REPORT ON CURRENCY AND FINANCE 2006-08

VOLUME II

THE BANKING SECTOR IN INDIA: EMERGING ISSUES AND CHALLENGES

RESERVE BANK OF INDIA

"The findings, views, and conclusions expressed in this Report are entirely those of the contributing staff of the Department of Economic Analysis and Policy (DEAP) and should not necessarily be interpreted as the official views of the Reserve Bank of India".

In India	-	Rs. 400 (Normal)
	-	Rs. 425 (Inclusive of Postal Charges)
	-	Rs. 300 (Concessional)
	-	Rs. 325 (Concessional Inclusive of Postage)
Abroad	-	US $ 40 (Inclusive of Air Mail Courier Charges)

© Reserve Bank of India 2008
All rights reserved. Reproduction is permitted provided an acknowledgement of the source is made.

ISSN 0972-8759

Published by Rekha Misra for the Reserve Bank of India, Mumbai-400 001
and designed and printed by her at Alco Corporation, A-2/72, Shah & Nahar Industrial Estate, Lower Parel, Mumbai-400 013

CONTENTS

VOLUME I

FOREWORD

		Page No.
I.	**THE THEME**	**1-12**
	Evolution of Banking in India	4
	Issues in Banking Development in India	6
	Structure of the Report	10
II.	**RECENT ECONOMIC DEVELOPMENTS**	**13-73**
	Real Sector	14
	Fiscal Situation	23
	Monetary and Credit Situation	32
	Financial Markets	43
	Banks and Financial Institutions	59
	External Sector	62
	Overall Assessment	72
III.	**EVOLUTION OF BANKING IN INDIA**	**74-141**
	The Early Phase of Banking in India – up to 1947	75
	Banking in the Early Years of Independent India – 1947 to 1967	84
	Social Control over Banks – 1967 to 1991	96
	Phase of Financial Sector Reforms – 1991-92 onwards	110
	Summing Up	136
	Annex III.1 : Bank Failures, Liquidations and Amalgamations in India 1913 - 2007	139
	Annex III.2 : Number of Banks	141
IV.	**MANAGING RESOURCE MOBILISATION**	**142-176**
	Theoretical Underpinnings	143
	Deposit Mobilisation by Banks in India	145
	Cross-Country Experiences	166
	Emerging Issues and the Way Forward	172
	Summing Up	176
	Exhibit IV.1 : Factors Affecting Household Savings	145
V.	**MANAGING CAPITAL AND RISK**	**177-233**
	Risk and Capital	179
	Basel Norms on Capital Adequacy	182
	Advantages, Limitations, Issues and Challenges of Basel II	191
	Managing Capital and Risk : Indian Experience	199
	The Way Forward	226
	Summing Up	230
	Annex V.1: Basel II Implementation : Cross-Country Status	232

(Contd...)

VOLUME II

		Page No.
VI.	**LENDING AND INVESTMENT OPERATIONS OF BANKS**	**235-293**
	Lending Operations of Banks – Theoretical Underpinnings	236
	Lending Operations of Scheduled Commercial Banks in India	239
	Lending to Agriculture	245
	Credit to Industry	259
	Infrastructure Lending	271
	Retail Credit	278
	Investment Operations of Banks	282
	The Way Forward	286
	Summing Up	291
VII.	**FINANCIAL INCLUSION**	**294-348**
	Access to Finance: Conceptual Framework	295
	Nature, Causes and Consequences of Financial Exclusion	299
	Initiatives for Financial Inclusion in India	303
	An Assessment of Financial Inclusion/Exclusion in India	318
	Operating Cost and Leveraging of Technology for Financial Inclusion	338
	The Way Forward	342
	Summing Up	345
	Annex VII.1 : Definitions of Various Types of Expenditure Used in the NSSO Survey	348
VIII.	**COMPETITION AND CONSOLIDATION**	**349-392**
	Consolidation – Theoretical Underpinnings	350
	Recent Trends in Mergers and Acquisitions in the Banking Industry	352
	Consolidation and Competition in India	353
	Mergers and Acquisitions : Impact on Competition and Efficiency in India	361
	Issues in Consolidation and Competition in India	369
	The Way Forward	386
	Summing Up	390
	Annex VIII.1: Roadmap for Presence of Foreign Banks in India	391
	Annex VIII.2: Ray Scale Economies	392

(Contd...)

		Page No.
IX.	**EFFICIENCY, PRODUCTIVITY AND SOUNDNESS OF THE BANKING SECTOR**	**393-446**
	Measurement of Productivity and Efficiency – Some Conceptual Issues	394
	Measurement of Productivity and Efficiency of the Banking Sector in India – Accounting Measures	395
	Measurement of Efficiency and Productivity of the Banking Sector in India - Economic Measures	421
	Soundness of the Banking Sector in India	433
	Factors Behind the Improvement in Efficiency and Productivity	439
	The Way Forward	441
	Summing Up	443
	Appendix IX.1 : Accounting *Versus* Economic Measures of Efficiency	445
X.	**REGULATORY AND SUPERVISORY CHALLENGES IN BANKING**	**447-503**
	Theory of Banking Regulation	448
	Regulatory and Supervisory Practices – Recent Developments	451
	Extant Regulatory and Supervisory Framework in India	475
	Regulatory and Supervisory Challenges	481
	The Way Forward	494
	Summing Up	499
	Annex X.1: Major Initiatives by the Board for Financial Supervision	501
XI.	**OVERALL ASSESSMENT**	**504-515**
	Evolution of Banking in India	504
	Managing Resource Mobilisation	506
	Managing Capital and Risk	507
	Lending and Investment Operations of Banks	508
	Financial Inclusion	509
	Competition and Consolidation	511
	Efficiency, Productivity and Soundness of the Banking Sector	511
	Regulatory and Supervisory Challenges in Banking	513
	Some Final Reflections	513
	SELECT REFERENCES	**I to XX**

LIST OF BOX ITEMS

Box No.	Title	Page No.
VI.1	Lending Operations of Banks : Major Policy Initiatives	240
VI.2	Risks Associated with Lending to Agriculture	246
VI.3	Priority Sector Targets for Scheduled Commercial Banks – Revised Guidelines	247
VI.4	Issues in Agricultural Credit – Developing Countries' Perspective	256
VI.5	Agricultural Lending Practices : Cross-Country Experiences	257
VI.6	Agriculture Credit – An International Perspective of Successful Experiences	258
VI.7	Difficulties faced by the Banking Sector in Extending Credit to SMEs	265
VI.8	Initiatives to Improve the Credit Flow to SMEs	266
VI.9	Lending to SMEs – Recent Initiatives Taken by Banks in India – A Brief Survey	267
VI.10	Basel II and Lending to the SME Sector – Banks' Behaviour	268
VI.11	Financing of SMEs : Experiences of Advanced and Emerging Economies	269
VI.12	Bank Lending to Infrastructure : Risks and Opportunities	273
VI.13	Financing of Infrastructure by Banks : Cross-Country Experiences	274
VI.14	RBI Guidelines on Financing of Infrastructure by Banks : Salient Features	275
VI.15	Risks of Retail Lending	281
VII.1	Factors Affecting Access to Financial Services	301
VII.2	Financial Inclusion in India – Key Elements	304
VII.3	Self-Help Group – Bank Linkage Programme	306
VII.4	Financial Inclusion: Novel Method of Financing	309
VII.5	Financial Inclusion: Women Empowerment	309
VII.6	Grameen Bank in Bangladesh	310
VII.7	Successful Model for Financial Inclusion: A Case Study of Andhra Pradesh	312
VII.8	Branchless Banking through Business Correspondents	313
VII.9	Urban Financial Inclusion – Dharavi (Mumbai) Model	313
VII.10	Housing and Financial Inclusion	314
VII.11	Report of the Committee on Financial Inclusion	315
VII.12	Financial Inclusion Strategy in Select Countries	316

(Contd...)

Box No.	Title	Page No.
VII.13	Financial Inclusion Initiatives in Different Countries	317
VII.14	SHG-Bank Linkage Programme : An Assessment	331
VII.15	Relationship Between Financial Inclusion and Development Indicators	337
VII.16	Technology and Financial Inclusion	342
VIII.1	Consolidation and its Implications for Financial Stability and Monetary Policy	352
VIII.2	Guidelines on Mergers and Amalgamations of Banks	356
VIII.3	Market-Driven *versus* Government-led Bank Consolidation : Cross-Country Experience	359
VIII.4	Impact of Consolidation on Competition : Cross-Country Evidence	362
VIII.5	Measures of Concentration Indices	363
VIII.6	Panzar-Rosse Statistics : The Indian Case	366
VIII.7	Efficiency Gains from M&As : A Case Study of Select Banks	368
VIII.8	Privatisation of Commercial Banks : Cross-Country Experiences	374
VIII.9	Branches *versus* Subsidiaries of Foreign Banks	378
VIII.10	Growing Significance of Foreign Banks in EMEs	380
VIII.11	Cost and Benefits of Foreign Banks Entry	381
VIII.12	Benefits and Costs of Foreign Banks Entry: Cross-Country Evidence	382
IX.I	Productivity and Efficiency – A Fine Distinction	394
IX.2	Productivity and Efficiency : Cross-Country Empirical Evidence	396
IX.3	Analytical Framework of Ratio Analysis	397
IX.4	Yield Curve and Net Interest Margin of Banks	408
IX.5	Determinants of Net Interest Margin in India	409
IX.6	Data Envelopment Analysis	422
IX.7	What Explains the Differences in Efficiency of Different Banks? An International Perspective	428
IX.8	Does Size Matter? – Cross-Country Empirical Evidence	430
IX.9	Determinants of Efficiency of the Banking Sector in India	432
IX.10	Malmquist Productivity Index	433
IX.11	Importance of Efficiency – The Case Study of a Bank	438
IX.12	Efficiency and NPAs Relationship in India	439

(Contd...)

Box No.	Title	Page No.
X.1	Banking Supervision and the Central Bank	454
X.2	Northern Rock Liquidity Crisis	456
X.3	The Lender of Last Resort	457
X.4	Financial Conglomerates – Definition and Structure	459
X.5	Approaches to Financial Regulation	462
X.6	Subordinate Debt as a Means of Market Discipline	467
X.7	Growth of Deposit Insurance Systems	470
X.8	Deposit Insurance – Advantages and Disadvantages	472
X.9	The Design of Deposit Insurance	473
X.10	Board for Financial Supervision and its Major Initiatives	479
X.11	Integration of Supervisory Methodologies	485
X.12	Report of the Electronic Banking Group of BCBS on “Risk Management Principles for Electronic Banking”	490

LIST OF CHARTS

Chart No.	Title	Page No.
VI.1	Non-food Credit and Bank Credit	241
VI.2	Gross and Net NPAs	242
VI.3	Outstanding Credit of SCBs According to Type of Accounts	243
VI.4	Bank Group-wise Growth Rate in Bank Credit	243
VI.5	Credit-GDP Ratio of SCBs in India	243
VI.6	Bank Group-wise Credit-Deposit Ratio	244
VI.7	Loans and Advances by Banks : Sector-wise Share	245
VI.8	Priority Sector Advances to Agriculture	248
VI.9	Outstanding Credit of Scheduled Commercial Banks to the Agricultural Sector	249
VI.10	Institutional Credit to Agriculture (Disbursements) as Percentage of Agricultural GDP and Total GDP	249
VI.11	Bank Group-wise Classification of Outstanding Credit of SCBs to Agriculture	250
VI.12	Classification of Outstanding Credit of SCBs to Agriculture	250
VI.13	Indirect Finance to Agriculture by Type of Accounts	250
VI.14	Scheduled Commercial Banks' Direct Finance to Farmers (Disbursements) According to Size of Land Holdings : Amount	251
VI.15	Scheduled Commercial Banks' Direct Finance to Farmers According to Size of Land Holdings (Disbursements) : Number of Accounts	251
VI.16	Small Loans : Number of Agricultural Borrowal Accounts	252
VI.17	Small Loans : Agricultural Credit Outstanding	252
VI.18	The Share of Agricultural Small Borrowal Accounts in Agricultural Borrowal Accounts – Adjusted for Inflation	253
VI.19	Credit Intensity of Industry	260
VI.20	Trends in Credit to the SSI Sector	263
VI.21	Credit Intensity of the SSI Sector	264
VI.22	The Share of Credit to SMEs in Credit to Industry : Bank Group-wise	264
VI.23	Weighted Average Interest Rates on Credit to Select Sectors and BPLR	266
VI.24	Trend in Personal Loans	278
VI.25	Trend in Housing Loans	278

(Contd...)

Chart No.	Title	Page No.
VI.26	Share of Personal Loans in Total Bank Credit – Bank Group-wise	280
VI.27	Growth Rate of Investments by SCBs	282
VI.28	SLR Investments by Scheduled Commercial Banks	283
VI.29	Growth in Bank Credit and Investment in Government Securities by SCBs	283
VI.30	Major Assets of Scheduled Commercial Banks	283
VI.31	Bank Group-wise Investment-Deposit Ratio	284
VI.32	Return on Advances and Return on Investments	284
VII.1	Financial Products and Services and the Institutional Structure	298
VII.2	Dimensions of Access Problems	300
VII.3	Post Office Savings Schemes – Share in Number of Accounts	334
VII.4	Savings Accounts per 100 Persons – Different Estimates	336
VIII.1	Concentration Ratio of Commercial Banks in India.	364
VIII.2	HHI and Entropy Index Measures of Concentration	365
VIII.3	RoA of Select Merged Banks *vis-à-vis* Respective Bank Group	369
IX.1	Operating Cost to Total Assets – 2006-07	398
IX.2	Off-Balance Sheet Exposures to Total Assets	398
IX.3	Ratio of Operating Costs to Average Assets of Banks in Select Countries – 2006	399
IX.4	Cost to Income Ratio – 2006-07	400
IX.5	Cost to Income Ratio of Banks in Select Countries – 2006	400
IX.6	Labour Cost per Earning Asset – 2006-07	402
IX.7	Ratio of Labour Cost to Total Assets in Select Countries – 2006	403
IX.8	Non-Labour Cost per Earning Asset – 2006-07	404
IX.9	Ratio of Non-Labour Costs to Total Assets of Banks in Select Countries – 2006	405
IX.10	Intermediation Cost – 2006-07	407
IX.11	Net Interest Margin – 2006-07	408
IX.12	Net Interest Margin of Banks in Select Countries – 2006	409
IX.13	Other Operating Income to Total Income – 2006-07	411
IX.14	Ratio of Other Income to Total Income of Banks in Select Countries – 2006	411
IX.15	Business Per Employee – 2006-07	413

(Contd...)

Chart No.	Title	Page No.
IX.16	Business Per Branch of Various Bank Groups – 2006-07	415
IX.17	Return on Assets of Various Bank Groups – 2006-07	416
IX.18	Return on Assets of Banks in Select Countries – 2006	417
IX.19	Return on Equity of Various Bank Groups – 2006-07	418
IX.20	Return on Equity of Banks in Select Countries – 2006	419
IX.21	Bank Group-wise Trends in Efficiency (1992-2007)	424
IX.22	Efficiency and Ownership	425
IX.23	Efficiency and Size	431
IX.24	Efficiency and Other Income	431
IX.25	Efficiency and Non-Performing Assets	432
IX.26	Bank Group-wise Trends in Productivity – 1991-92 - 2006-07	434
IX.27	Net NPAs of various Bank Groups	437
X.1	Assets of Commercial Banks in India	482
X.2	Off-Balance Sheet Exposure of Commercial Banks in India	482

LIST OF TABLES

Table No.	Title	Page No.
6.1	Sector-wise Growth Rate of Bank Credit	241
6.2	Credit-GDP Ratio of the Banking Sector – Select Countries	244
6.3	Distribution of Outstanding Credit of Scheduled Commercial Banks (Share in Total Credit)	245
6.4	Borrowing of Cultivator Households from Different Sources	248
6.5	Small Borrowal Accounts to Agriculture	253
6.6	Commercial Bank Credit to the Agriculture Sector : A Survey of Select Countries	254
6.7	Commercial Bank Credit Intensity of the Agriculture Sector : A Survey of Select Countries	254
6.8	Pattern of Sources of Funds of Indian Corporates	260
6.9	Type of Credit to Industry by Banks	260
6.10	The Share of Credit to Industry in Total Credit – Component-wise	261
6.11	Commercial Bank Credit to Industry : A Cross – Country Survey (Share in Total Bank Credit)	261
6.12	Credit Intensity of the Industrial Sector: A Survey of Select Countries	262
6.13	Bank Credit to Industry and the SSI sector	263
6.14	Gross NPAs of Scheduled Commercial Banks in the SSI Sector	263
6.15	The Share of SME Credit in Total Credit (Bank Group-wise)	264
6.16	Ownership Structure of SSIs	266
6.17	Financing Constraints (Percentage of Firms Rating Constraint 'Major' or 'Moderate')	270
6.18	Financing Patterns of Firms in Select Countries	271
6.19	Financing Sources for Private Sector Infrastructure	272
6.20	Credit by Scheduled Commercial Banks to Infrastructure Sector	275
6.21	Credit by Scheduled Commercial Banks to Infrastructure : Sector-wise – Outstanding	276
6.22	Net Credit Flow to the Infrastructure Sector by Scheduled Commercial Banks	276
6.23	Credit Disbursed by DFIs to the Infrastructure Sector	277
6.24	Commercial Bank Credit to the Infrastructure Sector : A Survey of Select Countries	277

(Contd...)

Table No.	Title	Page No.
6.25	Growth of Housing Loans	278
6.26	Composition of Bank Credit : A Cross-Country Comparison	280
6.27	Non-SLR Investments of Scheduled Commercial Banks	284
6.28	The Share of Investment in Total Assets : Select Countries	285
7.1	Definitional Aspects of Financial Inclusions/Exclusions	297
7.2	Basic/'No-Frills' Accounts – Salient Features in Select Countries	307
7.3	India's SHG – Bank Linkage Programme and Bangladesh's Grameen Bank Model : Major Features	311
7.4	Number of Indebted Households	319
7.5	Outstanding Households' Debt	319
7.6	Outstanding Debt per Indebted Household	320
7.7	Indebtedness of Households – Asset Holding-wise	320
7.8	Number of Indebted Households – Institutional *versus* Non-Institutional Sources	321
7.9	Outstanding Households Debt – Institutional *versus* Non-Institutional Sources	322
7.10	Distribution of Indebted Households to Institutional and Non-Institutional Credit Agencies	323
7.11	Sources of Loans by Income Groups – IIMS Survey	324
7.12	Purpose of Loans Taken by Households – NSSO Survey	324
7.13	Purpose of Loans Taken by Earners – IIMS Survey 2007	325
7.14	Annual Average Growth Rates of Agriculture and in Bank Credit	326
7.15	Population per Bank Branch	327
7.16	Credit Accounts with Scheduled Commercial Banks	327
7.17	Credit Accounts with Scheduled Commercial Banks – Region-wise	328
7.18	Number of Credit Accounts and Outstanding Credit as per Size of Credit Limit – All SCBs	328
7.19	Number of Credit Accounts of All SCBs – Inflation Adjusted Credit Limit	329
7.20	Regional Rural Banks in India – Credit Accounts/Amounts	329
7.21	Progress of Primary Agricultural Credit Societies	330
7.22	SHG-Bank Linkage Programme	330

(Contd...)

Table No.	Title	Page No.
7.23	Regional Pattern of SHGs Linked to Banks	330
7.24	Institutional Credit Flow to the Agriculture Sector in India	331
7.25	Number of Credit Accounts with Institutions	332
7.26	Savings Accounts with Scheduled Commercial Banks	332
7.27	Savings Accounts of Scheduled Commercial Banks	333
7.28	Savings Accounts with Regional Rural Banks	333
7.29	Number of 'No-Frills' Accounts Opened in India	334
7.30	Earners Having a Bank Account – 2007	334
7.31	Number of Savings Accounts with Institutions	335
7.32	Insurance Penetration Ratio - Select Countries – 2005	335
7.33	Comparison of AIDIS and BSR Data – Household Indebtedness to Commercial Banks	336
7.34	Return on Assets and 'No-Frills' Accounts – Select Banks	339
7.35	Cost of Credit from Various Agencies in India	340
7.36	Charges of Micro-Finance Institutions	340
7.37	Pros and Cons of Various Technologies	341
8.1	Cross-Country Bank Mergers and Acquisitions	353
8.2	Number of Commercial Banks	354
8.3	Banks Amalgamated since Nationalisation of Banks in India	357
8.4	New Private Sector and Public Sector Banks and Bank Mergers in India	360
8.5	Ranking of Indian Banks Among World's Top 1000 Banks	360
8.6	The Relative Size of the Largest Bank of India *vis-à-vis* the Largest Banks in Select Countries	361
8.7	Trend in Banking Concentration Ratio Across Countries	364
8.8	Herfindahl-Hirschman Index	365
8.9	Size of the Banking System in Relation to the Size of Economy	371
8.10	Degree of State-Owned Bank Assets and Banking Crisis	377
8.11	Foreign and Domestic Bank Performance Indicators in Developing Regions – 1998-2005 (Average)	383
8.12	Foreign Banks in India	384

(Contd...)

Table No.	Title	Page No.
9.1	Operating Cost to Total Assets of Commercial Banks in India	397
9.2	Operating Cost to Total Assets of Commercial Banks in Select Countries	399
9.3	Cost to Income Ratio of Commercial Banks in India	400
9.4	Cost to Income Ratio of Commercial Banks in Select Countries	401
9.5	Labour Cost per Unit of Earning Assets of Commercial Banks in India	402
9.6	Ratio of Personnel Expenses to Earning Assets of Commercial Banks in Select Countries	403
9.7	Non-Labour Cost per Unit of Earning Assets of Commercial Banks in India	404
9.8	Ratio of Labour Cost to Non-Labour Cost of Commercial Banks in India	405
9.9	Ratio of Non-Labour Cost to Total Earning Assets of Commercial Banks in Select Countries	406
9.10	Intermediation Costs of Commercial Banks in India	406
9.11	Ratio of NIM to Total Assets of Commercial Banks in India	407
9.12	Net Interest Margins of Commercial Banks in Select Countries	410
9.13	Share of Other Income to Total Income of Commercial Banks in India	411
9.14	Ratio of Other Operating Income to Total Income of Commercial Banks in Select Countries	412
9.15	Business per Employee of Commercial Banks in India	413
9.16	Business per unit Labour Cost of Commercial Banks in India	414
9.17	Business per Branch of Commercial Banks in India	415
9.18	Business per Urban/Metro Branch of Commercial Banks in India	416
9.19	Return on Assets of Commercial Banks in India	416
9.20	Return on Assets of Commercial Banks in Select Countries	417
9.21	Return on Equity of Commercial Banks in India	418
9.22	Return on Equity of Commercial Banks in Select Countries	419
9.23	A Snapshot of Productivity Ratios of Commercial Banks in India	420
9.24	Bank Group-wise Efficiency Levels	423
9.25	Frequency Distribution of Efficiency	424
9.26	Efficiency Ranks of Banks	426

(Contd...)

Table No.	Title	Page No.
9.27	Total Factor Productivity Change	434
9.28	CRAR of Commecial Banks in India	435
9.29	Capital to Total Assets Ratio of Commercial Banks in Select Countries	436
9.30	Net NPAs as per cent of Total Advances of Commercial Banks in India	437
9.31	Ratio of Impaired Loans to Gross Loans of Commercial Banks in Select Countries	438
10.1	Countries with Super Regulator Structure	463
10.2	Strategic Aim and Indicators of Principle-based Regulation	468
10.3	Countries with Risk-based Premium under Explicit Deposit Insurance System	475

SELECT REFERENCES

VI. LENDING AND INVESTMENT OPERATIONS OF BANKS

Barth, James R., Gerard Caprio Jr., and Ross Levin. 2002. "Financial Regulation and Performance: Cross-country Evidence." in Leonardo Hernández and Klaus Schmidt-Hebbel (eds.), *Banking, Financial Integration, and International Crisis*. 113-41. Central Bank of Chile. Santiago.

Batra, Geeta, Daniel Kaufmann and Andrew H. W. Stone. 2002. *Voices of the Firms 2000: Investment Climate and the Governance Findings of the World Business Environment Survey*. The World Bank Group.

Beck, Thorsten, Asli Demirgüç-Kunt, and Vojislav Maksimovic. 2003. "Bank Competition, Financing Obstacles and Access to Credit." *Policy Research Working Paper*, 2996. The World Bank.

Beck, Thorsten, Asli Demirguc-Kunt. 2005. "Small and Medium-Size Enterprises: Overcoming Growth Constraints." The World Bank Group. February.

Berger, A. N. and Gregory F. Udell. 1994. "Did Risk-Base Capital Allocate Bank Credit and Cause a 'Credit Crunch' in the United States?" *Journal of Money, Credit and Banking*, 26: 586-628.

Berger, A. N., and W.S. Frame. 2005. "Small Business Credit Scoring and Credit Availability." Federal Reserve Bank of Atlanta. *Working Paper Series* 10, May.

Bernanke, Ben S. and Cara S. Lown. 1991. "The Credit Crunch." *Brookings Papers on Economic Activity*, 2: 205-46.

Boyd, J.H. and M. Gertler. 1993. "US Commercial Banking: Trends, Cycles and Policy." *NBER Working Paper Series* No. 4404. July.

Clark, T., A. Dick, B. Hirtle, K.J. Stiroh, and R. Williams. 2007. "The Role of Retail Banking in the U.S. Banking Industry: Risk, Return, and Industry Structure." Federal Reserve Board New York. *Economic Policy Review*. December.

Coleman, W.D. and Wyn P. Grant. 1998. "Policy Convergence and Policy Feedback: Agricultural Finance Policies in a Globalizing Era." *European Journal of Political Research*, 34(2): 225-47.

Cottarelli, Carlo, Giovanni Dell'Ariccia, and Ivanna Valdkova-Hollar. 2003. "Early Birds, Late Risers, and Sleeping Beauties: Bank Credit Growth to the Private Sector in Central and Eastern Europe and the Balkans." *IMF Working Paper*, wp/03/213.

Cull, Robert, E. Lance Davis, R. Naomi Lamoreaux and Jean-Laurent Rosenthal, 2005. "Historical Financing of Small and Medium-Sized Enterprises." *NBER Working Paper Series*. October.

European Commission. 2003. "SMEs Access to Finance" Observatory of European Commission No. 2.

——. 2005. "SME Access to Finance." *Flash Barometer No.* 174, October.

Food and Agriculture Organisation. 1998. "Agricultural Finance Revisited: Why?" Agricultural Finance Revisited, No. 1, Food and Agriculture Organisation of the United Nations. June.

Gawlick, Sonia. 2007. "Public-Private Partnerships : A Financier's Perspective." United Nations Eonomic and Social Commission for Asia and the Pacific (UNESCAP). UNO.

Ghosh, B., and P. De. 2004. "How do Different Categories of Infrastructure Affect Development? Evidence from Indian States," *Economic and Political Weekly*, October 16, 4645-4657.

Ghosh, Saibal, D. M. Nachane, and Partha Ray. 2004. " Behaviour of Bank Capital: Issues and Evidence from India." *Economic and Political Weekly*. March.

Ghosh, Swati R., and Atish R. Ghosh. 1999. "East Asia in the Aftermath: Was There a Crunch?." *IMF Working Paper*, wp/99/38.

Golait, Ramesh. 2007. "Current Issues in Agricultural Credit in India: An Assessment." *Reserve Bank of India Occasional Papers,* 28(1), Summer.

Gopinath, S. 2005. "Retail Banking: Opportunities and Challenges." *RBI Bulletin*. June.

Government of India. 2007a. *The Report of the Committee on Infrastructure Financing*, (Chairman: Shri. Deepak Parekh), Government of India. May.

——. 2007b. *Report of the Expert Group on Agricultural Indebtedness*. (Chairman : Shri. R. Radhakrishna) Government of India, July.

Hernández, Leonardo and Oscar Landerretche. 2002. "Capital Inflows, Credit Boom and Macroeconomic Vulnerability: The Cross-Country Experience." in Hernández and Schmidt-Hebbel (eds), *Banking, Financial Integration and International Crises*. Central Bank of Chile, 199-233.

Hirtle, B. J. and K. J. Stiroh. 2007. "The Return to Retail and the Performance of US Banks." *Journal of Banking and Finance*, 31(4): 1101-1133.

Hollinger, F. 2004. "Agricultural Lending Practices: Methodologies and Programs Financing Term Investments in Agriculture: A Review of International Experiences." Food and Agriculture Organisation of the United Nations.

Keynes, J.M. 1930. *Treatise on Money.*

Lloyd, W. Mints. 1945. *A History of Banking Theory,* Chicago: University of Chicago Press, 27-29.

Meade, J. S. 1934. "The Amount of Money and the Banking System." Repr., *Readings in Monetary Theory* eds. Friedrich A. Lutz and Lloyd W. Mints, 77-83 London 1951. *Economic Journal,* No.44.

Meyer, Richard. L., and Geetha Nagarajan. 2000. *"Study of Rural Asia: Volume 3: Rural Financial Markets in Asia: Policies Paradigms and Performance.*" Asian Development Bank, Oxford University Press for ADB.

Mohan, Rakesh. 1996. " Policy Imperatives for Growth and Welfare." *The India Infrastructure Report* Vol. 2. NCAER for Government of India.

——. 2003. "Transforming Indian Banking : In Search of a Better Tomorrow." *RBI Bulletin.* January.

——. 2004. "Finance for Industrial Growth." *RBI Bulletin.* March.

——. 2005. "Indian Economy in the Global Setting." *RBI Bulletin.* October.

——. 2006. "Agricultural Credit in India: Status, Issues and Future Agenda." *Economic and Political Weekly*. March.

——. 2008 . "Innovation and Growth: Role of the Financial Sector." *RBI Bulletin*. April.

Mohanty, M.S., Gert Schnabel and Pablo Garcia-Luna. 2006. " Banks and Aggregate Credit: What is New?" *BIS Papers* No. 28.

Montiel, Peter J. 2000. "What Drives Consumption Booms?" *World Bank Economic Review*, 14(3): 457-80. September.

Morris, Sebastian. 2001. "Issues in Infrastructure Development Today: The Interlinkages." Chapter 2, *India Infrastructure Report*, 3inetwork.

Moulton, H.G. 1918. "Commercial Banking Capital Formation." *Journal of Political Economy,* 26 (7).

Nachane, D.M., Aditya Narain, Saibal Ghosh, and S. Sahoo. 2001. "Bank Response to Capital Requirements: Theory and Indian Evidence." *Economic and Political Weekly,* 329-35.

National Bank for Agriculture and Rural Development. 2007. "Rural Infrastructure Development Fund." http://www.nabard.org/ridf/genesisofridf.asp

National Commission for the Enterprises in the Unorganised Sector. 2007. Financing of Enterprises in the Unorganised Sector & Creation of a National Fund For the Unorganised Sector (NAUFS) (Chairman: Arjun K. Sengupta).

Passmore, W and S. Sharpe. 1994. "Optimal Bank Portfolios and the Credit Crunch." *Finance and Economics Discussion Series*, 94-19, Federal Reserve Board of Governors.

Pesek, B.P., and T.R. Saving. 1967. *Money, Wealth and Economic Theory*. New York: MacMilan.

Prochnow, Herbert V. 1949. *Term Loan and Theories of Bank Liquidity.* New York: Prentice Hall.

Rajan, Raghuram., and Luigi Zingales. 1998. "Financial Dependence and Growth." *American Economic Review*, 88 (3): 559-86.

Rao, K. S. Ramchandra, Abhiman Das, and Arvind Kumar Singh. 2006. "Commercial Bank Lending to Small Scale Industry." *Economic and Political Weekly*. March.

Reddy, Y. V. 2005. "Banking Sector Reforms in India : An Overview." *RBI Bulletin*. June.

——. 2006. "Reforming India's Financial Sector. Changing Dimensions and Emerging Issues. *RBI Bulletin.* June.

Reserve Bank of India. 2004. *Report of the Advisory Committee on Flow of Credit to Agriculture and Related Activities from the Banking System.* June.

——. 2005. *Report of the Internal Group to Review Guidelines on Credit Flow to SME Sector* (Chairman: Shri. C. S. Murthy).

——. 2007a. "Developement of Financial Markets and Role of Central Bank." *Report on Currency and Finance*.

——. 2007b. *Report on Trend and Progress of Banking in India*.

Roussakis, N. Emmanuel. 1997. *Commercial Banking in an Era of Deregulation*, Praeger, Publication Westport. Connecticut.

Sen, Sunanda, Soumya Kanti Ghosh. 2005. "Basel Norms, Indian Banking Sector and Impact on Credit to SMEs and the Poor." *Economic and Political Weekly*, March.

Thakor, Anjan V. 1996. "Capital Requirements, Monetory Policy and Aggregate Bank Lending: Theory and Empirical Evidence." *The Journal of Finance*, 51: 279-324.

Thomas, Rollin G. 1937. *Modern Banking*, New York: Prestige Hall 161-169.

Timothy, C. D. Astrid , H. Beverly, K. J. Stiroh, and R. Williams . 2007. "The Role of Retail Banking in the U.S. Banking Industry: Risk, Return, and Industry Structure." *FRBNY Economic Policy Review*, December.

Wall, L. D. and David R. Peterson. 1995. "Bank Holding Company Capital Targets in the Early 1990s: The Regulations Vensus the Markets." *Journal of Banking Banking and Finance*, 19: 563-574.

Yaron, Jacob. 1992. "Rural Finance in Developing Countries." *World Bank Policy Research Working Paper*, Agricultural Policies Division, Agriculture and Rural Development Department, World Bank, March.

World Bank. 2008. Finance for All ?, Policies and Pitfalls in Expanding Access. *A World Bank Policy Research Report*.

VII. FINANCIAL INCLUSION

Agarwal, Gaurav. 2007. "Financial Inclusion through Mobile Phone Banking: Issues and Challenges." *CAB Calling*, July-September, 2007.

APMAS and EDA Rural Systems. 2006. "Self-Help Groups in India: A Study of the Lights and Shades." Study by Andhra Pradesh *Mahila Abhivruddhi* Society (APMAS) and EDA Rural Systems Private Ltd. www.apmas.org.

Aryavart Grameen Bank. http://aryavart-rrb.com.

Asian Development Bank. 2000. *Finance for the Poor: Micro-finance Development Strategy*.

——. 2007. "Low Income Households' Access to Financial Services – International Experience, Measures for Improvement, and the Future." *EARD Special Studies*, October.

Bank of Scotland. 2007. *Delivering Our Financial Inclusion Agenda in Scotland*. March.

Bridgeman, J.S. 1999. *Vulnerable Consumers and Financial Services*. The Report of the Director General's Inquiry, Office of Fair Trading, January.

CAB. 2007. *Report on Costs and Margins of Micro Finance Institutions*. College of Agricultural Banking, Reserve Bank of India.

Chant Link and Associates. 2004. *A Report on Financial Exclusion in Australia*. November.

Connolly, C. and K. Hajaj. 2001. "Financial Services and Social Exclusion." Financial Services Consumer Policy Centre. University of New South Wales.

Creado, J. and R. Koshi. 2008. "Creating Leaders at the Bottom of the Pyramid." Microfinance Insights, March.

Ford, J. and K. Rowlingson. 1996. "Low-Income Households and Credit: Exclusion, Preference and Inclusion." *Environment and Planning*, 28: 1345–60.

Government of India. 2007. *Report of the Working Group on Competitive Micro-Credit Market in India.* Eleventh Five Year Plan, Planning Commission.

——. Book of Information. Department of Posts.

——. Central Electricity Authority. www.cea.nic.in.

——. Department of Road Transport and Highways. www.morth.nic.in.

——. NSSO, various rounds of survey.

——. 2008. "Challenges, Policy Reforms and Medium-Term Prospects." *Economic Survey 2007-08*, Chapter 2.

——. 2008. *Report of the Committee on Financial Inclusion in India (Chairman Dr. C. Rangarajan).* January.

Grameen Bank. www.grameen-info.org.

H.M. Treasury. 2004. *Promoting Financial Inclusion*. HMSO, St Clements House, 2-16 Colegate, Norwich, December.

——. 2006. *Financial Inclusion: Credit, Savings, Advice and Insurance*. Twelfth Report of Session 2005–06, Volume I. House of Commons Treasury Committee, UK.

——. 2007. *Financial Inclusion: the Way Forward*. HM Treasury. London, March.

IIMS. 2007. *Invest India Incomes and Savings Survey*. Invest India Market Solutions (IIMS dataworks). www.iimsdataworks.com.

IRDA. 2008. "Getting Better and Better." *IRDA Journal*. Insurance Regulatory and Development Authority, January. www.irdaindia.org.

Indian Bank. www.indianbank.in

Kamath, Raghav. 2007. "Branchless Banking: Corp Bank's Answer for Financial Inclusion." *CAB Calling*, July-September, Vol. 31, No. 3.

Kempson, E. 2006. "Policy Level Response to Financial Exclusion in Developed Economies: Lessons for Developing Countries." Paper for Access to Finance: Building Inclusive Financial Systems, May 30-31, World Bank, Washington, D.C.

Kempson, E. and C. Whyley. 1998. *Access to Current Accounts*. London: British Bankers' Association.

——. 1999. *Kept Out or Opted Out?* Bristol: Policy Press.

——. 2000. *In or Out? Financial Exclusion: A Literature and Research Review*. Financial Services Authority, London.

Kempson E, A. Atkinson and O. Pilley. 2004. "Policy Level Response to Financial Exclusion in Developed Economies: Lessons for Developing Countries." University of Bristol.

Leeladhar, V. 2006. "Taking Banking Services to the Common Man – Financial Inclusion." *RBI Bulletin*, January.

Leyshon, A. and N. Thrift. 1993. "The Restructuring of the UK Financial Services Industry in the 1990s: A Reversal of Fortune?" *Journal of Rural Studies*, 9: 223–41.

——. 1995. "Geographies of Financial Exclusion: Financial Abandonment in Britain and the United States." *Transactions of the Institute of British Geographers, New Series,* 20: 312–41.

Meadows, P., P. Ormerod and W. Cook. 2004. "Social Networks: Their Role in Access to Financial Services in Britain." *National Institute Economic Review* (189): 99-109.

Mohan, Rakesh. 2006. "Economic Growth, Financial Deepening and Financial Inclusion." *RBI Bulletin*, November.

NAFSCOB. *Performance of Primary Agricultural Credit Societies. V*arious issues.

NCAER. 2008. *"How India Earns, Spends, and Saves*." Results from The Max New York Life-NCAER India Financial Protection Survey. www.ncaer.org

NHB. 2006. *Report on Trend and Progress on Housing in India 2005.* National Housing Bank, November.

NSSO. *All India Debt and Investment Survey (AIDIS)*. Various Issues.

Puhazhendi, V. and K.J.S. Satyasai. 2000. "Microfinance for Rural People: An Impact Evaluation." NABARD.

Puhazhendi, V. and K.C. Badatya. 2002. "SHG-bank Linkage Programme for Rural Poor - An Impact Assessment." www.microfinancegateway.org.

Rajan, M.S.S. 2007. "Replication of Financial Inclusion: Opportunities and Challenges – Indian Bank Experience." *CAB Calling*, July-September, Vol.31, No.3.

Rao, M.B.N. 2007. "Sustainable Inclusion- Cost of Inclusion." Skoch Financial Technologies Summit.

Reddy, Y.V. 2007. "Financial Sector Policies for Growth and Employment." *RBI Bulletin*, December.

Reserve Bank of India. *Basic Statistical Returns of SCBs in India*. Various issues.

——. *Report on Trend and Progress of Banking in India.* Various issues.

——. *Survey of Small Borrowal Accounts*. *Reserve Bank of India Bulletin*, various issues.

——. 2007. *Handbook of Statistics on the Indian Economy 2006-07*.

——. 2007. *Report for the Technical Group to Review Legislations on Money Lending.*

Rogaly, B., T. Fisher and E. Mayo. 1999. *Poverty, Social Exclusion and Microfinance in Britain.* London: Oxfam GB.

Sinclair, Stephen, P. 2001. "Financial Exclusion: An Introductory Survey." Centre for Research into Socially Inclusive Services (CRSIS) Edinburgh College of Art, Heriot Watt University.

Speak, S. and S. Graham. 1999. "Service Not Included: Private Services Restructuring, Neighbourhoods and Social Marginalisation." *Environment and Planning*, A. 31.

Tankha, A. 2002. "Self-help Groups as Financial Intermediaries in India: Cost of Promotion, Sustainability and Impact." A Study Prepared for ICCO and Cordaid, The Netherlands. www.microfinancegateway.org

Thorat, Usha. 2006a. "Financial Inclusion and Millennium Development Goals." *RBI Bulletin,* February.

——. 2006b. "Financial Inclusion for Sustainable Development: Role of IT and Intermediaries." *RBI Bulletin*, December.

——. 2008. "Inclusive Growth - The Role of Banks in Emerging Economies." *Reserve Bank of India Bulletin*, March.

United Nations. 2006a. Advisors Group on Inclusive Financial Sectors, United Nations. www.uncdf.org

——. 2006b. *Building Inclusive Financial Sectors for Development*. New York.

Wallace, James E. 1995. "Financing Affordable Housing in the United States." *Housing Policy Debate*, 6(4):785–814.

World Bank. 2008. *Finance for All – Policy and Pitfalls in Expanding Access.* The World Bank, Washington, D.C.

VIII. COMPETITION AND CONSOLIDATION

Aguirre, E. and Norton, J.J. 2000. "Reform of Latin American Banking Systems: National and International Perspectives." Kluwer Law International, London, England.

Allen, L. and Rai A. 1996. "Operational Efficiency in Banking: An International Comparison." *Journal of Banking and Finance,* Vol. 20: 655-72.

Andrews, Michael A. 2005. "State-owned Banks, Stability, Privatization, and Growth: Practical Policy Decisions in a World without Empirical Proof." *IMF Working Paper* WP/05/10, International Monetary Fund.

Bank for International Settlements. 2001. *Report on Consolidation in the Financial Sector,* Group Ten. Switzerland.

——. 2004. "Foreign Direct Investment in the Financial Sector of Emerging Market Economy." *CGFS*, Publication No. 22, March.

——. 2001. "The Banking Industry in the Emerging Market Economies: Competition, Consolidation and Systematic Stability." *BIS Papers* No.4.

Barth, J. R., G. Caprio, and R. Levine. 2000. "Banking Systems Around the Globe: Do Regulation and Ownership Affect Performance and Stability"? *Working Paper* No.2325, World Bank.

Barth, J.R., G. Caprio Jr., and R. Levine. 2001. "Banking Systems Around the Globe: Do Regulations and Ownership Affect Performance and Stability?." in *Prudential Supervision: What Works and What Doesn't* ed. Mishkin, F.S., 2001., Univ. of Chicago Press, 31–88.

Barth, J. R., Caprio, Jr., Gerard and Nolle, Daniel E. 2004. “Comparative International Characteristics of Banking.” *Economic and Policy Analysis Working Paper* No.1.

Berger, Allen, N. and Loretta J. Mester. 1997. “Inside the Black Box: What Explains Differences in the Efficiencies of Financial Institutions?,” *Center for Financial Institutions Working Papers 97(04)*, Wharton School Center for Financial Institutions. University of Pennsylvania.

Berger, Allen N. and Humphrey, David B. 1997. “Efficiency of Financial Institutions: International Survey and Directions for Future Research.” *European Journal of Operational Research*, Elsevier, Vol.98, No.2: 175-212.

Berger, Allen, N. and Timothy H. Hannan. 1998. “The Efficiency Cost of Market Power in the Banking Industry: A Test of the “Quiet Life” And Related Hypotheses.” *The Review of Economics and Statistics*, Vol.80, No.3: 454-465.

Berger, Allen N., Rebecca S. Demsetz and Philip E. Strahan. 1999. “The Consolidation of the Financial Services Industry: Causes, Consequences, and Implications for the Future.” *Journal of Banking and Finance,* Vol.23: 135-194.

Bikker, Jacob A., and Haaf Katharina. 2002. “Competition, Concentration and their Relationship: An Empirical Analysis of the Banking Industry.” *Journal of Banking & Finance,* Vol.26: 2191-2214.

Bikker, Jacob A. 2004. “Competition and Efficiency in a Unified European Banking Market.” Edward Elgar Publishing.

Cárdenas, J., J. P. Graf, and P. O.’Dogherty. 2003. “Foreign Bank Entry In Emerging Market Economies: A Host Country Perspective.” *CGFS Working Group on FDI in the Financial Sector.*

Casu, Barbara., and Claudia Girardone. 2007. “Does Competition Lead to Efficiency? The Case of EU Commercial Banks.” *University of Essex Discussion Paper* No.07-0, University of Essex.

Claessens, Stijn and Laeven, Luc. 2003. “What Drives Bank Competition? Some International Evidence.” *Policy Research Working Paper Series* 3113, World Bank.

Deloitte. 2005. *The Changing Banking Landscape in Asia Pacific: A Report on Bank Consolidation.* Deloitte Touche Tohmatsu.

Domanski, D. 2005. “Foreign Banks in Emerging Market Economies: Changing Players, Changing Issues.” *BIS Quarterly Review.*

Edwards, J. and Fischer, K. 1994. “Banks, Finance, and Investment in Germany.” Cambridge: Cambridge University Press.

Egli, D. and B. Rime. 1999. “The UBS-SBC Merger and Competition in the Swiss Retail Banking Sector.” *Studienzentrum Gerzensee Working Paper* No.00/02. December.

Eisenbeis, R.A. and Kaufman, G. 2005. "Bank Crises Resolution and Foreign-Owned Banks." *Economic Review*, Vol.90, No.4. Federal Reserve Bank of Atlanta.

Eichengreen, Barry, and Michael Mussa. 1998. "Capital Account Liberalization - Theoretical and Practical Aspects." *IMF Occasional Paper* No.172. International Monetary Fund, Washington.

Eichengreen, Barry and Michael Mussa. 1998. “Capital Account Liberalization and the IMF.” *Finance and Development*, Vol.35, No.4.

European Central Bank. 2005. “Banking Structures in the New EU Member States.” Frankfurt. January.

Federal Reserve Bank of San Francisco. 2004. “Banking Consolidation.” *FRBSF Economic Letter*, No. 2004-15.

Gaston, R. Gelos and Jorge Roldos. 2002. “Consolidation and Market Structure in Emerging Market Banking Systems.” *IMF Working Paper* No.02/186. International Monetary Fund.

George, Clarke *et al*., .2002. “The Effects of Foreign Entry on Argentina’s Domestic Banking Sector.” World Bank, Washington.

Gerschenkron, and A. Gerschenkron. 1962. “Economic Backwardness in Historical Perspective: A Book of Essays.” Cambridge: Harvard University Press.

Goldberg, L. S., Crystal, J and Dages, B. G. 2002. “Has Foreign Bank Entry led to Sounder Banks in latin America?” *Current Issues in Economics and Finance*, Vol.8, No. 1.

Gourlay, Adrian, Ravishankar Geetha and Weyman-Jones Tom. 2006. “Non-Parametric Analysis of Efficiency Gains from Bank Mergers in India.” *Discussion Paper Series,* WP – 17. Loughborough University. UK.

Government of India. 1998. *The Committee on Banking Sector Reforms* (Chairman: M. Narasimham).

Gutiérrez, de Rozas, Luis. 2007. “Testing for Competition in the Spanish Banking Industry: The Panzar-Rosse Approach Revisited.” *Banco de España Research Paper* No. WP-0726. August.

Halperin, M. and Bell, S. J. 1992. “Research Guide to Corporate Acquisitions, Mergers, and Other Restructuring.” New York: Greenwood Press.

Hannan, Timothy H. 1997. “Market Share Inequality, the Number of Competitors, and the HHI.” *Review of Industrial Organization*, Vol.12: 23-35.

Hawkins, John and Dubravko Mihaljek. 2001. “The Banking Industry in the Emerging Market Economies: Competition, Consolidation and Systemic Stability – An Overview.” *BIS Papers* No.4.

Honohan, Patrick and Klingebiel, Daniela, 2000. "Controlling The Fiscal Costs Of Banking Crises." *Policy Research Working Paper Series 2441*. The World Bank.

Huang, X., et al. 2008. “Assesing the Impact of Foreign Banks’ Entry into China’s Banking.” *China Insights Today*, Vol.1, No.1.

Huizinga, H.P., J.H.M. Nelissen and R. Vander Vennet. 2001. “Efficiency Effects of Bank Mergers and Acquisitions in Europe.” *Discussion Paper* No.088/03. Tinbergen Institute, Amsterdam.

Ignacio, Fuentes and Sastre Teresa. 1998. “Implications of Restructuring in the Banking Industry: The Case of Spain.” *BIS Conference Papers*, 7: 98-120.

Indian Banks’ Association. 2003. *Banking Industry: Vision 2010 of the Indian Banks*. Report.

Jalan, Bimal. 2002. "India's Economy in the New Millennium: Selected Essays." UBS Publishers' Distributors Pvt Ltd.

Jones, Kenneth D. and Tim Critchfield. 2005. “Consolidation in the U.S. Banking Industry: Is the ‘Long, Strange Trip’ About to End?” *Federal Deposit Insurance Corporation Banking Review*, Vol.17, No.4.

Joshi, Vijay and I. M.D. Little. 1996. *India’s Economic Reforms: 1991-2001*, Delhi: Oxford University Press,

Kang, Jun-Koo and Stulz, Rene M. 2000. "Do Banking Shocks Affect Borrowing Firm Performance? An Analysis of the Japanese Experience." *Journal of Business*, Vol.73, No.1.

Krainer, J. 2000. “The Separation of Banking and Commerce.” FRBSF Economic Review 2000, Federal Reserve Bank of San Francisco: 15-25.

La Porta, R., F. Lopez-de-Silanes, and A. Shleifer. 2002. “Government Ownership of Banks.” *Journal of Finance*, Vol.57: 265-301.

Lahusen, Reinhard. 2004. “Bank Performance in Europe: Great Progress Through Consolidation - Except in Germany.” *EU Monitor* No.13, Financial Market Special. Deutsche Bank Research, June.

Leeladhar, V. 2008. “Consolidation in the Indian Financial Sector.” Adress at the International Banking & Finance Conference 2008 Organised by the Indian Merchants’ Chamber. Mumbai.

——. 2004. *Report on Consolidation in Indian Banking System*.

Mahesh, H. P. and Meenakshi Rajeev. 2006. “Liberalisation and Productive Efficiency of Indian Commercial Banks: A Stochastic Frontier Analysis.” *MPRA Paper 827*. University Library of Munich. Germany.

Mathieson, D. J. and Roldos, J. 2001. "The Role of Foreign Banks in Emerging Markets." Prepared for 3rd Annual Financial Markets and Development Conference, The World Bank, International Monetary Fund, and Brookings Institution.

Megginson, William L. 2005. “The Economics of Bank Privatisation.” *Journal of Banking & Finance,* Vol.29: 1931-1980.

Mihaljek, Dubravko. 2006. “Privatisation, Consolidation and the Increased Role of Foreign Banks.” *BIS Paper* 28. August.

Mohan, Rakesh. 2004a. “Globalisation: The Role of Institution Building in the Financial Sector: The Indian Case.” *RBI Bulletin*. February.

——. 2004b. “Ownership and Governance in Private Sector Banks in India.” *RBI Bulletin*, October.

——. 2006. “Reforms, Productivity and Efficiency in Banking: the Indian Experience.” *RBI Bulletin*, March.

Nitsure, Rupa Rege. 2008. “Consolidation of Banks: Some Thoughts.” Presentation at Financial Sector Seminar Series, ICRIER on April 8.

Northcott, C. A. 2004. “Competition in Banking: A Review of the Literature.” *Bank of Canada Working Paper* No. 24.

Panzar, J. and J. Rosse. 1987. “Testing for Monopoly Equilibrium.” *Journal of Industrial Economics*, Vol.35: 443-56.

Petersen, M. A and R. G. Rajan. 1995. “The Effect of Credit Market Competition on Lending Relationships.” *Quarterly Journal of Economics*, Vol.110 : 407–443.

Prager, and Hannan. 1998. “The Relaxation of Entry Barriers in the Banking Industry: An Empirical Investigation.” *Journal of Financial Services Research,* Vol.14, No.3: 171-188.

Prager, Robin A. and Hannan, Timothy H. 1998. “Do Substantial Horizontal Mergers Generate Significant Price Effects? Evidence from the Banking Industry.” *Journal of Industrial Economics*, Vol.46, No.4: 433-52, December.

Prasad, A. and Saibal Ghosh. 2005. “Competition in Indian Banking.” *IMF Working Paper* No. WP/05/141.

Radecki, L. J., J. Wenniger and D.K. Orlow. 1997. “Industry Structure: Electronic Delivery’s Potential Effects on Retail Banking.” *Journal of Retail Banking Services,* Vol.19, No.4: 57-63.

Radecki, L. J. 1998. “The Expanding Geographic Reach of Retail Banking Markets.” *Economic Policy Review,* Vol.4, No.2, Federal Reserve Bank of New York.

Rajan, R.G. and Zingales, L. 1998. "Financial Dependence and Growth." *American Economic Review*, Vol.88, No.3.

Ram Mohan, T. T. 2002. “Deregulation and Performance of Public Sector Banks.” *Economic and Political Weekly*, Vol.37, No.5: 393-397.

——. 2004. “Consolidation of Banks: A Case of Misplaced Priorities.” *Economic and Political Weekly*, Vol.39, No.50: 5283-87.

——. 2005. “Bank Consolidation: Issues and Evidence.” *Economic and Political Weekly*, Vol.40, No.2: 1151-1159.

Ram Mohan, T. T. and S. Ray. 2004. “Productivity Growth and Efficiency in Indian Banking: A Comparison of Public, Private, and Foreign Banks.” *Department of Economics Working Paper* No.2004-27, University of Connecticut.

Ram Mohan, T. T. and S. Ray. 2004. “Comparing Performance of Public and Private Sector Banks: A Revenue Maximisation Approach.” *Economic and Political Weekly*, Vol.39, No.12: 1271-75.

Rangarajan, C. 2007. “The Indian Banking System - Challenges Ahead”. First R. K. Talwar Memorial Lecture at Indian Institute of Banking and Finance on July 31, 2007.

Reserve Bank of India. 1991. *Committee on Financial System* (Chairman: M. Narasimham).

Reddy, Y. V. 1992. "Privatisation and Financial Sector: Ownership, Competition and Efficiency." Paper Presented at the Bank Economists' Conference.

——. 2000. "Banking in Future: Flexibility, Autonomy and Regulatory Refocus." Valedictory Address at Conference of Chairmen of Banks at NIBM, Pune.

——. 2002. “Public Sector Banks and the Governance Challenge: Indian Experience.” Paper presented at the World Bank, International Monetary Fund, and Brookings Institution Conference on Financial Sector Governance: The Role of the Public and Private Sectors on April 18, 2002 at New York.

——. 2004. “Towards Globalization in the Financial Sector in India.” *RBI Bulletin*, January.

Reserve Bank of India. 1999. *The Working Group on Restructuring of Weak Public Sector Banks* (Chairman: M. S. Verma).

——. 2004. *Flow of Credit to Agriculture and Related Activities*. Advisory Committee Report.

——. 2005. *Report of the Internal Working Group on RRBs*.

——. 2007. *Report on Trend and Progress of Banking in India, 2006-07*.

Ross, S. A., Westerfield, R. W., and Jordan, B. D. 1995. *Fundamentals of Corporate Finance*. Chicago: Irwin.

Sarkar, Jayati, Subrata Sarkar and Suman Bhaumik. 1998. “Does Ownership Always Matter? – Evidence from the Indian Banking Industry.” *Journal of Comparative Economics*, Vol.26, No.2: 262-81.

Sapienza, P. 1998. “The Effects of Banking Mergers on Loan Contracts.” *Northwestern University working Paper*.

Sharpe, S.A. 1990. “Asymmetric Information, Bank Lending and Implicit Contracts a Stylised Model of Customer Relationships.” *Journal of Finance,* Vol.45: 1069–1087.

Shull, Bernard and Hanweck, Gerald A. 2001. *Bank Mergers in a Deregulated Environment: Promise and Peril*, Quorum Books. USA.

Simons, K. and J. Stavins. 1998.“Has Antitrust Policy in Banking Become Obsolete?” Federal Reserve Bank of Boston, *New England Economic Review* (March-April), 13-26.

Talwar, S.P. 2001. “Competition, Consolidation and Systemic Stability in the Indian Banking Industry.” *BIS Papers*, August.

Timothy, H. Hannan & J. Nellie Liang. 1991. “Inferring Market Power from Time-series Data: The Case of the Banking Firm.” *Finance and Economics Discussion Series 147*, Board of Governors of the Federal Reserve System. (U.S.).

Udeshi, Kishori J. 2004. "Issues in Bank Regulation and Supervision." *BIS Review* 50/2004.

Vander, Vennet R. 2002. "Cost and Profit Efficiency of Financial Conglomerates and Universal Banks in Europe." *Journal of Money, Credit and Banking*, Vol.34, No.1: 254-282.

Vyas, V. S. 2004. *Report on the Flow of Credit to Agriculture and Related Activities*. June.

Wilmarth, Jr. Arthur E. 2007. "Wal-Mart and the Separation of Banking and Commerce." *Connecticut Law Review*, Vol. 39. May.

World Bank. 2005. World Development Report: *A Better Investment Climate for Everyone*. World Bank, Washington, D.C.

Yeyati, Eduardo Levy and Micco, Alejandro. 2007. "Concentration and Foreign Penetration in Latin American Banking Sectors: Impact on Competition and Risk." *Journal of Banking & Finance*, Vol.31, No.6: 1633-1647.

Yildirim, H. Semih and Philippatos, George C. 2007. "Restructuring, Consolidation and Competition in Latin American Banking Markets." *Journal of Banking & Finance*, Vol.31, No.3: 629-639. March.

Yuan, Y. 2006. "The State of Competition of the Chinese Banking Industry." *Journal of Asian Economies,* Vol.17: 519–534.

IX. PRODUCTIVITY EFFICIENCY AND SOUNDNESS OF THE BANKING SECTOR IN INDIA

Aly, H.Y., R. Grabowski, C. Pasurka, and N. Rangan. 1990. "Technical, Scale and Allocative Efficiencies in U.S. Banking: An Empirical Investigation." *Review of Economics and Statistics*, 72(2): 211-218.

Banker, R. D., A. Charnes and W. W. Cooper. 1984. "Some Models for Estimating Technical and Scale Inefficiencies in Data Envelopment Analysis." *Management Science*, 30(9): 1078-1092.

Barr, R., and T. Siems. 1996. "Bank Failure Prediction using DEA to Measure Management Quality." *Federal Reserve Bank of Dallas Working Paper*.

Bell, F. W. and N. B. Murphy. 1968. "Ecomices of Scale and Division of Labour in Commercial Banking." *Southern Economic Journal*, 131-139. October.

Berger, A. N., D. Hancock, and D. B. Humphrey. 1993. "Bank Efficiency derived from the profit function." *Journal of Banking and Finance*, 17: 317-47.

Berger, A. N., and D. B. Humphrey. 1997. "Efficiency of Financial Institutions: International Survey and Directions for Future Research." *European Journal of Operational Research*, 98:175-212.

Berger, A. N., and R. de Young. 1997. "Problem Loans and Cost Efficiency in Commercial Banks." *Federal Reserve Board Finance and Economics Discusion Series 8.*

Berger, A. N., and L.J. Mester. 1997. "Inside the Black Box : What Explains Differences in the Efficiencies of Financial Institutions." *Journal of Banking and Finance,* 21(7): 895-947.

Bhattacharya, Anjana, Arunava Bhattacharya and Subal C. Kumbhakar. 1997. "Changes in Economic Regime and Productivity Growth: A Study of Indian Public Sector Banks." *Journal of Comparative Economics*, 25(2):196-219 .

Bhide, M. G., A. Prasad and S. Ghosh. 2002. "Banking Sector Reforms: A Critical Overview." *Economic and Political Weekly*, 37(5): 399-408.

Bikker, J. A. 2002. *Efficiency and Cost Differences Across Countries in a Unified European Banking Market*. De Nederlandsche Bank.

Casolaro, L., and G. Gobbi. 2004. "Information Technology and Productivity Changes in the Italian Banking Industry." Banca D'Italia, March.

Casu, Barbara, Claudia Girardone, and Philip Molyneux. 2002. "Productivity Change in European Banking : A Comparison of Parametric and Non-Parametric Approaches." *Journal of Banking and Finance*, 25(2): 196-219.

Chandra, Prasanna. 2004. *Financial Management: Theory and Practice*, Tata McGraw Hill, New Delhi.

Charnes, A., W. W. Cooper, and E. Rhodes. 1978. "Measuring the Efficiency of Decision Making Units." *European Journal of Operational Research*, 2(4): 429-444.

Cuerta, R., and L. Orea. 2002. "Mergers and Technical Efficiency in Spanish Savings Banks: A Stochastic Distance Function Approach." *Journal of Banking and Finance*, 26(12): 2231-2247.

Das, A., A. Nag and S. C. Ray. 2005. "Liberalisation, Ownership and Efficiency in Indian Banking : A Nonparametric Analysis." *Economic and Political Weekly*, 40(12): 1190-1197.

Das, A., and S. Ghosh. 2006. "Financial Deregulation and Efficiency: An Empirical Analysis of Indian Banks during the Post Reform Period." *Review of Financial Economics*, 15:193-221.

Debreu, G. 1951. "The Coefficient of Resource Utilisation." *Econometrica*, 19: 273-92.

D'Souza, E. 2002. "How Well have Public Sector Banks Done? A Note" *Economic & Political Weekly*, 37(9): 867-870.

Farell, M. J. 1957. "The Measurement of Productive Efficiency." *Journal of Royal Statistical Society*, 120(A): 253-81.

Ghosh, C. R. et al. 2004. *"Strategic Models for Repositioning of Public Sector Banks – Creating Global Winner."* Bancon.

Goddard, J. A., P. Molyneux, and J.O.S. Wilson. 2001. *European Banking – Efficiency, Technology and Growth*. Wiley Finance, UK.

Gomez-Gonzalez, Jose E., Nicholas M. Keifer. 2006. *Bank Failure: Evidence from the Colombian Financial Crisis*. Cornell University, Ithaca, New York, USA.

Gramley L. E. 1962. *A Study of Scale Economies in Banking*. Federal Reserve Bank of Kansas City, USA.

Greenbaum, S. I. 1967. "A Study of Bank Cost." *National Banking Review*, 4 (June): 415-434.

Indian Institute of Banking and Finance. 2005. *Financial Management*. Macmillan, Mumbai.

Isik, I., and M. Hassan. 2003. "Financial Deregulation and Total Factor Productivity Change: An Emperical Study of Turkish Commercial Banks." *Journal of Banking and Finance*, 27(8): 1455-1485.

Kaparkis, E. I., S. M. Miller and A. G. Noulas. 1994. "Short-run Cost Inefficiency of Commercial Banks: A Flexible Stochastic Frontier Approach." *Journal of Money, Credit and Banking*, 26: 875-93.

Kolari, J. and A. Zardkoohi. 1987. *Bank Cost, Structure and Performance*. Lexington Books, Lexington, USA.

Matthews, K., and M. Ismail. 2006. "Efficiency and Productivity Growth of Domestic and Foreign Commercial Banks in Malaysia." *Cardiff Business School Working Paper Series*.

Mathur, K. B. L. 2005. "Market Orientation of Financial Sector." *Economic and Political Weekly*, March 19:1136-1140.

Mohan, Rakesh. 2005. "Financial Sector Reforms in India." *Economic and Political Weekly*, March 19.

——. 2006a. "Reforms, Productivity and Efficiency in Banking: The Indian Experience." *RBI Bulletin*, February.

——. 2006b. "Reforms, Productivity and Efficiency in Banking: The Indian Experience." *RBI Bulletin*, March: 279-293.

Molyneux, P, Y. Altunbas, and E. Gardener. 1996. *Efficiency in European Banking*. John Wiley & Sons.

Murphy, 1972. Cost of Banking Activities: Interaction Between Risk and Operating cost: A comment, *Journal of Money, Credit and Banking*, 4, August: 14-15.

Oster, A. and L. Antioch. 1995. "Measuring Productivity in the Australian Banking Sector." Reserve Bank of Australia.

Podpiera, A., and J. Podpiera. 2005. "Deteriorating Cost Efficiency in Commercial Banks Signals an Increasing Risk of Failure." *CNB Working Paper Series*, December.

Ray, S., 2004. *Data Envelopement Analysis: Theory and Techniques for Operations Research and Economics*. Cambridge University Press, Cambridge, UK.

Reddy, Y. V. 2002. "Monetary and Financial Sector Reforms in India: A Practitioner's Perspective." Presentation at the Indian Economy Conference, Cornell University, USA.

——. 2006. "Importance of Productivity in India." *RBI Bulletin*, January.

Reserve Bank of India. 2003. *Report on Trends and Progress of Banking in India*, Mumbai.

Reserve Bank of New Zealand. Capital Adequacy Ratios for Banks-Simplified Explanation and Example of Calculation.

Rossi, S. P. S, M. Schwaiger, and G. Winkler. 2005. "Managerial Behaviour and Cost/Profit Efficiency in the Banking Sectors of Central and Eastern European Countries." *Working Paper* 96,

Schweiger, I. and J. S. McGee. 1961. "Chicago Banking." *Journal of Business*, 34(3): 203-366.

Souza, Sobrinho and F. Nelson. 2007. "The Macroeconomics of Bank Interest Spreads: Evidence from Brazil." *UCLA Working Paper*.

X. REGULATORY AND SUPERVISORY CHALLENGES IN BANKING

Abrams, K. Richard and Michael W. Taylor. 2000. "Issues in the Unification of Financial Sector Supervision." *IMF Working Paper, WP/00/213.* December.

Adrian, Tobias and Hyun Song Shin. 2008. "Financial Intermediaries, Financial Stability and Monetary Policy." Paper for the Federal Reserve Bank of Kansas City Symposium on "Maintaining Stability in a Changing Financial System", August 21-23.

Alworth, J. S. and S. Bhattacharya. 1998. "The Emerging Framework of Bank Regulation and Capital Control." in *The Emerging Framework of Financial Regulation* (ed.) C.A.E. Goodhart. Central Banking Publications.

Ayadi, Rym and Pujals, Georges. 2004. "Banking Consolidation in the European Union, Overview and Prospects." *Research Report in Finance and Banking*, Centre for European Policy Studies (CEPS), No.34, April.

Bagehot, Walter. 1873. *Lombard Street: A Description of the Money Market*. London.

Bank for International Settlements. 1988. *International Convergence of Capital Measurement and Banking Standards*. Basle Committee on Banking Supervision.

——. 1997. *Core Principles for Effective Banking Supervision*. Basle Committee on Banking Supervision, Publication 30.

——. 1998. *Enhancing Bank Transparency*. Basle Committee on Banking Supervision, Publication 41.

——. 2002. *Over-view Paper for the Impact Study*. Basle Committee on Banking Supervision.

——. 2003a. *Management and Supervision of Cross-Border Electronic Banking Activities*.

——. 2003b. *Risk Management Principles for Electronic Banking.* July.

Baring, Francis. 1797. *Observations on the Establishment of the Bank of England and on Paper Circulation of the country*. London: Minerva Press.

Barth, James R., Caprio Jr., G., and Ross Levine. 2001. "Banking Systems around the Globe: Do Regulations and Ownership affect Performance and Stability?." in *Prudential Supervision: What Works and What Doesn't?* 31–88. (ed.) F.S. Mishkin, University of Chicago Press.

——. 2006. *Rethinking Bank Regulation: Till Angels Govern*. New York: Cambridge University Press.

Barth, James R., Rob Koepp and Zhongfei Zhou. 2004. "Institute View: Disciplining China's Banks." Milken Institute Review: *Journal of Economic Policy*, 2nd Quarter, 83-92.

Benston, G. J. 2000. "Is Government Regulation of Banks Necessary?." *Journal of Financial Services Research*, 18(2-3).

Benston, G. J. and Kaufman, G. G. 1988. "Risk and Solvency Regulation of Depository Institutions: Past Policies and Current Options." *Monograph,* Salomon Brothers Center, Graduate School of Business, New York University.

——. 1996. "The Appropriate Role of Bank Regulation." *The Economic Journal*, 106(436): 688-697.

Berger, A.N., Hancock, D. and Humphrey, D.B. 1993. "Bank Efficiency Derived from the Profit Function." *Journal of Banking and Finance,* 17: 317-47.

Berger, A.N., William Hunter, and Stephen Timme. 1993. "The Efficiency of Financial Institutions: A Review and Preview of Research Past, Present, and Future." *Journal of Banking and Finance,* 17: 221-249.

Berger, A.N., and Gregory Udell. 1996. "Universal Banking and the Future of Small Business Lending." in *Universal Banking: Financial System Design Reconsidered* (eds.) I. Walter and A. Saunders, 559-627, Chicago.

Berger, A.N., Richard J.Herring, and Giorgio P.Szego. 1995. "The Role of Capital in Financial Institutions." *Journal of Banking and Finance*, 19: 257-276.

Bernanke B. S. and M. L. Gertler. 1995. "Inside the Black Box: The Credit Channel of Monetary Policy Transmission." *Journal of Economic Perspectives*, 9 (Fall): 27-48.

Blinder, Alan S., and Robert F, Wescott. 2001. *Reform of Deposit Insurance: A Report to the FDIC*. March.

Blum, J.M. 2002. "Sub-ordinated Debt, Market Discipline, and Banks' Risk Taking." *Journal of Banking and Finance*, 26(7): 1427–1441.

Board of Governers of the Federal Reserve System. 1999. *Using Subordinated Debt as an Instrument of Market Discipline*. Study Group on Subordinated Notes and Debentures, December.

Boot, Arnoud W.A. and Anjan V. Thakor. 1993. "Self-Interested Bank Regulation." *The American Economic Review*, 83(2): 206-212.

Boyd, J.H., Chang, C., and B.D. Smith. 1998. "Moral Hazard under Commercial and Universal banking." *Journal of Money, Credit and Banking,* 30 (3.2): 426–468.

Buiter, Willem H. 2008. "Central Banks and Financial Crises." Paper for the Federal Reserve Bank of Kansas City Symposium on "Maintaining Stability in a Changing Financial System", August 21-23.

Briault, Clive. 1999. "The Rationale for a Single National Financial Services Regulator." *Occasional Paper Series 2*, Financial Services Authority, UK, May.

Calomiris, Charles W. 1993. “Financial Factors in the Great Depression.” *The Journal of Economic Perspectives*, 7(2) (Spring): 61-85.

——. 1999. “Building an Incentive-compatible Safety Net.” *Journal of Banking & Finance,* 23: 1499-1519.

Calomiris, Charles W., and Berry Wilson. 1998. “Bank Capital and Portfolio Management: The 1930s Capital Crunch and Scramble to Shed Risk.” *NBER Working Paper No.* 6649, July.

Cama, Z. J. 2002. *Report of the Working Group on Electronic Money*. July.

Caprio, Levine and Barth. 2004. “Bank Regulation and Supervision: What Works Best.” *Journal of Financial Intermediation,* 12: 205-248.

Central Banking Publications. 2008. *How Countries Supervise their Banks, Insurers and Securities Markets 2008: The Who and How of Financial Supervision in more than 190 Jurisdictions*. London: Incisive Media Haymarket House.

Chan, Yuk-Shee; Greenbaum, Stuart I and Thakor, Anjan V. 1992. “Is Fairly Priced Deposit Insurance Possible?.” *The Journal of Finance,* 47(1), March.

Claessens, and Klingebiel. 2000. “Alternative Frameworks for Providing Financial Services.” *World Bank Policy Research Working Paper 2189,* November.

Cordella, T. and E.L. Yeyati. 1998. “Public Disclosure and Bank Failures.” *IMF Staff Papers*, 45.

Currie, E., J. Dethier and E. Togo. 2003. “Institutional Arrangements for Public Debt Management.” *Policy Research Working Paper 3021,* World Bank.

Demirguc-Kunt, Asli and Edward Kane. 2002. “Deposit Insurance Around the Globe: Where Does it Work?.” *Journal of Economic Perspectives,* 16 (2): 175-195.

Demirguc-Kunt, Asli, Karacaovali and Luc Leaven. 2005. “Deposit Insurance around the World: A Comprehensive Database.” *Policy Research Paper No.3628*, World Bank, June.

Department of Treasury. 2008. *Blueprint for a Modernised Financial Regulatory Structure.* USA, March.

Dewatripont, Mathias, and Jean Tirole. 1994. *The Prudential Regulation of Banks*. Cambridge: Cambridge University Press.

Di Noia, C and Di Giorgio, G. 1999. “Should Bank Supervision and Monetary Policy Tasks be given to Different Agencies?.” *International Finance*, 2(3): 361-378, November.

Djankov, Simeon, Rafael La Porta, F.Lopez-de-Silanes, and A.Schleifer. 2002. “The Regulation of Entry.” *Quarterly Journal of Economics*, 117(1): 1-37.

Dow, S. C., and J. Smithin. 1993. “Change in Financial Markets and the First Principles of Monetary Economics.” *Mimeo*, University of Stirling and York University, Ontario.

Dowd, Kevin. 1993. *Laissez-Faire Banking*. London: Routledge.

——. 1996. “The Case for Financial Laissez-Faire.” *The Economic Journal*, 106(436): 679-687.

Eijffinger, S. C.W. 2001. “Should the European Central Bank Be Entrusted with Banking Supervision in Europe?.” Briefing Paper on *‘The Conduct of Monetary Policy and An Evaluation of the Economic Situation in Europe-2nd Quarter’* for the European Parliament, May.

Federal Reserve Bank of San Francisco (FRBSF) Economic Letter. 2002. “The Promise and Limits of Market Discipline in Banking”. No. 36, December 13.

Fiebig, M. 2001. *Prudential Regulation and Supervision for Agricultural Finance*. Italia. FAO / GTZ.

Financial Services Authority. 2007. *Principles-based Regulation – Focusing on the Outcomes that Matter*. UK, April.

Fischer, K. and J. Gueyie. 1995. "Financial Liberalisation and Bank Solvency." *Working Paper*, University of Laval, Quebec.

Freixas, X. and Anthony Santomero. 2002. "An Overall Perspective on Banking Regulation." *Working Paper*, Research Department. Federal Reserve Bank of Philadelphia.

Friedman, Milton, and Anna Jacobson Schwart. 1963. *A Monetary History of the United States, 1867-1960*. *National Bureau of Economic Research*, Princeton NJ: Princeton University Press.

Frolov, Mikhail. 2004. "Funding Deposit Insurance: Designing Options and Practical Choices." *KUMQRP Discussion Paper Series*, DP2003-21, Keio University, Market Quality Research Project, February.

Georges, Dionne. 2003. "The Foundations of Banks' Risk Regulation: A Review of the Literature." Paper Presented in the Bank of Canada Conference, The Evolving Financial System and Public Policy. Ottawa, December.

Gerschenkron, A. 1962. *Economic Backwardness in Historical Perspective: A Book of Essays*. Cambridge: MA: Belknap Press of Harvard University Press.

Gieve, John. 2008. "The return of the Credit Cycle – Old Lessons in New Markets." at the Euromoney Bond Investors Congress, London, February.

Gjedrem, Svein. 2007. "Turbulence in Credit Markets – Mortgage Financing at home and Abroad." at the Annual Meeting of the Norwegian Savings Banks Association, Hamar, October.

Goodhart, C. A.E. 1998. "An incentive Structure for Financial Regulation." in *The Emerging Framework of Financial Regulation*, (ed.) C.A.E. Goodhart, Central Banking Publications.

——. 2000a. "Whither Central Banking?." 11th C. D. Deshmukh Memorial Lecture, Reserve Bank of India, December, Mumbai.

——. 2000b. "The Organisational Structure of Banking Supervision." *Occasional Paper No.* 1, Basel, Switzerland, FSI, November.

Goodhart, C. A.E. and Dirk Schoenmaker. 1993. "Institutional Separation Between Supervisory and Monetary Agencies." *LSE Financial Markets Group Special Paper No 52*.

——. 1995. "Should the Functions of Monetary Policy and Banking Supervision be separated?." *Oxford Economic Papers,* 47: 539-560.

Goodhart, C. A.E., P. Hartmann, D. Llewellyn, L. Rojas, Suarez and S. Weisbrod. 1998. "The Institutional Structure of Financial Regulation." in *Financial Regulation, Why, How and Where Now*? C.A.E. Goodhart (ed.). London: Routledge Publication.

Gorton, Gary, and Andrew Winton. 2000. "Liquidity Provision and Cost of Bank Capital, and the Macroeconomy." *International Monetary Fund Seminar Series Paper,* No.22:1-43.

Government of UK. 2008. *Notification on Temporary Public Ownership of Northern Rock*. February 22.

Greenspan, Alan. 1997. *Remarks at the Conference on Bank Structure and Competition of the Federal Reserve Bank of Chicago*. Chicago, Illinois, May.

Gruenberg, Martin J. 2007. *The International Role of Deposit Insurance*. The Exchequer Club. Washington D.C., November.

Ingves, Stefan. 2007. "Regulatory Challenges of Cross-Border Banking – Possible Ways Forward." BIS website, www.bis.org.

Ioannidou, Vasso P. 2003. "Does Monetary Policy Affect the Central Bank's Role in Bank Supervision?." *Journal of Financial Intermediation,* 14: 58-85, September.

John, Kose, Teresa A. John, and Anthony Saunders. 1994. "Universal Banking and Firm Risk Taking." *Journal of Banking and Finance,* 18 (2): 307-323.

Joint Forum on Financial Conglomerates. 1999. *Supervision of Financial Conglomerates*. February.

Jordan, John S., Joe Peek, and Eric S. Rosengren. 2000. "The Market Reaction to the Disclosure of Supervisory Actions: Implications for Bank Transparency." *Journal of Financial Intermediation*, 9(3): 298-319.

Kane, Edward J. 1981. "Accelerating Inflation, Technological Innovation, and the Decreasing Effectiveness of Banking Regulation." *Journal of Finance*, 36 (2): 355-367.

——. 1990. *The S&L Insurance Mess: How Did It Happen?*. Urban Institute Press, Washington DC.

Keeley, M.C. and F.T. Furlong. 1990. " A Reexamintaion of Mean-Variance Analysis of Bank Capital Regulations." *Journal of Banking and Finance,* 14: 69-84.

Keeley, M.C. 1990. "Deposit Insurance Risk and Market Power in Banking." *American Economic Review,* 80 (5): 1183-1200.

Ketcha Jr, Nicholas J. 1999. "Deposit Insurance System Design and Considerations." *BIS Policy Papers* No.7, November.

King, Mervyn. 2007. "Monetary Policy Developments." at the Northern Ireland Chamber of Commerce and Industry, Belfast. October.

Kwan, Simon H. 2002. "The Promise and Limits of Market Discipline in Banking." Federal Reserve Bank of San Francisco (FRBSF), *Economic Letters*, Number 36, December.

La Porta, Rafael, F.Lopez-de-Silanes, and A. Schleifer. 2002. "Government Ownership of Commercial Banks." *The Journal of Finance,* 57 (1): 265-301.

Laeven, Luc. 2002. "Pricing of Deposit Insurance." *Policy Research Working Paper,* No. 2871, World Bank. July.

Leeladhar, V. 2007. "The Evolution of Banking Regulation in India – A Retrospect on Some Aspects." *RBI Bulletin*.

Llewellyn, David T. 2000. "Some Lessons for Regulation from Recent Bank Crises." *Open Economies Review*, Volume 11, Supplement 1, August.

Maclachlan, Fiona C. 2001. "Market Discipline in Bank Regulation, Panacea or Paradox?." *The Independent Review,* Vol. VI, No. 2, Fall : 227–234.

Malkonen, Ville. 2004. "Capital Adequacy Regulation and Financial Conglomerates." *Bank of Finland Research Discussion Paper No. 10,* Government of the Republic of Financial - Government Institute for Economic Research.

Malik, V. 2001. *Report of the Working Group on Consolidated Accounting and Other Quantitative Methods to Facilitate Consolidated Supervision*. December.

Martinez, Jose de Luna and Thomas A Rose. 2003. "International Survey of Integrated Financial Sector Supervision." *Policy Research Working Paper 3096,* World Bank. July.

Martinez-Peria, Maria Soledad and Sergio Schmukler. 2001. "Do Depositors Punish Banks for 'Bad Behaviour? Market Discipline, Deposit Insurance and Banking Crises." *The Journal of Finance,* 56 (3): 1029-1051.

Memorandum from the FSA, UK to the Treasury Committee. 2007. Government of UK.

Merrick, John J.Jr. and Anthony, Saunders. 1985. "Bank Regulation and Monetary Policy." *Journal of Money, Credit and Banking,* 17(4): 691-717.

Merton, R.C. and Bodie, Z. 1993. "Deposit Insurance Reform: A Functional Approach." in *Carnegie-Rochester Conference Series on Public Policy* 38 (June), (eds.) Meltzer, A. and C. Plosser.

——. 1995. *A Conceptual Framework for Analyzing the Financial Environment, The Global Financial System - A Functional Perspective*. Harvard Business School Press.

Merton, Robert C. 1995. "Financial Innovation and the Management and Regulation of Financial Institutions." *Journal of Banking & Finance*, 19(3-4): 461-481.

Meyer, Laurence H. 1999. "Market Discipline as a Complement of Banking Supervision and Regulation." Remarks before the Conference on Reforming Bank Capital Standards in New York, June.

Mistry, Percy. 2003. *Trends in International Financial System Regulation and Supervision.* Commonwealth Secretariat.

Mohan, Rakesh. 2004. "Ownership and Governance in Private Sector Banks in India." *RBI Bulletin,* October.

——. 2007. "India's Financial Sector Reforms: Fostering Growth While Containing Risk." *RBI Bulletin,* December.

Mor, Nachiket and R. R. Nitsure. 2002. "Organisation of Regulatory Functions: A Single Regulator?." *Economic and Political Weekly*, Vol XXXVII, February.

Mullineux. 2008. "British Banking Regulation and Supervision: Between a Rock and a Hard Place." *International Economics and Economic Policy,* 4(4), February.

Nitsure, R. R. 2003. "E-Banking Challenges and Opportunities." *Economic and Political Weekly*, 38 (51-52): 5377-5381.

Nsouli, Saleh. M. and Schaechter, Andrea. 2002. "Challenges of the E-Banking Revalution." *Finance and Development,* 39(3), September.

Padoa-Schioppa, T. 1999. "EMU and Banking Supervision." *International Finance*, 2(2) : 295-308, July.

Penn, Philip H. 2007. "Enhancing and Strengthening Banking Supervisory Capabilities in Pacific Countries." at the Pacific Regional Banking Supervision Seminar, Apia, Samoa, October.

Pennacchi, George G. 2005. "Risk-based Capital Standards, Deposit Insurance, and Procyclicality." *Journal of Financial Intermediation*, 14(4): 432-465.

Quintyn, Marc and Taylor, Michael W. 2004. "Should Financial Sector Regulators be Independent?." *Economic Issues,* 32, International Monetary Fund.

Raj, Janak. 2005. "Is There a Case for a Super Regulator in India? Issues and Options." *Economic and Political Weekly*, Vol.XLI, No.35, 3846-3855, August 27-September 2.

Ramesh, M. R. 2002. *Report of the Working Group for Suggesting Operational and Prudential Guidelines STRIPS*. July.

Reddy, Y. V. 2007. "Global Developments and Indian Perspectives: Some Random Thoughts." Valedictory address by at the Bankers' Conference on November 27, Mumbai.

——. 2008. "Global Financial Turbulence and Financial Sector in India: A Practitioner's Perspective". Address at the Meeting of the Task Force on Financial Markets Regulation organized by the Initiative for Policy Dialogue at Manchester, United Kingdom, July 1.

Reserve Bank of India. 1999. *Report on Internet Banking.* June.

——. 2000. *Discussion Paper on Prompt Corrective Action.* July.

——. 2001. *Internet Banking in India – Guidelines.* June.

——. 2004. *Report on Monitoring of Financial Conglomerates.* June.

——. 2005a. *Roadmap for Foreign Banks and Ownership Guidelines.* February.

——. 2005b. *Internet Banking in India – Guidelines.* July.

——. 2007. *Discussion Paper on Holding Companies in Banking Groups.* August.

Rochet, Jean-Charles & Vives, Xavier. 2004. "Coordination Failures and the Lender of Last Resort: Was Bagehot Right After All?." *IDEI Working Papers* 294. Institut d'Économie Industrielle (IDEI), Toulouse.

Rodríguez, L. Jacobo. 2002. "International Banking Regulation Where's the Market Discipline in Basel II?." *Policy Analysis, No. 455*. Cato Institute, October.

Rosengren, Eric S. 1999. "Modernizing Financial Regulation: Implications for Bank Supervision." *Journal of Financial Services Research*, 16(2-3), December.

Schaechter, Andrea. 2002. "Issues in Electronic Banking: An Overview." *IMF Policy Discussion Paper*, PDP/02/6.

Sadasivan, N. 2004. *Report of the Working Group on Development Financial Institutions*. Reserve Bank of India, May.

Santos, Joao, A.C. 2000. "Bank Capital Regulation in Contemporary Banking Theory: A Review of Literature." *BIS Working Paper,* No.90, September.

Saunders, Anthony. 1994. "Banking and Commerce: An Overview of the Public Policy Issues." *Journal of Banking and Finance,* 18(2): 231-254.

Schwartz, Anna. 1986. "Real and Pseudo-financial Crises." in *Financial Crises and the World Banking System* (eds.) Forrest Capie and Geoffrey E. Wood, London: Macmillan, 11-31.

Shaffer, Sherrill. 1997. "Deposit Insurance Pricing: The Hidden Burden of Premium Rate Volatility." *Cato Journal, 17(1),* Cato Institute.

Shleifer, Andrei, and Robert W. Vishny. 1998. *The Grabbing Hand: Government Pathologies and their Cures.* Cambridge, MA: Harvard University Press.

Taylor, M. 1995. "Twin Peaks: A Regulatory Structure for the New Century." *Working Paper No. 20,* Centre for the Study of Financial Innovation, London, December.

——. 1996. *Peak Practice: How to Reform the UK's Regulatory System*. Centre for the Study of Financial Innovation, London, October.

Thakor, Anjan V. 1996. "Capital Requirements, Monetary Policy, and Aggregate Bank Lending: Theory and Empirical Evidence." *The Journal of Finance,* 51(1): 279-324.

The Economist. 2007. "A Generation has Prospered from the Wholesale Transfer of Risk through Securitisation. Now it is Paying the Price." September.

——. 2008. *A Special Report on International Banking.* May.

Thornton, Henry. 1802. *An Enquiry into the Nature and Effects of Paper Credit of Great Britain*. Hatchhard, London, Reprint, George Allen and Unwin Ltd., London 1939.

Tripartite Authorities Statement. 2007. UK, September.

Tripartite Group of Bank, Securities and Insurance Regulators. 1995. *The Supervision of Financial Conglomerates*. July.

UNCTAD. 2002. *E-Commerce and Development Report*. http//ro.unctad.org/ecommerce/docs/.

Vives, X. 2000. "Banking Supervision in the European Monetary Union." in Fiscal Policy Imbalances, the Monetary Transmission Mechanism and Prudential Supervision: Issues facing Europe's Central Bankers. S.C.W. Eijffinger, K. Koedijk and S. Yeo (eds.), *Centre for Economic Policy Research*/ European Summer Institute, London.

Volcker, Paul. 2008. Keynote Address at International Conference on "The Subprime Crisis and its International Consequences: What happened and How to Avoid a Similar Crisis." Brookings, Institut Montaigne and Institut de l'enterprise, April.

Website of International Association of Deposit Insurers (IADI), List of Countries with a Deposit Insurance System, www.iadi.org.

Whalen, Gary. 2000. "Inter-state Banking, Branching, Organization and Market Rivalry." *Economic and Policy Analysis,* Working Paper 7, July.

ABBREVIATIONS

ABA	–	Australian Bankers' Association
ABS	–	Asset-Backed Securities
ACF	–	Autocorrelation Function
ADB	–	Asian Development Bank
ADI	–	Authorised Deposit-Taking Institution
ADRs	–	American Depository Receipts
AE	–	Allocative Efficiency
AFI	–	Annual Financial Inspection
AFS	–	Available for Sale
AHCs	–	Asset Holding Companies
AIDIS	–	All India Debt and Investment Survey
AIFI	–	All India Financial Institution
AIG	–	Accord Implementation Group
A-IRB	–	Advanced-Internal Ratings Based Approach
AIRCS	–	All India Rural Credit Survey
AIs	–	Authorised Institutions
ALCO	–	Asset Liability Management Committee
ALM	–	Asset-Liability Management
AMA	–	Advanced Measurement Approach
ANBC	–	Adjusted Net Bank Credit
APMAS	–	Andhra Pradesh Mahila Abhivrudhi Society
APRA	–	Australian Prudential Regulation Authority
ARC	–	Agricultural Refinance Corporation
ARCs	–	Asset Reconstruction Companies
ARDC	–	Agricultural Refinance and Development Corporation
ARIMA	–	Auto Regressive Integrated Moving Average
ASA	–	Alternative Standardised Approach
AS	–	Accounting Standards
ATF	–	Aviation Turbine Fuel
ATM	–	Automated Teller Machine
BAAC	–	Bank for Agriculture and Agricultural Cooperatives
BaFin	–	German Federal Financial Supervisory Authority
BCBS	–	Basel Committee on Banking Supervision
BCP	–	Business Continuity Planning
BCPs	–	Basel Core Principles
BCs	–	Business Correspondents
BCSBI	–	Banking Codes and Standards Board of India
BE	–	Budget Estimates
BEEPS	–	Business Environment and Enterprises Performance Surveys
BF	–	Business Facilitator
BFS	–	Board for Financial Supervision
BGFRS	–	Board of Governors of the Federal Reserve System
BHC	–	Bank Holding Company
BIA	–	Basic Indicator Approach
BIS	–	Bank for International Settlements
BoE	–	Bank of England
BoJ	–	Bank of Japan
BoP	–	Balance of Payments
BoT	–	Bank of Thailand
BPLR	–	Benchmark Prime Lending Rate
BPO	–	Business Process Outsourcing
BR Act	–	Banking Regulation Act
BRAC	–	Building Resources Across Community

BRI	–	Bank Rakyat Indonesia
BSE	–	Bombay Stock Exchange
BSP	–	Bangko Sentral ng Pilipinas
BSR	–	Basic Statistical Returns
CALCS	–	Capital Adequacy, Asset Quality, Liquidity, Compliance and Systems
CAMELS	–	Capital Adequacy, Asset Quality, Management, Earnings, Liquidity, Systems and Control
CAR	–	Capital to Assets Ratio
CARE	–	Credit Analysis and Research Limited
CAS	–	Credit Authorisation Scheme
CBFA	–	Commission Bancaire, Financiere et des Assurances
CBLO	–	Collateralised Borrowing and Lending Obligation
CBRA	–	Conduct of Business Regulatory Agency
CBS	–	Core Banking Systems
CBSR	–	Committee on Banking Sector Reforms
CDIC	–	Canada Deposit Insurance Corporation
CDMA	–	Code Division Multiple Access
CDOs	–	Collateralised Debt Obligations
CDR	–	Corporate Debt Restructuring
CD	–	Certificates of Deposit
CDS	–	Credit Default Swap
CE	–	Cost Efficiency
CEO	–	Chief Executive Officer
CEPS	–	Centre for European Policy Studies
CFES	–	Centralised Funds Enquiry System
CFL	–	Compact Fluorescent Lamp
CFMS	–	Centralised Funds Management System
CFS	–	Committee on Financial System
CFS	–	Consolidated Financial Statement
CFTS	–	Centralised Funds Transfer System
CG	–	Capital Goods
CIBIL	–	Credit Information Bureau (India) Limited
CLN	–	Credit Linked Notes
CMD	–	Chairman-cum-Managing Director
CoR	–	Certificate of Registration
CP	–	Commercial Paper
CPI-AL	–	Consumer Price Index (Agriculture Labourers)
CPI-IW	–	Consumer Price Index (Industrial Workers)
CPI-RL	–	Consumer Price Index (Rural Labourers)
CPI-UNME	–	Consumer Price Index (Urban Non-Manual Employees)
CPSB	–	Corp Pragathi Savings Bank
CPSMS	–	Central Plan Scheme Monitoring System
CRA	–	Community Reinvestment Act
CRAR	–	Capital to Risk-Weighted Assets Ratio
CRCS	–	Central Registrar of Cooperative Societies
CRD	–	Capital Requirements Directive
CRISIL	–	Credit Rating Information Services of India Limited
CRM	–	Credit Risk Mitigation
CRR	–	Cash Reserve Ratio
CSO	–	Central Statistical Organisation
CSOs	–	Civil Society Organisations
DCC	–	District Consultative Committee
DCCBs	–	District Central Cooperative Banks
DEA	–	Data Envelopment Approach
DEs	–	Designated Entities

DFIs	–	Development Finance Institutions
DFSA	–	Danish Financial Supervisory Authority
DGCI&S	–	Directorate General of Commercial Intelligence and Statistics
DICGC	–	Deposit Insurance and Credit Guarantee Corporation
DIS	–	Deposit Insurance Systems
DMU	–	Decision Making Unit
DoT	–	Department of Treasury
DRI	–	Differential Rate of Interest
DRT	–	Debt Recovery Tribunal
EAD	–	Exposure at Default
EBG	–	Electronic Banking Group
EC	–	Economic Capital
ECA	–	Export Credit Agency
ECAAs	–	External Credit Assessment Agencies
ECB	–	European Central Bank
ECBs	–	External Commercial Borrowings
EEE	–	Exempt-Exempt-Exempt
EET	–	Exempt-Exempt-Taxed
EFT	–	Electronic Funds Transfer
EL	–	Expected Losses
EMEs	–	Emerging Market Economies
EMI	–	Equated Monthly Installment
EMU	–	European Monetary Union
ENSR	–	European Network for Social and Economic Research
EPOS	–	Electronic Point of Sale
ERM	–	Enterprise-wide Risk Management
EU	–	European Union
EXIM Bank	–	Export-Import Bank
FCAC	–	Fuller Capital Account Convertibility
FCAC	–	Financial Customer Agency of Canada
FCNR(A)	–	Foreign Currency Non-Resident (Account)
FCNR(B)	–	Foreign Currency Non-Resident Accounts (Banks)
FDI	–	Foreign Direct Investment
FDIC	–	Federal Deposit Insurance Corporation
FHC	–	Financial Holding Company
FI	–	Financial Institutions
FII	–	Foreign Institutional Investor
FIRBA	–	Foundation Internal Ratings Based Approach
FIs	–	Financial Intermediaries
FMCG	–	Fast Moving Consumer Goods
FoF	–	Flow of Funds
FOMC	–	Federal Open Market Committee
FRA	–	Forward Rate Agreement
FRB	–	Federal Reserve Bank
FRBM	–	Fiscal Responsibility and Budget Management
FRBSF	–	Federal Reserve Bank of San Francisco
FRL	–	Fiscal Responsibility Legislation
FRL	–	Full Reservoir Level
FSA	–	Financial Services Authority
FSF	–	Financial Stability Forum
FSI	–	Financial Stability Institute
GATS	–	General Agreement on Trade in Services
GB	–	Grameen Bank
GCCs	–	General Credit Cards
GDCF	–	Gross Domestic Capital Formation
GDP	–	Gross Domestic Product
GDRs	–	Global Depository Receipts
GDS	–	Gross Domestic Saving

GFD	–	Gross Fiscal Deficit
GLB Act	–	Gramm-Leach-Bliley Act
Gnie	–	Government not included elsewhere
GoI	–	Government of India
GOLD	–	Global Operational Loss Database
GPRS	–	General Packet Radio Service
GV	–	Grama Vidiyal
HDFC	–	Housing Development Finance Corporation
HFCs	–	Housing Finance Companies
HFT	–	Held-for-Trading
HHI	–	Herfindahl-Hirschman Index
HKMA	–	Hong Kong Monetary Authority
HSBC	–	Hong Kong and Shanghai Banking Corporation
HTM	–	Held-to-Maturity
IADI	–	International Association of Deposit Insurers
IAIS	–	International Association of Insurance Supervisors
IAY	–	Indira Awas Yojana
IBA	–	Indian Banks' Association
IBL	–	Inter-Bank Liabilities
ICAAP	–	Internal Capital Adequacy Assessment Process
ICAI	–	Institute of Chartered Accountants of India
ICRA	–	Investment Information and Credit Rating Agency
ICS	–	Investment Climate Survey
IDA	–	Individual Development Account
IDBI	–	Industrial Development Bank of India Ltd.
IDRBT	–	Institute for Development and Research in Banking Technology
IFCI	–	Industrial Finance Corporation of India Ltd.
IFR	–	Investment Fluctuation Reserve
IIBI	–	Industrial Investment Bank of India Ltd.
IIMS	–	India Invest Market Solutions
IIP	–	Index of Industrial Production
IMA	–	Internal Measurement Approach
IMD	–	India Meteorological Department
IMDs	–	India Millennium Deposits
IMF	–	International Monetary Fund
INFINET	–	Indian Financial Network
IOSCO	–	International Organisation of Securities Commissions
IPDI	–	Innovative Perpetual Debt Instruments
IPO	–	Initial Public Offer
IRBA	–	Internal Ratings Based Approach
IRDA	–	Insurance Regulatory and Development Authority
IRR	–	Interest Rate Risk
IRS	–	Interest Rate Swap
ISO	–	International Organisation for Standardisation
IT	–	Information Technology
ITB	–	Intermediate Treasury Bill
ITES	–	Information Technology Enabled Services
ITEs	–	Intra-Group Transactions and Exposures
JNNURM	–	Jawaharlal Nehru National Urban Renewal Mission
KCC	–	Kisan Credit Card
KUMQRP	–	Keio University Market Quality Research Project
KYC	–	Know Your Customer
LAF	–	Liquidity Adjustment Facility
LBS	–	Lead Bank Scheme
LDA	–	Loss Distribution Approach
LDCs	–	Least Developed Countries

LGD	–	Loss Given Default
LIC	–	Life Insurance Corporation of India
LIHTC	–	Low-Income Housing Tax Credit
LoLR	–	Lender of Last Resort
LPA	–	Long Period Average
LPG	–	Liquefied Petroleum Gas
LTO	–	Long Term Operations
M&As	–	Mergers and Acquisitions
M_3	–	Broad Money
MAS	–	Monetary Authority of Singapore
MBS	–	Mortgage-Backed Securities
M-CRIL	–	Micro-Credit Ratings International Limited
MFIs	–	Micro-Finance Institutions
MICR	–	Magnetic Ink Character Recognition
MIS	–	Management Information System
MLR	–	Minimum Lending Rate
MoU	–	Memorandum of Understanding
MPBF	–	Maximum Permissible Bank Finance
MPC	–	Monetary Policy Committee
MPI	–	Malmquist Productivity Index
MSME	–	Micro, Small and Medium Enterprise
MSMED	–	Micro, Small and Medium Enterprises Development
MSS	–	Market Stabilisation Scheme
NABARD	–	National Bank for Agriculture and Rural Development
NASSCOM	–	National Association of Software and Services Companies
NBC	–	Net Bank Credit
NBFC-ND-SI	–	Systemically Important Non-Deposit Taking Non-Banking Financial Company
NBFCs	–	Non-Banking Financial Companies
NCAER	–	National Council of Applied Economic Research
NCAF	–	New Capital Adequacy Framework
NCC	–	National Credit Council
NCDC	–	National Cooperative Development Council
NCDs	–	Non-Convertible Debentures
NDS	–	Negotiated Dealing System
NDS-OM	–	Negotiated Dealing System-Order Matching
NDTL	–	Net Demand and Time Liabilities
NEER	–	Nominal Effective Exchange Rate
NEFT	–	National Electronic Funds Transfer
NFC	–	Near Field Communication
NGOs	–	Non-Governmental Organisations
NHB	–	National Housing Bank
NIM	–	Net Interest Margin
NMFI	–	National Mission for Financial Inclusion
NNPAs	–	Net Non-Performing Assets
NPAs	–	Non-Performing Assets
NPL	–	Non-Performing Loan
NR(E)RA	–	Non-Resident (External) Rupee Account
NR(NR)RD	–	Non Resident (Non-Repatriable) Rupee Deposit
NREGS	–	National Rural Employment Guarantee Scheme
NRFIP	–	National Rural Financial Inclusion Plan
NRIs	–	Non-Resident Indians
NRO	–	Non-Resident Ordinary
NSC	–	National Savings Certificates
NSE	–	National Stock Exchange
NSKFDC	–	National Safai Karmacharis Finance and Development Corporation
NSSF	–	National Small Savings Fund

NSSO	–	National Sample Survey Organisation
NTR	–	Non-Tax Revenue
OBC	–	Oriental Bank of Commerce
OBE	–	Off-Balance Sheet Exposures
OD	–	Overdraft
OECD	–	Organisation for Economic Cooperation and Development
OFIs	–	Other Financial Institutions
OFSA	–	Oracle Financial Services Application
OMOs	–	Open Market Operations
OMS	–	Open Market Sales
ONGC	–	Oil and Natural Gas Corporation
OPEC	–	Organisation of Petroleum Exporting Countries
OSMOS	–	Off-Site Surveillance and Monitoring System
OSS	–	Off-Site Surveillance System
OTS	–	One Time Settlement
OWS	–	Other Welfare Schemes
P/E	–	Price to Earnings
PA	–	Passport Account
PACF	–	Partial Autocorrelation Function
PACS	–	Primary Agricultural Credit Society
PAT	–	Profit After Tax
PBC	–	People's Bank of China
PBT	–	Profit Before Tax
PCA	–	Prompt Corrective Action
PCFC/EBR	–	Pre-Shipment Credit in Foreign Currency / Export Bills Rediscounting
PCPS	–	Perpetual Cumulative Preference Shares
PD	–	Probability of Default
PDs	–	Primary Dealers
PDCF	–	Primary Dealer Credit Facility
PDS	–	Public Distribution System
PFRA	–	Prudential Financial Regulatory Agency
PFRDA	–	Pension Fund Regulatory and Development Authority
PIN	–	Personal Identification Number
PIO	–	Principal Inspecting Officer
PLR	–	Prime Lending Rate
PNCPS	–	Perpetual Non-Cumulative Preference Shares
PoS	–	Points of Sale
PPP	–	Public Private Partnership
P-R	–	Panzar-Rosse
PSBs	–	Public Sector Banks
PSU	–	Public Sector Undertaking
QIS-5	–	Fifth Quantitative Impact Study
RBAP MABS	–	Rural Bankers' Association of the Philippines Microenterprise Access to Banking Services
RBI	–	Reserve Bank of India
RBS	–	Risk-Based Supervision
RCPS	–	Redeemable Cumulative Preference Shares
RCs	–	Reconstruction Companies
RCS	–	Registrar of Cooperative Society
RD	–	Revenue Deficit
RE	–	Revised Estimates
REER	–	Real Effective Exchange Rate
RFID	–	Radio Frequency Identification Device
RIBs	–	Resurgent India Bonds
RIDF	–	Rural Infrastructure Development Fund
RNBC	–	Residuary Non-Banking Company
RNCPS	–	Redeemable Non-Cumulative Preference Shares
RoA	–	Return on Assets

RoE	–	Return on Equity
RPO	–	Recovery Point Objective
RPT	–	Risk Profile Template
RRBs	–	Regional Rural Banks
RTCP	–	Rural Transformation Centre Programme
RTGS	–	Real Time Gross Settlement
RTO	–	Recovery Time Objective
RTP	–	Reserve Tranche Position
RWA	–	Risk-Weighted Assets
SA	–	Standardised Approach
SARFAESI	–	Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest
SBI	–	State Bank of India
SBITCA	–	SBI Tiny Card Accounts
SBP	–	State Bank of Pakistan
SC	–	Scheduled Caste
SCB	–	State Co-Operative Bank
SCBs	–	Scheduled Commercial Banks
SCILL	–	Standard Chartered Investment and Loans Limited
SCs	–	Securitisation Companies
SDA	–	Standardised Duration Approach
SDRs	–	Special Drawing Rights
SEBI	–	Securities and Exchange Board of India
SEDF	–	Small Enterprises Development Fund
SEU	–	Social Exclusion Unit
SFC	–	Securities and Futures Commission
SHGs	–	Self-Help Groups
SHPIs	–	Self-Help Promoting Institutions
SIDBI	–	Small Industries Development Bank of India
SIFIs	–	Systemically Important Financial Intermediaries
SIM	–	Subscriber Identity Module
SIV	–	Special Investment Vehicle
SLBC	–	State Level Bankers' Committee
SLR	–	Statutory Liquidity Ratio
SMA	–	Seasonal Moving Average
SME	–	Small and Medium Enterprise
SMERA	–	Small and Medium Enterprises Rating Agency
SMO	–	Special Market Operation
SMS	–	Short Message Service
SNB	–	Swiss National Bank
SNDs	–	Subordinated Notes and Debentures
SPV	–	Special Purpose Vehicle
SREP	–	Supervisory Reviews and Evaluation Process
SRP	–	Supervisory Review Process
SSA	–	Simplified Standardised Approach
SSI	–	Small Scale Industry
SSP	–	Social Security Pensions
ST	–	Scheduled Tribe
STCCS	–	Short-Term Co-operative Credit Structure
TAF	–	Term Auction Facility
TAFCUBs	–	Task Force for Urban Co-operative Banks
TAP	–	Text-A-Payment
TB	–	Thrift Banks
TBA	–	Total Branch Automation
TE	–	Technical Efficiency
TFC	–	Twelfth Finance Commission
TFCI	–	Tourism Finance Corporation of India Ltd.
TFP	–	Total Factor Productivity
TPDS	–	Targeted Public Distribution System
TRM	–	Trading Risk Management
TRS	–	Total Return Swap

UASL	–	Unified Access Service License
UCBs	–	Urban Co-operative Banks
UCCs	–	Urban Credit Co-operatives
UD	–	Unit Desai
UI	–	User Interface
UK	–	United Kingdom
UL	–	Unexpected Losses
USA	–	United States of America
UT	–	Union Territory
UTI	–	Unit Trust of India
VaR	–	Value at Risk
VAT	–	Value Added Tax
VCF	–	Venture Capital Fund
VRS	–	Voluntary Retirement Scheme
VSAT	–	Very Small Aperture Terminal
WADR	–	Weighted Average Discount Rate
WBES	–	World Business Environment Survey
WCTL	–	Working Capital Term Loans
WDI	–	World Development Indicators
WMAs	–	Ways and Means Advances
WOS	–	Wholly Owned Subsidiary
WPI	–	Wholesale Price Index
WTI	–	West Texas Intermediate
WTO	–	World Trade Organisation
Y-o-Y	–	Year-on-Year

This Report can also be accessed on Internet
URL : www.rbi.org.in

VI LENDING AND INVESTMENT OPERATIONS OF BANKS

6.1 Commercial banks undertake a wide variety of activities, which play a critical role in the economy of a country. They pool and absorb risks for depositors and provide a stable source of investment and working capital funds to various sectors of the economy. In addition, they provide a smooth functioning payment system that allows financial and real resources to flow relatively freely to their highest return uses. They are also a back up source of liquidity for any sector in the economy in temporary difficulty. Banks are a particularly important source of funds for small borrowers who often have limited access to other sources of external finance. The three main interrelated functions of commercial banks are holding of deposits; creating credit through lending and investment activities; and providing a mechanism for payments and transfers of funds for various productive activities. The extension of credit or lending is, thus, the principal activity of a commercial bank.

6.2 From the early days of banking theory, the difference between deposits and lending was viewed as minimal, associated with cash balances required to satisfy uncertain cash flows and regulatory seigniorage extracted from the depository process by the central bank through required reserves held in fiat money or central bank balances (Meade, 1934). Not only is lending the primary source of banks' income, but it provides financing for productive activity throughout the economy. Historically, understanding the role performed by the commercial banks in the economy has had its roots in macroeconomic theory. Keynes (1930) and Pesek and Saving (1967) argued that commercial banks are central to a macro economy as they act as financial intermediaries between savers and investors.

6.3 Banks in India have traditionally been the main source of credit for various sectors of the economy. They have also funded borrowing requirements of the Central and State Governments by investing in their securities. Lending and investment operations of banks in India have evolved in response to the changing needs of the economy. Prior to the initiation of financial sector reforms in the early 1990s, lending by banks was tightly regulated and banks were expected to align their lending operations to plan priorities. Bank lending was the principal focus of monetary policy under the credit planning approach adopted in 1967-68. However, in the wake of banking sector reforms, various restrictions on banks' balance sheet were withdrawn and direct credit controls largely dismantled**,** though in a phased manner. Directed investments were also reduced to a significant extent. The system of administered lending rates was also dismantled and various other restrictions on banks' lending were gradually removed in order to enable banks to operate in a flexible manner. This led to a structural transformation in the lending and investment operations of the banks. Keeping in view their impact on the overall macroeconomic performance of the country, this chapter details the lending and investment operations of banks in India, especially in the light of financial sector liberalisation measures spanning the last decade and a half.

6.4 The chapter is divided into ten sections. Section II begins with a brief review of literature on the theoretical underpinnings of lending operations of banks. It takes a broad overview of the portfolio behaviour of banks and the allocation of assets in terms of loans and investments. Section III focuses on the trends in overall credit of scheduled commercial banks in India. The major indicators of lending behaviour by banks, including the trends in the credit-deposit ratios of banks are analysed. Trends in agricultural lending by banks along with the various issues in lending to agriculture are set out in Section IV. The cross-country patterns in advances to agriculture are also traced in this section to have an insight as to how agricultural lending policies have evolved in different countries. Section V covers the trends in lending to industry with a special focus on lending to the small and medium enterprises (SMEs) sector. This section contains a cross-country analysis of lending to SMEs and explains as to how banks in some countries have overcome the constraints faced by them while lending to SMEs. Section VI analyses the trends in lending by banks to the infrastructure sector. The cross-country experiences in financing infrastructure by banks are also covered. In Section VII, rapid growth of retail loans and various issues concerning thereto are covered. Section VIII analyses the various aspects of investment behaviour of banks. Section IX, as a way forward, makes some suggestions for ensuring adequate and timely credit

to various sectors of the economy. Section X sums up the main points of discussions.

II. LENDING OPERATIONS OF BANKS – THEORETICAL UNDERPINNINGS

6.5 The literature available on banking provides various theories which govern the lending operations of banks. These theories have evolved over time along with the evolution of commercial banks. However, most of these theories are based on the conventional distinction between commercial banks as creators and other private financial enterprises as brokers of loanable funds. Commercial banks can borrow at a lower interest rate and lend at higher interest rates. They relieve the market of some primary securities and substitute others' indirect securities or financial assets whose qualities command a higher price. The margin between yields on primary and indirect securities is the intermediaries' compensation for the special services they supply.

6.6 The earliest theory of credit is the commercial loan theory of credit which is also referred to as the 'real bills doctrine'. This theory, originated in England, dates back to the 18th century. Bank lending to merchants traditionally took the form of discounting of commercial bills. According to this theory, the earning assets of commercial banks must be in the form of short-term, self-liquidating loans extended to businesses for the financing of their inventory needs. It was strongly believed that banks by financing these types of loans could possess most liquid assets which will enable banks to easily meet their demand deposits obligations. In fact, the term 'commercial bank' owes its origin to the commercial loan theory as banking was related to the financing of commerce (Roussakis, 1997). Despite certain limitations of this theory, in practice many banks still prefer the short-term self-liquidating loans over other types.

6.7 Another major theory of bank lending is the shiftability theory which holds that a bank's assets are shiftable, *i.e.,* easily marketable and the liquidity of most of the assets is adequately maintained. For instance, the securities that can be easily converted into cash, possess a high degree of liquidity. In essence, the shiftability theory is based on the consideration of 'how quickly' the assets could be converted into cash. This theory was first set forth by H.G.Moultan in 1918. Commercial banks all over the world that hold stocks of sovereign bonds, which in present day banking is a common practice, are knowingly or unknowingly followers of this doctrine.

6.8 According to anticipated income theory (Prochnow,1949), a bank can maintain its liquidity if loan repayments are scheduled on the basis of the anticipated income of the borrower rather than the use made of the funds or the collateral offered. The basic argument of this theory is that the banks should rely on the borrower's income earning capacity or the cash flow and the coverage of debt service requirements, rather than merely on the collateral. The debt service coverage is determined on the basis of inclusive cash-flow projections which ordinarily provide a reliable indication of the quality of the loan being financed. This theory seems to be more suitable in the practice of the modern time banking than the previous two theories.

6.9 According to the liability management theory, it is not necessary for a bank to observe traditional liquidity standards if it can go into the market and bid for funds whenever it is in need of liquidity. A bank can create additional liabilities to meet its liquidity requirements**,** and banks have a number of avenues to meet their liquidity requirements such as issuing CDs, borrowing from the central bank and borrowing in the capital market, among others. The liability management theory is a major breakthrough in the modern approach to commercial banking.

6.10 Banks lending operations are determined, at the micro level, based on certain considerations outlined in the theories discussed above. However, the quantum and target group of lending is determined by the financial system which a country adopts, *i.e.,* market based financial system or bank based financial system. An important aspect of the growth process that has been widely discussed in the available literature on the subject is the type of financial system that is the most conducive to growth. Focusing from this standpoint, most of the systems of industrial finance can be grouped into two clear systems mentioned earlier. At one end is the 'market-based finance', where financial markets play a more important role than the banking industry. At the other end of the spectrum is the model of 'bank-based finance', in which savings flow to their productive uses predominantly through financial intermediaries such as banks and other financial institutions, and the capital market is less important for raising funds. Most of the industrial financing systems have evolved endogenously from their own particular circumstances of economic history - and have their own success story to tell or otherwise. The market-based system is relatively impersonal because the sources of funds could actually be atomistic household savers, directly

or indirectly through mutual funds, pension funds or insurance funds. The bank-based systems are more relationship-based, because the lenders are few and large. Bank-based systems tend to be stronger in countries where the Governments have taken a direct role in industrial development such as Germany in the 19th century, and Japan, East Asia, South-East Asia, China and India, in the 20th century (Mohan, 2004).

6.11 Ever since India opted for development plans for its growth, the role and importance of banking and other financial institutions have gained in importance. Research has also confirmed the inter-linkage between finance and growth in India. The Indian growth process has, essentially been 'finance-led', whereby expansion in the financial sector played an enabling role in promoting capital accumulation, which, in turn, engendered higher growth (Reddy, 2006).

Portfolio Behaviour of Banks

6.12 Commercial banks hold a portfolio of assets and, given the characteristics and distribution of the liabilities, they attempt to structure their portfolio of assets in such a manner so as to yield the greatest return, subject to the constraints. Banks have four categories of assets, *viz.,* cash in hand and balances with the central bank; assets with the banking system; investments in Government and other approved securities; and loans and advances. Quantitatively, lending and investments are the most important earning assets of banks. The quantum and also the composition of loans and investment is determined by the banks' portfolio behaviour which, in turn, is generally determined by the present and expected levels of market interest rates, loan demand and cash demand and actions of the central banks. The study of commercial bank portfolio behaviour is important as it is a significant explanatory factor for the magnitudes and changes in the bank credit as well as the cost and flow of credit to specific sectors of the economy.

Determinants of Bank Lending

6.13 Literature sets forth divergent views regarding the determinants of bank lending. According to one view it is the demand side elements that determine the bank lending whereas the other view professes the dominance of supply side factors. The principle that the demand for bank loans determines bank portfolio behaviour is sometimes referred to as the accommodation principle. Similarly the principle that commercial banks' responses to market forces determine their portfolio behaviour is referred to as profit maximisation principle. As per accommodation principle, bank lending is the key determinant of banks' portfolio behaviour. The use of the term "accommodation" implies that the demand for such loans would mainly determine bank behaviour regarding borrowing from the central bank, holdings of excess reserves, and the division of earning assets between loans and investments. Thus, the response of demand for loans to such economic variables as interest rates and economic activity would also determine bank behaviour regarding the above mentioned balance sheet accounts (Boyd and Gertler, 1993). Under the accommodation principle, bank behaviour would mainly reflect the demand of customers for loans. For example, a rise in the demand for loans from banks (supply of this form of earning asset) would be met, subject to the deposit constraint, by reductions in investments and excess reserves and an increase in borrowings from the central bank and, with banks being the mainstay of financial intermediation, the banking sector.

6.14 The profit maximisation principle implies that commercial banks' responses to market forces determine their portfolio behaviour. If the existing distribution of assets held by the commercial bank is not the distribution desired, then the bank will attempt to adjust its portfolio of assets by increasing its holdings of some assets and decreasing its holdings of other assets. The commercial bank's decision of allocating its portfolio of assets between the two earning assets, *i.e.,* loans and investment are generally determined by the existing legal reserve requirements against commercial banks' demand and time deposits. Given the *de jure* and *de facto* status of the most of banks' liabilities, and given that an individual bank cannot predict with certainty future deposit flows, loan demands, interest rates, and actions by the monetary authorities, commercial banks desire to have a portion of their asset portfolio that represents a stock of liquidity to act as a buffer against changes in the aforesaid factors. In practice, the dominance of either demand or supply side on credit fluctuations is difficult to prove as both the factors play a determining role most of the times.

6.15 According to one view, the firms' and households' demand is the underlying determinant of bank credit. As per this view, the credit extended by the institutions adjusts in consonance with the demand conditions prevalent at that point of time. Cottarelli *et al.,* (2003) put forth the view that the

recent lending boom in central and eastern Europe owes its origin to an upward shift in the IS supply curve in the region following macroeconomic deregulation. Similarly, the collapse of bank lending in East Asia following the 1997-98 financial crises was led by a decline in the demand for bank loans rather than banks' withdrawal from the credit market (Ghosh and Ghosh, 1999).

6.16 The real business cycle literature also sets forth the view that the demand for bank loans is highly procyclical. An analysis of several episodes of consumption boom in industrial and developing economies revealed that these owed their origin to consumption boom originating in terms-of-trade improvement. A positive technological shock with the resultant increase in investment and credit demand in the economy could also be one of the factors. Montiel (2000) after examining several episodes of consumption boom in industrial and developing economies between 1960 and 1995, concluded that in most of the countries, terms-of-trade improvements led to consumption boom which subsequently resulted in sharp pick up in lending by banks.

6.17 An alternative view is that fluctuations in bank lending reflect supply side developments such as changes in banks' capacity and willingness to lend. To the extent that some firms face a high external premium in accessing the capital market, or such markets are not well developed, they are heavily dependent on bank lending. Others have argued that bank credit is, indeed, special because it could trigger innovation, particularly in industries that did not have access to external financing; (Rajan and Zingales, 1998). Thus, any shock that relaxes banks' lending capacity - a rise in capital inflows or an easier monetary policy - could lead to increased credit supply in the economy. Moreover, such shocks could affect asset prices and balance sheets, exerting an indirect influence on banks' capacity to lend (Mohanty *et al.*, 2006).

6.18 Financial liberalisation in the face of poorly regulated and supervised banks and inappropriate incentive structures may also lead to increased boom and bust credit cycles in emerging economies (Hernández and Landerretche, 2002; Barth *et al.*, 2002). Credit booms have often been preceded by strong capital flows and overheating of asset prices. However, when asset prices collapse, the banks' non-performing assets rise. The banks become risk averse leading to a credit crunch as banks reduce their lending. The access to bank lending is also determined by the level of concentration of bank lending, regulatory regime in place and presence of foreign banks. The level of capital held by the bank also determines the willingness of the bank to support new loan proposals (Bernanke and Lown, 1991).

6.19 According to some recent studies, creditors' rights and emergence of credit information bureaus in the emerging economies also create an enabling environment for improved lending by banks. The basic argument is that countries with better private property rights and credit risk screening mechanisms (particularly well functioning credit bureaus or credit registery systems) are able to achieve a higher credit to GDP ratio than those that lack such institutions (Mohanty *et al.*, 2006).

6.20 To sum up, different theories have evolved from time to time to explain banks' lending behaviour. According to the commercial loan theory, which is the earliest theory on credit, the earning assets of banks will be in the form of short-term and self-liquidating loans. According to the shiftability theory, the main consideration is how quickly the assets can be converted into cash. The anticipated income theory postulates that a bank can maintain its liquidity if loan repayments are scheduled on the basis of the anticipated income of the borrower. According to the liability management theory, it is not necessary for a bank to observe traditional liquidity standards if it can go into the market and bid for funds whenever it is in need of liquidity. Banks' lending operations are determined at the micro level, based on certain considerations as suggested by the theories. However, the overall quantum and target group of lending is determined by the financial system which a country adopts, *i.e.*, market based financial system or bank based financial system.

6.21 Bank lending is determined by both supply side and demand side factors. On the supply side, banks' portfolio behaviour determines their lending. Commercial banks hold a portfolio of assets based on risk return perceptions and distribution of the liabilities so as to yield the greatest return. Loans and investments are the two most important earning assets in the asset portfolio of banks and their composition is determined by the banks' portfolio behaviour which, in turn, is based on either accommodation principle where lending is the key determinant of banks' portfolio or profit maximisation principle. A rise in capital inflows or an easier monetary policy could also lead to increased credit supply in the economy. Banks' willingness to lend could also be affected by the regulatory regime in place, and whether they hold enough capital to support all the new profitable loan proposals.

III. LENDING OPERATIONS OF SCHEDULED COMMERCIAL BANKS IN INDIA

Policy Developments

6.22 In India, prior to initiation of financial sector reforms in the early 1990s, the lending operations of the banking sector were highly regulated. These related to an administered structure of interest rates, high levels of pre-emptions in the form of reserve requirements, and credit allocation to certain sectors. There existed different credit limits and margin requirements in respect of sensitive commodities and sectors. There were requirements of prior approval from the Reserve Bank for sanction of credit beyond a threshold. Commercial banks were also required to meet mainly the short-term/working capital funds requirements. As such, banks did not have much choice in terms of allocation of resources among different asset classes.

6.23 The initiation of financial sector reforms facilitated a gradual move away from a financially repressed regime to a liberalised one. Banks were given the freedom to innovate and expand their businesses. Lending rates were freed to enable banks to price their products freely. Interest rate deregulation imparted greater efficiency to the resource allocation process (Box VI.1). The objective of the banking sector reforms was to promote a diversified, efficient and competitive financial system with the ultimate objective of improving the allocative efficiency of resources through operational flexibility, improved financial viability and institutional strengthening (Mohan, 2005). With the phasing out of the regulated regime, banks started exploring new avenues for expanding businesses.

6.24 Diversification of portfolios and asset adjustments by banks are now made more on the basis of risk-return considerations. Banks in India followed the accommodation principle in the pre-liberalisaton phase. However, the profit maximising principle has been dominating the banks' portfolio behaviour in the post-liberalisation phase.

Trends in the Lending Operations of Scheduled Commercial Banks

6.25 In India, like many other emerging market economies, commercial banks remain the most important source of credit supply. The total credit extended by scheduled commercial banks grew at 17.2 per cent during the 1980s and 16.0 per cent during the 1990s (Table 6.1).

6.26 Credit by scheduled commercial banks from the early 1990s witnessed three distinct phases. In the first phase (from 1990-91 to 1995-96), bank credit growth showed erratic behaviour with the growth rate varying between 8 per cent and 29 per cent. In the second phase (from 1996-97 to 2001-02), bank credit growth decelerated sharply and ranged between 10 and 18 per cent. In the third phase (from 2002-03 to 2006-07) credit growth generally remained high (Chart VI.1).

6.27 The deceleration in credit during the second phase was on account of several factors, both on the demand and the supply sides. On the supply side, introduction of prudential norms relating to income recognition, asset classification and provisioning in the early 1990s made banks cautious. Application of norms revealed large gross non-performing assets (NPAs) with scheduled commercial banks (15.7 per cent of their gross advances at end-March 1997). Banks, therefore, became wary of enlarging their loan portfolio. Regression analysis suggests that asset quality is one of the main determining factors of credit, besides time deposits and lending interest rate[1]. The relatively high level of NPAs, in particular, had a severe impact on weak banks. Banks' capacity to extend credit was also impaired due to little headroom available in the capital adequacy ratio (8.7 per cent at end-March 1996). Banks found risk adjusted returns on

[1] An empirical exercise on the relationship between non-food credit (NFC) and level of deposits, specifically time deposits (TD), interest rates, as captured by the commercial paper rate (CP), output gap (OG), non-performing assets of banks (NPAs) and asset prices as captured by the BSE Sensex (BSE) was attempted for the period between April 1996 to March 2006 based on monthly data. The output gap was computed using HP-filter and the equation was estimated in the first difference form.

DNFC = 20922.50 + 0.71DTD - 891.11CP + 0.18OG - 0.20GNPA + 2.00DBSE
(9.6)* (-3.5)* (3.4)* (-2.2)* (1.1)

Adjusted R Square =0.49 D.W.=2.12

Figures in brackets are t-values and *denotes significance at 5 per cent level.

The results indicate that time deposits, lending interest rate and non-performing assets were the significant factors determining the credit of scheduled commercial banks. Non-food credit offtake was seen to be pro-cyclical in nature, as credit advances were positively related to the output gap.

Box VI.1
Lending Operations of Banks: Major Policy Initiatives

Since the early 1990s, several policy measures have been initiated to provide flexibility to banks in their lending and investment operations.

Lending Interest Rates

Lending interest rates of commercial banks were deregulated in October 1994 and banks were required to announce their prime lending rates (PLRs). The concept of benchmark prime lending rate (BPLR) was introduced by the Reserve Bank on April 29, 2003 to address the need for transparency in banks' lending rates as also to reduce the complexity involved in pricing of loans. Banks are now free to prescribe respective BPLRs. Banks are also permitted to offer floating rate loan products linked to a market benchmark in a transparent manner.

Term-lending by Banks

Various restrictions on term loans by banks were gradually phased out by 1997. In terms of the guidelines prevailing before the initiation of economic reforms in 1991, banks were expected to extend term loans for small projects in participation with the State level institutions, though it was not mandatory. For large projects, however, they were allowed to participate compulsorily along with all-India financial institutions (FIs), subject to the condition that the share of the banking system would be restricted to 25 per cent of term loan assistance from banks and FIs and the aggregate term finance from the banking system could not exceed Rs.75 crore.

Exposure Limits

Regulatory limits on banks' exposure to individual and group borrowers in India were prescribed to avoid concentration of credit. The applicable limit is 15 per cent of capital funds in the case of a single borrower and 40 per cent in the case of a group of borrowers. Credit exposure to borrowers belonging to a group may exceed the exposure norm of 40 per cent of bank's capital funds by an additional 10 per cent (*i.e.*, up to 50 per cent), provided the additional credit exposure is on account of extension of credit to infrastructure projects. Credit exposure to a single borrower may exceed the exposure norm of 15 per cent of bank's capital funds by an additional 5 per cent (*i.e.*, up to 20 per cent). In addition, banks may, in exceptional circumstances, with the approval of their boards, consider enhancement of the exposure to a borrower up to a further 5 per cent of capital funds.

Priority Sector Lending

Over the years the stipulation for lending to the priority sector has been retained, though its scope and definition was fine-tuned by including new items. Based on the recommendations of the Working Group, set up by the Reserve Bank, the priority sector norms were revised in April 2007. As per the revised norms, the sectors of the society/economy that impact large segments of the population, the weaker sections and the sectors which are employment-intensive such as agriculture and micro and small enterprises, have been retained as priority sector in the revised guidelines, which came into effect from April 30, 2007. Agriculture, small enterprise, micro credit, retail trade, education loans and housing loans up to Rs.20 lakh are the broad categories included in the priority sector.

NPA Management

The high level of non-performing loans (NPLs) of banks, apart from limiting the ability of credit institutions to recycle their funds, also weakened them by adversely affecting their profitability. The Reserve Bank and the Central Government, therefore, initiated several institutional measures to recover the past dues to banks and FIs and reduce the NPAs. These were Debt Recovery Tribunals (DRTs), *Lok Adalats* (people's courts), Asset Reconstruction Companies (ARCs) and the Corporate Debt Restructuring (CDR) mechanism. Settlement Advisory Committees have also been formed at regional and head office levels of commercial banks. Furthermore, banks can also issue notices under the Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest (SARFAESI) Act, 2002 for enforcement of security interest without intervention of courts. Further, banks, (excluding securitisation companies/ reconstruction companies) have been permitted to undertake sale/purchase of NPAs. Thus, banks and other credit institutions have been given a menu of options to resolve their NPA problems.

Development of Securitisation Market

With a view to ensuring healthy development of the securitisation market, the Reserve Bank issued guidelines on securitisation of standard assets on February 1, 2006 to banks, financial institutions and non-banking financial companies.

Credit Information Bureau

Comprehensive credit information, which provides details pertaining to credit facilities already availed of by a borrower as well as his repayment track record, is critical for the smooth operations of the credit market. Lack of credit history is an important factor affecting the credit flow to relatively less creditworthy borrowers. In the absence of credit history, pricing of credit can be arbitary, the perceived credit risk can be higher and there can be adverse selection and moral hazard. Accordingly, a scheme for disclosure of information regarding defaulting borrowers of banks and financial institutions was introduced in 1994. In order to facilitate sharing of information relating to credit matters, a Credit Information Bureau (India) Limited (CIBIL) was set up in 2000, which took over the functions of dissemination of information relating to defaulting borrowers from the Reserve Bank. The Credit Information Companies (Regulation) Act was enacted in 2005 to facilitate the setting up of credit information companies.

Statutory Liquidity Ratio Provisions

At present, all scheduled commercial banks are required to maintain a uniform Statutory Liquidity Ratio (SLR) of 25 per cent of net demand and time liability as on the last Friday of the second preceding fortnight under Section 24 of the BR Act. The assets eligible for meeting the Statutory Liquidity Ratio requirements can be held in the form of cash, gold or in unencumbered approved securities. Consequent upon the amendment to Section 24 of the Banking Regulation Act, 1949, the floor rate of 25 per cent for the SLR has been removed and the Reserve Bank has also been empowered to determine the SLR eligible assets. However, no change has been made in the SLR so far in view of the prevailing macroeconomic and monetary conditions.

Table 6.1: Sector-wise Growth Rate of Bank Credit

(Per cent)

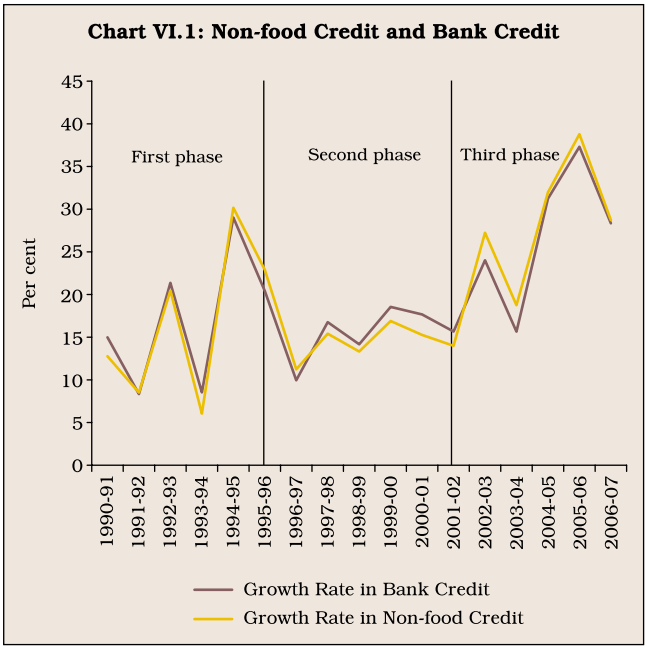
Period	Agriculture	Industry	Transport Operators	Professional Services	Personal Loans	Trade	Finance	SMEs	Total Bank Credit
1	2	3	4	5	6	7	8	9	10
1980-81 to 1989-90	18.1	17.4	13.6	20.7	25.3	11.8	29.2	20.7	17.2
1990-91 to 1999-00	10.6	15.4	9.4	16.8	22.7	17.3	25.6	8.1	16.0
2000-01 to 2006-07	26.0	19.5	18.2	35.3	35.5	16.2	28.1	10.7	22.9
Memo: April-March									
2000-01	13.3	10.6	7.7	31.3	27.7	25.0	21.0	3.3	17.0
2001-02	23.7	14.9	7.1	44.0	25.1	12.7	42.2	-3.6	21.8
2002-03	18.6	14.1	0.9	22.4	38.1	3.2	34.6	14.9	15.2
2003-04	26.7	8.1	18.7	29.5	57.2	-2.5	16.4	0.4	16.4
2004-05	29.2	33.5	22.8	25.8	42.9	27.8	24.3	22.8	30.9
2005-06	38.8	26.7	72.9	48.1	38.0	15.9	29.8	17.3	31.4
2006-07	33.3	31.0	9.9	48.4	22.7	36.4	30.3	23.0	28.6

Source: Basic Statistical Returns of Scheduled Commercial Banks, various issues, Reserve Bank of India.

Government securities more attractive. Hence, despite lowering of statutory pre-emption in the form of SLR, banks continued to invest in Government securities, far in excess of the stipulated requirements. Banks' investments in SLR securities at end-March 1996 were 36.9 per cent of net demand and time liabilities (NDTL) as against the prescribed requirement of 31.5 per cent. Banks' investments in SLR securities remained more or less at that level (36.7 per cent) by end-March 2002, even as the SLR was brought down significantly to 25 per cent (RBI, 2007a).

6.28 On the demand side also, several factors contributed to the decline in demand for credit by the corporate sector. The industrial sector witnessed massive expansion in capacity in certain sectors, especially cement and steel, in the initial phase of reforms. However, as the quantitative restrictions were removed and import tariffs reduced, the corporate sector faced intense competition during the latter part of the 1990s. The focus of the corporate sector, thus, shifted from expanding capacity to restructuring and the industrial sector slowed down significantly. The average annual growth rate of industrial production was 5.2 per cent during 1996-97 to 2001-02 as compared with 9.4 per cent in the preceding three years. This affected the demand for credit by the corporate sector. Increased competition also forced corporates to restructure their balance sheets, whereby they increased their reliance on retained earnings and reduced their borrowings. This was evident from the debt-equity ratio, which declined from an average of 85.5 per cent during 1990-91 to 1994-95 to 65.2 per cent during 1995-96 to 1999-2000 (RBI, 2007a).

Chart VI.1: Non-food Credit and Bank Credit

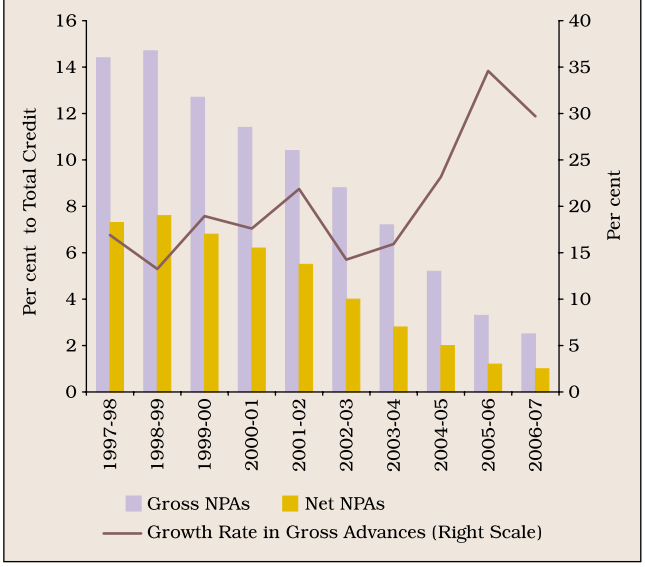


6.29 Although the Reserve Bank pursued accommodative monetary policy during this period (1996-97 to 2001-02) by reducing the cash reserve ratio (CRR) and the policy rates, *viz.,* the Bank Rate and the reverse repo rate (the then repo rate), credit offtake did not pick up. Downward stickiness of nominal interest rates on the one hand, and the falling inflation rate on the other, led to a significant rise in real interest rates. The average real lending rates of banks increased to 12.5 per cent during 1996-97 to 2001-02 as against 6.5 per cent during 1990-91 to 1995-96 (Mohan, 2003). This also appeared to have contributed to slackness in credit expansion.

6.30 In the third phase (2002-03 to 2006-07), credit growth generally remained high. The nature of rapid credit growth from May 2002 has been structurally at variance from the historical trends. Credit, in particular, expanded at a robust pace of around 30 per cent for three consecutive years from 2004-05 to 2006-07. The credit expansion was also pro-cyclical in nature, which indicates that the strong income growth recorded in recent years also significantly contributed to credit growth (RBI, 2007a). One of the major contributory factors was an improvement in asset quality. As banks' gross/net NPAs declined to more reasonable levels, credit growth accelerated (Chart VI.2).

6.31 Other major factors that contributed to the acceleration in credit growth were a pick-up in economic growth, moderation in inflation and inflation expectations, decline in real interest rates, rising income of households and increased competition with the entry of new private sector banks. Besides, the sharp growth in bank credit in recent years could also be attributed to factors such as financial deepening from a low base, structural shifts in supply elasticities, rise in efficiency of credit markets and policy initiatives to improve the flow of credit to sectors such as agriculture and small and medium enterprises. During this phase, retail credit, especially housing loans, emerged as the major source of credit demand as explained in Section VII. Banks also increased their exposure to the infrastructure sector as detailed in Section VI.

Chart VI.2: Gross and Net NPAs

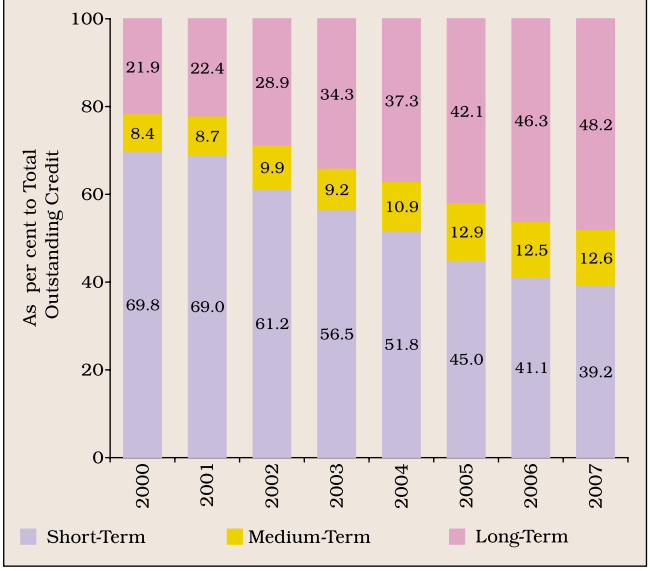


6.32 The rise in the credit to GDP ratio indicates increasing financial deepening. However, rapid credit growth may pose certain risks. In view of rapid credit expansion, the Reserve Bank in April 2006 indicated that growth of non-food bank credit, including investments in bonds/debentures/shares of public sector undertakings and private corporate sector and commercial paper, would be calibrated to decelerate to around 20 per cent during 2006-07 from a growth of above 30 per cent. Keeping this in view, monetary measures were initiated to moderate the credit growth. Besides, prudential measures were also introduced in the form of increased risk weight and provisioning requirement for lending to certain sensitive sectors. The risk weight on exposures on commercial real estate was increased from 100 per cent to 125 per cent and further to 150 per cent. Banks' total exposure to venture capital funds was included as part of their capital market exposure and they were required to assign a risk weight of 150 per cent to such exposures. The general provisioning requirement on standard advances to the sectors comprising real estate, outstanding credit card receivables, loans and advances qualifying as capital market exposure and personal loans, excluding residential housing loans, was raised to 2.00 per cent on January 31, 2007. The provisioning requirement in respect of residential housing loan was raised to 1.00 per cent from the existing 0.4 per cent for loans in excess of Rs.20 lakh. Monetary measures included an increase in the repo rate by 150 basis points in stages to 7.50 per cent by March 2007 from 6.00 per cent in September 2004. Further, CRR was raised by 150 basis points in stages from 4.50 per cent in March 2004 to 6.00 per cent by March 2007[2]. The Reserve Bank increased the provisioning requirement for banks' exposure in the standard asset category to systemically important NBFCs to 2.00 per cent from the earlier level of 0.4 per cent. Further, risk weight for banks' exposure to such NBFCs was increased to 125 per cent from the earlier level of 100 per cent. Banks were prohibited from granting fresh loans in excess of Rs.20 lakh against the NR(E)RA and FCNR(B) deposits, either to depositors or to third parties.

6.33 Housing loans combined with infrastructure financing led to a sharp increase in the share of medium and long-term loans in total credit (Chart VI.3).

[2] The repo rate was further increased by 150 basis points in various stages to 9.00 per cent by July 2008 from 7.50 per cent in March 2007. The CRR was raised by 275 basis points in various stages from 6.00 per cent in March 2007 to 8.75 per cent in July 2008. The CRR is to be increased further by 25 basis points to 9.00 per cent from August 30, 2008.

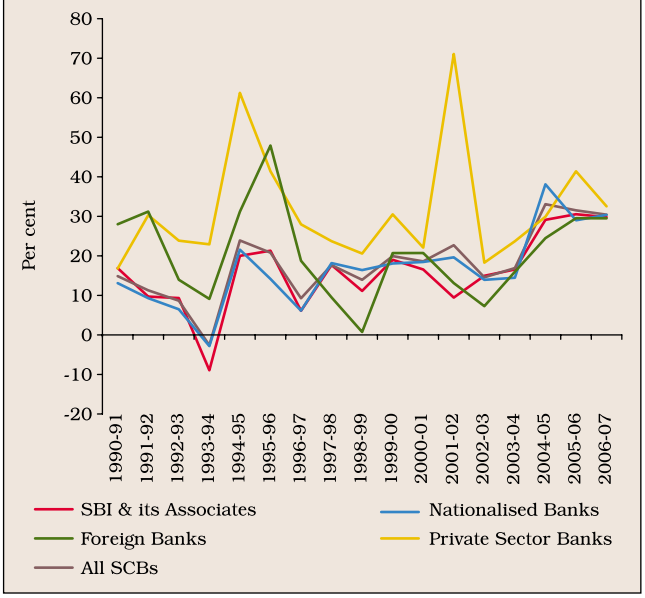
Chart VI.3: Outstanding Credit of SCBs According to Type of Accounts (End-March)



The share of long-term loans in the outstanding credit of scheduled commercial banks increased from 21.9 per cent at end-March 2000 to 34.3 per cent at end-March 2003 and further to 48.2 per cent at end-March 2007. The share of medium-term loans also showed an increase from 8.4 per cent in 2000 to 12.6 per cent in 2007.

6.34 Bank group-wise analysis indicates that credit growth of private sector banks was consistently above the overall credit growth. At times, it also showed wide variations (Chart VI.4)

Chart VI.4: Bank Group-wise Growth Rate in Bank Credit



6.35 Bank credit (outstanding), which constituted 20.4 per cent of GDP at end-March 1991, increased to 22.3 per cent at end-March 2000 and 46.8 per cent at end-March 2007 (Chart VI.5).

6.36 Notwithstanding the increase, the credit to GDP ratio in India was lower than that of developed and several emerging market economies (Table 6.2).

Credit-Deposit Ratio (CDR)

6.37 The credit-deposit ratio refers to the proportion of loan assets funded by banks from deposits mobilised. The C-D ratio of scheduled commercial banks tended to move upwards from 2000-01. The ratio, which was 48.4 per cent at end-March 1994, increased to 53.2 per cent at end-March 2002 and further to 73.0 per cent at end-March 2007. The financing of higher proportion of credit in recent years in a way was facilitated by excess SLR securities portfolio built-up by banks in the mid-1990s. An analysis of bank-group wise credit-deposit ratio during the period 1991-2007 reveals that the credit-deposit ratio of all bank groups tended to move up in line with the increase in overall credit from 2001-02. The ratio of various bank groups almost converged at around 73 per cent at end-March 2007, barring foreign bank group, which maintained significantly higher C-D ratio from 1995-96 than other bank groups. The ratio in respect of foreign banks was at around 84 per cent at end-March 2007 (Chart VI.6).

Chart VI.5: Credit-GDP Ratio of SCBs in India

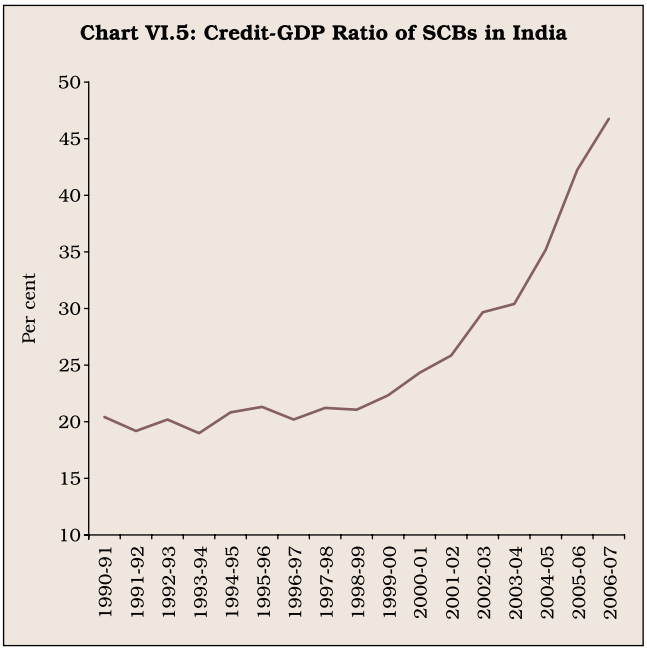


Table 6.2: Credit-GDP Ratio of the Banking Sector – Select Countries

(Per cent to GDP)

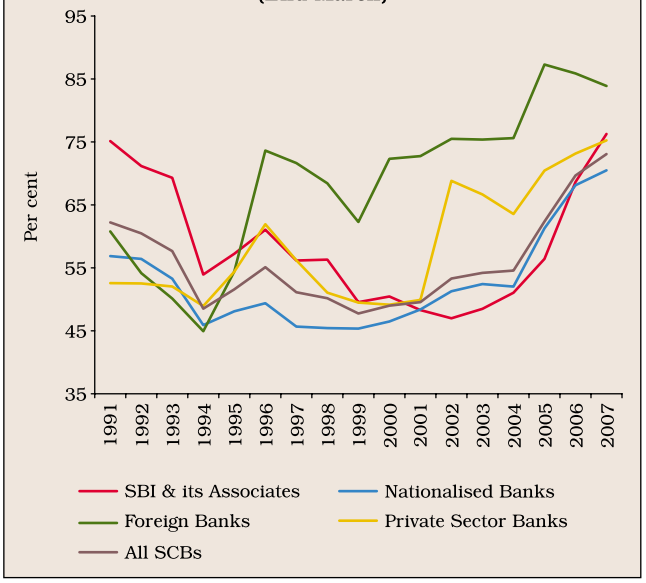
Country	1960	1970	1980	1981-85*	1986-90*	1991-95*	1996-00*	2001-06*
1	2	3	4	5	6	7	8	9
Argentina	21.7	25.2	33.0	43.0	47.1	25.1	32.2	44.1
Australia	41.6	39.0	39.0	39.1	56.8	73.2	84.7	103.6
Belgium	33.0	38.4	53.6	61.6	69.0	130.8	139.1	109.9
Brazil	30.8	36.8	43.0	50.7	156.5	110.2	68.1	75.0
Canada	28.6	47.9	84.8	92.4	97.0	115.0	119.4	205.0
France	58.8	79.4	112.6	110.3	94.6	101.4	102.2	107.6
China	..	..	53.6	60.2	81.2	92.6	109.2	138.6
India	**7.1**	**9.2**	**17.6**	**18.3**	**20.1**	**19.9**	**21.2**	**33.5@**
Indonesia	..	10.7	8.2	13.7	31.2	48.5	59.3	48.9
Ireland	28.9	35.2	39.3	54.5	54.8	56.5	93.9	134.9
Italy	..	86.3	89.0	85.7	85.6	96.8	92.1	103.7
Japan	60.3	136.3	191.3	212.8	251.6	274.7	298.6	300.1
Russian Federation	..	..	..	..	..	27.7	32.1	24.6
Singapore	..	24.8	52.4	87.5	83.1	73.9	90.3	82.8
South Africa	..	88.6	76.4	88.2	94.8	118.5	144.5	157.7
Sri Lanka	20.1	30.2	50.0	45.2	42.4	33.4	39.0	43.7
Sweden	52.7	78.8	90.6	104.0	117.9	125.8	99.0	114.4
United Kingdom	44.7	49.5	36.6	48.4	98.8	117.2	126.4	156.5
United States	105.5	118.0	120.2	126.5	150.4	163.6	195.3	216.1
World	**75.8**	**88.4**	**95.2**	**108.3**	**132.6**	**142.8**	**155.4**	**163.3**

.. : Not available. * : Average.
@ : Pertains to the average of 2001 to 2007 period.
Note : Data relate to calander years. In case of India data relate to end-March.
Source : 1. World Bank Online Database.
2. Handbook of Statistics on the Indian Economy 2006-07.

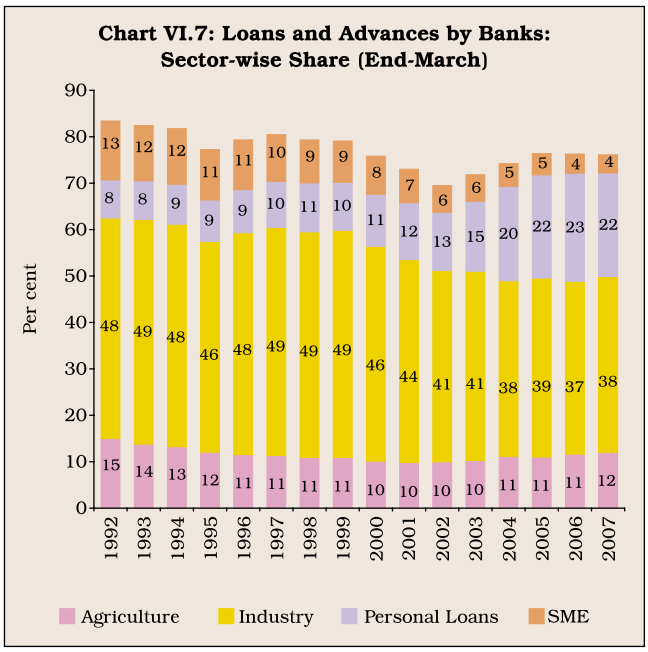
Sectoral Deployment of Credit

6.38 Economic reforms and the evolving economic structure had a profound impact on the bank lending to the various sectors of the economy during the 1990s and the current decade. The growth of lending to agriculture by banks during the 1990s slowed down to almost one-half as compared with the 1980s. However, credit growth to agriculture picked up significantly from 2003-04 onwards as a result of concerted efforts made by the Reserve Bank and the Government to increase the flow of credit to agriculture. Bank lending to the industrial sector too slowed down, *albeit* marginally, in the 1990s. However, it picked up in the current decade. Credit growth to the household sector accelerated sharply in the current decade (refer Table 6.1).

Chart VI.6: Bank Group-wise Credit-Deposit Ratio (End-March)



6.39 The share of personal loans in overall credit extended by SCBs increased from 6.4 per cent at end-March 1990 to 22.3 per cent at end-March 2007 (Chart VI.7 and Table 6.3). As a result, other components of credit underwent a significant change. The share of the agriculture sector in bank credit declined in the 1990s before it recovered from end-March 2002 onwards. The share of the industry and the SME sectors also declined. A detailed analysis of bank credit to various sectors is set out in the following sections.



IV. LENDING TO AGRICULTURE

6.40 The key driver for the progress of any sector is the availability of adequate credit. In the case of agriculture, it is not only the availability of credit but also the access to adequate institutional credit that matters, since most of those who are engaged in agriculture belong to the marginal and small farmer categories. In view of this, the strategy has been to strengthen the role of institutional sources of credit to agriculture with a view to replace informal sources of credit such as moneylenders and ensuring timely credit to the agricultural sector. Moreover, since agriculture still continues to depend on the monsoon (as evident in substantial year to year variations in agricultural output), it is perceived as a high risk area (Box VI.2).

6.41 There was a perceived reluctance on the part of the banks to service high-risk activities, including agriculture. Some policy intervention was thus felt necessary to direct credit to the agricultural sector. The policy framework of agricultural finance has evolved over the years with the aim of creating an enabling environment for the smooth flow of resources to agriculture. The need for adequate institutional credit to agriculture occupied the policy space as early as 1936 and 1937 when studies showed that finance to agriculture was totally dependent on moneylenders and co-operatives and other agencies played a negligible part. Hence, during the period between 1935 and 1950, the focus of the Reserve Bank was on re-invigorating the co-operative credit movement. The increased role for commercial banks in the delivery of rural credit in national policy began as a result of the recommendations of the All India Rural Credit Review Committee set up by the Reserve Bank in July 1966 (Chairman: Shri B Venkatappiah). The role of commercial banks was further widened following the nationalisation of major commercial banks in 1969 (and in 1980) and with the introduction of the concept of priority sector advances

Table 6.3: Distribution of Outstanding Credit of Scheduled Commercial Banks (Share in Total Credit)

(Per cent)

Activity	end-March										
	1980	1990	1995	2000	2001	2002	2003	2004	2005	2006	2007
1	2	3	4	5	6	7	8	9	10	11	12
i. Agiculture	15.7	15.9	11.8	9.9	9.6	9.8	10.0	10.9	10.8	11.4	11.8
1. Direct Finance	12.2	13.8	10.2	8.4	8.1	7.2	7.8	8.0	8.2	8.2	8.8
2. Indirect Finance	3.5	2.1	1.7	1.5	1.5	2.5	2.2	3.0	2.6	3.2	3.0
ii. Industry	48.8	48.7	45.6	46.5	43.9	41.4	41.0	38.0	38.8	37.4	38.1
iii. Transport Operators	4.6	3.2	1.9	1.8	1.6	1.4	1.2	1.3	1.2	1.6	1.3
iv. Professional and Other Services	2.2	3.0	2.3	3.2	3.6	4.2	4.5	5.0	4.8	5.4	6.2
v. Personal Loans	3.4	6.4	9.0	11.2	12.2	12.6	15.1	20.3	22.2	23.3	22.3
1. Loans for Purchase of Consumer Durables	0.1	0.4	0.3	0.6	0.6	0.5	0.4	0.5	0.6	0.4	0.5
2. Loans for Housing	1.1	2.4	2.8	4.0	4.7	5.0	6.5	9.7	11.0	12.0	11.8
vi. Trade	19.7	13.9	17.1	15.6	16.6	15.4	13.8	11.5	11.2	9.9	10.5
vii. Finance	1.0	2.1	3.8	4.8	4.9	5.7	6.7	6.7	6.4	6.3	6.4
viii. All Others	8.1	6.8	8.5	7.1	7.5	9.5	7.7	6.2	4.6	4.7	3.3
Total Bank Credit	100	100	100	100	100	100	100	100	100	100	100
Memo:											
Small and Medium Scale Enterprises	**12.0**	**12.4**	**10.8**	**8.2**	**7.2**	**5.7**	**5.7**	**4.9**	**4.6**	**4.1**	**3.9**

Source: Basic Statistical Returns of Scheduled Commercial Banks in India, various issues, Reserve Bank of India.

Box VI.2
Risks Associated with Lending to Agriculture

The nature of risk and its intensity faced by farmers and rural entrepreneurs vary according to the type of farming system, agricultural production, weather conditions and the prevailing economic and agricultural policies. The risks that the financial institutions face while lending to agriculture relate mainly to high interest and liquidity risk, refinance risk and credit risk.

Credit risk increases in long-term agricultural lending, since estimation of prices, costs, market demand and technical progress becomes more difficult over longer time horizons and the likelihood of systemic risk increases. Accordingly, the margin of error inherent in loan appraisal increases proportionately to loan maturity. There is also the case of larger amounts and longer terms, which result in increasing the moral hazard risks.

Any defaults on term loans have a greater impact on the quality of portfolio of the lender. This may lead to higher costs for loan loss provisioning and affect the rating of the bank in the capital market, increasing the costs of funds. In order to contain portfolio risks, lenders are constrained to limit the share of agricultural term loans in their portfolio. The severity of this risk is more if instruments for managing systemic risks such as crop insurance, irrigation or price risk management tools are absent.

A conventional bank practice that protects the lender against possible borrower default is the requirement of loan collateral such as real estate or mortgage. Banks use loan collateral in order to screen potential clients (as a substitute for lack of customer information) and to enforce and foreclose loan contracts in the event of loan default. The preferred form of conventional bank collateral is mortgage on real property, which, however, requires clear land titles and mortgage registration. As there is generally lack of clear and secure land titles, banks face additional risk in lending to agriculture.

Lending to agriculture tends to be heavily dependent on a very narrow range of sub-sectors with bulk of the portfolios restricted to 2-3 agricultural products in any given branch. The more concentrated the portfolio is among fewer agricultural products, the more susceptible the entire portfolio to market risk and changes in the industry. Moreover, as economic activities of rural depositors are similar or interlinked, the 'production risks' tend to be covariant in a given community and might be passed on to the deposit-taking institution. For instance, in the event of any major crop failure and animal diseases among others, the lending institution is beset with the higher risks of massive deposit withdrawals simultaneously with higher loan demand.

One of the most common risks faced by the agriculture sector in developing countries is the vulnerability of the prices of the final products to macroeconomic factors in the rest of the world than the market for the goods and services of urban enterprises, which tend to have local markets that are less volatile, even if they are weak.

The presence of higher risks assumes criticality in lending to agriculture. It is held that experiments with crop or credit-insurance have not been very satisfactory in most of the developing countries so far. In fact, many farmers feel that where compulsory insurance is resorted to, it has only increased the burden of borrowing from institutional sources and once the transaction costs are added, the overall costs rise significantly. Perhaps, it is necessary to recognise that if some elements of insurance are *ab initio* not viable, extending credit becomes more risky and hence constrained (Reddy, 2005).

References:

Coffey, Elizabeth. 1998. "Agricultural Finance: Getting the Policies Right." *Agricultural Finance Revisited No.2,* FAO, June.

Gichler, Thorsten. 1999. "Sources of Funds for Agricultural Lending." *Agricultural Finance Revisited No.4,* FAO, December.

Reddy, Y.V. 2005. "Banking Sector Reforms in India: An Overview." *RBI Bulletin,* June.

in 1969, which was formalised in 1972 (Box VI.3). In terms of recommendations of the Working Group on Rural Banks (Chairman: Shri M Narasimham), regional rural banks (RRBs) were set up constituting the third institutional tier in the "multi-agency approach". Following the recommendations of the Committee to Review Arrangements for Institutional Credit for Agriculture and Rural Development, a specialised institution, National Bank for Agriculture and Rural Development (NABARD) was set up in 1982. It took over the entire undertaking of the Agricultural Refinance and Development Corporation (ARDC) and the refinancing functions of the Reserve Bank in relation to State co-operatives and RRBs.

6.42 Institutional credit to cultivator households has made considerable progress since the mid-1960s. Based on the All India Debt and Investment Surveys (AIDIS) by the National Sample Survey Organisation (NSSO), the share of borrowings of cultivator households from institutional sources increased from 7.3 per cent in 1951 to 66.3 per cent in 1991, but declined to 61.1 per cent in 2002. Between 1991 and 2002, borrowings by cultivator households increased sharply, especially from non-institutional sources. The increase in household indebtedness was largely on account of consumption and similar other expenditures. It is, therefore, possible that the increase in indebtedness of cultivator

Box VI.3
Priority Sector Targets for Scheduled Commercial Banks - Revised Guidelines

The origin of priority sector prescriptions for banks in India can be traced to the Credit Policy for the year 1967-68, wherein it was emphasised that commercial banks should increase their involvement in the financing of priority sectors, *viz.*, agriculture, exports and small-scale industries, as a matter of urgency. However, the concept of the priority sector was formalised in 1972 on the basis of the report submitted by the Informal Study Group on Statistics Relating to *A*dvances to the Priority Sectors constituted by the Reserve Bank in May 1971. On the basis of this report, the Reserve Bank prescribed a modified return for reporting priority sector advances and certain guidelines were issued in this regard in February 1972, indicating the scope of the items to be included under various categories of priority sector. In most of these cases, the guidelines indicated only the general description of the advances to be included and no ceilings were fixed, except in the case of small-scale industry and road and water transport operators where ceilings on the value of original investments were indicated. The scope and extent of priority sector has undergone several changes since then with several new areas and sectors being brought within the purview of this sector.

As per the revised priority sector norms in April 2007, the priority sector definition was rationalised to include only those sectors that impact large sections of the population, the weaker sections and the sectors which are employment-intensive such as agriculture, and tiny and small enterprises. The broad sectors under the revised norms include agriculture (both direct and indirect), small enterprises (direct and indirect), retail trade in essential commodities and consumer cooperatives stores, micro credit, education loans and housing loans.

Under the revised norms, the overall priority sector lending targets at 40 per cent and 32 per cent for the domestic and foreign banks, respectively, as also other sub-targets, have been retained unchanged. However, these are now calculated as a percentage of adjusted net bank credit (ANBC) or credit equivalent amount of off-balance sheet exposures (OBE), whichever is higher, instead of net bank credit (NBC). ANBC includes NBC plus investments made by banks in non-SLR bonds held in HTM category.

Individual farmers, under priority sector advances, can avail of up to Rs.10 lakh against pledge/hypothecation of agricultural produce (including warehouse receipts) for a period not exceeding 12 months, irrespective of whether the farmers were given crop loans for raising the produce or not. Out of the overall 40 per cent target for domestic banks, a sub-target of 18 per cent of adjusted net bank credit or credit equivalent amount of off-balance sheet exposure, whichever is higher, has been set for lending to the agricultural sector. The 18 per cent lending target to agriculture is inclusive of finance provided by banks to farmers indirectly, *i.e.*, through other agencies or indirect finance. However, indirect credit to agriculture should not exceed 4.5 per cent of adjusted net bank credit or 25 per cent of overall credit to agriculture (which is used for computing the performance by the banks under the sub-target of 18 per cent). Under the priority sector norms direct institutional credit to the agriculture sector includes loans sanctioned for small and marginal farmers for purchase of land for agricultural purposes. Distressed farmers indebted to non-institutional lenders can obtain loans against appropriate collateral and group security.

In the revised guidelines, with the aim of overcoming the crowding out effect against small loans, particularly to agriculture, only one-third of amount of the big-ticket loans/ advances are allowed to be classified as direct agriculture. In order to address cases where banks report a 'nil' or negligible net bank credit (NBC) on account of its engagement in mostly non-funded business (derivatives), the priority sector lending targets were linked to the credit equivalent of their off balance-sheet business.

In case, the domestic scheduled commercial banks are unable to meet the priority sector lending targets (40 per cent of ANBC or credit equivalent amount of off-balance sheet exposure, whichever is higher) and/or agriculture target (18 per cent of ANBC or credit equivalent amount of off-balance sheet exposure, whichever is higher), they would be allocated amounts for contribution to the Rural Infrastructure Development Fund (RIDF) established with NABARD or funds with other financial institutions, as specified by the Reserve Bank. The foreign banks with a shortfall in priority sector lending as per stipulated target/sub-targets are required to contribute to Small Enterprises Development Fund (SEDF), the necessary logistics in this respect have been put in place by Small Industries Development Bank of India (SIDBI).

households to non-institutional sources was also partly on account of consumption expenditures, which could not be easily financed from institutional sources. As a result, the share of non-institutional sources in the indebtedness of cultivator households increased between 1991 and 2002 even as indebtedness of cultivator households to institutional sources grew at a higher rate between 1991-2002 in comparison with 1981-91 (Table 6.4).

6.43 As per the statistical returns by banks[3], of the direct[4] institutional sources of agricultural credit, the share of co-operatives, which constituted the largest share of 57 per cent of outstanding direct institutional

[3] Based on data provided in the Handbook of Statistics on the Indian Economy, 2006-07.

[4] Agricultural credit advanced directly to the beneficiary/borrower by institutions such as co-operatives, scheduled commercial banks (including regional rural banks) and State Governments.

Table 6.4: Borrowing# of Cultivator Households from Different Sources

(Per cent)

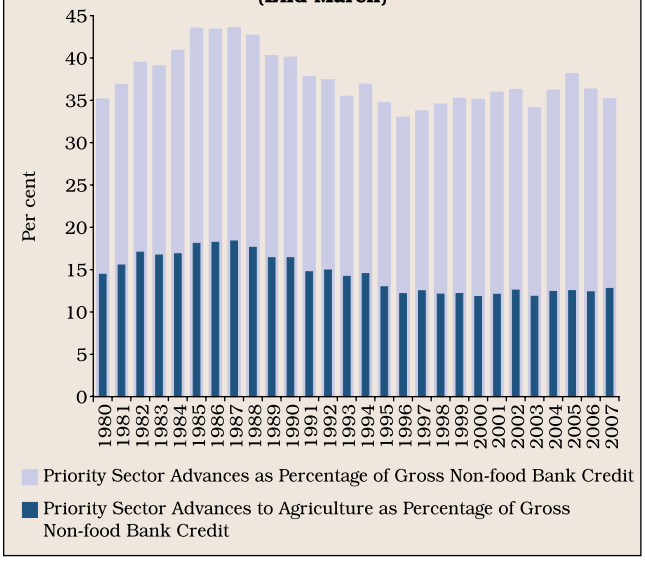
Category	1951	1961	1971	1981	1991	2002
1	2	3	4	5	6	7
1. Non-institutional	**92.7**	**81.3**	**68.3**	**36.8**	**30.6**	**38.9**
					(10.0)	***(19.4)***
Of which:						
Moneylenders	69.7	49.2	36.1	16.1	17.5	26.8
					(13.0)	*(21.6)*
2. Institutional	**7.3**	**18.7**	**31.7**	**63.2**	**66.3**	**61.1**
					(12.6)	***(15.6)***
Of which:						
Commercial Banks	0.9	0.6	2.4	28.8	35.2	26.3
					(14.4)	***(13.2)***
3. Unspecified	–	–	–	–	3.1	–
Total (1+2+3)	**100**	**100**	**100**	**100**	**100**	**100**
					(12.1)	***(16.5)***

: Borrowing refers to outstanding cash loans.

Note : Figures in parentheses represent Compound Annual Growth Rates (CAGR). Column 6 represents CAGR for the period 1981-1991, while column 7 represents CAGR for the period 1991-2002.

Source : 1. Mohan (2006).
2. All India Debt and Investment Survey, various issues, NSSO.

Chart VI.8: Priority Sector Advances to Agriculture (as Percentage of Non-food Gross Bank Credit) (End-March)

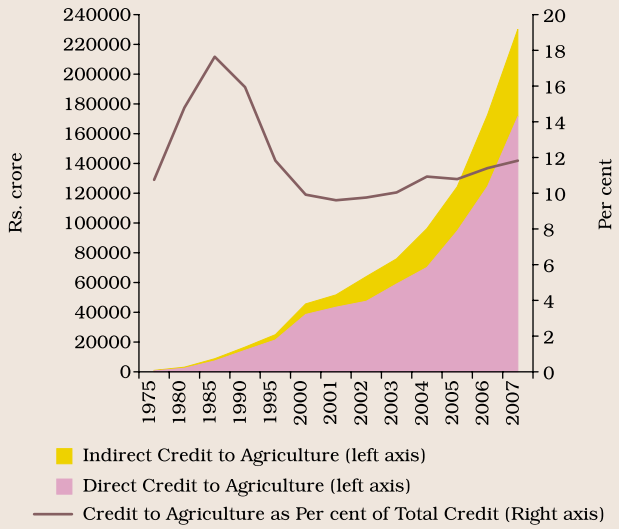


agriculture credit in 1980-81, declined to 32 per cent in 2001-02. On the other hand, the share of scheduled commercial banks (including RRBs), which constituted 43 per cent of outstanding direct institutional credit to agriculture in 1980-81, increased to 68 per cent in 2001-02, thereby emerging as the largest source of direct institutional agricultural credit. However, the share of agricultural credit in the total credit outstanding by scheduled commercial banks (SCBs) showed a sharp decline in the 1990s and at the beginning of the current decade. The share of priority sector advances to the agricultural sector by SCBs in gross non-food credit declined from a peak level of 18.4 per cent at end-March 1987 to 14.8 per cent at end-March 1991 and further to 12.1 per cent at end-March 2001 (Chart VI.8).

6.44 There has been a significant improvement in the share of SCB credit to agriculture in the recent years. The share of agricultural credit in total credit outstanding of SCBs increased from 9.8 per cent at end-March 2002 to 11.8 per cent at end-March 2007, although it was still below the level attained in the early 1990s. The upturn could be attributed to a series of policy measures initiated to improve the credit flow to agriculture. These, among others, included the rescheduling of short-term loans into medium and long-term loans following agricultural distress in several parts of the country, higher credit targets under Special Agricultural Credit Plans for public and private sector banks, and directions to banks to double the flow of credit within three years starting from 2004-05 (RBI, 2007a). As part of the comprehensive credit policy for agriculture announced by the Government of India on June 18, 2004, agricultural credit was to be doubled within three years, with credit to increase at the rate of 30 per cent per year. In terms of financial inclusion, policy efforts were directed towards increasing the coverage of farmers by commercial banks by extending finance at the rate of 100 farmers/branch and financing of 50 lakh new farmers in a year. As a result, growth of SCB credit to agriculture, which was a low 10.6 per cent during the 1990s, accelerated to 26.0 per cent during 2000-01 to 2006-07. Growth of bank credit to agriculture accelerated significantly from 2003-04 onwards, from 23.7 per cent during 2001-02, to 29.2 per cent during 2004-05 and further to 38.8 per cent during 2005-06, before moderating to 33.3 per cent in 2006-07 (refer Table 6.1). A salient feature of the upturn was the sharp increase in the share of indirect finance[5] in total credit

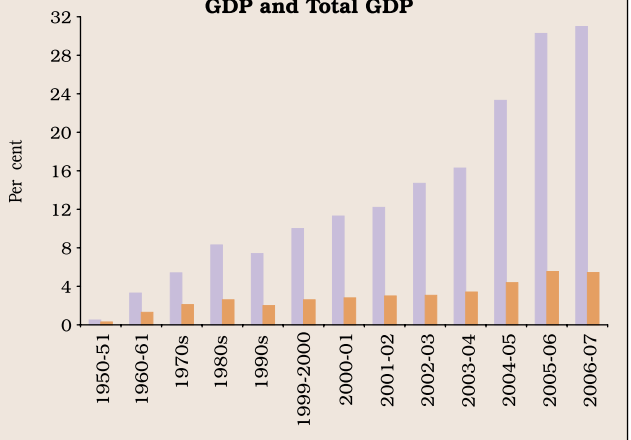
[5] Indirect finance for agriculture by SCBs comprises loans advanced for storage and market yards and for setting up of other agricultural allied activities. Unlike in the case of direct finance, which is issued directly to the borrower, in case of indirect finance, it is normally routed through some other agency/conduit/ tier.

Chart VI.9: Outstanding Credit of Scheduled Commercial Banks to the Agricultural Sector (End-March)



by SCBs to the agricultural sector from 16.1 per cent at end-March 2001 to 25.5 per cent at end-March 2007 (Chart VI.9). The growth in indirect finance was possibly a consequence of the broadening of the scope of items covered under the indirect bank finance to the agricultural sector.

Chart VI.10: Institutional Credit to Agriculture (Disbursements) as Percentage of Agricultural GDP and Total GDP



Note : Institutional credit to agriculture implies agricultural credit by co-operative banks and scheduled commercial banks.

6.45 As a result of the various policy initiatives to improve the flow of credit to agriculture, credit to agriculture from institutional sources as percentage of agricultural GDP (credit intensity) increased sharply from 11.3 per cent in 2000-01 to 31 per cent in 2006-07. The share of agricultural credit from institutional sources in total GDP (at factor cost at current market prices) also rose from 2.8 per cent in 2000-01 to 5.4 per cent in 2006-07 (Chart VI.10). One striking aspect of this increase in credit intensity of the agricultural sector was that it was occurring at a time when the value added by agriculture as a ratio to GDP was witnessing a decline (Mohan, 2006).

Agricultural Credit by SCBs: Bank Group-wise

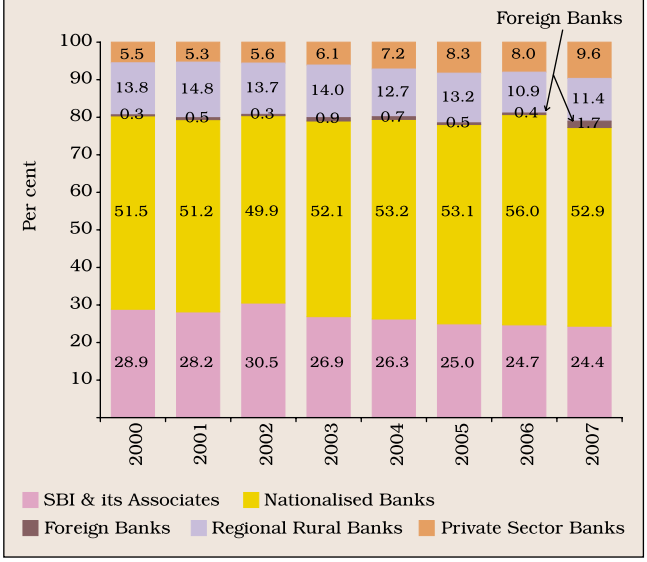
6.46 Bank group-wise distribution of credit of scheduled commercial banks suggests that at end-March 2007, more than half of outstanding bank credit to agriculture was contributed by the nationalised banks group (52.9 per cent) and around one fourth by the State Bank group (24.4 per cent). Among scheduled commercial banks, public sector banks, thus, together accounted for more than three fourths (77.3 per cent) of credit to the agricultural sector. Over the years, while the share of SBI and its associates declined, that of nationalised banks and private sector banks increased. The share of regional rural banks, which were primarily set up to provide timely institutional credit in rural areas specifically to agriculture, declined to 11.4 per cent at end-March 2007 from around 13.8 per cent at end-March 2000. The share of private sector banks witnessed a moderate increase during the period 2000-2007 (Chart VI.11).

Agricultural Credit by SCBs: By Type of Loans

6.47 The trend in credit to agriculture by SCBs based on type of account reveals that the share of long-term loans[6] in total outstanding credit to agriculture has declined sharply since the early 1990s. This was in contrast to the pattern in overall bank credit, wherein the share of long-term loans in total bank credit increased sharply. The share of long-term loans to agriculture in outstanding credit by SCBs to agriculture declined sharply from 76.3 per cent at end-March 1991 to 59.3 per cent at end-March 1996, to 40.7 per cent at end-March 2005 and further to 34.7 per cent at end-March 2006 before showing an improvement to 39.8 per cent at end-March 2007.

[6] Term loans in Basic Statistical Returns of Scheduled Commercial Banks in India are divided into medium and long-term loans. While medium-term loans represent loans granted for a period above 1 year and up to 3 years, long-term loans represent loans granted for above 3 years.

Chart VI.11: Bank Group-wise Classification of Outstanding Credit of SCBs to Agriculture (End-March)



6.48 On the other hand, the share of short-term credit[7] in total agricultural credit by scheduled commercial banks increased significantly from end-March 2002 while that of medium and long-term loans declined (Chart VI.12). This increase in the share of short-term credit from 2002 was contributed largely by the sharp increase in short-term indirect finance. Short-term indirect finance to agriculture increased from Rs.165 crore at end-March 1991 to Rs.23,829 crore at end-March 2006 before declining to Rs.18,714 crore at end-March 2007 (Chart V1.13). As a result, the share of short-term indirect credit to agriculture in short-term credit to agriculture increased from 16.2 per cent at end-March 2001 to 58.4 per cent at end-March 2006 before declining to 45.9 per cent at end-March 2007. The decline in the share of term loans could be the result of both supply and demand side constraints. On the demand side, the demand for credit for investment may have been adversely affected due to reduction in the average size of land holdings. Between 1991-92 and 2003, the number of operational holdings increased from around 93 million to around 101 million, whereas the area operated declined from around 125 million hectares to around 108 million hectares, resulting in a decline in average area operated from 1.34 hectares in 1991-92 to 1.06 hectares in 2003[8]. On the supply side, banks might also be interested more in short-term credit as it bears low credit risk, entails lower supervision and monitoring costs, and facilitates a better asset liability management (Golait, 2007).

Chart VI.12: Classification of Outstanding Credit of SCBs to Agriculture (End-March)

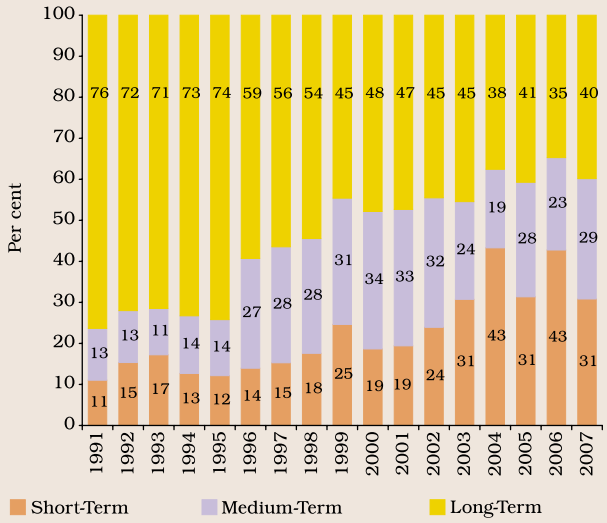
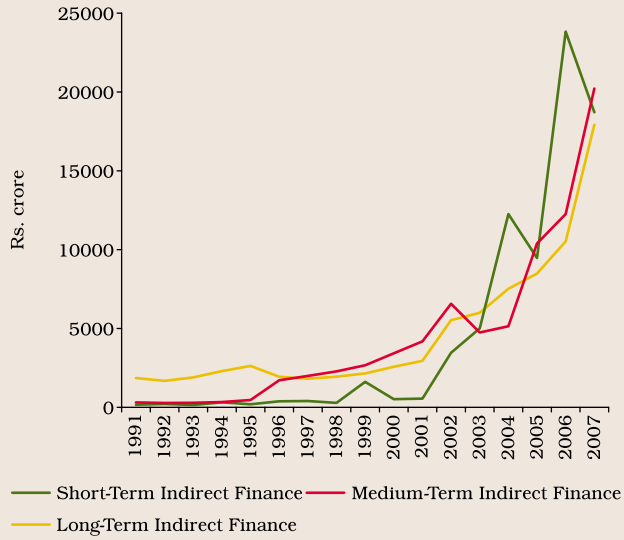


Chart VI.13: Indirect Finance to Agriculture by Type of Accounts (End-March)



[7] Short-term credit includes cash credit, overdraft, demand loans, packing credit, export trade bills purchased and discounted, export trade bills advanced against, advances against export cash incentives and duty drawback claims, inland bills purchased and discounted (trade and others), advances against import bills and foreign currency cheques/TCs/DDs/TTs/MTs purchased.

[8] Report of the Expert Group on Agricultural Indebtedness, 2007.

Agricultural Loans by SCBs: By Size of Land Holdings

6.49 The underlying objective in granting priority sector status to agriculture was to ensure that credit flowed specifically to the small and marginal farmers, who constituted the bulk of the agricultural labour force. Data on loans disbursed by SCBs to agriculture, according to the size of land holdings, revealed that the share of marginal farmers (with land holdings up to 2.5 acres) in the total agricultural loans remained broadly at the same level between 1980-81 and 2004-05. The share of small farmers (with land holdings above 2.5 acres and up to 5 acres) increased from 16.6 per cent in 1980-81 to 26.2 per cent by 1985-86 and remained broadly at that level thereafter, while that of large farmers (with land holdings of above 5 acres) declined from 58.5 per cent in 1980-81 to 46.2 per cent in 1985-86 and remained broadly at the same level thereafter (Chart VI.14). Thus, even when loans to small and marginal farmers in absolute amount increased by more than ten times between 1990 and 2005, their share in total agricultural loans did not show any significant improvement.

6.50 In terms of number of loan accounts, the share of marginal farmers in total number of agricultural loan accounts declined from 51.7 per cent in 1980-81 to 37.4 per cent in 1995-96, before recovering to 44 per cent in 2004-05 (Chart VI.15).

Agricultural Credit by SCBs: Small Loans to Agriculture

6.51 Small loans to agriculture (comprising borrowal accounts up to Rs.2 lakh as per the revised cut-off limit for small loans effective March 1999), which constituted around 99 per cent of total number of agricultural borrowal accounts at end-March 2000, declined moderately to 95.1 per cent at end-March 2007. The further break-up of small loans category shows that the share of small borrowal accounts with a credit limit of less than Rs.25,000 in total number of agricultural borrowal accounts declined from 85.4 per cent at end-March 2000 to 55.9 per cent at end-March 2007. However, the share of small borrowal accounts with credit limit greater than Rs.25,000 and up to Rs.2 lakh in total number of agricultural accounts increased from 13.6 per cent at end-March 2000 to 39.1 per cent at end-March 2007 (Chart VI.16).

6.52 The share of agricultural credit outstanding to small borrowal accounts up to Rs.2 lakh in total agricultural credit declined from 80.9 per cent at end-March 1992 to 67.6 per cent at end-March 2000 and further to 42.6 per cent at end-March 2007. This was primarily on account of a significant decline in the share of agricultural credit outstanding in respect of small borrowal accounts with a credit limit size class of Rs.25,000 and less (Chart VI.17).

Chart VI.14: Scheduled Commercial Banks' Direct Finance to Farmers (Disbursements) According to Size of Land Holdings : Amount

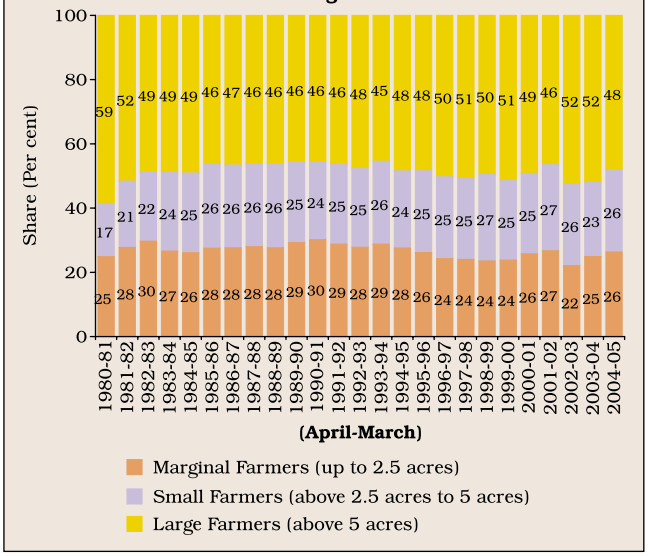


Chart VI.15: Scheduled Commercial Banks' Direct Finance to Farmers According to Size of Land Holdings (Disbursements) : Number of Accounts

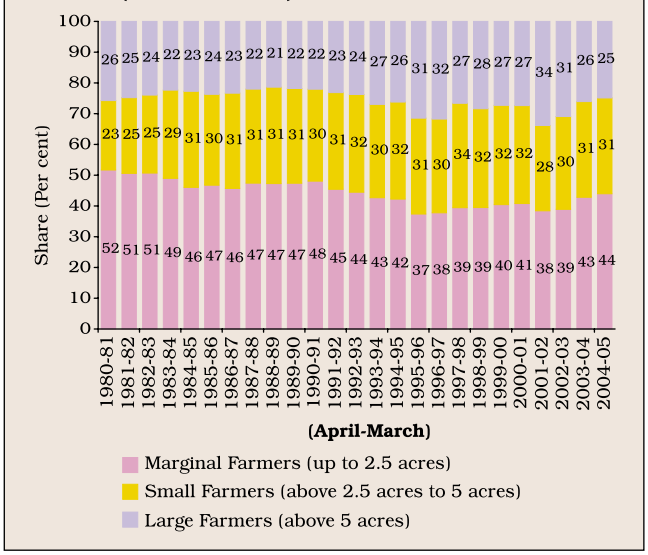
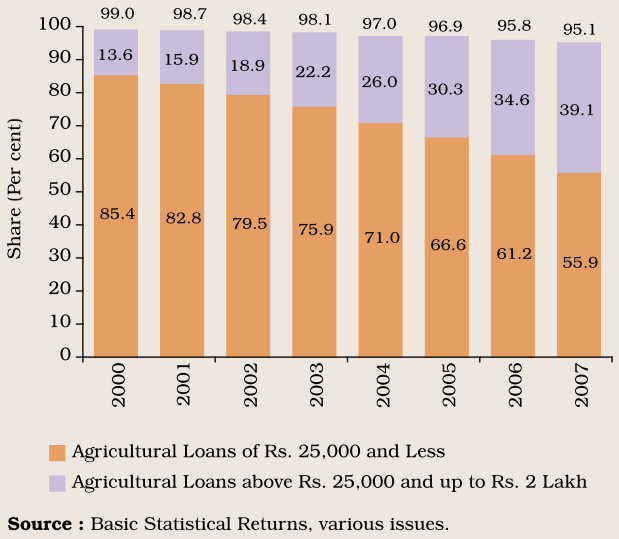
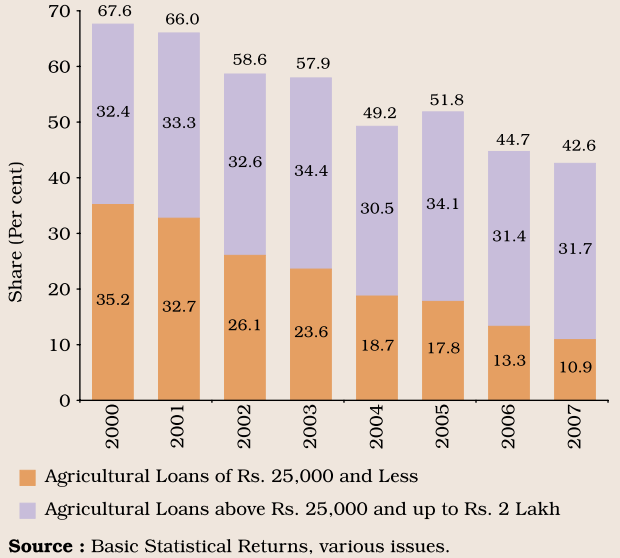


Chart VI.16: Small Loans : Number of Agricultural Borrowal Accounts (End-March)



Source : Basic Statistical Returns, various issues.

Chart VI.17: Small Loans: Agricultural Credit Outstanding (End-March)



Source : Basic Statistical Returns, various issues.

6.53 The decline in the share of agricultural small borrowal accounts (which comprise accounts up to credit limit size of Rs.2 lakh) in terms of number of accounts and amount outstanding was partly due to inflation effects. The credit limit size classes are expressed in nominal terms and over a period of time, on account of inflation, there is a possibility that the value of these credit limit size classes in real terms has fallen. On the basis of the 'Survey of Small Borrowal Accounts', for the period 2001-2006, after adjusting the credit limit size classes under small borrowal accounts for inflation[9], the decline in the share of number of agricultural small borrowal accounts in total number of agricultural borrowal accounts persisted, although the extent of decline was somewhat lower. The share of number of small borrowal accounts with a credit limit of Rs.25,000 and less (which is the credit limit size with the most number of agricultural small borrowal accounts), after adjusting for inflation declined. However, the decline was of a lower order when adjusted for effects of inflation. The share of amount outstanding under agricultural small borrowal accounts in total credit outstanding to agriculture, after adjusting for inflation effects, also witnessed a decline, although of a lower order than without adjusting for inflation effects (Table 6.5 and Chart VI.18).

Cross-Country Experiences in Lending to Agriculture

6.54 In 2007, New Zealand was the only country in the sample studied in which the agricultural credit share in total credit of commercial banks was higher than that of India (Table 6.6). Among the countries reviewed commercial bank credit intensity of the agricultural sector in India (*i.e.*, agricultural credit of commercial banks as percentage of agricultural GDP) was similar to that in other East Asian emerging economies. However, credit intensity of agriculture was significantly higher in countries such as New Zealand, Australia, the UK and the US (Table 6.7). This could be mainly due to the higher level of commercialisation of agriculture in these countries, which demands increased credit for technological upgradation, for food processing activities and also for marketing systems for agricultural products.

6.55 To sum up, in India, the share of institutional credit in total agricultural credit has increased significantly since the mid-1960s (Government of India, 2007b). Co-operative banks were the predominant source of institutional agricultural credit in the 1970s and the early 1980s, while scheduled commercial banks emerged as a major source from the mid-1980s. The

[9] 1. The small loan credit limit size classes were inflated using GDP deflator with 1999-2000 as the base year. For example, in the case of the Rs.25,000 credit limit size class, the revised figures were Rs.25,880 for 2001, Rs.28,780 for 2004 and Rs.31,374 for 2006.

2. In order to obtain the number of loan accounts and amount outstanding corresponding to the inflation adjusted small loan credit limit size classes, linear interpolation was applied on the available data.

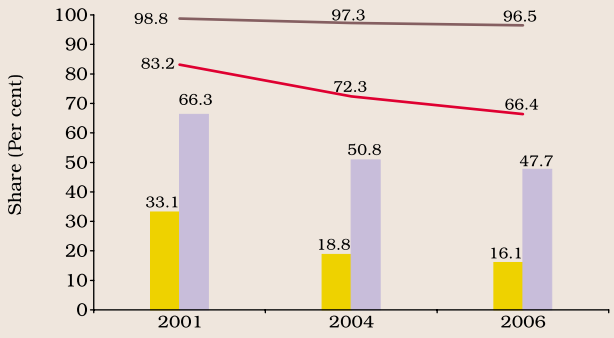
Table 6.5: Small Borrowal Accounts to Agriculture (End-March)

Size of Credit limit	Small Borrowal Accounts : Number of Accounts (Share in total number of agricultural borrowal accounts) (Per cent)			Small Borrowal Accounts : Amount Outstanding (Share in total amount outstanding in agricultural borrowal accounts) (Per cent)		
	2001	2004	2006	2001	2004	2006
1	2	3	4	5	6	7
Less than Rs. 25,000	**82.8 (83.2)**	**70.0 (72.3)**	**61.2 (66.4)**	**32.7 (33.1)**	**17.1 (18.8)**	**13.3 (16.1)**
Rs. 25,000-50,000	9.8 (9.6)	15.3 (14.1)	20.1 (17.4)	11.4 (11.3)	10.8 (10.5)	11.0 (10.4)
Rs. 50,000-75,000	2.0 (1.9)	3.8 (4.2)	4.8 (5.8)	4.0 (3.9)	4.3 (5.5)	4.3 (6.5)
Rs. 75,000-1,00,000	0.8 (0.8)	3.4 (2.4)	4.5 (2.4)	2.4 (2.4)	5.5 (4.3)	5.7 (3.8)
Rs. 1,00,000-1,50,000	1.3 (1.4)	1.9 (2.5)	2.7 (3.3)	4.5 (5.3)	4.1 (6.2)	4.7 (6.6)
Rs. 1,50,000-2,00,000	2.2 (2.0)	2.6 (1.7)	2.6 (1.2)	11.0 (10.1)	7.3 (5.6)	5.6 (4.2)
Less than Rs. 2 lakh	**98.8 (98.8)**	**97.1 (97.3)**	**95.9 (96.5)**	**66.0 (66.3)**	**49.2 (50.8)**	**44.8 (47.7)**

Note : Figures in parentheses are adjusted for inflation.
Source : Survey of Small Borrowal Accounts, RBI Bulletin, various issues.

share of institutional credit in the indebtedness of cultivator households declined between 1991 and 2002. This was mainly on account of a sharp increase in borrowing from non-institutional sources. Borrowings by cultivator households from institutional sources in the 1990s continued to grow more or less

Chart VI.18: The Share of Agricultural Small Borrowal Accounts in Agricultural Borrowal Accounts – Adjusted for Inflation (End-March)



Source : Calculations based on data from Survey of Small Borrowal Accounts, RBI Bulletin, various issues.

at the same rate as during the 1980s. However, credit growth to agriculture by SCBs picked up significantly from 2003-04. As a result, the share of credit to agriculture in total credit by SCBs increased in recent years. Priority sector advances to agriculture as percentage of non-food bank credit also increased. As a result, credit intensity of the agricultural sector improved. However, some disquieting features were also observed. One, the share of long-term loans in total credit to agriculture declined almost consistently between 1991 and 2006; the share in 2006 was less than half of the share in 1991. Two, the share of marginal farmers in direct finance to farmers and in total credit accounts held by them showed little perceptible improvement. Three, the share of loans up to Rs.2 lakh, interest rates on which continue to be partially regulated, witnessed a decline both in credit accounts and amount outstanding. However, this decline persists even after adjusting for inflation, although the decline was of a lower order after adjusting for inflation.

Issues in Bank Credit to Agriculture

6.56 Agricultural credit as percentage of total bank credit showed a persistent decline from the early

Table 6.6: Commercial Bank Credit to the Agriculture Sector : A Survey of Select Countries

(Per cent to total credit)

Country	1991	1995	2000	2001	2002	2003	2004	2005	2006	2007
1	2	3	4	5	6	7	8	9	10	11
Australia	..	9.6	8.8	8.9	9.2	9.9	10.1	9.7	9.0	8.1
Germany	0.7	0.7	0.6	0.6	0.6	0.7	0.7	0.7	0.8	0.8
India	**15.0**	**11.8**	**9.9**	**9.6**	**9.8**	**10.0**	**10.9**	**10.8**	**11.4**	**11.8**
Indonesia	7.5	6.6	7.3	6.8	6.1	5.6	5.8	5.3	5.7	5.6
Malaysia	..	..	3.1	3.2	3.0	2.6	2.2	2.0	2.0	..
New Zealand	8.4	10.0	9.1	9.8	10.8	11.8	11.5	12.1	12.4	12.6
Thailand	7.0	4.0	2.7	2.5	2.3	2.1	2.1	2.0	1.9	1.6
United Kingdom	1.5	1.2	0.8	0.7	0.7	0.6	0.6	0.6	0.6	0.5
United States*	1.6	1.5	1.2	1.2	1.1	1.0	1.0	0.9	0.9	0.8

* : Non-real-estate farm loans outstanding as percentage of total loans and leases.
.. : Not available.
Sources : 1. Central Bank websites of respective countries.
2. Basic Satitstical Returns of Scheduled Commercial Banks in India, various issues, Reserve Bank of India.

1990s to 2000-01. This period was also characterised by a decline in the share of agriculture in GDP. Therefore, a more relevant measure to evaluate the agricultural credit performance would be credit intensity, *i.e.,* agricultural credit as percentage of agricultural GDP. Credit intensity of agriculture, which rose continuously between the early 1950s and the 1980s, declined in the 1990s. Growth in bank credit to agriculture, however, accelerated significantly from 2003-04 on account of the various policy initiatives by the Government and the Reserve Bank. As a result, credit intensity began to increase sharply from 2003-04 onwards. However, insofar as the priority sector credit norms for agriculture are concerned, the credit flow to agriculture has been below the priority sector target of 18 per cent for agriculture since early 1990s. Only eight of the 28 public sector and three of the 26 private sector banks met the target of extending 18 per cent of the net credit outstanding to agriculture at end-March 2007 (RBI, 2007b). The shortfalls in priority sector lending targets by the commercial banks are required to be deposited with the Rural Infrastructure

Table 6.7: Commercial Bank Credit Intensity* of the Agriculture Sector: A Survey of Select Countries

(Per cent)

Country	1991	1995	2000	2001	2002	2003	2004	2005	2006
1	2	3	4	5	6	7	8	9	10
Australia	0.0	85.6	94.4	83.7	116.3	119.2	131.6	143.8	..
Germany	14.2	15.8	16.0	14.1	17.3	18.4	17.3	21.8	22.9
India	**12.3**	**9.5**	**10.2**	**11.5**	**13.1**	**16.1**	**18.0**	**23.2**	**29.0**
Indonesia	18.5	19.9	9.0	7.9	7.6	7.9	9.8	10.1	10.5
Malaysia	..	..	31.9	37.3	30.9	24.5	22.6	24.2	..
New Zealand	101.2	145.5	136.7	143.6	206.0	..	..	..	..
Thailand	39.9	39.7	27.1	22.4	20.9	16.5	16.5	15.6	13.3
United Kingdom	75.3	51.4	92.9	93.1	89.9	84.8	84.0	94.6	94.5
United States^	33.2	36.3	41.8	42.2	46.2	36.8	32.4	36.4	

* : Credit intensity is defined as lending to agriculture by commercial banks as a per cent of agricultural GDP.
^ : Commercial banks non-real-estate farm loans outstanding as percentage of agricultural GDP.
.. : Not available.
Sources : 1. World Development Indicators Database.
2. Central Bank websites of respective countries.
3. Basic Statistical Returns of Scheduled Commercial Banks in India, various issues, Reserve Bank of India.
4. Handbook of Statistics on the Indian Economy, 2006-07.

Development Fund (RIDF) maintained with NABARD. Thirteen annual tranches of RIDF have so far added up to Rs.72,000 crore (NABARD, 2007). The Union Budget for 2008-09 has budgeted the corpus of fourteenth tranche of RIDF, *i.e.,* RIDF-XIV for 2008-09 at Rs.14,000 crore.

6.57 Although the overall flow of institutional credit has increased in recent years, there are still several issues in agricultural credit delivery arising out of structural transformation taking place in the agricultural sector. First, a change in the pattern of demand for agriculture is emerging as the agricultural sector is getting increasingly diversified and the required scale of finance is increasing. Second, though substantial proportion of Indian agriculture continues to be a 'small farm' based economic activity, it is increasingly moving from a system of farmers' own-resource based subsistence farming to input-based intensive commercial farming. However, at present, the banking system in India is geared more to financing the traditional crops like cereals. It needs to reorient itself to meet the changing requirements of commercialisation of agriculture with heterogeneous production cycles. There is an increased demand for allied activities such as dairy, fishing and livestock, cash crops, besides ancillary activities such as sorting, grading, processing, packaging and transporting to final destinations and markets. Other service sector activities that spin-off the main activities are also growing. On the part of the banks, this would call for designing innovative schemes and products which recognise the differing nature of agri-business and supply chains for different products. More importantly, increased commercialisation of agriculture would call for newer forms of credit assessment and risk-management systems to be put in place, besides upgrading skills and changes in attitudes and mindsets. The banking system may also have to address the problem of "financial dualism", characterised by faster modernisation of urban financial markets compared with their rural counterparts and the "digital divide", which separates those using modern computers and communication technologies from those who do not. Financial dualism could result in large farmers, agri-business and rural industries obtaining financial services from modern urban financial institutions, while small and marginal farmers and landless labourers may have to depend on micro-finance and personal savings (Mohan, 2006). More or less similar issues in effective credit delivery to the agriculture sector are confronted by several other developing countries and even advanced countries (Box VI.4).

International Experiences in Credit to the Agricultural Sector

6.58 Broadly, agricultural finance systems in various countries can be classified into three categories, *viz.,* the developmental model, the mixed market model and the market liberal model (Coleman and Grant, 1998). In developmental model, the state plays a proactive and dominant role in agricultural finance activities. This, among others, takes the form of providing long-term credit, where commercial banks are reluctant to participate. For this purpose, specialised corporations are established, interest rates are charged lower and subsidised loans are provided to agriculture. In a mixed market model, there is an orientation towards market-based provision of infrastructure for agriculture, while at the same time a special role for direct state intervention is retained. In such a model, though state supported agencies exist, they cater to the broader agri-food sector rather than agriculture producers and they work in direct competition with the commercial banks. Finally, in a market liberal model, there exists no specific support for agricultural farmers and marginal producers and the credit needs of agriculture, as in the case of other sectors, are met by the banking system. Most of the countries follow one of the three models or a mix of the three. However, the specific lending practices have evolved in accordance with the country-specific needs and characteristics (Box VI.5).

6.59 Most developing countries followed largely 'supply-side' oriented directed credit programme till the 1980s. A review of agricultural credit delivery mechanisms in developing countries revealed that results of the supply-led thrust to agricultural credit were disappointing for several reasons. First, for agriculture, more than liquidity the immediate need is that of flexible services, which are generally provided by informal lenders. Second, despite empirical evidence of significant saving potential of small farmers, the agricultural credit markets failed, which could be attributed to inadequate public investment in legal and physical infrastructure, enforcement mechanisms and commodity risk mitigating mechanisms. Third, the fungible nature of money, provided as credit, very often resulted in funds being used for purposes other than investment, thereby reducing the effectiveness of credit in enhancing productivity. There were some examples of successful credit programmes, which were primarily due to strong village co-operative systems and social cohesiveness along with institution building and development of legal and physical infrastructure

Box VI.4
Issues in Agricultural Credit - Developing Countries' Perspective

Agriculture plays an essential role in developing economies, especially because the large proportion of the population is engaged in agriculture in developing countries as also for strategic reason of ensuring food security. The variety in farming activities and farm management poses challenges and opportunities to agricultural and rural lenders. It is common that policymakers, particularly in developing countries, have been confronted with the task of resolving a number of issues in agricultural lending.

The basic challenge faced is that providing finance to agriculture and rural development is not seen as a commercial and business opportunity by the banks or for that matter by the formal financial systems. Unlike in the past, the present day agriculture has become increasingly capital intensive which requires access to working capital and seasonal loans along with medium and long-term credit for on-farm investments and cannot modernise without the support of a strong financial system. Significantly, even small farmers generally have no access to formal credit because the financial system is not innovative or sufficiently efficient to reduce transaction costs and to provide 'tailor-made' products to small clients at affordable cost.

Two major factors that hamper the smooth flow of credit to agriculture are the absence of effective credit delivery systems and the lack of adequate credit absorptive capacity of the rural populace.

In agricultural lending, the cost for delivery and monitoring of credit is found to be very high and the banks have not yet found an easy solution to manage the cost of credit delivery and supervision in the agricultural sector within the discipline of balance sheet numbers. Distances between clients and financial intermediaries, transport and communication difficulties, and the risky nature of agriculture that is vulnerable to natural disasters, boost these costs. The challenge still is to design and deliver the provision of loan products to better suit the farming community. Weak land titling and cumbersome and costly court procedures also compound the problems of providing conventional collateral for loans in rural areas, thereby further increasing the risks of rural lending. Another major issue confronting the agricultural and rural credit is that standard credit programmes are not suited to the heterogeneous needs of small farmers. Subsidised interest rates blocked the emergence of vigorous and competitive rural financial markets, fostered loan repayment indiscipline, prevented banks from covering costs, and discouraged local savings mobilisation. Complexity of various outdated procedures and the related paper-work involved in provision of credit is another issue in agricultural lending.

Rural financial markets cannot thrive and grow if their clients lack creditworthiness. The low absorption capacity of farmers, inability to repay loans, and the inability to save because their incomes are depressed, all result in low creditworthiness. Notwithstanding improvements in the information technology, banks lack essential information on the credit history of potential clients, the viability of on-farm investments, the self-financing capacity of farmers and their repayment capability. Lack of these vital pieces of information hampers the timely credit reach for agriculture and rural development.

As most of the farmers are either small or marginal in the developing countries, they lack the absorptive capacity both in terms of cost and the size of loans and advances which are of cost effective size to be handled by the banks. Since many of the financial transactions in rural areas are small - both for loans and for deposits - the transaction cost per unit of money involved is necessarily high compared to larger transactions. Most of the banks either lack risk management system or they feel it is not necessary to have one, especially when it comes to financing agriculture.

References:

Klien Brigette, Meyer Richard, Hanning Alfred, Burnett Jill and Ficbig Michael. 1999. "Better Practices in Agriculture Lending." *Agricultural Finance Revisited* No.3, FAO, December.

RBI. 2004. "Report of the Advisory Committee on Flow of Credit to Agriculture and Related Activities from the Banking System." June.

(Yaron, 1992; FAO, 1998; Meyer and Nagarajan, 2000). However, with non-sustainability of directed credit in many developing countries, 'demand-centric approach' – where the stress is more to meet the unique credit requirements of the farmers, especially the small and marginal farmers through specific products – has been adopted, focusing on the viability of banking. Noteworthy among them are the success stories of Bank Rakyat Indonesia (BRI) and its BRI-UD (Unit Desai) system in Indonesia and Bank for Agriculture and Agricultural Co-operatives (BAAC) in Thailand (Box VI.6).

6.60 To sum up, institutional credit to agriculture has made considerable progress since the mid-1960s. The share of institutional agricultural credit in total credit to agriculture increased from 18.7 per cent in 1961 to 66.3 per cent in 1991. In particular,

Box VI.5
Agricultural Lending Practices: Cross-Country Experiences

Agricultural lending markets during the past few years have witnessed a structural change. Dissatisfaction with the outcome of traditional agricultural credit policies and the inconsistencies among these policies and a shift in the dominant development paradigm from central planning to one that relies on market forces have led to agricultural policy reassessments in many countries. In many developing countries, directed credit programmes, on account of their limited outreach and sustainability, have been phased out and many agricultural development banks have been liquidated. Further with the withdrawal of the state and donor and development agencies from agricultural and rural finance there was an urgent need to devise mechanisms that helped to deliver term finance for working capital requirements of small farmers and to provide inter-linked credit arrangements to small farmers to better orient their agricultural products to the market.

In several countries, such as Brazil, Indonesia, Mexico, and Sri Lanka, supply-led and directed credit programmes were the dominant tool used to spur agricultural development during the three decades prior to the 1990s. In centrally planned countries, directed credit was likewise a prominent instrument used to implement agricultural production plans. The assumption behind these efforts was that many farmers faced liquidity constraints that limited their ability to make farm investments and to use additional modern inputs. Relaxing these constraints by providing them with loans, therefore, was thought to be an easy way of stimulating farm investment, boosting the use of modern inputs, and augmenting farm production. Subsidies play an important role in directed credit and are, perhaps, its distinguishing characteristic. These subsidies can take the form of concessional credit. World-wide, the switch from directed credit to financial market development is only partial.

In many countries, the Governments have tried to increase the amount of money available for investment in agriculture by introducing regulations affecting urban-based commercial banks. In these cases, banks that are normally not involved in agricultural lending are required by law to lend a fixed quota of their total loans to the agricultural sector. Either they have to allocate this fixed share of their portfolio directly in the sector or indirectly through specialised banks which on-lend these compulsory funds to the final borrower. In some cases shortfalls of commercial banks, which were not able to lend the required amount directly to the final borrower, constitute a considerable part of agricultural development banks resources (*e.g.,* the Agricultural Bank of Iran and the Bank for Agriculture and Agricultural Co-operatives, BAAC, in Thailand in the past). Many Asian countries established portfolio allocation targets for commercial banks. In Iran and the Philippines, the target of credit allocations in the agricultural sector was set at 25 per cent, in Thailand at 20 per cent.

Directed agricultural credit programmes continue to play a strong role in some developing countries, such as the Philippines. However, in countries such as Chile, El Salvador, Indonesia, Peru, and Uganda, only a few remnants of the old directed credit approach remain. In many other countries the conversion to the new approach has been less complete. Typically, partial conversions involve interest rate deregulation and a reduction of subsidies and fewer facilities in central banks providing concessionary funds to lenders.

Since the late 1980s there has been a significant shift in the approach to agricultural and rural development from that of a strategy that was predominantly supply-led towards an approach that was more market-oriented with the aim of developing rural financial systems that were sustainable in the long run. However, often, in the formative years, its implementation had resulted in the decline of institutional credit to agriculture as most banks neither had the rural branch network nor the agricultural lending expertise to serve small farmer clients. This has resulted in agricultural credit still being heavily dependent on informal, non-institutional sources.

References :

Coleman, W.D. and Wyn P. Grant. 1998. "Policy Convergence and Policy Feedback: Agricultural Finance Policies in a Globalizing Era". European Journal of Political Research, Vol. 34, No.2, pp. 225-47.

Klien Brigette, Meyer Richard, Hanning Alfred, Burnett Jill and Ficbig Michael. 1999. "Better Practices in Agriculture Lending." Agricultural Finance Revisited No.3, FAO, December.

commercial banks' credit to agriculture expanded rapidly in the early 1970s and the 1980s. Commercial banks' credit to agriculture exhibited sluggish growth in the 1990s. However, the share of agricultural credit in total credit outstanding of SCBs showed an upturn beginning from end-March 2002, increasing from 9.8 per cent in 2002, to 10.9 per cent in 2004, to 11.4 per cent in 2006 and 11.8 per cent in 2007. Bank credit to agriculture increased sharply from 2003-04 due to the implementation of the Government policy of doubling agricultural credit and various other initiatives taken by the Reserve Bank. As a result, credit intensity of agriculture from institutional sources increased significantly from 11.3 per cent in 2000-01, to 16.3 per cent in 2003-04 and further to 31.0 per cent in 2006-07.

Box VI.6
Agriculture Credit – An International Perspective of Successful Experiences

Bank Rakyat Indonesia (BRI) is a state-owned foreign exchange commercial bank in Indonesia established with the aim of development of the agricultural sector. BRI had almost universal coverage of the country and the depth of its coverage increased with the establishment of the BRI-Unit Desai (UD), which came into existence in 1984 and as a successor to BIMAS (Mass Guidance) programme of supplying directed credit for rice cultivation. With the active backing of the Government, the BIMAS program branch units were restructured to be the Unit Desai System of BRI. Each BRI-UD was given a mandate to provide credit to rural areas on a self-sustaining basis. BRI-UD catered exclusively to micro and small customers in rural areas with the aim of running it on a commercially viable basis without any support by means of subsidy from the Government. BRI-UD became profitable within a few years of its inception and has hence become a global leader in rural financial intermediation (Yaron *et al.*, 1997). Hence, Unit Desai system of BIMAS regime, which essentially focused on directed agricultural credit, was transformed into a broad-based rural credit institution under BRI, operating with positive lending rates, sufficient to cover operational costs and providing wide ranging financial services to the rural poor (Yaron *et al.*, 1997). The organisation of BRI-UD enjoys a considerable degree of autonomy from its parent concern, the BRI, and is highly decentralised in its operations. The stable macroeconomic environment up to 1997 has been one of the major factors for the rapid growth of BRI-UD (Meyer and Nagarajan, 2000). High interest rate policy and high spreads between deposits and loans have been the other major factors in the success of BRI-UD. It helped the bank to cover the costs of servicing small loans and deposits and subsequently enabled the bank to depend less on subsidy for daily operations. Hence, even though the very small deposits earn no interest, the availability of well-designed and attractive saving products were instrumental in the high level of coverage of rural poor by the BRI-UD (Yaron *et al.*, 1997).

The Bank for Agriculture and Agricultural Cooperatives (BAAC), a Government owned institution, in Thailand is a pioneering example among rural agricultural finance institutions. The BAAC was constituted to provide credit exclusively to the agricultural sector and replaced the Bank of Cooperatives. BAAC provides credit both directly and through agriculture cooperatives and farmers' associations at interest rates below the market rate. However, since 1999, as part of efforts at reforming the Bank's interest rate policy BAAC started to follow a policy of charging a minimum lending rate, irrespective of the loan size and borrowers with good performance and track record were given preferential interest rates (BAAC, 2004). Commercial banks that are unable to meet the statutory minimum lending of 20 per cent of their funds to agriculture are required to park their funds with BAAC and the administrative cost of maintaining these funds is borne by the commercial banks.

Since 1998, BAAC has been following a policy of decentralisation of its banking operations resulting in a substantial increase in the number of field offices and branches. Each BAAC branch since 1994 has been organised as a profit centre and return on assets (ROA) is now taken as a major yardstick for branch performance. Significantly, the portfolio of loans of BAAC is predominantly long-term in nature and BAAC has an unparalleled coverage of around 92 per cent of total farm households in Thailand (BAAC, 2004). Of late, BAAC has been diversifying its operations to become a rural bank offering a host of services from its traditional role of an agricultural lending bank. Successful human resource management has been identified as the key to BAAC's success coupled with the stress on financial sustainability and a robust management information system (Murakai *et al.,* 1998).

References:

BAAC . 2004. "How Can Public Bank Contribute to Outreach in Rural Areas?" Paper presented by Mr. Supachai Sathakarn, BAAC Senior Vice-President at Regional Symposium of The 48th Asia-Pacific Rural and Agricultural Credit Association(APRACA) Ex-Com Meeting, 10 October 2004, Tehran, Iran.

Meyer, Richard. L. and Geetha Nagarajan .2000."Study of Rural Asia: Volume 3: Rural Financial Markets in Asia: Policies Paradigms, and Performance." Asian Development Bank, published by Oxford University Press for ADB.

Muraki, Tetsutaro *et al.,* 1998. "The Thai Bank for Agriculture and Agricultural Cooperatives". Case Studies in Microfinance, Sustainable Banking with the Poor, World Bank, Asia Series.

Yaron, Jacob *et al.,* 1997. "Rural Finance: Issues, Design and Best Practices." Environmentally and Socially Sustainable Development Studies and Monographs Series, No. 14, Rural Development, World Bank.

6.61 Notwithstanding the recent improvement in the extension of credit to agriculture some disconcerting features were also noticed. First, the share of long-term loans in total agricultural credit declined during the 1990s as well as the current decade. Both demand side as well as supply side factors led to this decline. Second, the share of marginal farmers in direct finance to farmers, in terms of loans disbursed and number of loan accounts, showed little perceptible improvement. Third, the share of small borrowal accounts (up to Rs.2 lakh) also declined during the current decade even after adjusting for inflation.

6.62 An antiquated legal framework and outdated tenancy laws have hampered the flow of credit and development of strong and efficient agricultural credit institutions. Banks, on their part, need to make a better analysis on where the risks are in the extension of agricultural credit, and then find market-oriented solutions for mitigating such risks. Banks need to adopt a more specialised approach as between different agricultural sectors and regions in order to achieve a better understanding of agricultural credit needs and risks on a disaggregated basis. A comparison of commercial bank credit to agriculture in India with that of other countries shows that bank credit to agriculture as percentage of total bank credit in India was on the higher side. However, credit intensity of agriculture in highly commercialised agricultural systems such as New Zealand, Australia and the UK, among others, was significantly higher than that in India. A review of the cross-country experiences suggests that the absence of effective credit-delivery systems and lack of adequate credit absorptive capacity of the rural population are the two major factors that hamper the smooth flow of credit to agriculture. Till the 1980s, several developing countries followed largely 'supply-side' oriented directed credit programmes. However, owing to the disappointing results of supply-led approach, agriculture and rural banking institutions in some countries such as Indonesia and Thailand have moved on to a demand-centric approach under which stress is on a combination of attractive savings and loan products suited to meet the specific needs of the rural poor coupled with the efficient risk management practices. This concept also emphasises viability of banking institutions.

V. CREDIT TO INDUSTRY

6.63 The banking system in India has been actively involved in financing various sectors of the economy, of which, financing of industry, in general, and SMEs, in particular, has been of high significance. Banks have, historically, financed short-term working capital requirements of industry, while long-term funding requirements were met by development finance institutions (DFIs), the initiation of which dates back to as early as 1947 when the Industrial Finance Corporation of India was established exclusively to extend term loans to industry. This was followed by the establishment of several DFIs, both in public and private sectors. However, with the initiation of financial sector reforms in the early 1990s to promote a competitive environment in the financial sector to enhance the allocative efficiency of resources, the industrial finance structure has changed with the conversion of two major DFIs into banks.

6.64 The compound annual growth of credit by scheduled commercial banks to industry, which grew by 17.4 per cent during the 1980s, decelerated to around 15.4 per cent during the 1990s. In the current decade, the credit to industry grew at a moderate pace up to 2003-04, but accelerated sharply to 33.5 per cent in 2004-05 and remained high at 31.0 per cent in 2006-07 (refer Table 6.1).

6.65 The overall deceleration in bank credit to industry in the 1990s was on account of industry's increased reliance on other sources of funding, especially the equity market in the first half of the 1990s. However, bank credit to industry accelerated in the current decade (2000-01 to 2005-06) even as the corporate sector reduced its reliance on the external sources. The share of internal sources, which averaged 34.1 per cent during 1985-86 to 1990-91, increased to 56.1 per cent during 2001-02 to 2005-06. Within external sources, the share of bank credit increased sharply. As the economy develops, large corporates are in a position to raise resources from the domestic and international capital markets. It is, therefore, natural that the corporates reduce their dependence on the banking sector. This trend, observed in the 1990s, was reversed in the current decade (Table 6.8).

6.66 The share of credit to industry in total bank credit declined over the years. Also over the years, the share of industry in total GDP declined. As a result, credit intensity of industry increased in recent years. One of the reasons for increased credit intensity was increased dependence of corporates on banks for funding their medium to long-term requirements. The industrial sector accounted for 53.0 per cent of total bank credit in 1990-91 as against its share of 22.0 per cent in the GDP. However, by end-March 2007, the share of bank credit to industry declined sharply to 36.2 per cent, while its share in GDP declined marginally to 20 per cent. As a result, credit intensity of industry (credit to industry as percentage of sectoral GDP) increased from 55.7 per cent in 1990-91 to 90.0 per cent in 2006-07 (Chart VI.19).

6.67 With the conversion of two major DFIs into banks in the first half of the 2000s, banks increasingly stepped up the medium to long-term funding requirements of industry (including infrastructure) (RBI, 2007a). Accordingly, in recent years, the

Table 6.8: Pattern of Sources of Funds of Indian Corporates

(Per cent)

Item	1985-86 to 1990-91	1991-92 to 2000-01	1992-93 to 1996-97	1997-98 to 2000-01	2001-02 to 2005-06
1	2	3	4	5	6
1. Internal Sources	**34.1**	**35.7**	**31.3**	**43.1**	**56.1**
2. External Sources (a+b+c)	**65.9**	**64.3**	**68.7**	**56.9**	**43.9**
a) Equity capital	7.1	16.2	20.6	12.9	10.9
b) Borrowings	36.2	32.2	33.3	28.6	13.8
i) Debentures	10.3	6.2	5.2	6.1	-2.9
ii) From Banks	12.7	10.0	10.7	9.4	21.5
iii) From FIs	8.4	9.5	8.3	9.8	-5.1
iv) Others*	4.8	6.5	9.1	3.3	0.3
c) Trade dues & other current liabilities	22.6	15.9	14.8	15.4	19.2
Total (1+2)	**100**	**100**	**100**	**100**	**100**

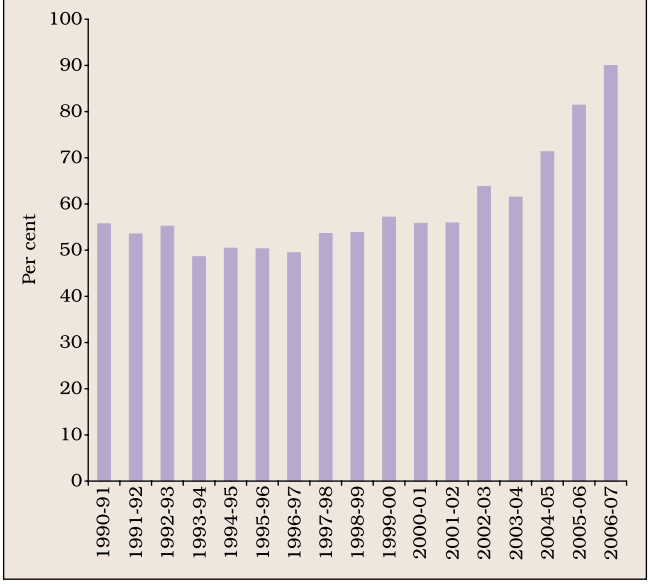
*: Others includes borrowing from foreign institutional agencies, Government and semi-Government bodies, companies, deferred payments and public deposits.

Note : Data pertain to non-Government non-financial public limited companies.

Source : Report on Currency and Finance 1998-99, RBI for data up to 1997-98 and articles on"Finances of Public Limited Companies", RBI Bulletin (various issues) for subsequent years.

proportion of long-term credit extended by the SCBs to industry increased sharply from 11.6 per cent at end-March 1995 to 44.1 per cent by end-March 2007

Chart VI.19: Credit Intensity of Industry



(Table 6.9). As a result, the share of short-term loans to industry in total short-term loans by banks declined between 1995 and 2007, while that of medium and long-term loans increased (Table 6.10).

6.68 With the development of alternative sources of funds, the reliance of industry on commercial banks for meeting their credit requirements declines, as alluded to earlier. A survey of select countries shows that the share of bank credit to industry has declined

Table 6.9: Type of Credit to Industry by Banks

(Amount in Rupees crore)

End-March	Short-Term*		Medium-Term		Long-Term		Total Credit to Industry
	Amount	Percentage Share in Total Credit to Industry	Amount	Percentage Share in Total Credit to Industry	Amount	Percentage Share in Total Credit to Industry	Amount
1	2	3	4	5	6	7	8
1995	77,134	82.5	5,438	5.8	10,874	11.6	93,446
1996	97,809	81.7	6,620	5.5	15,273	12.8	1,19,702
1997	1,09,666	79.6	8,136	5.9	19,988	14.5	1,37,790
1998	1,23,408	78.0	10,579	6.7	24,261	15.3	1,58,248
1999	1,36,487	76.1	10,660	5.9	32,151	17.9	1,79,298
2000	1,52,997	74.6	13,299	6.5	38,778	18.9	2,05,074
2001	1,70,114	74.8	16,067	7.1	41,341	18.2	2,27,522
2002	1,65,828	63.0	22,314	8.5	74,910	28.5	2,63,052
2003	1,79,687	59.5	22,366	7.4	99,853	33.1	3,01,907
2004	1,89,917	57.9	32,188	9.8	1,06,084	32.3	3,28,189
2005	2,29,672	52.4	46,535	10.6	1,62,296	37.0	4,38,503
2006	2,68,138	48.2	58,018	10.4	2,30,202	41.4	5,56,357
2007	3,36,958	46.1	71,865	9.8	3,22,335	44.1	7,31,157

***:** Short-term credit includes cash credit, overdraft, demand loans, packing credit, export trade bills purchased and discounted, export trade bills advanced against, advances against export cash incentives and duty drawback claims, inland bills purchased and discounted (trade and others), advances against import bills and foreign currency cheques/TCs/DDs/TTs/MTs purchased.

Source: Basic Statistical Returns of Scheduled Commercial Banks in India, various issues, Reserve Bank of India.

Table 6.10: The Share of Credit to Industry in Total Credit – Component-wise

(Amount in Rupees crore)

End-March	Short-Term Loans to Industry		Medium-Term Loans to Industry		Long-Term Loans to Industry	
	Amount	Share in Total Short Term Loans (Per cent)	Amount	Share in Total Medium Term Loans (Per cent)	Amount	Share in Total Long Term Loans (Per cent)
1	2	3	4	5	6	7
1997	1,09,666	64.6	8,136	32.4	19,988	38.5
1998	1,23,408	63.3	10,578	32.8	24,261	39.3
1999	1,36,487	66.0	10,660	40.1	32,151	52.8
2000	1,52,997	61.4	13,299	44.5	38,778	49.6
2001	1,70,114	57.1	16,067	42.9	41,341	42.8
2002	1,65,828	51.1	22,314	42.5	74,910	48.9
2003	1,79,687	52.0	22,366	39.7	99,853	47.7
2004	1,89,917	51.1	32,188	41.0	1,06,084	39.7
2005	2,29,672	53.6	46,535	37.8	1,62,296	40.5
2006	2,68,138	51.5	58,018	36.6	2,30,202	39.3
2007	3,36,958	51.5	71,865	34.1	3,22,335	40.1

Source : Basic Statistical Returns of Scheduled Commercial Banks in India, various issues, Reserve Bank of India.

since 1991 in all countries in the sample studied, barring Thailand in which it increased marginally. Significantly, the share of credit to industry in India in 2007 was the highest among all countries (Table 6.11). This was despite the fact that the share of the industrial sector in GDP in these countries was significantly higher than that of India. This suggests that corporates are still heavily dependent on the banking sector in India in comparison with other countries. The dependence increases further if banks' support to industry in the form of non-traditional investments (investment in shares/debentures) is also taken into account. For instance, banks' investment in the instruments of commercial papers, corporate bonds, equities increased during the second half of the 1990s, although such investments declined somewhat from 2000-01 onwards.

6.69 A cross country survey revealed that credit intensity of industry (industrial credit to industrial GDP ratio) in India was the highest among the select countries studied. Also, in contrast to most other countries, credit intensity of industry in India increased significantly in recent years (Table 6.12).

Bank Lending to Small and Medium Enterprises (SMEs)

6.70 SMEs constitute an important segment of the industrial and services sectors of India due to their growth potential, employment generation capacity, export generation and their role as seedbed to new entrepreneurship. The contribution of SMEs in the Indian economic development has been immense. Their share was over 40 per cent of total value added in the economy. It is significant to note that about 33 per cent of total exports are generated by small scale industries (SSIs).

6.71 The development of the small scale sector has been an important plank of India's industrial policy. SSIs in India have been given a distinct identity and the Government has accorded high priority to this sector on account of the vital role it plays in balanced and sustainable economic growth. SMEs are typically much more informationally opaque than large corporations because they often do not have certified audited financial statements to yield credible financial information on a regular basis. Moreover, these firms usually do not have publicly traded equity or debt, yielding no market prices or

Table 6.11: Commercial Bank Credit to Industry: A Cross-Country Survey (Share in Total Bank Credit)

(Per cent)

Country	1991	1995	2000	2001	2002	2003	2004	2005	2006	2007
1	2	3	4	5	6	7	8	9	10	11
Australia	..	20.0	18.5	17.5	17.3	16.4	15.4	15.2	14.7	13.1
Brazil	20.9	23.8	26.2	29.4	30.2	27.9	25.0	22.9	22.5	22.4
Germany	..	34.0	15.5	13.9	11.5	10.3	8.8	7.7	7.2	6.9
India	**47.6**	**45.6**	**46.5**	**43.9**	**41.4**	**41.0**	**38.0**	**38.8**	**37.4**	**38.1**
Indonesia	36.5	38.6	44.7	42.9	37.4	32.1	30.9	29.6	29.1	27.4
Malaysia	..	31.4	29.8	28.9	26.9	25.6	23.4	19.8	16.9	..
New Zealand	7.1	6.7	5.7	5.9	4.7	4.3	3.7	4.2	4.2	4.1
Thailand	29.8	29.5	32.3	30.3	29.7	30.5	33.0	32.1	32.2	31.1
United Kingdom	13.1	10.3	7.1	6.6	5.6	4.5	4.1	4.3	4.0	3.9
United States	27.1	25.3	27.6	25.2	21.9	19.6	18.5	18.9	19.0	20.7

.. : Not available.

Sources: 1. Central Bank websites of respective countries.
2. Basic Statistical Returns of Scheduled Commercial Banks in India, various issues, Reserve Bank of India.

Table 6.12: Commercial Bank Credit Intensity* of the Industrial Sector: A Survey of Select Countries

(Per cent)

Country	1991	1995	2000	2001	2002	2003	2004	2005	2006
1	2	3	4	5	6	7	8	9	10
Australia	..	23.9	30.2	28.2	27.0	26.2	24.9	25.0	..
Brazil	..	35.4	34.9	38.5	33.9	30.5	27.7	29.3	31.9
Germany	23.4	16.1	15.2	14.8	13.5	12.5	11.0	9.9	9.7
India	**55.7**	**50.4**	**57.1**	**55.8**	**55.9**	**63.8**	**61.5**	**70.7**	**81.4**
Indonesia	40.8	47.6	18.8	16.7	16.4	16.0	16.7	15.7	14.6
Malaysia	..	65.5	50.8	56.8	51.7	45.2	36.8	35.1	32.9
New Zealand	25.1	27.1	29.9	32.4	26.2	..	..	..	..
Thailand	55.4	68.8	70.7	59.8	59.0	56.8	61.2	58.4	54.4
United Kingdom	35.9	26.4	31.2	31.0	28.7	25.0	24.1	26.8	26.2
United States	38.0	36.9	47.9	45.4	42.0	38.9	37.8	38.7	..

* : Credit Intensity is defined as credit to Industry as percentage of industrial GDP. .. : Not available.

Sources: 1. World Development Indicators Online Database.
2. Handbook of Statistics on the Indian Economy, 2006-07.

public ratings that might suggest their quality (Berger and Frame, 2005). Modern development theories increasingly emphasise the key role of inadequate access to finance which leads to slower growth of these firms (World Bank, 2008). The major problems faced by the SSI sector relates to non-availability of loan without collaterals, delay in getting the loan, high cost of funds, delayed payments, marketing problems and sickness among others. Lending to the SME sector, therefore, has necessitated some kind of institutions in many countries.

6.72 In India, an enunciation of the need to channel the flow of credit to certain sectors, in the larger interest of the economy, can be traced back to the Reserve Bank's credit policy for the year 1967-68. Subsequently, the nationalisation of major banks in 1969 signalled the need for redefining the lending priorities. Thus, the concept of priority sector lending was evolved to ensure that assistance from the banking system flowed in an increasing measure to the vital sectors of the economy and according to national priorities (RBI, 2007b). In the 40 per cent mandated target for banks for the 'priority sector', the SSI sector was also included.

6.73 There have been several disconcerting features of credit flow to the small scale industries sector in recent years as is evident from the various indicators. First, the average annual growth of SSI advances decelerated to 7.2 per cent during 2000-2005 from 13.1 per cent during the 1990s. The growth rate picked-up to 22.3 per cent in 2005-06 and 29.2 per cent in 2006-07. The SSI sector's share in credit to industry declined significantly, which itself has also declined. As a result, the share of credit to the SSI sector in total credit declined sharply (Table 6.13). Second, the share of the SSI sector in total priority sector advances declined steadily from 43.7 per cent at end-March 1998 to 17.9 per cent at end-March 2006. It picked up marginally to 18.6 per cent at end March-2007. Though the decline in the share of the SSI sector in total priority sector advances was across the bank groups, it was much sharper in the case of private sector banks; from 55.4 per cent as at end-March 1996 to 43.6 per cent as at end-March 2000 and to 9.1 per cent as at end-March 2007. During the same period, the share was 42.4 per cent, 36.1 per cent and 20.1 per cent, respectively, for public sector banks. Inclusion of new sectors in the priority sector domain could be one of the reasons for the drastic fall in the share of the SSI sector in total priority sector lending. Third, the share of credit to the SSI sector in non-food bank credit declined from 15.1 per cent in 1990-91 to 6.5 per cent in 2006-07. SSI advances by public sector banks as percentage of net bank credit declined to 8.0 per cent at end-March 2007 as compared with 8.1 per cent at end-March 2006 and 9.5 per cent at end March 2005. In the case of private banks, it declined to 3.9 per cent from 4.2 per cent and 5.4 per cent, respectively, during the same time period. Fourth, although credit growth to the SSI sector accelerated in 2004-05 to 2006-07, the share of SSI credit in total non-food gross bank credit and in total credit to the industrial sector remained almost stagnant (Chart VI.20). Fifth, the number of loan accounts of the SSI sector with scheduled commercial banks declined from 5.8 million at end-March 1992 to 2.2 million at end-March 2006 and further to 1.9 million at end-March 2007.

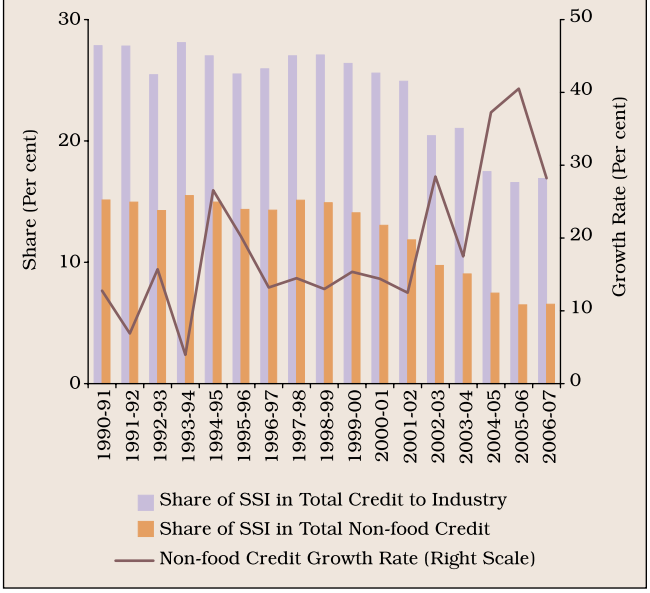
Table 6.13: Bank Credit to Industry and the SSI Sector*

Year	Growth Rate (Per cent)			Share in Total Non-Food Bank Credit		Share of Credit to the SSI in Total Credit to Industry (Per cent)
	Total Non-Food Bank Credit	Credit to Industry	Credit to the SSI Sector	Credit to Industry	Credit to the SSI Sector	
1	2	3	4	5	6	7
1991	12.8	14.7	10.5	54.3	15.1	27.9
1992	6.9	5.8	5.6	53.8	15.0	27.8
1993	15.7	20.6	10.3	56.0	14.3	25.5
1994	4.0	2.3	12.9	55.1	15.5	28.1
1995	26.6	27.1	22.2	55.4	15.0	27.0
1996	20.2	22.1	15.4	56.3	14.4	25.5
1997	13.2	10.9	12.7	55.1	14.3	25.9
1998	14.5	16.2	21.0	56.0	15.1	27.0
1999	13.0	11.2	11.4	55.0	14.9	27.1
2000	15.4	11.8	8.9	53.4	14.1	26.4
2001	14.4	9.3	6.0	51.0	13.0	25.6
2002	12.5	4.9	2.1	47.5	11.8	24.9
2003	28.4	28.8	5.6	47.7	9.7	20.4
2004	17.5	5.9	9.0	43.0	9.0	21.0
2005	37.3	36.4	13.3	42.7	7.5	17.5
2006	40.5	28.9	22.3	39.2	6.5	16.6
2007	28.2	26.7	29.2	38.7	6.5	16.9

* : Based on data as at end of March of respective years.
Source : Handbook of Statistics on the Indian Economy, 2006-07.

6.74 The main reason for the slowdown of credit to the SSI sector was its poor performance and consequent risk aversion by banks. The activity of the SSI sector slowed down significantly between 1997-98 and 2002-03 with the value of production growing at an average annual rate of 7.7 per cent as compared with 11.1 per cent in the 1980s. The poor performance of the SSI sector was also reflected in the significantly higher level of NPAs in this sector (Table 6.14). Banks, therefore, became somewhat risk averse and reduced their exposure to the SSI sector (RBI, 2007a).

Chart VI.20: Trends in Credit to the SSI Sector



6.75 In recent years (*i.e.*, from 2003-04 to 2006-07), the performance of the SSI sector has improved. Accordingly, NPAs in the SSI sector have also declined significantly. This was reflected in the improved flow of credit to the SSI sector during the period 2004-07. As a result, credit intensity of the SSI sector, after declining almost consistently between 1997-98 and 2004-05, increased somewhat in 2005-06 and 2006-07 (Chart VI.21). The credit to the SSI sector, to an extent, does not give a true picture as different banks appeared to have followed different definitions of the SSI sector. The definition of small and medium

Table 6.14: Gross NPAs of Scheduled Commercial Banks in the SSI Sector

(Per cent)

End-March	SSI Sector*	All Sectors**
1	2	3
2002	21.1	10.4
2003	18.9	8.8
2004	15.3	7.2
2005	11.8	5.2
2006	8.5	3.3
2007	5.5	2.5

* : Gross NPAs in the SSI sector as percentage of gross advances to the SSI sector.
**: Gross NPAs as percentage of gross advances to all sectors.
Source: Off-site Returns, Reserve Bank of India.

Chart VI.21: Credit Intensity of the SSI Sector

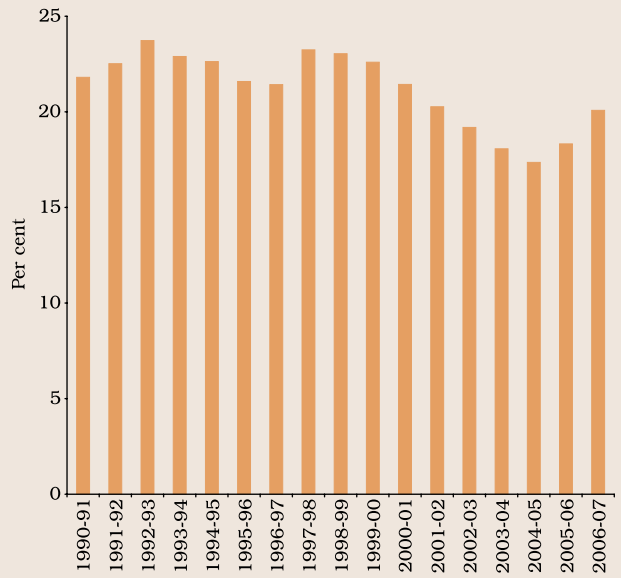
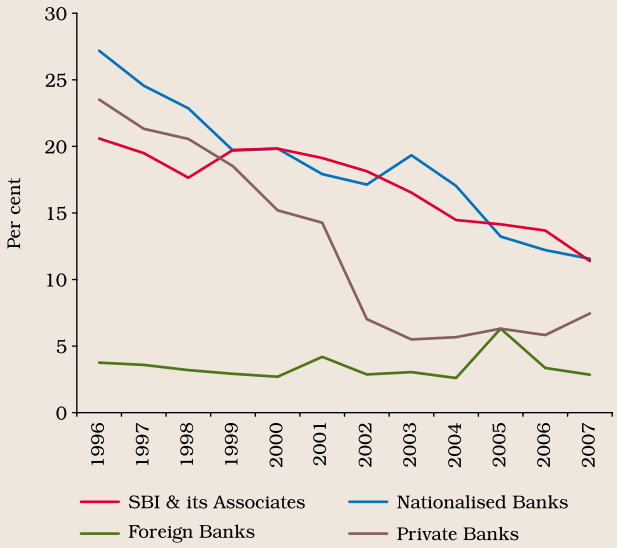


Chart VI.22: The Share of Credit to SMEs in Credit to Industry: Bank Group-wise (End-March)



enterprises has now been clearly laid down in the Micro, Small and Medium Enterprises Development Act, 2006. Therefore, it is expected that there would be an improvement in the data reporting and the proper assessment of credit to the SME sector.

6.76 The analysis of bank group-wise credit to SMEs revealed that credit disbursement from all bank groups, both as percentage of credit to industry and percentage of total credit, experienced a sharp decline during the period 1996-2007 (Table 6.15 and Chart VI.22). The share of the SME sector in credit to industry, which was 25.9 per cent at end-March 1997, declined to 16.9 per cent by end-March 2007. The decline was sharper in the SMEs' share in total bank credit. Though the decline was noticed across all bank groups, it was more pronounced in the case of private sector banks. Of all the bank groups, the share of the SME sector in credit to industry was the lowest in the case of foreign bank group (Chart VI.22).

Table 6.15: The Share of SME Credit in Total Credit (Bank Group-wise)

(Per cent)

End-March	SBI and its Associate Banks	Nationalised Banks	Foreign Banks	Private Banks
1	2	3	4	5
1996	10.5	12.6	2.4	9.8
1997	10.4	11.6	2.4	9.5
1998	9.7	10.4	2.0	9.7
1999	10.6	9.1	1.9	9.2
2000	10.0	8.6	1.6	7.6
2001	9.1	7.4	2.4	6.5
2002	7.1	6.3	1.5	4.1
2003	6.3	7.1	1.4	3.3
2004	5.6	6.3	1.1	2.4
2005	5.8	5.4	2.8	2.2
2006	5.5	4.8	1.4	1.8
2007	5.0	4.6	1.2	2.3

Source : Basic Statistical Returns of Scheduled Commercial Banks in India, various issues, Reserve Bank of India.

6.77 Growth in credit extended by scheduled commercial banks to industry, which had decelerated in the 1990s in comparison with the 1980s, accelerated in the current decade. This, to an extent, was due to increase in the share of medium and long-term loans. As a result, credit intensity of industry increased significantly in recent years. Notwithstanding the decline in the share of industry in the overall bank credit, it continued to rely heavily on the banking sector, which was one of the highest in select countries studied. Credit to the SSI sector decelerated sharply in the latter part of the 1990s and the initial years of the current decade. The credit growth to the SSI sector was particularly low between 1999-2000 and 2003-04. However, as a result of the efforts of the Reserve Bank and the Government, the credit growth to the SSI sector started picking up from 2004-05 and grew at a robust pace during 2006-07.

Issues in Lending to the SME Sector and the Measures Initiated

6.78 The institutional credit extended to SMEs has gone down in relation to credit to industry and other sectors as was borne out by the analysis earlier in this section. The problem on the supply side has

been the reluctance on the part of banks to lend to SMEs, except against securities or against hypothecations of plant and machinery that are disproportionate to the value of the loan. Other bottlenecks, according to a FICCI survey (2004), include delays in loan approval, sanction and disbursal, lack of information and transparency, centralisation of authority in bank headquarters and poor collateral security norms. These problems are reflected in the SMEs' share in non-food bank credit, which declined from 15.1 per cent at end-March 1991 to 6.5 per cent at end-March 2007. SMEs have historically faced significant difficulties in accessing funding for creditworthy projects. One of the most common complaints by the potential lenders is lack of reliable information about them (Box VI. 7).

6.79 The SMEs are generally proprietary concerns and this may have also impeded the smooth flow of institutional credit to SMEs. The share of proprietary concerns in the ownership of SMEs increased sharply from around 61.0 per cent in 1972-73 to around 95.8 per cent in 2001-02 as per the Third All-India Census of SSIs conducted in 2001-02. On the other hand, the share of partnership concerns declined from 35.0 per cent in 1972-73 to around 1.9 per cent in 2001-02 (Table 6.16). The proprietary concerns have limited credit history or only the credit history of their owners on the basis of which banks can determine their lending decisions. Therefore, the change in the ownership pattern appeared to have affected the access to credit by SMEs.

6.80 During the post-reform period, cost of funds for the SME sector also went down in line with the general decline in interest rates for various sectors of economy. Benchmark prime lending rate and interest rates charged to various sectors have tended to converge over the years (Chart VI.23). However, large corporates are able to negotiate fine rates with banks and are able to bring down their overall interest costs. In addition, large corporates have the option of accessing the domestic and international capital markets for funds. The burden of adjustment has, therefore, fallen on SMEs, which have limited access to funds. The high interest rates paid by SMEs may not always be in accordance with their risk profile (Mohan, 2004). It may be noted that in recent years there has been a decline in interest rates to the SME sector. This may be on account of policy initiatives taken and better assessment by the banks of the risks in this sector.

Box VI.7
Difficulties Faced by the Banking Sector in Extending Credit to SMEs

The difficulties faced by the banks in extending credit to SMEs mainly stem from informational opacity and lack of credit history. Unlike large corporations, small businesses are typically much more informationally opaque, because they often do not have certified audited financial statements to yield credible financial information on a regular basis. Also, these firms usually do not have publicly traded equity or debt, yielding no market prices or public ratings that might suggest their quality.

High-risk perception associated with small-scale sector stems from a number of factors such as weak financial strength, inability to provide adequate collateral and other factors. Inability to properly appraise the new projects, new firms and new activities by bankers often results in banks shunning a small borrower. To a greater extent, as the banks are not able to assess the actual or potential risks about the borrower from the SME sector, there is likelihood that banks may arrive at a wrong perception about the borrower.

Asymmetric information about the business prospects of small scale projects and financial standing of the small borrowers arises because small-scale borrowers generally do not have a well-documented credit history. As a result of asymmetric information and high-risk perception, banks rely heavily upon the collateral-based lending rather than cash-flow analysis while working with small-scale sector borrowers. Although there is a threshold up to which bankers should not insist on collateral, they seldom assume the risk involved in non-collateralised lending. The surveys conducted by the Reserve Bank revealed that many bank branches insisted on collaterals even for loans up to Rs.5 lakh.

Moral hazard problems are associated with the possibility of small scale sector diverting funds to alternative projects or they develop the propensity to take excessive risks. Also, owing to the small amounts of each loan, the aggregate costs of information gathering, due diligence, loan processing and monitoring are much higher than for loans to large corporate borrowers. Therefore, financial institutions charge relatively higher interest rates to small scale sector than to larger companies in order to compensate for the higher costs of information collection, the smaller volume of external financing and perceived greater credit risk.

Other reasons often stated by banks for the weak growth of SME credit are (i) the large number of unregistered enterprises, which require different lending and risk management techniques, processes, and skills; (ii) lack of a secured transactions law to regulate assignment and registry of movables; and (iii) the difficulty and high cost of registering property and enforcing contracts.

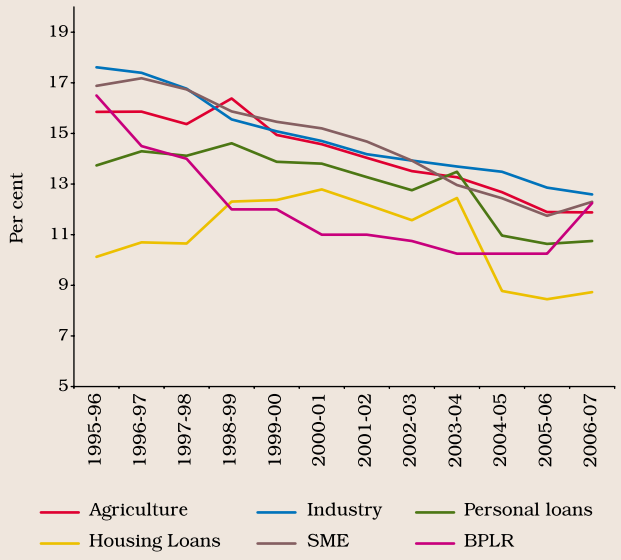
Table 6.16: Ownership Structure of SSIs

(Per cent)

Ownership Structure	First All-India Census of SSIs 1972-73	Second All-India Census of SSIs 1987-88	Manufacturing Enterprises Survey 1994-95	Third All-India Census of SSIs 2001-02
1	2	3	4	5
Proprietorship	61.0	80.5	97.7	95.8
Partnership	35.0	16.8	1.9	1.9
Co-operative	0.7	0.3	–	0.1
Limited Companies	3.0	2.1	–	0.7
Others	0.3	0.3	–	1.4
Not Reported	–	–	0.4	0.1
Total	**100**	**100**	**100**	**100**

– : Nil or negligible.

Chart VI.23: Weighted Average Interest Rates on Credit to Select Sectors and BPLR



6.81 The key issue in improving the credit flow to the SME sector is to enable the banking institutions to improve their credit assessment capabilities with regard to small scale enterprises so that they can distinguish adequately between good and bad credit. Small scale must not be equated with high risk. It, therefore, was considered necessary to undertake measures for smoothening the flow of credit to this sector. Accordingly, various policy initiatives were undertaken to address the issue of paucity of credit to SMEs (Box VI.8).

Box VI.8
Initiatives to Improve the Credit Flow to SMEs

Recognising the importance of the SME sector, the Government of India and the Reserve Bank had constituted several committees and working groups, *viz.,* Nayak Committee (1992), Kapoor Committee (1992), S. P. Gupta Working Group (2000), Ganguly Committee (2004) and Murthy Group (2005). These Committees/Groups have made several recommendations for improving the credit flow to the SME sector. On the recommendations of these Groups, several policy actions were taken.

In 2006, the Parliament enacted Micro, Small and Medium Enterprises Development (MSMED) Act, 2006. The Act lays down definition and framework for SMEs in India. The Act has removed distortions which create perverse incentive for small business to remain small and not move/graduate to medium sized firms, reaping economies of scale and contributing growth and employment.

The past approach based on preferential treatment of SSIs and targeted loan at subsidised interest rates is being changed. The artificial barriers to entry and regulated credit market are not suitable for optimal size and efficiency of SSIs. The Government has pruned a number of items from the list of products reserved for SSIs to infuse competition and provide incentive to small firms to grow organically and reap benefits of scale.

To strengthen the framework for tackling loan defaults and contract enforcement, the Parliament enacted the Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest (SARFAESI) Act, 2002.

As better information can directly increase the financing for SMEs by reducing the cost and risk arising from information asymmetries, the Parliament also enacted Credit Information Companies (Regulation) Act, 2005. The Act has strengthened the legal mechanism. The credit information companies can also be set up to collect, process and share credit information on the borrowers of the banks and financial institutions.

A debt restructuring mechanism for nursing of sick units in the SME sector and a one-time settlement (OTS) scheme for SME accounts in the books of banks as on March 31, 2004 were formulated and advised to all commercial banks and public sector banks, respectively, for implementation.

The Reserve Bank has constituted empowered committees at the Regional Offices to review the progress in SME financing and rehabilitation of sick SSI and SME units, and coordinate with other banks/financial institutions and the State Governments in removing bottlenecks, if any, to ensure smooth flow of credit to the sector. These regional level committees may decide the need to have similar committees at cluster/district levels.

Box VI.9
Lending to SMEs – Recent Initiatives taken by Banks in India - A Brief Survey

State Bank of India has adopted a cluster financing approach through its Project Uptech, where the units from similar industry are identified for process improvement. This means that units, which come forward to adopt innovations, get financial assistance for upgradation costs. ICICI Bank has introduced a simplified loan product, an unsecured loan up to Rs 25 lakh for the SME sector. This is ideal for promoters with big ideas and little collateral security. SMEs can also apply for loans through the bank's website now. Another service in the pipeline is the roping in of legal and taxation experts as channel partners whose services SME units could utilise.

Oriental Bank of Commerce (OBC) is in the process of setting up a specialised cell for the SME sector. Apart from processing and imparting loans for this sector, the cell would carry out marketing activity and follow up loan cases for customers of SMEs. The cells would be set up at all the 29 OBC regional centres across the country. Standard Chartered Bank has a separate business unit called Standard Chartered Investment & Loans Ltd. (SCILL) operating currently in 16 cities. The bank has drawn up a road map to extend SCILL's network to 60 cities. HSBC is offering mass-banking service through its 21 branches in 16 cities across the country. The minimum income level required for getting a loan from HSBC is just Rs 3,500 per month for salaried employees and Rs 10,000 per year for the self-employed. Understandably, risk management for this sector is a huge issue with banks. Credit Rating Information Services of India Ltd. (CRISIL) has stepped in to provide a rating service for the SME sector. According to this rating programme, SMEs would be rated on a scale of one to eight, with scale one indicating the highest credit quality and the scale eight, hinting at default possibilities. The ratings assigned to SMEs would also function as a self-improvement tool for them. SBI, ICICI Bank and Standard Chartered Bank have joined hands with the Small Industries Development Bank of India (SIDBI) and have floated a rating agency for the SME segment. The rating agency, Small and Medium Enterprises Rating Agency of India Limited (SMERA), will rate the company's overall strength; unlike most rating agencies whose core business are to rate debt instruments.

Source : SME Rating Agency of India Ltd. at http://www.smera.in

6.82 In the recent period, a number of initiatives have been taken by banks in India to improve the credit flow to the SME sector (Box VI.9).

6.83 With the introduction of Basel II capital norms, the question arises whether banks would tend to behave differently from the past. Literature amply suggests that internationally, banks responded to the change in capital ratios (Basel I) either by mere cosmetic changes in the form of reducing the total assets growth or by exploiting differences between capital as measured for regulatory purposes and the bank's true economic capital. Empirical studies also underline the fact that banks have responded to the change in regulations by reducing their risk exposure. This was done by perhaps refusing to make new loans, while allowing their loans to be repaid (Nachane *et al.*, 2001). Some studies conducted during the late 1980s and the 1990s concluded that supply of loans to the SME sector declined due to regulatory capital requirements (Nachane *et al.*, 2001). Berger and Udell (1994) and Wall and Peterson (1995) found that banks in US in the early 1990s, subject to a formal regulatory mandate to increase their capital ratios, reduced their loan portfolios significantly. However, the likely impact of Basel II norms on lending to the SME sector is not clear at this stage (Box VI.10).

Financing of SMEs – Cross-Country Experiences

6.84 The analysis of types and sources of financing and the policy approaches followed by different countries around the world suggests that the SMEs typically finance their operations quite differently from large corporations. SMEs do face severe problems in obtaining financial support from the organised sector in most of the EMEs. However, SMEs, still, both in developed and developing countries, depend on the banking system a great deal for their financing needs (Box VI.11).

6.85 While many country-level and microeconomic studies have assessed the importance of SMEs in the economic development and industrialisation process, lack of reliable cross-country data have impeded a rigorous cross-country analysis so far. However, various surveys of firms, *viz.,* the Regional Program on Enterprise Development (RPED) studies for sub-Saharan Africa in the 1990s, Business Environment and Enterprises Performance Surveys (BEEPS) for the transition economies, the World Business Environment Survey (WBES 1999-2000) and the Investment Climate Survey (ICS 2002) over the past 10 years have expanded the information available about financing patterns of and access constraints on small firms and even micro-enterprises

Box VI.10
Basel II and Lending to the SME Sector – Banks' Behaviour

Since most of SSI sector firms are proprietorship firms and run on family-based management, the SMEs generally have no or very short credit history which makes it difficult for the banks to accurately assess and rate the credit risk. Banks with an excellent data about their clients will be able to assess their risks more accurately and accordingly provide the capital. However, the basic rule will remain the same that higher the risk, lesser the banks' preference to lend to the sector if the banks are risk averse.

Under Basel II, banks will have the option of calculating their credit risk (and, hence, minimum capital requirements) either using a standardised approach or an internal ratings based (IRB) approach. With respect to SME loans in particular, banks will also have the option of including their SME exposures as part of a retail portfolio (subject to certain conditions) or in a commercial portfolio. Depending on as to which option is chosen, the risk weighting attached to SME exposures will vary and, by implication, the amount of capital that a bank has to have will also vary.

A survey reported that larger banks that can afford to have sophisticated risk measurement techniques will have lower minimum capital requirements. Further, it pointed out that it is possible there may be a scope for increasing the supply of lending to SMEs and/or reduction in margins (as banks more closely align interest rates with economic cost). Those banks which successfully employ the IRB approach should, in theory, be better placed to avoid over-pricing good risks and under-pricing bad risks. It follows that there may, therefore, be some migration of higher risk SME loans to those banks which do not adopt the IRB approach and which, by implication, rely on less sophisticated and more standardised measures of risk.

However, unless a detailed study is conducted to understand the potential impact on the banks' lending of Basel II, it would be difficult to indicate as to what would be the impact of Basel II norms on lending to SME sector. It is necessary to work on to establish the relationship between the probability of default and the amount of capital that a bank must hold under the IRB approach. One more possibility is that the major banks may consider that they are pricing the loans according to the true risk of exposure. Therefore, any enhanced sensitivity of regulatory capital requirements to risk may be doing nothing more than aligning the regulatory environment with current practice.

The introduction of Basel II is not being perceived by the banks as an impediment to lending to SMEs (or other customer groups) and, indeed, may be being perceived as ratifying current practice. The small size of SMEs means that the information asymmetry problem may be more acute for this segment of the market. In the SME market, the use of collateral is a particularly important feature and therefore, the likelihood of a decline in the flow of credit to SMEs on a large scale is not likely.

In the Indian context, a number of committee reports and studies have pointed out that there are some specific segments of the SME market where banks are reluctant to provide loans. This is more because banks perceive them as high risk areas. This perception may or may not be true in the actual scenario. In the backdrop of the new Basel II agreement, banks have been stated to be changing their behaviour and concentrating more towards assessing the relative riskiness of their clients. To estimate the risk of their client firms, banks need more information than before. SMEs that can prove that they are stable can expect to benefit with lower interest rates and better access to loans.

References:

Ghosh, Saibal, D M Nachane, Partha Ray. 2004. "Behaviour of Bank Capital: Issues and Evidence from India". *EPW,* March.

Sen, Sunanda, Soumya Kanti Ghosh. 2005. "Basel Norms, Indian Banking Sector and Impact on Credit to SMEs and the Poor". *EPW*, March.

across countries. These surveys did show that more than 40 per cent of large firms use external finance, in comparison with just over 20 per cent small firms. For financing new investments also, small firms use only 15 per cent from external sources, while large firms finance 30 per cent from external finance. Beck T. and Asli Demirguc-Kunt (2005) observed that size, ownership and age of the firms were the most reliable predictors of firms' financing. They found that older, larger and foreign-owned firms report lower financing obstacles. From this follows the corollary that smaller and relatively newer firms face considerably higher financing obstacles. Data also show that small firms finance a smaller share of their investment with formal sources of external finance (Beck *et al.,* 2003). Globally, while finance is identified as the second leading constraint by SMEs, for large enterprises, it ranks fourth (Batra *et al.,* 2002). Internal funds were the main source of financing for SMEs across the countries.

6.86 As per the WBES Survey, the financing constraints faced by the percentage of firms were lower in OECD countries and East Africa and China as compared with other regions. While maximum percentage of firms in Latin America, South Asia and Africa rated high interest rates as the major constraint, firms in East Africa and China did not face this as a major constraint. Lack of access to long-term loans

Box VI.11
Financing of SMEs: Experiences of Advanced and Emerging Economies

Developed countries have larger SME sectors in manufacturing in terms of their contribution to total employment and to GDP (World Bank, 2005). Studies also show that SMEs in developed countries have better access to institutional finance as compared to those in developing countries. Even in their early stages of development, institutional credit support for SMEs was robust in the developed countries. Cull, *et al.* (2005) explored the financing patterns of SMEs in the core North Atlantic Economies during the 19th and early 20th centuries and they found that the main institutions associated with modern finance – banks and securities markets – were of marginal significance to SMEs, but an impressive variety of local institutions emerged to cater to their financing requirements. These intermediaries took different forms. For instance, they functioned as notaries in France and cooperative institutions in Germany. Significantly, most of these institutions were demand driven and were established through private initiatives. While governments played a little role in creating these institutions, they allowed their emergence through a generally permissive regulatory environment.

In the US, depository institutions – commercial banks, thrift institutions (savings bank and savings associations) and credit unions – and non depository institutions* are the suppliers of financial services to SMEs. In 2003, depository institutions were used by 96 per cent of all surveyed firms - the same as was in 1998 (Fed Survey, 2006). Among depository institutions, use of commercial banks was highest, *i.e.,* 87 per cent. The percentage of firms using commercial banks increases as firm size increases.

European Network for Social and Economic Research (ENSR) Enterprise Survey 2003 and SME Access to Finance Survey 2005 analysed the financial access and constraints faced by SMEs in European Union. According to the Survey 2003, 13 per cent of the SMEs considered access to finance as a major barrier, though the majority considered lack of skilled labour as major constraint. However, majority of European SMEs depend on bank financing and there seems to be a lack of alternative financial source. In most of the member states these enterprises use bank finance, *i.e.,* overdrafts and bank loans. But leasing also constitutes an important source of finance. In Spain, France, Luxembourg, the Netherlands and Portugal, leasing is used more often than overdrafts. Factoring is also an important source in France.

The funding of SMEs has a number of specific features. In France, SMEs generally rely heavily on bank financing, whereas large firms can directly access capital markets. According to ENSR Enterprises Survey 2003, smaller firms use relatively more bank financing than larger enterprises. Approximately 80 per cent of all enterprises have at least one credit line. Significant differences in the use of bank credit persist among countries. In some countries such as Ireland and Iceland, almost every SME (95 per cent and more) has one or more credit lines, whereas in other countries such as Finland, this applies to about 70 per cent of SMEs.

Often the problem of inadequate information is mentioned as one of main aspects hampering bank finance to SMEs, even among the developed countries. The balance sheet and profit and loss account (60 per cent) are the most commonly requested documents by banks.

Lending to SMEs is by and large based on collateral than it is for larger enterprises. The most common requirement for bank financing even among the developed countries are collateral. The real estate is most common collateral, followed by personal/private savings book. Inventories are generally not accepted as collateral. In recent years, SMEs' access to bank financing has become reasonably easy.

Among the EMEs, Malaysia is one of the leading economies in the promotion and development of SMEs. In Malaysia, most of the SMEs use their own internally generated funds and funds sourced from friends and family members to finance their business operations. In contrast to 50 per cent large companies, only 16 per cent of SMEs indicated their reliance on financing from financial institutions (commercial banks and development finance institutions). Indeed only 10 per cent of micro enterprises depend on external source of finance. According to the Census of Establishment and Enterprises 2005, lack of collateral was the most important obstacle faced by SMEs while seeking financing from banking institutions. This was followed by insufficient loan documentation and lack of financial track record, as well as financial viability. The main types of credit facilities utilised by SMEs are short-term and long-term loans, as well as leasing. Malaysia has set up dedicated development finance institutions to accelerate the growth of strategic sectors identified by the government, *viz.,* SME Bank, EXIM Bank, Malayasian Industrial Development Finance (MIDF), Bank Pertanian Malaysia and Bank Pembabgunan Malaysia Berhad for high technology and Information Communication Technology (ICT) companies. Besides there is Credit Guarantee Corporation Malaysia Berhad (CGC) as Malaysia's primary guarantee provider to SMEs with insufficient collateral to obtain credit from banking institutions.

In Indonesia more than 70 per cent of micro, small and medium enterprises (MSMEs) are inherited from parents. More than 70 per cent of business capital of micro-enterprises and 65 per cent of capital for small-scale businesses is raised through self-financing. Although it is claimed that there is need for finance but not all MSMEs submit for credit applications. Reasons cited include lack of collateral (for micro-enterprises) and high interest rate (for small and medium enterprises).

References:

Batra, Geeta, Daniel Kaufmann, Andrew H. W. Stone. 2002. "Voices of the Firms 2000: Investment Climate and the Governance Findings of the World Business Environment Survey." The World Bank Group.

Beck Thorsten, Asli Demirguc-Kunt, 2005. "Small and Medium-Size Enterprises: Overcoming Growth Constraints." The World Bank Group, February.

Cull Robert, Lance E.Davis, Naomi R. Lamoreaux, Jean-Laurent Rosenthal, 2005, "Historical Financing of Small and Medium-Sized Enterprises". NBER Working Paper Series, October.

* Non-depositories consist of finance companies and factors, brokerage and pension firms, leasing companies and insurance and mortgage companies, credit cards and cheque processing firms, government sources, family and individuals, business firms, suppliers and venture capital funds, among others.

was another major financing constraint cited by more than 50 per cent of the surveyed firms in all the regions, except OECD countries and East Africa and China. Collateral requirement also acted as a major financing constraint in almost all the regions (Table 6.17).

6.87 A cross country analysis of the investment financing pattern of SMEs conducted in 2000 shows that firms in Latin American countries used external finances ranging between 43 per cent in Argentina to 57 per cent in Chile. Among the external sources of financing, commercial banks had a predominant share in most of the emerging economies, except China. In the case of developed countries, equity finance also constituted an important source of external finance (Table 6.18). In Poland and Germany, equity finance was considerably high at 27.6 per cent and 23.1 per cent, respectively. Informal sector's (moneylenders) share in financing varies from 5.9 per cent in China to zero per cent in Indonesia.

6.88 To sum up, various indicators, such as share of credit to the SSI sector in credit to industry and total credit, decline in credit intensity of the SSI sector, decline in SSI's share in the priority sector lending, indicate that policy initiatives to improve the flow of credit to the sector have not been very successful. There are many conventional explanations for tepid growth of credit to SMEs, *viz.,* lack of sufficient collateral, opacity in operations, dominance of proprietorship pattern of ownership and lack of credit history because most of the firms are young. Lack of appropriate collateral with the SMEs appears to be one of the major reasons for the slow credit growth to the SME sector. In recent years, banks have increased their exposure to the infrastructure and the retail sectors. Availability of superior quality of collateral with industry, individuals and the retail sector could be one possible explanation for this shift in the lending pattern of the banks. However, it also points towards a bigger and more critical problem of the credit appraisal system, *i.e.,* lack of adequate risk assessment techniques. Finding new entrepreneurs, new ideas, new products and new services to finance need greater effort and more sophisticated risk management system. Indian banks are handicapped by absence of centralised information and record management system for small and medium enterprises (Mohan, 2008). As the Credit Information Companies Act has already been enacted and the necessary guidelines in this regard have also been laid down by the Reserve Bank, it is expected that the setting up of credit information companies would help mitigate the problem.

6.89 SMEs in both developing and developed economies depend heavily on the banking sector for their financing needs. Irrespective of the level of development, the major hurdle faced by SMEs is lack of collateral and insufficient information. Various cross country surveys suggest that high interest rates, lack

Table 6.17: Financing Constraints
(Percentage of Firms Rating Constraint 'Major' or 'Moderate')*

Financing Constraint	Africa	MENA	East Africa NIC/ China	East Asia Developing	South Asia	Latin America	OECD	CIS	CEE
1	2	3	4	5	6	7	8	9	10
High Interest Rates	83.5	67.4	40.3	72.5	83.9	87.6	47.8	80.6	79.5
Lack of Access to Long Term Loan	..	..	31.2	52.0	65.1	63.1	20.0	58.7	67.0
Collateral Requirements	51.9	45.2	30.1	43.6	58.5	65.1	35.7	49.7	52.2
Bank Paperwork	47.1	51.6	29.9	34.6	56.6	63.0	38.9	52.9	48.3
Inadequate Credit Information on Clients	51.7	46.3	27.0	48.4	46.7	46.1	23.5	40.1	41.6
Special Connections	38.2	33.3	26.3	39.6	44.5	46.5	26.5	35.1	43.1
Banks Lack Money to Lend	28.4	33.0	20.6	52.2	35.1	39.1	14.3	37.4	46.8
Access to Specialised Export Finance	44.9	39.8	15.1	33.7	36.4	34.7	16.5	35.5	38.8
Access to Non-Bank Equity	43.1	36.2	13.0	32.6	34.9	35.6	18.1	38.3	42.0
Access to Lease Finance	38.2	29.3	13.1	34.9	32.9	34.1	19.3	32.7	48.9
Access to Foreign Banks	43.6	29.3	11.7	41.5	33.9	35.0	11.1	35.3	40.4

.. : Not available.
* : Data pertain to the World Bank survey in the year 2000.
MENA : Middle East and North Africa.
NIC : Newly Industrialised East Asia.
OECD : Organisation of Economic Co-operation and Development.
CIS : Common Wealth of Independent States.
CEE : Central and Eastern Europe.
Source : World Bank, 2002. Adapted from Batra *et al.,* 2002.

Table 6.18: Financing Patterns of Firms in Select Countries*

Country	External Finance	Bank	Equity	Leasing	Supplier Credit	Development Bank	Informal
1	2	3	4	5	6	7	8
Argentina	43.5	30.0	2.8	0.8	7.5	1.6	0.8
Brazil	51.8	23.1	6.9	4.7	11.4	4.2	0.4
Chile	57.3	41.3	0.3	2.6	7.7	0.5	1.0
China	29.9	10.2	2.4	1.6	2.4	4.6	5.9
Colombia	55.2	29.2	0.4	2.0	12.5	4.8	0.0
France	30.9	6.8	5.8	4.3	7.4	1.4	1.7
Germany	54.3	16.8	23.1	0.7	0.9	8.5	4.1
India	**20.1**	**14.3**	**0.0**	**..**	**0.0**	**..**	**..**
Indonesia	21.8	17.2	0.0	1.7	0.7	1.7	0.0
Pakistan	43.1	30.0	5.6	1.5	2.9	1.0	2.1
Philippines	36.6	17.5	2.0	1.4	10.8	4.5	0.4
Poland	58.6	15.4	27.6	4.5	4.6	4.3	1.7
United Kingdom	36.1	13.1	11.6	2.9	7.5	0.6	0.5
United States	47.1	21.5	3.2	6.1	6.6	6.8	2.9

* : Data pertain to the World Bank survey in the year 2000.

.. : Not available.

Source : World Bank (2004) and Third All India SSI Census, 2001 - 02 (Adapted from Thorsten Beck, Aslý Demirgüç-Kunt and Vojislav Maksimovic, August 2004).

of access to long-term finance were the two major constraints faced by the SMEs. In developed economies with better financial systems, access to finance is much higher. Besides, they have devised various programmes for improving the credit flow to this sector, *viz.,* venture capital, credit registry, specialised institutions for financing to SMEs, cluster-based financing and improving financial knowledge of SMEs, among others. Emerging economies have also given special emphasis on credit needs of the SME sector due to their strategic status in their economies. Since financial markets in these economies are not as much developed as in developed economies, they have established specialised institutions for the purpose. To avoid information asymmetry, most of the countries have dedicated credit guarantee institutions.

VI. INFRASTRUCTURE LENDING

6.90 Infrastructure is broadly defined as the physical framework of facilities through which goods and services are provided to the public and cover services as diverse as transportation, power generation, transmission and distribution, telecommunications, port handling facilities, water supply and sewage disposal, urban mass transport systems and other urban infrastructure, irrigation, medical, educational and other primary services. While provision of certain infrastructure services have a direct bearing on the level of business and commercial activity in a country, others are crucial for strengthening its social infrastructure (Mohan, 1996).

6.91 Paucity of adequate investments in infrastructure constraining growth was highlighted in the India Infrastructure Report 2001, which argued that the supply as well as demand constraints arising out of inadequate infrastructure had resulted in lower growth rates in the 1990s than what could have been possibly achieved with sufficient infrastructure. Infrastructural deficiencies at the State level and inter-State disparities in physical, social and economic infrastructure facilities were identified as contributing to the growing regional income disparities (Ghosh and De, 2004). According to the Eleventh Plan, additional investments in infrastructure to the extent of about Rs.12,00,000 to Rs.14,00,000 crore (at 2005-06 prices) would be necessary in order to attain the medium-term growth target of 9 per cent per annum, which is the target growth rate for Eleventh Five Year Plan. As per the Committee on Infrastructure Financing (Chairman: Shri Deepak Parekh), the above estimates may be an underestimation of financing needs. The Committee has put the investment required for the infrastructure sector during the Eleventh Plan at Rs.15,00,000 to Rs.17,00,000 crore, at 2005-06 prices, assuming that the real GDP grows at 9 per cent per annum and the annual inflation remains at 5 per cent. Furthermore, in order to achieve this ambitious target, half of the incremental domestic savings during the Eleventh Five Year Plan would have to be directed towards the infrastructure sector from the existing level of 15-20 per cent (Government of India, 2007a).

The Role of Commercial Banks in Infrastructure Financing

6.92 Infrastructure projects are usually characterised by large and lumpy investments. Most of the infrastructure projects are public goods. Infrastructure projects have long pay back periods and special features that make their financing more difficult. Therefore, the question arises as to what should be the mode of ownership and financing – the options being that of Government ownership or private participation in infrastructure. Government financing is preferable for infrastructure projects that are created with the aim of providing benefits to the society at large, whereas infrastructure projects that have a strong commercial component in the delivery of its services are more suitable for private sector participation. Private sector participation and Public-Private Partnerships (PPP) can occur through concessions (which include leases, affermages, build-operate-transfer contracts (BOTs) and divestitures with revocable licenses), green field projects and also through management and lease contract routes.

6.93 In general, government financing is advocated for the provision of those services which have a public good nature and those which are non-excludable in their provision. In infrastructure projects developed by private sector participation, the modes of financing available are either equity or debt and the optimum of each is obtained, in theory, when the capital structure of the investment project is able to balance the risk of bankruptcy with the tax savings possible under debt (Table 6.19). In practice, the mode of financing of infrastructure projects would be dependent, among others, on the access to financial markets and the stage of development of the infrastructure project (Gawlick, 2007). Traditionally, the role of banks in infrastructure financing was predominantly through debt finance.

6.94 Debt financing of infrastructure projects are carried out primarily by means of commercial loans and bonds. Commercial loans are funds lent by commercial banks and other financial institutions and these funds are usually securitised by the project's underlying asset. Provision of such funds usually depend upon the financial strength of the borrower, but of late, the expected cash flow from the infrastructure project is also given greater consideration for the provision of commercial loans. For funding large infrastructure projects, commercial banks may also syndicate loans - in which a large loan is shared among different banks. Syndicated lending enables the banks to diversify their portfolio as well as aid the banks to comply with the capital adequacy requirements. Investment in bonds, which are long-term interest bearing debt instruments, are done by banks, pension funds, insurance companies and fund managers through public or private placements. The credit quality of the bonds would be indicated by the credit ratings for the project given by independent credit rating agencies (Gawlick, 2007).

6.95 Lending by banks to infrastructure projects exposes them to several risks. However, at the same time, it provides them good business opportunities (Box VI.12).

Table 6.19: Financing Sources for Private Sector Infrastructure

Domestic Sources	External Sources
Equity	
• Domestic developers *(independently or in collaboration with international developers)* • Public utilities *(taking minority holdings)* • Other institutional investors *(likely to be very limited)*	• International developers *(independently or in collaboration with domestic developers)* • Equipment suppliers *(in collaboration with domestic or international developers)* • Dedicated infrastructure funds • Other international equity investors • Multilateral agencies *(International Finance Corporation, Asian Development Bank)*
Debt	
• Domestic commercial banks (3 - 5 years) • Domestic term-lending institutions (7-10 years) • Domestic bond markets (7-10 years) • Specialised infrastructure financing institutions	• International commercial banks (7-10 years) • Export credit agencies (7 -10 years) • International bond markets (10 - 30 years) • Multilateral agencies (15 - 20 years) • Bilateral aid agencies

Source: Adapted from 'Financing Private Infrastructure: Lessons from India' (Ahluwalia, 1997).

Box VI.12
Bank Lending to Infrastructure: Risks and Opportunities

Commercial banks, by the very nature in which they conduct their business - where they primarily deal with short term borrowings (liabilities) and long term investments (assets) - face serious term mismatch in financing infrastructure projects, which involves funding of 10-12 years and at times over 15 years. Hence, credit by commercial banks to infrastructure projects, on the scale required, could be subject to limitations, including the banks' reluctance to lend on account of adverse macroeconomic scenario or due to high opportunity costs of bank deposits.

Banks, on their part, may prefer bond financing of infrastructure projects as it would lead to a better perception of credit risk on account of external ratings of the bonds. Furthermore, the ability to trade bonds in debt market would also give them an exit option. In this context, with the recent emergence of project finance and project bonds, banks have an option to enter into financing of high risk, capital intensive, long duration infrastructure projects with a transparent cash flow. Moreover, in case of loans disbursed by bank to infrastructure, it need not retain the loans as an asset in its balance sheet for extended period of time as it can resort to securitisation of advances extended to the infrastructure projects. Another way by which the banks have been increasing their exposure to infrastructure sector has been through the establishment of infrastructure funds.

More importantly, the role of banks in private infrastructure financing includes project evaluation and design, arrangement and placement of funds and loan finance, the application of banks' specialist skills to facilitate development of new projects by making more funds available and in improving efficiency by bringing out organisational innovation (Lynch, 1996). Hence, successful infrastructure financing or project financing by banks involves not only the provision of credit, but more importantly, also their role as advisors to project finance as they possess legal, accounting, tax and banking skills.

Banks play a vital role in infrastructure financing through originating, underwriting and distributing risk. Infrastructure projects usually turn to banks for financing their construction activities and on completion of the project, for their permanent long-term financing. Construction finance requirements would be for a period of 2 to 3 years, for which banks could charge interest at a floating rate. The permanent finance requirements would be for a period of 10 to 15 years which could be at a fixed rate of interest.

While financing the construction stage, banks are exposed to construction risk, especially in projects related to power and roads. Construction risk here refers to the time and cost overruns that can occur due to unexpected developments during the construction stage. Another risk that the banks have to examine at the time of construction stage, due to interest rates being charged at floating rates, would be interest rate risks. Interest rate risks are particularly associated with infrastructure projects having high capital intensity and long payback period. In such a scenario, interest costs constitute a substantial share of total costs for a long duration and large variations in interest rates can result in significant cost overruns over the expected levels.

At the operational stage, permanent bank lending to infrastructure projects has to take into account a number of risks. The risks at this stage would primarily take the form of market risk, operating risk and foreign exchange risk, among others. Market risks in infrastructure projects arise when the market conditions assumed in determining the viability of the project are not realised. In cases, where the private infrastructure provider deals directly with the users, market risk is borne by the investor/bank. Operating risks in infrastructure projects refer to risks of the project delivering performance levels which was lower than what was expected from the previous feasibility studies. Such risks are more concentrated in telecommunications, where technology is changing rapidly. Finally, in the case of banks lending to infrastructure projects abroad, there exist foreign exchange risks which can occur on account of various reasons. In the event of a depreciation of the currency of the country in which the infrastructure project is financed and in which currency the project revenues are denominated, unless substantial increase in project's cash flow are realised, it could lead to substantial increase in domestic currency cost of payments for the project to international lenders.

In spite of these risks, infrastructure would emerge as one of the largest source of demand for finance, specifically long-term finance, in the coming years, in both developed as well as emerging markets. If carried out correctly, infrastructure financing especially by means of participation in project finance represents tremendous opportunity for banks to increase their sphere of operations. Banks' involvement in infrastructure financing is aided by the fact that they are better placed than most other market participants in assessing complex project financing transactions and in identifying various risks in different stages of the infrastructure project.

First and foremost, given the necessity for increased finance in infrastructure, a point for consideration is the manner in which banks should participate in infrastructure financing without compromising on the efficiency of the banking sector in general, considering the long term duration and high risks involved in infrastructure finance. Often banks involvement in infrastructure finance has been without due considerations to the various kinds of risks involved in infrastructure finance. Hence, in addition to credit risk there also is the necessity for the commercial banks to be aware of the market risks involved in financing of the infrastructure projects. It would entail in having a clear understanding of and appropriate design of the revenue generating mechanism, dispute settlement mechanisms and support mechanism in the event of revenue shortfall. Secondly, taking into consideration the social benefit derived from many infrastructure projects and their public good nature, it would also bring forth the fact that private sector participation and especially financing of infrastructure by scheduled commercial banks might be viable only in those scenarios where a sustained, transparent cash flow can be guaranteed. In the absence of guaranteed cash flows, government intervention in terms of targeted subsidies or supplementary revenue mechanisms need to be realised to make private participation viable in this sector.

References:

Ahluwalia, M.S. 1997. "Financing Private Infrastructure: Lessons from India." in *Choices for Efficient Private Provision of Infrastructure in East Asia*, (eds.) Harinder Kohli, Ashoka Mody, and Michael Walton, World Bank.

Gawlick, Sonia. 2007. "Public-Private Partnerships: A Financier's Perspective." United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), UNO.

Lynch, David. 1996. "Financing Infrastructure Projects- Australian Investment Banks' Experience". Paper prepared for the APEC Financiers Meeting, Tokyo, Japan, February 1996.

Box VI.13
Financing of Infrastructure by Banks: Cross-Country Experiences

Private sector participation in infrastructure financing in Australia encompass almost the entire range of infrastructure projects which include social infrastructure - hospitals, prisons and commercial ventures in transport, power and communication. Australia has emerged as the pioneer in designing successful concession based infrastructure financing models. Banks in Australia played a twin role in ensuring greater private sector involvement in infrastructure projects, first by acting as a source of finance for the infrastructure projects and second, by way of providing project assessment. Financing of infrastructure by banks in Australia takes the form of underwriting of equity, where the Australian banks are the world's first in successful underwriting and placement of equity for a road project and in raising debt through the bond market (Lynch, 1996).

One of the spectacular success stories in infrastructure development in recent times is that of China. In China, the various sources of infrastructure finance are provincial and local governments, state development banks, Chinese international corporations, and multilateral agencies. It is primarily the domestic loans and self generated funds that contribute to the bulk of infrastructure financing. A major role in infrastructure financing is carried out by the China Development Bank, one of the three development banks established in 1994 for the purpose of lending to key infrastructure projects envisaged by the State. The major sources of financing for China Development Bank are first of all budgetary appropriations received from the Ministry of Finance for carrying out specific infrastructure projects. The second source of finance is the bonds, which are placed with specialised and provincial commercial banks based on their excess reserves thus enabling the development bank to utilise the deposits of commercial banks for infrastructure finance. It also raises funds in the international market by means of bonds as well as syndicated loans (Spear, Andrea *et al.*, 1997). During the period from 1994 to the end of 2005, 88.9 per cent of the lending by China Development Bank was directed towards eight key industry sectors, *i.e.,* power, road construction, railway, petro-chemical, coal mining, telecommunications, public facilities and agriculture and related industries.

References:

Lynch, David. 1996. "Financing Infrastructure Projects- Australian Investment Banks' Experience", Paper prepared for the APEC Financiers Meeting, Tokyo, Japan, February 1996.

Spear, Andrea *et al.*,1997. "China Infrastructure: Sectoral Plans, Reforms and Financing", East Asia Analytical Unit, Department of Foreign Affairs and Trade, Commonwealth of Australia.

6.96 Since financing by banks to infrastructure projects poses some serious risks, banks have devised appropriate mechanisms to finance infrastructure projects without exposing themselves much to the risks involved. Cross-country experiences of Australia and China shows that banks use bonds to raise long-term funds for on-lending to infrastructure projects (Box VI.13).

Financing of the Infrastructure Sector by Banks in India

6.97 The infrastructure sector was thrown open to private sector in the early 1990s. Banks, therefore, were allowed to provide, in addition to working capital requirements, term loans and guarantees for infrastructure projects. In order to facilitate financing of infrastructure projects, banks were allowed to exceed exposure norms by 10 per cent (Box VI.14). In the absence of a well-developed private corporate debt market, banks have emerged as a major source of funds for infrastructure projects.

6.98 The outstanding gross credit by SCBs for infrastructure projects grew sharply from Rs.3,163 crore at end-March 1998 to Rs.11,349 crore by end-March 2001 and further to Rs.1,42,975 crore at end-March 2007, *i.e.*, at a compound annual growth rate of 52.7 per cent during 1998-2007. The share of infrastructure financing in total bank credit increased from 1.0 per cent at end-March 1998 to 7.4 per cent at end-March 2007 (Table 6.20).

6.99 In 1998 and 1999, the telecommunication sector constituted the largest share of bank finance. However, at end-March 2000, the power sector constituted the largest share, the position which continued in the subsequent years. In fact, from 2002 onwards the power sector accounted for around 50 per cent share in bank credit to infrastructure projects (Table 6.21).

Box VI.14
RBI Guidelines on Financing of Infrastructure by Banks: Salient Features

In terms of the guidelines issued by the Reserve Bank in February 2003, Banks/FIs were given the freedom to finance technically feasible, financially viable and bankable projects undertaken by both public sector and private sector undertakings subject to the following conditions:

i) The amount sanctioned should be within the overall ceiling of the prudential exposure norms prescribed by the Reserve Bank for infrastructure financing.

ii) Banks/FIs should have the requisite expertise for appraising technical feasibility, financial viability and bankability of projects, with particular reference to the risk and sensitivity analysis.

iii) In respect of projects undertaken by public sector units, term loans may be sanctioned only for corporate entities (*i.e.,* public sector undertakings registered under Companies Act or a corporation established under the relevant statute). Further, such term loans should not be in lieu of or to substitute budgetary resources envisaged for the project.

iv) Banks may also lend to special purpose vehicles (SPVs) in the private sector, registered under Companies Act for directly undertaking infrastructure projects, which are financially viable and not for acting as mere financial intermediaries. Banks are required to ensure that the bankruptcy or financial difficulties of the parent / sponsor should not affect the financial health of the SPV.

In order to meet financial requirements of infrastructure projects, banks may extend credit facility by way of working capital finance, term loan, project loan, subscription to bonds and debentures/preference shares/equity shares acquired as a part of the project finance package which is treated as 'deemed advance' and any other form of funded or non-funded facility.

Banks may enter into take-out financing arrangement with IDFC / other financial institutions or avail of liquidity support from IDFC / other FIs.

Banks are permitted to issue guarantees favouring other lending institutions in respect of infrastructure projects, provided the bank issuing the guarantee takes a funded share in the project at least to the extent of 5 per cent of the project cost and undertakes normal credit appraisal, monitoring and follow up of the project.

In terms of guidelines issued by the Reserve Bank, banks were advised that the promoter's contribution towards the equity capital of a company should come from their own resources and the bank should not normally grant advances to take up shares of other companies. In view of the importance attached to infrastructure sector under certain circumstances, an exception may be made to this policy for financing the acquisition of promoter's shares in an existing company which is engaged in implementing or operating an infrastructure project in India.

Credit exposure to borrowers belonging to a group is allowed to exceed the exposure norm of 40 per cent of the bank's capital funds by an additional 10 per cent (*i.e.* up to 50 per cent), provided the additional credit exposure is on account of extension of credit to infrastructure projects. Credit exposure to single borrower is allowed to exceed the exposure norm of 15 per cent of the bank's capital funds by an additional 5 per cent (*i.e.* up to 20 per cent) provided the additional credit exposure is on account of infrastructure.

Banks are allowed to assign a concessional risk weight of 50 per cent for capital adequacy purposes, on investment in securitised paper pertaining to an infrastructure facility, subject to compliance with the other criterion. The infrastructure facility should be generating income/cash flows which would ensure servicing/repayment of the securitised paper.

The long-term financing of infrastructure projects may lead to asset-liability mismatches, particularly when such financing is not in conformity with the maturity profile of a bank's liabilities. Banks, therefore, are required to exercise due vigil on their asset-liability position to ensure that they do not run into liquidity mismatches on account of lending to such projects.

6.100 Net credit (net of repayments) by banks to infrastructure, which increased sharply in 2002-03 (due mainly to reverse merger of ICICI with ICICI Bank) and again in 2004-05 (due mainly to conversion of IDBI into a bank), registered negative growth in 2005-06, mainly due to high base. However,

Table 6.20: Credit by Scheduled Commercial Banks to Infrastructure Sector

(Amount in Rupees crore)

	End - March									
Item	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	2	3	4	5	6	7	8	9	10	11
Infrastructure	**3,163**	**5,941**	**7,243**	**11,349**	**14,809**	**26,297**	**37,224**	**78,999**	**1,12,853**	**1,42,975**
Annual Growth Rate	..	87.8	21.9	56.7	30.5	77.6	41.6	112.2	42.9	26.7
As per cent of :										
Gross Bank Credit	1.0	1.6	1.7	2.2	2.5	3.6	4.4	7.2	7.5	7.4
Gross Domestic Capital Formation	0.8	1.5	1.4	2.2	2.8	4.2	4.8	8.0	9.4	..

..: Not available.
Note : Outstanding as on last reporting Friday of March.
Source : Handbook of Statistics on the Indian Economy, 2006-07.

Table 6.21: Credit by Scheduled Commercial Banks to Infrastructure: Sector-wise – Outstanding

(Amount in Rupees crore)

Sector	End-March									
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	2	3	4	5	6	7	8	9	10	11
Power	**697** (22.0)	**2,109** (35.5)	**3,289** (45.4)	**5,246** (46.2)	**7,373** (49.8)	**15,042** (57.2)	**19,655** (52.8)	**38,235** (48.4)	**60,157** (53.3)	**72,816** (50.9)
Telecommunications	**2,045** (64.7)	**2,273** (38.3)	**1,992** (27.5)	**3,644** (32.1)	**3,972** (26.8)	**5,779** (22.0)	**8,408** (22.6)	**15,705** (19.9)	**18,455** (16.4)	**19,446** (13.6)
Roads and Ports	**421** (13.3)	**1,559** (26.2)	**1,962** (27.1)	**2,459** (21.7)	**3,464** (23.4)	**5,476** (20.8)	**9,161** (24.6)	**14,500** (18.4)	**19,695** (17.5)	**24,941** (17.4)
Other Infrastructure *	**..**	**..**	**..**	**..**	**..**	**..**	**..**	**10,559** (13.4)	**14,546** (12.9)	**25,772** (18.0)
Total Infrastructure	**3,163**	**5,941**	**7,243**	**11,349**	**14,809**	**26,297**	**37,224**	**78,999**	**1,12,853**	**1,42,975**

.. : Not available.

* : Other Infrastructure includes, among others, advances to urban infrastructure.

Notes : 1. Outstanding as on last reporting Friday of March.

2. Figures within parentheses are percentages to total.

Source : Handbook of Statistics on the Indian Economy, 2006-07.

during 2006-07 also, net credit growth, to infrastructure sector was negative (Table 6.22).

6.101 Development finance institutions have historically played an important role in financing the medium and long-term projects. After the infrastructure sector was thrown open to the private sector, DFIs by virtue of their project finance skills, were expected to play an important role in financing infrastructure projects. The setting up of IDFC in 1997 was further expected to provide an impetus to financing of infrastructure projects. However, the

Table 6.22: Net Credit Flow to the Infrastructure Sector by Scheduled Commercial Banks*

(Amount in Rupees crore)

Sector	1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07
1	2	3	4	5	6	7	8	9	10
Infrastructure	**2,778**	**1,302**	**4,106**	**3,460**	**11,488**	**10,927**	**41,775**	**33,854**	**30,122**
Annual Growth Rate	..	-53.1	215.4	-15.7	232.0	-4.9	282.3	-19.0	-11.0
of which:									
Power	**1,412** (50.8)	**1,180** (90.6)	**1,957** (47.7)	**2,127** (61.5)	**7,669** (66.8)	**4,613** (42.2)	**18,580** (44.5)	**21,922** (64.8)	**12,659** (42.0)
Telecommunications	**228** (8.2)	**-281** (-21.6)	**1,652** (40.2)	**328** (9.5)	**1,807** (15.7)	**2,629** (24.1)	**7,297** (17.5)	**2,750** (8.1)	**991** (3.3)
Roads and Ports	**1,138** (41.0)	**403** (31.0)	**497** (12.1)	**1,005** (29.0)	**2,012** (17.5)	**3,685** (33.7)	**5,339** (12.8)	**5,195** (15.3)	**5,246** (17.4)
Other Infrastructure **	**..**	**..**	**..**	**..**	**..**	**..**	**10,559** (25.3)	**3,987** (11.8)	**11,226** (37.3)

.. : Not available.

* : Net credit refers to net of repayments.

** : Other Infrastructure includes among others advances to urban infrastructure.

Note : Figures within parentheses are percentages to total.

Source : Handbook of Statistics on the Indian Economy, 2006-07.

Table 6.23: Credit Disbursed by DFIs to the Infrastructure Sector

(Amount in Rupees crore)

Sector	1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04	Cumulative up to end-March 2004
1	2	3	4	5	6	7	8
Infrastructure	**6,421**	**7,513**	**9,649**	**7,990**	**2,901**	**5,882**	**64,227**
Annual Growth Rate	–	17.0	28.4	-17.2	-63.7	102.7	
Electricity Generation	**3,843** (59.8)	**5,403** (71.9)	**5,532** (57.3)	**4,121** (51.6)	**1,264** (43.6)	**2,183** (37.1)	**41,416** (64.5)
Telecommunications	**1,201** (18.7)	**1,635** (21.8)	**3,266** (33.8)	**2,444** (30.6)	**563** (19.4)	**2,166** (36.8)	**13,837** (21.5)
Roads and Ports	**1,350** (21.0)	**450** (6.0)	**726** (7.5)	**385** (4.8)	**670** (23.1)	**655** (11.1)	**5,946** (9.3)
Urban Infrastructure	**28** (0.4)	**26** (0.3)	**126** (1.3)	**1,039** (13.0)	**405** (13.9)	**879** (14.9)	**3,027** (4.7)

Notes : 1. Figures within parentheses are percentages to total.
2. The DFIs covered include IDBI, IFCI, ICICI (up to 2001-02), IIBI, IDFC and SIDBI.

Source : Report on Development Banking in India, various issues, IDBI.

conversion of two major DFIs into banks and the sharp decline in the role of IFCI and IIBI because of their fragile health significantly reduced the role of financial institutions in financing the infrastructure projects. The total credit disbursements of DFIs amounted to Rs.5,882 crore during 2003-04. In the case of DFIs also, the power sector constituted the largest share (Table 6.23).

6.102 A comparison of funding of infrastructure projects by scheduled commercial banks and DFIs in terms of their advances to infrastructure credit reveals that till 2001-02, DFIs were the main source of funds for infrastructure projects. However, from 2002-03 onwards, banks emerged as a major source of funds for infrastructure projects. It was partly on account of the conversion of two major DFIs (ICICI Ltd. and IDBI) into banks.

6.103 A cross country survey of bank credit to infrastructure in select countries shows that the role of commercial banks in infrastructure financing has declined significantly in recent years. However, commercial banks' credit to infrastructure projects in India increased in recent years (Table 6.24).

6.104 To sum up, with the increased private participation in infrastructure, the role of banks in financing infrastructure projects has increased significantly. Although banks have been financing all types of infrastructure projects, the power and telecommunication sectors have received the largest share of banks' funding.

Table 6.24: Commercial Bank Credit to the Infrastructure Sector : A Survey of Select Countries

(Per cent to total credit)

Country	1991	1995	2000	2001	2002	2003	2004	2005	2006	2007
1	2	3	4	5	6	7	8	9	10	11
Germany	5.3	4.0	4.2	4.0	4.1	4.1	4.2	4.1	4.1	4.4
India	..	..	**1.7**	**2.2**	**2.5**	**3.6**	**4.4**	**7.2**	**7.5**	**7.4**
Malayasia	..	..	5.0	3.8	4.0	3.6	2.9	2.8	2.6	..
New Zealand	..	..	3.9	3.8	3.7	3.2	3.3	2.9	3.3	3.4
United Kingdom	3.1	4.6	1.3	0.8	0.7	0.5	0.4	0.4	0.6	0.4

.. : Not available.

Source: 1. Central Bank websites of respective countries.
2. Handbook of Statistics on the Indian Economy, 2006-07.

VII. RETAIL CREDIT

6.105 Retail or household credit comprising mainly housing loans, advances to individuals against fixed deposits, credit card, educational loans and loans for purchase of consumer durables has become an important component of banks' loan portfolio in several countries. In India, until the initiation of financial sector reforms, there were too many restrictions on retail credit in the form of limits on total amount of housing loan, loans to individuals, rate of interest, margin requirement and prescription of maximum repayment period, among others. However, banks were granted the freedom in the 1990s to decide the quantum, rate of interest, margin requirement, repayment period and other related conditions of retail loans. These relaxations had a positive impact on the growth of personal loans beginning in the second half of the 1990s.

6.106 Personal loans registered an average annual growth of 28.1 per cent during the period from 1992-93 to 2006-07 as compared with 25.2 per cent in the 1990s; overall bank credit during this period increased at an average annual growth rate of 19.5 per cent. Growth of personal loans has always remained higher than the overall credit growth since 1992-93, barring 1998-99 and 2006-07. Consequently, the share of personal loans in total bank credit increased steadily from 8.3 per cent at end-March 1993 to 22.3 per cent at end-March 2007(Chart VI.24).

6.107 The share of housing loans in total bank credit picked up sharply from 3.2 per cent in 1998-99 to

Chart VI.24: Trend in Personal Loans

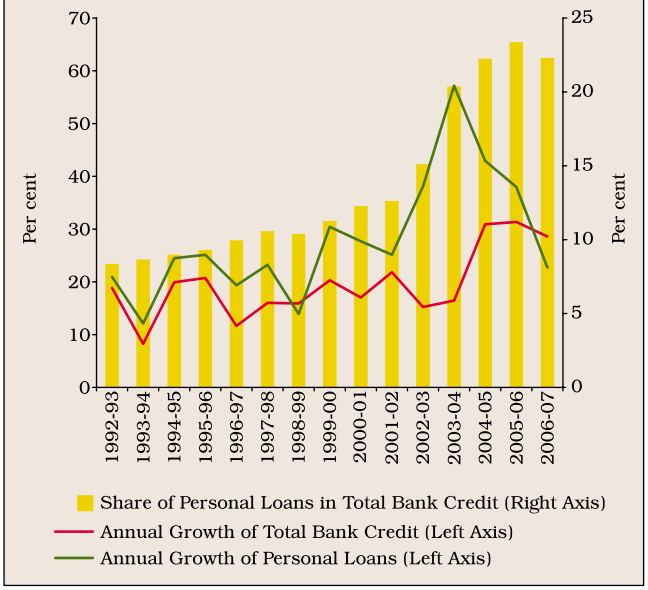
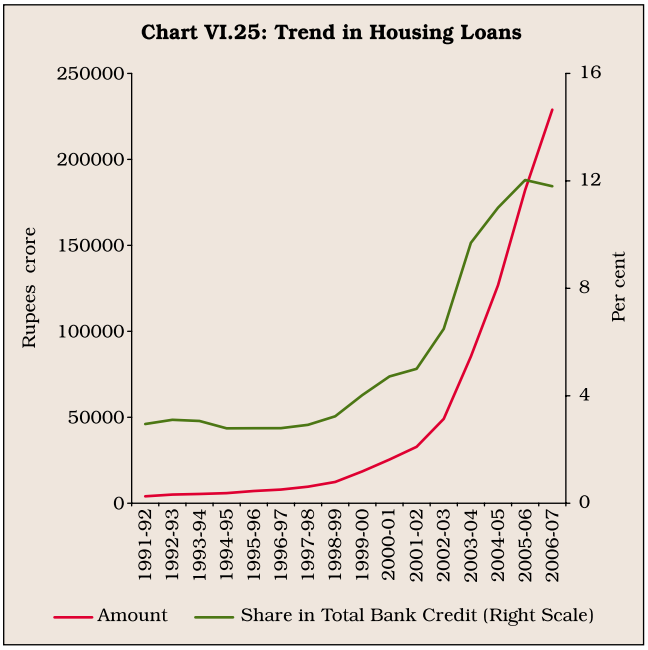


Chart VI.25: Trend in Housing Loans



11.8 per cent in 2006-07(Chart VI.25). Within personal loans, the share of housing loans declined from 37.3 per cent at end-March 1993 to 27.7 per cent by end-March 1998, but rose sharply thereafter to 52.8 per cent at end-March 2007 (Table 6.25).

Table 6.25: Growth of Housing Loans

(Per cent)

Year (April-March)	Total Bank Credit	Housing Loans	Share of Housing Loans in Total Personal Loans
1	2	3	4
1992-93	18.8	25.2	37.3
1993-94	8.3	6.7	35.5
1994-95	19.9	9.2	31.1
1995-96	20.7	20.9	30.1
1996-97	11.7	11.7	28.2
1997-98	16.0	21.2	27.7
1998-99	15.9	28.5	31.3
1999-00	20.3	49.7	35.9
2000-01	17.0	37.2	38.5
2001-02	21.8	29.2	39.8
2002-03	15.2	49.5	43.1
2003-04	16.4	73.9	47.7
2004-05	30.9	48.6	49.5
2005-06	31.4	43.7	51.6
2006-07	28.6	25.7	52.8

Source : Basic Statistical Returns of Scheduled Commercial Banks in India, various issues, Reserve Bank of India.

6.108 The sharp increase in bank credit to the household sector was contributed by several factors. With high economic growth in recent years, job opportunities in urban areas expanded and income levels rose sharply. Rising income levels, especially at younger age, enhanced the affordability. This coupled with real estate boom offered opportunities for the customers to own a house by availing of the housing loans. The rapid growth in the housing market was actively supported, *inter alia*, by the emergence of a number of second tier cities as upcoming business centres. With inflation and inflationary expectations well-anchored, the inflation risk premium fell resulting in a decline in both nominal and real interest rates. The increase in IT and IT-related activities had a positive impact on demand for housing. Further, tax incentives offered to salary earners made housing loans more attractive by bringing down the effective rate of interest. All these factors contributed to the increased demand for housing loans. The sharp rise in retail bank credit was also facilitated by the changing consumer demographics which indicates a vast potential for growth in consumption both qualitatively and quantitatively. India is one of the countries having highest proportion (70 per cent) of the young population (below 35 years of age). Convenience banking in the form of credit/debit cards, internet and phone-banking, anywhere and anytime banking attracted many new customers into the banking fold. Technological innovations such as, ATMs also contributed to the growth of retail banking in India.

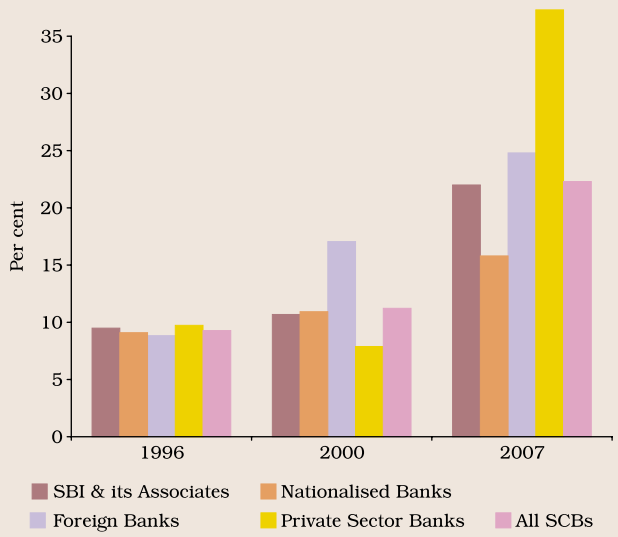
6.109 Credit cards have witnessed large-scale acceptance as a medium of transaction usage through points of sale (PoS) across different merchant establishments. It has found greater acceptance in terms of usage in major cities of the country, particularly in four metropolitan cities which account for bulk of the transactions. The share of credit card receivables in total loans and advances and total retail credit increased from 0.7 per cent and 3.3 per cent, respectively, at end-March 2004 to 1.0 per cent and 3.8 per cent, respectively, at end-March 2007. Growth in the credit card transactions is attributable to the rapid advances in information technology, the evolving macroeconomic environment and several micro-level demand and supply-side factors. Technology has enabled a significant reduction in the cost of external finance for borrowers, while banks have benefitted from product innovations, and lower transaction cost associated with collection, processing and use of information. Technology has offered banks better techniques for risk management and product pricing.

6.110 On the supply side, the demand for credit by the industrial sector slowed down, especially between 1996-97 and 2001-02, as a result of which banks started looking for alternative avenues of lending. Banks also looked at retail loans from the point of view of diversification of their loan portfolio, especially because banks' balance sheets were seriously impaired on account of lending to the corporate sector before the reform process began. Furthermore, treasury income of the banks, which helped in strengthening their profitability between 2002-03 and 2004-05, declined in recent years. In the case of retail and personal loans, the average size is very small and loans are widely distributed over a large number of borrowers. Accordingly, the average risk associated with retail loans is also much lower. In the case of mortgage loans, there is adequate collateral structure, particularly for housing and auto loans. It is also easier to determine the realistic sale value of housing loans than of inventory and plant and equipments**.** Besides, risk adjusted return on retail loans is normally significantly higher than the corporate loans. Banks, therefore, expanded their retail loan portfolio in a big way. Besides the above, comfortable liquidity position with banks, which created easy credit conditions, encouraged them to look to new clients.

6.111 The phenomenon of high growth in retail credit was observed across all bank groups. However, as foreign banks have limited bank branches and are located mostly in urban and metropolitan cities, they were more aggressive in promoting the personal loans, especially among the urban salaried class borrowers. Accordingly, the share of personal loans in total credit at end-March 2000 was the highest in the case of foreign banks. In recent years, however, Indian private sector banks also became more aggressive in promoting the retail loan segment. As a result, by end-March 2007, the share of personal loans in total credit extended by private banks was highest among all bank groups (Chart VI.26).

6.112 Countries such as Central Europe, Russia, South Africa and Saudi Arabia have also witnessed sharp increase in retail credit in recent years. Significantly, similar rising trend was observed in other Asian countries such as Korea, Malaysia, China and Indonesia also. The cross country experiences revealed that the sharp pick up in household credit was on account of both demand and supply side factors. Besides, the shift in the consumption pattern in most of these countries and the relaxation in the regulatory measures restricting bank lending to the

Chart VI.26: Share of Personal Loans in Total Bank Credit – Bank Group-wise (End-March)



housing and consumer sectors also contributed favourably towards this trend. With these developments, latent demand materialised (Bacchetta and Gerlach, 1997). In many countries, the authorities themselves took several proactive measures to encourage residential investment which attracted borrowing-led household consumption as part of the strategy to revive domestic demand. As regards the supply side factors, several innovative products/ measures and instruments were introduced by the banking sector which suited most to the consumers with adequate flexibility and convenience to the households which attracted increased bank credit flows. For instance, variable rate mortgages and credit card with flexible payment options, among others, indeed helped promote consumer or retail credit boom in most of the countries, including India. The general decline in interest rates coupled with lower and stable inflation also increased the purchasing power among the EMEs. Owing to the above factors, there was an unusual strong demand for credit growth in the household sectors in many countries (Mohanty *et al.*, 2006) (Table 6.26).

6.113 Retail credit became a key area of strategic emphasis in the U.S. banking industry also. A study in the US at the bank level pointed out that the principal attraction of retail banking was the belief that its revenues were stable and, thus, could offset volatility in the non-retail businesses. Some banking industry analysts argued that retail banking offered high returns along with low risk. The literature

Table 6.26: Composition of Bank Credit : A Cross Country Comparison@

(Per cent)

Country	Housing Credit			Consumer Credit			Business Credit		
	1994	1999	2004	1994	1999	2004	1994	1999	2004
1	2	3	4	5	6	7	8	9	10
Latin America									
Argentina	..	18	7	..	15	7	..	38	17
Chile	13	17	21	8	9	12	79	74	67
Colombia	..	7	11	..	15	14	..	56	39
Mexico	17	16	9	7	4	13	62	36	28
Venezuela	..	4	1	..	18	7	44	55	47
Asia									
Hong Kong SAR	7	15	15	2	3	3	86	76	73
India	**3**	**3**	**10**	**9**	**10**	**20**	**48**	**49**	**38**
Indonesia	..	5	6	..	7	18	..	60	37
Israel	..	..	8	15	10	9	..	..	..
Korea	..	9	33	..	18	17	..	69	47
Malaysia	10	18	28	..	8	16	..	64	45
Thailand	9	7	10	4	3	6	64	71	68
Turkey	..	..	2	2	3	6	76	58	39
Singapore	14	20	26	13	12	15	60	51	39
Central Europe									
Czech Republic*	..	10	16	..	4	5	..	41	37
Hungary	..	3	17	..	6	8	..	62	46
Poland	..	2	10	..	21	23	..	44	35

.. : Not available.
@ : Representing shares in total domestic credit of commercial banks.
* : Data in columns 3, 6 and 9 relate to 2002.
Source: Adapted from M.S.Mohanty *et al.* (2006). For India, data are taken from Basic Statistical Returns, various issues, Reserve Bank of India.

suggests that both risk and return decline as banks become more focused on retail banking activities, which is consistent with traditional finance theory, which highlights the importance of taking a longer run perspective when considering how risk and return are affected by broad shifts in business strategy (Clark *et al.*, 2007). Retail banking accounts for as much as 50 to 75 per cent of revenues in many large bank holding companies in the US. What is even more intriguing is that organisationally, many large banking companies in the US have exclusive retail banking units, with their own management and financial reporting structure.

6.114 In the US, retail banking is a significant source of revenue and profit for many large banking organisations. Data from a sample of large banks' annual reports and public financial statements suggest that between 50 and 75 per cent of net operating revenue (net interest income plus non-interest income) is derived from retail banking activities at most of these institutions. Banking industry analysts and the banks themselves consistently point to the stability of revenue and profit as the most important feature of retail banking and a key motivation for the recent interest. The retail lending portfolio which contains a large number of small, more often collateralised loans means that the lending income may be less volatile over time because of diversification across customers. Clark *et al.*, 2007 observed that '…among industry observers, there seems to be a consensus, supported by the academic evidence, that retail activities tend to be more stable than other banking activities…' However, there has been a contrarian view as well. Hirtle and Stiroh (2007) observed that while retail banking might be a relatively stable activity, it was also a relatively low-return one. Retail loans also expose the banking system to certain risks (Box VI.15).

6.115 To sum up, one of the significant and discernible changes in the pattern of bank credit was the sharp increase in the share of retail or household credit comprising mainly housing loans, advances to individuals against fixed deposits, credit card, educational loans, loans for purchase of consumer durables and related items. In India, consequent to initiation of financial sector reforms, banks were granted the freedom to decide the quantum, rate of interest, margin requirement, repayment period and other related conditions of retail loans. These relaxations were a driving force behind the growth of overall retail credit. Both demand and supply side factors contributed to the sharp spurt in credit to housing which has become the mainstay of retail bank credit. On the demand side, both macro and micro

Box VI.15
Risks of Retail Lending

A consumer sector shock could hurt the retail franchise on both the asset and liability sides. The banking system itself may, thus, be more exposed to a macroeconomic downturn in the consumer sector, and perhaps will have economy wide implications. For instance, Bernanke (1983) cautions that banks play a special role in the economy, given their ability to provide credit to informationally opaque small businesses which included the retail banking. However, this sector is most affected in the case of a downturn in the consumer sector, which, in turn, could impact the extent of a monetary policy response.

One of the most important aspects as far as the consumer sector is concerned is that the sector itself is vulnerable to many macroeconomic factors, such as oil prices hike, real estate prices hike, fall in employment leading to reduction in consumer sector's power to spend, general increase in inflation and so on. It is this sector which gets affected more than any other in the economy. Therefore large scale exposure to this sector has systemic implications.

An overheated property market could be another source of risk. For instance, both demand and supply of housing loans may be sustained by over-optimistic expectations and property prices, liberal valuation of housing collateral and high loan-to-value ratios, exposing households and banks to a downturn in property prices.

Yet another potential vulnerability could stem from possible under-assessment of risks by banks while lending to households. Excess liquidity, competition in retail loan markets and the strong income growth seen recently in many countries could lead to procyclical lending behavior, whereby banks ease lending standards by either charging excessively low interest rates or reducing collateral requirements to attract customers (Mohanty *et al.*, 2006). Such low rates may not accurately compensate for all possible risks.

In some countries, systemically very large banks are engaged in retail banking on a large scale. It is possible that in the event of a down turn, this may ultimately affect the system as a whole, lending the system vulnerable to such downturns.

References:

Mohanty, M. S., Gert Schnabel and Pablo Garcia-Luna. 2006. "Banks and Aggregate Credit: What is New?" *BIS Papers No. 28*

level factors, especially the robust growth in GDP, contributed to the increased demand for credit. With the increased size of middle-class population, the demand for consumer durables also increased, creating new demand for bank financing. On the supply side, the perceived higher returns, low and diversified risk (due to small size of transactions) and most often collateralised lending, were some of the key factors that led to a surge in credit to the household sector across the banking spectrum. In the Indian context, retail lending has emerged as a key profit driver for banks in recent years. Retail loans have also benefitted from the entry of new private sector banks which have concentrated more on retail lending in their portfolios. Incidentally, the banks' loan portfolio in several other countries, especially EMEs also grew rapidly.

VIII. INVESTMENT OPERATIONS OF BANKS

6.116 Commercial banks' investments are of three types, *viz.*, Government securities, other approved securities, and non-approved securities. These three are broadly categorised as SLR investments (Government and other approved securities) and non-SLR investments (comprising commercial papers, shares, bonds and debentures issued by the corporate sector). Banks are required to invest a prescribed minimum of their net demand and time liabilities in Government and other approved securities under the BR Act, 1949.

6.117 One of the major elements constricting the operational flexibility of banks and depressing banks' income earnings capacity prior to financial sector reforms was the system of directed investment in the form of minimum statutory liquidity ratio which was raised to as high as 38.5 per cent by September 22, 1990. However, the SLR was gradually reduced to the then statutory minimum level of 25 per cent by October 25, 1997. This provided the banks with greater flexibility to choose their investment portfolio.

6.118 For a long time, commercial banks in India were discouraged from undertaking investments in shares and debentures of joint stock companies. However, the policy in this regard was liberalised from 1985. The ambit of eligible investments was enlarged to cover commercial paper (CP), units of mutual funds, shares and debentures of PSUs, which are all known as non-SLR investments. Similarly, the limit on investments in the capital market has been revised from time to time. Aggregate exposure (both fund and non-fund based) of banks to the capital market in all forms under direct and indirect exposures was stipulated at 40 per cent of net worth in terms of the guidelines issued on December 15, 2006, which came into effect from April 1, 2007.

Trends in Investment Operations of Banks

6.119 Investments by SCBs grew at an average annual rate of 22.3 per cent during the 1970s, 19.9 per cent during the 1980s and 17.0 per cent during the 1990s. However, investments slowed down to 14.8 per cent during the period 2000-07 (Chart VI.27).

6.120 The statutory liquidity ratio was brought down in phases from 38.5 per cent in February 1992 to 25 per cent by October 1997. However, banks continued to invest in Government securities because of their risk averse behaviour and slowdown of the industrial sector (Chart VI.28).

6.121 Incidentally, the period of low demand for credit coincided with the period when banks were making efforts to raise their capital levels and reduce the levels of NPAs. The application of capital adequacy norms, which required banks to maintain 8 per cent of their risk-weighted assets as capital from March 31, 1996, and the pressure to bring down their NPA levels made banks somewhat risk averse. That was also the time when certain segments of industries like basic metals and alloy industries, chemicals, cement, iron and steel, and textiles faced failures leading to large scale NPAs. As such, investments in Government and other approved securities, which attracted zero-risk weights, became

Chart VI.27: Growth Rate of Investments by SCBs

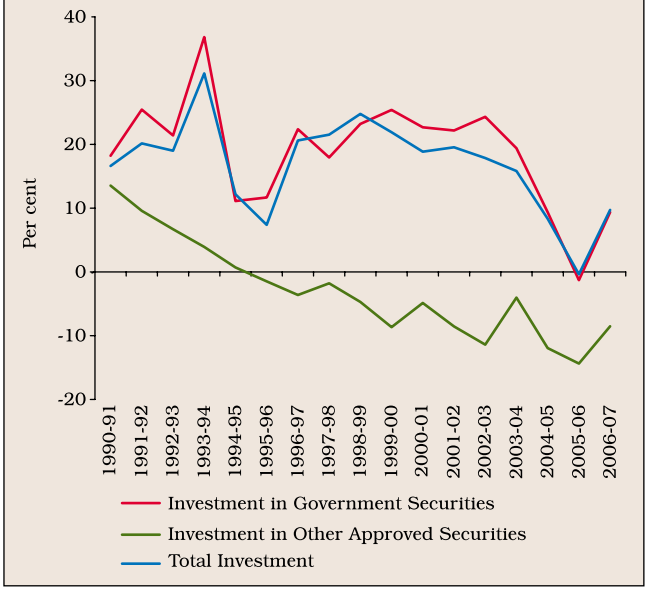


Chart VI.28: SLR Investments by Scheduled Commercial Banks (End-March)

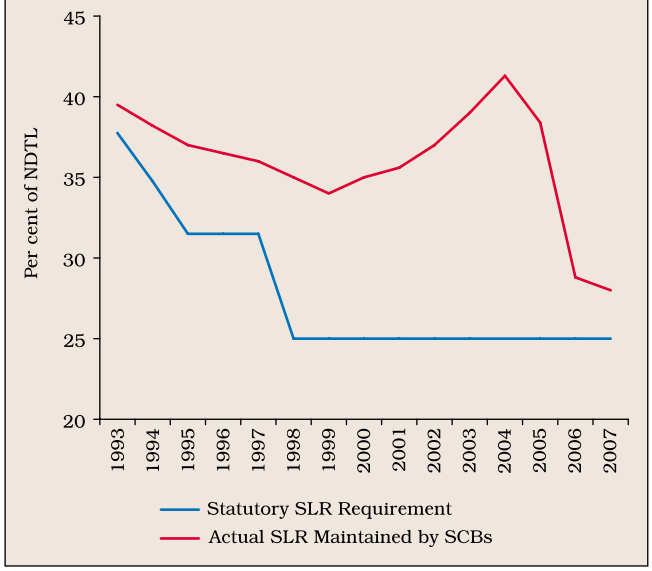
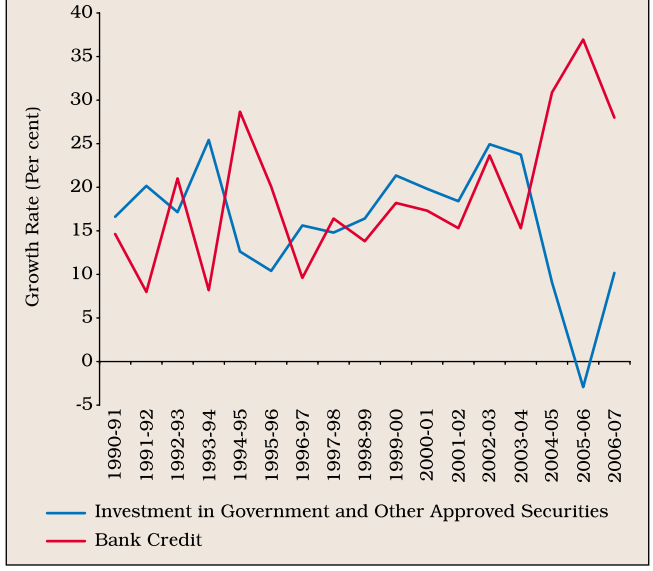


Chart VI.29: Growth in Bank Credit and Investment in Government Securities by SCBs

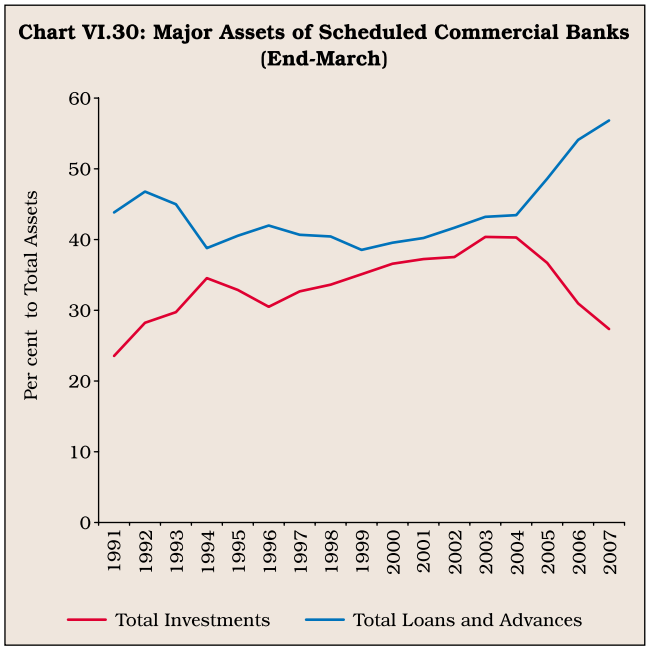


the preferred form of investments by banks. It is also possible that, in a declining interest rate scenario in the presence of a developing debt market, this was a rational profit maximising strategy (Mohan, 2004). This development was in accordance with the intuitive argument that the increase in a risk-based capital requirement can cause a bank to shift from loans to investment in securities. Similar bank behaviour was observed in other countries as well whenever there was a change in regulatory reserve requirement. Empirical research by Thakor (1996) and Passmore and Sharpe (1994) pertaining to bank behaviour also came up with similar findings.

6.122 Growth of aggregate deposits slowed down to 15.4 per cent in 2004-05 from 16.4 per cent in 2003-04 as banks faced increased competition from other saving instruments. However, credit demand increased sharply, first from the household sector and then from the other sectors. The combination of these factors led to a significant adjustment in the investment portfolio of banks. Banks endeavoured to meet the increased credit demand by restricting fresh investments in Government securities in 2004-05 and then liquidating Government securities in 2005-06. The banks' investment in government securities picked up again in the year 2006-07 (Chart VI.29 and Chart VI.30).

6.123 Growth in investments by scheduled commercial banks in non-SLR securities declined sharply between 1997-98 and 2001-02, but witnessed an erratic pattern thereafter mainly because of adjustment in response to banks' main portfolio of loans and advances and SLR investments. During 2006-07, banks' investments in non-SLR securities (*i.e.,* bonds/debentures/shares and commercial papers) issued by the corporate sector increased by 5.0 per cent as compared with a decline of 15.2 per cent in the previous year, reflecting the robust growth of deposits and slowdown in credit. While investments in bonds/ debentures declined sharply, those in shares and commercial paper increased.

Chart VI.30: Major Assets of Scheduled Commercial Banks (End-March)



6.124 The share of non-SLR investments in total assets of banks increased steadily from 5.4 per cent in 1998 to 7.6 per cent in 2001, but declined thereafter to 2.9 per cent by end-March 2007 (Table 6.27).

6.125 In terms of instruments, bonds/debentures constituted the largest component of non-SLR investments, though their share in total non-SLR investments declined to 67 per cent at end-March 2007 *vis-à-vis* 85.4 per cent in 1998. On the other hand, the share of equities rose steadily, particularly from 2004-05. The share of CPs in total non-SLR investments fluctuated over the years.

6.126 An analysis of the bank-group wise investment-deposit ratio throws up some interesting features. The investment to deposits (ID) ratio of foreign banks was the highest among all bank groups in most of the years from 1992 to 2007 (Chart VI. 31).

6.127 The return on advances measured in terms of interest earned on advances traditionally was higher than return on investments. However, the divergence between the two started narrowing down in the early 1990s, when interest rates on Government securities were freed. The rate of return on investments has now converged with that of advances (Chart VI. 32).

6.128 Banks in India have historically maintained a significant share of investments because of prescription of SLR. Their non-SLR investments constituted a small percentage (2.9 per cent at end-March 2007) of their total assets. However, it is observed that in other countries also, banks maintain quite a sizeable portion of their assets in the form of investments. India had relatively higher proportion of investments in comparison with Italy, Mexico, Chile, South Korea, Indonesia, Thailand, Malaysia and Russian Federation, but lower than several other countries (Table 6.28).

Table 6.27: Non-SLR Investments of Scheduled Commercial Banks

End-March	Share in Total Non-SLR Investments (Per cent)			Total Non-SLR Investments		
	Commercial Paper	Shares	Bonds/ Debentures	Amount (Rs. crore)	Annual Growth (per cent)	Share in Total Assets of the Banks (Per cent)
1	2	3	4	5	6	7
1998	7.5	7.1	85.4	32,461	74.8	5.4
1999	8.3	8.1	83.7	48,376	49.0	6.9
2000	8.2	7.8	84.0	61,408	26.9	7.3
2001	10.6	7.5	81.9	75,844	22.9	7.6
2002	10.5	7.3	82.2	80,999	6.8	7.1
2003	4.3	9.7	86.0	92,854	14.6	6.6
2004	4.2	9.7	86.0	88,985	-4.2	5.4
2005	4.2	12.7	83.1	93,664	5.3	4.7
2006	6.1	16.1	77.9	79,464	-15.2	3.4
2007	11.0	22.0	67.0	83,466	5.0	2.9

Note : Data based on last reporting Friday of the financial year. Data exclude banks' investments in instruments of financial institutions and mutual funds.
Source : Reserve Bank of India.

Chart VI.31: Bank Group-wise Investment-Deposit Ratio (End-March)

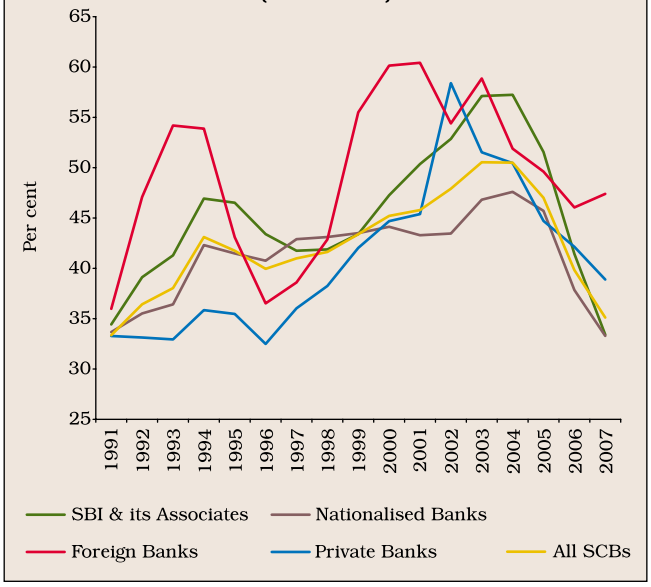


Chart VI.32: Return on Advances and Return on Investments

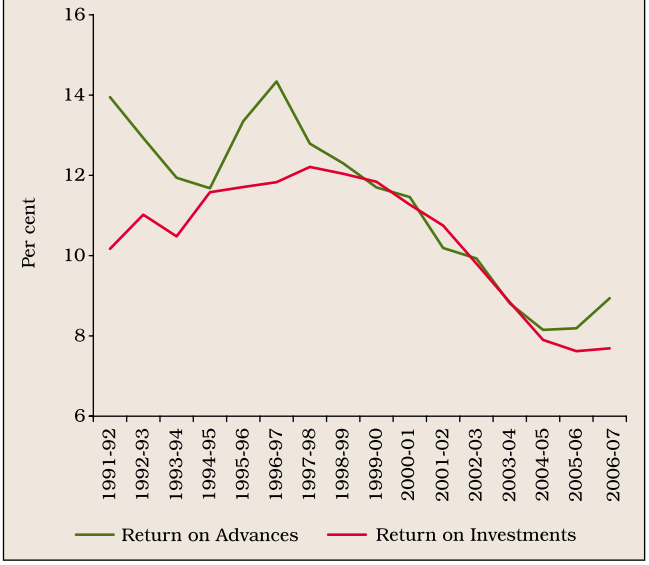


Table 6.28: The Share of Investment in Total Assets : Select Countries

(Per cent)

Country	2000	2001	2002	2003	2004	2005	2006
1	2	3	4	5	6	7	8
Advanced Economies							
Canada	31.8	30.6	32.9	33.2	34.6	36.9	36.4
France	17.1	16.7	22.1	24.4	47.7	48.5	47.3
Germany	31.1	33.1	36.7	39.5	40.7	41.9	39.3
Italy	12.1	9.6	8.8	10.5	18.6	24.1	22.0
Japan	26.7	25.8	28.9	32.1	33.7	33.5	33.3
United Kingdom	38.3	36.2	29.6	45.3	28.6	31.9	31.5
United States	25.5	28.4	30.5	31.0	30.7	29.1	29.2
Emerging Economies							
Brazil	40.1	40.2	37.2	35.6	35.9	34.8	36.0
China	13.2	15.8	21.1	22.7	25.2	30.6	31.2
Chile	19.9	21.4	23.0	21.7	19.9	18.0	14.7
India	**38.6**	**39.0**	**41.4**	**41.1**	**37.3**	**31.3**	**27.6**
Indonesia	57.0	48.8	45.0	37.6	30.6	27.3	24.3
Malaysia	17.5	17.7	17.5	17.8	17.9	17.5	18.8
Mexico	13.8	18.5	16.7	21.7	23.5	22.3	20.7
Philippines	13.9	24.1	10.9	10.5	36.4	35.4	32.2
Russian Federation	14.5	13.4	18.9	19.2	16.8	15.8	13.4
South Korea	26.5	26.0	21.4	19.5	19.7	20.4	18.6
Thailand	19.7	23.2	25.8	26.3	19.8	16.6	15.2

Source: Bankscope. Data for India are from Statistical Tables Relating to Banks in India, various issues, Reserve Bank of India.

6.129 To sum up, banks have been provided with greater flexibility in their investment portfolio since the mid-1990s. Banks used this flexibility to maximise returns. Banks continued to remain invested in Government securities even when the SLR was brought down significantly in the mid-1990s. This was mainly because credit demand had slowed down and also because banks found risk-adjusted return on Government securities more attractive. However, banks offloaded the excess stock of Government securities when interest rates softened (and made large trading profits in the process) and credit demand picked up. Non-SLR investments by banks were adjusted rapidly in response to their requirement of SLR portfolio and credit demand. Returns on investments held by banks have now converged with those on their loans and advances.

6.130 The overall analysis of lending and investment operations of SCBs reveals that credit by SCBs from the early 1990s witnessed three distinct phases. In the first phase (from 1990-91 to 1995-96), bank credit growth showed erratic behaviour. In the second phase (from 1996-97 to 2001-02), bank credit growth decelerated sharply and remained range-bound. In the third phase (from 2002-03 to 2006-07), credit growth has been high. Banks' loan portfolio responded mainly to the developments in the real economy and their own health. Bank credit growth decelerated from 1996-97 to 2001-02 when the industrial sector slowed down and banks' health was impaired. However, credit growth accelerated from 2002-03 onwards when credit demand picked up and banks' health improved. The credit to GDP ratio of banks in India also increased significantly in the current decade. However, the credit to GDP ratio in India was significantly lower than that in advanced economies and several other emerging market economies, as might be expected, given India's lower per capita income.

6.131 Bank credit underwent a major compositional shift from 2002 onwards. Credit growth to agriculture, accelerated significantly from 2003-04 onwards. Although the share of agriculture credit in total bank credit declined over the years, it needs to be seen in the context of decline in the share of agriculture in GDP. Credit intensity (agriculture credit as percentage of sectoral GDP) increased significantly. In fact, credit intensity of agriculture in 2006-07 was at an all-time high level. A cross country comparison suggests that the share of bank credit to the agriculture sector in total bank credit in the case of banks in India was on the higher side as compared with that in other countries. Commercial bank credit intensity of the

agriculture sector in India, in recent years, was also higher than some countries such as Germany, Thailand and Indonesia but lower than the UK, Australia and the US.

6.132 Bank credit to industry accelerated between 2000-01 and 2005-06. The financing pattern of Indian corporates also suggested a sharp increase in the share of bank borrowings in total sources of funds of the corporates. As a result, credit intensity of industry increased significantly after 2001-02. However, a part of the increase was on account of sharp increase in exposures of banks to the infrastructure sector and project loans to the corporates as reflected in the increase in the share of medium and long-term loans in total credit. Although the share of bank credit to industry in total credit declined over the years, still the dependence of industry on the banking sector in India was significantly higher than that in many other countries such as Australia, Brazil, the UK, New Zealand, South Korea and the US. Credit intensity of the industrial sector in India was also far higher than that in several other countries. This, however, cannot be attributed entirely to the increased exposure to the infrastructure sector. This is because although the share of credit to the infrastructure sector in total bank credit in India was higher than that in other countries, the difference was not large enough so as to explain the higher share of industry in total bank credit. The high credit intensity of industry was somewhat surprising, given that the share of the SSI sector in total credit to industry declined consistently over the years. This clearly suggests that in India, large corporates have increased their reliance on the banking sector and this was in contrast to the trend in many other countries. A survey of select countries on the financing pattern of SSIs also revealed that the dependence of the SSI sector on the banking sector in India was far lower than that in many other countries such as Argentina, Brazil, Chile, Colombia, Indonesia, Pakistan, the Philippines, and the US. The dependence of the SSI sector on the banking sector only in China, France and United Kingdom was lower than that in India.

6.133 A significant feature of bank credit in recent years was the sharp increase in credit in personal loans, which accounted for almost one-fourth of the total bank credit at end-March 2007. Most of the increase emanated from the increase in the share of housing loans. A cross country evidence suggested that the share of housing credit in total bank credit in the case of India was higher than that in Argentina, Indonesia, Israel, Mexico, and Turkey but lower than that in Chile, Columbia, Czech Republic, Hungary, Korea, Malaysia and Singapore.

6.134 Thus, agriculture, infrastructure, large corporates and households benefited from the sharp increase in bank credit in recent years. The SME sector received less than due attention from the banking sector. Banks adjusted their investments in SLR (other than the minimum statutory requirement) and non-SLR securities to suit the requirements of their credit portfolio.

IX. THE WAY FORWARD

6.135 Given that credit plays an important role in promoting the growth of the economy, the Reserve Bank has always endeavoured to ensure that adequate credit is available to all the productive sectors of the economy. Demand for bank credit is likely to remain strong in view of large funding required by the infrastructure sector, the growing size of the services sector, increased funding by the SMEs and rural enterprises, increasing household incomes and greater monetisation of the economy. The emphasis on financial inclusion will also lead to increased demand for credit. The banking system has to respond adequately to these new opportunities. Innovative channels for credit delivery for serving these new rural credit needs, encompassing full supply chain financing, covering storage, warehousing, processing, and transportation from farm to market will have to be found. The incipient investment boom in infrastructure, industry and services will yield best results only if enormous resource flows are successfully intermediated at a low cost. This will depend on the ability of the financial sector to process information properly and in an efficient manner.

6.136 While various measures from time to time have had favourable impact, there is a need to ensure that credit flows smoothly to all sectors, especially agriculture and SMEs. This is necessary to sustain the overall growth of the economy.

6.137 Banks, of late, are moving towards the use of more sophisticated risk management techniques. At present, banks, by and large, depend more on the traditional mode of hedging the credit risks by resorting to restricting fresh exposures, outright sale of an existing fund based exposure, obtaining credit guarantee cover, and more recently securitisation. In future, some more products such as credit derivatives may emerge in India. The Reserve Bank of India had issued the modified draft guidelines for introduction of credit derivatives in India on May 16, 2007.

However, in view of certain adverse developments witnessed in different international financial markets, particularly the credit markets, it has been decided to keep in abeyance the issuance of the final guidelines on introduction of credit derivatives in India.

Agricultural Finance

6.138 The major challenges faced in agricultural credit involves not only ensuring flow of credit to the small and marginal farmers but also designing policies and credit delivery systems that are relevant to the present scenario in terms of production and demand for agricultural products. Any policy on the future direction of agricultual credit in the country needs to take into account the need for crop diversification in the rural areas (Mohan, 2006). The current 'multi-agency' approach is proving to be inadequate to tackle the pressing need for finance of agricultural extension services. In order to fund the development of a wide range of allied activities, the issue is how to channel the resources of commercial banks, especially public sector banks (PSBs) in a sustainable and viable fashion.

6.139 A review of the performance of agricultural credit in India reveals that though the overall flow of institutional credit increased over the years, still substantial gaps persist in rural financial markets. These gaps relate to scarce provision of formal agricultural credit to small farmers and perhaps the inadequate medium and long-term lending. Furthermore, the extant legal framework and some issues relating to tenancy laws have also hampered the flow of credit and the development of strong and efficient agricultural credit institutions. The specific needs of the agricultural sector for financial services demand a broader systemic approach. There is need to understand the extent of availability and distribution of productive resources, along with their distribution, legal and social structures governing their use, cropping patterns, current and emerging technologies and dynamics of rural markets, among others, to gauge the credit requirements. This would improve the flow of credit to agriculture, especially small farmers. However, it also needs to be noted that it is difficult to estimate the true needs for agricultural credit, though studies generally tend to show a strong correlation between rural financial market development and high agricultural growth. A critical determinant for agricultural credit is the commercialisation of subsistence farmers. Development of efficient marketing system, among others, would result in the commercialisation of subsistence farmers by providing outlets and incentives for increased production (Mohan, 2006). Hence, agricultural credit can act as a facilitator but, by itself, cannot make a significant impact on agricultural growth unless critical issues related to rural agricultural infrastructure and institutions are addressed.

To Improve the Sustainability of Credit to Agriculture by Creating Enabling Conditions

6.140 Credit is an important input in agriculture activity. However, it will not serve the purpose unless agriculture is made viable. This requires irrigation facilities, rural roads and other infrastructure. A major issue in this context is also the inefficiency in resource use on account of mispricing of inputs such as power, water and credit. There is also a need for a greater market orientation of the sector. Farmers need to be incentivised to adopt market based solutions for input procurement and marketing of output through autonomous co-operatives and other forms of organisations. Further, credit absorption could be considerably enhanced if investment and production credit are integrated and scales of finance used at the district level are reviewed and readjusted in line with the requirements of modern, market-oriented capital intensive agriculture using newer technologies and superior inputs. The need, thus, is to create a favourable environment in which agriculture is sustained as a business and both public and private institutions participate willingly in the provision of financial services to agriculture on a sustainable basis.

Banks Need to Play an Active Role

6.141 Term loans to agriculture in total agricultural credit has registered a significant decline since the early 1990s. This is a matter of concern as this occurred when the share of agriculture credit in total credit also declined (until last few years). The decline is all the more disturbing because the share of overall medium and long-term loans in the portfolio of banks increased sharply in recent years. The deceleration in the growth of long-term loans impairs agricultural borrowers' credit absorption capacity, which would eventually affect the growth of crop loans as well. The flow of investment credit to agriculture is constrained by high transaction costs, structural deficiencies in the rural credit delivery system, issues relating to credit worthiness, lack of collaterals in view of low asset base of farmers, low volume of loans with associated higher risks and high manpower requirements, among others. Banks might also be more interested in extending short-term credit as it

bears low credit risk, entails lower supervision and monitoring costs, and facilitates asset liability management. As the decline in the share of long-term credit to agriculture could have serious implications for investment in agriculture, it is necessary that banks gradually increase the share of medium and long-term funding to agriculture. Significantly, term loans to agriculture increased sharply in 2007 and the need is to sustain this increase.

Need for Increased Support to Small and Marginal Farmers

6.142 Small and marginal farmers constitute the largest segment of farming community. They have no protection against natural calamities and are easily vulnerable. However, the share of small and marginal farmers in total agricultural credit has declined, *albeit* marginally. One category of agricultural loans of considerable bearing to small and marginal farmers is small loans (loans with a credit limit size of up to 2 lakh). On account of the limited ability of small borrowers to manage interest rate risk and for ensuring availability of credit at reasonable rates to small borrowers, interest rate ceiling on small loans up to Rs.2 lakh is linked to BPLR. Banks, in general, have been lending at sub-BPLR rates with the share of sub-BPLR lending around four fifths of total lending at end-March 2007 (RBI, 2007b). While such lending is confined to large creditworthy corporates, the agriculture sector in general is charged BPLR or in some cases higher rates (RBI, 2007a). The decline in the share of small loans in total loans to agriculture in a scenario, where lending of banks is increasingly at sub-BPLR rates, is a cause of concern.

Comprehensive Public Policy on Risk Management in Agriculture

6.143 The Union Finance Minister in the Budget for 2008-09 announced the waiver of direct agriculture loans disbursed by scheduled commercial banks, regional rural banks, co-operative credit institutions and local area banks up to March 31, 2007 and overdue as on December 31, 2007. Under this scheme, for marginal farmers (*i.e.,* holding up to 1 hectare) or small farmers (1-2 hectares), a complete waiver was announced of all eligible loan amounts that were overdue on December 31, 2007 and which remained unpaid until February 29, 2008. In respect of other farmers (more than 2 hectares), a one time settlement (OTS) scheme for all loans that were overdue on December 31, 2007 and which remained unpaid until February 29, 2008 was also announced. Since loans to farmers would be written-off, banks would be required to extend further credit to agriculture to meet the priority sector lending target. The banks would also not be affected as the Government would provide them with compensation. However, for the current debt waiver scheme to lead to a genuine revitalisation of institutional credit, it should be followed up with adequate monitoring, establishment of proper management information systems and well designed products so that banks adequately disburse credit to the agrarian sector in a viable manner. In the long run, it may perhaps be desirable to put in place a comprehensive public policy on risk management in agriculture. Such a policy, among others, could include the following three elements. First, establishing a well articulated, objective and independent assessment of impact of adverse monsoon conditions and appropriate relief to farmers on an assured basis. Second, establishing and implementing liability of suppliers for any shortfall in quality or assured supply in vital inputs such as seeds, pesticides, power and water. Third, gradually eliminating and replacing price-subsidies with outlays on risk mitigation for farmers in the broadest sense.

Ensuring Viability of Agricultural and Rural Institutions through Demand Driven Credit

6.144 The experience of the success of state-owned banks in some other countries such as BRI-UD (Indonesia) in providing rural credit in general and BAAC (Thailand) in providing agricultural credit shows that though the design specifics of agricultural institutions may vary, a combination of decentralised decision-making, efficiency in operations, stress on low cost operations and strong institutional support can result in commercially viable operations, while at the same time be successful in targeting the small and marginal farmers. In both the cases, the emphasis was on a demand-led rather than a supply-led approach. In demand-centric model, the direction of policies would be directed at creating attractive financial products and at the same time encouraging experimentation and adoption of new financial technologies, especially in maintaining cost-effective accurate management information systems. Supply driven credit in India has been less effective in reaching the needy in the agriculture and rural sectors. Therefore, the demand driven focus could be explored in the agricultural sector in India. Under

a demand centric approach for credit, deposits and other financial products, the primary focus would be on creating an enabling financial environment in rural areas primarily by a combination of favourable macroeconomic, agriculture and credit sector policies coupled with strong institutional design for their implementation. In order to have an effective coverage of the small and marginal farmers under such an approach, there should exist a decentralised network of branches that work as profit centres. Devising products to suit the specific needs of the farmers, especially on the loan repayment front, is critical. For farmers, timeliness and assured availability of credit is more critical than interest subsidy. In fact, the experiences of a number of microcredit systems have been more or less on this line of thinking.

Financing with Innovative Instruments

6.145 Adoption of innovative financial technologies may lead to improved credit access for farmers. Financial technologies, other than traditional loan finance, that can help in financing agricultural activities include leasing of farm machinery and equipment. The principle of separating the ownership rights from the user rights of an asset has two main potential advantages. First, it substitutes for additional collateral and, second, it may provide tax benefits. Further, inter-linking credit disbursement in cash or kind with output marketing can also be attempted. This would reduce the need for conventional loan collateral and reduce transaction costs related to loan collection, especially in scarcely populated areas. It has been widely used by non-financial institutions like traders, marketing boards, co-operatives and contract farming schemes for providing seasonal inputs on credit to be recovered through deductions from the produce.

Use of Score Carding for Credit Evaluation

6.146 Banks and other rural financial institutions could consider score-carding using limited information obtained from loan application forms. Through it, the financial institution could try to estimate the determinants of successful performance/repayment on agricultural loans from the previous experience; and to use those determinants (in a mechanistic, simple-to-use scoring procedure) to classify the loan applications into three categories: (1) accept, (2) reject, and (3) needs further analysis from a loan officer. This process could be used both to improve the speed and reduce the cost of credit decisions, and to direct loan officer's time and energy to those credits that need more analysis.

Computerised Land Records

6.147 One of the major constraints in increasing the credit flow to agriculture is the lack of suitable collateral. Most often land is the only asset available with the farmers. However, weak land titling and lack of proper land records prove to be a major impediment in using land as collateral. Availability of computerised land records can go a long way in smoothening the flow of credit to agriculture.

Coordination between Formal and Non-Formal Finance to Agriculture

6.148 There is need for the convergence of both informal and formal institutional arrangements. The challenge is to coordinate a variety of existing viable financial institutions that are client oriented, that mobilise deposits efficiently and provide access to loans to a broad spectrum of farmers, agri-business entrepreneurs and other rural clients due to specific nature of agricultural credit demand. Agricultural lending has a particular term-structure (seasonal and long-term). Accordingly, coordinating the credit flow from both informal and formal credit sectors would promote the agriculture growth.

SME Finance

6.149 SMEs constitute an important segment of the industrial and services sectors in India in view of their significant contribution to employment generation and exports. With the emergence of new activities in the rural segment such as agri-clinics, contract farming and rural housing with forward and backward linkages to SMEs, lending to SMEs is a viable revenue proposition for banks. For this potential to be realised, however, there is a need to increase credit availability to this sector at a reasonable cost. However, as underlined in the previous section, SMEs are not receiving adequate credit from the institutional set-up. This needs to change. The following specific suggestions could go a long way in improving the flow of credit to the SME sector.

Growth Clusters

6.150 The use of cluster approach for lending to SMEs has been found to be useful in many countries and even in India as revealed by a number of empirical

studies. This method seems to be worth emulating in a bigger way in India. A number of existing SME clusters such as Khadi and Village Industries Commission (KVIC), Ludhiana and Tirupur have enjoyed a measure of success. Lending to recognised SME clusters based on trade record, competitiveness or growth prospects can be encouraged. Encouraging such consolidation and delivering credit through this structure can enhance the bargaining power of SMEs, as well as help lenders reduce transaction costs to access information for better risk assessment and to put monitoring systems in place. Institutions such as CRISIL and IBA could develop a rating mechanism for industrial clusters, which could galvanise SMEs into adopting more efficient business practices and superior quality control and also enable lenders to penetrate the market more effectively.

Role of Credit Information Bureau

6.151 Empirical evidence shows that wider availability of credit histories greatly expands the flow of credit as potential borrowers are no longer tied to their local lenders (Mohan, 2005). Mutual transparency between lenders and borrowers, and between investors and issuers is a key requirement for the actual risk assessment of the borrower. Indeed, transparency is achieved mainly through financial and accounting disclosure. The quality of information emanating from SMEs must be improved and its presentation further harmonised. The maintenance of information and transparency becomes absolutely essential in the context of Basel II norms. Recent initiatives of the Government and the Reserve Bank such as the new legislation aimed at developing credit information bureaus should help in reducing information and transaction costs that should then lead to lower cost of credit to the SME sector. The legislation has already been put in place. The need is to encourage the formation of information bureaus/companies.

Small Business Credit Scoring (SBCS)

6.152 Credit scores have been widely used for many years in consumer credit markets (for instance mortgages, credit cards, and automobile credits) abroad, resulting in low cost, commoditised credits that are often sold into secondary markets, yielding significant growth in consumer credit availability. Banks in developed countries like the US are increasingly using the small business credit scoring (SBCS) technique to evaluate the credit worthiness of SMEs. SBCS used by many financial institutions to evaluate applicants for "micro credits" in developed countries could be tried in India too. Credit information companies/bureaus could also be expected to play a useful role by developing the credit scoring system.

Asset Based Lending

6.153 Providing asset based loans to SMEs are common among commercial banks in the US. The assets include commercial account receivables, inventory, business equipment and machinery, recurring revenue contracts, and commercial real estate. In asset based lending, banks provide SMEs a revolving line of credit based on a percentage of each of the qualifying asset classes. Growing small businesses, medium businesses and large companies can tap their assets for working capital to support growth and help fund through seasonal and cyclical periods or turnaround situations. Funds from asset based finance are used by SMEs for day-to-day operations, or as capital for restructuring/ turnarounds. Asset based loans are generally cost effective and competitive relative to other financial options. SMEs can draw from the 'line of credit', whenever needed and pay back to increase availability for future use. Since interest is charged only on the funds drawn, overall it is less expensive than a term loan. SMEs can borrow against their receivables and inventory, and retain control and ownership of their assets along with all credit and collection procedures.

Centralised Information on SMEs

6.154 Risk assessment is essential, and requires the co-operation of the company in order to ensure an appropriate positioning of the exposure on the bank's risk scale. To overcome the problem of informational opacity which is a major constraint in SMEs access to bank finance, the Banque de France places a set of on-line information services for the use of the banking profession. These "company credit ratings" are assessments of the capacity of companies to meet their financial obligations at a three-year horizon. Companies are rated on the basis of complete accounting documentation. Bank Negara Malaysia has launched an exclusive website for dissemination of information about various policies and awareness about SMEs. It may not be possible for the Reserve Bank to do this job in India, given the number of SMEs in India. However, it is expected that CIBIL or credit information companies which may be set up in future would make such an assessment of the borrowers and provide the information to banks.

Access to Capital Markets through Establishment of SME Stock Exchange

6.155 To facilitate the access to capital markets by the SMEs, in France, the actual listing structure of the equity market was overhauled considerably with the creation of a segment tailored to SMEs. In order to enhance the visibility and attractiveness of mid cap companies among individual and institutional investors, a new range of specific indices were created, and the special status of "small and mid cap expert" was established. In order to provide solutions that best fit the needs of mid cap companies, Euronext1 overhauled the listing structures on all of its markets. In India also, recently initiatives have been undertaken on the lines of European model of alternative stock exchange for SMEs. The Securities and Exchange Board of India (SEBI) has already approved an exchange to enable SMEs to raise capital from the equity market. The SEBI is in the process of putting in place enabling provisions that would facilitate an exchange for the SMEs in the calendar year 2008. A large number of regional stock exchanges also appeared to have expressed interest in such an endeavour. The need, therefore, is to expedite the setting up of an SME exchange. It is reported that the market regulator is likely to initially allow one SME exchange to operate. The global trend is to have a number of exchanges to create competition. Therefore, after gaining some experience, the possibility of creating more SME exchanges could be explored.

Venture Capital Financing

6.156 Venture capital has also a role to play in financing of SMEs (Mohan, 2008). Venture capital financing has played a great role in Silicon Valley in the US, and Canada, particularly financing of high technology sectors, *viz.*, software and communication firms. Consumer retail, bio-medical, semi-conductor, business services are other beneficiary areas of the venture capital funds. Though cost of venture capital financing is comparatively high, it can provide vital capital to innovative high technology based firms.

Infrastructure Financing

Need to Guard Against Asset Liability Mismatch

6.157 The share of medium to long-term loans in total credit of banks has increased sharply in recent years. Data on maturity profile of deposits as mentioned in Chapter IV also suggests that maturity profile of term deposits has changed significantly in favour of short-term deposits, especially up to one year. A part of long-term assets by banks has been funded by infrastructure bonds. Still, however, the changing profile of loans and deposits has serious implications for asset-liability management and banks need to guard against any asset-liability mismatch. One option is to transfer the risk from the balance sheet of the banks to other players in the financial system. With securitisation of loans to the infrastructure sector, whereby the loans are converted into tradable debt securities, banks can effectively deal with the concerns relating to exposure norms and in spreading out of risks associated with financing to infrastructure. Although securitisation in India is allowed, it has not become popular. Efforts, therefore, need to be made to popularise such products. However, in view of the collapse of the mortgage backed securities (MBS) market in United States and its impact on the health of the financial system in particular and the growing realisation that risks were often passed on to those who were least able to understand them, there is a need to take enough precautions to ensure such problems do not arise in India.

Need to Reduce the Dependence of Industry on the Banking Sector

6.158 The industrial sector continues to depend heavily on the banking sector. Although the share of industry in total bank credit has declined, credit intensity of industry has increased. The evidence also suggests that the industrial sector in India is much more dependent on the banking sector in comparison with other countries. Industry, therefore, needs to gradually reduce its dependence on the banking sector so that the requirements of agriculture and SME sector which are unable to tap funds from other sources, could be met by the banking sector.

X. SUMMING UP

6.159 Bank finance continues to be the predominant source of credit for all the major sectors of the economy. The role of the banking sector in providing credit in India has increased due to conversion of two DFIs into banks. The demand for bank credit has also increased on account of sustained high rates of growth of certain sectors of the economy and the emergence of new sources of demand. The pattern of lending and investment

operations of banks has evolved in response to changing structure of the economy.

6.160 The behaviour of bank credit since the early 1990s could be broadly categorised into three phases. In the first phase (from 1990-91 to 1995-96), bank credit growth showed an erratic behaviour. In the second phase (from 1996-97 to 2001-02), bank credit declined sharply and remained range bound between 10 to 18 per cent. In this phase, banks increased their investment in Government securities, even as such requirements were brought down gradually. This pattern reflected mainly the risk aversion by the banks due to application of prudential norms and slowdown of the industrial sector. In the third phase (2002-03 to 2006-07), credit growth remained generally robust. The demand for credit in the early part of this phase, which emanated mainly in the form of retail loans, soon turned broad-based, encompassing agriculture, industry and infrastructure sector. This was partly on account of robust growth of the economy and partly on account of the efforts made by the Reserve Bank to increase the formal credit to agriculture and the SME sector. There are several distinguishing features of this phase. One, household sector emerged as the significant component of bank credit. Two, the share of medium and long-term credit in total credit increased sharply mainly on account of infrastructure projects and credit for housing projects. Three, the credit-GDP ratio increased significantly.

6.161 The share of borrowing by cultivator households from institutional sources in total borrowings declined between 1991 and 2002. However, this was possibly due to increased borrowings for non-productive expenditure. The borrowings by cultivator households from institutional sources during the same period grew at a higher rate between 1991 and 2002. Credit to agriculture by SCBs which had decelerated in the 1990s, showed a significant growth from 2003-04 onwards. The share of credit to agriculture in total bank credit also increased sharply. There was also an increase in priority sector advances to agriculture as percentage of non-food bank credit. As a result, credit intensity of the agricultural sector improved significantly. However, several disconcerting features were also noted. One, the share of long-term loans in total credit to agriculture declined almost consistently between 1991 and 2006; the share in 2006 was less than half of the share in 1991. Outstanding term loans to agriculture, however, showed a significant improvement in 2007. Two, the share of small and marginal farmers in direct finance to farmers, in terms of both number of accounts and loans disbursed to agriculture, showed little perceptible improvement.

6.162 Bank credit to SMEs in India, which decelerated during the period 1994-95 to 2002-03, picked up thereafter. However, despite various policy initiatives, bank credit to SMEs has not been in consonance with the significance and needs of this sector. Bank credit has been the most important source of finance for SMEs the world over. SMEs are informationally opaque, the factor which has constrained their smooth access to bank credit. In order to sustain credit growth in the economy, it is necessary that various constraints on the flow of credit to agriculture and SMEs are removed.

6.163 In order to increase the credit flow to agriculture, it is necessary that enabling conditions are created so that agriculture becomes a sustainable business and public and private institutions willingly participate in lending to agriculture. There is also a need for a comprehensive public policy on risk management in agriculture. Supply driven credit, which is being followed at present in India and several other countries, has not been so effective. Therefore, some countries have focused on demand-centric approach. Under this model, the focus is on creating innovative financial products to suit the requirements of borrowers. The demand centric approach could also be explored in the agricultural sector in India. Since land is the only asset available with farmers, it is necessary to computerise the land records to facilitate the use of land as collateral. For the SME sector, there is a need to encourage clusters, which can enhance the bargaining power of SMEs as well as help lenders to reduce the transaction costs to access information. There is also a need to explore asset based financing for the SME sector in India. It is a more cost effective financing option than term loans.

6.164 In India, the industry continues to rely heavily on the banking sector. The industry needs to gradually reduce its dependence on the banking sector so that banks could meet the growing requirements of agriculture and SMEs, which cannot fund their requirements from other sources.

6.165 It is evident that banks in India have played a crucial role in the development process of the country. However, some gaps still remain which need to be filled for the growth process to be more sustainable and equitable. For the banking system

to nurture innovation and growth, its risk assessment practices need to improve while transaction costs need to be reduced. Greater availability of credit histories and credit information should help in this regard. All these will lead to better capacity in the financial system to take informed credit decisions. The issue is basically one of informed risk management in terms of segregating more risky from less risky credits and finding appropriate ways of financing them (Mohan, 2008).

VII FINANCIAL INCLUSION

7.1 Access to safe, easy and affordable credit and other financial services by the poor and vulnerable groups, disadvantaged areas and lagging sectors is recognised as a pre-condition for accelerating growth and reducing income disparities and poverty. Access to a well-functioning financial system, by creating equal opportunities, enables economically and socially excluded people to integrate better into the economy and actively contribute to development and protect themselves against economic shocks. Despite the broad international consensus regarding the importance of access to finance as a crucial poverty alleviation tool[1], it is estimated that globally over two billion people are currently excluded from access to financial services (United Nations, 2006a). In most developing countries, a large segment of society, particularly low-income people, has very little access to financial services, both formal and semi-formal. As a consequence, many of them have to necessarily depend either on their own or informal sources of finance and generally at an unreasonably high cost. The situation is worse in most least developed countries (LDCs), where more than 90 per cent of the population is excluded from access to the formal financial system (United Nations, 2006a).

7.2 Theories of development advocate that financial development creates enabling conditions for growth through either a 'supply-leading' (financial development spurs growth) or a 'demand-following' (growth generates demand for financial products) channel. Earlier theories of development hypothesised that a rise in inequality was inevitable in the early stages of development. The early literature on the subject focussed on the need to develop an extensive financial system that could tap savings and then channel the funds so generated to a wide spectrum of activities. The modern development theory perceives the lack of access to finance as a critical factor responsible for persistent income inequality as well as slower growth. A large body of empirical literature suggests that developing the financial sector and improving access to finance may accelerate economic growth along with a reduction in income inequality and poverty. Without an inclusive financial system, poor individuals and small enterprises have to rely on their own limited savings and earnings to invest in their education and entrepreneurship to take advantage of growth opportunities (World Bank, 2008).

7.3 In an underdeveloped financial system, certain segments of the population experience difficulties in obtaining appropriate access to financial services. As a result, they have to resort to high cost informal sources such as moneylenders. This is particularly true for the sporadic financing requirements of low income households for non-productive consumption purposes and other emergency requirements such as medical expenditure. Benefits of growth, therefore, tend to concentrate in the hands of those already served by the formal financial system. In mature financial systems on the other hand, financial institutions develop appraisal techniques and information gathering and sharing mechanisms, which then enable them to finance even those activities or firms or individuals that are at the margin, thereby promoting their growth-inducing productive activities. However, developed financial systems also encounter difficulties in serving low income groups for financing their consumption and other needs. The availability of external finance to potential entrepreneurs and small firms enables new entrants leading to increased competition to incumbents. This, in turn, encourages entrepreneurship and productivity.

7.4 Inclusive finance, including safe savings, appropriately designed loans for poor and low-income households and for micro, small and medium-sized enterprises, and appropriate insurance and payments services can help people to enhance incomes, acquire capital, manage risk, and come out of poverty (United Nations, 2006b). It has been well recognised that access to financial services facilitates making and receiving financial payments and reduces transaction costs. Furthermore, access to financial services

[1] The critical importance of micro-finance in achieving the Millennium Development Goals was highlighted at the World Summit, 2005, as well as in the endorsement by the Summit for the Monterrey Consensus of the International Conference on Financing for Development. The final declaration of the Monterrey Consensus put particular emphasis on strengthening domestic financial sectors to include underserved segments, such as rural areas and women.

contributes to higher production and social protection, as the financial sector – through stored savings, credit and insurance – serves as a measure of crisis mitigation. Broader access to financial services has, however, attracted less attention despite the emphasis it has received in the theory.

7.5 In India, growth with equity has been the central objective right from the inception of the planning process. Accordingly, over the years, initiatives have been taken continuously by the Government and the Reserve Bank to address the issue of inclusive growth. Notwithstanding the rapid increase in overall GDP and per capita income in recent years, a significant proportion of the population in both rural and urban areas still experiences difficulties in accessing the formal financial system. Recent concerns have arisen from an inadequate reduction in poverty levels, sectoral divergences in growth and employment opportunities and tardy improvement in other social indicators, despite higher economic growth. The Eleventh Five Year Plan, therefore, re-emphasised the need for a more inclusive growth in order to ensure that the per capita income growth is more broad-based. The farming, micro, small and medium enterprises have immense potential to play a critical role in achieving the objective of faster and more inclusive growth as these sectors contribute to output and employment generation in a significant way with capacity to expand regionally diversified production and generating widely dispersed off-farm employment.

7.6 Bringing the larger population within the structured and organised financial system has explicitly been on the agenda of the Reserve Bank since 2005 (Mohan, 2006). While several central banks focus solely on inflation, many in developed and emerging economies alike, including India, also focus on growth. There is currently a perception that there are a large number of people, potential entrepreneurs, small enterprises and others, who may not have adequate access to the financial sector, which could lead to their marginalisation and denial of opportunity to grow and prosper. The Reserve Bank has, therefore, introduced various new measures to encourage the expansion of financial coverage in the country. Financial inclusion is considered essential for fostering economic growth in a more inclusive fashion.

7.7 In a fast growing economy, an important issue is how to sustain and diversify growth so that the risk to growth process is diversified across sectors. It is in this context that the search for potential sources of incremental growth, *i.e.,* sectors that have difficulty in accessing financial services, assumes importance. Therefore, including such segments or sectors would, on the one hand, unleash their productive capacities, and on the other, would augment domestic demand on a sustainable basis driven by income and consumption growth from such sectors. This would also have strong inter-sectoral linkages.

7.8 Against the above backdrop, this chapter, drawing upon the theoretical developments, country experiences and empirical findings, seeks to examine key issues in financial inclusion/exclusion in India. Section II discusses the conceptual framework and measurement related issues. The nature, causes and consequences of financial exclusion are discussed in Section III. Section IV details the policy initiatives undertaken for promoting financial inclusion in India. Section V analyses the nature and extent of financial inclusion/exclusion in India. Operating cost of financial inclusion and the role of technology in financial inclusion are discussed in Section VI. Drawing from country experiences and empirical analysis in the Indian context, Section VII, as a way forward, makes some suggestions to promote financial inclusion in India. Section VIII concludes the chapter.

II. ACCESS TO FINANCE: CONCEPTUAL FRAMEWORK

Concept and Definition

7.9 Defining financial inclusion is considered crucial from the viewpoint of developing a conceptual framework and identifying the underlying factors that lead to low level of access to the financial system. A review of literature suggests that there is no universally accepted definition of financial inclusion. As measuring inclusion is perceived to be difficult, financial inclusion is generally defined in terms of exclusion from the financial system. Early discussion on financial exclusion was preceded by social exclusion and focussed predominantly on the issue of geographical access to financial services, in particular banking outlets (Leyshon and Thrift, 1993). However, financial exclusion is not just about physical access caused by the changing topography of financial services. Therefore, the debate has now broadened to include all types of people who make little or no use of financial services and the processes of financial exclusion (Ford and Rowlingson, 1996; Kempson and Whyley, 1998).

7.10 The definitional emphasis of financial inclusion varies across countries and geographies,

depending on the level of social, economic and financial development; the structure of stake holding in the financial sector; socio-economic characteristics of the financially excluded segments; and also the extent of the recognition of the problem by authorities or governments. Broadly, financial exclusion is construed as the inability to access necessary financial services in an appropriate form due to problems associated with access, conditions, prices, marketing or self-exclusion in response to discouraging experiences or perceptions of individuals/entities.

7.11 Definitions of financial exclusion in the literature vary depending on the dimensions such as 'breadth', 'focus' and 'degree' of exclusion. The 'breadth' dimension is the broadest of all definitions linking financial exclusion to social exclusion which defines financial exclusion as the processes that prevent poor and disadvantaged social groups from gaining access to the financial system (Leyshon and Thrift, 1995). The 'focus' dimension is in the middle of the spectrum that links financial exclusion to other dimensions of exclusion. It defines financial exclusion as the potential difficulties faced by some segments of population in accessing mainstream financial services such as bank accounts/home insurance (Meadows *et al*., 2004). The definitions laying emphasis on the 'focus' also vary significantly to include various segments of population such as individuals, households, communities, and businesses. The 'degree' dimension, which is the narrowest of all definitions of financial exclusion, defines financial exclusion as exclusion from particular sources of credit and other financial services including insurance, bill-payment services and accessible and appropriate deposit accounts (Rogaly, 1999). Finally, definitions of financial exclusion vary considerably according to the dimensions such as the concept of relativity, *i.e*., financial exclusion defined relative to some standard (*i.e*., inclusion). This line of thinking defines the problem of financial exclusion as that emanating from increased inclusion, leaving a minority of individuals and households behind (Kempson *et al*., 2000). Thus, there exists duality of hyper inclusion with some having access to a range of financial products and at the same time a minority lacking even the basic banking services. This phenomenon is observed mostly in developed countries with high degree of financial development.

7.12 Over the years, several definitions of financial inclusion/exclusion have evolved (Table 7.1). The working or operational definitions of financial exclusion generally focus on ownership or access to particular financial products and services. The focus narrows down mainly to the products and services provided by the mainstream financial service providers (Meadows *et al.,* 2004). Such financial products may include money transmission, home insurance, short and long-term credit and savings (Bridgeman, 1999). Furthermore, the operational definitions have also evolved from the underlying public policy concerns that many people, particularly those living on low income, cannot access mainstream financial products such as bank accounts and low cost loans, which, in turn, imposes real costs on them - often the most vulnerable people (H.M. Treasury, 2004).

7.13 The review of literature suggests that the most operational definitions are context-specific, originating from country-specific problems of financial exclusion and socio-economic conditions. Thus, the context-specific dimensions of financial exclusion assume importance from the public policy perspective. Furthermore, the definitions have witnessed a shift in emphasis from the earlier ones, which defined financial inclusion and exclusion largely in terms of physical access, to a wider definition covering access to and use and understanding of products and services.

7.14 The operational definition of financial inclusion, based on the access to financial products or services, also underscores the role of financial institutions or service providers involved in the process. The anatomy of various financial products or services and the institutional structure is schematically presented in Chart VII.1.

Measurement of Financial Inclusion/Exclusion

7.15 While the importance of financial inclusion has been widely accepted, much less is known about how inclusive the financial systems are and who has access to which financial services. The literature on financial inclusion lacks a comprehensive measure that can be used to indicate the extent of financial inclusion across countries. Though indicators of the depth of banking system, capital markets, and insurance sector are widely available, there is less information available about the degree of financial inclusiveness. Lack of information is more conspicuous in developing countries where there is little systematic information on who is served by the formal financial sector, which financial institutions or services are the most effective at supporting access by poor households and small enterprises, or what

Table 7.1: Definitional Aspects of Financial Inclusion/Exclusion

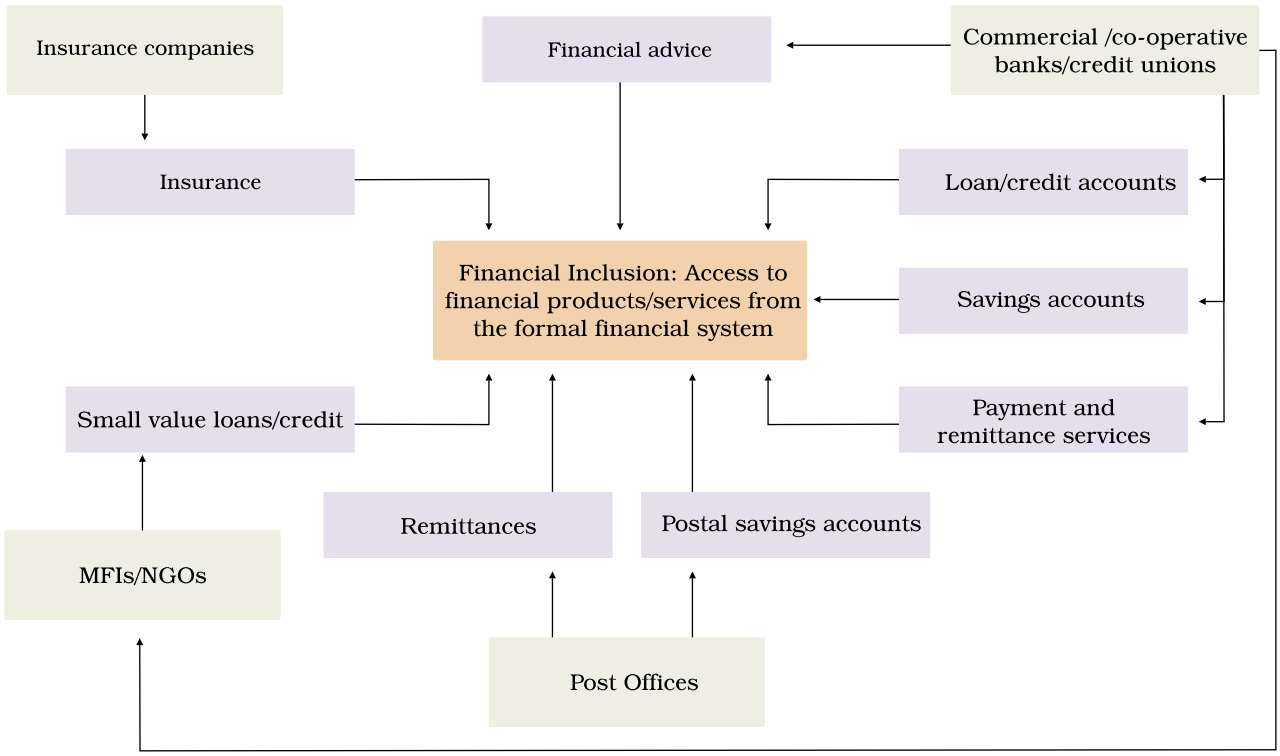
Institution/Author	Definition	Indicators
1	2	3
ADB (2000)	Provision of a broad range of financial services such as deposits, loans, payment services, money transfers and insurance to poor and low-income households and their micro-enterprises.	Deposits, loans, payment services, money transfer and insurance.
Stephen P. Sinclair (2001)	Financial exclusion means the inability to access necessary financial services in an appropriate form. Exclusion can come about as a result of problems with access, conditions, prices, marketing or self-exclusion in response to negative experiences or perceptions.	Basic banking services for money transmission, credit, insurance, debt and debt assistance, long-term savings and financial literacy.
Chant Link and Associates, Australia (2004)	Financial exclusion is lack of access by certain consumers to appropriate low cost, fair and safe financial products and services from mainstream providers. Financial exclusion becomes a concern in the community when it applies to lower income consumers and/or those in financial hardship.	Deposit accounts, direct investments, home loans, credit cards, personal loans, building insurance and home insurance.
Treasury Committee, House of Commons, UK (2004)	Ability of individuals to access appropriate financial products and services.	Affordable credit and savings for all and access to financial advice.
Scottish Government (2005)	Access for individuals to appropriate financial products and services. This includes having the capacity, skills, knowledge and understanding to make the best use of those products and services. Financial exclusion by contrast, is the converse of this.	Access to products and services, and/or capacity, skills, knowledge and understanding.
United Nations (2006 b)	A financial sector that provides 'access' to credit for all 'bankable' people and firms, to insurance for all insurable people and firms and to savings and payments services for everyone. Inclusive finance does not require that everyone who is eligible use each of the services, but they should be able to choose to use them if desired.	Access to credit, insurance, savings, payment services.
Report of the Committee on Financial Inclusion in India (Chairman: C.Rangarajan) (2008)	The process of ensuring access to financial services and timely and adequate credit where needed by vulnerable groups such as weaker sections and low income groups at an affordable cost.	Access to financial services and timely and adequate credit.
World Bank (2008)	Broad access to financial services implies an absence of price and non-price barriers in the use of financial services; it is difficult to define and measure because access has many dimensions.	Access to financial services such as deposit, credit, payments, insurance.

practical and policy barriers may be hindering the accessibility. Individual indicators, *viz*., number of bank accounts and number of bank branches that are generally used as measures of financial inclusion, can provide only partial information on the level of financial inclusion in an economy. Financial services or products rendered by banks, postal savings banks, credit unions, finance companies, micro-finance institutions (MFIs), and other formal and quasi-formal non-bank institutions generally form the basis for measuring the financial inclusion.

7.16 It is often observed that people may have access to financial services, but may not wish to use them. Such voluntarily excluded persons, it is argued, should be included in measures of access even if they do not use financial services. However, even among the 'voluntarily excluded', this may in reality be because such services are unaffordable, unsuited to their needs, or because the potential users fear that they will be declined upon request. Among the 'involuntarily excluded' from services such as credit, some represent high credit risk that lenders are discouraged to prudently serve them.

7.17 There are various measures of access to finance. For instance, access to finance can be measured in terms of access to certain institutions (such as banks, insurance companies, and MFIs or in terms of access to the functions that such institutions perform, or the services that they provide (such as payments services, savings or loans and

Chart VII.1: Financial Products and Services and the Institutional Structure



credits). Yet another approach is to look at details on the uses of specific financial products such as debit cards, credit cards, life insurance and home mortgages, among others. However, these are highly country-specific. The core access indicators often used are generally based on institutional distinctions concerning specifically the degree of formality of the financial institutions (World Bank, 2008).

7.18 Access covers a range of institutions from the more formal to less formal. At the one end of the spectrum are banks or near banks which are often defined as formal financial institutions which can provide multiple financial services to their clients, including deposits, payments and credit services. The attributes of banks and near banks are broadly comparable across countries. Other formal financial service providers are all other legal entities licensed to provide financial services. They are registered and subject to some reporting requirements. Thus, in the case of credit, this may include consumer finance companies, credit card companies or credit unions. Informal providers of financial services are other organised providers of financial services that are not registered as financial intermediaries and not subject to any oversight. Moneylenders and cheque cashing outlets, which are not regulated financial institutions, belong to this category. Based on the above characteristics of the financial service providers, the following measures/indicators can be summarised as the basic indicators used to measure the extent/ magnitude of financial exclusion in a country.

7.19 Core and headline indicators place a given population along a continuum of access, depending on its usage of formal, semi-formal, and informal financial services, and those excluded from the use of financial services. The access to finance could be divided into four segments (i) the proportion of the population that uses a bank or bank like institution; (ii) the population which uses service from non-bank 'other formal' financial institutions, but does not use bank services; (iii) the population which only uses services from informal financial service providers; (iv) percentage of population transacting regularly through formal financial instruments; and (v) the population which uses no financial services.

7.20 The second group of core indicators looks in greater detail at the kinds of financial services offered. This functional perspective enables a focus on specific service needs and their gradation in order of priority

from less to more developed financial environment. These additional core indicators provide augmented understanding of the nature and depth of financial services. The financial service functions identified to be used as the basis for indicators are: (i) transactions or payment services; (ii) savings (deposit) and investment services; and (iii) loan or credit services. Risk transformation services such as insurance could arguably be added. However, it is conceptually similar to a sophisticated savings and credit product.

7.21 To sum up, no universally accepted definition of financial inclusion is available. Since measuring inclusion is perceived to be difficult, financial inclusion has generally been defined in terms of exclusion from the financial system. The working or operational definitions of financial exclusion generally focus on ownership or access to particular financial products and services.

7.22 There is no single comprehensive measure that can be used to indicate the extent of financial inclusion across economies. Specific indicators such as number of bank accounts, number of bank branches, that are generally used as measures of financial inclusion, can provide only partial information on the level of financial inclusion in an economy. Another approach is to look at details on the uses of specific financial products such as debit cards, credit cards, life insurance, and home mortgages, but these are highly country specific.

III. NATURE, CAUSES AND CONSEQUENCES OF FINANCIAL EXCLUSION

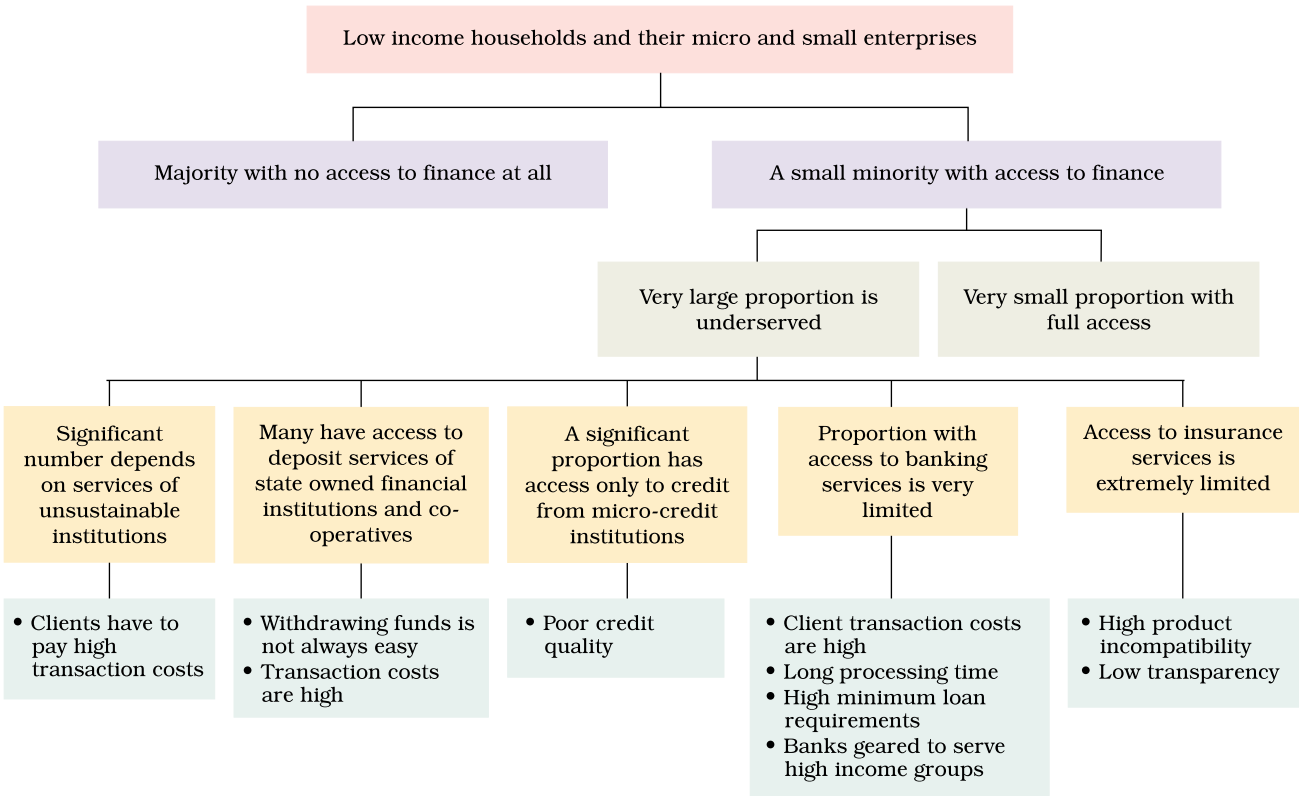
Nature and Causes

7.23 The nature and forms of exclusion and the factors responsible for it are varied and, thus, no single factor could explain the phenomenon. The principal barriers in the expansion of financial services are often identified as physical access, high charges and penalties, conditions attached to products which make them inappropriate or complicated and perceptions of financial service institutions which are thought to be unwelcoming to low income people (Sinclair, 2001). These barriers to inclusion have not been constructed deliberately; they are a result of the structural operation of the financial services industry. Kempson *et al.* (2000) analyse a range of physical and geographical barriers to financial inclusion and a broad range of other factors that can contribute to financial exclusion for different products and individuals under certain circumstances. A number of 'dimensions' or 'forms' of financial exclusion have been identified. The critical dimensions of financial exclusion include: (i) access exclusion- restriction of access through the process of risk management (by financial services providers); (ii) condition exclusion - conditions attached to financial products which make them inappropriate for the needs of some segments of population; (iii) price exclusion- some people can only gain access to financial products at prices they cannot afford; (iv) marketing exclusion - some people are effectively excluded by targeted marketing and sales; and (v) self-exclusion - people decide not to opt for a financial product because of the fear of refusal to access by the service providers (Kempson and Whyley, 1999; Kempson *et al.,* 2000; Connolly and Hajaj, 2001).

7.24 Measuring an individual's or household's usage of a particular financial service at a given time may not reveal whether exclusion is short-term or the result of a long-term process, nor whether access is diminishing or improving (Chant Link and Associates, 2004). Thus, financial exclusion is perceived as an ongoing process in terms of vulnerability to exclusion, rather than simply having access to certain financial services or not. In particular, financial exclusion may be a long-term phenomenon for many consumers or even a life-long process (Connolly and Hajaj, 2001). For families with particular constellations of socio-economic characteristics, it may extend beyond the lifetime of an individual family member and become inter-generational. It has generally been recognised that it is the poorer sections of the population that do not have access to financial services - formal or informal. However, in many countries, many non-poor individuals, micro, small and medium entrepreneurs also have difficulty in accessing financial services. The most conspicuous dimension is that many of the low-income segments of the population do not have access to even the very basic financial services. Even amongst those who have access to finance, most are underserved in terms of quality and quantity of products and services and significant proportion of low-income households is dependent on unsustainable, subsidy-dependent and poorly performing institutions (Chart VII.2).

7.25 Exclusion may also have resulted from a variety of structural factors such as unavailability of products suiting their requirements, stringent documentation and collateral requirements and increased competition in financial services. There has also been particular emphasis on socio-cultural factors that matter for an individual to access financial services (United Nations, 2006b). Substantial

Chart VII.2: Dimensions of Access Problems



Source: Asian Development Bank, 2007.

proportion of households, especially those with low income and those living in rural and remote areas, is at present outside the ambit of the formal financial system in many countries. Literature on financial inclusion/exclusion has identified a number of factors that affect efforts to expand access to financial services (Box VII.1).

7.26 Apart from the supply side factors, demand side factors also have a significant bearing on the extent of financial inclusion. A higher share of population below the poverty line results in lower demand for financial services as the poor may not have savings to place as deposit in savings banks. Thus, low income leads to low demand for financial services, particularly savings products. Likewise, at low levels of development, investment activity may be low and hence, may lead to low demand for credit from banks and other formal financial institutions. However, as poverty levels decline and households move into higher income brackets, their propensity to save increases, which, in turn, leads to higher demand for financial services both for saving and investment purposes.

7.27 Financial inclusion is also influenced by specific credit needs of various segments of the society. The demand for credit by the people arises for a number of activities such as housing, microenterprises, agricultural operations and consumption needs. Owing to difficulties in accessing formal sources of credit, the poor individuals and small and microenterprises usually rely on their personal savings or internal resources to invest in housing, health and education, and entrepreneurial activities to make use of growth opportunities (World Bank, 2008).

7.28 In India, the financially excluded sections comprise largely marginal farmers, landless labourers, oral lessees, self-employed and unorganised sector enterprises, urban slum dwellers, migrants, ethnic minorities and socially excluded groups, senior citizens and women. Some of the important causes of relatively low extension of institutional credit in the rural areas are risk perception, cost of its assessment and management, lack of rural infrastructure, and vast geographical spread of the rural areas with more than half a million villages, some sparsely populated (Mohan, 2006).

Box VII.1
Factors Affecting Access to Financial Services

A number of factors affecting access to financial services have been identified in many countries. These are:

- ***Gender issues:*** Access to credit is often limited for women who do not have, or cannot hold title to assets such as land and property or must seek male guarantees to borrow.
- ***Age factor:*** Financial service providers usually target the middle of the economically active population, often overlooking the design of appropriate products for older or younger potential customers.
- ***Legal identity:*** Lack of legal identities like identity cards, birth certificates or written records often exclude women, ethnic minorities, economic and political refugees and migrant workers from accessing financial services.
- ***Limited literacy:*** Limited literacy, particularly financial literacy, *i.e.*, basic mathematics, business finance skills as well as lack of understanding often constrain demand for financial services.
- ***Place of living:*** Although effective distance is as much about transportation infrastructure as physical distance, factors like density of population, rural and remote areas, mobility of the population (*i.e.,* highly mobile people with no fixed or formal address), insurgency in a location, *etc.,* also affect access to financial services.
- ***Psychological and cultural barriers:*** The feeling that banks are not interested to look into their cause has led to self-exclusion for many of the low income groups. However, cultural and religious barriers to banking have also been observed in some of the countries.
- ***Social security payments:*** In those countries where the social security payment system is not linked to the banking system, banking exclusion has been higher.
- ***Bank charges:*** In most of the countries, transaction is free as long as the account has sufficient funds to cover the cost of transactions made. However, there are a range of other charges that have a disproportionate effect on people with low income.
- ***Terms and conditions:*** Terms and conditions attached to products such as minimum balance requirements and conditions relating to the use of accounts often dissuade people from using such products/services.
- ***Level of income:*** Financial status of people is always important in gaining access to financial services. Extremely poor people find it difficult to access financial services even when the services are tailored for them. Perception barriers and income discrimination among potential members in group-lending programmes may exclude the poorer members of the community.
- ***Type of occupation:*** Many banks have not developed the capacity to evaluate loan applications of small borrowers and unorganised enterprises and hence tend to deny such loan requests.
- ***Attractiveness of the product:*** Both the financial services/products (savings accounts, credit products, payment services and insurance) and how their availability is marketed are crucial in financial inclusion.

References:

World Bank, 2008; Asian Development Bank, 2007; and Kempson *et al.*, 2004.

Costs and Consequences of Financial Exclusion

7.29 Broadly, the issue of cost of financial exclusion may be conceived from two angles, which are inter-twined. First, the exclusion may have cost for individuals/entities in terms of loss of opportunities to grow in the absence of access to finance or credit. Second, from the societal or the national perspective, exclusion may lead to aggregate loss of output or welfare and the country may not realise its growth potential. The more tangible outcomes of financial exclusion include cost and security issues in managing cash flow and payments, compromised standard of living resulting from lack of access to short-term credit, higher costs associated with using informal credit, increased exposure to unethical, predatory and unregulated providers, vulnerability to uninsured risks, and long-term or extended dependence on welfare as opposed to savings (Chant Link and Associates, 2004).

7.30 Access to a bank account, credit and insurance are now widely regarded as essential supports for personal financial management and for undertaking transactions in modern societies (Speak and Graham, 1999). According to the Treasury Committee, UK (2006), financial exclusion can impose significant costs on individuals, families and society as a whole. These include (i) barriers to employment as employers may require wages to be paid into a bank account; (ii) opportunities to save and borrow can be difficult to access; (iii) owning or obtaining assets can be difficult; (iv) difficulty in smoothening income to cope with shocks; and (v) exclusion from mainstream society.

7.31 In terms of cost to the individuals, financial exclusion leads to higher charges for basic financial transactions like money transfer and expensive credit, besides all round impediments in basic/ minimum transactions involved in earning livelihood

and day to day living. It could also lead to denial of access to better products or services that may require a bank account. It exposes the individual to the inherent risk in holding and storing money – operating solely on a cash basis increases vulnerability to loss or theft. Individuals/families could get sucked into a cycle of poverty and exclusion and turn to high cost credit from moneylenders, resulting in greater financial strain and unmanageable debt. At the wider level of the society and the nation, financial exclusion leads to social exclusion, poverty as well as all the other associated economic and social problems. Thus, financial exclusion is often a symptom as well as a cause of poverty. Financial exclusion is not evenly distributed throughout society; it is concentrated among the most disadvantaged groups and communities and, as a result, contributes to a much wider problem of social exclusion.

7.32 A significant portion of demand for credit by rural households arises in order to ease the financial burden of crop failures, illness or death, and health care. In the case of microenterprises, credit may be needed to achieve a reasonable and viable scale of activities. The rising entrepreneurship spanning rural, semi-urban and urban areas, particularly in the unorganised and informal sectors may give rise to large potential demand for credit. The evidence on the demand for credit in India suggests that medical and financial emergencies are the major reasons for household borrowings. Medical emergencies were particularly high for the lowest income quartile (IIMS, 2007)[2]. Thus, the difficulty in obtaining finance from formal sources has major social implications.

7.33 Another cost of financial exclusion is the loss of business opportunity for banks, particularly in the medium-term. Banks often avoid extending their services to lower income groups because of initial cost of expanding the coverage which may sometimes exceed the revenue generated from such operations. These business related concerns of banks were, however, meaningful when technology development was at a nascent stage and expanding the coverage of financial services required substantial initial investment. The strides in technology have now reduced the required initial investment in a significant manner. What is required is to explore the appropriate technology which is suitable to socio-economic conditions of the region under consideration. Moreover, availability and usage of financial services by the otherwise excluded population groups would lead to increase in their income levels and savings. This, in turn, would have the potential to increase savings deposits as well as credit demand, implying profitable business for banks in the medium-term.

7.34 Two other factors have often been cited as the consequences of financial exclusion. First, it complicates day-to-day cash flow management - being financially excluded means households, and micro and small enterprises deal entirely in cash and are susceptible to irregular cash flows. Second, lack of financial planning and security in the absence of access to bank accounts and other saving opportunities for people in the unorganised sector limits their options to make provisions for their old age. From the macroeconomic standpoint, being without formal savings can be problematic in two respects. First, people who save by informal means rarely benefit from the interest rate and tax advantages that people using formal methods of savings enjoy. Second, informal saving channels are much less secure than formal saving facilities. Those who can afford it least, suffer the highest risk. The resultant lack of savings and saving avenues means recourse to non-formal lenders such as moneylenders. This, in turn, could lead to two adverse consequences – (a) exposure to higher interest rates charged by informal lenders; and (b) the inability of customers to service the loans or to repay them. As loans from non-formal lenders are often secured against the borrower's property, this raises the problem of inter-linkage between two apparently separate markets. Judged in this specific context, financial exclusion is a serious concern among low-income households, mainly located in rural areas (Mohan, 2006).

7.35 To sum up, the nature and forms of exclusion and the factors responsible for it are varied and, thus, no single factor could explain the phenomenon. The principal barriers in the expansion of financial services are often identified as physical access, high charges and penalties, conditions attached to products which make them inappropriate or complicated and perceptions of financial service institutions which are thought to be unwelcoming to low income people. There has also been particular emphasis on socio-cultural factors that matter for an individual to access financial service. The most conspicuous dimension of exclusion is that a majority of the low-income population do not have access to the very basic financial services. Even amongst those who have access to finance, most of them are underserved in

[2] Invest India Incomes and Savings Survey undertaken by Invest India Market Solutions (IIMS).

terms of quality and quantity of products and services. The critical dimensions of financial exclusion include access exclusion, condition exclusion (conditions attached to financial products), price exclusion, and self exclusion because of the fear of refusal to access by the service providers. The financial exclusion process becomes self-reinforcing and can often be an important factor in social exclusion, especially for communities with limited access to financial products, particularly in rural areas. Apart from the above mentioned supply side factors, demand side factors may also significantly affect the extent of financial inclusion. For instance, low level of income and hence low savings would result in lower deposits. Similarly, at low level of income, the ability to borrow is affected because of low repayment capacity and inability to provide collateral. In the Indian context, both demand and supply side factors have an important bearing on the usage of financial/banking services.

7.36 The issue of cost has been conceived from two angles, which are inter-twined. First, the exclusion may have cost on the individuals/entities in terms of loss of opportunities to grow in the absence of access to finance or credit. Second, from the societal or the national perspective, exclusion may lead to aggregate loss of output or welfare and the country may not realise its growth potential. Recognising the implicit and explicit cost of financial exclusion across the globe, many countries have initiated measures to deal with the same.

IV. INITIATIVES FOR FINANCIAL INCLUSION IN INDIA

7.37 As discussed in Chapter III, India has a long history of banking development. After Independence, the major focus of the Government and the Reserve Bank was to develop a sound banking system which could support planned economic development through mobilisation of resources/deposits and channel them into productive sectors. Accordingly, the Government's desire to use the banking system as an important agent of change was at the core of most policies that were formulated after Independence. The planning strategy recognised the critical role of the availability of credit and financial services to the public at large in the holistic development of the country with the benefits of economic growth being distributed in a democratic manner. In recognition of this role, the authorities modified the policy framework from time to time to ensure that the financial services needs of various segments of the society were met satisfactorily.

7.38 In order to expand the credit and financial services to the wider sections of the population, a wide network of financial institutions has been established over the years. The organised financial system comprising commercial banks, regional rural banks (RRBs), urban co-operative banks (UCBs), primary agricultural credit societies (PACS) and post offices caters to the needs of financial services of the people. Besides, MFIs, self-help groups (SHGs) also meet the financial service requirements of the poorer segments. Furthermore, development of the institutional framework in recent years has focussed on new models of expanding financial services involving credit dispensation using multiple channels such as civil society organisations (CSOs), non-government organisations (NGOs), post offices, farmers' clubs, and *panchayats* as business facilitators/correspondents. Specific financial instruments/products were also developed in order to promote financial inclusion.

Overall Approach

7.39 Financial inclusion in the Indian context implies the provision of affordable financial services, *viz*., access to payments and remittance facilities, savings, loans and insurance services by the formal financial system to those who tend to be excluded. Besides access, emphasis is also placed on affordability (low cost) of financial services such as savings, loan, and remittance to the underprivileged segments of the population. Although the term 'financial inclusion' was not in vogue in India then, since the late 1960s both the Government and the Reserve Bank have been concerned about the non-availability of banking facilities to the under-privileged and weaker sections of the society. Accordingly, several initiatives have been taken over time such as nationalisation of banks, prescription of priority sector targets, lending to weaker sections at concessional rates, and initiation of the lead bank scheme. These initiatives were undertaken at different points in time to expand the outreach of banking facilities and increase the flow of credit to the rural areas. However, the broad approach towards financial inclusion followed in India in the 1970s and the 1980s was more oriented towards credit requirements of specific sectors/segments and there was relatively low emphasis on individual/household level inclusion. The Indian financial system essentially catered to the needs of planned development in a mixed-economy framework, where the Government sector had a predominant role in economic activity. The focus of banking policy during the 1990s and up to the early 2000s was more on creating a strong and efficient banking system. However, once the financial health of the banking system was restored, focussed

attention was again paid towards promotion of financial inclusion.

7.40 The recent approach focuses on financial inclusion on the individual and household level (Box VII.2). The important difference in the recent focus on financial inclusion is the adoption of market oriented approach that recognises the importance of business consideration of banks and other financial institutions for the long-term sustainability of the process. The Annual Policy Statement for the Year 2005-06 of the Reserve Bank observed that although there had been expansion, greater competition and diversification of ownership of banks leading to both enhanced efficiency and systemic resilience, there were legitimate concerns with regard to the banking practices that tended to exclude vast sections of population, in particular pensioners, self-employed and those employed in the unorganised sector. The Statement further observed that while commercial considerations were important, the banks had been bestowed with several privileges, especially of seeking public deposits on a highly leveraged basis, and therefore, should be obliged to provide banking services to all segments of the population on an equitable basis.

7.41 The broad strategy for financial inclusion in India in recent years comprises the following elements: (i) encouraging penetration into unbanked and backward areas and encouraging agents and intermediaries such as NGOs, MFIs, CSOs and business correspondents (BCs); (ii) focussing on a decentralised strategy by using existing arrangements such as State Level Bankers' Committee (SLBC) and district consultative committee (DCC) and strengthening local institutions such as co-operatives and RRBs; (iii) using technology for furthering financial inclusion; (iv) advising banks to open a basic banking 'no frills' account; (vi) emphasis on financial literacy and credit counselling; and (vii) creating synergies between the formal and informal segments (Thorat, 2008).

7.42 Various initiatives undertaken could broadly be categorised into three phases. In the first phase starting in the late 1960s through the 1980s, the focus was on channelling of credit to the neglected sectors of the economy. Special emphasis was also laid on weaker sections of the society. In the second phase spanning the early 1990s through March 2005, the focus was mainly on strengthening the financial institutions as part of financial sector reforms. Financial inclusion in this phase was encouraged mainly by the introduction of SHG-bank linkage programme in the early 1990s and Kisan Credit Cards (KCCs) for providing credit to farmers. In the third phase, beginning in April 2005, 'financial inclusion' was explicitly made as a major policy objective and thrust was on providing safe facility of savings deposits through 'no frills' accounts.

Progress till 1990

7.43 Before 1990, several initiatives were undertaken for enhancing the use of the banking system for sustainable and equitable growth. These

Box VII.2
Financial Inclusion in India – Key Elements

(i) Financial inclusion is delivery of banking services at an affordable cost to the vast sections of disadvantaged and low income groups. Unrestrained access to public goods and services is the *sine qua non* of an open and efficient society. As banking services are in the nature of public good, it is essential that availability of banking and payment services to the entire population without discrimination is the prime objective of the public policy (Leeladhar, 2006).

(ii) Financial exclusion signifies lack of access by certain segments of the society to appropriate, low-cost, fair and safe financial products and services from mainstream providers. Financial exclusion is thus a key policy concern, because the options for operating a household budget, or a micro/small enterprise, without mainstream financial services can often be expensive. This process becomes self-reinforcing and can often be an important factor in social exclusion, especially for communities with limited access to financial products, particularly in rural areas (Mohan, 2006).

(iii) Financial inclusion means the provision of affordable financial services, *viz.*, access to payments and remittance facilities, savings, loans and insurance services by the formal financial system to those who tend to be excluded (Thorat, 2006).

(iv) The process of financial inclusion consists of seeking each household and offering their inclusion in the banking system (Reddy, 2007).

(v) The process of ensuring access to financial services and timely and adequate credit where needed by vulnerable groups such as weaker sections and low income groups at an affordable cost (The Committee on Financial Inclusion, Chairman: Dr. C. Rangarajan, 2008).

included nationalisation of private sector banks, introduction of priority sector lending norms, the Lead Bank Scheme, branch licensing norms with focus on rural/semi-urban branches, interest rate ceilings for credit to the weaker sections and creation of specialised financial institutions to cater to the requirement of the agriculture and the rural sectors having bulk of the poor population. The announcement of the policy of social control over banks was made in December 1967 with a view to securing a better alignment of the banking system with the needs of economic policy. The National Credit Council was set up in February 1968 mainly to assess periodically the demand for bank credit from various sectors of the economy and to determine the priorities for grant of loans and advances. Social control of banking policy was soon followed by the nationalisation of major Indian banks in 1969. The immediate tasks set for the nationalised banks were mobilisation of deposits on a massive scale and lending of funds for all productive activities. A special emphasis was laid on providing credit facilities to the weaker sections of the economy.

7.44 The administrative framework for rural lending in India was provided by the Lead Bank Scheme introduced in 1969, which was an important step towards implementation of the two-fold objectives of deposit mobilisation on an extensive scale and stepping up of lending to weaker sections of the economy. Realising that the flow of credit to employment oriented sectors was inadequate, the priority sector guidelines were issued to the banks by the Reserve Bank in the late 1960s to step up the flow of bank credit to agriculture, small-scale industry, self-employed, small business and the weaker sections within these sectors. The target for priority sector lending was gradually increased to 40 per cent of advances in the case of domestic banks (32 per cent, inclusive of export credit, in the case of foreign banks) for specified priority sectors. Sub-targets under the priority sector, along with other guidelines including those relating to Government sponsored programmes, were used to encourage the flow of credit to the identified vulnerable sections of the population such as scheduled castes, religious minorities and scheduled tribes. The Differential Rate of Interest (DRI) Scheme was instituted in 1972 to provide credit at concessional rate to low income groups in the country (see Chapter III for details).

7.45 Since the 1970s, the promotional aspects of banking policy have come into greater prominence. The major emphasis of the branch licensing policy during the 1970s and the 1980s was on expansion of commercial bank branches in rural areas, resulting in a significant expansion of bank branches and decline in population per branch. The branch expansion policy was designed, *inter alia*, as a tool for reducing inter-regional disparities in banking development, deployment of credit and urban-rural pattern of credit distribution. In order to encourage commercial banks and other institutions to grant loans to various categories of small borrowers, the Reserve Bank promoted the establishment of the Credit Guarantee Corporation of India in 1971 for providing guarantees against the risk of default in repayment. The scheme, however, was subsequently discontinued.

7.46 The National Bank for Agriculture and Rural Development (NABARD) was set up in 1982 mainly to provide refinance to the banks extending credit to agriculture. RRBs, which were set up in 1975 to cater, *inter alia*, to the credit requirements of the rural poor, have recently been restructured.

Recent Initiatives

7.47 With the onset of economic reforms in the beginning of the 1990s, a strong and resilient financial sector was considered necessary for accelerating the growth momentum in the country and also for expanding the coverage of financial services in a sustainable manner. Accordingly, the financial sector reform process placed more emphasis on creating a strong, vibrant and competitive banking system. An important step to bring financially excluded people within the fold of formal financial sector was the promotion of micro-finance in India. The SHG-bank linkage programme was launched by NABARD in 1992, with policy support from the Reserve Bank, to facilitate collective decision making by the poor and provide 'door step' banking. Banks, as wholesalers of credit, were to provide the resources, while the NGOs were to act as agencies to organise the poor, build their capacities and facilitate the process of empowering them (Box VII.3).

7.48 To further promote the SHG-bank linkage programme in the country, banks were advised in 1998 that SHGs that were engaged in promoting the saving habits among their members would be eligible to open savings bank accounts and that such SHGs need not necessarily have availed of credit facilities from banks before opening savings bank accounts. Subsequent to the Monetary and Credit Policy announcement for the year 1999-2000, banks were

Box VII.3
Self-Help Group – Bank Linkage Programme

An SHG is a group of about 15 to 20 people from a homogenous class who join together to address common issues. They involve voluntary thrift activities on a regular basis, and use of the pooled resource to make interest-bearing loans to the members of the group. In the course of this process, they imbibe the essentials of financial intermediation and also the basics of account keeping. The members also learn to handle resources of size, much beyond their individual capacities. They begin to appreciate the fact that the resources are limited and have a cost. Once the group is stabilised, and shows mature financial behaviour, which generally takes up to six months, it is considered for linking to banks. Banks are encouraged to provide loans to SHGs in certain multiples of the accumulated savings of the SHGs. Loans are given without any collateral and at interest rates as decided by banks. Banks find it comfortable to lend money to the groups as the members have already achieved some financial discipline through their thrift and internal lending activities. The groups decide the terms and conditions of loan to their own members. The peer pressure in the group ensures timely repayment and becomes social collateral for the bank loans.

Generally, the SHGs need self-help promoting institutions (SHPIs) to promote and nurture them. These SHPIs include various NGOs, banks, farmers' clubs, government agencies, self-employed individuals and federations of SHGs. However, some SHGs have also been formed without any assistance from such SHPIs.

There are three different models that have emerged under the linkage programme:

- Model I: This involves lending by banks directly to SHGs without intervention/facilitation by any NGO.
- Model II: This envisages lending by banks directly to SHGs with facilitation by NGOs and other agencies.
- Model III: This involves lending, with an NGO acting as a facilitator and financing agency.

Model II accounted for around 74 per cent of the total linkage at end-March 2007, while Models I and III accounted for around 20 per cent and 6 per cent, respectively.

advised that interest rates applicable to loans given by them to micro credit organisations or by the micro credit organisations to SHGs/member beneficiaries would be left to their discretion. Subsequently, banks were advised that they should provide adequate incentives to their branches for financing the SHGs and that the group dynamics of working of the SHGs may be left to themselves.

7.49 The objective of bringing financially excluded people within the fold of the banking sector received renewed emphasis in 2005-06 as the term 'financial inclusion' was explicitly used for the first time in the Annual Policy Statement for 2005-06. It observed that there were legitimate concerns in regard to the banking practices that tended to exclude rather than attract vast sections of population, in particular pensioners, self-employed and those employed in the unorganised sector. It also indicated that the Reserve Bank would (i) implement policies to encourage banks which provide extensive services, while disincentivising those which were not responsive to the banking needs of the community, including the underprivileged; (ii) the nature, scope and cost of services would be monitored to assess whether there was any denial, implicit or explicit, of basic banking services to the common person; and (iii) banks urged to review their existing practices to align them with the objective of financial inclusion.

7.50 The process of financial inclusion received further impetus in November 2005, when banks were advised to make available a basic banking 'no-frills' account with low or nil minimum balances as well as charges to expand the outreach of such accounts to vast sections of the population. The low cost or free of cost account is internationally considered to be helpful in expanding the access of banking services, particularly to the low income groups. Similar types of accounts, though with different names, have also been extended by banks in various other countries with a view to making financial services accessible to the common man either at the behest of banks themselves or the respective Governments (Table 7.2).

7.51 In order to ensure that persons belonging to low income groups, both in urban and rural areas do not encounter difficulties in opening bank accounts, the know your customer (KYC) procedure for opening accounts was simplified for those accounts with balances not exceeding Rs.50,000 and credit limits not exceeding Rs.100,000 in a year. The simplified procedure allowed introduction by a customer on whom the full KYC drill had already been done.

7.52 Besides the KCCs, which were introduced in 1998, banks were advised in 2005 to consider introduction of a General Credit Card (GCC) facility

Table 7.2: Basic/'No-Frills' Accounts - Salient Features in Select Countries

Country	Name of the Account and Year of Introduction	Main Features
1	2	3
India	No-frills Account, 2005	1. Very low or no minimum balance 2. 5-10 free transactions per month 3. ATM facility
United Kingdom	Basic Bank Account	1. Affordable 2. Free face-to-face money advice
	Passport Account (PA)	1. International debit–cum-ATM cards 2. Shopping online, over the phone in the UK and abroad 3. Instrument of flexible savings account 4. Low costs international money transfer 5. Multi-lingual relocation advice 6. SIM (subscriber identity module) card
United States of America	First Account, 2002	1. Very low or minimum balance 2. Low fees 3. For people without deposit accounts
	Individual Development Account (IDA), 1991	1. Universal savings account 2. Savings by the poor, matched by the Government 3. Use of savings is restricted for investments in homes, education, business capitalisation or other development purposes 4. Over 44 States have adopted it
	Electronic Transfer Account, 1999	1. No minimum balance requirement 2. ATM facility provided 3. Government pays the obliging bank a one-time subsidy of $12.60 for every account it opens 4. No cheque book or direct debit payments
Belgium	Basic Bank Account	1. Euro 12 a year ceiling on charges 2. 36 free face-to-face transactions with a debit card 3. Compensation for banks that open more account 4. Independent dedicated extra-judiciary litigation service in case of dispute 5. Banks to give reasons for refusal in writing
South Africa	*Mzansi* Account, 2004	1. No management fees 2. One free cash deposit per month 3. Only valid ID as identity proof 4. Limited to deposits, withdrawals, transfers (anywhere in the country) 5. Debit card payments
Australia	Generic Account, 2002	1. No keeping fees 2. No minimum balance 3. Unlimited deposits free of charge 4. Six non-deposit transactions (including three over-the-counter cash withdrawals) free of charge each month
France	*La Poste* Account	1. Savings bank accounts and banking services 2. Used extensively by people with low income 3. A proposal to create full-fledged postal bank/credit institution was with the Parliament
	Livret A Account	1. No limit on over-the-counter withdrawals 2. Tax-free
Brazil	*Caixa Aqui* Account	1. Card based 2. Simplified application procedures 3. Accessible through point-of-sale terminals at correspondents 4. Accepts regular payments of social benefits and cash deposits 5. Electronic version e-Account *Caixa* for Brazilians abroad for remittances at just 2.5 per cent as compared with 8-15 per cent by traditional channels

up to Rs.25,000 at their rural and semi-urban branches. Under GCC, based on the assessment of household cash flows, the limits are sanctioned without insistence on security or purpose. The credit facility is in the nature of revolving credit entitling the holder to withdraw up to the limit sanctioned. Based on assessment of household cash flows, the limits are sanctioned. Interest rate on the facility is completely deregulated. Fifty per cent of GCC loans are treated as priority sector lending.

7.53 The SLBC identifies one or more districts for 100 per cent financial inclusion.[3] The responsibility is given to the banks in the area for ensuring that all those who want to have a bank account are provided with one by allocating the villages to the different banks. In April 2008, SLBCs reported achieving 100 per cent financial inclusion in 134 districts in 18 States and 6 Union Territories (UTs) of the country. The Reserve Bank is undertaking an evaluation of the progress made in these districts by independent external agencies to draw lessons for further action in this regard.

7.54 In January 2006, the Reserve Bank, permitted banks to utilise the services of NGOs/ SHGs, MFIs (other than NBFCs) and other civil society organisations as intermediaries for providing financial and banking services through the use of business facilitator (BF) and business correspondent (BC) models. In April 2008, banks were permitted to engage retired bank employees, ex-servicemen and government employees as BCs, subject to appropriate due diligence. The BC model allows banks to do 'cash in - cash out' transactions at a location much closer to the rural population, thus, addressing the last mile problem. Banks are also entering into agreements with Indian Postal authorities for using the enormous network of post offices as BCs, thereby increasing their outreach. In order to provide social security to vulnerable groups, in some cases banks have provided, in association with insurance companies, innovative insurance products at affordable cost, covering life disability and health cover. SHGs and MFIs are also being used extensively for financial inclusion on the credit side.

7.55 The list of eligible sectors for treatment as 'priority sector' was expanded in the post-reform period to include investments in specified bonds and also activities such as venture capital. As a result, there was a growing perception of inadequate flow of credit to the traditionally preferred sub-sectors of the priority sector such as agriculture and small industries. In order to address these concerns, revised guidelines on the priority sector were issued in April 2007. Consequently, the priority sector is now restricted to advances to highly employment intensive sectors such as agriculture, small enterprises, retail trade, educational loans, micro-finance and low cost housing.

7.56 Given the low credit-deposit ratios in some States, it became necessary to identify unique problems in such lagging States for expanding banking facilities and formulating area-specific action plans for accelerated financial deepening. Such plans were drawn up with full participation of the State Governments, banks and other local developmental agencies in States such as Uttarakhand, Himachal Pradesh, Jharkhand, Bihar, Andaman & Nicobar Islands and the North-Eastern States.

7.57 A growing component of inclusive banking is the lending by MFIs that are societies, trusts, co-operatives or 'not for profit' companies or non-banking financial companies registered with the Reserve Bank. The MFIs currently cover 8.3 million borrowers. The NBFC segment within this sector accounts for 42.8 per cent of the borrowers and is the fastest growing segment. Interest rates on lending to MFIs/NBFCs have been completely deregulated. Bank lending to such entities for micro-finance is treated as priority sector lending. Private sector and foreign banks are observed to be actively supporting this sector, which is also attracting private equity funding and philanthropy funding from outside the country (Thorat, 2008).

7.58 In India, there have been several innovative experiments with various variants of micro-finance taking into account the highly localised needs. An interesting example in this regard has been the efforts by *Aryavart Gramin Bank* which embarked upon a novel idea of financial inclusion in remote villages and hamlets of Uttar Pradesh (Box VII.4).

7.59 Another innovative micro-finance experiment was undertaken by the *Mann Deshi Mahila Bank* in the Satara District of Maharashtra which works

[3] In order to identify households without bank account, surveys are conducted using various databases such as electoral rolls, public distribution system, or other household data.

Box VII.4
Financial Inclusion: Novel Method of Financing

The *Aryavart Gramin* Bank embarked on a novel idea of financial inclusion in remote villages and hamlets of Uttar Pradesh where electricity supply was not available or if available was erratic. The villagers were dependent only on kerosene lamps for their lighting needs and often kerosene had to be bought from black markets, which was affecting their incomes. The bank embarked upon the novel idea of providing solar energy lights to the villages and identified a solar company in India, Tata BP Solar, for providing 'Solar Home Lighting System' for the village homes. The company and the dealer were ready to sacrifice their margins as the bank was agreeing to finance the system on a large scale. The system cost Rs.13,000 and consisted of a ready-to-use kit containing a 35 watt solar panel, low maintenance battery, MCR charge controller and two luminaries. The system could light two CFLs of 14 watt for more than 7 hours and could also support one mobile charger, one table fan and a television. The bank extended finance of around Rs.10,000 with Rs.3,000 as margin money to be contributed by the beneficiary. The amount together with interest was to be repaid in 60 equated monthly instalments of approximately Rs.222 per month. This was much less than the amount that the villagers had to spend for their kerosene requirements per month.

The bank had identified literate village youths as business facilitators who were trained by the company for maintenance of the systems. The bank is paying an honorarium of Rs.10,000 per annum to the business facilitators for maintaining 100 such systems. More than 1,300 households in Unnao District and about 500 houses in Barabanki District, were provided with Solar Home Lighting Systems by the bank as at end-December 2007. The bank aims to cover 25,000 households by October 2008.

Source: Website of *Aryavart Grameen* Bank; http://aryavart-rrb.com.

towards the holistic development of women entrepreneurs into women business owners and bank customers (Box VII.5).

7.60 Micro-finance has emerged as a major mode of expanding outreach of the formal financial sector in a number of countries. The experiences of these

Box VII.5
Financial Inclusion: Women Empowerment

The *Mann Deshi Mahila Bank*, based in Mhaswad, in Satara District, Maharashtra, is an organisation that works towards the holistic development of women entrepreneurs into women business owners' and bank customers. Founded in 1997, by Chetna Vijay Sinha, the *Mann Deshi Mahila* Bank has created 17,000 women entrepreneurs. The regulated co-operative that received an "A" grade from District Co-operative Department in 2000, equips its clients with liquid assets which help financial empowerment that, in turn, enables women to become entrepreneurs and plan a stable future for their families. Services which the bank offers include savings, loans, insurance and pensions. A partnership with UTI Mutual Fund had enabled the bank to be the first to offer pension schemes to its clients in Maharashtra.

The bank's success led to the creation of several sub-organisations, one of which is the *Mann Deshi* Business School for Rural Women. Set up in partnership with HSBC Bank, the school primarily aims at making its range of courses accessible to women who, due to financial and cultural constraints, would be unable to access such training in neighbouring urban hubs. Unlike traditional business schools that delve into the theory of microeconomics, accounting, organisational behaviour and so on, this business school focusses on imparting simple business skills. The school's courses can be categorised into basic business-oriented courses, such as financial literacy, marketing and product development and entrepreneurial or skill-based courses. The business school in Vaduj, Mhaswad attracts women from the surrounding villages as well as larger towns. As most of the women who attend the school are part of larger joint families, the school's courses are designed so as to enable them to attend the school after completing their household chores and supplement their household income with their earnings.

In 2007, in partnership with the Deshpande Foundation, which supports innovation and entrepreneurship in India, *Mann Deshi* and *Mann Vikas* (the NGO wings of the bank) established the Business School on Wheels for Rural Women. This currently operates in the Hubli-Dharwad district in the neighbouring State of Karnataka. A specially designed bus travels the district and offers courses similar to those of the business school. What is striking about the *Mann Deshi* Business School and the Business School on Wheels is that all their courses are designed not just to teach skills, but also at a larger level, to cater to the needs of the society. By enforcing a strict no educational qualification, no age bar policy, and with fees ranging from Rs.180 to Rs.1,800, the school has been able to attract, during the last year, 650 women from all social backgrounds and capacities, and provide them with skills they otherwise would never have been able to acquire.

Reference:

Creado, J. and R. Koshi. 2008. Creating Leaders at the Bottom of Pyramid, Microfinance Insight, March.

countries provide useful inputs regarding the methodology and model of finance to be emulated in other counties (Box VII.6).

7.61 The *Grameen* system has been widely replicated by micro-finance organisations in several other countries, including some institutions in India. For instance, Activists for Social Alternatives (ASA), Tiruchirapalli (Tamil Nadu) provides a range of integrated financial and non-financial services through its *Gram Vidiyal* (GV) programme. The GV consists of a federated structure built upon *Grameen* style small groups through which financial and non-financial services are provided by ASA, a NGO/MFI (Tankha, 2002).

7.62 Though a variety of micro-finance models are followed in India, SHG-bank linkage programme is the predominant one. The model has broad similarities with the *Grameen* Bank model such as formation of groups, extending credit to poor people, and focus on capacity building. There are, however, certain differences in the methodology followed by SHG-bank linkages programme in India and that by *Grameen* Bank in Bangladesh (Table 7.3).

7.63 The Reserve Bank has been encouraging the use of IT solutions by banks for enhancing their outreach with the help of their BCs or otherwise. Certain banks have adopted technological solution

Box VII.6
Grameen Bank in Bangladesh

The *Grameen* Bank (GB) was launched as a project in a village of Bangladesh in 1976 to assist the poor families by providing credit to help them overcome poverty. In 1983, it was transformed into a formal bank under a special law passed for its creation. It is owned by the poor borrowers of the bank who are mostly women. GB has reversed conventional banking practice by obviating the need for collateral. It has created a banking system based on mutual trust, accountability, participation and creativity. GB provides credit to the poorest of the poor in rural Bangladesh, without any collateral.

As GB was initiated as a challenge to the conventional banking, it rejected the basic methodology of the conventional banking and created its own methodology. The most distinctive feature of *Grameen* credit is that it is not based on any collateral, or legally enforceable contracts. It is based on 'trust' and not on legal procedures and system. It offers credit for creating self-employment, income-generating activities and housing for the poor, as opposed to consumption. It provides service at the door-step of the poor based on the principle that the people should not go to the bank, bank should go to the people. In order to obtain loans, a borrower must join a group of borrowers. Although each borrower must belong to a five-member group, the group is not required to give any guarantee for a loan to its member. The repayment responsibility solely rests on the individual borrower, while the group and the centre/branch oversee that everyone behaves in a responsible way and none gets into repayment problem. There is no form of joint liability, *i.e.,* group members are not responsible to pay on behalf of a defaulting member. Loans can be received in a continuous sequence. New loan becomes available to a borrower if her previous loan is repaid. All loans are to be paid back in instalments (weekly or bi-weekly).

The GB initially focussed on providing credit facilities and paid little attention to voluntary deposit mobilisation. This policy was changed in 2000, with increased emphasis on deposit mobilisation. GB currently offers four kinds of savings, namely personal savings account, special savings account, *Grameen* Pension Savings and credit-life insurance savings fund. After operating group lending for 25 years, the GB switched to individual lending recognising that with repeated loan cycles and greater credit exposure, homogeneity of the group would weaken as loan requirements vary with variation in the levels of upliftment attained. Thus, the more flexible *Grameen* II is more appropriate for reaching the poor because its products can be conveniently used for everyday money management as well as for microenterprises. GB II dispensed with the general loans, seasonal loans, family loans, and more than a dozen other types of loans. It also gave up the group fund; the branch-wise and zone-wise loan ceiling; fixed size weekly instalment; the rule to borrow for one whole year, even when the borrower needed the loan only for three months.

The Government of Bangladesh has fixed interest rate for government-run microcredit programmes at 11 per cent at flat rate, which amounts to about 22 per cent on a declining basis. The interest rate charged by the *Grameen* Bank is lower than that fixed by the Government of Bangladesh. There are four interest rates for loans from *Grameen* Bank: 20 per cent (declining basis) for income generating loans, 8 per cent for housing loans, 5 per cent for student loans, and 0 per cent (interest-free) loans for struggling members (beggars). All interests are simple interest, calculated on declining balance method. This implies an annual interest rate of 10 per cent for income-generating loan which is less than that (11 per cent) fixed by the Government of Bangladesh. GB offers attractive rates for deposits ranging from 8.5 per cent to 12 per cent.

As of March, 2008, it had 7.46 million borrowers, 97 per cent of whom were women. With 2,504 branches, GB provides services in 81,574 villages, covering more than 97 per cent of the total villages in Bangladesh.

Source: Website of *Grameen* Bank; www.grameen-info.org.

Table 7.3: India's SHG-bank Linkage Programme and Bangladesh's *Grameen* Bank Model : Major Features

SHG-bank Linkage Programme – India	*Grameen* Bank (GB) – Bangladesh
1	2
1. Group independent of the bank.	1. Members of the group are also owners of the bank.
2. Group normally consists of about 15 members.	2. Group normally consists of 5 members.
3. Group is jointly liable to repay the loans.	3. Liability to repay loan lies with the individual, though he/she has to be a member of a group to take loan.
4. Members of group or group leader has to sign an agreement for taking loan from bank.	4. No agreement or document is required, loan is given on the basis of trust.
5. There is normally an additional layer of NGOs or MFIs between the bank and the SHG.	5. GB directly lends to members.
6. Both men and women are covered.	6. Major focus is on women borrowers.
7. No interest rate ceiling.	7. Government of Bangladesh stipulated a ceiling of 11 per cent.

(Box VII.7). Pilot studies have also been carried out in a few States. One of the technological solutions used is hand-held devices, which are essentially smart card readers. These devices are used for making payments to rural customers and receiving cash from them at their doorsteps. Mobile phones have also been developed to serve as card readers. Account holders are issued smart cards, which have their photographs and finger impressions.

7.64 Recognising the potential of emerging business opportunities, some banks have also adopted innovative methods and appropriate technology to provide banking services to financially excluded people by enabling them to overcome obstacles such as procedural problems and difficulties in physical access. For instance, Corporation Bank has implemented the branchless banking model in the States of Goa, Karnataka, Tamil Nadu and Andhra Pradesh (Box VII.8).

7.65 To overcome financial exclusion which is widespread in urban areas, Indian Bank successfully experimented with an innovative model of providing access to slum dwellers in Mumbai (Box VII.9).

7.66 Housing to people with moderate income levels is internationally considered to promote financial inclusion (Box VII.10). In India, housing for the poor is one of the six elements of *Bharat Nirman* programme (announced in the Union Budget 2005-06) and is implemented through the *Indira Awas Yojana* (IAY). Against a target of 6.0 million houses, 4.11 million houses were constructed up to December 2007 and the cumulative number was expected to go up to 5.18 million houses by end-March 2008.[4] Recognising the high cost of construction, the Union Budget 2008-09 proposed to enhance the subsidy per unit in respect of new houses sanctioned after April 1, 2008 from Rs.25,000 to Rs.35,000 in plain areas and from Rs.27,500 to Rs.38,500 in hill/difficult areas. The subsidy for upgradation of houses would be increased from Rs.12,500 per unit to Rs.15,000. In the Union Budget 2008-09, it was also indicated that financial inclusion can be taken forward by expanding the reach, *inter alia*, of the National Housing Bank (NHB). In order to increase the resource base of NHB, it was proposed to tap the resources of scheduled commercial banks (SCBs) to the extent that they fall short of their obligation to lend to the priority sector. It was also proposed to create a fund of Rs.1,200 crore with NHB to enhance its refinance operations in the rural housing sector. The fund would be governed by the general guidelines that are now applicable to the Rural Infrastructure Development Fund (RIDF) with some modifications. The Reserve Bank, in February 2008, advised banks that the members of SC/STs satisfying the income criteria of the DRI scheme for weaker sections of the community can also avail of housing loan up to

[4] The housing loans outstanding as per cent of GDP increased from 3.4 per cent in 2001 to 8.5 per cent in 2006. The NHB estimated that the housing loans outstanding to GDP ratio would be about 9 per cent by the end of 2007. Reflecting these developments, housing stock in the country also increased from 148 million units in 1991 to 187 million units in 2001 and was estimated at 218 million units in 2007 (NHB, 2006).

Box VII.7
Successful Model for Financial Inclusion: A Case Study of Andhra Pradesh

The Rural Development Department of Government of Andhra Pradesh launched a pilot project in six *Mandals* of Warangal District for payment of Social Security Pensions (SSP) and National Rural Employment Guarantee Scheme (NREGS) benefits to the beneficiaries. The pilot programme involved six banks *viz*., State Bank of India, Union Bank of India, State Bank of Hyderabad, Andhra Bank, A.P.*Grameen*a Vikas Bank and Axis Bank. The benefits are paid to the villagers by the business correspondents of banks at the habitation level in the villages. The Rural Development Department, Government of Andhra Pradesh, played a very active role in the project and has financed a major portion of the cost of the cards and the devices. The project was co-ordinated by the Reserve Bank with the Regional Director, Hyderabad being the Convenor of the Steering Group for the project. The Institute for Development and Research in Banking Technology (IDRBT) was given the role of providing the management information systems (MIS) to the Government in the required format. In the second phase, the project will be scaled up to 50,000 villagers. The State proposes to scale up the efforts to the entire State in due course. The Andhra Pradesh Government also proposes to issue smart cards to all the SHG members in the State.

The project involves payment of SSP and NREGS benefits through BCs with the use of smart card and mobile technology. The BC uses a fingerprint scanner cum identifier, a mobile and a printer to process the payments. The beneficiaries hold smart cards with their photographs and images of their fingerprints pre-loaded at the time of their enrolment. The photograph and fingerprint are used for identification and authentication of the beneficiary. Once authenticated, the radio frequency identification device (RFID) chip embedded in the card gets charged. When the card with charged chip is brought close to the mobile phone, message templates for deposit, withdrawal and balance enquiry are generated in the mobile. The BC needs to select the relevant option and feed the amount of transaction through the mobile keypads and send the message to the back-end server. The server authenticates the message, processes the transaction and sends an update back to the mobile, which, in turn, writes back to the card. When the card is brought close to the printer, transaction report is printed in triplicate. The BC carries cash physically for making payments to the beneficiary. Thus, in effect, each BC carries a pocket ATM to the village in which it operates. The technology holds potential for whole range of activities that banks can conduct through BCs and this includes other products like fixed deposits, various loans, insurance, among others. The mobiles connect to a central data base server of the banks. The application has an off-line model also, which enables its operation in remote areas where there is no connectivity. Presently, the SSP and NREGS benefits are being paid through post offices which are given a commission of 2 per cent.

The State Government, for the initial pilot covering six *mandals,* agreed to pay Rs.90 per smart card, Rs.10,000 per hand held device and 2 per cent commission on transactions. The Government agreed to meet a part of the infrastructure costs to kick start the project. For the scaled up project, it is expected that the 2 per cent commission on turnover will be maintained and banks will fund the infrastructure. However, the model may have to be different in States with lesser turnover, as fixed cost per village is almost the same. The banks pay Rs.1,000 to the village organisation member in the village who is the representative of the BC of the bank. The cost of cards is a one-time exercise and enrolment of beneficiaries also involves an expense of Rs.50 per person in addition to the card cost.

The advantages to the bank are that the cost of transactions is reduced and there is scope for other services like crop loans, access to cheap savings in villages and micro-insurance, among others. The State Government can make all its payments through this mechanism. This would include salaries, pensions and contractor payments. The model ensures cost savings in the payment delivery mechanism and payments can be made centrally from the district or the State headquarters. An added benefit is that several bogus beneficiaries have been weeded out because of bio-metric identification and the State Government is expecting to save substantial amount on that account.

The model adopted for the project involves selection of technology and technology vendor by the bank; appointment of a BC; finalising the operating procedures with respect to transactions entered between bank and BCs such as movement of cash, crediting beneficiary accounts, payment of fee/commission and control mechanism. Other aspects of the model are enrolment and collection of critical data about the beneficiaries and issue of cards to them, training and sensitising the beneficiaries and meeting operational needs through ongoing support in servicing of instruments, constant monitoring and periodic evaluation of the project for improvement.

Rs.20,000 per beneficiary at a concessional interest rate of 4 per cent.[5] Following the announcement made in the Union Budget 2008-09, the Reserve Bank in July 2008, advised public sector banks (PSBs) that the Government would provide interest subvention of 2 per cent to PSBs in respect of short-term production credit up to Rs.3 lakh extended to farmers at 7 per cent per annum.

[5] This is over and above the individual loan of Rs.15,000 available under the DRI scheme at a concessional interest rate of 4 per cent for engaging in productive and gainful activities.

Box VII.8
Branchless Banking through Business Correspondents

Corporation Bank has taken up an outreach programme through the use of technology in order to provide very simple and basic financial services to the poor and the disadvantaged in the rural areas. To accomplish the task, the bank conducted a survey in the identified villages to gather information regarding the structure and size of village, family/household details such as occupation, asset ownership and the use of financial services. The automation of the survey facilitated generation of Corp Pragathi Savings Bank (CPSB) Account opening forms along with the photograph of the user at the site for the family members who expressed their desire to open an account with the bank.

The survey, *inter alia,* indicated that the villagers were generally reluctant to approach the bank as the branches were far off from their residence or workplace and hence they needed to spend money on commuting and time to carry out normal banking activities. Further, being semi-literate or illiterate, they found the procedures difficult to comprehend and follow. They were also not sure of the treatment that would be meted out to them when they approached the bank for remitting or withdrawing small sums of money. To mitigate these hardships faced by the villagers, the Corporation Bank adopted a branchless banking model in August 2007. After evaluation of different technologies ranging from palm-tops, simputers, hand held storage devices and diverse communication channels, the bank opted for a branchless banking model based on business correspondents (BCs) and use of a small hand held device. This model is more or less similar to that followed in pilot project in Andhra Pradesh (see Box VII.7). The branchless banking model has enabled the bank to reach out to the villagers by offering them savings and loan products at their doorsteps. The information collected through survey has enabled to meet the KYC requirements also.

The benefits of the model to the customers include saving of their time and cost of travel to the branch, comfort in dealing with BC as he is a familiar face, and convenience of transacting business practically at any time of the day. The advantage for the BC is that it is an alternative source of income. The benefits for the bank are that they are able to reach out to the hitherto unreached segments and mop up rural savings at lower transaction costs.

Reference:

Kamath, Raghav. 2007. Branchless Banking: Corp Bank's Answer for Financial Inclusion; CAB Calling July-September; Vol. 31, No. 3.

7.67 To strengthen the rural credit delivery system, a revival package for the short-term rural co-operative credit structure was announced recently. Based on the recommendations of the Task Force on Revival of Rural Co-operative Credit Institutions (Chairman: A. Vaidyanathan) and in consultation with State Governments, the Government of India approved a package for revival of the short-term rural co-operative credit structure. So far, 20 States have executed Memoranda of Understanding (MoUs) with the Government of India and the NABARD, as envisaged under the package. Seven States have made

Box VII.9
Urban Financial Inclusion – Dharavi (Mumbai) Model

There is generally a feeling that financial exclusion is a problem only in rural areas. However, in reality, a large number of people in urban centres also do not have easy access to banking facilities and financial exclusion is very common even in urban areas, particularly in the case of informal sector workers who do not have regular jobs. Moreover, many migrants who do not have bank accounts and knowledge of banking facilities send money to their family members through informal sources such as friends, relatives or carry cash whenever they visit their native place.

The situation is not too different in Dharavi, Asia's largest slum, in the country's commercial capital, Mumbai. Dharavi is inhabited by about 300,000 to 350,000 workers many of whom do not have bank accounts. After the KYC norms were rationalised to enable opening of 'no frills' accounts, Indian Bank opened a core banking branch and ATM facility in Dharavi in February 2007. The bank introduced smart card based banking which has enabled doorstep banking transactions for the slum dwellers. The facility has enabled the workers to save and migrants are able to utilise the services of easy and reliable remittance of money to their family members at their places of origin. Life and health insurance products are also offered to the residents.

Thus, some financially excluded people in urban areas have been provided banking access. Indian Bank has now also extended the Dharavi model to Guntur town of Andhra Pradesh and Tharamani, Chennai where the urban poor did not have bank accounts.

References:

1. Rajan, M.S.S. 2007. Replication of Financial Inclusion: Opportunities and Challenges – Indian Bank Experience; CAB Calling July-September, Vol.31, No.3.
2. Indian Bank Website, www.indianbank.in

Box VII.10
Housing and Financial Inclusion

In developed countries, mortgage lending to people living in deprived parts of the country has been recognised as a key instrument of financial inclusion and is considered to act as a catalyst for economic and social development. Expansion of mortgage finance to low income groups by mortgage companies, non-bank finance companies and banks seems to have helped in bringing a large part of the financially excluded population under the fold of the formal financial system in the developed countries. Housing associations in developed countries have taken a lead in combating financial exclusion amongst their tenants and residents and also supporting community financial institutions such as credit institutions through partnership and investment. Housing finance is generally availed to invest in new houses or home improvements. There is also great diversity in the sources of mortgage funding, including retail deposits, mortgage backed securities and covered bonds. In some countries such as the UK, alongside the competitive mainstream mortgage lending, there is access to mortgage credit for buyers with low housing equity, or uncertain incomes (HM Treasury, 2007). First time housing buyers in particular, face difficulties in getting housing finance. In order to provide affordable housing in the UK and Scotland, mortgage lenders are working on the Government's Open Market Home Buy Scheme, a shared equity scheme designed to finance first time buyers, workers and social tenants. Furthermore, customers who are shared owners also get access to the other financial products and services offered by the financial entity. Under this scheme both the Government and the lenders take responsibility for sharing equity in properties to allow people to enter the housing market. There have also been innovations in the methods of delivery and outreach work employed, for example, by entering into partnerships with local housing associations. In the UK, the Government target is to deliver more than 70,000 new affordable homes a year by 2010-11. In order to provide credit facility to tenants who otherwise cannot obtain loans from the main financial institutions, the Royal Bank of Scotland has reached an agreement with the Grampian Housing Association to devise a new savings and loans scheme.

In the United States, the federal government introduced the Community Reinvestment Act in 1997, under which federal bank regulatory agencies rate banks on their efforts and effectiveness at serving low-income communities. The main criterion is mortgage loans but regulators also consider the extent to which banks make retail banking services available to low and moderate income communities. The sub-prime mortgage or refinance loans are also recognised to have led to spread of credit among the Black and Hispanic communities, who generally lack easy access to credit. The Low-Income Housing Tax Credit (LIHTC) programme has also helped finance developments with units set aside for low or moderate income households. The intent of the programme was to provide enough incentives to ensure an adequate supply of low-income housing by granting tax credits to the owners of selected rental housing developed for occupancy by low or moderate income households. Although the subsidy is provided entirely through the federal tax code, it is administered through state government agencies, generally the state housing finance agency. The LIHTC programme has emerged as a primary mechanism for encouraging the production of housing to be occupied by low or moderate income households (Wallace 1995).

In the context of developed countries, it is argued that access to mortgage finance could be enhanced if lenders restructured and optimised the structure and processes associated with the existing mortgage products to align more closely with the needs and characteristics of the target market. Measures such as improved loan servicing processes, redefined borrower, property or area criteria, loan level product features such as insurance or collateral requirements, as well as portfolio interventions such as guarantees are all mechanisms that could be considered. However, it is also contended that there is a limit to the extent that mortgage products can facilitate access to housing finance across the target market. The nature of the housing needs and the financial and risk profile of households in the target market underlines the need for diversified housing finance products.

References:

1. Bank of Scotland. 2007. Delivering our Financial Inclusion Agenda in Scotland, March.
2. H.M. Treasury. 2007. Financial Inclusion: the Way Forward, HM Treasury, UK, March.
3. Kempson, E. 2006. Policy Level Response to Financial Exclusion in Developed Economies: Lessons for Developing Countries, Paper for Access to Finance: Building Inclusive Financial Systems, World Bank, Washington, May.
4. Wallace, James E. 1995. Financing Affordable Housing in the United States, Housing Policy Debate 6(4).

necessary amendments in their Co-operative Societies Acts. The revival package for long-term rural co-operative credit structure is also being worked out. The Union Budget 2008-09 announced that the Central Government and the State Governments have reached an agreement on the content of the package for revival of the long-term co-operative credit structure. As recommended by the Committee on Financial Inclusion in its interim Report, the Government had announced in the Union Budget 2007-08 the creation of two funds - Financial Inclusion Fund and Financial Inclusion Technology Fund with an overall corpus of Rs.500 crore each with NABARD - for meeting the costs of development, as also promotional and technology interventions as recommended. The Government indicated that for 2007-08, the initial

contribution would be Rs.25 crore each in the two funds by the Central Government, Reserve Bank and NABARD in the ratio 40:40:20. The Reserve Bank's initial contribution to the funds would come to Rs.10 crore each. The Committee submitted its final report in January 2008 (Box VII.11). The Committee on Financial Inclusion had also recommended that the State Governments should make payments under National Rural Employment Guarantee Scheme and Social Security Payments through such technology based solutions. The Reserve Bank has already requested State Governments to explore the possibility of routing Government payments through banks with the help of information and communication technology (ICT) (Government of India, 2008a and 2008b).

7.68 The Union Budget 2008-09 announced that banks would be encouraged to embrace the concept of total financial inclusion. Subsequently, the Reserve Bank in April 2008 advised all SCBs to meet the entire credit requirements of SHG members, *viz.,* (a) income generation activities; (b) social needs like housing, education, marriage; and (c) debt swapping. The Government introduced a new Self-Employment Scheme for rehabilitation of all the remaining scavengers and their dependents by March 2009. Scavengers and their dependents, irrespective of their income, who are yet to be provided assistance for rehabilitation, under any scheme of the Government of India/State Governments, are eligible for assistance. The identified scavengers would be provided training, loan and subsidy. Accordingly, the Reserve Bank, in April 2008, issued broad guidelines to be followed by the banks in implementing the Scheme. Banks would provide loans to candidates sponsored only by State Channelising

Box VII.11
Report of the Committee on Financial Inclusion

The Committee on Financial Inclusion was constituted by the Government of India (Chairman Dr. C. Rangarajan) on June 26, 2006 to prepare a strategy of financial inclusion. The Committee submitted its final Report on January 4, 2008. The Report viewed financial inclusion as a comprehensive and holistic process of ensuring access to financial services and timely and adequate credit, particularly by vulnerable groups such as weaker sections and low income groups at an affordable cost. Financial inclusion, therefore, according to the Committee, should include access to mainstream financial products such as bank accounts, credit, remittances and payment services, financial advisory services and insurance facilities.

The Report observed that in India 51.4 per cent of farmer households are financially excluded from both formal/informal sources and 73 per cent of farmer households do not access formal sources of credit. Exclusion is most acute in Central, Eastern and North-Eastern regions with 64 per cent of all financially excluded farmer households. According to the Report, the overall strategy for building an inclusive financial sector should be based on (i) effecting improvements within the existing formal credit delivery mechanism; (ii) suggesting measures for improving credit absorption capacity especially amongst marginal and sub-marginal farmers and poor non-cultivator households; (iii) evolving new models for effective outreach; and (iv) leveraging on technology based solutions.

Keeping in view the enormity of the task involved, the Committee recommended the setting up of a mission mode National Rural Financial Inclusion Plan (NRFIP) with a target of providing access to comprehensive financial services to at least 50 per cent (55.77 million) of the excluded rural households by 2012 and the remaining by 2015. This would require semi-urban and rural branches of commercial banks and RRBs to cover a minimum of 250 new cultivator and non-cultivator households per branch per annum. The Committee has also recommended that the Government should constitute a National Mission on Financial Inclusion (NaMFI) comprising representatives of all stakeholders for suggesting the overall policy changes required, and supporting stakeholders in the domain of public, private and NGO sectors in undertaking promotional initiatives.

The major recommendations relating to commercial banks included target for providing access to credit to at least 250 excluded rural households per annum in each rural/semi-urban branches; targeted branch expansion in identified districts in the next three years; provision of customised savings, credit and insurance products; incentivising human resources for providing inclusive financial services and simplification of procedures for agricultural loans.

The major recommendations relating to RRBs are extending their services to unbanked areas and increasing their credit-deposit ratios; no further merger of RRBs; widening of network and expanding coverage in a time bound manner; separate credit plans for excluded regions to be drawn up by RRBs and strengthening of their boards.

In the case of co-operative banks, the major recommendations were early implementation of Vaidyanathan Committee Revival Package; use of PACS and other primary co-operatives as BCs and co-operatives to adopt group approach for financing excluded groups.

Other important recommendations of the Committee are encouraging SHGs in excluded regions; legal status for SHGs; measures for urban micro-finance and separate category of MFIs.

Reference:

Government of India. 2008. *Report of the Committee on Financial Inclusion in India (Chairman Dr. C. Rangarajan).* January.

Agencies of National *Safai Karmacharis* Finance and Development Corporation (NSKFDC) and claim the admissible capital subsidy from them for disbursement to the beneficiary. After disbursement of loan to the beneficiaries, the concerned branch of the bank claims interest subsidy from the State Channelising Agency on a quarterly basis.

7.69 Recognising that lack of awareness is a major factor for financial exclusion, the Reserve Bank is taking a number of measures towards financial literacy and credit counselling. The Reserve Bank has undertaken a project titled "Project Financial Literacy". The objective of the project is to disseminate information regarding the central bank and general banking concepts to various target groups, including, school and college going children, women, rural and urban poor, defence personnel and senior citizens. It would be disseminated to the target audience with the help, among others, of banks, local government machinery, schools and colleges through presentations, pamphlets, brochures, films, as also through the Reserve Bank's website.

7.70 Furthermore, to promote financial literacy, a multilingual website in 13 Indian languages on all matters concerning banking and the common person was launched by the Reserve Bank on June 18, 2007. Comic type books introducing banking to school children were also put on the Reserve Bank's website on November 14, 2007. Similar books would be prepared for different target groups such as rural households, urban poor, defence personnel, women and small entrepreneurs. Financial literacy programmes are being launched in each State with the active involvement of the State Governments and the SLBC. The Reserve Bank has also been initiating measures for providing credit counselling. Each SLBC convenor has been asked to set up a credit-counselling centre in one district as a pilot and extend it to all other districts in due course. A concept paper on financial literacy and credit counselling has been prepared and placed on the Reserve Bank's website for public comments and the responses are being examined.

7.71 India has followed a multi-pronged strategy to promote financial inclusion. The global experience also suggests that countries that allow diversity in approaches are more likely to achieve better results. Diversity in approaches not only serves better the diverse demand for financial services, but also reduces systemic risks, increases competition, and improves efficiency. Many other countries also followed more or less a similar approach (Box VII.12).

7.72 The problem of financial exclusion is found even in several advanced countries. These countries have also initiated specific measures to bring financially excluded people within the fold of the banking system. The measures initiated, among others, include voluntary code of practices, legislation-backed norms, basic bank accounts and subsidised accounts (Box VII.13).

Box VII.12
Financial Inclusion Strategy in Select Countries

Historically, Governments in many countries intervened on the supply side to address access to financial services in various ways. Religious and other civil society organisations have also sought to broaden access to formal financial services for the poor and low-income people. These measures include (i) nationalising private banks; (ii) branch regulations; (iii) promoting specialised banks including national savings banks; (iv) directives on portfolio composition; (v) interest rate ceilings on credit to low-income households, and provision of credit at subsidised rates to priority sectors; (vi) voluntary charter or codes developed by banks themselves; (vii) enactment of legislations defining the right of access to formal banking services; (viii) setting up of empowered and dedicated agencies by Governments; (ix) running specialised and sponsored schemes including those sponsored by Governments and banks themselves using a blend of innovations, reforms in the existing structures of credit delivery and the existing infrastructure like post offices and passport accounts; (x) countering the operations of moneylenders, and (xi) community-based savings and credit societies and mutual savings banks, which in a way can be seen as precursors of the modern micro-finance movement.

For instance, in Bangladesh, the Government while providing necessary space for NGOs to play the lead role in pushing the frontier of finance for the poor and by facilitating the establishment of the *Grameen* Bank, continued using the state-owned *Krishi Bank* (agriculture bank) and Building Resources Across Community (BRAC) extensively to provide access to credit and deposit services for low-income households. Most Asian countries, including Sri Lanka and Pakistan also resorted to nationalisation of private banks to expand banking services to the excluded and established new state-owned banks to serve low-income segments. The strategy, *inter alia,* includes micro-finance development plans, expansion of branch networks, promotion of Islamic banking, and promotion of application of new information and communication technology to reach rural people.

References:

1. Kempson E, A. Atkinson and O. Pilley. 2004. "Policy Level Response to Financial Exclusion in Developed Economies: Lessons for Developing Countries." University of Bristol.

2. World Bank. 2008. *Finance for All – Policy and Pitfalls in Expanding Access.* The World Bank, Washington, D.C.

Box VII.13
Financial Inclusion Initiatives in Different Countries

Country	Legislation/Instrument/ Policy Scheme	Objectives
United Kingdom	Social Exclusion Unit (SEU), 1997	To reduce social exclusion, of which financial inclusion is an integral part
	Policy Action Teams (PATs)	To look in an integrated way at the problems of poor neighbourhoods
	Office of Fair Trading	1. To enforce consumer protection law and competition law 2. To review proposed mergers and conduct market studies
	Financial Inclusion Task Force	1. Access to banking, access to affordable credit 2. Access to free face-to-face money advice
	Financial Inclusion Fund	1. Access to banking services 2. Access to affordable credit 3. Access to money advice
United States of America	The Community Reinvestment Act, 1977	1. Prohibits discrimination by banks against low and moderate income neighbourhoods 2. To make mortgage loans to lower-income households 3. Banks are rated every three years on their efforts in meeting community credit needs
	Matched Savings Scheme (MSS) 1997	1. Personal savings in Individual Development Accounts (IDAs) are matched by local and national funds 2. Matching money has to be spent on one of a range of prescribed uses such as education, business or home purchase
France	Banking Act, 1984	1. Any person with French nationality has the right to open an account with any bank 2. If refused, the aggrieved person can apply to the *Banque de France* to designate a bank that should open an account
	French Bankers' Association (Basic Banking Services Charter of 1992)	Committed to providing • Affordable account • Cash card • Free access to a cash machine • Distance payment facilities • Bank statement • Negotiable number of cheques
	Law on Exclusion, 1998	1. Reiterated the Banking Act of 1984 2. Extended right to transaction account to those banned due to bad credit history 3. Allowed bounced cheque, an extra month, for correction
Australia	Australian Bankers' Association (ABA) Code of Practice, 1995	1. Generic Account was introduced in 2002 2. Staff to give information about suitable accounts to low-income customers 3. Face-to-face banking services even after branch closure through alternative means such as *franchising* 4. Three months written notice to customers before closing any branch
	Rural Transformation Centre Programme (RTCP)	1. To provide banking and other transaction services to communities without banking facilities 2. Using existing stores and post offices or stand–alone centres 3. Install Electronic Point of Sale (EPOS) equipment in post offices
Belgium	Charter on Basic Banking Services, 1996	1. Provide a basic bank account with no minimum balance and without overdraft facilities 2. Credit transfers, direct debits, and deposit and withdrawal facilities 3. If refused, customer must be informed the reasons, *i.e.,* laundering, bad credit history, etc.
	Basic Banking Act, 2003	Sanctions if principles of Charter on Basic Banking Services, 1996 are not applied
Canada	Access to Basic Banking Services Regulations, 2003	1. Personal bank accounts to all Canadians regardless of employment or credit history and with minimum identification requirements 2. Banks/FIs to encash government cheques at no charge
	Financial Consumer Agency of Canada (FCAC), 2001	1. Supervising provisions on consumers under Canada's Bank Act 2. Access to basic banking 3. Consumer protection measures and expanding consumer education 4. Rural banking, *i.e.,* it requires bank to give four months notice of branch closures and six months notice if it is the only branch in a range of 10 km

7.73 To sum up, a wide paraphernalia of institutional framework has been established by the Reserve Bank and the Government to ensure better banking penetration and outreach so that the credit needs of agriculture and small enterprises are met while allowing sufficient flexibility to banks to evolve their own policies and strategies for the purpose. While the policy initiatives towards financial inclusion in India started in the late 1960s, the focus through the 1970s and the 1980s was on channelling credit to ensure equitable growth. In the 1990s and the 2000s, micro-credit emerged as the main instrument for financial inclusion.

V. AN ASSESSMENT OF FINANCIAL INCLUSION/ EXCLUSION IN INDIA

7.74 As discussed in the previous section, widening of access to financial services has been one of the prime objectives of financial sector policies in general and banking sector policies in particular. The initiatives towards broadening the access of the banking sector in India began in the late 1960s. As detailed in Chapter III, banking sector policies were shaped by the continuous concern regarding a large segment of population left out of the fold of the formal financial system, especially in rural areas. The initiatives taken by the Reserve Bank and the Government of India towards promoting financial inclusion since the late 1960s have considerably improved the access to the formal financial institutions. Apart from SCBs, RRBs, co-operative banks and societies, post offices and insurance companies have played an important role in meeting the financial needs of people. However, comprehensive data on the progress of various aspects of financial inclusion are not available readily. The analysis in this section, therefore, is based on pieces of partial information from various sources such as All India Debt and Investment Survey (AIDIS) released once in a decade by the National Sample Survey Organisation (NSSO)[6] and various banking data brought out by the Reserve Bank from time to time. The analysis is also supplemented by the data based on the surveys conducted by NCAER-Max New York Life and India Invest Market Solutions (IIMS). The latest survey released by the NSSO related to the reference year 2002, with a sample size of 143,285 households (91,192 in the rural sector and 52,093 in the urban sector), which constituted 0.07 per cent of the total number of households (203.4 million) in the country. The NCAER-Max New York Life survey was conducted for the year 2004-05 with a sample size of 63,016 households, which were used to project estimates for 205.9 million households. The IIMS survey was carried out for the year 2006-07, providing estimates for 321 million earners in the country based on a sample of 100,000 respondents. An earner was defined as a person who was in the age of 18-59 years and getting some cash income.

7.75 Apart from survey data conducted by the NSSO and other agencies, and the banking data obtained through Basic Statistical Returns (BSR) of SCBs, data relating to PACS, UCBs, post offices, insurance companies and SHGs/MFIs are also analysed. Since different data sets are based on different methodologies and definitions, one needs to exercise caution while interpreting different data sets and comparing them. The latest NSSO data relate to the decade ended 2002. In recent years, several initiatives have been taken to increase the flow of credit to the agricultural sector and provide access to banking services, especially to the lower income segments. There is, therefore, also a need to take into account the data beyond 2002 for assessing the current status of financial inclusion. For this purpose, BSR data have been used. The AIDIS survey of NSSO provides information only on household indebtedness; it does not provide information on savings deposits. The major limitation of BSR data, on the other hand, is the multiple accounts held by a single person which makes it difficult to draw firm conclusions about the extent of financial inclusion/exclusion. An assessment of the progress of financial inclusion in India attempted in this section is, thus, subject to certain limitations and non-availability of relevant data.

Financial Inclusion: Credit side *(Analysis Based on Surveys)*

7.76 The AIDIS of NSSO, which was first instituted by the Reserve Bank in 1951 as All India Rural Credit Survey, provides information on the pattern of households' indebtedness. The survey is conducted on a decadal basis. The first three surveys, however, collected information in respect of rural households only. Beginning from the fourth survey in 1981, information on indebtedness of urban households has also been provided.

7.77 The number of indebted households, in absolute terms as also as percentage of total

[6] First two rounds of AIDIS were brought out by the Reserve Bank.

households, declined sharply during the period between 1961 and 1981. Thereafter, however, household indebtedness, both in terms of number of indebted households and households with debt as percentage of total households, increased significantly both in rural and urban areas, barring marginal decline in number of indebted households in relation to total households in urban areas. Overall, nearly 24 per cent of the total households in India were indebted in 2002 as compared with around 22 per cent in 1991. The share of rural indebted households in the total indebted households increased from around 77 per cent in 1991 to around 80 per cent in 2002. Indebtedness (households with debt as percentage of total households) was larger in rural areas than that in urban areas. Furthermore, the gap between rural/urban indebtedness widened in 2002 as compared with 1991 (Table 7.4). According to another survey released by the NCAER in 2008, at end-June 2005, 23.9 per cent (49.2 million) of all Indian households had loans outstanding with the ratio being 20.9 per cent (12.8 million) in urban and 25.2 per cent (36.4 million) in rural areas (NCAER, 2008).

7.78 According to the various rounds of surveys, the aggregate amount of outstanding debt of rural households, in nominal terms, increased significantly during all the previous four decades (1960s, 1970s, 1980s and 1990s). The outstanding debt of urban households also increased in the 1980s and the 1990s. The increase in debt of rural households, both in nominal and real terms, in the 1990s was the largest in any decade. The outstanding debt, in nominal terms, in rural areas during 1991-2002 grew at an annual compound rate of 15.8 per cent, while in real terms it grew by 8.5 per cent (4.3 per cent in the 1980s). In urban areas, the outstanding debt, both in nominal and real terms, between 1991 and 2002 grew at a somewhat lower rate than in rural areas (Table 7.5).

7.79 Outstanding debt per indebted household in real terms both in rural and urban areas increased sharply between 1991 and 2002 (Table 7.6).

7.80 Both in rural and urban areas, the indebtedness generally increased with the increase in income levels [represented by asset holding classes (AHCs)]. The pattern of indebtedness across different AHCs in rural and urban households remained broadly unchanged between 1991 and 2002 (Table 7.7). The increase in indebtedness in higher AHCs was, *inter alia*, on account of their enhanced capacity to borrow by providing collateral, increased level of confidence

Table 7.4: Number of Indebted Households

(Million)

End-June	Rural	Urban	Total
1	2	3	4
1961	43.1 (62.8)	@	43.1@ (62.8)
1971	31.8 (41.3)	@	31.8@ (41.3)
1981	18.2 (19.4)	5.0 (17.2)	23.2 (18.9)
1991	27.2 (23.4)	8.1 (19.3)	35.3 (22.3)
2002	39.2 (26.5)	9.9 (17.8)	49.1 (24.1)

@: Surveys of 1961 and 1971 collected information on rural households only.

Note : Figures in parentheses indicate number of indebted households as percentage of total households.

Source : AIDIS survey; various rounds.

Table 7.5: Outstanding Households' Debt

(Amount in Rupees crore)

End-June	Rural	Urban	Total
1	2	3	4
1961	2,789 (21.4)	@	2,789 @ (21.4)
1971	3,752 (12.2)	@	3,752 @ (12.2)
1981	6,193 (6.2)	3,023 (4.3)	9,216 (5.4)
1991	22,211 (6.3)	15,232 (5.1)	37,443 (5.7)
2002	1,11,468 (9.4)	65,327 (5.1)	1,76,795 (7.2)
Compound Annual Growth Rate in Nominal Terms (per cent)			
1961-71	3.0	@	3.0 @
1971-81	5.1	@	5.1 *
1981-91	13.6	17.6	15.0
1991-2002	15.8	14.2	15.2
Compound Annual Growth Rate at 1999-2000 Prices (per cent)			
1961-71	-3.2	@	-3.2 @
1971-81	-3.7	@	-3.7 *
1981-91	4.3	7.9	5.6
1991-2002	8.5	7.0	7.9

@: Surveys of 1961 and 1971 collected information on rural households only.

* : Pertains to rural households.

Note : Figures in parentheses are per cent of GDP at current market prices. Rural/urban GDP at current market prices is arrived at by applying the share of rural/urban NDP in total NDP published in National Accounts Statistics, Central Statistical Organisation (CSO).

Source : AIDIS survey; various rounds.

Table 7.6: Outstanding Debt per Indebted Household

(Rupees)

End-June	Rural	Urban	Total
1	2	3	4
	Nominal Terms		
1961	647	@	647@
1971	1,180	@	1,180@
1981	3,411	5,996	3,972
1991	8,166	18,805	10,607
2002	28,443	65,983	36,006
	At 1999-00 Prices		
1961	12,629	@	12,629@
1971	12,356	@	12,356@
1981	14,904	26,200	17,359
1991	15,105	34,785	19,621
2002	25,711	59,645	32,548

@: Surveys of 1961 and 1971 collected information on rural households only.

Source : AIDIS survey; various rounds.

Table 7.7: Indebtedness of Households – Asset Holding-wise*

(Per cent)

Asset Holding (Rs.'000)	End-June 1991		Asset Holding (Rs.'000)	End-June 2002	
	Rural	Urban		Rural	Urban
1	2	3	4	5	6
Less than 5	11.8	9.6	Less than 15	15.0	10.7
5-10	19.9	13.8	15-30	19.0	14.8
10-20	20.3	18.1	30-60	25.2	14.8
20-30	24.1	17.2	60-100	26.5	18.3
30-50	24.5	19.6	100-150	28.9	19.7
50-70	23.9	20.1	150-200	28.7	20.0
70-100	24.0	22.6	200-300	28.7	19.9
100-150	26.9	24.7	300-450	28.7	18.7
150-250	25.6	25.8	450-800	31.0	22.5
More than 250	29.7	25.2	More than 800	32.9	21.4
All	**23.4**	**19.3**	**All**	**26.5**	**17.8**

*: Indicates the number of indebted households as percentage of total households under each asset holding class (AHC).

Source: NSSO 48th and 59th round surveys.

of lenders, higher financing requirements of such households and their awareness about availability of different sources of finance.

7.81 Institutional (Government, co-operative societies and banks) and non-institutional (landlords and moneylenders) sources are broadly the two main sources from which households borrow. Between 1981 and 1991, the share of number of households indebted to institutional sources increased sharply, while that of indebted to non-institutional sources declined correspondingly. Between 1991 and 2002, the number of households indebted to institutional sources in absolute terms, both in rural and urban areas, continued to increase. However, reversing the trend of previous three decades, the share of households indebted to institutional sources in the total indebted households declined, while that of households indebted to non-institutional sources increased. The decline was relatively more pronounced among rural households and was due to decline in recourse to all the three major institutional agencies, *viz*., Government departments, co-operative societies and commercial banks (Table 7.8). According to the Report of the Committee on Financial Inclusion (Government of India, 2008), as per NSSO data, 45.9 million farmer households in the country out of a total of 89.3 million households do not access credit, either from institutional or non-institutional sources. A more or less similar trend was observed in the pattern of outstanding household debt. The share of institutional sources, which had increased sharply between 1981 and 1991, declined between 1991 and 2002 (Table 7.9).

7.82 The pattern of indebtedness of the households across different AHCs, representing the income levels, shows that the recourse to non-institutional sources is relatively high, both in rural and urban areas, by lower income groups. In other words, as the income levels go up, the proportion of people borrowing from non-institutional sources tends to decrease (Table 7.10).

7.83 This is corroborated by Invest India Incomes and Savings Survey (2007)[7] conducted by IIMS which also suggests that the earners at higher income level borrow more from institutional sources than non-institutional sources. The survey found that 70 per cent earners in the annual income bracket of more than Rs.400,000 borrowed from institutional sources as compared with only 27.5 per cent in the case of earners in the income bracket of less than Rs.50,000 (Table 7.11).

7.84 The relatively increased reliance of households with low income on non-institutional sources could be due to several factors. At low income levels, requirements generally include borrowings for purposes for which loans are not readily available from institutional sources. The inability to provide collateral

[7] The survey provided estimates for 321 million earners in the country based on a sample of 100 thousand respondents.

Table 7.8: Number of Indebted Households - Institutional *versus* Non-institutional Sources

(End-June)

Credit Agency	Rural					Urban			Total		
	1961	1971	1981	1991	2002	1981	1991	2002	1981	1991	2002
1	2	3	4	5	6	7	8	9	10	11	12
					Million						
I. Institutional Agencies	**7.5**	**7.6**	**8.9**	**18.2**	**19.8**	**2.3**	**4.9**	**5.2**	**11.2**	**23.1**	**25.0**
	–	**(0.2)**	**(1.5)**	**(7.4)**	**(0.8)**	–	**(7.9)**	**(0.4)**	–	**(7.5)**	**(0.7)**
Of which:											
(i) Government	3.7	2.6	1.0	2.0	1.2	0.5	1.0	0.6	1.4	2.9	1.7
(ii) Co-operative societies	6.9	5.9	6.1	7.8	10.2	1.1	2.0	2.0	7.1	9.8	12.2
	–	(-1.5)	(0.3)	(2.6)	(2.5)	–	(6.9)	(-0.2)	–	(3.3)	(2.0)
(iii) Commercial banks	0.3	0.3	2.9	8.7	8.4	0.7	1.5	1.8	3.6	10.3	10.2
	–	(2.1)	(24.0)	(11.6)	(-0.3)	–	(8.2)	(1.3)	–	(11.0)	(-0.1)
II. All Non-institutional Agencies	**35.6**	**24.2**	**9.3**	**11.4**	**22.9**	**2.7**	**3.9**	**5.2**	**12.0**	**15.3**	**28.1**
	–	**(-3.8)**	**(-9.1)**	**(2.1)**	**(6.5)**	–	**(3.7)**	**(2.6)**	–	**(2.5)**	**(5.7)**
Of which:											
(i) Landlords	0.6	3.6	1.1	1.3	0.6	0.1	0.1	0.1	1.2	1.4	0.6
(ii) Agricultural moneylenders	22.0	8.2	2.4	2.7	4.9	0.1	0.2	0.1	2.5	2.8	5.0
(iii) Professional moneylenders	7.6	5.0	1.9	3.6	10.2	0.8	1.4	2.7	2.7	5.0	12.9
III. All Agencies	**43.1**	**31.8**	**18.2**	**27.2**	**39.2**	**5.0**	**8.1**	**9.9**	**23.2**	**35.3**	**49.1**
	–	**(-3.0)**	**(-5.5)**	**(4.1)**	**(3.4)**	–	**(4.8)**	**(1.9)**	–	**(4.3)**	**(3.0)**
					Per cent to Total Indebted Households						
I. Institutional Agencies	**17.3**	**24.0**	**48.8**	**66.7**	**50.6**	**46.0**	**61.1**	**52.2**	**48.2**	**65.4**	**50.9**
Of which:											
(i) Government	8.6	8.3	5.4	7.3	3.0	9.0	11.9	5.6	6.2	8.3	3.5
(ii) Co-operative societies	15.9	18.5	33.4	28.6	26.0	20.9	25.4	20.2	30.7	27.9	24.9
(iii) Commercial banks	0.6	1.1	16.0	32.1	21.5	14.0	19.2	18.0	15.5	29.1	20.8
II. All Non-institutional Agencies	**82.7**	**76.0**	**51.2**	**41.9**	**58.5**	**54.0**	**48.7**	**52.8**	**51.8**	**43.4**	**57.3**
Of which:											
(i) Landlords	1.4	11.2	6.2	4.7	1.5	1.4	1.0	0.6	5.1	3.9	1.3
(ii) Agricultural moneylenders	51.0	25.8	13.2	9.8	12.5	2.2	2.1	1.1	10.8	8.1	10.2
(iii) Professional moneylenders	17.7	15.7	10.5	13.2	26.0	16.4	17.6	27.5	11.8	14.2	26.3
III. All Agencies	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

– : Not available.

Note : 1. Figures in parentheses are compound annual growth rates.

2. Sub-components may not add to total due to borrowings from multiple agencies.

Source : All India Debt and Investment Survey (AIDIS), various rounds.

to take recourse to the formal financial system could be another significant factor. On the other hand, the greater indebtedness of the higher AHCs to institutional sources, amongst both the rural and urban households, could be on account of their enhanced capacity to borrow, increased level of confidence of lenders in them, higher financing requirements of such households and their greater awareness about availability of different sources of finance.

7.85 According to the NSSO's 59th round survey, the share of non-institutional sources in the outstanding household debt increased sharply in 2002 as compared with 1991. A major reason for increase in the overall household debt and the increase in the share of households indebted to non-institutional sources between 1991 and 2002 was a significant increase in current farm expenditure and household expenditure, especially in rural areas (Table 7.12). The 'household expenditure' includes expenditure incurred on purchase of residential plot; purchase, construction, addition/alteration of building for residential purposes; purchase of durable household

Table 7.9: Outstanding Households Debt - Institutional *versus* Non-institutional Sources

(End-June)

Credit Agency	Rural						Urban			Total		
	1951	1961	1971	1981	1991	2002	1981	1991	2002	1981	1991	2002
1	2	3	4	5	6	7	8	9	10	11	12	13
Amount in Rs. crore												
I. Institutional Agencies	**–**	**413**	**1,094**	**3,794**	**14,215**	**63,648**	**1,813**	**10,662**	**49,060**	**5,606**	**24,878**	**1,12,708**
	–	**–**	**(10.2)**	**(13.2)**	**(14.1)**	**(14.6)**	–	**(19.4)**	**(14.9)**	–	**(16.1)**	**(14.7)**
Of which:												
(i) Government	–	147	250	247	1,355	2,564	443	1,691	4,965	689	3,046	7,529
(ii) Co-operative societies	–	255	753	1,773	4,798	30,431	528	2,620	13,392	2,302	7,417	43,823
	–	–	(11.4)	(8.9)	(10.5)	(18.3)	–	(17.4)	(16.0)	–	(12.4)	(17.5)
(iii) Commercial banks	–	12	82	1,736	7,485	27,310	679	3,290	19,402	2,415	10,775	46,712
	–	–	(21.6)	(35.7)	(15.7)	(12.5)	–	(17.1)	(17.5)	–	(16.1)	(14.3)
II. All Non-institutional Agencies	**–**	**2,376**	**2,658**	**2,399**	**7,996**	**47,820**	**1,210**	**4,570**	**16,266**	**3,610**	**12,566**	**64,086**
	–	**–**	**(1.1)**	**(-1.0)**	**(12.8)**	**(17.7)**	–	**(14.2)**	**(12.2)**	–	**(13.3)**	**(16.0)**
Of which:												
(i) Landlords	–	25	324	247	888	1,115	30	91	131	276	980	1,245
(ii) Agricultural moneylenders	–	1,281	867	531	1,577	11,147	109	152	588	640	1,729	11,735
(iii) Professional moneylenders	–	416	517	512	2,332	21,848	269	1,401	8,623	781	3,734	30,471
III. All Agencies	**–**	**2,789**	**3,752**	**6,193**	**22,211**	**1,11,468**	**3,023**	**15,232**	**65,327**	**9,216**	**37,443**	**1,76,795**
	–	**–**	**(3.0)**	**(5.1)**	**(13.6)**	**(15.8)**	–	**(17.6)**	**(14.2)**	–	**(15.0)**	**(15.2)**
Per cent to Total Outstanding Debt												
I. Institutional Agencies	**7.2**	**14.8**	**29.2**	**61.3**	**64.0**	**57.1**	**60.0**	**70.0**	**75.1**	**60.8**	**66.4**	**63.8**
Of which:												
(i) Government	3.7	5.3	6.7	4.0	6.1	2.3	14.6	11.1	7.6	7.5	8.1	4.3
(ii) Co-operative societies	3.5	9.1	20.1	28.6	21.6	27.3	17.5	17.2	20.5	25.0	19.8	24.8
(iii) Commercial banks	*	0.4	2.2	28.0	33.7	24.5	22.5	21.6	29.7	26.2	28.8	26.4
II. All Non-institutional Agencies	**92.8**	**85.2**	**70.8**	**38.7**	**36.0**	**42.9**	**40.0**	**30.0**	**24.9**	**39.2**	**33.6**	**36.2**
Of which:												
(i) Landlords	3.5	0.9	8.6	4.0	4.0	1.0	1.0	0.6	0.2	3.0	2.6	0.7
(ii) Agricultural moneylenders	25.2	45.9	23.1	8.6	7.1	10.0	3.6	1.0	0.9	6.9	4.6	6.6
(iii) Professional moneylenders	46.4	14.9	13.8	8.3	10.5	19.6	8.9	9.2	13.2	8.5	10.0	17.2
III. All Agencies	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

– : . Not available. * : Included under co-operative societies.

Note : Figures in parentheses are compound annual growth rates.

Source : All India Rural Credit Survey, 1951-52, and various rounds of AIDIS.

assets, clothes, among others and expenditure on medical treatment, education, marriages, and ceremonies (Annex VII.1). Thus, the 'household expenditure' includes many items for which households may find it difficult to obtain loans from institutional sources.

7.86 The Invest India Incomes and Savings Survey for the recent period (IIMS, 2007) also suggests that a large portion of loan is taken by the households for meeting financial emergency, medical emergency and social obligations. These three purposes accounted for about 53 per cent of the loans availed of by indebted earners. Furthermore, more than 60 per cent earners, indebted to non-institutional sources, took loans for the aforesaid three purposes (Table 7.13). In the case of emergencies, people may find it convenient to approach non-institutional sources for their credit needs. Financial emergencies, for instance, include unplanned expenditure on business, consumption and marriage, among others, which may not be financed by banks and other institutional agencies.

Table 7.10: Distribution of Indebted Households to Institutional and Non-Institutional Credit Agencies*

(Per cent)

Asset Holding (Rs.'000)	End-June 1991			Asset Holding (Rs.'000)	End-June 2002		
	Institutional	Non-Institutional	All		Institutional	Non-Institutional	All
1	2	3	4	5	6	7	8
Rural Households							
Less than 5	44.9	62.7	107.6	Less than 15	24.0	80.0	104.0
5-10	49.2	51.8	101.0	15-30	32.6	73.2	105.8
10-20	52.7	53.2	105.9	30-60	34.5	70.2	104.8
20-30	64.3	39.4	103.7	60-100	41.1	66.8	107.9
30-50	62.4	44.9	107.3	100-150	47.1	61.9	109.0
50-70	66.1	42.3	108.4	150-200	50.9	59.6	110.5
70-100	70.0	40.0	110.0	200-300	56.4	54.7	111.1
100-150	72.1	41.6	113.8	300-450	65.2	46.0	111.1
150-250	78.9	34.4	113.3	450-800	71.0	41.9	112.9
More than 250	85.9	26.6	112.5	More than 800	81.2	31.3	112.5
All	**66.7**	**41.9**	**108.5**	**All**	**50.6**	**58.5**	**109.1**
Urban Households							
Less than 5	30.2	75.0	105.2	Less than 15	13.1	88.8	101.9
5-10	35.5	73.2	108.7	15-30	16.2	86.5	102.7
10-20	48.6	59.1	107.7	30-60	30.4	74.3	104.7
20-30	47.1	53.5	100.6	60-100	39.3	65.0	104.4
30-50	57.1	54.6	111.7	100-150	42.1	61.9	104.1
50-70	59.7	52.2	111.9	150-200	44.5	60.0	104.5
70-100	54.9	51.8	106.6	200-300	55.8	50.8	106.5
100-150	76.9	40.9	117.8	300-450	64.7	43.9	108.6
150-250	67.8	43.0	110.9	450-800	75.1	32.0	107.1
More than 250	84.1	27.4	111.5	More than 800	86.4	19.6	106.1
All	**61.1**	**48.7**	**109.8**	**All**	**52.2**	**52.8**	**105.1**

* : Percentage distribution of indebted households between institutional and non-institutional sources under each AHC.

Note : Total exceeds 100 as some households borrowed from both sources.

Source : NSSO, 48th and 59th round surveys.

7.87 The AIDIS is the single most important source of data for assessing financial inclusion, at least for assessing the availability of credit. According to this data source, as alluded to earlier, the share of institutional sources in household debt declined between 1991 and 2002, while that of non-institutional sources increased. However, a detailed analysis suggests that institutional sources continued to provide credit in the 1990s broadly at the same pace as in the 1980s as is borne out by the following points. First, the total number of indebted households and the number of indebted households as percentage of total households in rural areas, which had declined significantly between 1961 and 1981, increased sharply between 1981 and 1991 and between 1991 and 2002. Outstanding debt of rural households, which had declined in relation to GDP between 1961 and 1981, increased marginally between 1981 and 1991, but significantly between 1991 and 2002. As a result, the debt to asset ratio in rural areas increased significantly from 19.9 per cent in 1981 to 23.4 per cent in 1991 and further to 26.5 per cent in 2002. However, a major reason for increased indebtedness between 1991 and 2002 was the sharp increase in number of indebted rural households, who borrowed for current farm expenditure, productivity of which, *inter alia*, depends on monsoon and other factors, and for household expenditure. As a result, in relative terms, the share of institutional sources declined significantly between 1991 and 2002. In absolute terms, the number of households indebted to banks remained more or less at the same level between 1991 and 2002, while those indebted to co-operative societies increased (refer Table 7.8). Outstanding household debt from institutional agencies grew at a compound annual rate of 14.7 per cent between 1991 and 2002, more or less comparable to the growth rate of 16.1 per cent between 1981 and 1991. Outstanding

Table 7.11: Sources of Loans by Income Groups – IIMS Survey*

(Per cent of Indebted Earners@)

Loan Agencies/ Annual Income Range	Less than Rs.50,000	Rs.50,000 to Rs.100,000	Rs.100,000 to Rs.200,000	Rs.200,000 to Rs.400,000	More than Rs. 400,000	Total
1	2	3	4	5	6	7
I. Institutional Sources	**27.5**	**46.0**	**59.4**	**60.2**	**70.5**	**32.8**
(i) Banks	13.0	34.5	49.3	51.6	62.8	19.1 #
(ii) Co-operative societies	4.9	6.7	8.6	3.6	4.1	5.3
(iii) Micro-finance institutions	1.1	1.0	0.7	0.5	2.4	1.1
(iv) Self-help groups	8.5	3.9	0.8	4.5	1.2	7.3
II. Non-institutional Sources	**72.5**	**54.0**	**40.6**	**39.8**	**29.5**	**67.2**
(i) Relatives / friends	35.1	32.1	26.5	22.2	22.1	33.9
(ii) Moneylenders	34.9	19.6	12.0	11.8	5.5	30.8
(iii) Others	2.5	2.3	2.1	5.8	1.9	2.5
III. Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

* : Respondents reported to have taken loans from various agencies during the preceding two years of the survey date. The survey was completed in July 2007.
@ : An earner is defined as a person who is in the age of 18-59 years and getting some cash income.
# : As per the survey, around 15 million earners took loans from banks which are comparable with around 17 million additional credit accounts opened by banks during 2005-07, as per BSR data.
Note : There may be an overestimation in the percentage of respondents reporting to have taken loans due to loans from multiple agencies.
Source : Invest India Market Solutions (IIMS), 2007.

households' debt from banks grew at a compound rate of 14.3 per cent between 1991 and 2002, which was moderately lower than the annual compound growth rate of 16.1 per cent between 1981 and 1991. Outstanding debt from co-operative societies, however, grew at a higher annual compound rate of

Table 7.12: Purpose of Loans Taken by Households – NSSO Survey

(End-June)

Purpose of Loan	1991 Rural	1991 Urban	2002 Rural	2002 Urban	1991 Rural	1991 Urban	2002 Rural	2002 Urban
1	2	3	4	5	6	7	8	9
	Number of Indebted Households (million)				**Outstanding Debt (Rs. crore)**			
I. Farm Business	**6.3**	**0.3**	**15.1**	**0.5**	**5,442**	**545**	**45,702**	**3,397**
(i) Current Expenditure	1.3	0.0	7.5	0.2	600	15	15,828	1,241
(ii) Capital Expenditure	3.0	0.2	8.1	0.3	2,665	378	29,873	2,156
II. Non-Farm Business	**3.3**	**1.2**	**4.3**	**1.5**	**2,865**	**3,163**	**13,376**	**12,869**
(i) Current Expenditure	0.9	0.3	1.2	0.5	444	605	3,121	2,090
(ii) Capital Expenditure	1.7	0.6	3.1	1.1	1,288	1,634	10,255	10,779
III. Household Expenditure	**12.4**	**6.3**	**22.9**	**8.2**	**8,840**	**11,152**	**52,390**	**49,060**
IV. Unspecified	**6.3**	**0.4**	**–**	**–**	**5,064**	**372**	**–**	**–**
V. Total	**27.2**	**8.1**	**39.2**	**9.9**	**22,211**	**15,232**	**1,11,468**	**65,327**
	Per cent to Total							
I. Farm Business	**23.2**	**3.6**	**38.5**	**5.1**	**24.5**	**3.6**	**41.0**	**5.2**
(i) Current Expenditure	4.7	0.5	19.2	2.2	2.7	0.1	14.2	1.9
(ii) Capital Expenditure	11.1	2.1	20.8	2.8	12.0	2.5	26.8	3.3
II. Non-Farm Business	**12.0**	**14.9**	**10.9**	**15.2**	**12.9**	**20.8**	**12.0**	**19.7**
(i) Current Expenditure	3.4	4.1	3.0	5.1	2.0	4.0	2.8	3.2
(ii) Capital Expenditure	6.4	7.8	7.9	10.7	5.8	10.7	9.2	16.5
III. Household Expenditure	**45.6**	**77.5**	**58.5**	**82.6**	**39.8**	**73.2**	**47.0**	**75.1**
IV. Unspecified	**23.1**	**4.7**	**–**	**–**	**22.8**	**2.4**	**–**	**–**
V. Total	@	@	@	@	**100.0**	**100.0**	**100.0**	**100.0**

@ : The sum of sub-totals in respect of number of indebted households may exceed 100 as loans may have been taken for more than one purpose by a single household.
Note : For 1991, farm and non-farm business also includes other expenditure.
Source : NSSO, 48th and 59th Round Surveys.

Table 7.13: Purpose of Loans Taken by Earners – IIMS Survey 2007

Purpose of Loan	Number of Loan Taking Earners (million)			Per cent to Loan Taking Earners		
	Rural	Urban	Total	Rural	Urban	Total
1	2	3	4	5	6	7
From All Sources						
1. Purchase of house/land/real estate	6.8	2.1	8.9	8.9	13.9	9.7
2. Purchase of vehicle	1.9	1.0	2.9	2.5	6.3	3.1
3. Purchase of consumer durables	3.1	0.8	3.9	4.1	5.1	4.3
4. Meeting a financial emergency	20.2	4.7	24.9	26.3	31.0	27.1
5. For business requirements	7.1	2.1	9.2	9.3	14.0	10.0
6. Medical emergency	12.5	1.8	14.3	16.3	11.7	15.5
7. Farm/crop loan	11.2	0.2	11.4	14.6	1.2	12.4
8. For meeting social obligations	7.1	1.1	8.2	9.2	7.5	8.9
9. For other consumption purposes	3.3	0.7	4.0	4.3	4.5	4.3
10. Education loan	1.9	0.4	2.3	2.4	2.9	2.5
11. Others	1.6	0.3	1.9	2.1	2.0	2.0
Total (1 to 11)	**76.6**	**15.1**	**91.8**	**100.0**	**100.0**	**100.0**
From Institutional Sources						
1. Purchase of house/land/real estate	2.8	1.1	3.8	11.4	20.1	13.0
2. Purchase of vehicle	1.1	0.6	1.6	4.4	10.9	5.5
3. Purchase of consumer durables	1.1	0.3	1.3	4.4	5.2	4.5
4. Meeting a financial emergency	4.8	1.3	6.1	19.6	24.9	20.6
5. For business requirements	3.2	0.9	4.1	13.0	17.1	13.8
6. Medical emergency	2.0	0.3	2.3	8.1	6.0	7.7
7. Farm/crop loan	6.6	0.1	6.7	27.2	2.3	22.7
8. For meeting social obligations	1.2	0.3	1.5	5.1	4.8	5.0
9. For other consumption purposes	0.7	0.2	0.9	2.8	3.5	2.9
10. Education loan	0.5	0.2	0.7	2.2	3.3	2.4
11. Others	0.4	0.1	0.5	1.8	1.9	1.8
Total (1 to 11)	**24.2**	**5.3**	**29.5**	**100.0**	**100.0**	**100.0**
From Non-institutional Sources						
1. Purchase of house/land/real estate	4.1	1.0	5.1	7.7	10.5	8.2
2. Purchase of vehicle	0.8	0.4	1.2	1.6	3.8	2.0
3. Purchase of consumer durables	2.1	0.5	2.6	4.0	5.0	4.1
4. Meeting a financial emergency	15.4	3.4	18.8	29.4	34.3	30.2
5. For business requirements	3.9	1.2	5.2	7.5	12.3	8.3
6. Medical emergency	10.5	1.5	12.0	20.1	14.8	19.2
7. Farm/crop loan	4.6	0.1	4.7	8.8	0.6	7.5
8. For meeting social obligations	5.8	0.9	6.7	11.1	9.0	10.8
9. For other consumption purposes	2.6	0.5	3.1	5.0	5.0	5.0
10. Education loan	1.3	0.3	1.6	2.5	2.7	2.6
11. Others	1.1	0.2	1.3	2.2	2.0	2.1
Total (1 to 11)	**52.4**	**9.9**	**62.3**	**100.0**	**100.0**	**100.0**

Source : Invest India Incomes and Savings Survey, 2007.

17.5 per cent between 1991 and 2002 than 12.4 per cent between 1981 and 1991 (refer Table 7.9). It is also significant to note that these growth rates were achieved on a large base as the growth rate between 1981 and 1991 was significantly high.

7.88 Second, some deceleration in bank credit to households needs to be seen in the context of change in banks' behaviour in the 1990s due to their impaired balance sheets. During the 1990s, banks' health became a major concern, as a result of which their focus shifted from expanding credit portfolio to strengthening balance sheets by investing in government securities in which the risk-adjusted returns were perceived to be higher. Banks also

became somewhat risk averse after prudential norms were tightened during the early 1990s. As a result, overall credit growth by the banking sector to all the sectors, including agriculture, slowed down significantly in the 1990s in comparison with the 1980s as detailed in Chapter VI. The slowdown in credit to households was, thus, in line with the overall slowdown in bank credit.

7.89 Third, the slowdown in credit to households also needs to be seen in the context of the slowdown in agriculture and allied activities. The index of agricultural production showed a low annual growth of 0.6 per cent during the NSSO survey period (between the 48th and 59th round) as compared with 3.5 per cent during the 1980s (Table 7.14). This may have led to reduced credit demand for agricultural investment purposes from the banking system. As lower income households generally take higher recourse to non-institutional sources to meet their household consumption requirements, slower growth in the rural incomes may have induced such households to approach non-institutional sources to meet their credit requirements. As alluded to earlier, according to the NSSO data, between 1991 and 2002, the increase in the indebtedness to the non-institutional sources was more pronounced in the case of lower AHCs. Fourth, the loan waiver of the 1990s could also have affected the overall credit culture and the attitude of banks to agricultural loans.

7.90 Fifth, the last round of NSSO survey related to the year 2002. Subsequently, several policy initiatives have been taken by the Government/ Reserve Bank to improve the credit flow to the needy sectors. These measures had a significant positive impact on financial inclusion as revealed by the analysis in the following section based on the BSR and other sources of data.

Table 7.14: Annual Average Growth Rates in Agriculture and in Bank Credit

(Per cent)

Period*	Agriculture and Allied Activities #	Index of Agricultural Production	Non-food Bank Credit	Bank Credit to Agriculture
1	2	3	4	5
1981-82 to 1991-92	3.0	3.5	16.4	16.1
1991-92 to 2002-03	2.3	0.6	15.4	13.2

* : Represents period between successive rounds of NSSO surveys.
# : Based on GDP data released by the CSO.
Source : Handbook of Statistics on the Indian Economy, 2006-07; Reserve Bank of India.

Analysis Based on Banks/Other Institutions Data

7.91 While the existing surveys such as NSSO, IIMS and NCAER/Max New York Life provide information from the household side, BSR and other institutional sources provide data from institutions' side not only on credit but also on deposit growth. In view of various limitations of surveys, and also to have an updated picture of financial inclusion, it is useful to examine the data available from other institutional sources such as commercial banks, RRBs, UCBs, PACS, and post offices. Thus, the analysis in the following section makes an assessment of financial inclusion from various perspectives, including availability of institutional network, instruments and infrastructure for financial services. As detailed in the previous section, several initiatives were taken in recent years to promote financial inclusion. In June 2004, the Central Government had announced the 'farm credit package' which, among others, stipulated doubling the flow of institutional credit to agriculture in the ensuing three years. The flow of credit to the farm sector, in fact, doubled after two years, ahead of the stipulated time period. The Union Budget 2008-09 has set a target of Rs.280,000 crore for agricultural credit during 2008-09. The RRBs, which were set up to pay focussed attention to the rural sector, suffered from poor health. However, the recent restructuring has had a positive impact as a result of which there is an evidence of increased credit flow to agriculture/rural sector by RRBs (refer Table 7.24). The share of RRBs in total institutional credit flows to agriculture improved in recent years. There have also been several innovative micro-finance based experiments catering to highly localised needs. Incentives have been provided for penetration of banking into unbanked areas and encouraging intermediaries such as NGOs, MFIs and CSOs. The definition of the priority sector has been modified to encourage the flow of credit to employment intensive sectors. Another major initiative relates to 'no frills' accounts, which have made significant progress in a short period.

Population per Branch

7.92 One of the indicators for measuring banking access is the population per branch. Following the nationalisation of banks in 1969, branch network of SCBs expanded rapidly. As a result, the population per branch declined significantly between 1969 and 1991. The population per branch in the rural segment increased after 1991. The population per branch,

Table 7.15: Population Per Bank Branch

(Thousand)

End-March	Rural	Urban	Total
1	2	3	4
1969*	82	33	63
1981	20	17	19
1991	14	16	14
2001	16	15	16
2007	17	13	16

* : As at end-June.
Source: Basic Statistical Returns of SCBs in India.

however, continued to decline in the urban areas (Table 7.15)[8]. One of factors responsible for increase in population per branch in rural areas between 1991 and 2007 was the reclassification of 953 rural centres, classified as rural as per 1991 census, which moved to higher population centres on account of increase in population. Besides reclassification, there were also instances where certain centres, which were earlier classified as rural, were brought into the jurisdiction of the adjoining municipality/municipal corporations and, thus, classified as urban/metropolitan depending on the population of municipality/municipal corporation.

Credit Accounts

7.93 The number of total credit accounts per 100 persons/adults, which is one of the indicators of the expansion of credit delivery services, after declining between 1991 and 2001, increased significantly thereafter. At the disaggregated level also, credit accounts per 100 persons/adults in both the rural and urban areas improved between 2001 and 2007 (Table 7.16). The significant increase in credit accounts, particularly in the urban areas, in recent years was on account of robust growth in retail, housing and consumer finance. This was mainly due to rise in the purchasing power, changing consumer demographics and high potential for growth in consumption, technological innovations in delivery of financial services/products, and recognition of retail business by the financial entities as an important part of their business activities. At present, the retail banking sector is characterised by three basic elements: multiple products (deposits, credit cards, insurance, investments and securities); multiple channels of distribution (call centre, branch, internet and kiosk); and multiple customer groups (consumers, small businesses, and corporates). The typical products offered in the Indian retail banking segment are housing loans, consumption loans for purchase of durables, auto loans, credit cards and educational loans. Within the retail segment, housing credit increased significantly over the last few years (refer Chapter VI for details).

7.94 Credit account penetration (credit accounts per 100 persons) declined both in the rural and urban areas in all the regions between 1991 and 2001, barring the urban areas in the Northern and Eastern Regions where they increased moderately and the Western Region where they remained unchanged. Credit accounts penetration, however, increased significantly in both the rural and urban areas in all the regions between 2001 and 2007 (Table 7.17).

Table 7.16: Credit Accounts with Scheduled Commercial Banks

(End-March)

Year		1971*	1981	1991	2001	2006	2007
1	2	3	4	5	6	7	8
Rural	No. of accounts (Million)	–	16.4	49.9	36.6	50.5	53.1
	Accounts per 100 Persons	–	3.1	7.9	4.9	6.3	6.5
	Accounts per 100 Adults	–	5.2	12.7	7.5	9.3	9.6
Urban	No. of accounts (Million)	–	4.4	12.1	15.8	34.9	41.3
	Accounts per 100 Persons	–	2.7	5.5	5.5	11.3	13.1
	Accounts per 100 Adults	–	4.5	8.9	8.4	16.7	19.5
Total	No. of accounts (Million)	4.3	20.7	61.9	52.4	85.4	94.4
	Accounts per 100 Persons	0.8	3.0	7.3	5.1	7.7	8.3
	Accounts per 100 Adults	1.3	5.0	11.7	7.9	11.6	12.4

* : As at end-June.
Source: Basic Statistical Returns of SCBs in India.

[8] The census population groups are 'rural' and 'urban', whereas the population groups used in BSR data are 'rural', 'semi-urban', 'urban' and 'metropolitan'. There is no unique relationship between the two. For comparison purpose and simplicity, therefore, 'rural' and 'semi-urban' are taken as 'rural', and 'urban' and 'metropolitan' are combined as 'urban'. Adult population in this section refers to the population in the age group of 15 years and above. Rural/Urban population for 2007 is estimated on the basis of rural/urban share in 2001 population. SCBs include RRBs unless stated otherwise/given separately.

Table 7.17: Credit Accounts with Scheduled Commercial Banks - Region-wise

(Per 100 persons)

Region/ End-March	Rural			Urban			Total		
	1991	2001	2007	1991	2001	2007	1991	2001	2007
1	2	3	4	5	6	7	8	9	10
Northern	6.6	4.7	5.6	5.9	7.4	10.0	6.4	5.6	7.1
North-Eastern	4.4	2.6	4.1	4.4	3.7	5.5	4.4	2.8	4.3
Eastern	7.2	3.5	4.5	4.3	4.6	6.2	6.6	3.7	4.8
Central	5.8	3.6	4.3	4.4	3.4	5.0	5.5	3.6	4.4
Western	6.2	4.1	4.8	4.8	4.8	18.9	5.7	4.4	10.5
Southern	13.6	9.6	14.4	7.6	7.2	21.6	11.8	8.8	16.8
All-India	7.9	4.9	6.5	5.5	5.5	13.1	7.3	5.1	8.3

Source: Basic Statistical Returns of SCBs in India.

7.95 For the purpose of financial inclusion, progress in the small accounts is particularly relevant. The break-up of credit accounts suggests that the share of number of credit accounts with credit limit up to Rs.25,000 in total credit accounts and the amount outstanding in such accounts in total credit outstanding declined between 1991 and 2002 and further by 2007. The credit accounts with credit limit of Rs.25,000-Rs.2,00,000 and the amount outstanding in these accounts showed a consistent increase during 1991-2007 (Table 7.18). However, this pattern to a large extent, might have been on account of migration of some loans (which are in nominal terms) with credit limit up to Rs.25,000 to the higher categories due to the impact of inflation.

7.96 Adjusted for inflation, the share of loans with less than Rs.25,000 credit limit continued to decline between 2001 and 2006. However, the decline was much smaller in the case of credit limit adjusted for inflation than unadjusted (Table 7.19). The share of number of accounts in credit limit of Rs.25,000-Rs.200,000, increased between 1991 and 2000 as also thereafter through 2006. However, the increase was relatively lower in the case of credit limit adjusted for inflation than unadjusted. This pattern, *inter alia,* reflected the impact of improvement in real income, resulting in higher amount of credit demand and high growth in retail credit.

7.97 The number of credit accounts with the RRBs also declined somewhat in the late 1990s, but increased sharply during the current decade (Table 7.20).

Co-operative Credit

7.98 Rural credit co-operatives in India were envisaged as a mechanism for pooling the resources of people with small means and providing them with access to different financial services. The short-term rural co-operative credit structure (STCCS) provides mainly short-term credit and other financial services, which are of particular relevance from the point of view of financial inclusion. At end-March 2006, the

Table 7.18: Number of Credit Accounts and Outstanding Credit as per Size of Credit Limit – All SCBs

(Amount in Rupees crore)

End-March	Credit Limit up to Rs. 25,000				Credit Limit between Rs.25,000 and Rs.2,00,000				Total	
	Accounts (Million)	Per cent to Total	Amount	Per cent to Total	Accounts (Million)	Per cent to Total	Amount	Per cent to Total	Accounts (Million)	Amount
1	2	3	4	5	6	7	8	9	10	11
1990	51.2	95.0	24,147	23.1	2.3	4.2	14,351	13.8	53.9	104,312
1991	58.8	94.9	27,323	22.0	2.7	4.4	17,267	13.9	61.9	124,203
1992	62.5	95.0	29,945	21.9	2.8	4.3	18,393	13.5	65.9	136,706
1993	58.5	94.2	32,091	19.8	3.1	5.0	20,217	12.4	62.1	162,467
1994	55.8	93.6	32,188	18.3	3.3	5.5	21,547	12.3	59.7	175,891
1995	53.9	92.8	34,060	16.1	3.5	6.1	23,882	11.3	58.1	210,939
1996	51.9	91.6	36,253	14.2	4.0	7.0	28,085	11.0	56.7	254,692
1997	50.1	90.1	37,446	13.2	4.6	8.3	32,227	11.3	55.6	284,373
1998	46.8	87.4	41,095	12.5	5.7	10.7	39,457	12.0	53.6	329,944
1999	42.7	81.7	38,285	10.0	8.2	15.8	49,997	13.1	52.3	382,425
2000	39.3	72.2	36,409	7.9	13.6	25.0	66,336	14.4	54.4	460,081
2001	37.3	71.1	37,816	7.0	13.2	25.2	68,478	12.7	52.4	538,434
2002	37.3	66.2	38,501	5.9	16.8	29.8	87,148	13.3	56.4	655,993
2003	36.9	62.0	41,038	5.4	19.7	33.0	104,019	13.8	59.5	755,969
2004	36.8	55.4	38,555	4.4	25.1	37.9	124,144	14.1	66.4	880,312
2005	38.7	50.2	42,992	3.7	32.4	42.0	156,888	13.6	77.2	1,152,468
2006	38.4	45.0	45,217	3.0	38.7	45.3	203,281	13.4	85.4	1,513,842
2007	38.6	40.9	45,903	2.4	45.7	48.4	232,992	12.0	94.4	1,947,100

Source: Basic Statistical Returns of SCBs in India.

Table 7.19: Number of Credit Accounts of All SCBs - Inflation Adjusted Credit Limit

End-March	Credit limit up to Rs.25,000 (at 1990 prices)		Credit limit between Rs.25,000 and Rs.2,00,000 (at 1990 prices)	
	Number of Accounts (Million)	Share in Total (Per cent)	Number of Accounts (Million)	Share in Total (Per cent)
1	2	3	4	5
1990	51.2	95.0	2.3	4.2
1993	59.2	95.3	2.4	3.9
1997	52.3	94.1	2.7	4.9
2001	43.9	83.5	7.7	14.7
2004	48.9	73.7	16.1	24.2
2006	57.8	67.6	25.0	29.2

Note : The credit limits for the year 1993 onwards equivalent to 1990 limits have been worked out by applying the GDP deflator to the credit limits of 1990.

Source : Worked out on the basis of Survey of Small Borrowal Accounts, Reserve Bank of India Bulletin (various issues).

three-tier STCCS consisted of nearly 106,400 PACS at the village level, 370 district central co-operative banks (DCCBs) at the district level with 12,991 branches and 30 state co-operative banks at the State level with 962 branches. One PACS on an average, serves 6 villages. With a total membership of more than 125 million rural people, PACS is possibly one of the largest rural financial systems in the world. The number of borrowing members increased significantly between 1994 and 2003, before declining thereafter (Table 7.21).

7.99 UCBs play an important role in meeting the growing credit needs of urban and semi-urban areas of the country. They mobilise savings from the middle and lower income groups and purvey credit to small borrowers, including weaker sections of the society. These banks in India are financial co-operatives akin to credit unions found abroad, except that they can also accept deposits from non-members. UCBs also form a part of the payment system.

7.100 In view of the special thrust on financial inclusion in recent years, co-operative banking has acquired renewed significance in the Indian financial system. Being member-driven institutions working on a collective principle, they facilitate the pooling of resources for the purpose of lending to their members who are also the banks' shareholders and, therefore, have a crucial stake in the affairs of the bank. In some parts of the country such as Maharashtra, Gujarat and Karnataka, UCBs play a significant role in extending banking services in the urban areas. As at end-March 2007, there were 7,670 branches (including extension counters) of 1,813 UCBs in India. Provisional estimates indicate that at end-March 2007, UCBs provided credit to around 7 million borrowers aggregating Rs.78,660 crore.

Micro-finance

7.101 In the recent period, micro-finance has emerged as an important semi-formal mode of credit delivery to the people, particularly to those who are excluded from the formal financial system. There are two broad models of micro-finance in

Table 7.20: Regional Rural Banks in India – Credit Accounts/Amounts

(No. of Accounts in '000, Amount in Rupees crore)

End-March	Credit Accounts		Small Borrowal Accounts		Col 4 as % of Col. 2	Col 5 as % of Col. 3
	Accounts	Amount	Accounts	Amount		
1	2	3	4	5	6	7
1996	13,056	7,344	12,902	6,120	98.8	83.3
1997	12,102	8,655	11,885	6,845	98.2	79.1
1998	12,293	10,200	12,001	7,797	97.6	76.4
1999	11,138	11,279	11,098	10,194	99.6	90.4
2000	11,868	13,126	11,801	11,561	99.4	88.1
2001	12,203	16,352	12,132	14,360	99.4	87.8
2002	12,627	18,869	12,543	16,435	99.3	87.1
2003	12,873	22,623	12,776	19,757	99.2	87.3
2004	12,715	26,020	12,593	22,310	99.0	85.7
2005	14,167	32,689	14,014	27,878	98.9	85.3
2006	13,394	36,644	13,195	30,163	98.5	82.3
2007	14,958	47,855	14,666	37,330	98.0	78.0

Source: Basic Statistical Returns of SCBs in India.

Table 7.21: Progress of Primary Agricultural Credit Societies

(End-March)

Particulars	1994	1995	2000	2002	2003	2004	2005	2006	2007
1	2	3	4	5	6	7	8	9	10
1. No. of PACS (thousand)	91.6	91.1	101.5	98.2	112.3	105.7	108.8	106.4	97.2
2. Members (million)	89.0	90.6	108.6	102.1	123.6	135.4	127.4	125.2	125.8
3. Borrowers (million)	50.5	38.0	43.0	55.5	63.9	51.3	45.1	46.1	47.9
4. Owned funds (Rs. crore)	2,694	3,412	5,338	6,855	8,198	8,397	9,197	9,292	11,039
5. Deposits (Rs. crore)	2,102	2,962	12,459	14,846	19,120	18,143	18,976	19,561	23,484
6. Borrowings (Rs. crore)	9,117	10,176	22,350	29,475	30,278	34,257	40,249	41,018	43,714
7. Total Resources (4+5+6)	**13,913**	**16,550**	**40,147**	**51,176**	**57,596**	**60,797**	**68,422**	**69,871**	**78,237**
8. Loans Outstanding (Rs. crore)	**10,534**	**12,141**	**28,546**	**40,779**	**42,411**	**43,873**	**48,785**	**51,779**	**58,620**

Source : Performance of Primary Agricultural Credit Societies (various issues); NAFSCOB.

India, *viz.*, SHG-bank linkage model and MFI model. Of these two models, the SHG-bank linkage has made rapid strides since its inception in the early 1990s. Commercial banks, co-operative banks and RRBs are actively engaged in the programme. As on March 31, 2007, 50 commercial banks, 96 RRBs and 352 co-operative banks were participating in the programme. The number of bank branches lending to SHGs was 35,294 at end-March 2006 and the number of participating NGOs and other agencies was 3,024. The programme is being implemented in 31 States/ UTs and 587 districts.

Table 7.22: SHG-Bank Linkage Programme

Year	Cumulative Number of SHGs Financed ('000)	Bank loan (Rs. crore) (cumulative)
1	2	3
1992-99	33	57
1999-00	115	193
2000-01	264	481
2001-02	461	1,026
2002-03	717	2,049
2003-04	1,079	3,904
2004-05	1,618	6,898
2005-06	2,239	11,398
2006-07	2,925	18,047
2006-07*	2,895*	12,366 *

*: Represents outstanding number and amount. The comparable figures for earlier years are not available.

Source: Progress of SHG–Bank Linkage in India 2005-06; NABARD.

7.102 The number of bank linked SHGs increased sharply, especially from 1999-2000. By 2006-07, about three million SHGs were bank-linked (Table 7.22). Assuming that, on an average, each SHG finances 14 members, the cumulative number of households served by SHGs-bank linkage programme would amount to about 41 million at end-March 2007. The estimated number of poor people assisted would, thus, be about 205 million, assuming average household size of 5 persons.

7.103 The region-wise pattern of SHGs linked to banks showed a greater concentration in the Southern region, although the spatial disparity declined over the years with the significant increase in the share of other regions, particularly the Eastern region (Table 7.23).

7.104 The average loan amount per SHG was Rs.61,648. A significant feature of the programme was the active participation of women (90 per cent) and timely loan repayment (over 90 per cent). The high

Table 7.23: Regional Pattern of SHGs Linked to Banks

(Per cent to total)

Region/End-March	2001	2002	2003	2004	2005	2006
1	2	3	4	5	6	7
Northern	3.4	4.2	4.9	4.9	5.3	5.9
North-Eastern	0.2	0.3	0.6	1.1	2.1	2.8
Eastern	8.4	9.9	12.7	14.7	16.4	17.6
Central	10.9	10.4	11.4	11.8	12.2	12.0
Western	5.9	6.4	5.9	5.1	5.9	7.4
Southern	71.1	68.8	64.6	62.5	58.0	54.3
All India	100.0	100.0	100.0	100.0	100.0	100.0

Source : Progress of SHG-Bank Linkage in India 2005-06; NABARD.

Box VII.14
SHG-Bank Linkage Programme : An Assessment

A few assessment studies have been carried out on the impact of the SHG-bank linkage programme in India at the grass root level. Puhazhendi and Satyasai (2000) observed that there was a shift in the income slabs of households towards higher income slabs between pre and post-SHG situation. About 74 per cent of the sample households were below an annual income level of Rs.22,500 during pre-SHG situation. The proportion declined to 57 per cent in the post–SHG situation due to increased income levels. Further, involvement in the group significantly contributed to improving the self-confidence of the members. The feeling of self-worth and communication with other group members improved after association with the SHGs. The members were relatively more assertive in confronting with social evils and problematic situations.

In another assessment, Puhazhendi and Badatya (2002) found that availing loans from moneylenders and other informal sources with higher interest rates was significantly reduced due to SHG intervention. It was also observed that consumption oriented loans were replaced by production oriented loans during post-SHG situation.

Another study (APMAS and EDA Rural Systems, 2006) observed that 30 per cent of SHGs in the sample were involved in community actions. These involved improving community services (43 per cent of the total actions, including water supply, education, health care, veterinary care, village road), trying to stop alcohol sale and consumption (31 per cent), contributing finance and labour to new infrastructure (12 per cent), protecting natural resources and acts of charity (to non-members). The most common single type of action taken up by SHGs was the attempt to close down local liquor outlets.

The study also pointed out that such community actions involved a new boldness and confidence for women, often involving putting pressure on the authorities (*panchayat*, district officers and police) to do their jobs, whether through petitions or by staging rallies and blockades; and varying degrees of skill in negotiation with SHG leaders.

Some of the States like Andhra Pradesh are trying to implement various developmental and poverty alleviation schemes through SHGs.

References:

1. Puhazhendi, V. and Satyasai, K.J.S. 2000. Micro-finance for Rural People: An Impact Evaluation; NABARD.
2. Puhazhendi, V. and Badatya, K.C. 2002. SHG-bank Linkage Programme for Rural Poor - an Impact Assessment; www.microfinancegateway.org
3. APMAS and EDA Rural Systems. 2006. Self-Help Groups in India: A Study of the Lights and Shades; Study by Andhra Pradesh *Mahila Abhivruddhi* Society (APMAS) and EDA Rural Systems Private Ltd; www.apmas.org

repayment rates of the SHGs provided comfort to the banks for lending to the SHGs (Box VII.14).

7.105 From the above analysis, it is evident that credit delivery from formal financial institutions to the relatively excluded segments has improved significantly in recent years due to various initiatives by the Reserve Bank and the Government. As a result, overall credit to agriculture by all credit institutions grew at an annual compound rate of 26.5 per cent between 2002-03 and 2007-08 as compared with 16.8 per cent between 1991-92 and 2001-02 (Table 7.24).

7.106 To sum up, there has been a distinct improvement in credit penetration (credit accounts per 100 persons) and credit flow to the rural sector in general and to agriculture since the early 2000s, that is, during the period subsequent to the reference year of AIDIS by the NSSO. Taking together all sources of formal credit, the number of credit accounts per 100 adults, which had declined from 20 in 1993 to 18 in 2002, improved to 25 in 2007 (Table 7.25).

Table 7.24: Institutional Credit Flow to the Agriculture Sector in India

(Rupees crore)

Year	Co-operatives	RRBs	Commercial Banks	Total
1	2	3	4	5
1991-92	5,797	596	4,806	11,199
	(45.9)	(78.2)	(2.8)	(24.7)
2001-02	23,604	4,854	33,587	62,045
	(13.5)	(15.0)	(20.8)	(17.4)
2002-03	23,716	6,070	39,774	69,560
	(0.5)	(25.1)	(18.4)	(12.1)
2003-04	26,959	7,581	52,441	86,981
	(13.7)	(24.9)	(31.8)	(25.0)
2004-05	31,424	12,404	81,481	125,309
	(16.6)	(63.6)	(55.4)	(44.1)
2005-06	39,404	15,223	125,859	180,486
	(25.4)	(22.7)	(54.5)	(44.0)
2006-07	42,480	20,435	140,382	203,297
	(7.8)	(34.2)	(11.5)	(12.6)
2007-08	43,684	24,814	156,850	225,348
	(2.8)	(21.4)	(11.7)	(10.8)
Memo: Compound Annual Growth Rates				
1991-92 to 2001-02	13.6	21.0	19.3	16.8
2002-03 to 2007-08	13.0	32.5	31.6	26.5

Note : Figures in parentheses are percentage change over previous year.
Source : Reserve Bank of India and NABARD.

Table 7.25: Number of Credit Accounts with Institutions

(Million)

Institution/End-March	1993	2002	2007
1	2	3	4
Scheduled Commercial Banks	46.4	43.3	76.6
Regional Rural Banks	13.0	12.6	15.0
Primary Agricultural Credit Societies	50.5	55.5	47.9
Urban Co-operative Banks	4.7	4.4	7.1
Self-Help Groups	0.0	7.4	40.5
Total	**114.6**	**123.3**	**187.1**
Total Accounts per 100 Persons	13	12	17
Total Accounts per 100 Adults	20	18	25

Note: 1. Data on UCBs for 1993 and 2002 are estimated assuming the same growth as observed in the case of SCBs.

2. Accounts with SHGs are estimated assuming on an average 16 accounts per SHG in 1993 and 2002 and 14 in 2007(obtained on request from NABARD). The average size of SHGs has declined in recent years due to formation of several new SHGs with smaller size.

3. Number of SHGs is adjusted against the credit accounts with SCBs to avoid double counting.

Financial Inclusion: Deposit Side

7.107 Apart from the availability of credit, the facility of deposits is another key element of financial inclusion. This is particularly important for the people with low and irregular income. Access to facility of safe deposits enables such people to plan their expenditure with convenience. This also promotes thrift and develops the culture of saving. In the absence of such facility, people may keep their savings in various informal forms such as cash at home or deposit with relatives/moneylenders. The possibility of losing money in such cases is very high which inflicts hardships to people and also discourage them to save more. A key to safe deposits is the ability to withdraw money from accounts as and when required. Thus, the nature of products available in this regard could play an important role in promoting financial inclusion.

7.108 In the Indian context, savings deposit accounts are provided by banks and post offices. Accordingly, this section examines the progress made by the banking system and post offices in terms of providing savings accounts based on the BSR data for banks and the data obtained from the Postal Department. A limitation of this analysis is the multiple accounts held by one individual and the dormant accounts that may not have been operated for a long time. Nevertheless, per capita deposit accounts can provide some important insights into the progress made in promoting financial inclusion.

Savings Bank Accounts

7.109 The number of savings accounts opened by SCBs expanded significantly over the years, especially between the early 1970s and the early 1990s. The expansion in savings accounts was much faster than the population growth, resulting in a substantial improvement in savings account penetration (savings accounts per 100 persons) (Table 7.26). The improvement was observed both in the urban and rural areas. The number of savings accounts per 100 persons/adults, which declined between 1991 and 2002, increased sharply thereafter. As a result, the number of savings accounts per 100 persons/adults at end-March 2007 was larger than that at end-March 1991. This reflects rise in the income levels and the various initiatives taken by the

Table 7.26: Savings Accounts with Scheduled Commercial Banks

(End-March)

Year		1971*	1981	1991	2001	2006	2007
1	2	3	4	5	6	7	8
Rural	No. of accounts (Million)	–	56.9	153.8	169.8	194.4	213.8
	Accounts per 100 Persons	–	10.9	24.5	22.9	24.2	26.2
	Accounts per 100 Adults	–	17.9	39.2	35.0	35.8	38.8
Urban	No. of accounts (Million)	–	40.9	99.2	110.2	149.1	159.7
	Accounts per 100 Persons	–	25.7	45.6	38.5	48.1	50.7
	Accounts per 100 Adults	–	42.3	73.1	58.9	71.4	75.2
Total	No. of accounts (Million)	23.6	97.8	253.0	280.0	343.4	373.5
	Accounts per 100 Persons	4.3	14.3	29.9	27.2	30.8	33.0
	Accounts per 100 Adults	7.1	22.9	46.8	41.5	45.9	48.9

* : As at end-June.
Source: Basic Statistical Returns of SCBs in India.

Reserve Bank such as urging banks to open 'no frills' accounts with 'nil' or low minimum balances.

7.110 The region-wise pattern indicates that savings accounts per 100 persons declined between 1991 and 2001 in all the regions, barring North-Eastern and Central regions in which the number of savings accounts per 100 persons increased. This pattern was observed broadly in both the rural and urban areas. However, savings account penetration increased sharply between 2001 and 2007 in both the rural and urban areas in all the regions (Table 7.27). The access to savings accounts was more evenly spread in comparison with credit accounts. Credit accounts showed a greater concentration in the Southern region, while savings accounts were more or less evenly spread in the Northern, Southern and Western regions. However, penetration of both savings accounts and credit accounts was low in the North-Eastern, Eastern and Central regions.

7.111 The number of savings accounts with RRBs, which are included in scheduled commercial banks data in Table 7.27, increased significantly between 1991 and 2006. In tandem with the growth in the number of accounts, the deposits with RRBs also increased (Table 7.28).

7.112 With a view to providing financial inclusion, the Reserve Bank had advised all banks to make available a basic banking 'no-frills' account either with 'nil' or low minimum balances as well as charges, as alluded to earlier. There has been a significant progress in the number of 'no frills' accounts opened by banks in India (Table 7.29).

7.113 According to the Invest India Incomes and Savings Survey 2007, the proportion of respondents having savings accounts was significantly lower in the low income groups, than in the higher income groups. The proportion of population having a bank account increased with the increase in the level of income. The survey also indicated that around 45 per cent of respondents had a savings account with a bank. Furthermore, the number of savings accounts held in urban areas was higher than that in rural areas (Table 7.30).

Table 7.28: Savings Accounts with Regional Rural Banks

Year	No. of Accounts (million)	Deposits Outstanding (Rs. crore)
1	2	3
1991	26.5	2,552
1992	28.5	2,899
1993	29.7	3,059
1994	30.5	4,016
1995	31.2	5,246
1996	31.4	6,006
1997	32.7	7,354
1998	34.4	9,242
1999	34.4	10,902
2000	35.4	12,777
2001	36.7	14,732
2002	36.7	17,507
2003	40.1	20,803
2004	42.9	25,670
2005	44.9	30,390
2006	47.5	37,559
2007	52.7	45,014

Source: Basic Statistical Returns of SCBs in India.

7.114 Another survey, conducted by Max New York Life and NCAER, found that at the all-India level, 66 per cent of households own accounts in a financial institution (commercial bank, post office, regional rural banks and registered societies). This percentage was lower in rural areas at 59 per cent as compared with 82 per cent in the urban areas (NCAER, 2008). The survey also indicated that 36 per cent of total households in India preferred to keep savings at

Table 7.27: Savings Accounts of Scheduled Commercial Banks

(Per 100 persons)

Region/End-March	Rural			Urban			Total		
	1991	2001	2007	1991	2001	2007	1991	2001	2007
1	2	3	4	5	6	7	8	9	10
Northern	30.1	27.3	29.9	62.6	50.3	64.1	40.0	35.0	41.5
North-Eastern	16.1	16.9	18.9	28.4	25.6	33.6	17.8	18.3	21.2
Eastern	17.7	16.2	18.4	40.0	37.4	44.4	21.8	20.2	23.3
Central	21.0	21.8	23.7	34.7	31.1	40.2	23.8	23.9	27.4
Western	24.7	21.9	26.4	53.8	42.0	53.6	35.5	30.1	37.5
Southern	34.6	31.9	38.7	42.7	35.9	53.8	37.0	33.2	43.8
All-India	**24.5**	**22.9**	**26.2**	**45.6**	**38.5**	**50.8**	**29.9**	**27.2**	**33.0**

Source: Basic Statistical Returns of SCBs in India.

Table 7.29: Number of 'No-Frills' Accounts Opened in India

(Number of Accounts)

Category	End-March 2006	End-March 2007	End-December 2007
1	2	3	4
Public Sector Banks	332,878	5,865,419	11,026,619
Private Sector Banks	156,388	856,495	1,560,518
Foreign banks	231	2,753	30,260
Total	**489,497**	**6,724,667**	**12,617,397**

Source : Reserve Bank of India.

home, while more than half of the Indian households preferred to keep their savings in bank deposits. In rural areas, the preference for keeping savings at home (41.7 per cent) was significantly higher than that in urban areas (23.4 per cent). On the other hand, significantly higher number of households (62.6 per cent) in urban areas preferred to keep savings in bank deposits as compared with those in rural areas (45.3 per cent).

Postal Savings and Remittance

7.115 Apart from the banking system, the post offices in India also provide the services of maintaining deposits and remittances. The Indian Postal Service with 155,516 post offices at end-March 2005 is the most widely spread post office system in the world. The numbers of post offices were more than twice the number of bank branches in the country with a large presence in remote areas. A post office in India, on an average, served 7,046 persons at end-March 2005. Indian post offices offer various types of small savings schemes and also provide other banking and financial services. Small savings schemes include deposits of various maturities and public provident funds. Other financial services include money order, international remittance, mutual fund and postal life insurance.

Table 7.30: Earners Having a Bank Account – 2007

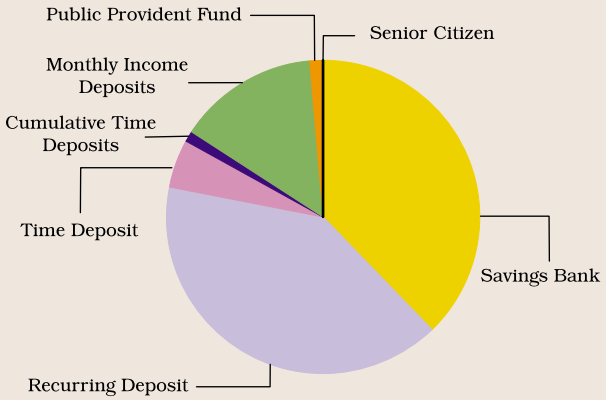
(Per cent of Total Earners*)

Range of Annual Income (Rs.)	Urban	Rural	Total
1	2	3	4
Less than 50,000	34.1	26.8	28.3
50,000 to 100,000	75.5	71.2	73.0
100,000 to 200,000	91.8	87.4	89.9
200,000 to 400,000	95.5	93.6	94.9
More than 400,000	98.0	96.3	97.6
All	61.7	38.0	44.9

* : An earner is defined as a person who is in the age of 18-59 years and earning some cash income.

Source: IIMS, 2007

Chart VII.3: Post Office Savings Schemes – Share in Number of Accounts
(End-March 2005)



7.116 The number of savings bank accounts with the post offices, which provide cheque facility, was 60.3 million, *i.e.*, about 19 per cent of the savings accounts with banks (about 320 million). The amount of savings deposits per account in post offices was around Rs.2,500 at end-March 2005 as compared with around Rs.15,000 with banks. This was because post offices largely cater to the banking needs of the low income groups. Apart from the savings bank accounts, post offices also offer several other products (Chart VII.3).

7.117 The aggregate picture of savings accounts with different institutions (SCBs, RRBs, UCBs, PACS and post offices) showed a steady improvement in absolute terms from 1993 to 2002 and further in 2007. However, savings accounts per 100 persons/adults declined in 2002 as compared with 1993. The position improved significantly thereafter. As a result, savings accounts per 100 persons/adults in 2007 were more than those in 1993 (Table 7.31).

Insurance Services

7.118 In most countries, a large segment of the population does not have access to formal insurance services. Micro-insurance services in a number of countries have begun to expand only in recent years. The Insurance Regulatory and Development Authority (IRDA) has been actively encouraging insurance services for low-income households. In 2002, the IRDA established rural and social sector targets for

Table 7.31: Number of Savings Accounts with Institutions

(Million)

Institution/End-March	1993	2002	2007
1	2	3	4
Scheduled Commercial Banks	246.0	246.5	320.9
Regional Rural Banks	30.5	36.7	52.7
Primary Agricultural Credit Societies	89.0	102.1	125.8
Urban Co-operative Banks	41.6	41.6	50.0
Post Offices	47.5	60.2	60.8
Total	**454.6**	**487.1**	**610.3**
Total Accounts per 100 Persons	**51**	**46**	**54**
Total Accounts per 100 Adults	**80**	**72**	**82**

Note : 1. Data on UCBs for 1993 and 2002 are estimated assuming the same growth as observed in the case of SCBs.
2. The number of accounts in the case of PACS represent total membership.
3. Data on savings accounts with post offices for 2007 are estimated on the basis of compound annual growth rate between 1999-2000 and 2004-05.

Table 7.32: Insurance Penetration Ratio - Select Countries – 2005

Country	Insurance Penetration
1	2
Developing Countries	
Bangladesh	0.61
People's Republic of China	2.70
India	**3.14**
Indonesia	1.52
Pakistan	0.67
Philippines	1.48
Sri Lanka	1.46
Developed Countries	
Japan	10.54
United Kingdom	12.45
United States of America	9.15
Republic of Korea	10.25

Note : Insurance penetration is gross insurance premium as a percentage of gross domestic product.
Source : Asian Development Bank. 2007.

insurance companies. All insurers entering the business after the start of the IRDA Act, 1999 are required to comply with the obligations towards the rural and social sectors in a phased manner**.** In India, the total number of life insurance policies (individual single premium) was about 3.41 million in November 2007 (IRDA, 2008). This implies that there are only around 3.1 policies per thousand persons. The insurance penetration (insurance premium as percentage of GDP) in India was relatively higher as compared with several emerging market economies, but significantly lower than that in advanced economies (Table 7.32).

An Assessment of Financial Inclusion by Various Agencies: A Comparison

7.119 A comparison of the NSSO's All-India Debt and Investment Survey and the BSR data brought out by the Reserve Bank[9] suggests that there are significant differences in the credit to households extended by banks (Table 7.33). The extent of household indebtedness to the banking system appears to be grossly underestimated by the NSSO data, both in terms of households/accounts and credit outstanding. Furthermore, number of credit accounts and amount outstanding in such accounts, as revealed by the BSR data, increased sharply between 2002 and 2007.

7.120 A comparison of the consolidated BSR data on savings accounts and other institutions (accounts with UCBs, post offices and PACS) with NCAER/Max New York Life survey also indicates significant differences in the extent of financial inclusion. According to data from banks and various other financial institutions, 54 persons out of 100 held a savings account with one or the other formal financial institution in 2007 as compared with 50 accounts per 100 persons in 2005. Assuming 5 persons as the average size of households, this works out to about 250 accounts per 100 households (2.5 accounts per household). NCAER/Max New York Life survey, on the other hand, found that 66 per cent households held account with a financial institution, which worked out to 13 accounts per 100 persons[10] (Chart VII.4). The

[9] The Reserve Bank collects information about the credit outstanding as on March 31 from the scheduled commercial banks (including RRBs) in an annual return, namely, BSR-1. Part A of BSR-1 provides detailed account-wise information on credit outstanding of all accounts with credit limit of more than Rs.200,000 and in Part B for advances up to Rs.200,000, termed as Small Borrowal Accounts. Only occupation-wise consolidated information on number of accounts, amount outstanding and credit limits are obtained. The detailed account-wise information on credit-outstanding of small borrowal accounts according to type of account holders, like, individuals, proprietary and partnership firms, co-operative societies, corporate bodies and other such groups is obtained by conducting a separate survey of Small Borrowal Accounts. For obtaining the information of total amount outstanding to individual account holders as on March 2002 the results of Small Borrowal Accounts Survey 2001 were utilised, which is the nearest survey pertaining to BSR-1 for March 31, 2002.

[10] The IIMS, 2007 survey indicated that around 45 per cent of respondents (earners) had an account with a bank. The findings of the survey, which are applicable for earners, are not comparable with other data discussed in this chapter.

Table 7.33: Comparison of AIDIS and BSR Data - Household Indebtedness to Commercial Banks

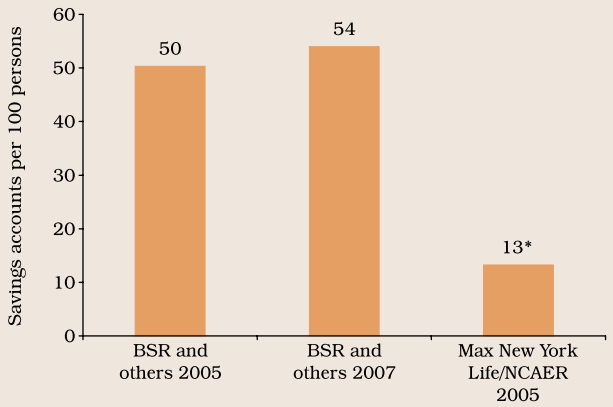
Item	AIDIS 1991	BSR 1991	AIDIS 2002	BSR 2002	BSR 2007
1	2	3	4	5	6
No. of households/accounts in '000	10,277	60,911	10,189	53,918	83,016
	(16.9)		(19.9)		
Amount of debt outstanding (Rs. crore)	10,775	43,171	46,712	175,659	654,392
	(24.9)		(27.8)		
Amount outstanding per household/account (Rs.)	10,464	7,088	45,846	32,579	78,827
Share in credit outstanding under various interest rate buckets					
Less than 12.0 per cent	–	–	27.6	16.9	64.2
12.0-15.0 per cent	–	–	40.9	57.2	18.5
15.0 per cent and above	–	–	31.5	25.0	17.3

Note: Figures in parentheses in columns 2 and 4 indicate AIDIS data as percentage of BSR data in columns 3 and 5, respectively.

differences in the magnitude of financial inclusion/ exclusion of the various studies may, *inter alia,* be on account of data problems and differences in the methodologies, definitions and other factors discussed above. There is, therefore, a need to interpret the results based on the data from various sources carefully.

7.121 While assessing savings accounts penetration, it is pertinent to exclude people who have very little or no capacity to save. About 22 per cent people below the poverty line would not have savings to put in bank deposits or other alternative avenues. This is also corroborated by the Max New York Life-NCAER Study (2008) which found that about 20 per cent of the total households did not have savings. Thus, a section of the households would be constrained to access the banking services due to lack of savings rather than the lack of banking services available to them. After excluding the people below poverty line, it is estimated that in India there are 105 accounts per 100 adults[11].

Chart VII.4: Savings Accounts per 100 Persons - Different Estimates



*: According to NCAER/Max New York Life survey, there were 66 accounts per 100 housholds. Assuming the average size of 5 persons per household, the number of accounts worked out to 13 accounts per 100 persons.

Note: BSR and others represent savings accounts with SCBs, UCBs, post offices and membership with PACS (2006).

7.122 An empirical analysis suggests that economic development and infrastructure (demand side factors), and branch network (supply side factor) were the main determinants of financial inclusion. Simultaneously, financial inclusion, among others, also affects economic development (Box VII.15).

7.123 To sum up, according to the All India Debt and Investment Survey of the NSSO, the household indebtedness increased sharply between 1991 and 2002. This was mainly on account of sharp increase in consumption and other expenditure, which could not be easily financed from institutional sources. Data also suggest that in absolute terms, the number of households indebted to institutional sources, both in rural and urban areas, increased between 1991 and 2002. However, the proportion of households indebted to institutional sources and the share of institutional sources in households' outstanding debt declined sharply between 1991 and 2002. A detailed analysis suggests that institutional agencies continued to increase credit to households between 1991 and 2002 more or less at the same rate as between 1981 and 1991. However, sharp increase in credit for consumption and other unproductive purposes from non-institutional sources resulted in a significant decline in the share

[11] 82 savings accounts per 100 adults imply approximately 82 accounts per 78 adults above poverty line (after excluding 22 per cent people below the poverty line).

Box VII.15
Relationship Between Financial Inclusion and Development Indicators

Both the demand and supply side factors have an important bearing on the use of banking services. The supply side factors, *inter alia,* include distance from branch, branch timings, cumbersome documentation and procedures and suitability of products. On the demand side, the main factors affecting the demand for financial services are income level, infrastructure development and financial literacy. In fact, it is argued in the literature that there is a two-way relationship between financial inclusion and economic development, *i.e.,* greater financial inclusion leads to higher level of income which, in turn, leads to higher financial inclusion.

The literature on finance and growth suggests that financial inclusion is one of major determinants of economic growth. Higher economic growth and infrastructure, in turn, play a crucial role in promoting financial inclusion. It is, thus, argued that in order to achieve the objective of growth with equity, it is imperative that infrastructure is developed in tandem with financial inclusion as this would facilitate and enhance credit absorptive capacity. An exercise was undertaken to empirically examine the inter-relationship between financial inclusion and economic development in general and infrastructure development in particular based on State-wise panel data for 2001 and 2006. Savings and credit accounts per 100 persons were taken as proxy indicators of financial inclusion. Per capita income was used as an indicator of economic development and electricity consumption and road length were taken as indicators of infrastructure development.

The following findings emerge from the analysis. First, apart from per capita income and branch network, electricity consumption is a significant factor in determining expansion of savings accounts. Second, electricity consumption also influences credit account penetration in a significant manner. Third, apart from credit accounts per 100 persons, infrastructure development also significantly affects per capita income level (Table 1). Thus, economic development and infrastructure appear to play a crucial role in financial inclusion by creating conducive conditions for expansion of savings and credit activities. Financial inclusion also has a positive impact on economic growth.

Table 1: Regression Estimates

Variables/Equation	Dependent Variables		
	Savings Accounts	Credit Accounts	Per Capita Income
Constant	-105.8 (-2.69) *	-23.03 (-1.88)	9.07 (108.95) *
Per Capita Income	10.74 (2.54) *	2.77 (2.14) *	–
Electricity	0.15 (2.62) *	0.04 (1.89) *	0.006 (4.04) *
Branch Network	2.86 (10.02) *	–	–
Road Network	–	–	0.001 (2.90) *
Credit Accounts	–	–	0.30 (2.92) *
Adjusted R^2	0.89	0.40	0.72

Note:

1. Number of observations – 54.
2. Figures in parentheses are 't' statistics; values marked with (*) are significant at 95 per cent.
3. Variables - Per capita income in rupees; Electricity = electricity consumption in mw per 100,000 persons; Road Network = road length in km.; Branch Network = branches per 100,000 persons; Savings Accounts = savings accounts per 100 persons; Credit Accounts = credit accounts per 100 persons.
4. The exercise is based on pooled cross-section state-wise data for years 2001 and 2006. Some UTs/smaller States were excluded from the analysis.
5. Data on road length for 2006 are projected on the basis of data for 2002 and growth rate during the previous two years; electricity data are projected on the basis of 2004-05 and growth rate in the previous two years.

Sources of data – Central Electricity Authority, www.cea.nic.in; Department of Roads Transport and Highways, http://morth.nic.in; and Banking Statistical Returns of SCBs in India.

of institutional sources in total number of indebted households and their outstanding debt.

7.124 Bank credit to households grew at a slightly lower rate between 1991 and 2002 as compared with that between 1981 and 1991. However, this needs to be viewed in the context of banks' increased focus on strengthening of their balance sheets and some degree of risk aversion in the wake of introduction/ tightening of prudential norms. During the period, banks' overall credit also slowed down. The marginal slowdown in banks' credit to households was, thus, in line with the overall slowdown in credit. The demand for credit in the rural sector was also affected by slowdown in agriculture growth during the period. The last AIDIS survey was conducted for the year 2002. Subsequently, however, several initiatives were undertaken by the Reserve Bank and the Government to increase the credit flow to needy sectors and bring more people within the banking fold. There has been a distinct improvement in credit penetration (credit accounts per 100 persons) and credit flow to the rural sector in general and to agriculture, in particular, since the early 2000s. Taking together all the formal sources of credit, the number of credit accounts per 100 adults improved significantly from 18 in 2002 to 25 in 2007.

A comparison of NSSO and BSR data suggests that the extent of household indebtedness to the banking system is grossly underestimated by the NSSO data both in terms of households/accounts and credit outstanding, which could be on account of differences in methodology, among others.

7.125 On the deposit side, savings accounts per 100 persons/adults declined marginally in 2002 as compared with 1993 for the reasons as indicated above. The position, however, improved significantly thereafter and savings accounts per 100 persons/adults in 2007 were more than those in 1993. According to the consolidated data on savings accounts with banks and other institutions (UCBs, post offices and PACS), 54 persons out of 100 held savings accounts in 2007. Assuming five persons as the average size of households, about 250 accounts were held per 100 households or 2.5 accounts per households. The NCAER/Max New York Life survey on households conducted in 2005 suggests that 66 per cent of households held accounts with financial institutions, which work out to 13 accounts per 100 persons. This suggests that there are significant differences in the various data sets/sources and that there is need for an extreme caution while drawing any conclusions about the extent of financial inclusion/exclusion.

7.126 Much more detailed work needs to be done to assess the progress of financial inclusion in the country and to then devise further strategies for promoting it. Reliance on a single source of data can lead to erroneous conclusions and incomplete assessment of the real situation. Significant progress has been made in various directions in the current decade after public sector banks were strengthened financially over the 1990s. Finally, the data suggest a very significant strengthening of the micro-finance movement. Its spread in regions other than the South now needs to be pursued vigorously. The empirical evidence in the Indian context suggests that economic development and infrastructure (demand side factors), and branch network (supply side factor) were the main factors affecting financial inclusion. Financial inclusion, among others, also affects economic development.

VI. OPERATING COST AND LEVERAGING OF TECHNOLOGY FOR FINANCIAL INCLUSION

7.127 Operating cost of providing financial services and the charges levied on the users are important dimensions of the process of financial inclusion. It is argued that the operating cost of small accounts or low value transactions often exceeds the revenue from such operations. As a result, banks either become cautious in providing such services or charge higher levies from the users of such services. In both the cases, the operating cost is considered as one of the major obstacles in promoting financial inclusion. This section, therefore, focusses on the operating cost of financial inclusion and examines as to how it could be minimised.

Lender's Perspective

7.128 Banks often tend to adopt a cautious approach while extending services to lower income groups due to fear of loan losses or inability to recover the loans, especially when the poor have hardly any asset to pledge as 'collateral'. In the case of deposit facility, the operating cost of maintaining an account, particularly when the average deposit in the account is low, may make it an economically unviable proposition for banks to extend banking services to low income groups.

7.129 In general, there are three kinds of costs incurred by the formal financial sector while extending credit, *viz.,* (a) cost of funds, (b) operating cost, and (c) cost of loan losses. One would expect the cost of raising funds to be same for all kinds of credit. The operating cost and cost of loan losses may, however, differ across different segments of borrowers. The operating cost of extending small loans is generally perceived to be higher. According to the Planning Commission (2007), the operating cost of servicing micro-credit is significantly higher than the normal finance. Salaries to staff, travelling expenses, commissions not classified under financial costs, expenses on promotion of groups, staff welfare expenses, amortisation and depreciation, rent on hired buildings and other overheads - all constitute the operating cost. These costs are critical to the operations of the formal banking sector. The differential cost of extending small loans to low income groups, particularly in the unbanked areas, is reflected in high rates of interest charged by co-operative credit institutions and MFIs. As these institutions often have less than sufficient deposits, they depend on refinance facilities from other agencies such as NABARD, SIDBI and commercial banks. The Planning Commission observed that the average cost of refinance varies from 8 to 14 per cent. The operationally reasonable interest rate that an efficient MFI should charge from borrowers, however, works out to 22-26 per cent. This difference is largely due to operating cost which is around 10-14 per cent for MFIs as compared with 3-4 per cent incurred by the banks servicing their average borrowers (Planning Commission, 2007).

7.130 Higher perceived operating costs may deter banks from extending even simple banking services such as savings account to low income groups. Some estimates indicate that even the 'no-frills' accounts require, on an average, a balance of around Rs.2,000 to be an economically viable activity (Rao, 2007). For instance, in the case of Canara Bank the cost of opening a new (no-frills) account was Rs.48 and cost of each transaction (deposit/remittance) was Rs.10[12]. To reach break even, the average amount of deposit required depends on the number of transactions. The break even average deposit level required was Rs.1,911 (for 12 transactions a year) and Rs.11,465 (for 72 transactions a year). The average balance for the Canara Bank was estimated at Rs.528, which was less than half the break even level for 12 transactions in a year (Rao, 2007). A survey of two other banks revealed that the cost structure of operating 'no-frills' account was more or less similar to that of Canara Bank. Given that the fixed costs often constitute a large part of operating cost of bank branches and that the number of personnel is generally fixed, calculation of the marginal cost of opening small accounts needs to be examined more carefully and the use of technology to reduce costs in opening and maintaining such accounts needs to be explored further.

7.131 While operating costs of 'no-frills' accounts could appear to be high, an analysis of operations in totality for some banks suggests that they can open a large number of 'no frills' accounts and still maintain their performance level. For instance, Syndicate Bank opened the largest number of 'no frills' accounts (1.25 million) in 2006-07 - the largest by any single bank in a single year. As a result, Syndicate Bank constituted the largest share in 'no frills' accounts by the banking industry at end-March 2007. The opening of a large number of 'no-frills' accounts in a single year, however, did not appear to have affected the financials of the Syndicate Bank as it was able to maintain its return on assets (RoA) (Table 7.34). It is true that RoA is influenced by several factors, nevertheless, the Syndicate Bank case suggests that the opening of 'no-frills' accounts may not be a loss-making proposition. In this context, it may also be noted that the average deposit size in the 'no frills' accounts increased in recent years. This trend of increase in average deposit size is expected to gain further momentum in view of high economic growth. Furthermore, extending banking services to lower income groups would trigger a virtuous cycle whereby access to banking services would enable more equitable distribution of the benefits of high economic growth, resulting in improvement in the level of income of the lower income groups. This will lead to increase in average deposit size in the accounts opened by the lower income groups, thereby making financial inclusion an operationally profitable and sustainable business proposition for banks. Moreover, as the economy grows and income growth takes place, today's 'no frills' accounts can be expected to assume the normal account status over the years.

Borrower's Perspective

7.132 People in India avail credit from a number of agencies such as banks, MFIs and private moneylenders. The cost of borrowing from informal/

Table 7.34: Return on Assets and 'No-Frills' Accounts – Select Banks

Bank	Returns as per cent of Assets				Number of 'No Frills' Accounts	
	2003-04	2004-05	2005-06	2006-07	End-March 2006	End-March 2007
1	2	3	4	5	6	7
Canara Bank	1.34	1.01	1.01	0.98	13,429	305,972
Syndicate Bank	1.67	0.82	0.91	0.91	41,329	1,290,898
State Bank of India	0.94	0.99	0.89	0.84	0	585,720
HDFC Bank	1.45	1.47	1.38	1.33	2,055	26,644
ICICI	1.31	1.59	1.30	1.09	112,075	193,989
SCBs	**1.10**	**0.9**	**0.88**	**0.9**	**489,497**	**6,732,335**

Source: Report on Trend and Progress of Banking in India (various issues) and the Reserve Bank of India.

[12] Calculations are based on a sample study of Cansaral operative accounts. Interest cost for the account was taken at 2.35 per cent as observed in the sample. Other costs include staff cost and overhead cost. Staff cost is worked out on the basis of time taken in transactions and staff cost per minute (Rs.2 per minute per staff). Overhead cost is taken as 58 per cent of the staff cost.

Table 7.35: Cost of Credit from Various Agencies in India

Lender Category	Interest Rate (Per cent per annum)
1	2
SHGs	18-24
MFIs	20-24
Informal credit providers	18-36
Banks (small borrowal accounts)	6-20

Source: 1. Report for the Technical Group to Review of Legislation on Money Lending.
2. Survey of Small Borrowal Accounts, 2004, RBI Bulletin, July 2006.

semi-formal sources is significantly higher than the borrowings from banks (Table 7.35). The high cost of borrowings may be attributed to two factors, *viz*., operating cost and risk perception. The operating cost of extending credit through MFIs and SHGs models increases because these models involve an additional layer of intermediation between lenders and ultimate borrowers. As regards risk perception, the higher recovery rate in the case of SHGs, however, indicates that the risk perception about small borrowers should be low. Hence, the high rate charged by MFIs or informal agencies is either due to high operating cost or due to high interest margins charged. As is evident from the experience of several pilot projects in India as well as other countries, the operating cost of providing credit to small borrowers could be reduced significantly, implying that there is a large scope for reducing interest rates on small loans.

7.133 According to the Report on Costs and Margin of MFIs in India (CAB, 2007), the cost to the borrower of an MFI generally comprises interest rate and other charges such as processing/ administrative charges and upfront levies. The study shows that the all-in-cost to a borrower of an MFI varies widely across States with a median value of about 24 per cent (Table 7.36).

Table 7.36: Charges of Micro-Finance Institutions (March 2006)

State	Range of Cost to the Borrower (per cent)
1	2
Andhra Pradesh	17.0 to 32.5
Karnataka	12.0 to 40.0
Orissa	14.0 to 24.5
Rajasthan	16.0
Uttar Pradesh	13.0 to 26.0

Source: CAB. 2007. *Report on Costs and Margin of Micro Finance Institutions*. College of Agricultural Banking (CAB), Reserve Bank of India.

Role of Technology

7.134 Technology can play an important role in reducing operating cost of providing banking services, particularly in the rural and low income groups segments. The technology, if blended appropriately with the right business model and policy, holds the key to extending affordable, viable and sustainable access to finance for the population at large. There are three broad types of technologies that have been identified to drive the growth of financial services. These are (i) pro-poor new information and communication technology, primarily low-cost cell phones; (ii) ATMs and other point of sales devices; and (iii) smart plastic card.

7.135 The centralised data processing system and the non-conventional methods based on computer systems, which do not require uninterrupted electric supply and radio frequency network, can significantly reduce the cost of extending financial services. There are a number of cases where banks have expanded the coverage of banking services to remote and un-banked areas with affordable infrastructure, while keeping operating costs low with the use of appropriate technology. Technology has the potential to lead to new delivery mechanisms and business models. For instance, technology will allow branchless banking and establishment of new partnerships between financial service providers and a range of other service providers that was not feasible before to provide services to clients in remote areas and low-population density areas.

7.136 Mobile phone-based services are revolutionising micro-finance services in a number of countries (Asian Development Bank, 2007). Mobile banking (or mobile payment) is a term used for performing balance checks, account transactions, payments, *etc. via* a mobile device such as a mobile phone, PDA or other such device. Most of the mobile payment platforms fall into four categories: (i) mobile banking enabling users to perform banking transactions using mobile phone like, balance checks, fund transfers, bill payments; (ii) remote purchase; (iii) person to person transfers; and (iv) point of sale, *i.e*., using phones to pay for goods at merchant location. These services can be provided using various available connectivity technologies, each one of which has its own pros and cons (Table 7.37). However, the extent to which technology will be integrated into the financial service industry at the low end will depend on supportive government policies and the quality of the infrastructure, particularly in rural areas.

Table 7.37: Pros and Cons of Various Technologies

Connectivity	Pros	Cons
1	2	3
Short Message Service (SMS)	1. Easier to build applications 2. Already a popular medium to communicate 3. Billing activities can be automated by tight integration with operator's systems	1. Still unreliable – delivery of message is not guaranteed 2. Requires user to remember codes/ keywords 3. Data size per message is restricted to 160 characters 4. Multiple SMS based transactions can cause user resistance
General Packet Radio Service (GPRS)/Code Division Multiple Access (CDMA)	1. Provides ability to build advanced features 2. User interacts with a well designed user interface (UI) and does not require training 3. Can integrate seamlessly with e-commerce scenarios 4. Development skillset for GPRS are widely available	1. GPRS / CDMA still not popular 2. GPRS in particular requires separate hardware and is not present wherever GSM connectivity is available 3. Both in turn do not have a pan India presence 4. CDMA requires specialised skillset which is not widely available
Handset Technologies		
Subscriber Identity Module (SIM) Toolkit	1. Ensure availability of application as and when customer buys a new SIM card 2. Operator is closely associated with the mobile banking project and hence the task of delivery of service is easy	1. Requires operator's assistance in replacing existing SIM cards 2. Operator lock-in for banks 3. Technology may not be inter-operable in multiple operator scenarios
Mobile Application Development	1. Operator independent 2. Development skillset is widely present for GPRS 3. Ability to design and deliver better features and user interface	1. Development skillset is rare for CDMA 2. Data security is a concern
Emerging Technology		
Near Field Communication (NFC)	1. Ease of use 2. Experience similar to credit card usage	1. Still in nascent stages, various pilots being conducted across the world 2. Mobile phones still costly
Mobile Phone as a device	1. Round the clock availability with customer 2. Always on and always connected 3. More handsets, than bank accounts 4. Telecom operators already have sophisticated billing systems and can deliver banking services independent of banks.	1. Not built for mobile transactions 2. Compared to Point of Sale (PoS)/Automated Teller Machine (ATM) devices which are built and certified for banking activities 3. Primarily Personal Identification Number (PIN) based authentication, concerns on ability to remember pin numbers (Efforts are on to integrate biometric scanners with phones)

Source: Agarwal, Gaurav. 2007. "Financial Inclusion through Mobile Phone Banking: Issues and Challenges." *CAB Calling*, July-September, 2007.

7.137 Different technologies have been successfully adopted in many countries to promote financial inclusion (Box VII.16).

7.138 Banks in India have initiated pilot projects utilising smart cards/mobile technology to increase their outreach. Biometric methods for uniquely identifying customers are also being increasingly adopted. Banks are also increasingly adopting technological solutions for delivery of credit at affordable price and to a wider section of the population. State Bank of India (SBI) initiated a project called the SBI Tiny Card Accounts (SBITCAs) recently in Aizwal. The project is a combination of 'no-frills' account and BCs/BFs model. The SBITCAs are operated through new generation mobile phones based on near-field communication (NFC) technology, enhanced with fingerprint recognition software and attached to receipt printer. The card allows activation of transaction of funds for the purpose of micro-savings (SBI-tiny no-frills pre-paid account), cash deposits and withdrawal, micro-credit (including KCCs, GCCs), money transfer (account-to-account within the system), micro-insurance, cashless

Box VII.16
Technology and Financial Inclusion

In the Philippines, two cell phone companies – Smart and Globe Telecoms – offer innovative cell phone based facilities, also called electronic wallet, to transfer money, pay bills, and make payments for purchases from stores, among other things, called Smart Money and G-Cash, respectively. In February 2005, the Rural Bankers Association of the Philippines Microenterprise Access to Banking Services (RBAP-MABS) launched a project called Text-A-Payment (TAP). TAP is an innovative mobile technology product that uses the SMS technology of Globe Telecom (powered by G-Cash) to pay for micro finance loan payments of borrowers. TAP seeks to bring in new and low cost technology tools to improve efficiency and outreach. Small borrowers can utilise the service for payments of their micro-finance loans. The other applications of TAP are remote deposit taking, cash withdrawal, international and domestic remittances, purchases and bills payment.

In South Africa, banking institutions, together with mobile phone companies, have begun to expand access to financial services targeting low-income customers with an interest-bearing bank account accessible through mobile phones, and debit card with which they can make purchases at retail outlets and deposit or withdraw money at ATMs. Customers can use their mobile phones to make person-to-person payments and transfer money.

Prodem, the first micro-finance organisation to create a chartered bank, *BancoSol*, in Bolivia started *Prodem* Smart ATM, a smart card *cum* ATM recently. The smart card stores customer's account balance every time the transaction is made using the card. This enables *Prodem* Smart ATM to operate even in the absence of internet connectivity, thereby, making it an ideal instrument to extend financial services in many rural parts of Bolivia that lack the technological infrastructure for a wide-reaching, online network.

Reference:

Asian Development Bank. 2007. "Low Income Households' Access to Financial Services – International Experience, Measures for Improvement, and the Future." *EARD Special Studies*, October.

payments to merchants, SHG savings-*cum*-credit accounts and attendance systems, disbursements of Government benefits like the national rural employment guarantee scheme, for equated monthly instalments (EMIs), utility payments, coupons, vouchers and tickets, loyalty points, automatic fare collection systems, portable and fixed positions for front-end devices (fully inter-operable).

VII. THE WAY FORWARD

7.139 The Government and the Reserve Bank have taken several initiatives to bring the underprivileged and weaker sections of the society within the banking fold, which have had a favourable impact. However, the magnitude of the problem is enormous and still a sizeable portion of the rural and urban low income population (mainly the immigrant labour) has very little access to financial services. These groups pay a high premium for accessing credit from moneylenders and other informal sources. There is, thus, a need to expand the outreach of the formal financial system to include rural and urban poor.

Measurement of Financial Exclusion

7.140 The most crucial issue in the context of financial inclusion is to know the extent to which low income households are excluded from the formal financial system. Most of the headline indicators such as bank branch density or bank accounts are only proxies for financial inclusion/exclusion. For a more accurate assessment of financial inclusion/exclusion, there is a need to have census data on the number and characteristics of households that have a bank account or an account with an institution like bank. Even in the case of census data on the usage of banking services, there is a need to distinguish between individuals who have voluntarily chosen not to make use of financial services, because of low or no money income, or low money savings, and those who need banking services but have been excluded from financial services due to several barriers such as lack of access to financial services, low level of literacy, high prices of financial services and complex procedure of documentation, among others. Such an exercise would involve undertaking specialised and detailed household surveys. In India, at present, the NSSO conducts several surveys, including urban/rural indebtedness. It is, therefore, felt that either separate surveys relating to financial inclusion/exclusion may be conducted or the scope of the indebtedness survey by the NSSO could be expanded to include various aspects of financial inclusion/exclusion. Besides the periodic surveys, the decadal census may also cover information relevant to financial inclusion/exclusion. Such specialised surveys would enable appreciation of the extent of the problem and would help design appropriate policies to close the gap.

7.141 NABARD presently collects data relating to SHG-bank linkage programme. Such data are also widely disseminated. At present, there are also a large number of MFIs/NGOs operating in the country. However, there is no comprehensive system for collecting data/information on various aspects of these institutions, which hampers appropriate policy formulation. It is, therefore, felt that a comprehensive system of data collection on MFIs/NGOs be put in place. Besides, there is also a need to have information on the number of households being financed by MFIs/NGOs. This work could be undertaken by NABARD.

Operating Cost of Financial Inclusion

7.142 One of the most challenging issues in the case of financial inclusion is the operational viability and sustainability of the process of providing financial services. Several countries have attempted to expand financial services coverage through control over financial institutions and by providing subsidies. This has, however, resulted in mounting fiscal costs making it fiscally unsustainable (World Bank, 2008). Another approach is to assign the responsibility of financial inclusion to financial institutions. Though financial inclusion provides an opportunity to financial institutions to expand their business by enlarging their customer base, the operating cost of expanding the coverage of financial services could be a major factor inhibiting banks and other financial institutions from extending various services to the public at large, particularly to low income groups living in rural and remote areas. Credit delivery in rural areas is often believed to be expensive for banks on account of a large number of small loan accounts to be serviced.

7.143 The experience of many banks in India as well as in other countries, however, suggests that the appropriate use of information technology can help in reducing the cost of providing financial services and make it operationally viable to expand the coverage of financial services. The appropriate technology combined with an effective use of banking correspondents has the potential of creating a banking outpost/ATM in every village, as has been observed in the case of Andhra Pradesh, which has successfully implemented mobile phone technology for providing banking services in remote areas in coordination with the Reserve Bank and IDRBT. There are several other instances, both within and outside the country, where it has been observed that technology has the potential to overcome the problem of high operating cost. The need, therefore, is to increase the use of technology to expand the outreach in the hitherto untapped areas. A wide range of technologies is available. However, while selecting a technology, banks need to ensure that the solutions are highly secure, amenable to audit, and follow widely accepted open standards to ensure eventual inter-operability among the different systems as was highlighted in the Reserve Bank's Annual Policy Statement for the year 2007-08.

Financial Inclusion as an Opportunity

7.144 The operating cost of financial inclusion is perceived to be high as compared with returns from the services extended to low income groups. Banks, therefore, are generally averse to voluntarily extending financial services to such segments. Several pilot projects and experience of SHGs have, however, proved that such a perception is unfounded. There is a need is to perceive financial inclusion as an opportunity for expanding business in the medium-term, notwithstanding some initial costs. There is also a need to recognise the vast potential for investment in agriculture and allied activities and the entire supply chain. Given the market imperfections in various aspects of the rural economy, the return on investments could be significant. Large local industrial corporates are already engaging in contract farming and direct marketing of rural products. Moreover, services and manufacturing activities have also been growing faster in rural areas. There is also growth in newer activities such as horticulture, floriculture, organic farming, genetic engineering, besides a range of supply chain activities like sorting, grading, storage, transportation, processing, and packaging. All these emerging activities are credit intensive and have enormous financing potential (Mohan, 2006). Besides, the potential of the rural markets of items for mass consumption is immense as population is moving laterally in the higher income brackets. In view of the evidence of a pick-up in consumer financing in rural areas, there is also a need to streamline the supply chain to deliver credit at the lowest cost to the ultimate user in the rural areas, to the benefit of both the bank and the borrower. Furthermore, there are huge opportunities in the area of farmer's insurance as farmers adopt new and untried technology and increase input intensities, they face larger risks. All these point to the vast scope for enhancing business opportunities for banks and financial institutions in the rural areas. Banks also need to explore and exploit the avenues in the urban areas.

Multiple-lending by Banks

7.145 As a result of accelerated growth of the MFIs sector in the last few years, a few issues have cropped

up. A joint fact-finding study by the Reserve Bank with a few major banks revealed several cases of multiple lending, and that MFIs were not engaging in capacity building to the desired extent. In order to avoid cases of multiple financing, there is a need to put in place a system of credit registries (through which lenders share information about their clients' repayment records) through credit information bureaus similar to that for the large corporates. Credit registries can increase access by establishing credit record of borrowers. This could, to start with, be done by one of the credit rating agencies for MFIs such as CRISIL, M-CRIL, ICRA or CARE which have been allowed to be used by banks for rating MFIs. In this context, the Credit Information Companies Act has been notified and soon new credit information companies will be authorised to commence business.

Availability of Suitable Financial Products

7.146 Lack of suitable services/products leaves the rural poor with little option than to transact with the informal sector which accepts small amounts, provide doorstep service, make available funds for all purposes (productive and non-productive such as consumption needs, festivals, marriages, medical and emergencies) and ensure ease of operations. Banks and other financial institutions, therefore, also need to design tailor-made thrift, credit, insurance and remittance products for the poor and weaker sections taking into consideration their requirements and repayment capacity. Apart from savings and loan products, poor people also need insurance products. Health related expenditure at times far exceeds the income levels of many households, which leads them to a situation of debt trap. The insurance companies, therefore, also need to design low cost health insurance products for the rural poor. The need is also felt for weather insurance products to provide relief to farmers in cases of losses due to excess/ deficient rainfall.

Financial Literacy and Technology

7.147 Lack of literacy in general and financial literacy in particular, are considered as the main hurdles in expanding the coverage of financial services to the poorer segments of society. Notwithstanding the initiatives taken so far, given the large magnitude of the problem, concerted efforts need to be made in this direction. It is, therefore, felt that banks should come forward to set up counselling centres and guide their clients about the features, benefits and risk of various financial products. Financial literacy and awareness about financial products in rural areas also need to be taken up in a big way. It can be effectively promoted by utilising the services of postmen and school teachers. The relevant information in the form of brochures/pamphlets could also be disseminated to people in the rural areas in an organised manner. There is also a need to widely disseminate the information relating to various customer protection mechanisms, which have been put in place.

7.148 In some parts of the country, the use of rural information e-kiosks and mobile vans has shown immense potential in providing information on various products and services in rural areas. The need is to increase the use of information kiosks to disseminate information not only about banking products, but also about input/output prices, insurance products and health services. Banks should come forward to set up such kiosks jointly and share the running costs amongst them. It may be mentioned that similar model (*e-choupal*) has already been implemented by the private sector for providing ready information in local language on weather, market prices, scientific farm practices and risk management. This model presently covers more than 31,000 villages and could be utilised for promoting financial literacy in association with private agencies.

Legislation for Moneylenders

7.149 At present, moneylenders are covered under State-specific legislations which have become outdated in many of the States. The model legislation suggested by the Technical Group to Review Legislation on Money Lending (2007) needs to be examined further and consideration be given to its possible implementation with the objective of mainstreaming the activity of money lending as also for strengthening the synergies between the formal and the informal segments, while eliminating its negative characteristics and usurious interest rates.

Strengthening the Institutional Structure

7.150 In order to build inclusive financial systems, globally, the focus is not only on specialised micro-credit institutions, but on an array of other financial institutions such as postal savings banks, consumer credit institutions, and, most importantly, the banking system. This broader approach is expected to expand the outreach of the financial services industry.

7.151 India also has a well-diversified structure of financial institutions such as commercial banks,

co-operative banks at different levels, primary agricultural credit societies, insurance companies and post-offices. The need is to involve not only commercial banks but also other financial intermediaries such as insurance companies and post-offices for promoting the cause of financial inclusion. The RRBs and co-operative banks, in particular, can play an important role. However, because of their fragile financial health, they have lagged behind in furthering the cause of financial inclusion. As alluded to earlier, the number of credit accounts held by RRBs in relation to those held by SCBs declined significantly between 2001 and 2007. The Government has already restructured RRBs and approved revival package of short-term rural co-operative credit structure. The revival package of long-term rural co-operative credit structure is also being worked out. It is expected that in future these institutions would play a far greater role in promoting financial inclusion. Apart from RRBs and other co-operative institutions, joint liability groups and SHGs model could also be used to extend credit to small and marginal farmers, oral lessees and sharecroppers.

Role of the Government

7.152 Credit alone may not help in improving the income and productive capacities of the rural poor as the credit absorptive capacity would depend upon various other factors such as appropriate policy environment, coupled with infrastructure and supply chain facility. The Government has an important role in building adequate infrastructure such as roads, electricity, public transport and marketing facilities which would facilitate production and distribution of output by the people residing in rural and remote areas. Government expenditure on social services such as health, education, water and sanitation would also enhance credit absorptive capacity of the borrowers. Furthermore, a large proportion of borrowings by low income households takes place for medical and other emergencies. Thus, borrowings from non-institutional sources to a significant extent could be reduced if health care, education and other services are provided to rural households at reasonable cost, including appropriate medical insurance at a reasonable premium. The results of empirical exercise discussed earlier in this chapter confirmed that infrastructure plays a significant role in promoting financial inclusion as well as economic growth. The Government, therefore, has a crucial role in facilitating financial inclusion by strengthening the rural infrastructure and providing enabling conditions as alluded to in Chapter VI also.

Evaluation of Banks' Performance for Promoting Financial Inclusion

7.153 In order to promote financial inclusion, it is necessary to monitor the performance of banks. In some countries such as US, there is a system of evaluation of banks' performance. A system of evaluation of banks' performance in India may, therefore, also be put in place. Under this system, Indian banks may be rated, say every two to three years, on their performance relating to financial inclusion and such assessment could also be put in the public domain. Such a system, through peer pressure, would help encourage financial inclusion efforts of banks.

VIII. SUMMING UP

7.154 Notwithstanding the widely recognised importance of financial inclusion, it has no universally accepted definition. The working or operational definitions of financial inclusion generally focus on ownership or access to particular financial products and services such as deposits, credit, long-term savings, money transfer and insurance provided by the mainstream financial service providers. Based on this definition, financial inclusion is often measured in terms of indicators such as number of bank accounts. There is, however, broad agreement that the financial exclusion cannot be measured by a single indicator. Therefore, multiple indicators have been used which include proportion of population with a bank account, population which uses the services of any formal financial institution, people receiving money regularly through formal financial instruments, people keeping money in formal financial institutions, and persons who have obtained or have loan or credit facility outstanding from a formal financial institution.

7.155 In the Indian context, financial inclusion has been described as the provision of affordable financial services, *viz.,* access to payments and remittance facilities, savings, loans and insurance services by the formal financial system to those who are excluded. Deepening the financial system and widening its reach is crucial for both accelerating growth and for equitable distribution. The major causes of financial exclusion often cited include relatively low extension of institutional credit in rural areas due to perception of high risk, high operating costs, lack of rural infrastructure, and vast geographical spread of the country with more than half a million villages, some sparsely populated. The micro factors, which are perceived to inhibit credit flow to disadvantaged

groups, mainly include factors such as lack of awareness of financial products and services, the procedures for obtaining agricultural non-farm loans, staffing and human resources, and lack of effective legislation for regulating money lending. From the demand perspective, low income and savings level could lead to lower demand for financial services, particularly the deposit facilities.

7.156 India has adopted a multi-pronged approach towards financial inclusion as has been the case in several other countries. Though the term financial inclusion is of recent origin, the efforts to bring the poorer and weaker segments of the society within the fold of the formal banking system were initiated both by the Reserve Bank and the Government beginning as back as the late 1960s. The specific policy initiatives towards financial inclusion in India broadly fall under three phases with the first one starting in the late 1960s through the 1980s with the focus on credit channelling to ensure equitable growth. The nationalisation of banks, directed lending to priority sectors, suitable changes in the branch licensing policy, introduction of specific schemes, establishment of specialised institutions and interest rate regulation were some of the major policy initiatives undertaken by the Government and the Reserve Bank to bring the weaker sections within the fold of the banking system. The second phase of financial inclusion spanning the early 1990s to early 2005 focussed on strengthening the financial institutions. The major financial inclusion initiatives taken in this phase were introduction of SHG-bank linkage programme in the early 1990s and introduction of KCCs. Efforts to bring financially excluded people within the banking fold received a major boost in April 2005, when financial inclusion was explicitly made a major policy objective. Introduction of 'no-frills' accounts in November 2005 was another major step for providing safe savings deposit facility to the rural and urban poor. Thus, a wide network of institutions has been established in order to expand the outreach of financial services to people.

7.157 Formal financial services have expanded rapidly in recent years. The question, therefore, arises as to what has been the impact of various measures on financial inclusion. Arriving at firm conclusions on the extent of financial inclusion or its obverse, *i.e.*, exclusion, is not easy from the existing data sources. There are differences in the data available from various sources and much more work needs to be done to reconcile these data. Nevertheless, the available information suggests that beginning from the late 1960s, significant progress has been made to bring more and more people within the fold of formal financial institutions. This trend continued even in the 1990s. Data on the household surveys by the NSSO suggest that the share of number of households accessing credit from non-institutional sources declined significantly from the late 1960s through 1980s. The share, however, increased in the 1990s. A detailed analysis of various aspects, however, suggests that number of indebted households and their outstanding debt increased sharply between 1991 and 2002. The increased debt was mainly for consumption and similar other purposes for which the finance could not be easily availed of from formal sources. As a result, the share of household indebtedness to non-institutional sources increased between 1991 and 2002 even as credit to households by various institutional sources grew broadly at the same rate between 1991 and 2002 as between 1981 and 1991. Within institutional sources, credit by banks grew at a marginally lower rate between 1991 and 2002 compared with that between 1981 and 1991. However, it needs to be viewed in the context of banks' increased focus in the 1990s on strengthening of their balance sheets and some risk aversion developed by banks on account of application/tightening of prudential norms, as a result of which banks' overall credit portfolio also slowed down.

7.158 The reference year for the latest NSSO data was 2002. An analysis of more recent BSR data reveals that there has been a distinct improvement in credit penetration (credit accounts per 100 persons) and credit flow to the rural sector in general and to agriculture, in particular, since the early 2000s, that is, after the release of the NSSO data. Responding to the initiatives taken in recent years, the number of credit accounts with all organised financial institutions (commercial banks, RRBs, UCBs, PACS, MFIs and SHGs) per 100 adults improved from 18 in 2002 to 25 in 2007.

7.159 On the deposit side also, the outreach of organised financial institutions expanded over the years. The number of savings accounts with all formal institutions increased to 54 per 100 persons (82 per 100 adults) in 2007 from 51 in 1993. However, after factoring in people below poverty line, who have little or no capacity to save, there are a little more than 100 savings accounts per 100 adults above poverty line. With faster growth in income, people may move into higher income brackets. As poverty levels decline and households income levels rise, their propensity to save would also go up. Such people would need easy access to the formal financial system to develop

the banking habits. Banks, therefore, would need to innovate and devise newer methods of bringing such customers into their fold.

7.160 Through housing and retail credit, banks have been able to bring an increasing number of households into the fold of formal credit. However, most of the expansion has taken place in cities and large towns. There is an enormous potential for expanding financial services in semi-urban and rural areas. With increasing urbanisation on the one hand, and spread of non-farm based activities in rural areas on the other, credit demand is expected to increase. Agricultural activity is also getting increasingly commercialised which would generate new business opportunities for banks. Banks, therefore, would also need to carefully examine the benefits of increasing penetration in rural areas. These developments suggest that the demand for financial services, both for savings and production purposes, would be greater than that has been in the past. To meet the growing credit demand, banks would need to mobilise resources on a larger scale than hitherto. This would promote financial inclusion and strengthen financial deepening. Along with extending credit to a variety of enterprises in both organised and unorganised sectors, the financial system would have to simultaneously enhance the risk assessment and risk management capacities in order to maintain credit quality and sustain the credit growth.

7.161 The key to enhanced financial inclusion is reduction in transaction costs. The operating cost of providing small accounts at times is a hindrance to the expansion of banking services to low income groups. The experience of some institutions in the country as well as in other countries, however, suggests that an appropriate use of technology could significantly reduce the operating cost of financial inclusion and make it a viable and sustainable activity. The availability of new information technology, expansion of credit information services, innovations in micro-finance and the non-conventional modes of delivery of financial products offer further opportunities for reducing transaction costs in dealing with small savers and borrowers. The challenge, thus, is to increase the scope and coverage of financial inclusion by addressing deficiencies such as lack of adequate infrastructure, higher transaction costs and low volumes of transactions.

7.162 From the perspective of institutional development, the role of RRBs and co-operative banks, which were established to expand the delivery of financial services in the unbanked sectors/ segments, suffered a setback due to their poor financial health. With the recent initiatives to strengthen them, it is expected that they would play a greater role in promoting financial inclusion. Considering the significance of moneylenders, especially in the rural credit delivery system, there is also a need for expeditious implementation of the model money lending legislation by the State Governments.

7.163 Sustainable financial inclusion process depends on several factors. Credit counselling can play a crucial role in improving the prospects of repayment of loans. Though a beginning has been made in India to provide credit counselling, there is a need to step up efforts in this direction. The Government can help in improving the absorptive capacity of financial services by creating an enabling environment by strengthening the basic infrastructure. Investment in human development such as health, water and sanitation, and education would also improve the credit absorptive capacity of borrowers. Apart from this, efforts to promote financial literacy can go a long way in improving the use of various financial services, particularly by the weaker and poorer sections of the society.

Annex VII.1: **Definitions of Various Types of Expenditure Used in the NSSO Survey**

(i) ***Farm business:*** Farm business comprised household economic activities like cultivation, including cultivation of plantation and orchard crops, and processing of produce on the farm, e.g., paddy hulling and *gur* making. Although *gur* making is a manufacturing activity, this was covered under farm business only when such activity was carried out in the farm by indigenous method.

(ii) ***Non-farm business*****:** Non-farm business was defined as all household economic activities other than those covered in the farm business. This cover manufacturing, mining and quarrying, trade, hotel and restaurant, transport, construction, repairing and other services. For the purpose of this survey, non-farm business shall exclude such activities when they are carried out in non-household enterprises. Non-farm business enterprises, which were registered under section 2m(i) or 2m(ii) and section 85 of Factories Act, 1948 and *Bidi* and cigar manufacturing establishments registered under *Bidi* and Cigar Workers (condition of employment) Act, 1966 were kept outside the coverage of the survey.

(iii) ***Capital expenditure in farm business*****:** The expenditure incurred in farm business on account of purchase, own construction, major repairs, *bunding* and other land improvement including reclamation of land, alterations and improvement of buildings and other constructions constituted the capital expenditure in farm business.

(iv) ***Current expenditure in farm business*****:** This comprised the current expenditure in the farm business for purchases of seeds, manure, fodder, payment of wages, rent, land revenue etc. and that for normal repairs and maintenance of buildings, constructions, machinery and equipment including transport equipment, furniture & fixtures and household durables meant for the farm business.

(v) ***Capital expenditure in non-farm business*****:** It consisted of the expenditure in non-farm business incurred on account of purchase, own construction, additions, alternations, major repairs and improvements of buildings, other constructions and machinery and equipment including transport equipment, furniture and fixture. It also included *bunding* and other land improvement, including reclamation of land, pertaining to non-farm business.

(vi) ***Current expenditure in non-farm business*****:** This was made up of the current expenditure in non-farm business for raw materials, fuel and lubricants, payment of rent, salaries and wages, hire charge of machinery and equipment etc. and normal repairs and maintenance of buildings, construction, machinery and equipment including transport equipment, furniture and fixtures and household durables meant for the non-farm business.

(vii) ***Household expenditure:*** The expenditure incurred on account of purchase of residential plot, purchase, construction, addition/ alteration of building for residential purposes, purchase of durable household assets, cloths etc. and expenditure for medical treatment, education, marriages, ceremonies etc. constituted the household expenditure.

VIII COMPETITION AND CONSOLIDATION

8.1 The financial services industry, particularly the banking industry, has undergone significant transformation all over the world since the early 1980s under the impact of technological advances, deregulation and globalisation. An important aspect of this process has been consolidation as a large number of banks have been merged, amalgamated or restructured. Although the process of consolidation began in the 1980s, it accelerated in the 1990s when macroeconomic pressures and banking crises forced the banking industry to alter its business strategies and the regulators to deregulate the banking sector at the national level and open up financial markets to foreign competition. This led to the blurring of distinctions between banks and non-bank financial institutions, various products and the geographical locations of financial institutions. The resulting competitive pressures on banks in the emerging economies led to deep changes in the structure of the banking industry, including, among others, privatisation of state-owned banks, mergers and acquisitions (M&As) and increased presence of foreign banks. The financial value involved in the M&As multiplied over the years. As a result of these M&As, the number of banks has declined substantially both in advanced and emerging market economies (EMEs).

8.2 The motives of consolidation have depended on firm characteristics such as size or organisational structure across segments, or even across lines of business within a segment (BIS, 2001). In developed countries, market forces have been the prime driving force behind M&As. Globalisation and deregulation led to decline in bank spreads, and consequently, profitability. In order to offset the decline in profitability, there were mergers between banks and between banks and non-banks to reap the benefit of economies of scale and scope. On the other hand, in many EMEs, mergers and amalgamations have often been driven by governments in order to restructure the banking systems in the aftermath of crisis.

8.3 Financial consolidation has implications not only for competition but also for financial stability, monetary policy, efficiency of financial institutions, credit flows and payment and settlement systems. Given the diverse nature of financial institutions, different levels of financial development, legal framework and other enabling environment, the causes and impact of financial consolidation have also tended to vary across the countries. For instance, financial consolidation led to higher concentration in countries such as US and Japan, though they continue to have much more competitive banking systems as compared with other countries. However, in several other countries, the process of consolidation led to decline in banking concentration, reflecting increase in competition. This was mainly because banks involved in M&As were of relatively small in size.

8.4 The Indian banking sector has not remained insulated from the global forces driving M&As across the countries. M&A activity in the Indian banking sector is not something new as it took place even before the independence. However, economic reforms introduced in the early 1990s brought out a comprehensive change in the business strategy of banks, whereby they resorted to mergers and amalgamations to enhance size and efficiency to gain competitive strength.

8.5 Against the above backdrop, this chapter, drawing on the theoretical perspective and country experiences on consolidation and competition, assesses various aspects of consolidation and competition in the Indian banking sector. The focus of the chapter is to examine the extent and nature of the process of consolidation and its impact on competition in the banking sector and efficiency of the merged entities. Some important issues that have arisen in the process of ongoing consolidation process have also been discussed. The chapter is organised into eight sections. Section II briefly sets out the theoretical underpinnings of the banking consolidation process. It also spells out the motives and factors driving M&As and the various methods of consolidation. Trends in M&A activity in various countries and the progress in banking consolidation in India are detailed in Section III and Section IV, respectively. The impact of the consolidation process on competition in the Indian banking sector and efficiency of the merged entities is analysed in section V. Section VI addresses the issues arising out of the ongoing process of competition and consolidation such as (a) future course of the process of consolidation that is underway; (b) role of public sector banks in the changed economic environment; (c) further

opening the banking sector to foreign competition; and (d) combining of banking and commerce. Section VII makes some suggestions as a way forward, while Section VIII sums up the main points of discussion.

II. CONSOLIDATION – THEORETICAL UNDERPINNINGS

8.6 There are several alternative methods of consolidation with each method having its own strengths and weaknesses, depending on the given situation. However, the most commonly adopted method of consolidation by firms has been through M&As. Though both mergers and acquisitions lead to two formerly independent firms becoming a commonly controlled entity, there are subtle differences between the two. While acquisition refers to acquiring control of one corporation by another, merger is a particular type of acquisition that results in a combination of both the assets and liabilities of acquired and acquiring firms (Halperin and Bell, 1992; and Ross *et al.,*1995). In a merger, only one organisation survives and the other goes out of existence. There are also ways to acquire a firm other than a merger such as stock acquisition or asset acquisition.

8.7 Mergers generally take place in three major forms, *viz.*, horizontal merger, vertical merger and conglomerate merger. Horizontal merger is a combination of two or more firms in the same area of business. Vertical merger is a combination of two or more firms involved in different stages of production or distribution of the same product, and can be either forward or backward merger. When a company combines with the supplier of material, it is called backward merger, and when it combines with the customer, it is known as forward merger. Conglomerate merger is a combination of firms engaged in unrelated lines of business activity.

8.8 M&As in the financial sector, in particular the banking sector, are undertaken mainly either to maximise the value of firms or for personal interest of managers. As is the case with any firm, the value of a financial institution is determined by the present discounted value of expected future profits. Mergers can increase expected future profits either by reducing expected costs or by increasing expected revenues or a combination of both. Cost reduction through M&As could arise for several reasons including economies of scale, economies of scope, infusing efficient management, reduction and diversification of risk due to geographic or product diversification, access to capital markets or a higher credit rating because of increased size, and entry into new geographical or product markets at a lower cost than that associated with *de novo* entry. M&As could also enable banks to make the provision of additional services making them capable of facing competition from larger banks. By this way, mergers can also lead to increase in revenue by allowing larger size firms to better serve large customers, offering "one-stop shopping" for a variety of different products, increased product or geographical diversification, leading to expanded pool of potential customers and enhancing the risk-taking abilities. M&As could also be used as a deterrent against unwanted possible acquisitions, particularly hostile takeovers, by other larger banks in the future.

8.9 Managers' actions and decisions, however, are not always consistent with the maximisation of a firms' value. In particular, when the identities of owners and managers differ and capital markets are less than perfect, managers may take actions that further their own personal goals and are not in the interests of the firm's owners. In some cases, managers may get engaged in consolidation simply to enhance their firms' size relative to competitors.

8.10 Deregulation, improvements in information technology, globalisation, shareholders' pressures and accumulation of excess capacity or financial distress have been some of the important factors that have encouraged consolidation of financial institutions. While new technologies embody high fixed costs, they enable provision of a broad array of products and services to a large number of clients over wider geographical areas at faster pace and quality of communications and information processing. In other words, it confers economies of scale by spreading the high fixed costs across a larger customer base and motivates mergers of firms operating at uneconomical scales. Further, new tools of financial engineering such as derivative contracts, off-balance sheet guarantees and risk management may be more efficiently produced by large institutions. Some new delivery methods for depositors' services such as phone centers, ATMs and on-line banking networks may also exhibit greater economies of scale than traditional branching networks (Radecki *et al.*, 1997).

8.11 Deregulation influences the restructuring process in banking through effects on market competition and entry conditions, approval/ disapproval decisions for individual merger transactions, limits on the range of permissible activities for service providers, through public ownership of institutions and efforts to minimise the social costs of failures. Over the past two decades, as a response to technological advances and financial

crises, governments, after reconsidering the legal and regulatory framework in which financial institutions operate, have relaxed many official barriers to consolidation. This has resulted in accelerated pace of M&As in the financial sector. At the same time, ceilings on interest and deposit rates have been removed leading to narrowing of interest rate spreads of banks. M&As wave has also been a response to increased competition that threatened profits. To offset the impact of decline in bank spreads on profitability, banks responded by expanding volume (economies of scale) and diversifying their activities (economies of scope). The removal of restriction on geographical areas for banking operations and on diversification of activities provided the opportunities for banks to consolidate among themselves and non-bank financial firms.

8.12 Globalisation, which is a by-product of technology and deregulation in many respects, has its bearing on economies of scale and consequently, influences consolidation strongly among the firms engaged in the provision of wholesale financial services. M&As have also been a frequent option for banks seeking to build a global retail system. It is felt that by acquiring an existing institution in the target market, the acquirer gains a more rapid foothold than would be possible with an organic growth strategy.

8.13 Increased access to the capital markets, both domestic and international, has increased the importance of shareholders relative to other stakeholders. On the other hand, increased competition has led to squeeze in the profit margins of financial firms, resulting in shareholders' pressure to improve performance. Financial firms have been adopting a simpler strategy of M&As to improve performance instead of achieving the same through business gains, productivity enhancement or more effective balance sheet management.

8.14 When there exist excess capacity in an industry or local market, firms, for several reasons, are rendered inefficient as they operate below the optimum level or below the efficient frontier of production. Consolidation through M&As can solve these inefficiency problems more effectively than bankruptcy or other means of exit by preserving the pre-existing franchise value of the merging firms. Similarly, consolidation is employed as an efficient way of resolving problems of financial distress, with weak or inefficient firms being taken over by stronger ones. In short, mergers of banks may help reduce the gestation period for launching/promoting new businesses, strengthen the product portfolios, minimise duplication, and gain competitive advantage, among others. They are also recognised as a good strategy for enhancing efficiency. Ideally, mergers should be aimed at exploiting synergies, reducing overlap in operations, right-sizing and redeploying surplus staff either by retraining, labour restructuring or voluntary retirement.

8.15 Consolidation in the banking industry, on the other hand, can be impeded by regulations, differences in corporate culture and governance regime and inadequate information flows. The legal and regulatory environment represents a substantial potential impediment for consolidation in the banking industry, as it directly affects the range of permissible activities undertaken by financial firms. In some countries, antitrust laws constitute an important impediment, mainly for domestic consolidation within sectors. Prudential regulation may hinder cross-border consolidation through differences in capital requirements. Regulatory impediments to consolidation include protection of national champions, government ownership of financial institutions, competition policies and rules on confidentiality.

8.16 The differences in corporate governance, which encompasses the organisational structure and the system of checks and balances of an institution, could also be deterrents to M&As. There are significant differences in the legislative and regulatory frameworks across the countries with regard to functions of the boards of directors ("supervisory") and senior management. These differences affect the inter-relation of the two decision-making bodies within an institution and relations with the firm's owners and other stakeholders, including employees, customers, the community, rating agencies and governments. There are also cultural differences and the related information asymmetries. These differences act as strong impediments to cross-border and cross-product levels of consolidation and in the hostile takeovers of financial institutions.

8.17 Information asymmetry faced by stakeholders may hinder M&As as the inadequate information flows increase the uncertainty about the outcome of a merger. Such information asymmetry would arise due to incomplete disclosure or large differences in accounting standards across countries and sectors, lack of comparability of accounting report, difficulties in asset appraisal and lack of transparency.

8.18 Consolidation, among others, has implications for financial stability and monetary policy. With the increase in the size of banks and concentration of

banking activities in a few megabanks, various types of risks such as operational risk, contagion risk and systemic risk could increase. Consolidation impacts market power which can have adverse effects on the yield curve by impeding interest rate arbitrage, lending to borrowers and the value of collateral, in turn, affecting the channels of monetary policy transmission (Box VIII.1).

III. RECENT TRENDS IN MERGERS AND ACQUISITIONS IN THE BANKING INDUSTRY

8.19 The number of M&As increased in the advanced countries in recent years. Insofar as EMEs are concerned, while in some countries M&As activity accelerated in recent years, in some other countries, it slowed down. However, the value of M&As increased

Box VIII.1
Consolidation and Its implications for Financial Stability and Monetary Policy

Banking consolidation, irrespective of the motives and types, gives rise to several challenges, of which the implications on financial stability and monetary policy are important ones. It is emphasised that even though there are several potentials for reducing the financial risk through geographical and product diversification at the individual firm level, consolidation leading to creation of megabanks could heighten various types of financial risks at the macroeconomic level. In fact, understanding the financial stability implications of evolving state ownership of banks after consolidation and also increasing presence of foreign banks is a high priority in policy makers' agenda in various countries. Operational risk could increase with the size of operations, as the distance between management and operational personnel is greater in large companies and the administrative systems are more complex. The transparency of the operations could also deteriorate with increase in size, particularly with regard to cross-border mergers, rendering detection of potential crises in time by the authorities difficult. The contagion risk, *i.e.*, problems arising in an individual bank spreading to others, also increases with size, as banks' exposures against one another rise along with the size of operations. Evidence suggests that the inter-dependencies, which are positively correlated with consolidation, have increased among large and complex financial institutions. Further, the consolidating institutions are found to shift their portfolios towards higher risk-return investment. Consequently, the concerns about systemic risk are heightened, as concentration of banking activities in few megabanks would mean that given their wholesale activities, any shock could have repercussions to the financial system and the real economy. For a small host nation, cross-border financial integration would mean increase in possibility of even a medium-sized foreign bank becoming a source of instability, and also increased probability of losing domestic ownership of its major banks.

The increased potential for systemic risk further intensifies the concerns for these banks being considered 'too-big-to-fail', which gives rise to the problem of moral hazard. Because of the increased potential systemic instability from impairment of such large banks, whatever be the *ex ante* declaration, the perception of the general public would be that the Government would not allow these banks to fail, and therefore, *ex post* provide bailout. Because of this perceived implicit or explicit guarantee by the Government, the risk taking behavior of these banks could increase, thereby further enhancing the systemic risk. It is, however, not possible to formulate a specific criteria on when a bank becomes 'too big to fail', though it may be concluded that there is a certain critical level with regard to the bank's importance in the economy and the financial system.

Consolidation leads to greater concentration of payment and settlement flows among few parties within the financial sector. Such concentration implies that if a major payment processor were to fail or were not able to process payment orders, systemic risks could arise. The emergence of multinational institutions and specialised service providers indulging in payment and settlement systems in different countries coupled with increasing inter-dependence of liquidity among them accentuate the potential role of payment and settlement systems in the transmission of contagion effects.

Monetary policy decisions are influenced by the behavior of financial firms and markets. The consolidation process by altering them has also a number of implications in the conduct of monetary policy. Consolidation can reduce competition in the markets, increase the cost of liquidity for some and impede the arbitrage of interest between markets. The performance of the markets could also be affected if the resulting large banks behave differently from their small predecessors. The impeding of arbitrage along the yield curve due to reduced competition would affect the monetary policy channel of transmission effected through interest rates across financial markets. The exercise of market power by the banks resulting from consolidation could also alter the monetary transmission operating through bank lending to borrowers without direct access to financial markets. Consolidation could also affect the way monetary policy affects the value of collateral, and, thus, on the availability of credit to those requiring collateral to obtain funds.

manifold in several countries, including those where M&As activities slowed down (Table 8.1).

8.20 Much of the consolidation activity in France took place during the 1990s among small banks leading to a large reduction in the total number of banking institutions. Similarly, in Germany consolidation took place among smaller savings and co-operative banks and the number of banks declined by about a third during the 1990s. Following consolidation, the number of banks in Italy also declined by more than a third during the same period. A combination of dismantling of restrictions on inter-state and intra-state banking, removal of interest rate ceilings on small time and savings deposits and permission on diversification of activities paved the way for mergers between banks and non-bank financial companies in the US during the 1990s. The consolidation that followed resulted in substantial growth, in both absolute and relative terms, by the largest institutions. In the UK, the regulatory reforms during the 1980s and the 1990s removed restrictions on financial institutions to compete across traditional business lines. This enabled the development of universal banking and led to growth of international banking and conversion of building societies into banks. Consequently, the number of banks in UK increased substantially before declining by almost 20 per cent following subsequent consolidation.

Table 8.1: Cross-Country Bank Mergers and Acquisitions

	Number		Value (US $ million)	
Country	1995-1999	2000-04	1995-1999	2000-04
1	2	3	4	5
UK*	7	52	1,137	20,376
Germany*	22	84	13,100	34,023
Italy*	36	121	12,953	153,346
Japan*	18	58	8,892	41,069
Hong Kong	0	14	0	–
Singapore	8	8	2,900	11,400
Korea	11	7	14,360	27,410
Indonesia	1	0	–	0
Malaysia	2	16	20	3,020
Philippines	2	13	6,900	17,740
Thailand	5	2	57,700	28,000
Chile	5	6	870	1,220
Colombia	9	11	40	33
Mexico	8	5	81,900	170,600
Czech Republic	9	3	–	–
Hungary	11	9	8,620	17,990
Poland	23	30	–	–

* : Based on Bloomberg database for the sub-periods 1997-2000 and 2001-2007. Value may not necessarily represent the amount of all deals.
– : Not Available
Source : BIS (2006) and Bloomberg.

8.21 In Canada, domestic banks traditionally controlled a large share of the banking sector. Owing to the dominance of the banking industry by a few banks, consolidation is regulated through a guideline established in 2000 to ensure that it does not lead to unacceptable level of concentration and drastic reduction in competition and reduced policy flexibility in addressing future prudential issues. Thus, not much consolidation took place during the 1990s and the number of banks did not decline much from the substantial increase observed during the 1980s due to entry of foreign banks. In Japan also, little consolidation took place during the 1990s and there was only a modest reduction in the number of banks at the end of the 1990s following some bank failures.

8.22 The banking industry in Sweden during the 1990s experienced the merger of co-operative banks into one commercial bank and transformation of the largest savings banks into one banking group. Further, there was consolidation among all the major banking groups. While all the above mergers reduced the number of banks, the total number of banks increased somewhat due to entry of foreign banks and the establishment of several 'niche banks' around the same time.

8.23 The banking consolidation since the 1990s resulted in a substantial decline in the number of banks in many emerging market and advanced economies. In US, about 25-30 per cent of banks have closed or merged due to consolidation in last two to three decades (Nitsure, 2008). In fact, the banking systems in EMEs have generally continued to evolve towards more private and foreign-owned structures, with fewer commercial banks and often smaller number of bank branches. In some countries, these trends have been the result of post-crisis weeding-out of weak financial institutions, and mergers encouraged by the authorities (for instance, Indonesia, Malaysia and Thailand). Elsewhere, these developments have been mostly market-driven (for instance, central Europe and Mexico) (Table 8.2).

IV. CONSOLIDATION AND COMPETITION IN INDIA

8.24 The banking sector reforms undertaken in India from 1992 onwards were aimed at ensuring the safety and soundness of financial institutions and at the same time making them efficient, functionally diverse and competitive. Financial sector reforms

Table 8.2: Number of Commercial Banks

Country	2001	2005	Percentage Variation
1	2	3	4
Advanced Economies			
Denmark	190	161	-15.3
France	444	294	-33.8
Germany	304	251	-17.4
Greece	44	21	-52.3
Italy	830	784	-5.5
Japan	234	215	-8.1
Korea	20	13	-35.0
Singapore	128	110	-14.1
Spain	285	272	-4.6
UK	398	333	-16.3
US	8,075	7,515	-6.9
Emerging Economies			
Peru	15	12	-20.0
Philippines	42	41	-2.4
Poland	69	54	-21.7
Argentina	86	71	-17.4
Brazil	180	161	-10.6
Chile	27	26	-3.7
Mexico	32	29	-9.4
Egypt	53	43	-18.9
India	100	88	-12.0
Israel	26	15	-42.3
South Africa	59	34	-42.4

Source: World Bank Database on Regulation and Supervision.

provided banks with operational flexibility and functional autonomy. Reforms also brought about structural changes in the financial sector by recapitalising them, allowing profit making banks to access the capital market and enhancing the competitive element in the market through the entry of new banks. Apart from achieving greater efficiency by introducing competition through the new private sector banks and increased operational autonomy to public sector banks, reforms in the banking system were also aimed at enhancing financial inclusion, funding of economic growth and better customer service to the public.

8.25 The Government and the Reserve Bank provided the enabling environment through an appropriate fiscal, regulatory and supervisory framework for the consolidation of financial institutions and at the same time ensured that a few large institutions did not create an oligopolistic structure in the market (Talwar, 2001). Competitive conditions in the Indian banking sector were strengthened by relaxing entry and exit norms and the increased presence of foreign banks. In February 2005, with a view to further enhancing the efficiency and stability of the banking system, a two-track and gradualist approach was adopted by the Reserve Bank. One track was consolidation of the domestic banking system in both the public and private sectors. The second track was gradual enhancement of the presence of foreign banks in a synchronised manner (Annex VIII.1). The regulatory framework, however, varies for different segments of the banking sector in India.

Mergers and Amalgamations: Regulatory Framework

8.26 The regulatory framework for M&As in the banking sector is laid down in the Banking Regulation (BR) Act, 1949. In the post-Independence era, the legal framework for amalgamations of banks in India was provided in the Act. The Act provides for two types of amalgamations, *viz.,* (i) voluntary and (ii) compulsory. For voluntary amalgamation, Section 44A of the BR Act provides that the scheme of amalgamation of a banking company with another banking company is required to be approved individually by the board of directors of both the banking companies and subsequently by the two-thirds shareholders (in value) of both the banking companies. Further, Section 44A of the BR Act requires that after the scheme of amalgamation is approved by the requisite majority in number representing two-third in value of shareholders of each banking company, the case can be submitted to the Reserve Bank for sanction. However, the Reserve Bank has the discretionary powers to approve the voluntary amalgamation of two banking companies under section 44A of the BR Act.

8.27 The experience of the Reserve Bank has been, by and large, satisfactory in approving the schemes of amalgamation of private sector banks in the recent past and there has been no occasion to reject any scheme of amalgamation submitted to it for approval. There have been six voluntary amalgamations between the private sector banks so far, while one amalgamation between two private sector banks (Ganesh Bank of Kurundwad and the Federal Bank) was induced by the Reserve Bank in the interest of the depositors of one of the banks. Most of these voluntary mergers was between healthy banks, somewhat on the lines suggested by the first Narasimham Committee. The Committee was of the view that the move towards the restructured organisation of the banking system should be market-driven and based on profitability considerations and brought about through a process of M&As (Leeladhar, 2008)

8.28 Insofar as compulsory amalgamations are concerned, these are induced or forced by the Reserve Bank under Section 45 of the BR Act, in public interest, or in the interest of the depositors of a distressed bank, or to secure proper management of a banking company, or in the interest of the banking system. In the case of a banking company in financial distress, the Reserve Bank under Section 45(2) of the BR Act may apply to the Central Government for an order of moratorium in respect of a banking company and during the period of such moratorium, may prepare a scheme of amalgamation of the banking company with any other banking institution (banking company, nationalised bank, SBI or its subsidiary). Such a scheme framed by the Reserve Bank is required to be sent to the banking companies concerned for their suggestions or objections, including those from the depositors, shareholders and others. After considering the same, the Reserve Bank sends the final scheme of amalgamation to the Central Government for sanction and notification in the official gazette. The notification issued for compulsory amalgamation under Section 45 of the BR Act is also required to be placed before the two Houses of Parliament. The amalgamation becomes effective on the date indicated in the notification issued by the Government in this regard.

8.29 In the case of voluntary merger or acquisition of any financial business by any banking institution, there was no provision under the BR Act for obtaining approval of the Reserve Bank. In order to revisit the regulatory, legal, accounting and human relations related issues, which may arise in the process of consolidation in Indian banking system, the Working Group (Chairman: Shri V. Leeladhar) was constituted by the Indian Banks' Association. The Group in its Report titled "Consolidation in Indian Banking System" submitted in 2004 highlighted the need for making an omnibus provision in the BR Act requiring any banking institution to obtain prior approval of the Reserve Bank before acquiring any other business or any merger or amalgamation of any other business of banking institution or non-banking financial institution, with absolute right to the Reserve Bank to finalise the swap ratio which should be made binding on all concerned.

8.30 The Reserve Bank, on the recommendations of the Joint Parliamentary Committee (2002), had constituted a Working Group to evolve guidelines for voluntary mergers involving banking companies. Based on the recommendations of the Group, the Reserve Bank announced guidelines in May 2005 laying down the process of merger proposal, determination of swap ratios, disclosures, the stages at which boards will get involved in the merger process and norms of buying/selling of shares by the promoters before and during the process of merger. Voluntary amalgamation of a non-banking company with a banking company is governed by sections 391 to 394 of the Companies Act, 1956 and the scheme of amalgamation has to be approved by the High Court. However, to ensure the continued strenght of merged entity, it has been provided in the guidelines that in such cases, the banking company should obtain the approval of the Reserve Bank of India after the scheme of amalgamation approved by its Board but before it is submitted to the High Court for approval.

8.31 In both situations, whether a non-banking company amalgamates with a banking company or amalgamation is among banking companies, the Reserve Bank ensures that amalgamations are normally decided on business considerations. For this, the Reserve Bank also laid down guidelines, to which boards of directors should give consideration during the merger process. These guidelines mainly relate to (i) values of assets and liabilities and the reserves of amalgamated entity proposed to be incorporated into the book of amalgamating banking company; (ii) swap ratio to be determined by competent independent valuers; (iii) shareholding pattern; (iv) impact on profitability and, capital adequacy of the amalgamating company; and (v) conformity of the proposed changes in the composition of board of directors with the Reserve Bank guidelines in that context (Box VIII. 2).

8.32 The statutory framework for the amalgamation of public sector banks, *viz*., nationalised banks, State Bank of India and its subsidiary banks, is, however, quite different since the foregoing provisions of the BR Act do not apply to them. As regards the nationalised banks, the Banking Companies (Acquisition and Transfer of Undertakings) Act, 1970 and 1980, or the Bank Nationalisation Acts authorise the Central Government under Section 9(1)(c) to prepare or make, after consultation with the Reserve Bank, a scheme, *inter alia*, for the transfer of undertaking of a 'corresponding new bank' (*i.e*., a nationalised bank) to another 'corresponding new bank' or for the transfer of whole or part of any banking institution to a corresponding new bank. Unlike the sanction of the schemes by the Reserve Bank under Section 44A of the BR Act, the scheme framed by the Central Government is required, under Section

Box VIII.2
Guidelines on Mergers and Amalgamations of Banks

The guidelines on merger and amalgamation announced by the Reserve Bank in May 2005, *inter alia,* stipulated the following:

- The draft scheme of amalgamation be approved individually by two-thirds of the total strength of the total members of board of directors of each of the two banking companies.
- The members of the boards of directors who approve the draft scheme of amalgamation are required to be signatories of the Deed of Covenants as recommended by the Ganguly Working Group on Corporate Governance.
- The draft scheme of amalgamation be approved by shareholders of each banking company by a resolution passed by a majority in number representing two-thirds in value of shareholders, present in person or by proxy at a meeting called for the purpose.
- The swap ratio be determined by independent valuers having required competence and experience; the board should indicate whether such swap ratio is fair and proper.
- The value to be paid by the respective banking company to the dissenting shareholders in respect of the shares held by them is to be determined by the Reserve Bank.
- The shareholding pattern and composition of the board of the amalgamating banking company after the amalgamation are to be in conformity with the Reserve Bank's guidelines.
- Where an NBFC is proposed to be amalgamated into a banking company in terms of Sections 391 to 394 of the Companies Act, 1956, the banking company is required to obtain the approval of the Reserve Bank before the scheme of amalgamation is submitted to the High Court for approval.

9(6) of the Bank Nationalisation Acts, to be placed before the both Houses of Parliament. Under this procedure, the only merger that has taken place so far relates to the amalgamation of the erstwhile New Bank of India with Punjab National Bank, on account of the weak financials of the former. As regards the State Bank of India (SBI), the SBI Act, 1955, empowers the State Bank to acquire, with the consent of the management of any banking institution (which would also include a banking company), the business, including the assets and liabilities of any bank. Under this provision,the consent of the bank sought to be acquired, the approval of the Reserve Bank, and the sanction of such acquisition by the Central Government are required. Several private sector banks were acquired by State Bank of India following this route. However, so far, no acquisition of a public sector bank has taken place under this procedure. Similar provisions also exist in respect of the subsidiary banks of the SBI. Thus, there are sufficient enabling statutory provisions in the extant statutes governing the public sector banks to encourage and promote consolidation even among public sector banks through the merger and amalgamation route, and the procedure to be followed for the purpose has also been statutorily prescribed.

8.33 In short, the primary objective of the Reserve Bank/Government in the process of consolidation is to ensure that mergers are not detrimental to the public interest, bank concerned, their depositors and shareholders, and also that they do not impinge on financial stability. Thus, the Reserve Bank ensures that after a merger, acquisition, reconstruction or takeover, the bank or banking group has adequate financial strength and the management has sufficient expertise and integrity.

Trends in Mergers and Amalgamations

8.34 Consolidation of banks through M&As is not a new phenomenon for the Indian banking system, which has been going on for several years. Since the beginning of modern banking in India through the setting up of English Agency House in the 18th century, the most significant merger in the pre-Independence era was that of the three Presidency banks founded in the 19th century in 1935 to form the Imperial Bank of India (renamed as State Bank of India in 1955).

8.35 In 1959, State Bank of India acquired the state-owned banks of eight former princely States. In order to strengthen the banking system, Travancore Cochin Banking Enquiry Commission (1956) recommended for closure/amalgamation of weak banks. Consequently, through closure/ amalgamations that followed, the number of reporting commercial banks declined from 561 in 1951 to 89 in June 1969. Merger of banks took place under the direction of the Reserve Bank during the 1960s. During 1961 to 1969, 36 weak banks, both in the public and private sectors, were merged with other stronger banks.

8.36 There have been several bank amalgamations in India in the post-reform period. In all, there have been 33 M&As since the nationalisation of 14 major

banks in 1969. Of these mergers, 25 involved mergers of private sector banks with public sector banks, while in the remaining eight cases, mergers involved private sector banks. Out of 33, 21 M&As took place during the post-reform period with as many as 17 mergers/ amalgamations taking place during 1999 and after (Table 8.3)[1]. Prior to 1999, the amalgamations of banks were primarily triggered by the weak financials of the bank being merged, whereas in the post-1999 period, there have also been mergers between healthy banks, driven by the business and commercial considerations (Leeladhar, 2008).

Table 8.3: Banks Amalgamated since Nationalisation of Banks in India

Sr. No.	Name of Transferor Bank/Institution	Name of Transferee Bank/Institution	Date of Amalgamation
1	2	3	4
1.	Bank of Bihar Ltd.	State Bank of India	November 8, 1969
2.	National Bank of Lahore Ltd.	State Bank of India	February 20, 1970
3.	Miraj State Bank Ltd.	Union Bank of India	July 29, 1985
4.	Lakshmi Commercial Bank Ltd.	Canara Bank	August 24, 1985
5.	Bank of Cochin Ltd.	State Bank of India	August 26, 1985
6.	Hindustan Commercial Bank Ltd.	Punjab National Bank	December 19, 1986
7.	Traders Bank Ltd.	Bank of Baroda	May 13, 1988
8.	United Industrial Bank Ltd.	Allahabad Bank	October 31, 1989
9.	Bank of Tamilnadu Ltd.	Indian Overseas Bank	February 20, 1990
10.	Bank of Thanjavur Ltd.	Indian Bank	February 20, 1990
11.	Parur Central Bank Ltd.	Bank of India	February 20, 1990
12.	Purbanchal Bank Ltd.	Central Bank of India	August 29, 1990
13.	New Bank of India	Punjab National Bank	September 4, 1993
14.	Kashi Nath Seth Bank Ltd.	State Bank of India	January 1, 1996
15.	Bari Doab Bank Ltd.	Oriental Bank of Commerce	April 8, 1997
16.	Punjab Co-operative Bank Ltd.	Oriental Bank of Commerce	April 8, 1997
17.	Bareilly Corporation Bank Ltd.	Bank of Baroda	June 3, 1999
18.	Sikkim Bank Ltd.	Union Bank of India	December 22, 1999
19.	Times Bank Ltd.	HDFC Bank Ltd.	February 26, 2000
20.	Bank of Madura Ltd.	ICICI Bank Ltd.	March 10, 2001
21.	ICICI Ltd.	ICICI Bank Ltd.	May 3, 2002
22.	Benares State Bank Ltd.	Bank of Baroda	June 20, 2002
23.	Nedungadi Bank Ltd.	Punjab National Bank	February 1, 2003
24.	South Gujarat Local Area Bank Ltd.	Bank of Baroda	June 25, 2004
25.	Global Trust Bank Ltd.	Oriental Bank of Commerce	August 14, 2004
26.	IDBI Bank Ltd.	IDBI Ltd	April 2, 2005
27.	Bank of Punjab Ltd.	Centurion Bank Ltd.	October 1, 2005
28.	Ganesh Bank of Kurundwad Ltd.	Federal Bank Ltd.	September 2, 2006
29.	United Western Bank Ltd.	IDBI Ltd.	October 3, 2006
30.	Bharat Overseas Bank Ltd.	Indian Overseas Bank	March 31, 2007
31.	Sangli Bank Ltd.	ICICI Bank Ltd.	April 19, 2007
32.	Lord Krishna Bank Ltd.	Centurion Bank of Punjab Ltd.	August 29, 2007
33.	Centurion Bank of Punjab Ltd.	HDFC Bank Ltd.	May 23, 2008

Source: Report on Trend and Progress, RBI, Various Issues.

[1] On February 25, 2008, the respective boards of the HDFC Bank and Centurion Bank of Punjab approved the merger of the latter bank with the former.

8.37 More recently the process of M&As in the Indian banking sector has been generally market driven. Given the policy objective of mergers, most of the mergers between banks in India have taken place voluntarily for strategic purposes. Given the difficulty of small banks to compete with large banks, which enjoy enormous economies of scale and scope, the Reserve Bank has been encouraging the consolidation process, wherever possible. Most of the amalgamations of private sector banks in the post-nationalisation period were induced by the Reserve Bank in the larger public interest, under Section 45 of the Act. In all these cases, the weak or financially distressed banks were amalgamated with the healthy banks. The over-riding principles governing the consideration of the amalgamation proposals were: (a) protection of the depositors' interest; (b) expeditious resolution; and (c) avoidance of regulatory forbearance. The amalgamations of the erstwhile Global Trust Bank and United Western Bank with public sector banks are recent examples of such mergers. Even in such cases, commercial interests of the transferee bank and the impact of the amalgamation on its profitability were duly considered. The mergers of many weak private sector banks with the healthy ones have brought the Indian banking sector to a credible position, as the CRAR of all private sector banks in the country was more than the minimum regulatory requirement of nine per cent as at end-March 2007.

8.38 M&As in India have also been used as a tool for strengthening the financial system. Through a conscious approach, the weak and small banks have been allowed to merge with stronger banks to protect the interests of depositors, avoid possible financial contagion that could result from individual bank failures and also to reap the benefits of synergy. Thus, the Indian approach has been different from that of many other EMEs, wherein the Governments were actively involved in the consolidation process. For instance, in East-Asia, after the banking crisis in 1997, the Government led the process of bank mergers in order to strengthen capital adequacy and the financial viability of many smaller and often family-owned banks. In these crisis ridden countries, the involvement of the Government was inevitable, as viable but distressed institutions were hardly in a position to attract potential buyers without moving some non-performing loans to an asset management company and/or receiving temporary capital support. Such intervention also proved more cost-effective than taking the bank into public ownership. However, with the intensification in competition through deregulation, privatisation and entry of foreign banks in the emerging markets, consolidation is becoming more market-driven (Box VIII. 3).

8.39 The consolidation process in the banking sector in India in recent years was confined to mergers in the private sector and some consolidation in the state-owned sector. After nationalisation of banks in 1969, India did not allow entry of private sector banks untill January 1993, when barriers to entry for private sector banks were removed. India also liberalised the entry of foreign banks in the post-reform period. These liberalised measures resulted in entry of many new banks (private and foreign). Accordingly, the number of banks increased during the initial phase of financial sector reforms. However, the pace of consolidation process gathered momentum from 1999-2000, leading to a marked decline in the number of private and foreign banks (Table 8.4). In February 2005, providing a comprehensive framework of policy relating to ownership and governance in private sector banks, the Reserve Bank prescribed that the capital requirement of existing private sector banks should be on par with the entry capital requirement for new private sector banks prescribed on January 3, 2001, according to which, banks are required to have capital initially of Rs. 200 crore, with a commitment to increase to Rs.300 crore within three years from commencement of business. In order to meet this requirement, all banks in the private sector should have a net worth of Rs. 300 crore at all times. Thus, post-2005 period, amalgamations/mergers have resulted partly from these guidelines. The number of scheduled commercial banks (SCBs) declined to 82 at end-March 2007 from 100 at end-March 2000 due to merger of some old private sector banks. In recent years, in the case of some troubled banks, the only option available with the Reserve Bank was to compulsorily merge them with stronger banks under section 45 of the Banking Regulation Act, 1949. These included amalgamation of Global Trust Bank with Oriental Bank of Commerce in August 2004, Ganesh Bank of Kurundwad Ltd. with Federal Bank Ltd. in September 2006 and the United Western Bank with IDBI Ltd. in October 2006.

8.40 Mergers and amalgamations involved relatively smaller banks. The largest number of mergers took place with ICICI Bank, Bank of Baroda and Oriental Bank of Commerce (each one of them was involved in three mergers). ICICI Bank replaced many entities to occupy the second position in the Indian banking sector after State Bank of India. In the Banker's list of the top 1000 banks of the world

Box VIII.3
Market driven versus Government-led Bank Consolidation: Cross-Country Experience

While the rationale and the driving factors behind the consolidation process might have undergone change inter-temporally and varied across countries, two distinct dimensions broadly emerge from the history of bank consolidations, *viz.,* market driven *vis-à-vis* government led consolidation.

A large number of banking consolidations since the early twentieth century followed from the Government policy to consolidate either on account of efforts to restructure inefficient banking systems or from intervention following the crisis. In Japan, the Bank Law of 1927 set the minimum capital criterion for banks, which came as a powerful measure for the Government to promote bank consolidation. Likewise, during the 1920s in the US, agriculture distress produced a wave of small bank failures, necessitating the repeal of many State laws prohibiting branch banking. In the emerging markets of South-East Asia and Latin America, much of the banking consolidation since the 1990s has been government-driven following the need to redress the distress within the financial system. During the financial crisis in 1997, the Korean Government accorded the top priority to financial sector restructuring through the earliest possible resolution of unsound financial institutions. The Government acted swiftly and decisively to close down financial institutions deemed non-viable after an exhaustive review of their financial situations. Somewhat similar phenomenon was observed in Malaysia, Indonesia and the Philippines. The Taiwanese Government also promoted consolidation in the financial sector in recent years. Similarly in Latin America, following numerous episodes of financial sector crises, the number of banks in the region declined significantly mainly through government efforts to restructure and consolidate the banking system. In Japan, realising the emergence of NPLs and lack of prudent risk management, Government steered some of the mergers in the overcrowded Japanese banking system during the 1990s.

On the other hand, the bank consolidation process since 1984 in the US, though facilitated by some legislative changes, was also an outcome of market-led forces. During the 1980s, many banks in the US experienced large loan losses and profits associated with depressed economy and excessive risk taking (Shull and Hanweck, 2001). Bank failures rose to high levels resulting in substantial number of mergers and acquisitions by better capitalized and profitable banks. These developments led to substantial improvements in profitability and capitalisation of banks in 1990s. With the onset of improved performance of banks, the number of mergers attributable to bank failures decreased but the number of mergers continued to increase on account of policy permissiveness in the US. The strict regulatory environment that existed before the 1980s largely precluded any dramatic consolidation within the US banking industry. Consolidation of the banking industry began in the earnest only after the regulatory constraints were relaxed in the early 1980s through a decade-long process of deregulating the banking and thrift industries so that they could be more responsive to marketplace realities (Jones and Critchfield, 2005). The removal of geographical restrictions on bank branching and holding company acquisitions by the individual states by the Reagle-Neal Interstate Banking and Branch Efficiency Act of 1994 greatly facilitated bank consolidation. Most of the bank acquisitions were carried out with the aim of securing consistent earnings growth in the future. The saturated markets offered limited organic growth potential, while the banks' balance sheets were strong. Thus, there was the need to grow *via* mergers and acquisitions for ensuring long-term earnings. This trend sometimes also led to increased market pressure for banks and financial institutions in other mature economies to keep pace and consolidate in their home markets. In the case of EU commercial banks, the banks responded to the new operating environment by adapting their strategies, seeking new distribution channels and changing their organisational structures. Thus, increased competition has been considered the main driving force behind the acceleration in the consolidation process in the EU economies (Casu and Girardone, 2007).

In Central and Eastern Europe and Mexico, the bank consolidation process that started in the late 1990s, has also been more market-driven with the foreign banks playing an important role. Political action, however, has influenced the process of consolidation in some but not all European markets. For instance, the very good performance of big Italian banks was enabled by the privatisation of the savings banks. Similarly, domestic consolidation in France was encouraged through the formation of "national champions". It is being observed that multiple forces have been at play to motivate consolidation deals, both within European countries and cross-border. These forces resulting in market driven consolidation process included the fragmented market, foreign competition, deregulation, technological innovation and the introduction of a single currency. For instance, 'Bank Consolidation Program' in Poland involved pooling of state-owned banks in order to increase their market share and efficiency.

References:

Casu, Barbara and Claudia Girardone (2007). "Does Competition Lead to Efficiency? The Case of EU Commercial Banks." *University of Essex Discussion Paper* No. 07-0, University of Essex.

Jones, Kenneth D. and Tim Critchfield (2005). "Consolidation in the U.S. Banking Industry: Is the 'Long, Strange Trip' About to End?" *Federal Deposit Insurance Corporation Banking Review*, Vol.17, No. 4.

Shull, Bernard and Hanweck, Gerald A. 2001. "Bank Mergers in a Deregulated Environment: Promise and Peril". Quorum Books. USA.

Table 8.4: New Private Sector and Public Sector Banks and Bank Mergers in India

Year	Number of Bank Mergers	New Banks Set Up			No. of Banks (at the end of March)
		Private	Foreign	Public Sector Banks	
1	2	3	4	5	6
1989-90	4	0	0	0	75
1990-91	1	0	2	0	74
1991-92	0	1	0	0	77
1992-93	0	0	0	0	77
1993-94	1	0	0	0	74
1994-95	0	8	4	0	86
1995-96	1	2	4	0	92
1996-97	0	1	8	0	101
1997-98	2	0	4	0	103
1998-99	0	0	8	0	105
1999-2000	3	0	1	0	100
2000-01	1	0	0	0	99
2001-02	0	1	4	0	98
2002-03	3	0	1	0	92
2003-04	0	1	1	0	90
2004-05	2	1	0	1*	88
2005-06	2	1	0	0	84
2006-07	3	0	1	0	82

– : Not available.

* : After merger of IDBI Bank Ltd. with IDBI, IDBI Ltd. is classified as other public sector bank. Apart from mergers and setting up of new banks, change in number of banks over the years is also on account of closure of some banks.

Table 8.5: Ranking of Indian Banks Among World's Top 1000 Banks

(As on March 31, 2006)

Sr. No.	Name of Bank	Overall Ranking	Assets (US$ Million)
1	2	3	4
1	State Bank of India *	70	186,988
2	ICICI Bank	147	56,258
3	Punjab National Bank	255	32,509
4	Bank of Baroda *	259	33,690
5	Canara Bank *	281	38,069
6	IDBI	329	20,209
7	HDFC Bank*	335	20,945
8	Oriental Bank of Commerce	378	13,190
9	Bank of India	411	25,126
10	Indian Overseas Bank *	414	18,868
11	Union Bank of India	495	19,945
12	Corporation Bank	507	9,079
13	Andhra Bank *	533	10,905
14	Allahabad Bank	548	12,374
15	Central Bank of India	561	16,713
16	UTI Bank	580	11,129
17	Syndicate Bank	601	13,668
18	Indian Bank	623	10,660
19	UCO Bank	699	13,839
20	United Bank of India *	708	9,700
21	Jammu & Kashmir Bank	744	5,919
22	Vijaya Bank	722	7,057
23	Bank of Maharashtra	805	6,989
24	Federal Bank	904	4,620
25	Punjab & Sind Bank	916	4,262
26	Karnatak Bank	962	3,346
27	Dena Bank	988	5,941

* : Data pertain to March 2007.

Note : Ranking of the banks is by the size of Tier I capital.

Source : The Banker, July 2007.

(July 2007), there were 27 Indian banks (as compared with 20 in July 2004). Of these, 11 banks were in the top 500 banks (as compared with 6 in July 2004) (Table 8.5). Even within Asia, India's largest banks, *viz*., SBI and ICICI Bank held 11th and 25th place, respectively.

8.41 The combined assets of the five largest Indian banks, *viz*., State Bank of India, ICICI Bank, Punjab National Bank, Canara Bank and Bank of Baroda, on March 31, 2006 were about 51.0 per cent of the assets of the largest Chinese bank, Bank of China, which was roughly 3.6 times larger than State Bank of India. Even in the Asian context, only one Indian bank – State Bank of India – figures in the top 25 banks based on Tier I capital, even though Indian banks offer the highest average return on capital among Asian peers. The total assets of State Bank of India were less than 10.0 per cent of the top three banks in the world. However, the size of State Bank of India was larger than the largest bank operating in some emerging markets such as Korea and Brazil. In a way, this suggests that the size of bank and the banking sector depends on the size of the economy (Table 8.6).

8.42 The mergers of regional rural banks (RRBs) have taken place on a large scale in India since September 2005. Mergers of RRBs were largely policy driven in pursuance of the recommendations of the Committee on the "Flow of Credit to Agriculture and Related Activities" (Chairman: Prof. V.S. Vyas). The Committee in its Report submitted in June 2004 had recommended restructuring of RRBs in order to improve the operational viability of RRBs and take advantage of the economies of scale. In order to reposition RRBs as an effective instrument of credit delivery in the Indian financial system, the Government of India, after consultation with NABARD, the concerned State Governments and the sponsor banks, initiated State-level sponsor bank-wise amalgamation of RRBs to overcome the deficiencies prevailing in RRBs and making them viable and

Table 8.6: The Relative Size of the Largest Bank of India vis-à-vis the Largest Banks in Select Countries

Sr. No.	Bank	Country	Assets (US million)	Relative size of SBI *vis-à-vis* Largest Banks in other Countries (per cent)
1	2	3	4	5
1.	UBS	Switzerland	1,963,870	9.5
2.	Barclays Bank	UK	1,956,786	9.6
3.	Citigroup	US	1,882,556	9.9
4.	Mitsubishi UFJ Financial Group	Japan	1,579,390	11.8
5.	Deutsche Bank	Germany	1,483,248	12.7
6.	ABN Amro Bank	The Netherlands	1,299,966	14.4
7.	ICBC	China	961,576	19.4
8.	National Australia Bank	Australia	331,408	56.4
9.	Kookmin Bank	Korea	180,805	103.4
10.	Banco Itau Holding Financeira	Brazil	98,124	190.6
11.	State Bank of India	India	186,988	—

Source: The Banker, July 2007.

profitable units. Consequent upon the amalgamation of 154 RRBs into 45 new RRBs, sponsored by 20 banks in 17 States, effected by the Government of India, the total number of RRBs declined from 196 to 88 as on May 1, 2008 (which includes a new RRB set up in the Union Territory of Puducherry). The structural consolidation of RRBs has resulted in the formation of new RRBs, which are financially stronger and bigger in size in terms of business volume and outreach and would enable them to take advantage of the economies of scale and reduce their operational costs.

8.43 Consolidation has also been seen as one of the exit routes for non-viable urban co-operative banks in India. The process of merger of weak entities with stronger ones was set in motion by providing transparent and objective guidelines for granting no-objection to merger proposals. The Reserve Bank, while considering proposals for merger/ amalgamation, confines its approval to the financial aspects of the merger taking into consideration the interests of depositors and financial stability. Almost invariably it is a voluntary decision of the banks that approach the Reserve Bank for obtaining no objection for their merger proposal. The guidelines on mergers are intended to facilitate the process by delineating the pre-requisites and steps to be taken for merger between banks. As on October 30, 2007, a total of 33 mergers had been effected upon the issue of statutory orders by the Central Registrar of Co-operative Societies/Registrar of Co-operative Societies (CRCS/ RCS) concerned (RBI, 2007).

V. MERGERS AND ACQUISITIONS: IMPACT ON COMPETITION AND EFFICIENCY IN INDIA

8.44 A good deal of debate on competition effects of bank consolidation has been phrased in terms of two competing hypotheses. The structure-conduct-performance paradigm argues that concentration will intensify market power and thereby stymie competition and efficiency. In contrast, the efficiency paradigm argues that economies of scale drive bank mergers and acquisitions, so that increased concentration goes hand-in-hand with efficiency improvements.

8.45 The impact of consolidation through M&As on competition operates through a number of channels, and among others, depends on the market structure, the nature of competition and the regulatory and supervisory framework. The competition effect would depend on the degree of concentration, the degree of entry barriers, the heterogeneity of products and price differentiation allowed. Depending on the level of competition of the banking industry, consolidation influences the provision of credit to different customer groups. Cross-country analysis does not provide support for the view that bank concentration is closely associated with banking sector efficiency, financial development, industrial competition, general institutional development, or the stability of the banking system. In fact, the impact of M&As on competition in the banking sector has not been uniform (Box VIII. 4).

8.46 M&As, especially market driven, are aimed at stepping up size (market powers) and maximising value (revenue) by exploiting economies of scale and scope, risk diversification and strengthening capital. Most recent studies have found unexploited scale economies even for larger banks in the US (Berger and Mester, 1997; Berger and Humphrey, 1997) and in Europe (Allen and Rai, 1996 and Vander Vennet, 2001). In the presence of excess capacity, some banks are bound to operate below efficient scale and may also have an inefficient product mix and, therefore, may be inside the efficiency frontier. In such a situation, M&As may help solve these problems more efficiently rather than outright bankruptcies because they preserve the franchise values of the merging banks (Huizinga *et al,* 2001).

Box VIII.4
Impact of Consolidation on Competition: Cross-country Evidence

Consolidation process may be a response to tackle the increased competition but it also affects potential competition. The primary factor that affects potential competition is the relative position of both merging entities in the banking system. For instance, merger of banks operating at the lower end of the banking system may have little implications for potential competition. Consolidation may affect competition through increase in the market concentration. Generally, in the case of financial industry, full contestability does not hold due to entry barriers directly imposed by regulatory authorities, inherent features in firms' cost structures and relatively inelastic customer demand.

The effect of concentration on competition also depends on whether firms compete on quantities or prices. In the first case, it is straightforward to show that the smaller the number of firms, the closer is the market outcome to monopoly. In the second case, the effect depends on the heterogeneity of products; the more heterogeneous the products are, the greater is the market power of firms. Firms tend to adopt niche strategies in order to differentiate products beyond their essential characteristics.

The effects of consolidation on competition is evaluated either directly by studying markets that have experienced consolidation or indirectly in cross-sectional studies comparing markets with different degrees of concentration at a point of time. Most of these studies find that M&As may have influenced market prices. In the US, a reduction in the interest rate on deposits is detected in markets that have been affected by consolidation (Prager and Hannan, 1998). Estimates of the impact of mergers on prices for the Swiss retail banking market indicate that concentration may have a negative effect on prices (Egli and Rime, 2000). In the M&As in Italy, loan rates increase when the market share of the acquired bank is large (Sapienza, 1998). The indirect approach using European data generally finds that higher concentration leads to less favourable conditions for bank customers (De Bonis and Ferrando, 1997). Market power in connection with prices for small business loans and retail deposits is found to exist in both US and Europe (Berger and Hannan, 1989 and Hannan 1991). However, it was indicated that the connection between concentration and retail deposit rates has dissipated somewhat in the 1990s relative to the previous decade (Hannan, 1997). Though the US banking industry has become stronger through the geographic diversification of risks, most researchers, especially those focusing on the 1980s and the early 1990s, did not find any broad-based improvements in cost efficiency emanating from economies of scale or scope. For the Latin American banking system, it was found that (i) concentration in banking markets did not necessarily lead to a lower level of competition and higher bank performance; and (ii) bank returns were negatively linked to the degree of competition and, to a lower extent, to foreign bank participation (Yildirim and Philippatos, 2007). Furthermore, in the context of the Latin American banking system, Yeyati and Micco (2007) suggested that it was not at all clear whether competition and concentration should go in opposite directions. In a cross-country study using structural model covering 50 major advanced and emerging market economies, Claessens and Laeven (2003) found that lower activity restrictions in the banking sector and greater foreign bank presence make banking systems more competitive. Emerging economies in the study included Argentina, Brazil, Chile, India, Indonesia, Malaysia, the Philippines, Russian Federation and Turkey, among others. However, they found no evidence that banking system concentration was negatively associated with competition.

In the emerging market banking systems, consolidation, to a large extent, has not yet translated into decline in competitive pressures. To some degree, this has been attributed to the process still being in its infancy, particularly in Central Europe and Turkey. Taking into account the internationalisation of banking sector in Turkey, Abbasoglu, Aysan and Gunes (2007) found no evidence of the existence of relationship between consolidation and competition. However, even for countries where the consolidation process is more advanced, namely Argentina and Mexico, no obvious impact of consolidations on competition intensity has been found (Gelos and Roldos, 2002). Bank consolidation in most emerging economies has not yet been associated with any marked rise in concentration, as most mergers appeared to have involved smaller banks. One reason for this pattern could have been reluctance on the part of the authorities to sanction mergers between the largest banks, which could raise both competition and moral hazard concerns. An important point that the recent literature on concentration-competition suggests is that the number of banks and the degree of concentration are not, in themselves, sufficient indicators of contestability. Other factors play a strong role, including regulatory policies that promote competition, a well-developed financial system, the effects of branch networks, and the effect and uptake of technological advancements (Northcott, 2004).

References :

Prager, and Hannan. 1998. "The Relaxation of Entry Barriers in the Banking Industry: An Empirical Investigation." *Journal of Financial Services Research*, 14(3).

Berger, Allen N. and Timothy H. Hannan. 1989. "The Price-Concentration Relationship in Banking'." *Review of Economics and Statistics*, Vol. 71.

Claessens, Stijn and Laeven, Luc, 2003. "What drives bank competition? some international evidence." *Policy Research Working Paper Series* 3113, The World Bank.

8.47 The Indian banking system has witnessed certain visible structural changes in the post-reform period. Apart from mergers/amalgamations and entry of new private and foreign banks, the Government equity has also been diluted in public sector banks. Of the 28 public sector banks, 22 banks have raised capital from the market. In three banks, the Government equity holding has come down close to 51 per cent. The changes in the ownership structure along with consolidation and entry of private and foreign banks are expected to have an impact on the overall competition in the banking sector.

8.48 To evaluate the impact of various changes specifically on competition in the banking system, a number of concentration indicators have been analysed. The process of consolidation may affect competition by enhancing concentration. To assess the implications, it is important to measure concentration, which could reflect the size distribution of banks. These include K-concentration ratio, Herfindahl-Hirschman Index (HHI) and Theil's Entropy measure of major banking sector variables such as assets and deposits (Box VIII. 5).

8.49 A number of widely used indicators suggest that despite a number of bank mergers and acquisitions, the Indian banking system has become less concentrated during the post-reform period. On the basis of asset size, there was little change in the

Box VIII.5
Measures of Concentration Indices

Various methods have been devised to measure degree of concentration based on various theoretical foundations (Bikker, 2004). Concentration measures can be classified according to their weighting schemes and structures. The weighting scheme of an index determines its sensitivity towards changes in the tail end of the bank size distribution. The structure of concentration index can be discrete or cumulative. Discrete measures of concentration correspond to the height of concentration curve at an arbitrary point. The K-bank concentration ratio, for instance, is discrete measure which is simple and can be calculated even when the entire data set is not available. However, this measure ignores the structural changes taking place in those parts of banking sector which are not covered in the concentration ratio. Cumulative measure of concentration, on the other hand, explains the entire size distribution of banking sector and covering the structural changes in all parts of the distribution. Herfindahl-Hirschman Index (HHI) and Theil's entropy index display such features.

Simplicity and limited data requirements make K-bank concentration ratio as the most commonly used measure of concentration which sums up the market shares of K largest banks. It gives equal weight to K leading banks, but neglects smaller banks. It varies between 0 and one (if market shares are measured in fractional form instead of percentage form).

$$CR_k = \sum_{i=1}^{K} S_i$$

The Herfindahl-Hirschman Index is second most popular summary measure of market concentration. It is defined as the sum of the squares of the market shares of each bank in the market. This is also often called full information index as it captures features of the entire distribution of bank sizes. It takes the form:

$$HHI = \Sigma^{K}_{i=1} (S_i)^2$$

The index ranges from 10,000 in the case of monopoly (or 1.0 when market share is in fractional form) to close to zero when there are large numbers of firms with no one firm having substantial market share. It will vary not only with the proportion of deposits/assets held by an arbitrary number of large K banks in the market, but also with the relative distribution of deposits among all banks in the market. In the US, the HHI plays a significant role in the enforcement process of anti-trust laws in banking. HHI is used for scrutinising proposed merger of banks (Shull and Hanweck, 2001). Since 1982, the US Department of Justice has based its merger guidelines on the HHI.

In contrast to HHI, the entropy index assigns greater weight to smaller banks and vice-versa. Under this method, each market share is weighed by taking log of the inverse of market share of each bank. The major advantage of using the HHI and the entropy measures is that each bank is separately included in order to avoid arbitrary cut-offs and insensitivity to the share distribution.

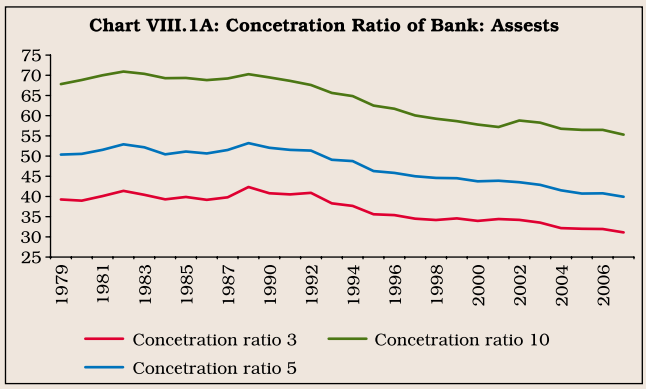
The entropy index assigns weights to the shares of a bank's activity by a log term of the inverse of the respective shares. This index gives less weight to larger activities than the HHI. These two measures are inverse of each other. Apart from these, there are several other alternative measures of concentration examining the evenness or unevenness of the size distribution of entities in a particular sector. These include Kwoka index, Horvarth Index and Rosenbluth Index, among others.

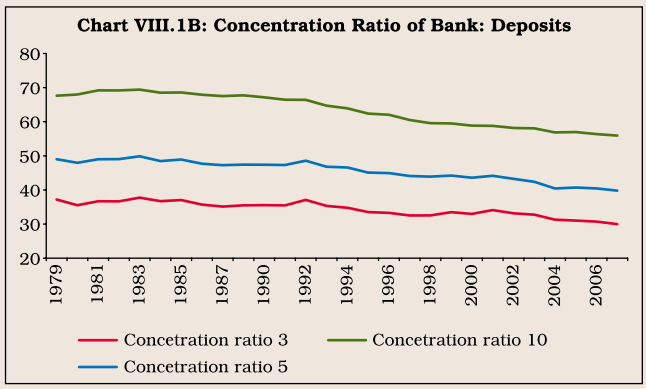
References:

Bikker, Jacob A. 2004. "Competition and Efficiency in a Unified European Banking Market." Edward Elgar Publishing.

Shull, Bernard and Hanweck, Gerald A. 2001. "Bank Mergers in a Deregulated Environment: Promise and Peril." Quorum Books, USA.

Chart VIII.1: Concentration Ratio of Commercial Banks in India





five-bank concentration ratio during 1978-79 and 1990-91, while it declined substantially from 51.4 per cent in 1991-92 to 44.5 per cent in 1998-99 and further to 39.9 per cent in 2006-07. A similar trend was discernible in the concentration of bank deposits (Chart VIII.1).

8.50 This was perhaps for the reason that bank mergers took place mostly among the small banks having little impact on market structure indicators. Besides, several new private and foreign banks were also set up. However, it is significant to note that the concentration declined even after 1999-2000 when the number of operating banks declined.

8.51 A cross-country analysis in terms of concentration ratios suggests that in several countries, concentration declined between 1991 and 2006, while in some advanced countries (US, Japan, Germany, Spain and France), it increased somewhat. The market structure of the Indian banking sector is less skewed when compared with most of the advanced and other emerging market economies (Table 8.7). The degree of concentration in the Indian banking sector was far lower than that in China, France, Spain, the UK, Singapore and South Africa. In fact, the degree of concentration in the Indian banking system, based on concentration ratio in 2006, was one among the lowest (after Russian Federation and the US).

8.52 The evidence of growing competitive pressures was also well supported by the declining trend of HHI. The HHI for total assets declined from 1008.2 per cent in 1991-92 to 540.7 per cent during 2006-07. The entropy index of concentration also corroborated the finding based on HHI (Chart VIII.2). Similar trend was discernable from the market structure indicators based on the size of bank deposits, in which concentration was relatively lower than that of assets.

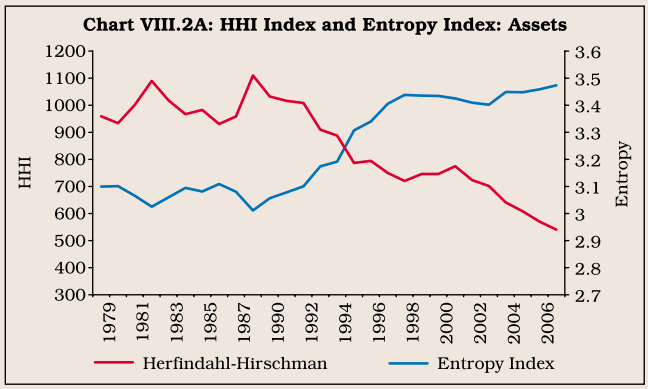
Table 8.7: Trend in Banking Concentration Ratio Across Countries*

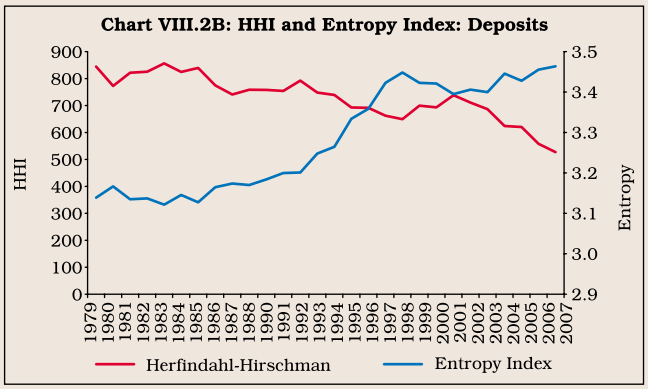
Country	1991	1998	2006
1	2	3	4
Advanced Economies			
Singapore	0.86	0.81	0.99
Germany	0.55	0.63	0.72
Spain	0.71	0.74	0.75
France	0.60	0.48	0.68
Australia	0.89	0.62	0.64
Canada	0.71	0.55	0.60
United Kingdom	0.56	0.70	0.57
Netherlands	0.55	0.77	0.54
Korea, Rep.	0.58	0.38	0.51
Japan	0.32	0.33	0.41
Italy	0.69	0.48	0.40
United States	0.20	0.22	0.33
Emerging Market Economies			
South Africa	0.99	0.94	0.99
Israel	0.85	0.74	0.81
China	0.91	0.83	0.70
Turkey	0.83	0.53	0.70
Indonesia	0.72	0.40	0.63
Philippines	0.83	0.65	0.60
Brazil	0.94	0.40	0.59
Malaysia	0.42	0.40	0.53
Thailand	0.56	0.51	0.51
Argentina	0.76	0.32	0.37
India	0.46	0.35	0.35
Russian Federation	0.99	0.75	0.20

* : Based on assets of three largest banks.

Source : T. Beck, A. Demirguc-Kunt and R.E.Levine, Financial Research, WPS2146, Financial Structure dataset updated in November 2007, World Bank.

Chart VIII.2: HHI and Entropy Index Measures of Concentration





8.53 A comparison with other countries shows that the concentration ratio measured in terms of HHI declined in India between 1998 and 2004, while it increased in all the select advanced and emerging market economies studied. In 2004, concentration was lowest in the US, followed by Germany and the UK. The concentration ratio in India, based on HHI measure was also lower than the select sample of emerging market economies, reflecting a greater degree of banking competition in India. The findings based on HHI are largely consistent with the concentration ratio as set out in Table 8.7 Although the concentration ratio and the HHI are most commonly used measure of concentration, the findings based on them can be somewhat different as concentration merely covers top K number of banks while the HHI, being more informative, covers the whole size distribution of the banking sector. Concentration in the Indian banking sector based on HHI was higher than that in the US, Germany and the UK (the least concentrated countries) perhaps on account of a large number of banking institutions operating in these countries, but HHI was lower than all other countries in the sample (Table 8.8).

8.54 While the various measures of concentration ratios provide the market structure and influences the way the banks operate, they do not fully indicate the actual conduct, and, therefore, the performance of the market. In other words, a highly concentrated banking sector does not necessarily imply lack of competition though it creates the potential for collusion among large banks. Similarly, a less concentrated market does not necessarily imply a greater degree of competition though its potential for the same is higher. Efficiency is also not necessarily enhanced by competition, as it can so happen that collusive behavior of large banks in a highly concentrated market results in superior market performance (Bikker and Haaf, 2002). In the literature, one common measure for the conduct (competition) of the banking industry is the H-statistic formulated by Panzar and Rosse (1987) to distinguish between oligopolistic, competitive and monopolistic markets. Based on H-Statistic, the Indian banking industry could be characterised as a monopolistically competitive market as is the case with most other advanced and EMEs. The level of competition appeared to have declined somewhat in the initial years of reforms, but improved thereafter. It was also found that the level of competition in the Indian banking industry was influenced by the concentration of assets with the largest three to five banks. In other words, greater is the degree of concentration of banking assets in a few large banks, the lower is the degree of competition (Box VIII. 6).

Table 8.8: Herfindahl-Hirschman Index*

Country	1998	2004
1	2	3
Advanced Economies		
US	117	157
Germany	245	283
UK	339	493
Italy	489	542
France	399	682
Spain	854	1188
Emerging Market Economies		
India	**720**	**541#**
Malaysia	1317	1334
Chile	974	1462$
Mexico	1542+	1529&
South Africa	1310++	1840#
Brazil	2164+	3352

+ : For 2000; ++ For 2001; $ For 2002; & For 2005 and # For 2006
* : Based on asset size of banks.
Source: IMF and other Country-specific Papers (Except India).

Box VIII.6
Panzar-Rosse Statistics: The Indian Case

An empirical test was developed by John C. Panzar and James N. Rosse (1987) to discriminate between oligopolistic, monopolistically competitive and perfectly competitive markets. Their procedure, which is based on the comparative static properties of reduced-form revenue equations, accomplishes a concise indicator which is called H-statistic. Under certain restrictive assumptions, it can be interpreted as a continuous and increasing measure of the overall level of competition prevailing in a particular market. The methodology suggested by Panzar and Rosse stems from a general equilibrium market model. It is based on the premise that firms employ different pricing strategies in response to changes in factor input prices depending on the competitive behavior of market participants. In other words, competition is measured by the extent to which changes in input prices are reflected in firms' equilibrium. The H-statistic provides a single number reflecting the overall level of competition prevailing in the market under consideration. The H-statistic can be used to identify the three major market structures, namely, monopoly/perfect collusion, monopolistic competition and perfect competition/ contestable market. Conclusions about the type of market structure are made based on the size and sign of the H-statistic.

Panzar and Rosse argued that market power can be measured by the extent to which changes in factor prices are reflected in revenues. With perfect competition, an increase in factor prices (say, deposit interest rates) induces no change in output but a proportional change in output prices *(i.e.*, under a perfectly elastic demand assumption). Instead, with monopolistic competition, or with potential entry leading to contestable markets, revenues would increase less than proportionally, as the demand for banking products facing individual banks is less than perfectly elastic. A number of studies in recent years have extended the P-R methodology to banking sector. Based on a reduced-form equation of revenue at the individual bank level, market power is inferred from the H-statistic, which measures the extent to which changes in factor prices are reflected in banks' revenue. If the market is perfectly competitive, an increase in factor prices would raise revenues equi-proportionally and the H-statistic should assume a value equal to 1. On the other hand, in the "intermediate" case of monopolistic competition, the H-statistic assumes a value between 0 and 1, with an increase in input prices leading to a less than proportional increase in revenues, as the demand for bank products facing individual banks is inelastic. A negative H arises when the market structure is a monopoly or a perfect colluding oligopoly (Rozas, 2007). Contestable markets would also generate an Ira H-statistic equal to unity.

Since P-R is a static approach, a critical feature of the empirical implementation is that the test must be undertaken on observations that are in long-run equilibrium. In previous studies, testing for long-run equilibrium involved the computation of the H-statistic in a reduced-form equation of profitability, using a measure such as return on equity/assets (ROE or ROA) in place of revenues as dependent variable. The resulting H was supposed to be significantly equal to zero in equilibrium, and significantly negative in case of disequilibrium. Overall, the P-R model is regarded as a valuable tool for assessing market conditions.

Most of the previous empirical estimations of P-R model were done for developed countries and recently, several studies employed this methodology to quantitatively assess the degree of competition and market structure of banking industry in developing and transition countries. In general, all of these studies find that banking market is best described as monopolistic competition. Using annual data on scheduled commercial banks for the period 1996-2004, Prasad and Ghosh (2005) found that the Indian banking system operates under competitive conditions and earns revenues as if under monopolistic competition.

In an attempt to compute H-Statistic in the context of Indian banking system, the following reduced form of equation for bank revenue function was estimated:

$$Ln(TREV) = \alpha 0 + \alpha 1\ Ln\ PL + \alpha 2\ LnPK + \alpha 3\ Ln\ PF + \alpha 4\ Ln\ EQ + \alpha 5\ Ln\ Size + \alpha 6\ Ln\ LO$$

Where:

TREV is the ratio of total revenue to total assets, PL is ratio of personnel expenses to employees as percentage of total assets, PKs ratio of other expenses to total assets used as proxy for unit price of capital, PFs ratio of annual interest expenses to total assets. A number of bank-specific factors were also included as control variables to account for size, risk, and capacity differences. These were size measured in terms of total assets, capital to assets ratio (EQ) to control for difference in capital structure, and loan to total assets ratio (LO) as a proxy for degree of intermediation. Under the P-R framework, the H-statistic is equal to the sum of the elasticities of the revenue with respect to the three input prices, *i.e.*, $H = \alpha 1 + \alpha 2 + \alpha 3$. The testable hypothesis for monopolistic competition is $0 < H < 1$, while $H \leq 0$ is monopoly. In a symmetric monopolistic competitive market, $0<H<1$. It is worth emphasizing that not only is the sign of H important, but its magnitude is equally important (Panzar and Rosse, 1987).

The H-statistics was estimated for the period 1990 to 2007 using 5-years rolling regressions. The unit cost of funds (PF) had a positive sign and was statistically significant at the 1 per cent level. Also, PL turned out to be significant at the conventional levels of significance. Confirming the findings of Prasad and Ghosh (2005), the results indicated

that the price of funds provided the highest contribution to the explanation of interest revenues (and therefore to the H statistic), followed by the price of labor. The H-statistic ranged between 0.8 to 0.45 with the value showing an initial decline and a rise thereafter (Chart). Bank competition seems to have strengthened particularly during post-2000 period. Since H statistics are found to be significantly different from both 0 and 1, the monopoly and perfect competition hypotheses are rejected and thus support the view that Indian banks earn their revenues under monopolistic competition which is also the case in most of the developed countries and other emerging market economies. A survey of literature, however, shows that banking sectors in China, Hong Kong, Kuwait, UAE and Saudi Arabia operate under near perfect competition conditions (Table A). In the case of China, Yuan (2006) argues that the small banks in China are newer, and are in the stage of studying the managerial experience of international banks, and in addition they are not protected by the State. As a result, the competition among small banks is so high that it is near perfect competition. Similarly, the large Chinese banks operate businesses on an international scale and compete with others in the international market and also operate under much more competitive conditions.

Further, as the conduct of the market is expected to be influenced by the market structure, the relationship between H-statistics and various measures of concentration was estimated for India. As expected from *a priori* theoretical arguments, it was found that all the measures of concentration ratios and index had a negative relationship with H-statistics, indicating that the greater the degree of concentration of banking assets, the lesser is the degree of competition. However, the relationship was statistically significant at the conventional level only with the concentration ratio of the three largest banks. On augmenting the relationships with the share of private sector in total assets, it was found that the negative relationships were statistically significant for all the measures of concentration ratios, except 'CR10' (Table B). In sum, the level of competition in the Indian banking industry was influenced by the concentration of assets with the largest three to five banks.

Chart: H-Statistics Obtained from 5-Years Rolling Regressions: Indian Context

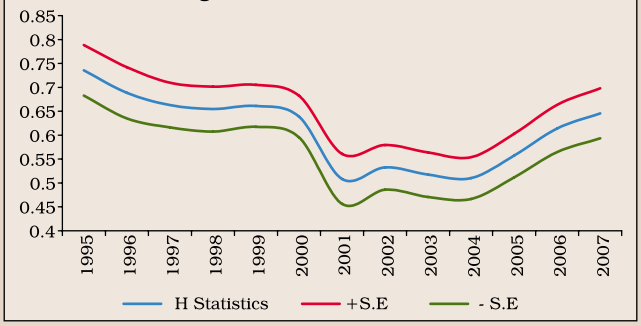


Table A: Cross-country H Statistics

Country	Period	H Statistics	Study
Argentina	1997-99	0.87	Yildrim and Philippatos, 2005
Bahrain	1993-2002	0.70	Muharrami, Matthews and Khabari, 2006
Brazil	1997-99	0.71	Yildrim and Philippatos, 2006
Chile	1997-99	0.62	Yildrim and Philippatos, 2007
China	2000	0.95	Yuan, 2006
Germany	1993-2002	0.43	Gischer and Stiele, 2004
Hong Kong	1992-2002	0.98	Jiang, Wong, Tang and Sze, 2004
India	1996-2004	0.37	Prasad and Ghosh, 2005
Korea	2005	0.47	Lee and Lee, 2005
Kuwait	1993-2002	1.02	Muharrami, Matthews and Khabari, 2006
Malaysia	2002-05	0.73	Majid and Sufian, 2006
Mexico	1993-2005	0.50	Maudos and Solís, 2007
Qatar	1993-2002	1.02	Muharrami, Matthews and Khabari, 2006
Saudi Arabia	1993-2002	0.63	Muharrami, Matthews and Khabari, 2006
Spain	1986-2005	0.57	Rozas, 2007
UAE	1993-2002	1.00	Muharrami, Matthews and Khabari, 2006
UK	1992-2004	0.46	Matthews, Murinde and Zhao, 2007
US	1976-2005	0.61	Yildrim and Mohanty, 2007
US	1996-2005	0.44	Yildrim and Mohanty, 2007

Table B: Relationship Between Competition and Concentration Ratios in Indian Banking Sector
(Dependent Variable H Statistic)

	HHI	CR3	CR5	CR10
Constant	1.08	1.96	1.85	1.90
	(3.0)*	(2.7)*	(2.2)*	(2.1)*
Concentration Index	-7.95	-4.2	-3.0	-2.34
	(-17.4)*	(-2.0)*	(-1.6)	(-1.6)
$\bar{R}^2$	0.16	0.20	0.14	0.14

Figures in parentheses are t-statistics. *: Significant at conventional levels.

References:

Gutiérrez de Rozas, Luis. 2007. "Testing for Competition in the Spanish Banking Industry: The Panzar-Rosse Approach Revisited." *Banco de España Research Paper* No. WP-0726, August.

Panzar, J. and Rosse. J. 1987. "Testing for monopoly equilibrium." *Journal of Industrial Economics*, Vol.35, pp. 443–56.

Prasad, A. and Ghosh. 2005. "Competition in Indian Banking, *IMF Working Paper* No. WP/05/141.

8.55 Some of the studies in the Indian context found that during the post-reform period, the bank mergers led to considerable enhancement of efficiencies for the merging banks. The mergers themselves exhibited considerable potential efficiency gains. The greater part of these gains stemmed from the synchronisation of varied but related product mixes. Gourlay *et al* (2006) found that mergers between distressed and strong banks in India tended to exhibit persistence in efficiency across time. In other words, economic policy reforms have succeeded in weeding out the weaker and inefficient banks by merging them with healthier banks. However, incumbent strong banks did not appear to adopt the M&As route to raise their efficiencies.

8.56 One of the motives of M&As is to enhance efficiency by reducing cost or increasing revenues or combination of both, as alluded to earlier. Efficiency gains stemming from M&As may be analysed by comparing the performance ratios in terms of return on assets and operating cost between the pre-merger and post-merger periods. The profit efficiency effect of M&As is the most inclusive. It embodies the scale, scope, product mix and X-efficiency (effectiveness with which a given set of inputs are used to produce outputs) effects for both costs and revenues and also includes at least some of the diversification effects. For the bank mergers in India, efficiency gains both in terms of increase in return on assets and reduction in cost were found only in the case of public sector banks. Similar gains were not observed in respect of merger of private sector entities (Box VIII.7).

8.57 As a result of banking sector reforms, there has been a general improvement in the performance

Box VIII.7
Efficiency Gains from M&As: A Case Study of Select Banks

During the post-reform period, there have been 21 mergers and amalgamations in the Indian banking sector. Of these, seven merger cases involving relatively larger banks were selected. In order to test the change in the profitability/ efficiency indicators in sample banks during the post-merger period, Wald test was used. The Wald test is a statistical test, typically used to determine whether an effect exists or not. Under this test, the maximum likelihood estimate θ of the parameter(s) of interest θ is compared with the proposed value θ_0 (zero in the present context), with the assumption that the difference between θ and θ_0 will be approximately normal. Typically the square of the difference is compared to a chi-squared distribution. Two variables are chosen, *viz*., return on assets and operating cost to assets ratio. Given the fact, mergers/amalgamations are envisaged to lead to synergy effects, return on assets is expected to increase while operating cost to assets ratio is expected to decrease during the post-merger period. Statistical significance of increase/decrease in the parameter can be inferred from the corresponding p-value of X^2 statistic.

As per *a priori* expectations, it was found that change in the average return on assets during the post-merger period over pre-merger period was positive and statistically significant in the case of public sector banks, while positive but insignificant in the case of two private sector banks. In the case of one private sector bank, the mean return on assets declined after the merger.

Efficiency gains in terms of decline in operating expenditure measured by mean of operating cost-assets ratio during post-merger period were also found to be significant in the case of three out of fours select public sector banks. On the other hand, for the sample of private sector banks, it was found that the mean of operating cost-assets ratio was higher during post-merger, though not statistically significant, reflecting that these banks could not realize efficiency gains in terms of operating expenditure emanating from merger and acquisitions (Table). Thus, public sector banks have been able to derive greater efficiency gains during the post-merger period than the private sector banks.

Table: Testing of Efficiency Indicators in Merged Banks in India

Panel A: Change in Return on Assets (RoA) during Pre and Post Merger: Wald Test*

Bank	Δ RoA	X^2 Statistics	S/NS
Punjab National Bank	0.57	25.34	S
Union Bank of India	0.49	15.68	S
Oriental Bank of Commerce	0.7	13.62	S
Bank of Baroda	0.53	12.5	S
HDFC Bank	-0.4	1.33	NS
ICICI Bank	0.04	0.02	NS
Centurion Bank of Punjab	0.52	0.26	NS

Panel B: Change in Operational Cost-Assets Ratio (OP) during Pre and Post Merger: Wald Test

Bank	Δ RoA	X^2 Statistics	S/NS
Punjab National Bank	0.46	15.69	S
Union Bank of India	-0.84	54.61	S
Oriental Bank of Commerce	-0.83	12.97	S
Bank of Baroda	-0.21	6.71	S
HDFC Bank	0.34	1.0	NS
ICICI Bank	0.21	0.45	NS
Centurion Bank of Punjab	1.44	2.7	NS

Note : S/NS: Significant/ Not Significant.

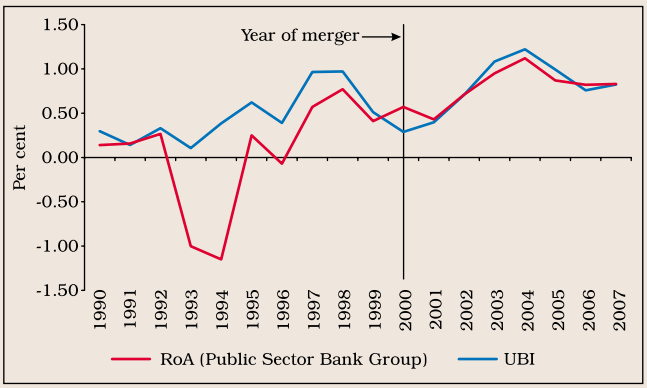
of the overall banking sector in India during the post-reform period. Hence, it is possible that the differences in the efficiency between pre and post-merger of the select transferee banks as referred to above were the result of overall improvement in the banking sector and not because of mergers. In order to check for efficiency gain/loss from mergers, the return on asset ratios of the select transferee banks in the post-merger period were compared with the return on assets of their respective bank groups. It was observed that in the case of most public sector banks with which other banks were merged, the return on assets ratios were above their group average both during the pre and post-merger periods (Chart VIII.3). It may thus be interpreted that gains in efficiency were more due to the general improvement in the industry than through mergers.

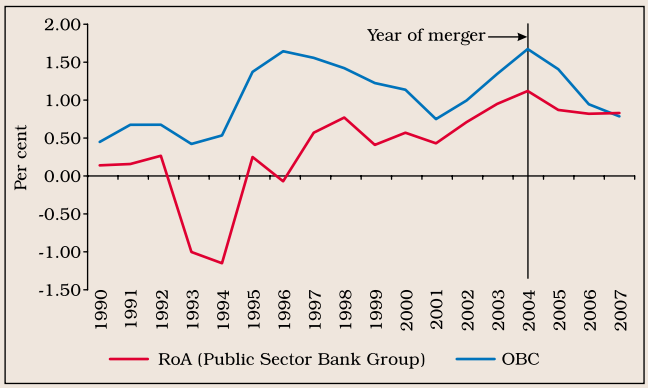
8.58 To sum up, M&A activity accelerated in the post-reform period, especially after 1999. However, alongside mergers/amalgamation, new private and foreign banks also came into existence. On the whole, the number of banks increased up to 1998-99 but declined thereafter every year. Since mergers/amalgamations were mostly among smaller banks or financially weak banks were taken over by stronger banks, the level of competition in the Indian banking system improved even as the total number of banks declined after 1998-99. This improvement was indicated in various measures of concentration ratios and competition indicators. Concentration in the Indian banking sector was found to be significantly lower than many EMEs. Like several other advanced countries and EMEs, the Indian banking industry operated under monopolistic competitive conditions. However, the impact of mergers on efficiency varied. Efficiency measured both by return on assets and operating cost to assets of public sector banks, with which private entities were merged, improved. Similar efficiency gains, however, were not observed in respect of private sector entities.

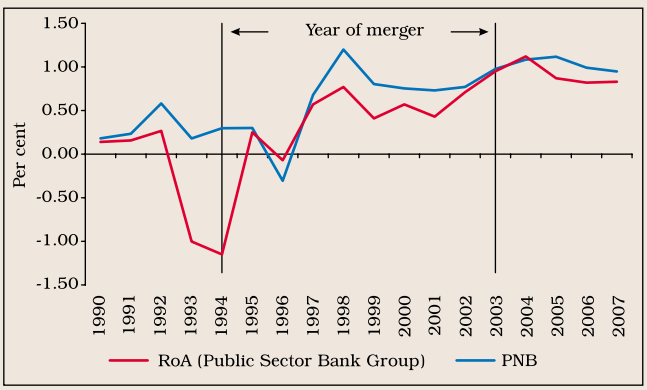
VI. ISSUES IN CONSOLIDATION AND COMPETITION IN INDIA

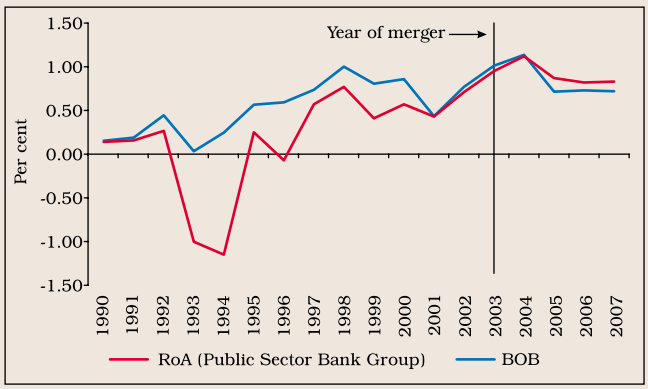
8.59 The Indian banking sector is passing through a critical phase. Various measures initiated to make the banking sector competitive have yielded the desired results. However, at this juncture, the Indian banking sector is also faced with several challenges

Chart VIII.3: RoA of Select Merged Banks *vis-à-vis* Respective Bank Group









and issues. These, *inter alia*, relate to (i) what should be the future course of the consolidation process that is underway? (ii) whether public sector banks need to be privatised in the changed economic environment? (iii) is the banking sector ready to embrace greater competition from foreign banks? and (iv) should industrial houses be allowed to enter the banking sector? These issues are of substantive nature with serious ramifications for the future of the banking sector. These are examined in detail in this section, while in the next section, specific suggestions as a way forward, have been made to ensure the future growth of the banking sector along sound lines.

Consolidation and Competition

8.60 The issue as to what should be the nature and extent of consolidation in the Indian context has been widely debated. The need for consolidation in the Indian banking system was highlighted by the Committee on Financial System – CFS (Chairman: Shri M. Narasimham) in 1991. The CFS argued that in view of the emerging trends in the global financial sector, mergers between banks and between banks and non-banks would make economic and commercial sense and the whole should be greater than the sum of parts and have a "force multiplier effect". The CFS recommended a possible structure towards which the banking system could evolve over time. Under the recommended structure, three to four large banks (including the State Bank of India) could have an international presence, while eight to ten national banks with a network of branches throughout the country could engage in general or universal banking. It also recommended for local banks whose operations would be confined to specific regions; and rural banks (including RRBs) whose operations would be confined to rural areas and whose business would predominantly be financing of agriculture and allied activities.

8.61 The Committee on Banking Sector Reforms – CBSR (Chairman: Shri M. Narasimham) in 1998 reiterated the recommendations of the CFS on the creation of few mega banks for an effective instrument of domestic and international competition. Taking cognisance of the global trends in banking, which was marked by twin phenomenon of consolidation and convergence, the CBSR stressed the importance of mergers and questioned the need for 27 public sector banks. It underlined the need for banks to be of a size which could offer greater competitive thrust to banking operations. The Committee, however, stressed that consolidation process in public sector banks needed to be based on synergies, and locational and business specific complementarities, which would help them in adapting to the emerging situations. An important factor highlighted by the CBSR was that the merger process in Indian public sector banks should emanate from the management of banks with the Government as a common shareholder playing a supportive role. The Working Group on Restructuring of Weak Public Sector Banks (Chairman: Shri M. S. Verma) in its report released in 1999 also emphasised the need for a comprehensive restructuring of the Indian banking system requiring careful considerations of merger or closures and privatisation of Indian banks.

8.62 Highlighting the inadequacy of size of Indian banks to face global competition, the need for consolidation in the Indian banking sector was also emphasised by the Union Finance Minister in his Budget speech for 2005-06. It is also argued that the prevalence and success of consolidation in the banking sector across the world and compulsions imposed by globalisation would make consolidation more visible in the Indian financial system in the near future. In a Report on "Banking Industry: Vision 2010" of the Indian Banks' Association released in 2003, it was visualised that mergers between public sector banks, or public sector banks and private sector banks, could be the next logical thing to happen as market players tend to consolidate their position to remain in the competitive race. However, the Report also pointed that merger or large size is just a facilitator but no guarantee for improved profitability on a sustained basis. The thrust should be on improving risk management capabilities, corporate governance and strategic business planning. In the short run, options like outsourcing and strategic alliances could be attempted in a meaningful manner.

8.63 In the context of banking consolidation process, the Report of the Committee on Fuller Capital Account Convertibility (FCAC) observed that some of the smaller banks, which specialise in certain areas of business or regions may have a comparative advantage over larger banks by virtue of their core competence. As such, emphasis on consolidation to mean larger banks, merely by mergers, may not lead to strengthening of the banking system. In other words, there is no immutable relationship between size and operational efficiency. Another issue that was emphasised by the Committee on FCAC was with regard to the legislative framework. About three-fourth of the banking system is covered by the public sector. This, by itself, should not be a constraint but the

legislative framework is a major handicap and there are embedded disabilities for consolidation and governance. First, within the public sector, the legislative framework for the State Bank group is different from the nationalised banks. The major constraint is majority ownership by the Government in public sector banks. The capital requirements of banks will go up in the context of Basel II, since they have to maintain capital for certain risks which do not attract a capital requirement under Basel I. Since banks would be exposed to greater level of risks than at present, the capital requirement would go up even further. The Government, according to the Committee, was unable or unwilling to provide large additional capital injection into public sector banks; at the same time, the Government did not agree to a reduction in the Government majority holding in public sector banks.

8.64 Going forward, the Indian banking system will be exposed to greater competition. The Committee, therefore, cautioned that regulatory forbearance in the case of public sector banks would greatly weaken the system and as such should be avoided. In this context, the issue of majority Government ownership of public sector banks would come to the fore. All public sector banks should not be on a 'one-size-fits-all' approach. The Committee recommended that the Reserve Bank should formulate its prudential policies in a manner which favour consolidation in the banking sector. The Committee also recommended that the Reserve Bank should facilitate emergence of strong and professionally managed banks and not only large banks. Different statutes for different segments of the banking sector in India have embedded provisions which hinder good governance and consolidation. Thus, the Committee emphasised that all commercial banks should be subject to a single banking legislation and separate legislative frameworks for groups of public sector banks should be abrogated so as to promote easier market driven consolidation within the banking sector.

8.65 Furthermore, it has been argued that as global integration of the Indian financial system and the task of banking system expands, the demand of the corporate sector for banking services is expected to change not only in size but also in composition and quality (Rangarajan, 2007). This would require a focus on the organisational effectiveness of banks.

8.66 The logic for consolidation in India is based on two explicit or implicit assumptions. One, there are too many banks in India. Two, if the banking sector has to be assessed in the international context, size is the most important factor. It is argued that the size of a bank enhances its risk-bearing capacity, for which consolidation through orderly M&As may be necessary. With more competition, as net interest margins get thinner, the need for more sophisticated products and low-cost technology may arise. Banks with sub-optimal size, it is argued, may not be able to invest in technology and serve their customers.

8.67 The number of deposit-taking institutions (DTIs) per million persons in India is significantly higher than in many other countries, though the size of the banking sector in relation to the size of the economy was comparable to these countries. For instance, there were 110 DTIs per million population in India as against 79 in the US, 65 in Malaysia, 9 in Brazil, 2 in Chile and more than one in South Africa, although the size of the banking sector in relation to the size of the economy in all these countries was broadly comparable with that of India (Table 8.9).

8.68 As regards size, it is difficult to say as to what is the optimal size of a bank, which is country-specific and depends on several factors such as the composition of liabilities, the credit-deposit (CD) ratio, the quality of assets, and the ratio of fee to interest income. Small banks also have a place in the system

Table 8.9: Size of the Banking System in Relation to the Size of Economy

Country	Number of DTIs per million People 1999	Bank Assets to GDP Ratio (2006)
1	2	3
India*	**110**	**0.58**
Indonesia	48	0.33
Korea	80	1.02
Malaysia	65	1.17
Thailand	80	0.99
Argentina	3	0.26
Brazil	9	0.72
Chile	2	0.63
Mexico	0.4	0.30
South Africa	1.4	0.77
Japan	5	1.55
UK	9	1.64
US	79	0.63

* : For India, DTIs include only scheduled commercial banks, regional rural banks, urban co-operative banks, rural co-operative institutions and deposit taking non-bank financial companies.

DTIs : Deposit-taking institutions include commercial, savings and various types of mutual and cooperative banks, and similar intermediaries such as building societies, thrifts, savings and loan associations, credit unions, post-banks and finance companies, but excluding insurance companies, pension funds, unit trusts and mutual funds.

Source : BIS (2001) and World Bank (2008).

as they cater to the requirements of some specific sectors. It may be noted that small and medium sized banks have been able to survive even in advanced countries along with large banks. Having said that, it is felt that India has many commercial banks that are very small. That is, of the 53 domestic banks (both public and private), the size of the 16 banks at end-March 2007 individually was less than 0.5 per cent of the size of the banking sector. Even in the public sector (nationalised banks and SBI group), the size of the five banks individually was less than one per cent of the size of the banking sector and of eleven other banks was between one and two per cent. Analysis in the subsequent chapter also suggests that, in general, large institutions are more efficient than the smaller ones. It is, therefore, felt that the system could be served better, if small and not so efficient banks consolidate with larger and more efficient banks. Thus far, the Indian banking sector has undergone a consolidation process involving relatively smaller banks. However, M&As to weed out the less efficient small banks or to remove excess capacity in the system has to be driven by the market, depending upon their synergies. Any meaningful consolidation among public sector banks must be driven by commercial motivation by individual banks with the Government and the regulator at best facilitating the process. Second, the process of consolidation does not mean that small or medium sized banks will have no future. Small but efficient banks should be able to survive. In fact, small banks in the Indian context should play a more active role as natural lenders to small businesses. It is small and inefficient banks that may find it difficult to cope in the changed environment.

8.69 There are three aspects to consolidation, *viz*., clear cut legal and regulatory regime governing consolidation, enabling policy framework, especially where several banks are owned by Government, and market conditions that facilitate such consolidation, recognising that all M&As may not necessarily be in the interests of either the parties concerned or the system as a whole (Reddy, 2004). Also for mergers to be successful, it is necessary that there is integration of manpower and culture of the two merged entities. It is only when integration in these aspects is achieved successfully that the merged entities would be able to capitalise on the synergies. Hence, while the consolidation moves would be triggered by market forces, it will be necessary to ensure that mergers are successful in all respects, including manpower and cultural aspects, which are unique in the Indian context (Udeshi, 2004).

Issues Relating to State-owned Banks

8.70 Banking is one of the key sectors that come under the purview of the Government. The ownership issue of banks becomes pertinent as commercial banking is arguably the most basic industry in modern economy having central role in the allocation of capital and monitoring corporate borrowers. Policymakers in many countries during the post-World War II period were generally much more inclined toward state ownership as a response to the market failures and political pressures. This resulted in directed credit to favoured groups, guaranteeing loans by private banks, and providing many financial services themselves through state-owned banks and development finance institutions (DFIs). To protect domestic banks, the Governments also restricted competition from foreign banks and other financial institutions. Even with a large number of privatisations in many countries, state-owned banks still play a major role in their financial systems. The state ownership and other interventions in the financial sector were often cited as ways of ensuring that small and rural borrowers had access to funding. However, the overall record of these government interventions was discouraging (World Bank, 2005).

8.71 Contrasting views exist about the impact of Government ownership of banks. One view holds that Governments help overcome capital market failures, exploit externalities, and invest in strategically important projects (Gerschenkron, 1962). According to this view, Governments have adequate information and incentives to promote socially desirable investments. In contrast, it has been argued that government ownership politicises resource allocation, softens budget constraints, and hinders economic efficiency. Thus, Government ownership facilitates the financing of politically attractive projects, not economically efficient ones. Empirical evidence suggests that countries with higher initial levels of Government ownership tend to have subsequently less financial development and slower economic growth (La Porta *et al*, 2002). Greater Government ownership is generally associated with less efficient and less well-developed financial systems (Barth *et al*, 2001a).

8.72 In recent years, some deficiencies of public ownership have become more explicitly visible. A vast amount of literature on benefits and costs associated with privatisation and foreign ownership of banks in EMEs suggests that inefficient state-owned banks may provide opportunities for inefficient private sector banks to thrive in less than competitive markets, or

alternatively permit efficient banks to earn extraordinary profits. Summarising the cross-country experience of the role of state-owned banks in the financial sector, Andrews (2005) argues that state-owned banks generally have a cost of funds advantage over privately owned banks due to an implicit or explicit Government guarantee. Furthermore, he asserts that these funds have generally been used to finance inefficient state-owned enterprises leading to crowding out of private intermediation. In general, the evidence suggests that productive, allocative and dynamic efficiencies tend to be lower in the banking systems dominated by state-owned banks, while privatisation and an increased role of foreign banks helps in improving some aspects of efficiency at least (Mihaljek, 2006). Analysis of the banking sectors, particularly those in Western Europe, confirms that the privatisation of state-run banks has resulted in positive effect on banks' profitability and efficiency. Since all the European banking systems have witnessed an increased market concentration in recent years, Lahusen (2004) argued that this should generally improve banks' performance since high concentration, as a rule, allows large banks to operate with efficiently sized units and generate economies of scale more easily. He also highlighted that by giving the greatest possible freedom in the selection of suitable partners for cooperation, systematic privatisation has been key to efficient consolidation.

8.73 The increased number of bank privatisations around the world since the mid-1970s provides evidence that state ownership of banks has become less popular with many policymakers. This arose for several reasons: (i) to promote economic efficiency and reduce government interference in the economy; (ii) to promote wider share ownership; (iii) to introduce competition; (iv) to introduce market discipline among the state-owned enterprises; and (v) to raise revenues for the state. In some countries, banks were privatised after a systemic crisis. Given the fiscal cost involved in recapitalisation of state-owned banks and output loss associated with banking crisis, Governments in many post-crisis countries tended to avoid these adverse implications by resorting to privatisation. Furthermore, the decreasing role of state-owned banks also partly reflects the declining role of non-financial public enterprises in most countries to which the wherewithal was largely provided by state-owned banks (Box VIII. 8).

8.74 In developing countries, the premise for Government ownership of the financial sector was to control the "commanding heights" of the economy for ensuring that (i) business enterprises balance social and economic objectives rather than focusing merely on profit maximisation; (ii) market failures do not impede the growth process; and (iii) informational asymmetries between principal and agent are addressed. Given these issues, the state-ownership was perceived as an economically efficient way of addressing them. Literature in the context of countries with a long history of state ownership of commercial banks, however, suggests that concerns regarding safety, efficiency and transparency are often found to be infinitely more complex and intractable than in more *laissez-faire* systems.

8.75 In the Indian case, though the banking system made considerable progress both functionally and in terms of geographical coverage during the post-Independence decades of the 1950s and the 1960s, there were still many unbanked rural and semi-urban areas. Moreover, large industries and big and established business houses tended to enjoy a major portion of the credit facilities, to the detriment of the priority sectors such as agriculture, small-scale industries and exports as detailed in Chapter III. These concerns led to the nationalisation of banks in 1969. The objective of bank nationalisation of 14 banks was to serve better the needs of development of the economy in conformity with national priorities and objectives. Bank nationalisation served to intensify the social objective of ensuring that financial intermediaries fully met the credit demands for productive purposes. Two significant aspects of nationalisation were (i) rapid branch expansion; and (ii) channelling of credit according to Plan priorities (Mohan, 2004a). In a somewhat repeat of the same experience, eleven years after nationalisation, the Government announced the nationalisation of six more scheduled commercial banks above the cut-off size. The second round of nationalisation gave an impression that if a private sector bank grew to the cut-off size, it would be under the threat of nationalisation (Reddy, 2002). Thus, public sector banks in India came into existence by way of nationalisation of private sector banks over the years, the trend which was then prevalent in other countries also.

8.76 With the onset of economic reforms since 1991, the debate on privatisation of public sector banks (PSBs) in India also gained prominence. This issue, however, did not merit much consideration in the CFS. In the view of the CFS, integrity and autonomy in the functioning of financial institutions was a more relevant issue than ownership, and the

Box VIII.8
Privatisation of Commercial Banks: Cross-Country Experiences

Although the wave of privatisation of state-owned banks began during the 1970s, the changes in the ownership structure of banks have been more significant in the recent years. In Chile, as part of a broad reform program initiated in 1973, 19 of 20 state-owned banks were sold to private investors in 1975. The bulk of these banks were acquired by financial conglomerates. In Mexico, government sold controlling stakes in 18 banks during June 1991 to July 1992. In 1997, Hungary was the first transition economy to practically complete the process of privatising state banks. In general, a notable decline has been observed in the share of state-owned banks in total bank credit across the countries. The other major privatisations have taken place in Indonesia, Korea, Thailand and the Central Europe. In Central Europe and Latin America, state-owned banks now account for merely 10 per cent and 11 per cent of total bank credit, respectively (45 per cent and 15 per cent, respectively in 1994), while there has been a sharp increase in the share of foreign owned banks. In Korea, privatisation was done in four banks which were nationalised during 1997-98 crisis. In Thailand, the authorities have reduced their shareholding in three out of five major domestic banks taken over by the Financial Institutions Development Fund during the 1997 crisis. Likewise, in Indonesia, during 2000-2004, 15 banks accounting for 70 per cent of total banking assets were sold in initial public offerings by the bank restructuring agency. Although the share of private domestic banks in total bank credit has increased in emerging market economies including China, India, Russia and Indonesia, state-owned banks still account for a substantial share in total bank credit. In sum, banking systems in emerging market economies have generally continued to evolve towards more private and foreign-owned structures.

As far as privatisation methods during the 1990s are concerned, in most of the East Asian economies they were carried out by way of disposing of the impaired assets of crises-ridden nationalised banks through asset management companies. In contrast, in Central Europe and Latin American economies, banks were privatised by selling the stakes to strategic foreign investors. In more recent years, privatisation of banks has been attempted through initial and subsequent public offers, sale of shares through tender or auction and in a few cases through private placements to strategic investors (Mihaljek, 2006). However, the Brazilian experience of bank privatisation is somewhat different, as some state-owned banks were straight privatised by their controllers whereas some others had their control first transferred from the States to the federal Government before they were privatised. The change in methods of privatisation of banks in recent years, in fact, reflects the systemic transformation of economies towards a market based principles in the late 1990s.

Despite the fact that privatisation has been increasingly undertaken in most of the emerging market economies, it has been observed that change in ownership alone may not suffice to address many of the factors contributing to poor performance by state-owned banks. According to Andrews (2005), institutional factors conducive to sound banking such as sustainable macroeconomic policies, legal infrastructure, particularly with respect to contract law and measures for pledging collateral and enforcing security agreements, and appropriate and widely-used accounting standards are the essential pre-requisites for a successful outcome of privatised banks. Based on the privatisation experience in Croatia, the Czech Republic, Mozambique and Uganda, an appropriate prudential review prior to privatisation of banks was also generally emphasised upon, as it had important implications for the post-privatisation performance of banks. Furthermore, evidence from a number of case studies suggests that better financial performance is achieved when privatisation involves a strong financial institution as a significant shareholder. Apart from these, privatisation of banks is also perceived to be a political process, as it has implications for regional as well sectoral allocation of resources/services and also preserving employment. Andrew (2005) noted that even when privatisation of banks is viewed as a good policy option, its implementation may be problematic. In developing countries as compared to developed ones, political factors significantly affect state-owned banks' privatisation process (Boehmer *et al,* 2005). Key issues which need to be managed include the cost associated with continued state-owned banking system, sequencing of other reforms, and achieving political consensus.

References:

Andrews, A. Michael. 2005. "State-Owned Banks, Stability, Privatisation, and Growth: Practical Policy Decisions in a World Without Empirical Proof. " *IMF Working Paper* No. WP/05/10.

Boehmer, E.Nash, R.C. and Netter, J.M. 2005. "Bank Privatisation in Developing and Developed Countries: Cross-sectional Evidence on the Impact of Economic and Political Factors." *Journal of Banking and Finance*, Vol.29.

Mihaljek, Dubravko. 2006. "Privatisation, Consolidation and the Increased Role of Foreign Banks." *BIS Papers* No. 28, August.

issues of efficiency and profitability were neutral to ownership. Holding a similar view, Reddy (1992) opined that "the privatisation trend in the financial sector has to be viewed basically as a part of macroeconomic reforms, and ensuring appropriate regulatory framework to enhance competition and

making ownership a secondary issue". Further, given the fragile nature of the financial market as compared to other manufacturing industries, it was emphasised that the focus for the banking sector should be more on regulation than ownership. In an efficient market, competition leads to exit of inefficient firms. However, because of fragile nature of banking segment of the financial sector, exit of banks, it was felt, needed to be considered with a lot more caution. The stability in the financial system depends on confidence of the service takers. Owing to 'herd behavior' leading to information asymmetries, this confidence could be easily lost resulting in bank runs, which can even be on healthy units and spread to the entire financial system. In this regard, Reddy (1992) noted that "the cost of exit of a firm in financial sector could have serious repercussion on the viability of the financial sector as a whole, compared to the cost of exit of a firm in the manufacturing sector. This, perhaps, is the main reason why ownership is not as focused and regulation more readily accepted in respect of financial sector". While recognising the importance and potential benefits of competition, World Development Report 2001 highlighted that excessive competition may create an unstable banking environment, while insufficient competition may breed inefficiency or reduced credit access for borrowers (World Bank, 2001).

8.77 Along with the progress in economic reforms, Government ownership of banks, however, began to be questioned. Joshi and Little (1996) found a strong empirical case for privatisation of banks, as public ownership was mainly responsible for management inefficiency due to political and administrative interference in the allocation of credit. They, therefore, recommended that "rather than go through a futile process of attempting to secure autonomy within the framework of Government ownership, the Government should prepare a plan to privatise several public sector banks".

8.78 The CBSR, however, approached the issue from a pragmatic assessment of the situation, and instead of privatisation, recommended PSBs accessing capital market to meet the likely gap in capital requirements, and also to bring down the statutory minimum shareholding by the Government/ the Reserve Bank to 33 per cent from 51 per cent. The Working Group on Restructuring of Weak Public Sector Banks (Chairman: Shri M.S. Verma) in the context of three weak banks had noted that privatisation of these three weak public sector banks was an acceptable course as the process alone could reduce the Government's responsibility of capitalising further and enable the Government, in the long run, to recoup the investment made in these Banks. However, the Working group did not recommend privatisation at that point of time considering (i) the prohibitively high cost of restructuring; (ii) lack of the required resources; (iii) inability to access capital markets by these banks; and (iv) the given staffing pattern and levels of skills and technology.

8.79 It has been argued that most of the problems of PSBs were inextricably associated with Government ownership and control, for which they should be privatised as was done in other sectors of the economy (Acharya, 2001). However, Ram Mohan (2002) in the context of privatisation in general, concluded that "contrary to popular supposition, neither the theory nor the empirical evidence on privatisation provides unqualified support for the belief that privatisation leads to outcomes superior to those under public ownership. The theoretical literature, while pointing to the potential benefits of private ownership, also underlines the many conditions required for such benefits to materialise".

8.80 Many studies in the Indian context have not found any significant difference between the performance indicators of PSBs *vis-à-vis* private sector banks in the post-reform period. While studying the impact of nature of ownership on bank efficiency, Ram Mohan and Ray (2004) and Mahesh and Rajeev (2006) found that it was difficult to support the proposition that efficiency and productivity were lower in public sector banks relative to their peers in the private sector. Comparing the PSBs and private banks, Sarkar *et al* (1998) also found that there was only a weak ownership effect on the performance. This could be attributable to the fact that there has been a change in the orientation of PSBs from social objectives towards an accent on profitability, particularly, given that some of these banks have been listed on the stock exchange and, thus, a stake of private investors is involved. Another factor that seems to have played a role is that PSBs enjoy a huge first-mover advantage in terms of scale of operations over private sector banks and these advantages perhaps offset any inefficiency that could be ascribed to the Government ownership (Ram Mohan, 2005).

8.81 Privatisation of public sector banks in India has generally been argued along the following lines: (a) recapitalisation of banks is a huge cost to the fisc; (b) State ownership of banks leads to loss of competition and breeds inefficiency; (c) State ownership does not necessarily lower the probability

of banking crisis; and (d) private and foreign ownership of banks stimulates efficiency, innovation and economic growth.

8.82 The general recapitalisation was continuously effected till 1998-99. Since then it took place only during 2001-02, 2002-03 and 2005-06. The cost of recapitalisation as per cent of GDP was, however, much lower than many other countries. While this is so, international experience suggests that private ownership does not necessarily lead to decline in the recapitalisation cost. This is because even under private ownership, Governments would not allow banks failure, and consequently, the fiscal cost for recapitalisation could be significant. In the banking crisis-ridden countries, irrespective of state ownership of banks, the impact on budgets has been as high as 40-55 per cent of GDP (Hononhan and Klingebiel, 2000). The health of the banking system is critical for both macroeconomic and fiscal stability. If the banking system, public or private is unhealthy and weak, the hit is on the fisc since the bailout has to be publicly funded. The contention that merely shifting of the ownership from the public sector to the private sector will immunise the possible impact on the fisc is not correct (Reddy, 2001).

8.83 As far as the efficiency of PSBs in India is concerned, well-designed policy reforms have gradually exposed them to increased competitive environment. These policy reforms by releasing the forces of competition forced the PSBs to optimise the use of resources to attain efficiency. Consequently, there has been significant improvement in the performance of PSBs. As brought out in the following chapter, some public sector banks are as efficient as private sector banks and foreign banks. In fact, the 29 least efficient banks in the Indian banking sector relate to private and foreign bank segments. In terms of soundness and asset quality parameters also, the performance of public sector banks has converged with private sector and foreign banks.

8.84 Thus, public sector banks have responded to the new challenges of competition, as reflected in the increase in the share of these banks in the overall profit of the banking sector. From a position of net loss in the mid-1990s, in recent years, the share of public sector banks in the profit of the commercial banking system has become broadly commensurate with their share in assets, indicating a broad convergence of profitability across various bank groups. This suggests that with operational flexibility, public sector banks have been able to compete effectively with private sector and foreign banks. The 'market discipline' imposed by the listing of most public sector banks has also probably contributed to this improved performance. Public sector bank managements are now probably more attuned to the market consequences of their activities (Mohan, 2006).

8.85 On the banking system stability with public sector ownership, the underlying argument has been that because of the inherent inefficiency due to lower competition associated with public ownership, the risk of crisis is heightened. International experience, however, does not reveal any unambiguous relationship between state ownership and banking crisis. In a sample of 34 countries that faced banking crisis, Barth, *et al* (2000) found that in half of the countries, state owned banks controlled more than 20 per cent of the total banking assets, while in six countries, the share was less than 20 per cent. In as many as nine countries that faced crises, the state-owned banks did not exist (Table 8.10). There are instances where privatisation preceded banking crisis such as in Cameroon, Croatia, Mexico, Korea and Ukraine (Andrews, 2005). Thus, the risk of banking crisis was not associated with the degree of Government ownership of banks. The fact that India has not faced any systemic banking crisis may be attributed to the dominance of the banking sector by public sector banks.

8.86 Apart from the fact that the performance of public sector banks has improved significantly, there have been several other advantages of public sector banks over private sector and foreign banks. In comparison with private and foreign banks, public sector banks through their huge branch network have played a far greater role in extending credit to agriculture and the SME sector as envisaged under the priority sector norms for them. Public sector banks have also been more actively engaged in promoting financial inclusion, which, of late, has emerged as a major policy objective. It has been argued that in the Indian context, particularly in view of the need to give adequate attention to agriculture and the rural sector, public sector character of existing PSBs should not be given up (Jalan, 2002). Furthermore, a well diversified banking system, operating under competitive conditions, bodes well in the perspective of financial stability.

8.87 To sum up, privatisation of public sector banks is an issue which gained prominence after the initiation of financial sector reforms. The most commonly cited reason for privatisation of PSBs has been their inherent inefficiency. However, in the Indian

Table 8.10: Degree of State-Owned Bank Assets and Banking Crisis

Country	State Ownership Up to 20 Per cent	Type of Crisis		Country	State Ownership Up to 20 Per cent	Type of Crisis	
		Systemic	Major			Systemic	Major
1	2	3	4	5	6	7	8
Bolivia	0	Yes	Yes	Argentina	30.5	Yes	Yes
Canada	0	Yes	Yes	Brazil	51.0	Yes	Yes
Colombia	19.0	Yes	Yes	Chile	23.8	Yes	Yes
Denmark	0	No	Yes	Egypt	66.6	Yes	Yes
Ecuador	NA	Yes	Yes	Finland	41.1	Yes	Yes
El-Salvador	6.9	Yes	Yes	Ghana	38.8	Yes	Yes
Hong Kong	0	No	Yes	India	80.0	No	Yes
Japan	0	Yes	Yes	Indonesia	41.5	Yes	Yes
Korea	0	Yes	Yes	Italy	25.0	No	Yes
Malaysia	9.6	Yes	Yes	Madagascar	22.0	Yes	Yes
Nigeria	13.0	Yes	Yes	Mexico	41.5	Yes	Yes
Peru	0	Yes	Yes	Norway	37.6	Yes	Yes
Philippines	19.8	Yes	Yes	Sri Lanka	58.0	Yes	Yes
Sweden	0	Yes	Yes	Tanzania	50.1	Yes	Yes
US	0	No	Yes	Thailand	29.0	Yes	Yes
Venezuela	7.2	Yes	Yes	Turkey	36.5	Yes	Yes
				Uruguay	45.5	Yes	Yes
				Zimbabwe	24.6	Yes	Yes

Source: Barth, Caprio and Levine (2000).

context, it is observed that there have been significant improvements in the performance of PSBs derived from the operational flexibility and functional autonomy. In fact, the performance of private sector and foreign banks was not necessarily superior to many of these banks, despite PSBs being subject to a greater social responsibility. However, there are several other issues such as changed operating environment and sustaining the operations of PSBs due to constraints faced by the Government in providing capital to banks, which need to be carefully assessed. These are discussed in the subsequent section.

Issues Relating to Operations of Foreign Banks

8.88 The process of consolidation of the banking sector has led to extensive entry of foreign banks, especially in EMEs. Moreover, internationalisation of trade in goods and services has also forced foreign banks to expand their operations cross-borders, reflecting the desire of large international and regional banks to enter profitable markets. Foreign banks are now playing an increasingly important role in the evolving global financial system. Historically, with economic integration, the main motivation for foreign banks was to establish representative offices to handle trade credit operations to assist their home country customers in international transactions and possibly arrange international private debt and equity placements between borrowers in the host country and lenders in the source country. At a later stage, with greater understanding of the foreign market and a developed network of relationship with local financial institutions, foreign banks open branches dealing with wholesale deposit and money markets. Eventually, subsidiaries are set up to enter retail banking. However, the reasons for foreign entry, as well as the competitive and regulatory conditions, differ significantly between developed and developing countries.

8.89 In general, foreign banks enter into business activities outside their parent economies either through cross-border lending or by physical presence. In the case of cross-border lending, as a cost effective strategy, foreign banks do not have any outposts in the territory of host country. Physical presence of foreign banks can be either in the form of opening a *de novo* bank through greenfield investment or from purchase of a majority stake of a domestic bank. Through greenfield investment, foreign banks either open a branch or subsidiary in the host country, depending upon the bank's strategic requirement and regulatory regime prevalent in the host country. In

recent years, profit opportunities have become a key factor in determining the pattern of foreign bank shareholdings and have taken varied forms: acquisition, targeted purchases of specific activities, joint ventures or alliances and outsourcing of administrative and financial services (Box VIII.9).

Box VIII.9
Branches *versus* Subsidiaries of Foreign Banks

Since the second half of the 1990s, banking sectors in some of the emerging economies in Latin America and Eastern Europe have witnessed increasing control and dominance of foreign banks. In fact, most of these emerging economies were inflicted by banking crises and subsequently, as a part of strengthening, the banking sector in these economies was opened for entry of foreign banks. Policy makers while deciding liberalisation of the foreign banks entry not only weigh the costs and benefits on domestic banks and on the corporate sector but also often analyse pros and cons of the mode of entry before deciding. Foreign bank can be allowed to enter through two modes: First, foreign bank can open a *de novo* bank through greenfield investment and second, foreign bank can enter through acquisition of the existing domestic banking entity.

Again, in the case of greenfield investment, policy makers as well as foreign banks have two options, *i.e.,* to establish a branch or a subsidiary. A branch is licensed by the host country with powers defined in the parents' company charter but with obligation and limitation stated by the authorities in the host country. A subsidiary is a fully independent legal entity, with powers and responsibilities set by its own charter in the host country. Normally, foreign banks decide the mode of entry in the case of greenfield investment depending upon the purpose of investment by the parent bank. In case a foreign bank wants to explore profitable opportunities through host of banking activities, *i.e*., deposits, credits and other financial services in the host country, then the obvious choice would be a subsidiary. On the other hand, the choice will most likely dwell on a branch if entry of foreign bank stems with an objective of promoting the coordinated operations of the parent bank. As recently illustrated by the decisions of some foreign banks not to capitalise their subsidiaries in Argentina, the branches' access to the parent bank capital is more often direct than is the case for subsidiaries (Clarke *et al*., 2002). Foreign bank branches are typically involved in wholesale banking, while subsidiaries are involved in retail banking in most of the countries.

Another issue related to foreign bank entry in the form of branch or subsidiary emanates from their likely behaviour during the crisis periods. Although, there is a general belief that foreign banks may be a stabilising influence before or during local crisis, their response may depend upon their entry through branches or subsidiaries. A branch is a part of a parent bank and can draw upon the capital of the parent in the case of a difficulty. In case the subsidiary face any difficulty, the parent company may simply wind up the subsidiary. In other words, parent banks face full responsibility of the liabilities of branches, while their liability is limited to the loss of the equity invested in the case of subsidiaries. However, concerns about loss of reputation have at times led banks to support their subsidiaries, although they were not legally bound to do so.

Eisenbeis and Kaufman (2005) highlighted that despite the benefits that might accrue to foreign ownership, either in the form of branch offices or subsidiary banks, cross-border banking raises a number of important policy concerns. These relate to the provision of deposit insurance, the effectiveness of prudential regulation, the strength of market discipline, the timing of declaring an insolvent institution officially insolvent and placing it in receivership or conservatorship, and the procedures for resolving bank insolvencies. It is also often found that the main benefits associated with foreign branches are in terms of their increased lending capacity (basing loan size limits on the parent bank's capital), and reduced corporate governance requirements, unlike foreign bank subsidiaries.

The Committee on Global Financial System (2004) highlighted the issues regarding the sharing of information by foreign entities with host regulatory and supervisory authorities. Concern is especially acute for foreign branches which do not have meaningful balance sheets or income statements. This makes monitoring difficult for the host country regulator. In the case of subsidiaries, since they are separate legal entities, they would have balance sheets and income statements that would be available to the regulator in the country in which they are chartered.

From the host country's perspective, foreign banks entry in the form of branches and subsidiaries would largely depend on the competency and preparedness of the regulatory and supervisory authorities of that country. However, with increasing size of foreign outposts of foreign banks, the division of supervisory responsibilities between host and home country based on the distinction between branch and subsidiary is getting increasingly blurred.

References:

Bank for International Settlements. 2004. "Foreign Direct Investment in the Financial Sector of Emerging Market Economy." CGFS, Publication No. 22, March.

George, Clarke *et al*. 2002. "The Effects of Foreign Entry on Argentina's Domestic Banking Sector." World Bank, Washington.

Eisenbeis, R.A. and Kaufman, G. 2005. "Bank Crises Resolution and Foreign-Owned Banks." *Economic Review*, 90-4. Federal Reserve Bank of Atlanta.

8.90 In many of the emerging market economies, foreign bank entry has been the result of initiatives taken by the local authorities to improve the efficiency and stability of their financial systems, and also to reduce the recapitalisation of weak domestic banks, following the banking crisis. With improvements in risk measurement and management in emerging economies, foreign banks have gained experience in quantifying and managing market and credit risks using standard frameworks. The revamped macroeconomic policy frameworks and a greater reliance on market forces have also aligned the character of EME-related risks more closely with those in mature economies. These developments have facilitated the expansion of foreign banks in these countries. Various studies have found the increased influence of foreign banks in terms of their control and participation in the banking sectors of emerging economies, especially during the second half of 1990s onwards (Eichengreen and Mussa, 1998). The liberalisation of the Latin American economies with free trade and capital flows spearheaded the demand for new financial products and services that was accommodated by the reformed and restructured banking systems (Aguirre and Norton, 2000).

8.91 EMEs provided the foreign banks the opportunities for entry, as in these countries, interest margins as well as operating costs were invariably very high. Further, EMEs, with a greater openness to foreign trade and investment in the aftermath of financial crises, wanted to transform the banking sectors by infusing competition and efficiency and bring about financial stability by looking upon to international banks (Box VIII.10).

8.92 There are several potential costs and benefits associated with the entry of foreign banks. The entry of foreign banks can stengthen the financial systems of the host nations. The benefits from entry of banks arise for several reasons. The increase in the number of banks directly increase the competition. Efficiency also improves from the infusion of technology and skilled management leading to overall improvement in the quality of services. Allocation of credit improves due to application of formal credit standards. Incentives and expertise to develop certain segments of the market also help in the development of local markets. The introduction of superior risk management practices also enhances the soundness of the domestic financial system. Stronger capital base and less sensitiveness to host country business cycle of foreign banks lend a stabilising influence at the time of financial distress. A lower cost structure of foreign banks also helps in lowering the cost structure of the entire banking system.

8.93 On the other hand, depending upon the mode of entry of foreign banks, there can be loss of competition due to concentration. Consequently, the benefits to customers in terms of lower cost of intermediation would depend upon the form of entry and the consequent pricing strategy followed. For the domestic banks, competing with larger foreign banks could mean incurring additional costs. There is also a general concern that entry of foreign banks would lead to neglect of small customers and diversion of domestic funds to large corporate through inter-bank market. Further, there are also supervisory and regulatory challenges that crop up with entry of foreign banks (Box VIII. 11).

8.94 Cross-country evidence reveals that the benefits and costs of foreign banks are not unambiguous, and have been contextual, depending upon the sequencing of financial sector reforms and the level of development of the concerned country. In some countries such as Thailand, the Philippines and countries in the Central and Eastern Europe, foreign banks entry led to improved competition and efficiency. On the other hand, in many of the Latin American countries, the level of competition declined due to increased concentration of banking assets with foreign banks. In general, foreign banks exert more competitive pressure in developing countries than in the developed countries, where domestic banks are already competitive. The empirical evidence on the impact of foreign banks entry on financial stability and the lending pattern of banks has not been conclusive (Box VIII.12).

8.95 The cross-country evidence on the relative efficiency between foreign and domestic banks has also been mixed. For the developing countries, as a group, net interest margins of foreign banks were lower than those of domestic banks. However, the overhead to asset ratio and the cost to income ratio of domestic banks were lower. Significant variations were observed across the regions. In South Asia, however, mainly reflecting their performance in India net interest margins of foreign banks were higher than those of domestic banks. However, the overhead to asset ratio and the cost to income ratio were lower than those of domestic banks (Table 8.11).

Box VIII.10
Growing Significance of Foreign Banks in EMEs

With increasing financial liberalisation, one of the most striking changes in many emerging markets' financial system has been the growing presence of foreign-owned financial institutions, particularly in the banking sector. Following banking crises in many EMEs during the 1990s, authorities opened up their economies to foreign banks as a part of a strategic consolidation of the banking sector. Yet, the rise in foreign ownership of banks in emerging markets is one facet of the ongoing consolidation of banking systems in both mature and emerging markets (Mathieson and Roldos, 2001).

The extent of foreign banks control and participation in EMEs have increased significantly during the second half of the 1990s and onwards. However, studies have found divergent trends across different regions, with Central Europe and Latin America witnessing larger increase in the presence of foreign banks than Asia. Foreign banks' participation in Central Europe, which increased considerably in the second half of the 1990s, reached over 50 per cent by the end of the decade. In Latin America, although foreign banks presence dates back for many decades, there has been a quantum jump in the extent of participation in the second half of the 1990s with the acquisition program initiated by the leading Spanish financial institutions. For example, foreign banks had a relatively large presence in Argentina and Chile by end-1994, and the share of assets under foreign control increased to 50 per cent, following a series of mergers and acquisitions in 1996-97 (Mathieson and Roldos, 2001). In Mexico, foreign banks accounted for over 75 per cent of total banking sector assets.

A comparison of the performance of foreign and domestic banks in select Latin American countries revealed that while foreign banks differed little from their domestic counterparts in overall financial condition, they showed more robust loan growth, a more aggressive response to asset quality deterioration, and a greater ability to absorb losses characteristics that could help to strengthen the financial systems of their host countries (Goldberg, Crystal and Dages, 2002). Foreign banks in Asia have played a smaller role than in Central Europe and Latin America, partly due to the official policies stance on limited entry, especially the local retail banking markets.

The past decade has also seen a transformation of the role of foreign banks in EMEs. First, while the large foreign banks expanded there operations in select markets, some mid-size foreign banks also entered EMEs since the mid-1990s. Accordingly, international claims of BIS reporting banks increased substantially in all emerging markets in Asia, Latin America and Central & Eastern Europe (Table A). Second, while initially foreign banks provided services to their traditional clients, later they also started targeting aggressively local customers in EMEs. One reflection of this development is that direct cross-border lending by the head offices of foreign banks has been progressively overshadowed by the local lending of their foreign affiliates. The rising focus of foreign banks on local retail activities has resulted into substantial rise in local claims of BIS reporting banks in emerging market economies across the world (Table A). Increased participation of foreign banks in emerging market economies is visible in rising cross-border international claims and local claims of BIS reporting banks in these countries.

Table A: International and Local Claims of BIS Reporting Banks in Emerging Market Economies

Item	Year	Asia	Latin America	Central & Eastern Europe	Others
International Claims* (US $ billions)	1995	745	188	76	61
	2000	471	257	87	91
	2005	590	196	190	105
	2007	961	251	353	186
Local Claims** (US $ billions)	1995	159	28	3	1
	2000	286	165	35	7
	2005	529	331	175	17
	2007	730	505	276	114
Local Claims/ International Claims (%)	1995	21	15	4	2
	2000	61	64	40	8
	2005	90	169	92	17
	2007	76	202	78	61

* : BIS reporting banks' cross-border claims in all currencies and their foreign affiliates' local claims in foreign currencies.
** : BIS reporting banks' local claims in local currencies.
Source: BIS (Consolidated Banking Statistics).

Another manifestation of increasing influence of foreign banks across the world including EMEs is in their rising share in total assets across the regions (Table B). The share of foreign banks in total assets in Eastern Europe and Latin America more than doubled during 1995-2005. In some of the Central and Eastern European countries, foreign banks accounted for about 90 per cent of total assets of banking system. However, foreign banks' share in total assets in Asia was very low and stagnated at the same level during this period.

Table B: Foreign Banks' Assets across the Regions (Per cent)

Region	1995	2005
All Countries	15	23
North America	10	21
Western Europe (19)	23	29
Eastern Europe (8)	24	58
Latin America (14)	18	38
Africa (25)	8	8
Middle East (25)	14	17
Central Asia (4)	2	2
East Asia & Oceania (13)	5	6

Note : Figures in brackets indicate number of banks.
Source : IMF, Global Financial Stability Report, April 2007.

References:

Goldberg, L. S., Crystal, J and Dages, B. G. 2002. "Has Foreign Bank Entry led to Sounder Banks in latin America?" *Current Issues in Economics and Finance*, Vol.8, No. 1.

Mathieson, Donald J. and Roldos, J. 2001. "The Role of Foreign Banks in Emerging Markets." Prepared for 3rd Annual Financial Markets and Development Conference, The World Bank, International Monetary Fund, and Brookings Institution.

Box VIII.11
Cost and Benefits of Foreign Banks Entry

The following are the commonly highlighted benefits of foreign bank entry. First, it heightens competition and promotes efficiency leading to decline in costs or increase in productivity. When a foreign bank enters through greenfield investment and sets up a *de novo* institution, the increase in the number of banks in the host country directly enhances competition. Entry through merger and acquisition, which infuses more skilled management and upgrade governance through introducing more advanced systems and risk management, may force other banks in the host country to improve their efficiency in order to protect their market shares.

Second, entry of foreign banks improves credit allocation, as in making credit decisions, they apply formal credit standards and risk-adjusted pricing and are not influenced by other considerations.

Third, foreign banks help in the development of local financial markets since they have both the incentives and the expertise to develop certain segments of local market, such as funding, derivatives and securities markets. Foreign banks that lack a branch network to guarantee deposit financing of their activities are more likely to turn to the inter-bank market. Foreign banks can also contribute by bringing professional expertise to the local foreign currency markets. They often try to create markets or gain market share through product innovation, especially by offering a variety of new financial services to corporate clients, including structured products.

Fourth, the overall soundness of domestic financial system is enhanced by introducing the risk management practices of the foreign parent banks. Based on tighter credit review policies and practices, they adopt more aggressive measures to address asset quality deterioration and limit the build-up of non-performing assets in the financial system.

Fifth, foreign banks may exert a stabilising influence in times of financial distress, as stronger capitalisation and the possibility of an injection of additional funds by the parent, if needed, reduces the probability of failure. For the same, foreign banks are less sensitive to both home and host country business cycles, and consequently, lending to local residents in the local market is likely to be more stable in times of stress than either cross-border lending or the lending of indigenous banks in the markets. Further, when the foreign banks continue to operate in a crisis, the probability of the system as a whole remaining functional increases.

Sixth, there could be long-term benefits from lower cost structures in the banking system. Foreign banks, in general, are found to operate with lower administrative costs as has been found in Latin America and most of other developing countries (Cull and Peria, 2004). However, in some countries such as India, operating cost of foreign banks was found to be higher than that of domestic banks.

Seventh, foreign ownership usually involves the transfer of human capital at both the managerial and the operational level. Complementary to this is the transfer of "soft" infrastructure such as back office routines or credit control systems. Such transfers have gained importance to reap economies of scale through standardisation of processes.

There could also be several costs associated with the entry of foreign banks.

First, entry of foreign banks could also lead to concentration and loss of competition. In many countries, foreign banks entered the system mainly by acquiring existing domestic banks, while in some countries domestic banks consolidation and concentration occurred in response to foreign competition.

Second, though foreign banks entry may lower interest margins and potentially foster the process of financial intermediation, the impact would depend on the form it takes and may not benefit all borrowers. The benefits would depend on whether the lower spread is the result of a more aggressive pricing strategy across the board or the banks choosing to lend only to the most transparent segments where there is more competition or at least greater market contestability.

Third, the growing presence of foreign banks can increase the complexity of the tasks facing supervisory authorities and thus lead to regulatory conflicts. This could be a particular concern in countries where foreign commercial banks expand their operations rapidly in the area of non-bank financial services such as insurance, portfolio management, and investment banking. Given the complex structure of many internationally active banks, Integral issues within foreign banks are increasingly being shown to be of potential systemic significance (Song, 2004).

Fourth, foreign banks expose the country to some downside risks/ challenges attached with their entry. More strikingly, domestic banks in emerging markets generally incur costs since they have to compete with large international banks with better reputation, particularly in developing world.

Fifth, there is a general concern that as foreign banks have historically followed home-country customers or specialised in servicing corporate customers, their entry would lead to neglect of rural customers and small and medium sized firms. Another concern is that with foreign banks using the inter-bank market for much of their funding, local banks could divert their funds from domestic loans to the inter-bank market, thereby channelling fund to large corporate at the expense of small companies.

Sixth, it is also argued that the presence of foreign banks may not necessarily yield a more stable source of credit to domestic borrowers because foreign banks can, at times, shift funds abruptly from one market to another for risk management purposes. Literature also suggests that foreign banks will be more likely to shift their funds to more attractive markets during a crisis if their parent banks are weak.

References:

Cull, R. and Peria, M.S.M 2007. "Foreign Bank Participation and Crises in Developing Countries." *World Bank Policy Research Working Paper* No. 4128.

Song, Inwon. 2004. "Foreign Bank Supervision and Challenges to Emerging Market Supervisors." *IMF Working Paper* No.WP/04/82.

Box VIII.12
Benefits and Costs of Foreign Banks Entry: Cross-Country Evidence

The empirical evidence on the benefits and costs of foreign banks entry has been mixed. With regard to impact of foreign banks on competition, in the context of Thailand, Chantapong and Menkhoff (2005) reveal that to a large extent domestic banks were able to catch up to the best-practice standards throughout 1995-2003, significantly after the 1997 financial crisis, partly due to greater foreign participation through acquisitions, which increased the competitive pressure in the banking industry, and also to financial restructuring of domestic banks. In the context of the Philippines banking sector, Unite and Sullivan (2002) also found that foreign bank entry was associated with a reduction in interest rate spreads and bank profits, but only for those domestic banks that were affiliated to a family business group. Foreign entry, in general, led to improvements in operating efficiencies, but a deterioration of loan portfolios. Analysing the performance of 219 banks, between 1995-2001, from a sample of ten countries in Central and Eastern Europe, Uiboupin (2004) offered evidence consistent with the notion that foreign bank entry increased competition.

On the other hand, examining the increased consolidation and foreign bank penetration in 11 Latin American countries, Yildirim and Philippatos (2007) found that there was a decline in competition for Brazil, Chile, and Venezuela in the late 1990s, which may be attributable to increased consolidation. However, they observed that deregulation and opening up of the financial markets for foreign participation served as an important catalyst to increase the competitiveness of banking markets. In the case of Mexico, foreign bank participation did not lead to increase in competition and efficiency, and instead, led to a retrenchment in lending (Haber and Musacchio, 2005). In the case of China, Huang *et al.* (2007) argued that it was difficult to be conclusive on whether the foreign banks entry had enhanced the competitiveness of Chinese domestic banks.

The benefits from entry of foreign banks were found to depend upon the sequencing of financial sector reforms and the level of economic development. Using data on 30 developing and developed countries, Bayraktar and Wang (2004) found that foreign banks entry had significantly improved domestic banks competitiveness in countries which liberalised their stock market first. In these countries, both profit and cost indicators were negatively related to the share of foreign banks. Countries which liberalised their capital account first seemed to have benefited less from foreign banks entry as compared to the other two sets of countries.

Literature also suggests that impact of foreign banks entry on domestic banks is not uniform across the developed and developing countries. For instance, based on a sample of 7900 banks from 80 countries, Claessens *et al.* (2001) found that although entry of foreign banks led to reduction in profitability and margins for domestic banks, foreign banks had higher profits than domestic banks in developing countries, while the opposite was true in developed countries. This may be due to home ground advantage of domestic banks such as organizational problem, better knowledge of local customers and difference of language and culture. Consequently, foreign banks in developed countries are unable to exert any influence on interest margins, operating expenditure and profitability etc., of domestic banks.

The evidence on the impact of foreign banks entry on the economy and the stability of the financial sector has also been ambiguous. In some emerging markets, foreign banks entry are found to exert a stabilising influence before and during the crisis periods, as they appear not to retrench their lending significantly during the crisis periods when compared to domestic banks. Credit granted by foreign banks in Argentina and Mexico was more stable than credit granted by locally-owned banks (Goldberg *et al*., 2000). Foreign banks did not abandon the local markets during 1997-98 crisis in Malaysia and received less Government support than domestic institutions (Detragiache and Gupta, 2004). On the other hand, in the cross country context, it was found that foreign ownership neither showed unambiguous impact on the economy nor on the stability of the financial sector.

With regard to divergence in the business focus of foreign and domestic banks, the empirical evidence has been mixed. In Central Europe, foreign banks were found to increasingly focus on lending to small and medium-sized enterprises and households due to strong competition and significant penetration. However, in most emerging markets, foreign banks were cautious of lending to smaller firms due to limited knowledge of local industry. Thus, there is no decisive cross-country empirical evidence that foreign banks entry adversely affects lending to SMEs.

References:

Claessens, S., Demirguc-Kunt, A. and Huizinga, H. 2001. "How Does Foreign Entry Affect Domestic Banking Markets?" *Journal of Banking and Finance*, Vol. 25, No.5.

Uiboupin, J. 2004. "Implications of Foreign Bank Entry on Central and East European Banking Market." *Kroon & Economy*, No.1. pp.25-35.

Yildirim, H. S. and G. C. Philippatos, 2007. Restructuring, Consolidation and Competition in Latin American Banking Markets, *Journal of Banking and Finance*, Vol.31 No. 3.

Table 8.11: Foreign and Domestic Bank Performance Indicators in Developing Regions – 1998-2005 (Average)

Category	Net interest margin (%)	Overhead to assets ratio (%)	Taxes to assets ratio	Loan loss reserves to assets ratio	Loan loss reserves to gross loans	Pre-tax profits to assets ratio	Cost to income ratio
Developing countries							
Domestic	7.27	**5.72**	**0.53**	4.51	**8.32**	**1.69**	**69.60**
Foreign	6.86	**6.30**	**0.63**	3.63	**7.27**	**1.29**	**76.52**
East Asia and Pacific							
Domestic	3.84	2.68	**0.35**	**3.26**	**6.01**	**0.66**	63.98
Foreign	3.83	3.03	**0.57**	**10.35**	**11.85**	**2.04**	62.10
Europe and Central Asia							
Domestic	**7.71**	**6.55**	**0.67**	**5.24**	**8.13**	**2.08**	**67.86**
Foreign	**6.02**	**5.59**	**0.41**	**2.92**	**5.70**	**1.43**	**73.73**
Latin America and the Caribbean							
Domestic	**9.79**	7.55	**0.44**	3.06	7.23	**1.84**	76.74
Foreign	**7.83**	8.05	**0.83**	2.74	7.52	**0.63**	81.30
Middle East and North Africa							
Domestic	3.57	**2.16**	0.25	5.84	12.66	1.08	**59.78**
Foreign	3.71	**2.69**	0.27	8.25	16.07	0.90	**76.09**
South Asia							
Domestic	2.85	2.52	**0.44**	2.47	6.35	**0.92**	64.75
Foreign	3.75	2.38	**1.02**	1.62	7.06	**2.46**	51.07
Sub-Saharan Africa							
Domestic	10.08	7.76	0.79	**8.52**	**12.56**	2.55	74.08
Foreign	9.07	7.24	0.81	**3.31**	**5.54**	1.89	81.40
Developed countries							
Domestic	2.63	2.20	0.27	**1.92**	3.19	1.01	**59.78**
Foreign	1.80	1.74	0.23	**1.40**	2.69	1.26	**55.86**

Note : Pairs in bold indicate difference in means of corresponding indicators for foreign and domestic banks and are statistically significant at 10 per cent level. Net interest margin is net interest income as percentage of earning assets.

Source : Global Development Finance 2008, World Bank.

8.96 In India, the presence of foreign banks dates back to the pre-independence period. After independence greater emphasis, however, was laid on strengthening the domestic banking sector with the increased participation of public sector banks. After the initiation of financial sector reforms, entry of foreign banks in India was opened up further. The CFS in 1991 and the CBSR in 1998 recommended further opening up of the Indian banking sector to foreign banks to augment competition and efficiency. The CFS put forth that entry of more foreign banks would enhance competitive efficiency of the Indian banking sector and encourage domestic banks to induct banking technology and professional governance practices. Furthermore, a window for expansion of foreign banks was opened in India under the General Agreement on Trade in Services (GATS) of World Trade Organisation (WTO). Initially, under GATS India committed to issue five additional branch licenses to both new and existing foreign banks. Subsequently, in a supplementary agreement signed in July 1995, this limit of five branches was increased to eight branches and further to twelve branches in February 1998. Along with allowing more branches of foreign banks, giving them more flexibility in their operations. India has gone beyond the WTO commitment of 12 branches. In fact, number of branches allowed each year has already been higher than WTO commitments.

8.97 Initially foreign banks in India were allowed to enter and expand by *de novo* branches only and were not permitted to own controlling stakes in domestic banks. Subsequently, the aggregate foreign investment from all sources was allowed up to a maximum of 74 per cent of the paid-up capital of a private bank.

8.98 The road map for the presence of foreign banks in India, divided into two phases, was unveiled in February 2005. In the first phase (April 2005-March 2009), foreign banks are permitted to establish presence by way of WOS or conversion of the existing branches into a WOS following the one mode presence criterion. The WOS are treated on par with the existing branches of foreign banks for branch expansion in India. So far, however, no bank has applied for a WOS presence. Second phase will begin from April 2009 and further measures related to foreign banks presence would be decided after reviewing the experience in phase I.

8.99 The existing procedures indicate that regulatory regime followed by the Reserve Bank in respect of foreign banks is non-discriminatory, and is, in fact, very liberal by global standards. This is evident from (i) India issues a single class of banking licence to foreign banks and does not require them to graduate from a lower to a higher category of banking licence over a number of years; (ii) the single class of licence places them virtually on the same footing as an Indian bank and does not place any restrictions on the scope of their operations; (iii) no restrictions exist on establishment of non-banking financial subsidiary in India for the specified 18 activities under automatic route by the foreign banks and their group companies; (iv) deposit insurance cover is uniformly available to all foreign banks at a non-discriminatory rate of premium; (v) the prudential norms applicable to the foreign banks for capital adequacy, income recognition and asset classification, *etc.*, are, by and large, the same as for the Indian banks. Thus, the Indian regulatory regime is essentially non-discriminatory as between branches of foreign banks and domestic banks, in regard to their authorisation or the scope of their operations. In fact, some hold that there is some positive discrimination in favour of foreign banks by way of lower priority sector lending requirement at 32 per cent of the adjusted net bank credit as against a level of 40 per cent required for Indian banks. Thus, Indian regulatory regime is in fact much more equitable and provides a far more level playing field to the foreign banks, than in many other jurisdictions, both developed and emerging economies (Leeladhar, 2007).

8.100 The number of foreign banks in India increased from 24 in 1990 to 41 during 2000; although their number consequently declined to 29 in 2005 on account of merger between the Indian branches of foreign banks, merger of banks at a global level and closure of some foreign banks. However, the share of foreign banks in total scheduled commercial banks operating in India increased from 13.9 per cent in 2000 to 16.5 per cent during 2007 due to decline in total number of domestic banks. Yet, the number of branches of foreign banks augmented significantly from 138 in 1990 to 186 in 2000 and further to 272 during 2007. The share of foreign banks' in total assets of SCBs improved from 5.6 per cent in 1990 to 7.5 per cent in 2000 and further to 8.0 per cent during 2007 (Table 8.12). Thus, the policy changes on entry of foreign banks in India implemented during 1995 and 2004 have had positive impact on their presence in the Indian banking industry.

Table 8.12: Foreign Banks in India

Year	Foreign Banks (No.)	Foreign Branches (No.)	Share in Total Number of Commercial Banks Operating in India (Per cent)	Share in Total Assets of Commercial Banks (Per cent)
1980	14	129	9.5	3.9
1990	24	138	8.8	5.6
1995	29	156	10.2	7.3
2000	41	186	13.9	7.5
2003	36	207	12.9	6.9
2005	29	251	13.6	6.5
2006	29	262	16.5	7.2
2007	29	272	16.5	8.0

Source : Report on Trend and Progress of Banking in India (RBI), Various Issues.

Banking and Commerce

8.101 The guidelines for licensing of new banks in the private sector were issued by the Reserve Bank on January 22, 1993. While reviewing the guidelines for entry of new private sector banks in January 2001, the Reserve Bank had specifically barred the large industrial houses from directly promoting a bank. However, individual companies connected with large industrial houses were allowed to take up equity of new private sector banks up to maximum 10 per cent, but without controlling stake. The 10 per cent limit is applied to all inter-connected companies of large industrial houses and the final decision about which company belongs to an industrial house or was connected with it rests with the Reserve Bank (RBI, 2001).[2] Any higher level of acquisition is to be with the prior approval of the Reserve Bank and in accordance with the guidelines of February 3, 2004. Similarly, it was laid down that the proposed bank shall maintain an arm's length relationship with business entities in the promoter group and the individual company/ies investing up to 10 per cent of the equity as stipulated above. Banks can not extend any credit facilities to the promoters and company/ies investing up to 10 per cent of the equity.

8.102 Given the need for consolidation of Indian banking industry in the context of greater capital account convertibility, the Committee on FCAC (Chairman: Shri S.S. Tarapore) recommended for allowing greater participation of industrial houses in commercial banking. The Committee observed that the commercial banks in India, depending on the banking groups, are governed by six different statutes [*viz*., Banking Companies (Acquisition & Transfer of

[2] RBI Notification on 'Guidelines on entry of new banks in the private sector', RBI, 2001.

Undertaking) Act, 1970; Banking Companies (Acquisition & Transfer of Undertaking) Act, 1980; State Bank of India Act 1955; State of Bank of India (Subsidiary Banks) Act, 1959; Industrial Development Bank (Transfer of Undertaking and Repeal) Act, 2003; and the Companies Act, 1956)], which are in addition to the Banking Regulation Act, 1949. These statutes having embedded provisions hinder good governance and consolidation. The Committee, therefore, recommended that to promote easier market driven consolidation, necessary legislative amendments be made to the above statutes so that all commercial banks are registered under a single Companies Act and regulated under the Banking Regulation Act. The Committee further recommended that until the amendments of the relevant statutes to promote consolidation in the banking system, the Reserve Bank should evolve policies to allow, on a case by case basis, industrial houses to have a stake in Indian banks or promote new banks.

8.103 Greater participation of industrial houses in commercial banking has also been argued for the post-2009 period when entry of foreign banks would be reviewed. It has been argued that already there is majority foreign shareholding in the two largest private sector banks in India.

8.104 Arguments for combining banking and commerce mainly dwell upon the potential gains stemming from operating and information efficiencies. Operating cost would fall if there are economies of scale and scope as average cost of production would fall with the increase in the scale of production and product diversification. Evidence provides that banking and commercial affiliations arise out of confluence of a particular need for a service in a particular market and the ability of a particular bank to provide that service. Similarly, commercial firms would have the incentive to affiliate with banks if there are scope economies to be realised. With regard to informational efficiency, it is maintained that when banks hold equity of non-financial firms, the financial constraints of the latter are eased since the banks by having specific information can accommodate funding requirements of the firm. An insider bank can also make more accurate assessments of the risks facing the firm than an arm's length bank can and enable providing additional services.

8.105 While the policy makers should have no objections if combining banking and commerce leads to lower operating costs and improves flow of information between firms and investors, there are several risks involved. The three most serious regulatory concerns stem from the conflict of interest between banking and commerce, reduced level of competition and the threat to safety net. The most frequently cited example on conflict of interest is the potential for banks to help firms issue bonds and use the funds to pay off their bank loans. Banks could also use their insider knowledge of a firm to trade profitably in the firm's securities. Historically, one of the chief reasons for separating banking and commerce was the desire to curtail concentration of economic powers in the hands of banks. When banks hold a large equity share of firms, they may deny finance to the competitors of the firm to earn a greater return on its equity investment. However, such situations are likely where the competition is already imperfect and the discriminated firms have no alternative sources of finance.

8.106 The greatest source of risk from combining banking and commerce arises from the threat to the safety net provided under the deposit insurance and 'too-big-to-fail' institutions whose depositors are provided total insurance and the mis-channeling of resources through the subsidised central bank lending to banks. Because of the safety net provided, the firms affiliated with banks could take more risk with depositors' money, which could be all the more for large institutions on which there is an implicit guarantee from the authorities. Bank can also channel cheaper funds from the central bank to the commercial firm. On the other hand, bad assets from the commercial affiliate could be shifted to the bank either by buying assets of the firms at inflated price or lending money at below-market rates in order to effect capital infusion. Though the regulators temper the risk taking incentives of banks by monitoring and through formal examinations, this supervisory task is rendered more difficult when banking and commerce are combined.

8.107 Empirically, in the cross-country context, the cost and benefit of combining bank and commerce is an unsettled issue. It is argued that in the German universal banking system "hausbank", the ownership and control on companies by the universal banks led to provision of better corporate control on companies. A similar view is held in the case of Japan, where by combining bank and commerce, main banks are able to rescue financially distressed companies by extending credits in an environment with weak contract enforcement. For the less developed economies where contracts are ineffective and price signals from the market are relatively uninformative, relationship-lending by combining commerce and banking may work better than arm's length credit relationship (Rajan and Zingales, 1998).

8.108 In the US, the policy of separating banking and commerce has been generally followed since 1787 and has gained strength over time. Banks have frequently tried to engage in commercial activities, and commercial firms have often attempted to gain control of banks. However, federal and state legislators have repeatedly passed laws to separate banking and commerce, whenever it appeared that either (i) the involvement of banks in commercial activities threatened their safety and soundness; or (ii) commercial firms were acquiring a large numbers of banks (Wilmarth, Jr, 2007). In this context, concerns relate to loans to commercial affiliates with favourable terms and relaxed underwriting standards and distortions in the allocation of credit, resulting from preferential bank lending to suppliers and customers of commercial affiliates. A new law 'the Gramm-Leach-Bliley Act' was enacted in 1999 which allows commercial and investment banks to consolidate but continues to separate the banking and commercial activities. Besides the US, several other countries including Canada, Israel, Hong Kong, Italy, Malaysia, Mexico, the Philippines and Thailand do not permit non-financial firms to own banks.

8.109 Empirical evidence provided by Edwards and Fischer (1994) on German universal banking and Kang and Stulz (2000) on Japanese firms, however, have refuted the advantages of combining banking and commerce. It may be noted that in Germany and Japan, banks exercise their right to hold equity in commercial firms, but it is unusual for commercial firms to own banks. Further, combining banking and commerce has been singled out as an important factor for the financial crisis in the emerging market economies. Notable examples have been the Chilean banking crisis of 1982, where unending rollovers of loans evading regulatory controls were allowed due to liaison between banks and corporate and financial crisis in Thailand in 1997 where there were high level of related party transactions between banks and their affiliates. Barth, Caprio and Levine (2000), however, found that the likelihood of a banking crisis was greater if tighter restrictions were placed on bank ownership of non-financial firms.[3]

8.110 Recognising the inherent problems in mixing banking and commerce, some of the emerging markets have taken steps to separate the two activities. In Singapore, banks have been asked to divest their non-financial assets and cross-holdings are allowed in only one direction. The sharing of directors, managers or brand names is also prohibited. Similarly, in Brazil, the major banks have been asked to divest from their non-financial companies, while in Republic of Korea, individual ownership of a bank holding company is limited to 4 per cent of total equity to prevent industrial capital from controlling financial capital.

VII. THE WAY FORWARD

8.111 In the previous section, some of the issues relating to the process of consolidation, role of public sector banks, operations of foreign banks in India and combining the banking and commerce were discussed. In this section, some specific suggestions relating to each of the four above referred aspects are made with a view to further consolidating the gains in the banking sector.

Consolidation

8.112 There have been some mergers and amalgamations in the Indian banking industry in recent years. Despite this, however, competition in the banking sector has increased as mergers involved smaller banks. At present, of the 15 largest banks, 13 are in the public sector in which the holding of the Central Government can not be less than 51 per cent. This also ensures that there is no threat to competition. However, going forward, the scenario could change. The Government may have to allow PSBs to raise capital from the market as discussed subsequently in this section. Also, the roadmap for foreign banks is due for review in 2009. These developments, as and when they occur, would need to be monitored and guided carefully so that competitive pressures in the banking system are maintained in the interest of overall banking efficiency. Cross-country experiences suggest that where entry of foreign banks was allowed in the form of acquiring existing domestic banks, domestic banks consolidated in response to foreign competition, leading to concentration of assets and liabilities in the banking system and loss of competition. The cross-country experiences also suggest that FDI in banking activities of EMEs increased substantially beginning the mid-1990s. The value of FDI, as measured by cross-border M&As targeting banks in EMEs, rose from about US$ 2.5 billion during 1991-95 to US$ 51.5 billion in the following five years and US$ 67.5 billion from 2001 to October 2005. The share of cross-border M&A deals involving financial institutions from EMEs as the target increased from 13 per cent of the global amount in 1991-95 to 28 per cent in 1996-2000 and further to 35 per cent from 2001 to October 2005. Between 1991

[3] The study, however, did not distinguish in clear terms whether the tighter norms on bank ownership followed after the crisis or existed before.

and 2005, transactions targeting banks in the Latin America region accounted for US$ 58 billion or 48 per cent of total cross-border M&As targeting banks in EMEs. Latin America was followed by emerging Asia with US$ 43 billion (36 per cent of total M&As) and central and eastern Europe with US$ 20 billion (17 per cent of total M&As) (Domanski, 2005). The implementation of Basel II could also accelerate the process of consolidation as smaller banks would face several difficulties such as cost implications and higher management information system (MIS) requirements. The implementation of Basel II itself would also immediately raise capital requirements. In view of the above referred developments, there would be need to ensure that consolidation does not undermine competition.

8.113 Consolidation among large banks, in particular, would raise both competition and moral hazard concerns, *i.e.,* "too big to fail". It has also been argued in some quarters that in terms of size, banks in India do not compare well with banks in other countries. As alluded to earlier, the size of the banking sector needs to be seen in relation to the size of the economy. And if size is the issue, some banks in the world are larger than the size of the scheduled commercial banking sector in India.

8.114 In order to preserve competition, some countries such as Canada have denied mergers of banks. In Australia, there is a policy of 'four pillars', whereby the merger of any two or more of the big four banks is not allowed. Some countries have also imposed higher CRAR for banks with large market share, *i.e.,* 20 per cent or more. It would, therefore, be necessary to have appropriate policy in place, whereby the competition is not undermined any time in future. While mergers among large banks can undermine competition, competition can be enhanced if mergers take place among the smaller and weaker banks in order to compete with the larger banks. Empirical analysis shows that scale economies exist significantly at the lower size segment of the banking sector.[4] However, these economies of scale get exhausted with increase in size and turn into diseconomies only for the banks in the largest class size. This suggests that in India there is scope for several small banks to expand further through mergers and acquisitions and still operate in the economies of scale zone. While a large and well capitalised bank can readily absorb isolated small banks and improve the performance of the merged entities, it is unlikely that merging two weak banks can quickly create a single strong bank. However, any move to merge even the smaller banks, as in the past, needs to be driven by the synergies. It would also need to be ensured that the larger entities do not neglect small customers.

Public Sector Banks

8.115 After nationalisation of 14 banks in 1969 and six banks in 1980, a major segment of the banking system came under the ownership of the Government. Although with the entry of new private sector banks, the share of public sector banks has declined, they still remain the mainstay of the Indian banking sector, accounting for nearly 70 per cent of assets and income.

8.116 As alluded to in the previous section, in several emerging market economies state-owned banks have been privatised. However, this was done to restructure the banking systems after the crises. In contrast, the Indian banking sector is in robust state. Public sector banks have been able to improve their performance. Public sector banks have been able to achieve, to a large extent, the objectives for which they were nationalised. There has been sharp overall increase in credit to the preferred sectors, especially agriculture. Adequate safeguards are in place to avoid the pitfalls which forced the Government to nationalise banks. Priority sector targets are in place to ensure that credit flows to the desired sectors. Such targets can continue to exist so long as the need is felt for directing credit to certain preferred sectors.

8.117 Although ownership is not an issue insofar as efficiency of public sector banks and providing credit to the desired sectors is concerned, there are several other issues that need to be carefully weighed. The operating environment for banks has changed quite significantly in the last few years. The Indian economy is getting increasingly integrated with the global economy. India is also progressively moving towards fuller capital account convertibility. Competition in the banking sector has intensified. In a competitive environment, banks need flexibility to respond to the changing conditions. Also, in order to sustain operations, banks need to raise capital from the market on an ongoing basis. At present, all public sector banks have CRAR of more than 10 per cent.

[4] Essentially, the ray scale economies measure the response of cost to change in output (scale) for different sizes of bank groups. A value of greater than 1 shows that a unit increase in scale leads to more than unit increase in cost, i.e., there is diseconomies of scale. A value of less than 1 implies cost increasing by less than 1 for unit increase in output, *i.e.*, economies of scale. A value of 1 shows constant return scale (Annex VIII.2).

Although with the Basel II norms, capital requirements are expected to go up by 100 to 150 basis points, all PSBs should be able to meet Basel II norms. Thus, in the near term, public sector banks would not have difficulty in funding the capital requirements as detailed in Chapter V. However, in the medium to long-run, banks may be required to raise capital (other than the innovative instruments) from the market. In terms of the present provisions of the law, Government equity in public sector banks cannot be less than 51 per cent. This can become an issue hampering the growth of public sector banks if the Government is not able to provide adequate capital for expansion of public sector banks. Thus, there would be need to find a durable solution to the problem, whereby either the Government contributes to the capital of banks or allows banks to raise capital from the market. Therefore, the issue of state ownership needs to be weighed against the changed operating environment and whether public sector banks can continue to expand without being constrained by capital.

Foreign Banks

8.118 Although India has committed 12 branches of foreign banks in a year, it has been more liberal than the commitments. During the period 2003 to October 2007, India gave approval for 75 new foreign bank branches. In the roadmap for presence of foreign banks, it was envisaged that the issues concerning according full national treatment to the foreign banks, dilution of stake in WOS and mergers/acquisitions of any private sector bank in India will be taken up for a review in April 2009. At the time of review, several issues would need to be carefully weighed.

8.119 One of the arguments in favour of increased foreign bank presence is to enhance efficiency of the domestic banking sector. It is often argued that foreign banks entry renders the domestic banking system more competitive and thereby puts pressure on domestic banks to improve their efficiency and productivity. For instance, following banking sector crises and macroeconomic pressures in many EMEs during the 1990s, banking sectors in EMEs were opened up for foreign banks entry to generate competition, efficiency and stability. In emerging market economies, historically, the banking was a highly protected industry with very little operational flexibility to banks and no presence of foreign banks. The case of the Indian banking, however, is different. India has already a well developed banking sector. The Indian banking sector has widespread coverage as well as expertise in providing banking services. Extensive banking expertise in India stems from the diversified banking entities, *i.e.*, public sector, private sector, and foreign banks existing historically and catering to the needs of the different sections of the economy. This co-existence of different groups of banks along with the deregulation of various banking activities led to efficiency gains across the banking groups in India. Foreign banks in India in the past have played an important role. They have also brought with them latest skills and technologies and their presence had an important positive spillover effect on domestic banks. Going forward, although efficiency gains from the increased presence of foreign banks would need continued consideration, there would be need to consider the other kinds of impact that the operations of foreign banks may have. The increased presence of foreign banks, by intensifying competition, could accelerate the consolidation process that is underway. While this may be the positive outcome, it may, at the same time, also raise the risk of concentration. The prospect of liberalisation of foreign banks' entry also could lead to consolidation within the domestic banking sector. There is not much empirical evidence on the impact of cross-border consolidation on the scale, scope and product mix efficiencies. It, however, is likely to be different from the scale, scope and mixed effects within the country. If mergers involve large banks, it may lead to concentration as was observed in several Latin American countries. Here, it is significant to note that it is number of entrants, rather than their market share, which matters more for enhancing the efficiency of the domestic banking system.

8.120 Another issue which concerns the effect of foreign banks' expansion is on the supply of credit to domestic entities, especially small ones that rely heavily on bank credit for external finance. There are studies which suggest that large foreign bank presence can lead to reduction in lending to small businesses substantially. This issue is of special relevance in the present context because lending to the SME sector even in the present structure has not received adequate attention. The larger presence of foreign banks also raises several home-host issues as detailed in Chapter X. These issues, therefore, would need to be carefully weighed while reviewing the roadmap for the presence of foreign banks.

8.121 In regard to the operationalisation of the envisaged road map for the presence of foreign banks in India, in the days ahead, there are multiple dimensions of the issues involved, which need to be kept in view. As mentioned earlier, one of the important considerations relating to removal of the

statutory restriction on the exercise of voting rights and empowering the Reserve Bank of India to strengthen the governance standards in the banks and to secure this diversified ownership, envisaged under Phase I of the road map, has yet to take place. In the public sector banks segment, which continues to account for a major share of the assets of the Indian banking system, no significant progress has taken place so far in regard to the consolidation and governance practices. Public sector banks are yet to be fully compliant with the process for ensuring the observance of 'fit and proper' criteria in respect of the selection of independent directors nominated to the boards of these banks.

8.122 The foreign banks present in India had a share of 10.1 per cent in the aggregate assets and 63.8 per cent in the aggregate off-balance sheet business of the Indian banking system as on June 30, 2008 and receive a favourable regulatory treatment in certain aspects vis-à-vis their Indian counterparts. The experience of the Indian banks in other jurisdictions, however, indicates that the principle of reciprocity is not fully observed in certain jurisdictions. Certain large global banks are in the midst of considerable turmoil and financial distress in the aftermath of the credit market turbulence and its fall out. This raises question about the audit of the risk management capability of these global banks, the efficacy of their corporate governance and transparency in their financial affairs. The approach to the road map may have to take account of these developments whose implications and ramifications are not yet clear.

8.123 In terms of our WTO commitment, licences for new foreign banks may be denied when the share of foreign banks' assets in India, including both on- as well as off-balance-sheet items, in the total assets (including both on- and off-balance sheet items) of the banking system exceeds 15 per cent. The actual share of foreign banks in the total assets of the Indian banking system, including both on- and off-balance sheet items (on a notional principal basis), has been far above the limit. This share of foreign banks was at 49 per cent at end-January 2007, as mentioned in the India's Trade Policy Review, 2007. However, India has autonomously not invoked this limitation so far to deny licences to the new foreign banks.

8.124 There is also need to weigh the various issues of cross-border operations of Indian banks. As the Indian economy expands further, the number of corporates accessing the international capital markets would also increase. This would also require larger presence of Indian banks overseas, and reciprocity issues would also need to be considered in the expanded entry of foreign banks in India.

Combining Banking and Commerce

8.125 The issue of combining banking and commerce in the banking sector needs to be viewed in the historical perspective as also in the light of cross-country experiences. India's experience with banks before nationalisation of banks in 1969 as well as the experiences of several other countries suggest that several risk arise in combining banking and commerce. In fact, one of the main reasons for nationalisation of banks in 1969 and 1980 was that banks controlled by industrial houses led to diversion of public deposits as loans to their own companies and not to the public, leading to concentration of wealth in the hands of the promoters. Many other countries also had similar experiences with the banks operated by industrial houses. Several countries, therefore, continue to place restrictions on combining banking and commerce.

8.126 The issue of allowing commercial interests to undertake banking business involves several issues. One, banks by nature are highly leveraged institutions, whereby with small equity, they have command over a large amount of resources. It is in this context that the issue of diversified ownership in banks is emphasised. In contrast, industrial houses are either highly concentrated or are not so well-diversified. Also, in some cases, business houses are owned by families. The concentrated ownership of commercial interests makes it extremely difficult to achieve diversified ownership of banks. Given the fact that owners or shareholders of the banks have only a minor stake and considering the leveraging capacity of banks (more than ten to one), they command a very large volume of public funds of which their own stake is miniscule. Thus, concentrated shareholding in banks controlling huge public funds does pose issues relating to the risk of concentration of ownership because of the moral hazard problem and linkages of owners with businesses. Apart from this, greater control of individual companies also poses the issue of inter-connected lending that once was widely prevalent before the nationalisation of banks in India. Thus, diversification of ownership is desirable as also ensuring 'fit and proper' status of such owners and directors (Mohan, 2004b). The policy relating to ownership of banks by commercial interests may, therefore, have to take full account of international practices, given the issues relating to potential conflict of interests, increased potential of contagion effects and increased concentration.

VIII. SUMMING UP

8.127 An important aspect of liberalisation of the banking sector in the early 1990s was the entry of new private sector and increased presence of foreign banks to enhance the competition. The number of new private sector and foreign banks increased during the larger part of the 1990s, resulting in an overall increase in the number of banks. However, the process of consolidation through mergers and amalgamations gained momentum during the latter part of the 1990s, which led to a decline in the number of banks. Mergers and amalgamations were market driven with the Reserve Bank acting only as the facilitator. Despite the accelerated pace of consolidation, competition in Indian banking sector increased as was reflected in the various measures of concentration, which declined in recent years. It was mainly because banks involved in mergers and amalgamations were small. Concentration in the Indian banking sector was lower than that in many other emerging market economies and even some advanced countries. As is the case with several other advanced and emerging market economies, the Indian banking sector was operating under monopolistic competitive conditions and the degree of competition improved somewhat in recent years.

8.128 The Indian banking sector is at a critical juncture and is faced with several challenges/issues. These relate to nature and extent of further consolidation, the changed environment for public sector banks and the capital constraints faced by them due to Government ownership and further opening of the banking sector to foreign competition. However, some banks in India are of very small size. Although small banks have a role to play to cater to some sector specific needs, small and not so efficient banks may find it difficult to sustain their operations in a highly competitive environment. There is, therefore, a scope for consolidation. The empirical analysis also suggests that the scope for achieving economies of scale exists for banks operating at the lower end. However, the process of consolidation even of small banks should be driven by the market.

8.129 Public sector banks in India have played a very useful role in promoting the growth of the Indian economy. In the post-reform period, their performance, both in terms of efficiency/productivity and soundness parameters, has converged with that of private and foreign banks. Thus, while ownership from the efficiency viewpoint is not an issue, banks now operate in a competitive environment and, therefore, need sufficient flexibility. Another issue relates to the funding of capital requirements. Although such funding is not an issue in the near future, in the medium to long-term, the issue of funding of capital of PSBs is expected to surface. Provision will have to be made for the adequate expansion of capital of public sector banks as necessary and also of governance norms and practices that enable them to be competitive in the presence of increased competitive pressures. It is, in this context, that the issue of Government ownership needs to be weighed and the consolidation of public sector banks needs to be considered.

8.130 The road map for the presence of foreign banks in India envisages a review, in 2009, of the experience gained during the implementation of Phase I of the road map. At that stage, several dimensions of the presence of foreign banks in a country would need to be carefully examined. There is a general perception that the foreign banks bring many benefits to the host countries in the emerging markets, such as modern technology, accelerated consolidation, increased competition and the resultant gains in efficiency. While in the Indian context, the considerations of efficiency gains would need to be continually kept in view, the evidence of how the expanded presence of foreign banks, through organic or inorganic route, affects different sectors of the host economy in a variety of countries is not clear. It has been a public policy concern that the foreign banks enter a country but do not deliver the benefits to the wider community on account of their largely urban-centric presence and also since they tend to ignore the local factors due to a decision making structure, particularly in the area of credit, centralised at the overseas head office. It is also argued that the foreign banks tend to focus on the larger corporates while avoiding bank credit to the small and medium-sized enterprises. There are several studies that suggest that the expanded foreign bank presence in a country could lead to reduced availability of credit to the small firms and small borrowers. This would be an area of particular concern in the Indian context. Thus, all these considerations would need to be carefully evaluated while evolving a policy framework in regard to the enhanced presence of foreign banks in India.

8.131 India's experience before nationalisation of banks in 1969 as well as the experiences of several other countries suggest that several serious risks arise from combining banking with commerce such as conflicts of interest, misallocation of resources and emergence of the monopoly power of industrial houses. Realising these concerns, many countries have continued to place restrictions on combining banking and commerce.

Annex VIII.1: Roadmap for Presence of Foreign Banks in India

The Reserve Bank of India (RBI) released the roadmap for presence of foreign banks in India and guidelines on ownership and governance in private sector banks. Shri P Chidambaram, Minister of Finance, Government of India, in his speech announcing the Union Budget for 2005-2006, stated that the 'RBI has prepared a roadmap for banking sector reforms and will unveil the same.'

Accordingly, the following three documents were released:

a. Roadmap for presence of foreign banks in India,

b. Annex for setting up of wholly owned banking subsidiaries, and

c. Guidelines on ownership and governance in private sector banks.

Roadmap for Presence of Foreign Banks in India

It may be recalled that the Ministry of Commerce and Industry, Government of India had, on March 5, 2004 revised the existing guidelines on foreign direct investment (FDI) in the banking sector. These guidelines also included investment by non-resident Indians (NRIs) and FIIs in the banking sector.

As per the guidelines the aggregate foreign investment from all sources was allowed up to a maximum of 74 per cent of the paid up capital of the bank while the resident Indian holding of the capital was to be at least 26 per cent. It was also provided that foreign banks may operate in India through only one of the three channels, namely (i) branch/es (ii) a Wholly owned Subsidiary or (iii) a subsidiary with an aggregate foreign investment up to a maximum of 74 per cent in a private bank. In consultation with the Government of India, RBI has released the road map for presence of foreign banks in India to operationalise the guidelines.

The roadmap is divided into two phases. During the first phase, between March 2005 and March 2009, foreign banks will be permitted to establish presence by way of setting up a wholly owned banking subsidiary (WOS) or conversion of the existing branches into a WOS.

To facilitate this, RBI has also issued detailed guidelines. The guidelines cover, inter alia, the eligibility criteria of the applicant foreign banks such as ownership pattern, financial soundness, supervisory rating and the international ranking. The WOS will have a minimum capital requirement of Rs. 300 crore, i.e., Rs 3 billion and would need to ensure sound corporate governance. The WOS will be treated on par with the existing branches of foreign banks for branch expansion with flexibility to go beyond the existing WTO commitments of 12 branches in a year and preference for branch expansion in under-banked areas. The Reserve Bank may also prescribe market access and national treatment limitation consistent with WTO as also other appropriate limitations to the operations of WOS, consistent with international practices and the country's requirements.

During this phase, permission for acquisition of share holding in Indian private sector banks by eligible foreign banks will be limited to banks identified by RBI for restructuring. RBI may if it is satisfied that such investment by the foreign bank concerned will be in the long term interest of all the stakeholders in the investee bank, permit such acquisition. Where such acquisition is by a foreign bank having presence in India, a maximum period of six months will be given for conforming to the 'one form of presence' concept.

The second phase will commence in April 2009 after a review of the experience gained and after due consultation with all the stakeholders in the banking sector. The review would examine issues concerning extension of national treatment to WOS, dilution of stake and permitting mergers/ acquisitions of any private sector banks in India by a foreign bank in the second phase.

Guidelines on Ownership and Governance

For Private Banks

It may be recalled that the Reserve Bank had released a draft policy framework for ownership and governance in private sector banks on July 2, 2004 for discussion and feed back. These guidelines emphasised desirability of diversified ownership in banks, 'fit and proper' status of important shareholders, directors and the CEO and the need for a minimum capital / net worth criteria. Suitable transition arrangements had been provided while keeping the policy and the processes transparent and fair. The guidelines have remained in the public domain for a sufficient length of time and have been widely debated. There is a general consensus on the need for good governance and management in the banking system and desirability of diversified ownership to the extent possible while keeping the overriding objective of ensuring fit and proper status of owners and directors. Certain issues were also raised on the application of the framework to existing banks and the need for enabling shareholding higher than 10 per cent to facilitate restructuring in the banking system and consolidation.

Based on the feedback received and in consultation with the Government of India, the Reserve bank has now finalized the guidelines on ownership and governance. The guidelines provide for higher levels of shareholding, inter alia, for ensuring restructuring and consolidation simultaneous with compliance of fit and proper criteria. The present policy of acknowledgement for acquisition / transfer of shares by FIIs will continue based upon the guidelines on acknowledgement of acquisition / transfer of shares issued on February 3, 2004 and RBI may seek certification from the concerned FII of all beneficial interest.

While implementing the above policies it will be ensured by RBI that the approach is consultative, processes are transparent and fair, and a non-disruptive path is followed.

Annex VIII.2: Ray Scale Economies

	1999-2000	2006-07
Size Class / No. of Banks	99	79
I	0.908	0.867
II	0.880	0.888
III	0.909	0.889
IV	0.943	0.921
V	0.950	0.921
VI	0.960	0.936
VII	0.973	0.941
VIII	0.987	0.944
IX	0.984	0.948
X	0.992	0.953
XI	0.990	0.956
XII	0.992	0.926
XIII	0.992	0.964
XIV	0.990	0.969
XV	0.997	0.971
XVI	1.004	0.998
XVII		1.008

Note: A particular class does not necessarily represent the same size for both periods of analysis.

IX EFFICIENCY, PRODUCTIVITY AND SOUNDNESS OF THE BANKING SECTOR

9.1 A well-functioning financial sector facilitates efficient intermediation of financial resources. The more efficient a financial system is in resource generation and in its allocation, the greater is its contribution to economic growth (Mohan, 2005). An efficient system of financial intermediation also contributes to the risk mitigation process in the economy. For instance, enhanced efficiency in banking can result in greater and more appropriate innovations, improved profitability as well as greater safety and soundness when the improvement in productivity is channelled towards strengthening capital buffers that absorb risk (Casu, Giraradone and Molyneux, 2002). Moreover, efficiency or productivity measures could act as leading indicators for evolving strengths or weaknesses of the banking system and could enable pre-emptive steps by the regulator when necessary. Therefore, investigation and measurement of efficiency and productivity in the banking sector have always been areas of interest for economic research.

9.2 It has been empirically found that banks receiving high efficiency scores are much more likely to survive than banks which have relatively low scores (Barr and Siems, 1996). Another study has validated the relevance of regular cost efficiency screening for early warning signals of managerial problems in commercial banks. This study confirms a negative and significant relation between cost efficiency and the risk of a bank failure (Podpiera and Podpiera, 2005). The assessment of efficiency and productivity of banking, thus, assumes high importance.

9.3 Several factors have been found to be associated with efficiency and productivity of financial intermediaries. While specific factors may vary across countries, a policy environment facilitating tapping of economies of scale, diversification of activities and introduction of state of the art technologies have generally been the driving force behind higher efficiency and productivity levels. These factors, therefore, have been engaging the attention of policymakers all over the world.

9.4 One of the major objectives of banking sector reforms in India was to promote flexibility, operational autonomy and competition in the system and to raise the banking standards in India to the international best practices (Reddy, 2002). In order to achieve these objectives, several measures have been initiated since the early 1990s. As a result of these measures, together with technological developments, the operating environment for banks in India has changed significantly. The Indian banking system has been exposed to increased competition with the enhanced presence of foreign banks and entry of new private sector banks. Most of the public sector banks have accessed the capital market. This has changed their capital structure, besides subjecting them to market discipline, as alluded to in the previous chapter. The administered interest rate structure has been almost deregulated. Statutory pre-emptions in the form of CRR and SLR have been reduced significantly. Banks have also been allowed to diversify into non-traditional activities. Banks were provided with operational flexibility and functional autonomy in their day-to-day decision making process to enable them to respond to the evolving situation. Banks have also been subjected to prudential norms in line with the international best practices. In the past, a large amount of banks' funds was locked in non-performing assets. Multi-pronged institutional arrangements were put in place to enable banks to expeditiously recover their past dues. Advances in information and communication technology have enabled banks to introduce new products and delivery channels, and strengthen their internal control systems. All these changes are expected to have altered the way banks combine inputs to produce and deliver their products and services having a bearing on their efficiency and productivity.

9.5 In the above backdrop, this chapter assesses efficiency, productivity and soundness of the banking sector in India. The focus of the chapter is to assess whether efficiency and productivity of the banking sector have improved in the post-reform period; and if so, to what extent. The productivity and efficiency of the Indian banking sector are also compared with banks in other countries, especially emerging market economies (EMEs). Efficiency has also been tested along three different dimensions, *viz*., ownership (public *versus* private), size (small *versus* large) and activity (specialisation *versus* diversification).

9.6 The chapter has been organised in eight sections. Section II sets out some conceptual issues relating to the measurement of efficiency and

productivity. Section III assesses productivity and efficiency of the banking sector as well as bank group-wise, based on accounting measures or financial ratios. A comparison has also been made with other countries, wherever possible. The factors affecting the net interest margin (NIM), the main source of income for banks, have also been analysed. Section IV undertakes the measurement of productivity and efficiency in terms of economic measures and attempts to ascertain the determinants of efficiency for the Indian banking sector as a whole as well as bank group-wise. The relationship between efficiency on the one hand, and ownership, size and diversification on the other is also analysed in this section. Section V assesses the soundness of the banking sector in terms of capital to risk-weighted asset ratio (CRAR) and asset quality. It also attempts to establish the relationship between efficiency and soundness. Section VI explains the factors that have led to improvement in efficiency over the years. As a way forward, Section VII delineates the issues that need to be addressed for further improving the efficiency, productivity and soundness of the banking sector. Section VIII sums up the main points emerging from the analysis.

II. MEASUREMENT OF PRODUCTIVITY AND EFFICIENCY – SOME CONCEPTUAL ISSUES

9.7 Productivity is construed as the ability and willingness of an economic unit to produce maximum possible output with given inputs and technology (Kalirajan and Chand, 1994). Higher the output per unit of input, higher is the productivity. Efficiency, on the other hand, measures performance of the bank in a normative sense by comparing it with the industry leader within or across the borders. Though, in general, it is expected that there would be a co-movement in productivity and efficiency, score of a bank in terms of these two measures may actually diverge. While, a bank may improve in terms of productivity over a period, its efficiency score may decline if rise in its productivity is slower than that of the industry's best performer (Box IX.1).

9.8 Unlike the case of a typical firm in an economic textbook, the bank does not produce a definite product or output – rather it is a multi-product producing unit. Therefore, the usual yardsticks to measure the productivity of a typical manufacturing firm cannot be readily implemented in the case of banks. Specific methods that are required to measure productivity and efficiency of banking units are broadly of two types, *viz*., accounting measures and economic measures. Accounting measures refer to various financial ratios that focus on one or more outputs and their relevant inputs to measure the performance or productivity of a banking unit. Efficiency, being a normative concept, could be measured by comparing the bank's performance as evaluated using these ratios against the best practices within or outside the country.

Box IX.1
Productivity and Efficiency – A Fine Distinction

The standard measures of productivity, better known as accounting measures, involve calculation of output per unit change in a single input assuming that other variable factors, technology and institutions remain unchanged (average productivity). Business per employee, profit per employee, ratio of operating costs to average assets or ratio of operating income to staff expenses are often used as traditional measures of productivity in the banking sector. Under these standard concepts of productivity change, the fine distinction between efficiency and productivity is blurred. However, the development of aggregate measures of productivity such as total factor productivity (TFP) enabled disaggregation of output change into two major components, namely, output change due to change in efficiency and output change attributable to change in technology. While a change in efficiency measures the increment in output without a rise in input or the amount by which inputs may be reduced without reducing the output, a change in technology represents the change in output that may be attributed to innovations (technical progress), shocks (financial crisis), changes in market structure (high concentration due to M&As) and regulatory policies (financial deregulation). More technically, a change in efficiency is a movement along the production function (catching up or falling behind), while a change in technology is a shift in the production function (See Appendix IX.1). In other words, the concept of efficiency relates to how well a bank employs its resources relative to existing production possibilities frontier. Hence, the analysis of banking efficiency relies on intra-sector comparisons, involves both technological and relative pricing aspects and has partial indicator value for analysing productivity performance. The concept of productivity, on the other hand, refers to the performance of the sector as a whole and effectively combines changes in efficiency and technological advances in an average measure (Oster and Antioch, 1995).

Reference:

Oster, A. and L. Antioch. 1995. "Measuring Productivity in the Australian Banking Sector." Reserve Bank of Australia.

9.9 In the case of accounting measures, various ratios are computed and each of them refers to a particular aspect of bank activity. Since the banking industry uses multiple inputs to produce multiple outputs, a precise inference may not always be possible. In order to overcome this limitation, alternative techniques are employed to compute total factor productivity of a banking unit, which captures all aspects of banking operations in a single measure. These techniques, which are commonly referred to as 'economic measures' are broadly of two types – parametric regression based on production function specification and alternatively, the non-parametric approach (Appendix IX.1).

9.10 There is a large body of literature on the subject which throws light on alternative methods of assessing efficiency and productivity of the banking sector (Box IX.2).

III. MEASUREMENT OF PRODUCTIVITY AND EFFICIENCY OF THE BANKING SECTOR IN INDIA – ACCOUNTING MEASURES

9.11 In this chapter, productivity and efficiency of the banking sector in India have been measured using both accounting measures and economic measures. While accounting measures enable a disaggregated and incisive analysis of bank's performance in terms of individual parameters determining the overall efficiency level, economic measures provide a composite and precise estimate of efficiency and productivity by comparing each bank against the best performer in the industry. In this section, productivity and efficiency have been assessed using accounting measures, while the assessment based on the economic measures is attempted in the next section.

9.12 Intermediation cost, interest spread, operating expenditure, cost to income ratio, return on assets, return on equity, business per employee, income per employee and business per branch, among others, are some of the commonly used accounting measures for assessing the efficiency and productivity of a banking unit. Although each of the ratios is indicative of the productivity/efficiency and reflects on certain aspect/s of a bank's functioning, it needs to be juxtaposed with other ratios to derive an insight into the performance of a banking unit (Box IX.3).

Operating Costs to Total Assets

9.13 This ratio indicates the amount of operating costs expended per unit of assets. All efforts by a bank to cut cost by rationalising its labour force and branches and back office operations should get reflected in this ratio. Larger the ratio, the lower is the efficiency. This ratio is also used to represent the intermediation cost of banking system by some researchers. The logic for such usage lies in the fact that ultimately, the banks use these operating costs to generate assets (*i.e.*, loans) from their available funds (*i.e.*, deposits). A reduction in operating costs is expected to ultimately result in reduction in lending rates and also net interest margins, thereby facilitating greater credit offtake, and hence, economic growth (Bhide, Prasad and Ghosh, 2002). In terms of the Basel II norms, banks should have cost to asset ratio of about one per cent (Ghosh, C.R *et al*, 2004).

9.14 There has been a gradual and almost sustained decline in the cost-asset ratio for the Indian banking industry as a whole from the peak level of 2.93 per cent in 1995-96 to 1.91 per cent in 2006-07. However, the trend varied across the bank groups. The cost-asset ratio of new private sector banks, which declined sharply between 1997-98 and 2001-02, increased gradually from 2002-03 onwards. However, the ratio for all other bank groups, which generally increased in the 1990s, declined in the 2000s. For the entire period, *i.e.*, between 1991-92 and 2006-07, while the ratio for public sector banks and old private sector banks declined, it increased in respect of foreign banks and new private banks (Table 9.1).

9.15 The sharp decline in the operating cost to total assets ratio of public sector banks in 2001-02 was on account of rationalisation of the workforce. State Bank of India and nationalised banks introduced voluntary retirement schemes during 2000-01, which had a major bearing on the cost-asset ratio for public sector banks in 2001-02. The sharp decline in operating expenses during 2006-07 may be explained in terms of a lower increase in wage bill as compared with the previous years as banks in recent years have tended to outsource many routine activities. Increase in the ratio in the case of new private sector banks that began in the late 1990s reflects expansion of branch network and spending on technological up-gradation and creation of infrastructure. New private sector and foreign banks have invested large amounts on technology up-gradation, which has had the salutary effect of leveraging technology to provide better consumer support and to manage assets in the long-run (D'Souza, 2002), though operating costs did increase in the short term. This is substantiated by steadily increasing non-labour cost to earning assets ratio in the case of foreign banks, much above the industry levels. Further, foreign banks have been

Box IX.2
Productivity and Efficiency: Cross-country Empirical Evidence

Initially, efficiency studies were confined to detection of scale (size) and scope economies (product mix) under the implicit assumption that banks are technically and allocatively efficient (Berger and Humphrey; 1997). However, with banking structure undergoing overwhelming changes in the event of financial globalisation and evolution of new products, a broad consensus evolved that differences in technical efficiency cannot be attributed completely to incorrect scale and scope of output (Berger and Humphrey, 1997).

There is extensive empirical work on US banking industry exploring whether or not branch network contributes to cost efficiency of banks. But evidence in this regard is inconclusive. A comprehensive work on the US banking sector with sample of 5,548 banks revealed that the operation of branch network, either domestic or foreign, contributed to higher cost inefficiency (Kaparkis, *et. al*, 1994). On the other hand, another study on the US banking sector pointed out that there was no significant difference in efficiency between branch banks and non-branching unit banks and overall and technical efficiency were negatively related to product diversity and positively related to the extent of urbanisation.

Similarly, with regard to impact of deregulation on bank efficiency, consensus is again less than absolute. A study based on separate panels of 88 Spanish banks and 55 savings banks covering the period 1985-91 highlights the point that deregulation was associated with a decrease in relative cost efficiency for commercial banks but no change for savings banks (Cuerta, Rand Orea, L (2002). Again, a study on Turkish commercial banks adopting data envelopment analysis covering the period from 1988-1999, revealed that banks experienced scale inefficiency during the period of deregulation. On the other hand, a couple of studies on the Indian banking sector show that deregulation which permitted diversification in fee based activities and relaxed norms for branching has contributed to the efficiency and productivity growth ((Bhattacharya, Bhattacharya and Kumbhakar, 1997). Similarly, a study on Turkish banks for the period between 1981-90 found that productivity improved significantly after deregulation but it was driven mainly by efforts of inefficient banks to catch up with best banks rather than technical progress. Further, exclusion of non-traditional activities such as off-balance sheet items significantly deteriorated average efficiency and productivity scores of entire industry.

With regard to impact of diversification, there is more or less a consensus. A panel study covering 86 commercial banks over the period 1985-1990 observed that diversification has led to overall economic gains in the U.S. commercial banking industry of roughly 1 per cent. Similarly, a panel consisting of Taiwan's 22 domestic banks, of which 11 were public banks, for the period 1981-1992 identified that both scale and scope economies existed in Taiwan's banking industry.

There are a couple of cross country studies evaluating relative efficiency level of banking industry in different countries. European Commission estimated a pooled time series cost frontier for all main European Union banking sectors for the period 1987-94. Overall the study found average productivity inefficiencies of 20 per cent. At an individual country level, Luxembourg banks appeared to be relatively more efficient. Another comprehensive work on productivity, efficiency and differences in technology, for eight European countries in 1992, suggests that France, Spain and Belgium appeared to have the most efficient banking sectors (with efficiency scores of 0.95, 0.82 and 0.81, respectively), while UK (0.54), Austria (0.61) and Germany (0.65) were the least efficient.

Some studies have documented how cost efficiency can particularly enhance safety and soundness of the financial system. Berger and De Young, in fact found a two-way causality between problem loans or asset quality - which is a crude indicator of safety and soundness under CAMELS rating - and cost efficiency for US banks between 1985 and 1994. Non- performing loans, caused due to external events can impose extra operating costs on banks.

It has been demonstrated empirically how bank failure can be predicted using efficiency score obtained from data envelopment analysis as a proxy of management quality. It was found that banks receiving high efficiency score are much more likely to survive than banks which have relatively low scores (Barr and Siems,1996).

Another study has validated the high relevance of regular cost efficiency screening for early warning signals of managerial problems in commercial banks in Czechoslovakia. It confirmed a negative and significant relationship between cost efficiency and the risk of bank failure. In view of this, the assessment of efficiency and productivity of banking assumes seminal importance (Podpiera and Podpiera, 2005).

References:

Barr, R., and T. Siems. 1996. "Bank Failure Prediction using DEA to Measure Management Quality." *Federal Reserve Bank of Dallas Working Paper*.

Berger, A. N., and D. B. Humphrey. 1997. "Efficiency of Financial Institutions: International Survey and Directions for Future Research." *European Journal of Operational Research*, 98:175-212.

Berger, A. N., and R. de Young. 1997. "Problem Loans and Cost Efficiency in Commercial Banks." *Federal Reserve Board Finance and Economics Discusion Series* 8.

Bhattacharya, Anjana, Arunava Bhattacharya and Subal C. Kumbhakar. 1997. "Changes in Economic Regime and Productivity Growth: A Study of Indian Public Sector Banks." *Journal of Comparative Economics*, 25(2):196-219 .

Cuerta, R., and L. Orea. 2002. "Mergers and Technical Efficiency in Spanish Savings Banks: A Stochastic Distance Function Approach." *Journal of Banking and Finance*, 26(12): 2231-2247.

Podpiera, A., and J. Podpiera. 2005. "Deteriorating Cost Efficiency in Commercial Banks Signals an Increasing Risk of Failure." *CNB Working Paper Series*, December.

Box IX.3
Analytical Framework of Ratio Analysis

A common approach to efficiency and productivity analysis in the banking sector is the ratio analysis, whereby the performance of a banking unit is adjudged in terms of certain key parameters and their ratios such as cost to income ratio, business per employee, business per branch *etc.* However, it may be observed that the analysis follows a sequence and each of these ratios is inter-linked. For example, cost to income ratio can be termed as an overall efficiency measure of the bank. It is a proxy of how efficiently bank undertakes its overall operations. Picking up individual income components and relating them to their respective cost constituents would reveal or provide insight into the bank's competence in different activities. Deposit mobilisation and credit creation is the core of banking business. Hence, the intermediation cost which relates income from credit and cost of deposit would illuminate bank's efficiency in its core function of raising deposits from savers and on lending to user groups. Similarly, bank's investment in Government and non-Government securities can be hypothesised to be sourced from borrowed funds, raised either domestically or internationally. The net interest margin ratio relates how efficiently banks manage their pecuniary risk arising from asset-liability mismatch.

As far as non-fund or fee based activities are concerned, personnel skills and business acumen of bank employees handling the particular desk matters. However, it is difficult to segregate cost incurred by a bank on its personnel staff handling fee-based activities, given the fact that the same set of personnel may be engaged in handling both fund and non-fund based activities. Thus, efficiency of banks in this third line of business is broadly measured in terms of ratio of non-interest income to interest income or total income. Banks often employ a transfer pricing mechanism to calculate the contribution of each banking activity towards total profits.

Income depends upon two factors, *viz*., size of business or quantum of credit or investment portfolio and price or lending rates or interest/dividend/capital gains on per unit of investment. Thus, after ascertaining bank's competence in sub-activities, its efficiency could be seen in terms of overall quantum of business per unit of its inputs, that is, business per employee or business per branch. Finally, this could be followed by profitability ratios such as return per unit of assets or returns on equity.

attracting the best talents in the industry with lucrative salaries and perks. They have invested a good amount of resources on training and human resource management strategies to retain their workforce, which has raised their labour costs, as explained subsequently.

Table 9.1: Operating Cost to Total Assets of Commercial Banks in India

(Per cent)

Year	Domestic Banks						All Domestic Banks	Foreign Banks	All Commercial Banks
	Public Sector Banks			Private Banks					
	State Bank Group	Nationalised Banks	All Public Sector Banks	Old Private Banks	New Private Banks	All Private Banks			
1	2	3	4	5	6	7	8	9	10
1991-92	2.48	2.67	2.60	2.97	*	2.97	2.61	2.26	2.59
1992-93	2.64	2.64	2.64	2.71	*	2.71	2.64	2.70	2.65
1993-94	2.66	2.64	2.65	2.49	*	2.49	2.64	2.65	2.64
1994-95	2.95	2.76	2.83	2.35	*	2.35	2.80	2.72	2.79
1995-96	3.09	2.93	2.99	2.63	1.82	2.47	2.95	2.77	2.93
1996-97	2.94	2.85	2.88	2.49	1.94	2.36	2.83	3.04	2.85
1997-98	2.68	2.65	2.66	2.30	1.76	2.14	2.60	2.98	2.63
1998-99	2.70	2.63	2.65	2.22	1.74	2.04	2.59	3.39	2.65
1999-2000	2.46	2.56	2.52	2.18	1.42	1.85	2.43	3.11	2.48
2000-01	2.66	2.76	2.72	1.98	1.75	1.87	2.60	3.05	2.64
2001-02#	2.11	2.40	2.29	2.08	1.12	1.45	2.13	3.00	2.19
2002-03	2.11	2.33	2.25	2.04	1.95	1.99	2.20	2.78	2.24
2003-04	2.21	2.21	2.21	1.99	2.04	2.02	2.17	2.75	2.21
2004-05	2.14	2.06	2.09	2.02	2.03	2.03	2.08	2.88	2.13
2005-06	2.28	1.93	2.05	2.11	2.11	2.11	2.06	2.94	2.13
2006-07	1.98	1.67	1.77	1.88	2.11	2.06	1.84	2.78	1.91

* : First published balance sheet data of new private sector banks were available from the year ended March 1996.

: The sharp decline in the operating cost to total assets ratio of public sector banks in 2001-02 was on account of launch of voluntary retirement schemes by State Bank of India and nationalised banks during 2000-01.

Source: Computed from Statistical Tables Relating to Banks in India (RBI).

Chart IX.1: Operating Cost to Total Assets – 2006-07

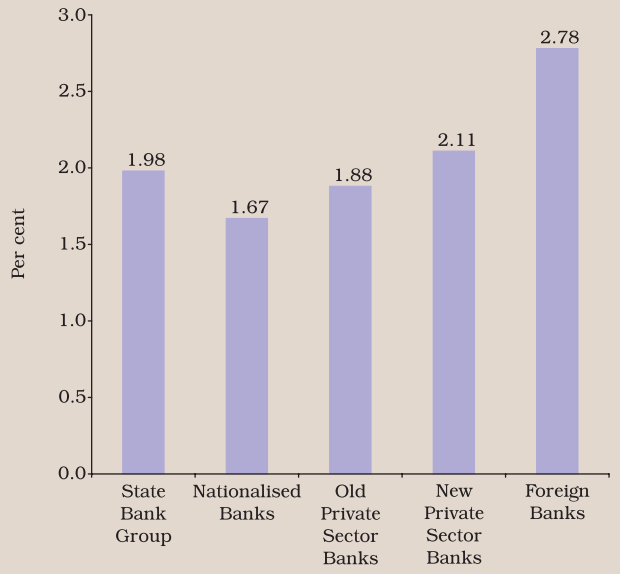
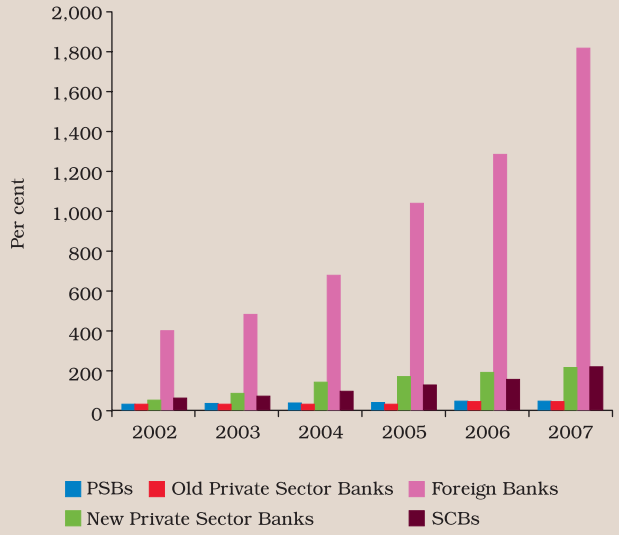


Chart IX.2: Off-balance Sheet Exposures to Total Assets (As at end-March)



9.16 A comparison of cost to asset ratio across the bank groups shows that during 2006-07, the cost to asset ratio was the lowest for nationalised banks, followed by old private banks, State Bank group and new private sector banks. It was the highest for foreign banks (Chart IX.1).

9.17 The high ratio in respect of foreign banks could be somewhat misleading because of off-balance sheet exposures, which constitute a sizeable proportion of their total business (Chart IX.2). Although such business entails cost, it is not captured in the assets as a result of which the operating cost to asset ratio is inflated.

9.18 A cross country comparison reveals that the ratio of operating expenses to total assets declined in several advanced economies and EMEs between 1999 and 2006 due mainly to growing competitive pressures within and across the borders. Although the ratio in India was higher than that in advanced countries, it compared favourably with most emerging market economies (EMEs). While the ratio was generally less than two for advanced economies during 2006, it ranged widely between 1.43 and 7.13 in EMEs. Also, the ratio in EMEs in Asia was lower than that of Latin America and Eastern Europe (Russia). The ratio in the case of India compared favourably with Thailand, the Philippines and Indonesia, but unfavourably with Korea, Malaysia and China (Table 9.2 and Chart IX.3)[1].

Cost to Income Ratio

9.19 The cost to income ratio indicates how profitably the funds have been deployed by the banks. The ratio reflects the ability of a bank to generate revenue from its expenditure. It captures the impact of off-balance sheet operations and is, thus, a better measure of efficiency than the cost to assets ratio. For the industry as a whole, the cost to income ratio declined gradually from a peak level of 71.89 per cent in 1992-93 to 50.15 per cent in 2007 (Table 9.3). However, trends have varied across the bank groups. While the ratio moved up in the case of foreign and new private sector banks, it gradually declined for all other bank groups.

9.20 As a result, the gap in the ratio amongst different bank groups narrowed down over the years. During 2006-07, the cost per unit of income continues to be the least in the case of foreign banks, implying this group is most efficient in the industry, followed by nationalised and old private sector banks. In terms of this ratio, State Bank and new private sector bank groups are the least efficient (Chart IX.4). As per the international best practice norm, banks should strive

[1] For the sake of comparability, data for India in this as well as all subsequent tables relating to cross country comparison have been sourced from "Bank Scope". These figures for India may not necessarily tally with figures set out in other tables on account of difference in coverage.

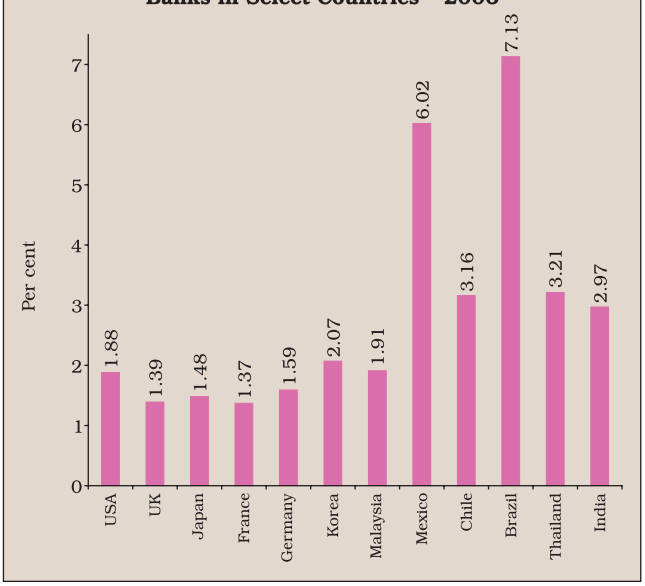
Table 9.2: Operating Cost to Total Assets of Commercial Banks in Select Countries

(Per cent)

Country	1999	2000	2001	2002	2003	2004	2005	2006
1	2	3	4	5	6	7	8	9
ADVANCED ECONOMIES								
USA	2.30	2.75	2.82	2.71	2.79	1.65	1.83	1.88
Canada	*	3.21	3.29	3.49	3.23	2.98	2.99	2.57
UK	*	2.38	2.58	2.47	1.34	1.56	1.40	1.39
Italy	3.26	3.23	3.32	3.34	3.43	2.32	1.91	2.30
France	1.59	2.02	1.71	1.63	1.57	1.49	1.31	1.37
Germany	1.89	1.94	2.54	2.80	2.37	1.93	1.71	1.59
Japan	2.63	2.35	2.92	2.45	2.28	1.87	1.43	1.48
EMERGING ECONOMIES								
Mexico	11.26	6.29	6.09	5.98	5.49	5.33	5.74	6.02
Chile	4.43	3.63	3.75	3.81	3.46	3.41	3.38	3.16
Korea	4.59	4.27	2.86	2.81	3.74	2.88	2.16	2.07
Thailand	7.70	2.34	1.85	2.69	2.48	2.36	2.28	3.21
Philippines	5.52	5.37	3.77	3.84	3.39	3.69	3.81	3.87
Malaysia	*	2.34	2.82	2.39	2.07	2.06	1.99	1.91
Indonesia	7.61	2.44	3.45	2.94	3.39	3.31	3.79	3.97
Brazil	9.25	7.60	7.27	7.18	7.20	7.35	7.16	7.13
Russian Federation	6.54	4.60	5.15	4.80	4.44	4.70	4.61	5.93
China	1.73	1.61	1.58	1.60	1.63	1.56	1.44	1.43
Memo :								
RANGE	**1.59 - 11.26**	**1.61 - 7.60**	**1.58 - 7.27**	**1.60 - 7.18**	**1.34 - 7.20**	**1.49 - 7.35**	**1.31- 7.16**	**1.37 - 7.13**
India	**2.99**	**3.43**	**3.06**	**3.30**	**3.40**	**3.42**	**3.22**	**2.97**

*: Data are not available, or if available, have very small sample, and hence not considered for analysis.
Source: Bank Scope.

Chart IX.3: Ratio of Operating Costs to Average Assets of Banks in Select Countries – 2006



to achieve cost-income ratio of 40 per cent[2]. Therefore, India, with the cost to income ratio of 50.15 per cent, needs to cover a lot of ground to achieve international competitiveness and meet the best practice norm in rendering banking services.

9.21 Although the ratio of operating cost to income was higher than the desirable level, it may be noted that the ratio of Indian banks compared favourably with several advanced and emerging market economies (Chart IX.5). In most of the countries in the sample, the ratio was more than 50 per cent. Only in three EMEs, the ratio was close to 40 per cent (Malaysia, China and Korea). China was able to bring down the cost to income ratio by one half between 1999 and 2006 (Table 9.4).

9.22 The operating costs can be disaggregated into labour and non-labour operating costs. Such disaggregation helps in finding out the relative importance received by labour/technology

[2] Basel II norms indicated in, Ghosh, C.R. et al (2004), 'Strategic Models for Repositioning of Public Sector Banks – Creating Global Winners' Bancon 2004.

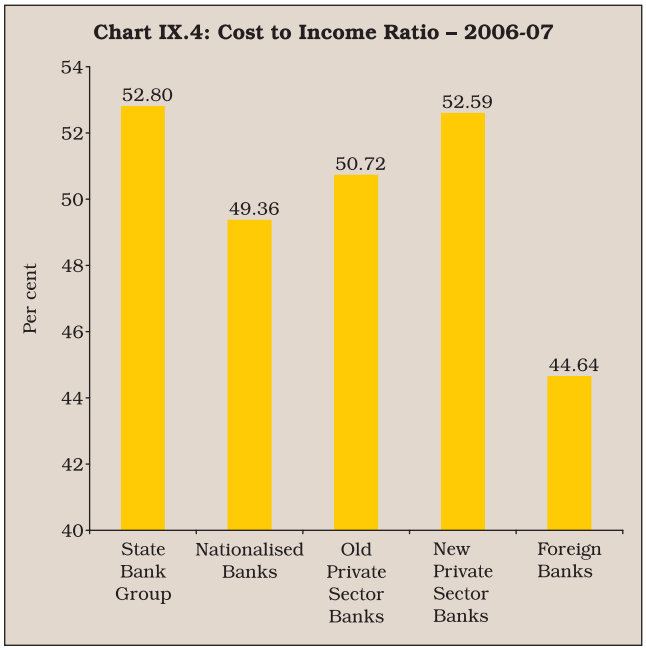
Table 9.3: Cost to Income Ratio of Commercial Banks in India

(Per cent)

Year	Domestic Banks						All Domestic Banks	Foreign Banks	All Commercial Banks
	Public Sector Banks			Private Banks					
	State Bank Group	Nationalised Banks	All Public Sector Banks	Old Private Banks	New Private Banks	All Private Banks			
1	2	3	4	5	6	7	8	9	10
1991-92	47.44	67.51	58.41	58.96	*	58.96	58.44	30.91	55.30
1992-93	59.19	86.35	73.72	66.75	*	66.75	73.32	59.15	71.89
1993-94	64.84	79.09	73.08	57.33	*	57.33	72.02	41.22	68.10
1994-95	60.43	72.65	67.57	52.21	*	52.21	66.49	40.34	63.51
1995-96	59.53	71.98	66.66	54.39	39.42	51.53	65.34	45.36	63.25
1996-97	57.37	69.33	64.31	56.20	38.34	51.31	63.04	45.54	61.00
1997-98	56.85	66.61	62.72	53.80	37.21	48.47	61.14	43.04	58.88
1998-99	62.41	68.29	65.94	65.13	48.69	58.96	65.26	56.61	64.26
1999-2000	58.64	66.25	63.23	54.22	40.22	48.62	61.36	48.35	59.86
2000-01	65.15	68.22	67.01	53.15	50.13	51.75	65.12	49.90	63.37
2001-02	52.11	56.65	54.93	43.47	47.95	45.61	53.53	48.76	53.01
2002-03	48.16	49.97	49.30	43.36	46.08	45.05	48.53	46.35	48.34
2003-04	45.76	45.03	45.30	43.51	49.22	47.13	45.63	42.92	45.38
2004-05	46.74	50.16	48.87	55.76	51.81	53.03	49.60	49.13	49.56
2005-06	51.19	52.69	52.11	58.69	53.97	55.19	52.77	46.79	52.11
2006-07	52.80	49.36	50.58	50.72	52.59	52.17	50.98	44.64	50.15

*: First published balance sheet data of new private sector banks were available from the year ended March 1996.
Source: Computed from Statistical Tables Relating to Banks in India (RBI).

in the different banking systems. Further, with increased integration of financial services and markets across the world, necessitating greater reliance on technology solutions to achieve greater competitiveness and speed in providing financial services, it is expected that the non-labour operating costs would account for greater share than the labour costs.



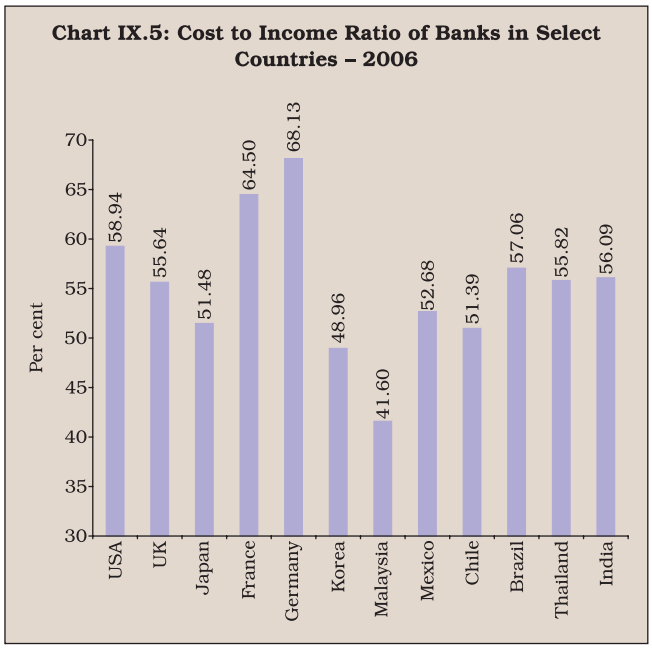


Table 9.4: Cost to Income Ratio of Commercial Banks in Select Countries

(Per cent)

Country	1999	2000	2001	2002	2003	2004	2005	2006
1	2	3	4	5	6	7	8	9
ADVANCED ECONOMIES								
USA	57.87	60.07	62.34	63.69	51.74	52.07	54.90	58.94
Canada	*	68.38	69.42	70.46	70.66	69.83	72.66	65.53
UK	*	60.89	69.21	67.03	67.14	57.20	56.28	55.64
Italy	73.28	69.85	75.24	87.93	82.99	66.31	60.37	59.29
France	72.58	70.74	76.77	77.34	72.85	68.03	66.16	64.50
Germany	70.02	70.62	91.90	87.13	89.52	72.92	71.96	68.13
Japan	50.47	49.53	52.47	51.64	51.61	50.13	51.55	51.48
EMERGING ECONOMIES								
Mexico	57.50	68.64	62.13	65.75	61.85	63.18	55.35	52.68
Chile	60.49	59.41	58.07	55.05	54.59	54.67	54.65	51.39
Korea	43.91	48.93	40.98	39.95	41.18	43.56	48.10	48.96
Thailand	91.52	86.54	78.96	64.02	58.05	52.18	51.78	55.82
Philippines	70.39	68.29	72.81	60.06	56.91	64.02	61.69	61.97
Malaysia	*	37.92	41.79	41.41	42.07	43.35	42.26	41.60
Indonesia	60.19	62.96	55.86	55.31	52.65	49.58	57.06	53.21
Brazil	71.10	82.32	71.23	62.46	62.33	65.20	58.99	57.06
Russian Federation	51.50	62.15	49.34	57.29	51.47	52.85	48.72	54.22
China	79.91	75.69	72.54	54.09	48.50	46.18	46.03	41.98
Memo:								
RANGE	**43.91 - 91.52**	**37.92 - 86.54**	**40.98 - 91.90**	**39.95 - 87.93**	**41.18 - 89.52**	**43.35 - 72.92**	**42.26 - 72.66**	**41.60 - 68.13**
India	**57.78**	**58.87**	**53.93**	**48.67**	**46.32**	**51.29**	**54.13**	**56.09**

*** :** Data are not available, or if available, have very small sample and hence not considered for analysis

Source: Bank Scope.

Labour Cost per Unit of Earning Assets

9.23 Banking, by nature is an information and human capital intensive industry, notwithstanding the increased reliance on technology solutions for improving productivity. Hence, labour cost plays an important role in determining the profitability of banks. Therefore, at a disaggregated level of operating costs, labour cost (expenditure on salaries) per unit of earning assets assumes importance among the components of operating costs. The labour cost per unit of earning asset almost declined by one half for the industry as a whole from 2.30 per cent in 1991-92 to 1.23 per cent in 2006-07. This was mainly on account of decline in labour cost per unit of public sector banks and old private sector banks; the unit cost of new private sector banks and foreign banks increased (Table 9.5). The decline in the case of public sector banks was largely on account of vigorous implementation of voluntary retirement scheme in 2000-01.

9.24 The labour cost for new private sector banks during 2006-07 was the lowest among all bank groups, essentially as they rely more on technology for routine work than labour force, apart from outsourcing most of the routine marketing jobs (Chart IX.6). However, their labour costs are on the rise, mostly due to expansion in their branch network and recruitment of staff. On the other hand, the labour cost of foreign banks, which was the lowest in the banking sector in 1991-92 at 1.08 per cent, increased to 1.56 per cent in 2006-07 mainly on account of much higher emoluments paid by them. Foreign banks, which accounted for only 0.38 per cent of branch network and 1.45 per cent of staff strength of all commercial banks in 1991-92, accounted for 3.14 per cent of total expenditure on salaries among the commercial banks. The salary expenditure of foreign banks accounted for 8.52 per cent of total salary expenditure of all commercial banks, for only 3.11 per cent of total bank staff strength and 0.47 per cent of branch network in 2006-07.

9.25 Notwithstanding considerable improvement in labour productivity during the last 10 years or so, labour cost in India continues to be higher than that in developed economies. In most of the developed countries and some Asian nations such

Table 9.5: Labour Cost per Unit of Earning Assets of Commercial Banks in India

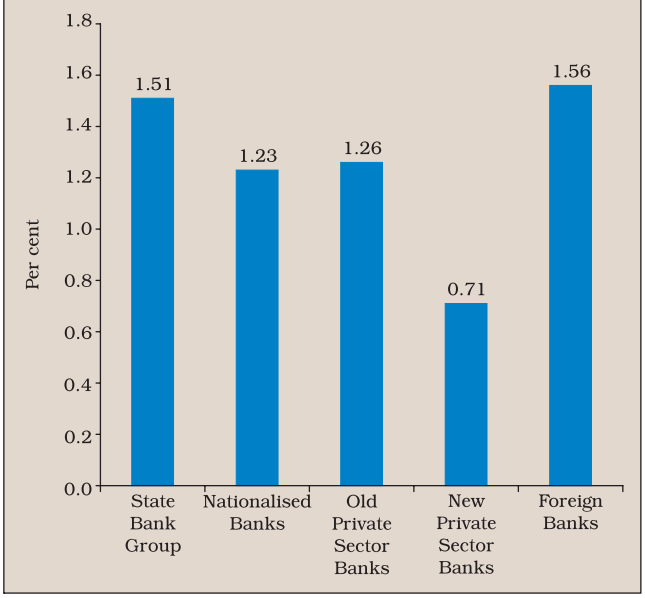
(Per cent)

Year	Domestic Banks						All Domestic Banks	Foreign Banks	All Commercial Banks
	Public Sector Banks			Private Banks					
	State Bank Group	Nationalised Banks	All Public Sector Banks	Old Private Banks	New Private Banks	All Private Banks			
1	2	3	4	5	6	7	8	9	10
1991-92	2.41	2.34	2.36	2.86	*	2.86	2.38	1.08	2.30
1992-93	2.51	2.40	2.44	2.59	*	2.59	2.45	0.96	2.34
1993-94	2.51	2.38	2.43	2.22	*	2.22	2.42	1.10	2.31
1994-95	2.86	2.48	2.61	2.05	*	2.05	2.58	1.23	2.48
1995-96	3.22	2.89	3.01	2.29	0.37	1.91	2.92	1.37	2.80
1996-97	3.01	2.73	2.83	1.96	0.36	1.56	2.70	1.45	2.60
1997-98	2.75	2.51	2.59	1.81	0.38	1.38	2.46	1.31	2.37
1998-99	2.70	2.52	2.58	1.83	0.39	1.30	2.44	1.37	2.35
1999-2000	2.37	2.40	2.39	1.77	0.36	1.17	2.22	1.31	2.15
2000-01	2.55	2.62	2.59	1.53	0.40	0.99	2.37	1.24	2.28
2001-02	1.93	2.11	2.04	1.54	0.47	0.93	1.86	1.33	1.83
2002-03	1.80	1.91	1.87	1.45	0.52	0.86	1.69	1.10	1.65
2003-04	1.78	1.80	1.79	1.35	0.56	0.84	1.61	1.17	1.58
2004-05	1.66	1.62	1.63	1.30	0.58	0.81	1.48	1.15	1.46
2005-06	1.79	1.46	1.57	1.38	0.62	0.83	1.41	1.34	1.40
2006-07	1.51	1.23	1.32	1.26	0.71	0.84	1.21	1.56	1.23

*: First published balance sheet data of new private sector banks were available from the year ended March 1996.
Source: Computed from Statistical Tables Relating to Banks in India (RBI).

as China, Korea, Thailand and Malaysia, the labour cost (personnel expenses per unit of earning asset in percentage terms) was less than 1 per cent. India's labour cost, however, was comparable with Italy and somewhat better than that of the Philippines and Indonesia in recent years. Among other EMEs, labour costs in Brazil and Russia were significantly higher at more than 2 per cent (Table 9.6 and Chart IX.7).

Chart IX.6: Labour Cost per Earning Asset – 2006-07



9.26 These patterns suggest that economic development alone may not be a significant factor in explaining the labour costs. Competitive pressures and labour market structure also appear to be important factors affecting the labour cost.

Non-Labour Cost

9.27 With increased emphasis on technological solutions for quicker processing of data and routine tasks, and for providing more "customer friendly" services, the non-labour costs[3] of banks, in absolute terms, have been on the rise. Non-labour cost per unit of earning assets increased for all bank groups in the early period of reforms (Table 9.7). However, from the mid-1990s, non-labour cost declined for all bank groups, barring foreign and new private sector banks. Nonetheless, enhanced spending on technology intensive inputs is expected to enhance productivity and efficiency in the long-run with

[3] Non-Labour Cost = Total Operating Cost – Labour Cost

Table 9.6: Ratio of Personnel Expenses to Earning Assets of Commercial Banks in Select Countries

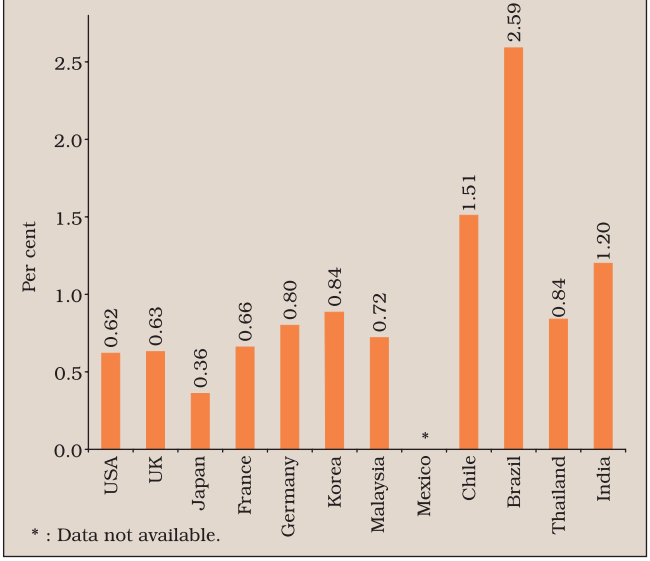
(Per cent)

Country	1999	2000	2001	2002	2003	2004	2005	2006
1	2	3	4	5	6	7	8	9
ADVANCED ECONOMIES								
USA	0.86	0.90	0.89	0.67	0.73	0.57	0.63	0.62
Canada	*	1.68	1.67	1.73	1.69	1.67	1.52	1.41
UK	*	1.01	1.00	0.90	0.84	0.76	0.64	0.63
Italy	*	1.37	1.40	1.38	1.38	1.32	1.00	1.12
France	*	1.01	0.91	0.91	0.89	0.84	0.68	0.66
Germany	*	0.97	1.03	1.00	0.93	0.79	0.75	0.80
Japan	*	0.43	0.41	0.46	0.42	0.38	0.39	0.36
EMERGING ECONOMIES								
Mexico	2.98	2.37	*	*	*	*	*	*
Chile	*	1.85	1.85	1.80	1.71	1.62	1.56	1.51
Korea	0.90	0.89	0.88	0.95	0.92	0.91	0.92	0.93
Thailand	*	0.72	0.72	0.67	0.68	0.74	0.79	0.84
Philippines	*	1.54	1.50	1.48	1.52	1.38	1.40	1.36
Malaysia	*	0.76	0.83	0.76	0.72	0.73	0.72	0.72
Indonesia	*	0.83	1.01	1.13	1.36	1.61	1.78	1.71
Brazil	*	4.22	3.58	3.19	3.22	3.13	2.86	2.59
Russian Federation	2.35	2.38	2.31	2.35	2.37	2.62	2.43	2.16
China	*	0.31	0.45	0.56	0.51	0.47	0.53	0.52
Memo:								
RANGE	**0.86 – 2.98**	**0.31 - 4.22**	**0.41 - 3.58**	**0.46 - 3.19**	**0.42 - 3.22**	**0.38 - 3.13**	**0.39 - 2.86**	**0.36 - 2.59**
India	*	**1.96**	**1.54**	**1.56**	**1.49**	**1.40**	**1.37**	**1.20**

*: Data are not available, or if available, are with a very small sample, and hence not considered for analysis.
Source: Bank Scope.

relatively faster expansion of earning assets compared to the non-labour costs. Non-labour costs of new private sector banks and foreign banks were significantly higher than those of public sector banks and old private sector banks. One of the major reasons for high non-labour cost of foreign bank group was large off-balance sheet exposures, which are not captured in the denominator (total assets), while costs of conducting such business are reflected in the numerator (non-labour costs). Higher non-labour cost in the case of foreign and new private bank groups was also on account of expenditure incurred on branch expansion, technological up-gradation and infrastructure creation, which is expected to enhance their efficiency and productive capacity in the long run (Chart IX.8).

Chart IX.7: Ratio of Labour Cost to Total Assets in Select Countries – 2006



9.28 Notwithstanding the general trend of decline in non-labour costs, some interesting trends emerge in the ratio of labour cost to non-labour cost (normalised by earning assets) which can be taken as indicative of the labour intensity of different bank groups. The labour intensity has been on the decline for public sector banks and old private sector banks, essentially due to the technological solutions undertaken by these bank groups (Table 9.8). Further, the rationalisation of the labour force in

Table 9.7: Non-Labour Costs per Unit of Earning Assets of Commercial Banks in India

(Per cent)

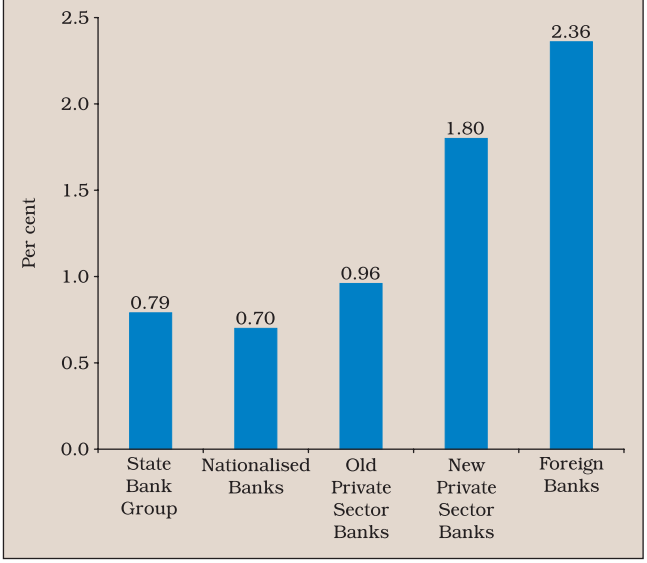
Year	Domestic Banks						All Domestic Banks	Foreign Banks	All Commercial Banks
	Public Sector Banks			Private Banks					
	State Bank Group	Nationalised Banks	All Public Sector Banks	Old Private Banks	New Private Banks	All Private Banks			
1	2	3	4	5	6	7	8	9	10
1991-92	1.02	1.05	1.04	1.17	*	1.17	1.05	2.18	1.12
1992-93	0.98	1.05	1.03	1.10	*	1.10	1.03	2.89	1.17
1993-94	1.23	1.12	1.16	1.11	*	1.11	1.15	2.36	1.25
1994-95	1.09	1.21	1.17	1.05	*	1.05	1.16	2.53	1.26
1995-96	1.09	1.07	1.08	1.21	2.10	1.38	1.11	2.53	1.22
1996-97	1.14	1.03	1.07	1.25	2.12	1.47	1.11	2.67	1.24
1997-98	0.92	0.97	0.95	1.19	1.92	1.41	1.00	2.77	1.14
1998-99	1.09	0.91	0.98	1.07	1.88	1.36	1.02	3.27	1.20
1999-2000	0.94	0.86	0.89	1.01	1.48	1.21	0.93	2.63	1.06
2000-01	0.94	0.83	0.87	0.94	1.81	1.36	0.94	2.69	1.07
2001-02	0.78	0.79	0.79	0.99	1.47	1.26	0.86	2.68	0.99
2002-03	0.73	0.79	0.77	0.95	1.88	1.54	0.91	2.38	1.00
2003-04	0.80	0.78	0.79	0.98	1.90	1.58	0.94	2.50	1.04
2004-05	0.80	0.75	0.77	1.09	1.83	1.58	0.93	2.58	1.02
2005-06	0.85	0.77	0.80	1.08	1.82	1.61	0.98	2.57	1.08
2006-07	0.79	0.70	0.73	0.96	1.80	1.60	0.93	2.36	1.03

*: First published balance sheet data of new private sector banks were available from the year ended March 1996.
Source: Computed from Statistical Tables Relating to Banks in India (RBI).

public sector banks also helped in reducing their labour intensity. On the other hand, the labour intensity of new private banks increased gradually, both on account of increase in the labour force and emoluments paid by them, as explained earlier.

9.29 Non-labour cost for Indian banks at around 2 per cent was somewhat on the higher side as compared with the advanced countries and some emerging market economies such as Korea, Malaysia and China (Chart IX.9). In some countries such as Mexico, Brazil and Russia, the ratio was more than 3 to 4 times of that of global standards. The ratio was also relatively high for some EMEs in Asia such as Thailand, Indonesia and Philippines (Table 9.9).

Chart IX.8: Non-Labour Cost per Earning Asset – 2006-07



9.30 Among the emerging economies, far-east Asian economies such as Malayasia and Korea have non-labour cost comparable to the developed world (Chart IX.9).

Intermediation cost

9.31 There is no one definition of intermediation cost. Although some researchers have used the difference between the lending and deposit rates as the definition of intermediation, the most commonly used definition of intermediation cost is the spread between cost of deposits and return on loan assets. It reflects the efficiency with which financial resources are intermediated by the banks from savers to investors. The intermediation costs are expected to decline with the increase in productivity/efficiency of the banking system, as more efficient financial systems are expected to facilitate easier fund mobility at lower transaction costs.

Table 9.8: Ratio of Labour Cost to Non-Labour Cost of Commercial Banks in India

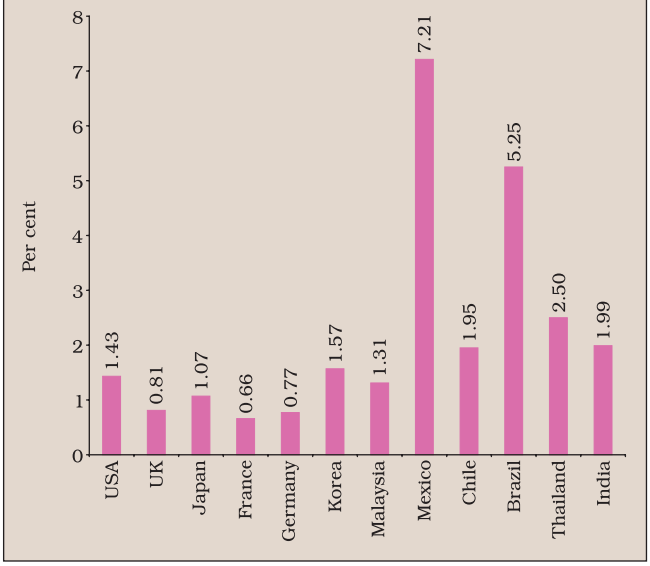
(Per cent)

Year	Domestic Banks						All Domestic Banks	Foreign Banks	All Commercial Banks
	Public Sector Banks			Private Banks					
	State Bank Group	Nationalised Banks	All Public Sector Banks	Old Private Banks	New Private Banks	All Private Banks			
1	2	3	4	5	6	7	8	9	10
1991-92	236.24	221.98	227.08	245.12	*	245.12	227.96	49.36	204.72
1992-93	257.00	227.60	237.99	235.20	*	235.20	237.84	33.23	199.59
1993-94	203.81	213.47	209.79	199.84	*	199.84	209.24	46.79	184.95
1994-95	262.20	204.24	223.47	194.83	*	194.83	221.74	48.68	196.74
1995-96	294.18	269.41	278.48	188.97	17.68	138.37	263.68	54.35	230.20
1996-97	264.38	264.02	264.16	156.80	17.16	106.44	243.33	54.52	210.34
1997-98	299.84	258.05	272.09	152.20	19.71	98.11	245.33	47.20	207.60
1998-99	246.80	276.16	264.51	171.41	20.64	95.60	238.74	41.81	196.81
1999-2000	251.97	278.45	268.24	176.57	24.22	96.72	238.38	49.61	202.81
2000-01	270.32	317.40	298.02	161.65	22.07	72.71	252.76	46.28	212.80
2001-02#	247.87	266.69	259.70	155.73	31.97	73.81	216.28	49.63	184.85
2002-03	245.97	241.73	243.25	152.70	27.77	56.03	185.49	46.21	164.28
2003-04	221.91	231.26	227.72	137.94	29.65	53.19	170.51	46.70	152.33
2004-05	207.03	215.01	212.07	119.72	31.65	51.34	159.73	44.72	142.73
2005-06	209.33	189.16	196.54	128.39	33.94	51.20	143.69	52.10	129.99
2006-07	189.80	174.46	179.94	130.95	39.35	52.52	129.73	66.12	119.90

* : First published balance sheet data of new private sector banks were available from the year ended March 1996.
\# : Figures have been adjusted for bank merger.
Source: Computed from Statistical Tables Relating to Banks in India (RBI).

9.32 Consequent upon the initiation of financial sector reforms, there has been a gradual decline in the cost of intermediation in India. The intermediation cost at the industry level declined from 6.24 per cent during 1991-92 to 3.43 per cent in 2006-07 (Table 9.10). The decline in the intermediation cost is in sync with the decline in the cost to income ratio. The decline was noticed across all banks groups, reflecting increased competitive pressures.

Chart IX.9: Ratio of Non-Labour Costs to Total Assets of Banks in Select Countries – 2006



9.33 During 2006-07, the intermediation cost was the lowest in the case of State Bank group (2.97 per cent), followed by nationalised banks (3.32 per cent),new-private sector banks (3.61 per cent), old private sector banks (3.63 per cent) and foreign banks (5.50 per cent) (Chart IX.10).

9.34 High intermediation cost in the case of foreign banks was partly due to their ability to raise low cost deposits. During the year 2005-06, the cost of deposits in the case of foreign bank group at 3.5 per cent was at least 100 basis points lower than the State Bank group. It is also significant to note that the share of current account deposits in total deposits was the highest in the case of foreign banks. Intermediation cost in the Indian context, however, needs to be interpreted with caution. This is because a significant part of the resources mobilised is required to be deployed in the statutory reserve requirements in the form of CRR and SLR on which banks, in the past, earned lower than the market returns. This necessitated cross-subsidisation by banks, resulting in a large wedge in the intermediation cost. The extent to which such resources are pre-empted has come

Table 9.9: Ratio of Non-Labour Cost to Total Earning Assets of Commercial Banks in Select Countries

(Per cent)

Country	1999	2000	2001	2002	2003	2004	2005	2006
1	2	3	4	5	6	7	8	9
ADVANCED ECONOMIES								
USA	2.13	1.95	2.03	2.03	2.11	1.18	1.36	1.43
Canada	*	1.91	2.08	2.28	2.00	1.78	1.86	1.47
UK	*	1.29	1.36	1.37	1.25	0.99	0.86	0.81
Italy	*	1.59	1.77	1.93	1.97	1.65	1.07	1.19
France	*	0.92	0.91	0.89	0.84	0.83	0.72	0.66
Germany	*	1.06	1.43	1.66	1.31	1.01	0.88	0.77
Japan	*	1.75	2.39	1.84	1.70	1.39	1.03	1.07
EMERGING ECONOMIES								
Mexico	11.36	6.26	7.34	7.16	6.56	6.26	6.87	7.21
Chile	*	2.35	2.44	2.44	2.23	2.1	1.94	1.95
Korea	4.46	3.99	2.54	2.35	3.31	2.36	1.54	1.57
Thailand	*	1.63	1.21	2.13	1.90	1.69	1.57	2.50
Philippines	*	3.41	3.27	3.35	2.29	2.95	3.01	3.17
Malaysia	*	1.63	2.05	1.68	1.41	1.37	1.43	1.31
Indonesia	*	2.63	2.78	2.24	2.35	2.28	2.65	2.85
Brazil	*	4.80	4.72	5.03	4.82	5.07	5.16	5.25
Russian Federation	5.98	3.07	3.78	3.32	3.10	3.04	3.11	4.84
China	*	1.73	1.61	1.43	1.35	1.20	1.08	1.04
Memo :								
RANGE	**2.13-11.36**	**0.92 - 6.26**	**0.91 - 7.34**	**0.89 - 7.16**	**0.84 - 6.56**	**0.83 - 6.26**	**0.72 - 6.87**	**0.66 - 7.21**
India	*	**1.80**	**1.71**	**2.00**	**2.18**	**2.20**	**2.09**	**1.99**

*: Data are not available, or if available, are with a very small sample, and hence not considered for analysis.
Source: Bank Scope.

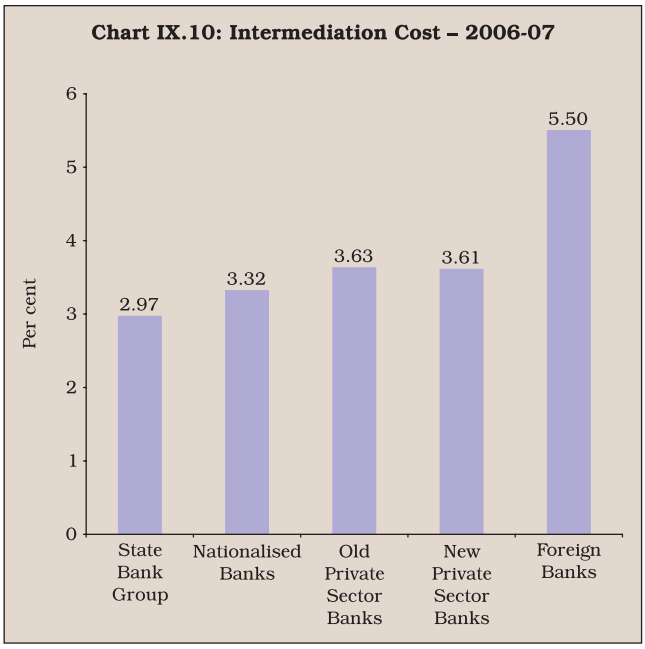
down significantly and banks also fetch market related interest rates on their investment in Government securities. Still, however, an element of cross subsidisation cannot be ruled out. Therefore, the intermediation cost in the Indian context is better represented by net interest margin.

Table 9.10: Intermediation Costs of Commercial Banks in India

(Per cent)

Year	Domestic Banks						All Domestic Banks	Foreign Banks	All Commercial Banks
	Public Sector Banks			Private Banks					
	State Bank Group	Nationalised Banks	All Public Sector Banks	Old Private Banks	New Private Banks	All Private Banks			
1	2	3	4	5	6	7	8	9	10
1991-92	5.92	5.66	5.77	6.13	*	6.13	5.79	13.28	6.24
1992-93	4.05	4.26	4.22	5.54	*	5.54	4.29	12.81	4.82
1993-94	4.85	4.84	4.85	5.78	*	5.78	4.91	9.25	5.22
1994-95	3.54	4.17	3.95	5.06	*	5.06	4.03	7.30	4.27
1995-96	4.69	5.58	5.26	5.70	4.00	5.31	5.27	7.03	5.43
1996-97	5.83	6.18	6.06	6.19	7.93	6.62	6.14	7.45	6.28
1997-98	3.68	4.58	4.26	5.00	5.59	5.17	4.37	6.89	4.61
1998-99	3.49	4.23	3.96	3.86	4.36	4.03	3.98	6.32	4.19
1999-2000	2.69	3.88	3.45	3.71	3.57	3.68	3.48	4.88	3.59
2000-01	3.09	3.86	3.58	3.44	3.48	3.48	3.57	5.81	3.74
2001-02#	2.15	3.14	2.79	3.24	4.83	4.15	2.97	5.12	3.12
2002-03	1.79	3.33	2.78	3.06	4.77	4.07	3.03	5.22	3.17
2003-04	1.82	3.36	2.82	3.43	4.69	4.18	3.09	4.72	3.18
2004-05	2.04	2.86	2.58	3.33	3.96	3.68	2.79	4.35	2.87
2005-06	2.20	3.07	2.78	3.38	3.71	3.58	2.95	4.79	3.05
2006-07	2.97	3.32	3.20	3.63	3.61	3.61	3.30	5.50	3.43

* : First published balance sheet data of new private sector banks were available from the year ended March 1996.
# : Figures have been adjusted for bank merger.
Source: Computed from Statistical Tables Relating to Banks in India (RBI).



Net Interest Margin (NIM) or Spread

9.35 Net interest margin is defined as the difference between the total interest earned (including from such items as investments) and total interest expended (including on such items as inter-bank borrowings), normalised by assets. This ratio indicates as to how effectively the banks deploy all their funds (both deposit and borrowings) to generate income from credit and investment operations. Lower the ratio, the more efficient is the banking system.

9.36 Historically, Indian banks had high NIM due mainly to lack of enough competition. The increased competitive pressures in the industry following the initiation of reforms appear to have exerted downward pressure on the spreads. The NIM for the industry, which was 3.30 per cent in 1991-92 declined to 2.57 per cent in 2001-02. From 2002-03 onwards, with a pick-up in economic activity and unprecedented credit growth, NIM exhibited upward movement and reached to 2.87 per cent by 2003-04, before moderating to 2.69 per cent level by 2006-07 (Table 9.11).

9.37 Bank group-wise data reveal that in 1991-92, the NIM in respect of State Bank group, old private sector banks and foreign banks was almost at the same level. While the NIM of foreign banks over the years declined only marginally, that of State Bank group and old private sector banks declined significantly. Trends in the case of new private sector banks showed large variations. The ratio after declining almost consistently between 1995-96 and 2001-02, increased significantly thereafter. Despite this increase, however, their NIM was the lowest in 2006-07 (2.36 per cent), followed by nationalised banks (2.58 per cent), old private sector banks (2.74 per cent), State Bank group (2.79 per cent) and foreign banks (3.74 per cent) (Chart IX.11). Higher

Table 9.11: Ratio of NIM to Total Assets of Commercial Banks in India

(Per cent)

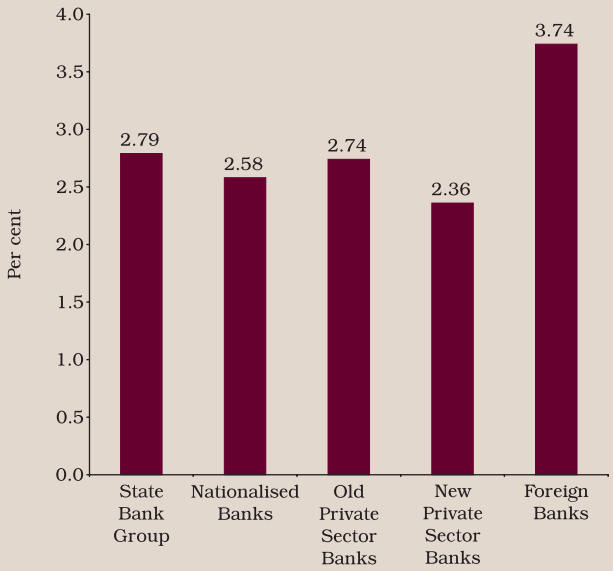
Year	Domestic Banks						All Domestic Banks	Foreign Banks	All Commercial Banks
	Public Sector Banks			Private Banks					
	State Bank Group	Nationalised Banks	All Public Sector Banks	Old Private Banks	New Private Banks	All Private Banks			
1	2	3	4	5	6	7	8	9	10
1991-92	3.80	2.86	3.22	4.01	*	4.01	3.26	3.90	3.30
1992-93	3.01	2.02	2.39	2.92	*	2.92	2.42	3.57	2.51
1993-94	2.68	2.17	2.36	3.01	*	3.01	2.40	4.20	2.54
1994-95	3.27	2.73	2.92	3.07	*	3.07	2.93	4.27	3.03
1995-96	3.34	2.95	3.10	3.17	2.85	3.10	3.10	3.75	3.15
1996-97	3.48	2.97	3.16	2.96	2.94	2.95	3.14	4.13	3.22
1997-98	3.14	2.78	2.91	2.56	2.25	2.46	2.86	3.98	2.95
1998-99	2.85	2.78	2.81	2.17	2.01	2.11	2.73	3.52	2.79
1999-2000	2.76	2.67	2.70	2.33	1.87	2.13	2.63	3.85	2.72
2000-01	2.76	2.90	2.84	2.51	2.14	2.33	2.77	3.64	2.84
2001-02#	2.71	2.74	2.73	2.40	1.18	1.58	2.52	3.25	2.57
2002-03	2.77	2.99	2.91	2.46	1.68	1.96	2.73	3.36	2.77
2003-04	2.83	3.06	2.98	2.56	2.03	2.21	2.82	3.57	2.87
2004-05	3.06	2.82	2.91	2.65	2.18	2.34	2.80	3.34	2.83
2005-06	3.07	2.73	2.85	2.72	2.28	2.40	2.75	3.58	2.81
2006-07	2.79	2.58	2.65	2.74	2.36	2.45	2.60	3.74	2.69

* : First published balance sheet data of new private sector banks were available from the year ended March 1996.
\# : Figures have been adjusted for bank merger.
Source: Computed from Statistical Tables Relating to Banks in India (RBI).

NIM in the case of foreign banks was on account of their large proportion of current accounts that enabled these banks to raise low cost deposits, as explained earlier.

9.38 The international experience shows that in a deregulated and competitive environment, net interest margin tends to decline. This is because as competition increases, competing banks offer comparatively higher rates of interest on deposits to attract funds, while at the same time, they tend to charge lower interest rates on loans so as to expand their business. The squeeze in margins in recent years could also be attributed to the flattening of the yield curve. The international experience shows that contracting yield spread may contribute to the lowering of net interest margins, particularly in economies where interest rate derivatives are not well developed and there are limited opportunities to earn non-interest income. The yield spread computed from secondary market yields of Government securities market in India was significantly correlated to NIM during 1997-98 to 2007-08 (Box IX.4).

Chart IX.11: Net Interest Margin – 2006-07



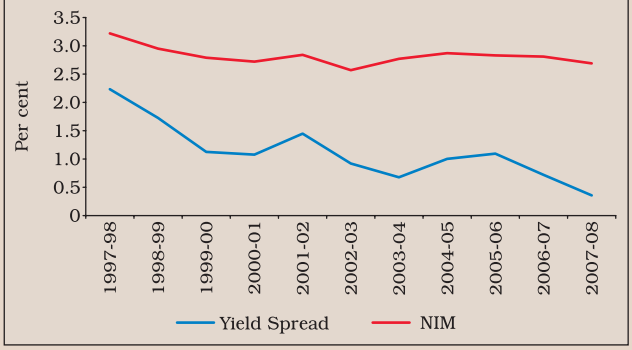
Box IX.4
Yield Curve and Net Interest Margin of Banks

Traditionally it is argued that yield curve and banks' net interest margins share a logical relationship. Banks pay interest on their deposits based upon short-term interest rates while making loans tied to long-term interest rates. Thus, the difference between interest paid and received, which is the net interest margin, should be influenced by the slope of the yield curve, defined as the spread between short term and long term interest rates. The international discourse in this matter has been supported historically through 1984 and 1994 when the correlation between changes in the yield curve spread and banks' net interest margins with a two-quarter lag worked out to be 70 per cent. This relationship between yield curve and net interest margin is important from a macroeconomic point of view given the fact that a flattening yield curve is a precursor to a slowing economic growth and consequently increased pressure on banks' earnings. However, of late, banks have become less sensitive to yield curve movements for several reasons. One, this may be attributed to changing banking regulations and product differentiation which has enabled banks to diversify into non-traditional activities. Two, exposure to interest rate movements have been moderated through the development of new financial products such as interest rate swaps, securitisation and adjustable rate loans. Three, banks have been able to offset the impact of declining yields on net interest margins of banks by funding more of their assets through non-interest bearing liabilities such as equity and demand deposits.

Another interesting observation has been that although net interest margins of large banks have moved in consonance with the yield curve movements, small banks have exhibited signs of decoupling from the prescribed trend of the yield curve. This may be attributed to differences in asset composition and funding costs between small and large banks. Large banks specialise in commercial and industrial loans which have experienced decline in rates charged because of competition from both bank and non-bank sources. Secondly, larger banks have experienced a rapid rise in funding costs due to their greater reliance on overnight and wholesale funding which are repriced faster during an upward revision of interest rates. This is as opposed to smaller banks which rely more on long term deposits.

In the case of India, there has been flattening of yield curve with yield spread (between 1 year and 10 year Government securities) contracting from 3.22 per cent in 1996-97 to 0.72 per cent in 2006-07. The reason for this was the decline in long term rates and relative stability of short term rates as inflationary expectations remained well-anchored. The NIM has been following yield spreads with a lag possibly because lending and deposit/borrowing rates do not get adjusted to the market movements instantly. Correlation between yield spread and NIM with a one year lag was around 0.68 (Chart).

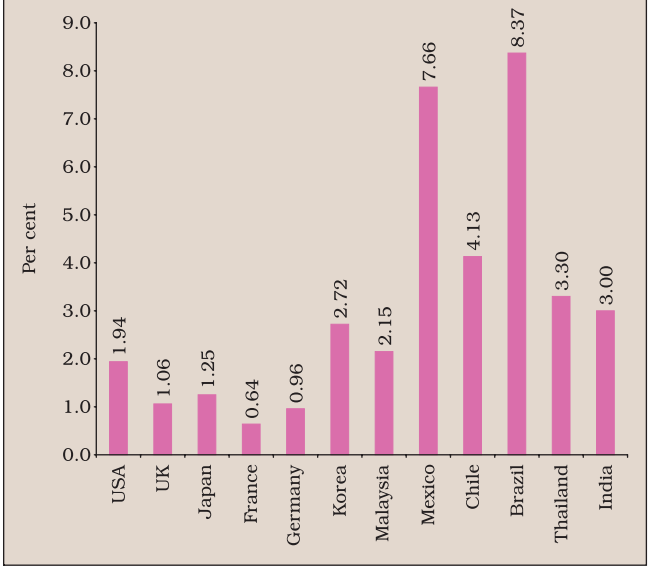
Chart: Yield Spread and Net Interest Margin



9.39 The empirical exercise conducted to ascertain the determinants of net interest margin of banks in India suggests that operating expenses are the main determinants of NIM. Provisioning also leads to increase in net interest margin. In other words, banks with large NPAs need to make larger provisions, which ultimately get reflected in higher net interest margins. The analysis also suggests that diversification results in reduction in net interest margins. That is, better diversified banks will have lower net interest margins. Economic growth positively influences the net interest margins with a lag. Further, the coefficient of the Herfindahl Index – a measure of concentration- suggests that a reduction in concentration (increase in competition), as expected, leads to decline in net interest margins, though the coefficient was not statistically significant. This could be because banks compete in terms of products, which are differentiated in terms of maturity, loan size, grace period and servicing, among others. Hence banks may continue to sell their products even without lowering interest rates. As such, the impact of increased competition on overall NIM tended to be relatively weak (Box IX.5).

9.40 The cross country evidence suggests that there are wide variations in NIM across the banking sectors in different countries (Chart IX.12). The NIM generally declined in all the developed countries in the first half of the 2000s. However, generally NIM in advanced countries such as the USA, the UK, Canada, Japan, Germany and France was less than two. Notwithstanding the recent decline, the overall level of NIM of Indian banks was marginally higher than that prevailing internationally. The NIMs in emerging economies were much higher than in advanced countries with Brazil being at 8.37 per cent, followed by Mexico (7.66 per cent) and Indonesia (5.90 per cent). The high spreads in Brazil could be attributed to a credit programme that requires banks to allocate a significant portion of their loans to selected high-risk, high-cost borrowers at below-market interest rates. Banks offset their losses in the selected market by charging a disproportionately higher spread in the non-selected market (Souza

Chart IX.12: Net Interest Margin of Banks in Select Countries – 2006



Box IX.5
Determinants of Net Interest Margin in India

The literature suggests that net interest margins (NIMs) are significantly influenced by competition or industrial concentration, level of non-performing assets, operating expenses and the growth in gross domestic product. It is also argued that higher diversification in banking activities also contributes towards lower NIM. Banks with higher non-fund income tend to cross-subsidise their fund-based activities, resulting in lower NIM. In order to ascertain these aspects empirically, panel regression for the period 1995-96 to 2006-07 was undertaken. Concentration was measured by Herfindial Index, (the decline in concentration would suggest increase in competition), diversification was captured by other income to total income ratio, while provisioning during the year was used to assess the impact of asset quality. The variables were made stationary by taking first difference before estimating. The estimated results indicate that NIM is significantly and positively influenced by operating expenses, growth in GDP and provisioning requirements. As expected, diversification level is negatively related to NIM. As regards concentration, results are contrary to the conventional wisdom. Higher concentration ratio has been found to be positively related to net interest margin, although statistically not very significant (Table).

Table: Dependent Variable : Net Interest Margin

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Other income to total income	-0.04	0.009	-3.91	0.00
Operating Expenses	0.57	10.50	5.43	0.00
Concentration	0.002	0.002	1.41	0.166
Provisioning	0.25	0.039	6.53	0.000
GDP Growth Rate (-1)	0.02	0.008	2.51	0.017
R-squared	**0.65**	**Durbin-Watson stat**		**2.21**

Sobrinho, 2007). The average NIM in India, however, was comparable to several countries in Asia such as Thailand, Korea and Philippines (Table 9.12).

Other Operating Income to Total Income

9.41 Although the ratio of other operating income (non-interest income) to total income cannot be classified as an accounting measure *per se*, it has been used to indicate the growing importance of other sources of income such as off-balance sheet exposures and non-traditional sources of income such as fees and commission. Thus, in a way the ratio is an indicator of diversification of operations of banks. The ratio of all bank groups, barring foreign banks, has undergone four different phases (Table 9.13). In the first phase between 1991-92 to 1995-96, non-interest sources of income increased sharply due mainly to buoyant primary capital market as banks were able to earn sizeable income from merchant banking activities. In the second phase from 1996-97 to 2000-01, rise in non-interest income got stalled mainly due to the decline of fee and commission based income due to the depressed capital market. In the third phase from 2001-02 and 2003-04, the non-interest income to income ratio rose sharply when banks offloaded high interest yielding government securities and earned large trading profits. In the fourth phase from 2004-05 to 2006-07, however, the ratio of other operating income to total income declined as some banks incurred trading losses on Government securities due to hardening of interest rates. Non-interest income to total income ratio of foreign banks, however, showed relatively less fluctuations. On the whole, the ratio for all scheduled commercial banks improved between 1991-92 and 2006-07.

9.42 The share of other income in total income has been significantly higher for both new private sector banks and foreign banks than public sector banks and old private sector banks. This was mainly on account of large size of off-balance sheet exposure of foreign and new private sector banks as compared with public and old private banks (Chart IX.13).

9.43 The significance of other operating income of banks in India has increased mainly on account of banks' foray into non-traditional activities. However,

Table 9.12: Net Interest Margins of Commercial Banks in Select Countries

(Per cent)

Country	1999	2000	2001	2002	2003	2004	2005	2006
1	2	3	4	5	6	7	8	9
ADVANCED ECONOMIES								
USA	2.81	3.28	3.32	1.94	2.80	2.54	2.27	1.94
Canada	*	2.12	2.24	2.47	2.36	2.19	1.95	1.76
UK	*	1.30	1.33	1.42	0.86	1.36	1.15	1.06
Italy	2.35	2.33	2.50	2.24	2.14	2.25	1.65	2.03
France	0.88	1.00	0.64	0.67	0.87	0.99	0.72	0.64
Germany	1.13	1.08	1.18	1.20	1.13	1.02	0.94	0.96
Japan	1.44	1.30	1.43	1.32	1.30	1.24	1.23	1.25
EMERGING ECONOMIES								
Mexico	5.59	6.73	6.37	5.42	5.07	5.71	7.17	7.66
Chile	4.65	4.48	4.61	4.97	3.33	4.12	4.21	4.13
Korea	2.11	2.20	2.13	2.53	2.84	2.96	3.00	2.72
Thailand	0.92	1.72	1.93	2.11	2.29	2.77	3.08	3.30
Philippines	4.24	5.49	3.85	4.77	4.93	3.65	4.08	3.91
Malaysia	*	3.17	3.02	2.86	2.67	2.45	2.25	2.15
Indonesia	-3.67	2.31	3.55	4.07	4.90	5.90	5.78	5.90
Brazil	9.19	7.83	7.92	9.02	9.52	8.56	8.69	8.37
Russian Federation	6.18	5.72	5.98	5.05	4.85	5.07	5.04	5.10
China	2.23	2.10	2.12	2.30	2.33	2.35	2.22	2.30
Memo:								
RANGE	**(-)3.67 - 9.19**	**1.00 - 7.83**	**0.64 - 7.92**	**0.67 - 9.02**	**0.86 - 9.52**	**0.99 - 8.56**	**0.72 - 8.69**	**0.64 - 8.37**
India	**2.92**	**3.14**	**2.95**	**3.13**	**3.30**	**3.29**	**3.22**	**3.00**

*: Data are not available, or if available, are with a very small sample, and hence not considered for analysis.

Source: Bank Scope.

Table 9.13: Share of Other Income to Total Income of Commercial Banks in India

(Per cent)

Year	Domestic Banks						All Domestic Banks	Foreign Banks	All Commercial Banks
	Public Sector Banks			Private Banks					
	State Bank Group	Nationalised Banks	All Public Sector Banks	Old Private Banks	New Private Banks	All Private Banks			
1	2	3	4	5	6	7	8	9	10
1991-92	12.31	9.73	10.74	9.62	*	9.62	10.69	22.72	11.82
1992-93	12.87	9.88	11.04	10.76	*	10.76	11.03	7.86	10.73
1993-94	14.44	11.88	12.83	12.88	*	12.88	12.84	18.20	13.34
1994-95	15.40	11.17	12.77	13.85	*	13.85	12.84	19.89	13.48
1995-96	16.79	10.85	13.13	14.10	16.02	14.46	13.25	18.31	13.72
1996-97	14.41	10.54	12.01	12.18	17.01	13.40	12.16	18.64	12.79
1997-98	14.72	11.60	12.75	14.66	21.09	16.59	13.21	21.98	14.08
1998-99	14.39	10.44	11.91	11.04	14.43	12.25	11.95	19.35	12.67
1999-2000	14.19	11.62	12.59	14.95	18.09	16.15	13.07	20.72	13.75
2000-01	13.60	11.16	12.09	11.43	14.13	12.65	12.17	20.93	12.96
2001-02	13.44	14.50	14.10	20.29	20.75	20.51	15.06	25.20	15.93
2002-03	16.37	16.68	16.56	20.93	23.96	22.88	17.81	25.43	18.34
2003-04#	21.05	19.97	20.38	21.01	23.94	22.88	20.87	29.76	21.49
2004-05	17.71	16.17	16.74	12.39	23.11	19.51	17.25	29.65	18.10
2005-06	16.19	12.26	13.71	11.25	21.60	18.68	14.77	30.41	16.02
2006-07	12.16	10.47	11.04	12.10	19.58	17.86	12.73	27.80	14.09

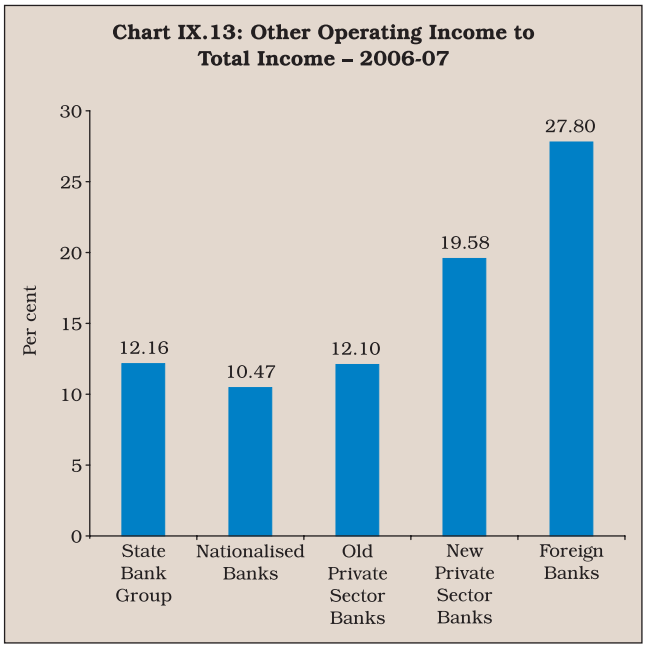
* : First published balance sheet data of new private sector banks were available from the year ended March 1996.

\# : In 2003-04, non-interest income to total income ratio rose sharply when banks offloaded high interest yielding government securities and earned large trading profits.

Source: Computed from Statistical Tables Relating to Banks in India (RBI).

it is still low as compared with the USA, France and Canada in the developed world and Brazil and Russia among the emerging market economies (Table 9.14 and Chart IX.14).

9.44 *Prima facie*, it appears that the level of economic development is not a significant factor in determining the share of other operating income to total income. Banks in Brazil and Russian Federation



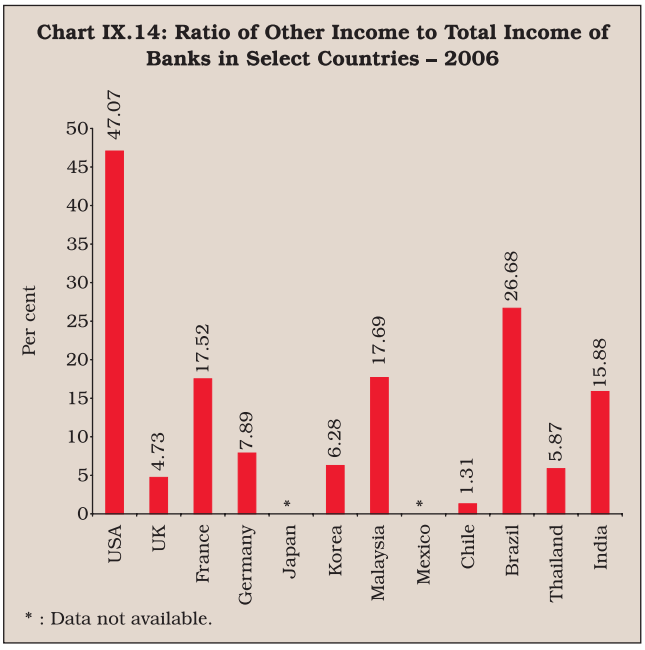


Table 9.14: Ratio of Other Operating Income to Total Income of Commercial Banks in Select Countries

(Per cent)

Country	1999	2000	2001	2002	2003	2004	2005	2006
1	2	3	4	5	6	7	8	9
ADVANCED ECONOMIES								
USA	15.22	15.81	15.09	45.11	38.74	42.84	43.16	47.07
Canada	*	55.80	53.64	48.89	28.26	24.64	24.70	24.39
UK	*	43.29	40.48	33.89	7.49	2.40	-0.10	4.73
Italy	6.51	4.92	7.77	10.47	13.10	5.31	5.85	5.30
France	2.30	2.67	3.40	3.12	3.52	17.01	18.35	17.52
Germany	13.25	11.86	10.42	13.19	-3.34	8.94	10.92	7.89
Japan	*	*	*	*	*	*	*	*
EMERGING ECONOMIES								
Mexico	*	*	*	*	*	*	*	*
Chile	1.89	1.44	1.32	1.21	1.91	2.39	4.07	1.31
Korea	23.14	18.18	16.64	5.39	3.84	5.04	6.56	6.28
Thailand	27.43	8.79	9.84	8.78	8.74	6.35	5.81	5.87
Philippines	9.92	6.44	13.29	10.47	11.71	13.71	10.15	12.29
Malaysia	*	8.32	9.82	11.17	11.49	13.65	16.05	17.69
Brazil	32.36	26.38	29.71	25.62	19.25	26.68	25.19	26.68
Russian Federation	30.61	23.35	21.15	20.26	23.76	15.54	22.79	34.88
China	5.59	3.94	3.16	3.58	4.44	5.27	5.13	3.90
Memo:								
RANGE	**1.89-32.36**	**1.44-55.80**	**1.32-53.64**	**1.21-48.89**	**(-)3.34-38.74**	**2.39-42.84**	**(-)0.10-43.16**	**1.31-47.07**
India	**11.47**	**8.98**	**4.30**	**5.85**	**7.21**	**10.56**	**12.91**	**15.88**

*: Data are not available, or if available, are with a very small sample, and hence not considered for analysis.
Source: Bank Scope.

had a sizeable portion of their income emanating from other sources than many advanced countries (Table 9.14). On the other hand, the ratio of other operating income to total income, which was high in UK, Korea and Thailand, has declined in recent years.

Business per Employee

9.45 Various ratios used so far assessed the performance in terms of cost or return as a proportion to total earning assets, whereby productivity of the labour could not be ascertained directly. To understand the trend in labour productivity devoid of the influence of various other aspects such as pricing of services rendered by the bank could be undertaken by using ratios such as business per employee and business per branch. The business (deposits plus credit) per employee of commercial banks in India increased by more than eleven times from Rs.46.66 lakh in 1991-92 to 521.94 lakh in 2006-07 (Table 9.15). The rise in business per employee was observed across all the bank groups. The growth in business per employee was more pronounced for public sector banks and old private sector banks compared with other bank groups, due to their very low base during the early 1990s. However, despite this increase, productivity of these bank groups was still less than half of that enjoyed by foreign and new private sector banks. The business per employee of new private banks from the very beginning was significantly higher than that of other bank groups and they maintained their lead position until 2002-03, when the business per employee of foreign banks exceeded that of new private sector banks. During 2006-07, business per employee was the highest for foreign banks, followed by new private sector banks, nationalised banks, old private sector banks and State Bank group (Chart IX.15).

9.46 The entry of new private sector banks appears to have provided impetus for expansion of business per employee of public sector banks and old private banks by creating highly competitive environment, apart from introducing aggressive marketing strategies and hybrid products. Intense competition led to expansion in banking products, penetration of banking into unbanked areas, expansion of business through aggressive marketing strategies ably supported by technology such as

Table 9.15: Business per Employee of Commercial Banks in India

(Per cent)

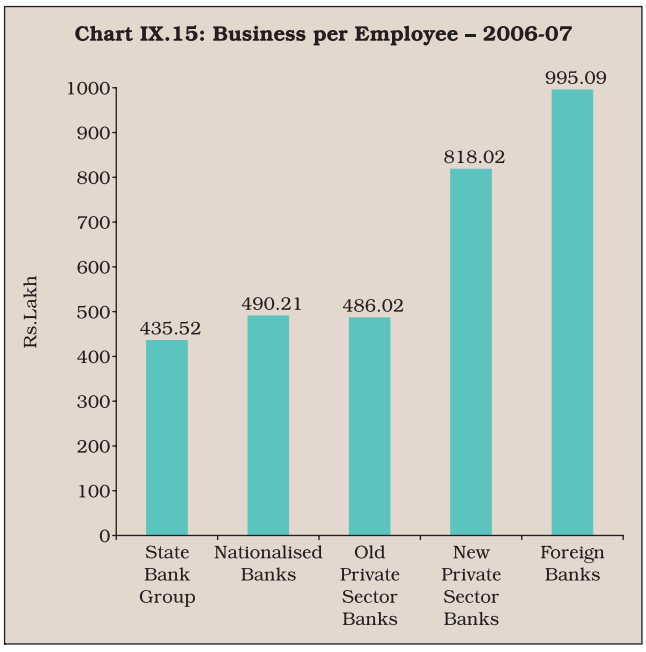
Year	Domestic Banks						All Domestic Banks	Foreign Banks	All Commercial Banks
	Public Sector Banks			Private Banks					
	State Bank Group	Nationalised Banks	All Public Sector Banks	Old Private Banks	New Private Banks	All Private Banks			
1	2	3	4	5	6	7	8	9	10
1991-92	42.99	46.37	45.15	33.48	*	33.48	44.42	199.47	46.66
1992-93	47.28	48.24	47.91	43.49	*	43.49	47.65	233.66	50.32
1993-94	49.65	41.69	44.10	55.26	*	55.26	44.66	287.39	47.57
1994-95	56.58	60.10	58.87	73.68	*	73.68	59.72	326.96	63.40
1995-96	65.65	67.52	66.86	83.39	734.57	99.74	68.89	393.63	73.42
1996-97	72.51	76.86	75.30	102.24	794.18	129.76	78.72	448.24	84.09
1997-98	84.43	91.91	89.20	124.12	908.73	165.91	94.14	480.99	100.04
1998-99	102.45	107.67	105.78	138.78	793.78	193.95	111.57	504.81	117.72
1999-2000	122.11	126.18	124.71	169.53	976.01	255.23	133.93	627.00	140.92
2000-01	158.83	160.18	159.69	196.62	758.99	296.39	170.58	720.19	179.43
2001-02#	181.54	197.59	191.57	218.10	651.21	333.86	204.10	773.40	213.97
2002-03	205.09	221.05	215.09	266.19	834.88	445.68	236.45	909.68	247.02
2003-04	232.90	255.74	247.22	316.86	898.08	527.85	275.17	952.50	286.90
2004-05	284.04	318.92	305.96	362.03	870.97	578.65	335.98	966.11	348.27
2005-06	337.79	383.07	366.61	419.53	904.30	670.67	405.91	955.41	419.77
2006-07	435.52	490.21	470.99	486.02	818.02	694.07	506.77	995.09	521.94

*: First published balance sheet data of new private sector banks were available from the year ended March 1996.

#: Figures have been adjusted for bank merger.

Source: Computed from Statistical Tables Relating to Banks in India (RBI).

core banking solutions. Higher economic growth rate and higher gross domestic savings coupled with lower penetration of other saving products also resulted in rise in deposits and credit. Public sector banks also benefited from the rationalisation of workforce through VRS undertaken during the early 2000s and introduction of practices whereby some routine jobs were outsourced. Banks focussed on generation of banking services through human capital intensive processes in line with improved technologies rather than manpower intensive banking. The rise was also discernable in the case of foreign banks, but not as sharp as that of public sector banks. The growth in business per employee of both the new private sector and foreign banks tapered off during the last two years, while it continued to rise in the case of public sector banks.



9.47 However, in terms of business per unit labour cost, public sector banks compared favourably with other bank groups, barring new private sector banks (Table 9.16). The ratio for both new private sector and foreign banks moderated between 1996-97 and 2006-07, possibly because of a sharp rise in labour cost in these banks, while the ratio for public sector banks showed a steady rise mainly because of low wage productive labour. New private sector banks were far ahead of all other bank groups. During 2006-07, business per unit labour cost was the highest for new private sector banks, followed by nationalised banks, old private sector banks, State Bank group and foreign banks.

Table 9.16: Business per unit Labour Cost of Commercial Banks in India

(Rs. Lakh)

Year	Domestic Banks						All Domestic Banks	Foreign Banks	All Commercial Banks
	Public Sector Banks			Private Banks					
	State Bank Group	Nationalised Banks	All Public Sector Banks	Old Private Banks	New Private Banks	All Private Banks			
1	2	3	4	5	6	7	8	9	10
1991-92	64.50	72.85	69.74	62.26	*	62.26	69.35	141.27	71.60
1992-93	60.99	71.31	67.37	69.01	*	69.01	67.45	149.62	70.01
1993-94	60.90	69.41	66.26	79.01	*	79.01	66.93	133.01	69.43
1994-95	53.04	66.74	61.41	83.79	*	83.79	62.60	128.84	64.96
1995-96	47.90	57.41	53.73	75.91	438.90	89.62	55.72	114.77	57.95
1996-97	53.02	60.29	57.57	86.87	452.83	108.14	60.49	107.19	62.60
1997-98	58.00	65.44	62.68	94.40	435.09	122.35	66.35	115.95	68.50
1998-99	59.66	64.89	62.95	91.73	396.06	124.98	66.73	101.14	68.29
1999-2000	65.02	67.47	66.58	93.10	421.85	136.24	71.50	99.73	72.81
2000-01	59.05	61.74	60.74	107.68	373.74	159.15	66.43	104.41	68.02
2001-02	76.28	75.81	75.98	104.16	271.37	148.20	81.70	101.71	82.70
2002-03	78.24	80.27	79.54	108.57	252.48	163.76	87.39	119.73	88.77
2003-04	78.26	84.68	82.31	115.79	241.71	170.72	91.35	118.23	92.56
2004-05	87.41	93.02	91.01	125.53	243.76	182.12	100.54	118.49	101.37
2005-06	85.71	108.58	99.67	119.68	234.47	181.88	110.32	105.38	110.02
2006-07	106.58	133.76	123.52	133.67	210.90	183.23	133.05	89.94	129.37

* First published balance sheet data of new private sector banks were available from the year ended March 1996.
Source: Computed from Statistical Tables Relating to Banks in India (RBI).

Business per Branch

9.48 Business per branch, similar to the ratio of business per employee, has risen steadily for the banking industry and for all bank groups since the early 1990s. This may be attributed to expansion of new business, rationalisation of branches by some banks, and evolution of new business strategies like sharing of ATMs so as to economise on cost and capitalise on technology. Pick up in business per branch in the case of public sector banks was not as sharp as in the case of business per employee, the rise in which, to an extent, was also due to voluntary retirement schemes introduced by public sector banks. Business per branch of foreign and new private sector banks, which was already high, grew faster than that of public sector and old private sector banks. This accentuated the gaps in the relative productivity levels across the various bank groups, measured by business per branch.

9.49 During 2006-07, the business per branch of foreign banks was almost 3.5 times that of new private sector banks and almost 15 times that of the State Bank group and nationalised banks (Table 9.17, Chart IX.16). The relatively low business per branch of public sector banks could be attributed to large proportion of rural branches where the size of transaction is small. On the other hand, foreign and new domestic private sector banks operate largely in urban areas and manage accounts of high net worth individuals and premium corporates. This was also evident from the size of business per urban/metro branch, which in the case of foreign banks and private sector banks, was significant in comparison with public sector banks (Table 9.18).

Return on Assets

9.50 Return on Assets (RoA) gives an indication as to how much profits a business unit (bank in the instant case) is able to generate per unit of its assets. Higher value of this ratio is indicative of higher profitability, and hence, productivity. As per Basel -II norms, the ROA should be more than one per cent (Ghosh, C.R. *et al*; 2004).

9.51 Notwithstanding increased competition in the banking system in India, the return on assets improved significantly from 0.39 per cent in 1991-92 to 1.13 per cent in 2003-04, *albeit* with some fluctuations, before stabilising at around 0.90 per cent in the following three years (Table 9.19). The significant improvement in the profitability ratio is all the more significant as the intermediation cost of the bank declined during the same period.

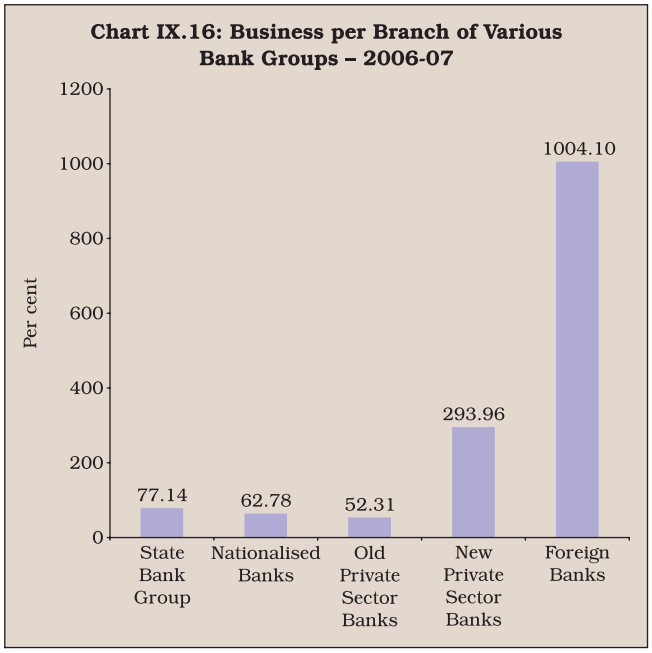
Table 9.17: Business per Branch of Commercial Banks in India

(Rupees crore)

Year	Domestic Banks						All Domestic Banks	Foreign Banks	All Commercial Banks
	Public Sector Banks			Private Banks					
	State Bank Group	Nationalised Banks	All Public Sector Banks	Old Private Banks	New Private Banks	All Private Banks			
1	2	3	4	5	6	7	8	9	10
1991-92	10.53	8.27	8.93	4.87	*	4.87	8.59	149.96	9.12
1992-93	11.52	9.03	9.76	6.01	*	6.01	9.45	179.39	10.08
1993-94	12.09	9.72	10.42	7.46	*	7.46	10.16	208.37	10.92
1994-95	13.84	11.34	12.08	9.86	*	9.86	11.88	160.22	12.72
1995-96	16.15	12.89	13.86	11.44	35.85	13.09	13.79	278.06	14.84
1996-97	17.91	14.29	15.36	13.86	45.57	16.69	15.49	312.23	16.72
1997-98	20.85	16.72	17.94	16.62	55.00	20.87	18.23	334.71	19.59
1998-99	24.92	19.23	20.90	19.04	66.34	25.24	21.32	349.04	22.75
1999-2000	29.03	22.12	24.15	22.35	95.61	32.46	25.01	389.20	26.58
2000-01	34.64	25.32	28.06	25.96	111.12	39.82	29.26	423.81	31.13
2001-02#	38.47	28.93	31.73	27.35	133.27	46.71	31.73	461.81	35.32
2002-03	43.08	32.05	35.27	33.88	182.42	65.33	38.35	672.42	40.56
2003-04	48.23	36.45	39.87	38.79	201.82	77.41	43.94	712.28	46.45
2004-05	58.05	44.53	48.42	43.11	220.23	88.92	53.00	759.19	55.81
2005-06	64.39	50.94	54.78	45.87	271.19	109.31	61.31	803.45	64.74
2006-07	77.14	62.78	66.83	52.31	293.96	133.16	75.04	1004.10	79.39

* : First published balance sheet data of new private sector banks were available from the year ended March 1996.
\# : Figures have been adjusted for bank merger.
Source: Computed from Statistical Tables Relating to Banks in India (RBI).

9.52 Amongst the bank groups, the ratio improved significantly for the State Bank group and nationalised banks. The ratio for nationalised banks had turned negative in the initial years of reforms, following the application of prudential norms, which revealed large NPAs and required huge provisioning by banks, resulting in net losses by some banks. In 1992-93, 13 banks reported net losses as against 3 in 1991-92. The RoA of all banks fluctuated widely during the 1990s. The RoA of public sector banks increased significantly during 1997-98 due to rise in net profit to total assets because of lower provisions on account of decline in NPAs. On the other hand, the ratio for new private banks declined during the year due to higher provisions on account of 'mark to market' losses on their investment portfolios. However, the RoA of old private sector banks declined sharply during the last three years of the 1990s. Overall, it may be observed that the RoA of public sector banks and private sector banks has almost converged, while that of foreign banks continues to be high, reflecting to a large extent profits generated from off-balance sheet business (Chart IX.17).



9.53 The RoA of banks in countries across the globe vary significantly. However, the ratio in most advanced countries and some emerging market economies was less than one. Banks in Brazil and Russia exhibited relatively high levels of ROA due

Table 9.18: Business per Urban/Metro Branch[4] of Commercial Banks in India

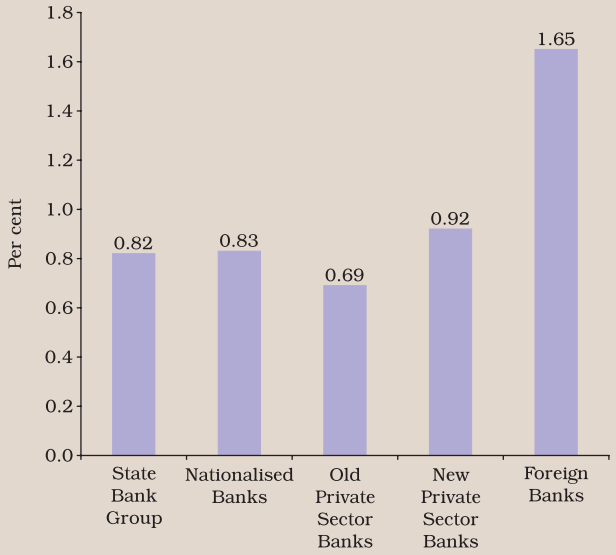
(Rupees crore)

Year	Domestic Banks			Foreign Banks	All Commercial Banks
	State Bank Group	Nationalised Banks	Private Banks		
1	2	3	4	5	6
1991-92	22.23	15.26	7.48	225.43	18.06
1992-93	26.79	17.44	8.84	245.52	20.85
1993-94	28.79	19.40	12.57	267.57	23.14
1994-95	32.86	22.82	20.45	322.15	27.64
1995-96	36.53	24.05	24.96	359.54	30.02
1996-97	36.26	25.82	31.51	373.72	32.19
1997-98	41.07	30.19	37.22	408.11	37.20
1998-99	47.99	34.89	44.58	428.64	42.72
1999-00	56.42	39.91	57.61	501.18	49.88
2000-01	65.39	45.64	66.14	541.85	57.22
2001-02	73.79	52.03	93.77	580.69	67.23
2002-03	77.47	59.40	119.27	588.71	76.81
2003-04	92.61	68.44	141.04	689.86	90.23
2004-05	110.33	83.07	151.11	701.24	106.06
2005-06	128.31	97.29	180.08	896.41	125.54
2006-07	154.95	116.51	218.43	1094.53	151.39

Source: BSR 7.

to the above average spreads enjoyed by the banks possibly due to low competition (Table 9.20 and Chart IX.18).

Chart IX.17: Return on Assets of Various Bank Groups – 2006-07



Return on Equity (RoE)

9.54 The return to asset ratio as analysed before would impart upward bias to some foreign banks as they are able to generate large profits from off-balance sheet exposures. The return on equity, defined as the

Table 9.19: Return on Assets of Commercial Banks in India

(per cent)

Year	Domestic Banks						All Domestic Banks	Foreign Banks	All Commercial Banks
	Public Sector Banks			Private Banks					
	State Bank Group	Nationalised Banks	All Public Sector Banks	Old Private Banks	New Private Banks	All Private Banks			
1	2	3	4	5	6	7	8	9	10
1991-92	0.21	0.33	0.28	0.57	*	0.57	0.30	1.56	0.39
1992-93	0.22	-1.71	-0.99	0.34	*	0.34	-0.92	-2.70	-1.07
1993-94	0.25	-1.98	-1.15	0.58	*	0.58	-1.05	1.72	-0.84
1994-95	0.54	0.10	0.25	1.16	*	1.16	0.31	1.87	0.43
1995-96	0.42	-0.36	-0.07	1.03	1.89	1.20	0.03	1.59	0.15
1996-97	0.82	0.41	0.56	0.93	1.84	1.15	0.62	1.20	0.66
1997-98	1.04	0.62	0.77	0.80	1.60	1.04	0.80	0.97	0.81
1998-99	0.51	0.37	0.42	0.46	1.05	0.67	0.45	1.01	0.50
1999-2000	0.80	0.44	0.57	0.84	0.97	0.90	0.62	1.24	0.66
2000-01	0.55	0.33	0.42	0.62	0.81	0.71	0.46	1.00	0.50
2001-02	0.77	0.69	0.72	1.08	0.44	0.66	0.71	1.35	0.76
2002-03	0.91	0.98	0.96	1.17	0.88	0.99	0.96	1.59	1.00
2003-04	1.02	1.19	1.12	1.16	0.84	0.95	1.09	1.64	1.13
2004-05	0.91	0.85	0.87	0.19	1.13	0.83	0.86	1.29	0.89
2005-06	0.86	0.80	0.82	0.54	1.00	0.87	0.83	1.54	0.88
2006-07	0.82	0.83	0.83	0.69	0.92	0.87	0.84	1.65	0.90

*: First published balance sheet data of new private sector banks were available from the year ended March 1996.
Source: Computed from Statistical Tables Relating to Banks in India (RBI).

[4] Urban group includes centres with population of 1 lakh and above but less than 10 lakh. Metropolitan group includes centres with population of 10 lakh and more.

Table 9.20: Return on Assets of Commercial Banks in Select Countries

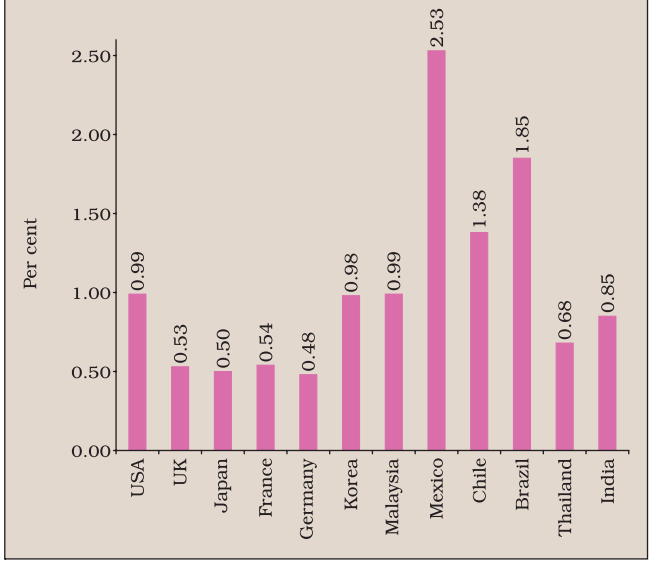
(Per cent)

Country	1999	2000	2001	2002	2003	2004	2005	2006
1	2	3	4	5	6	7	8	9
ADVANCED ECONOMIES								
USA	0.84	0.97	0.87	0.77	1.33	1.72	1.26	0.99
Canada	*	0.72	0.68	0.52	0.75	0.85	0.71	0.95
UK	*	0.90	0.68	0.65	0.37	0.63	0.54	0.53
Italy	0.68	0.55	0.13	0.05	0.35	0.66	0.60	0.74
France	0.28	0.43	0.11	0.13	0.20	0.54	0.48	0.54
Germany	0.23	0.68	-0.19	-0.36	-0.26	0.09	0.33	0.48
Japan	0.13	-0.04	-0.64	-0.64	-0.12	0.13	0.56	0.50
EMERGING ECONOMIES								
Mexico	1.42	1.12	0.90	0.53	1.50	1.09	2.14	2.53
Chile	0.82	1.07	1.32	1.13	1.32	1.30	1.35	1.38
Korea	-1.21	-0.39	0.70	0.51	0.02	0.80	1.14	0.98
Thailand	-5.72	0.07	1.47	0.23	0.69	1.24	1.31	0.68
Philippines	0.39	0.71	0.54	1.25	1.61	1.10	1.25	1.22
Malaysia	*	1.18	0.68	1.03	1.10	1.03	1.02	0.99
Indonesia	-9.42	0.44	0.86	1.30	1.66	2.32	1.52	1.56
Brazil	1.62	0.65	1.02	2.32	1.90	1.76	2.04	1.85
Russian Federation	2.00	3.69	2.07	1.83	2.35	2.19	2.60	2.33
China	0.17	0.17	0.21	0.30	0.49	0.57	0.55	0.62
Memo:								
RANGE	**(-)9.42 - 2.00**	**(-)0.39 - 3.69**	**(-)0.64 - 2.07**	**(-)0.64 - 2.32**	**(-)0.26 - 2.35**	**0.09 - 2.32**	**0.33 - 2.60**	**0.48 - 2.53**
India	**0.83**	**0.54**	**0.72**	**0.98**	**1.20**	**0.91**	**0.90**	**0.85**

*: Data are not available, or if available, are with a very small sample and hence not considered for analysis.
Source: Bank Scope.

ratio of net profits after tax to total equity capital, is, therefore, used as an alternative measure of profitability. The disadvantage of this measure, however, is that equity may vary significantly across the banks, even though their asset size may be identical. However, this problem is not encountered for various domestic bank groups as their equity level (as percentage of their risk-weighted assets) is not significantly different. The RoE indicates the amount of profits a business unit is generating for its equity investors. The ratio is widely used by equity investors in their decision making. Higher value of the ratio is indicative of higher profitability, and hence, productivity.

Chart IX.18: Return on Assets of Banks in Select Countries – 2006



9.55 The return on equity in the case of Indian banks exhibited almost similar trends as that of RoA. The RoE of all commercial banks fluctuated widely during 1991-92 to 2006-07 in consonance with the profitability and prevailing capital position in India. However, unlike RoA, RoE of public sector banks was comparable even with foreign banks. In fact, RoE of public sector banks, new private sector banks and foreign banks converged to around 14-15 per cent in 2006-07, while that of old private sector banks lagged behind somewhat (Table 9.21 and Chart IX.19). The RoE declined drastically during 2000-01 due to fall in net profits in all bank groups except

Table 9.21: Return on Equity of Commercial Banks in India

(per cent)

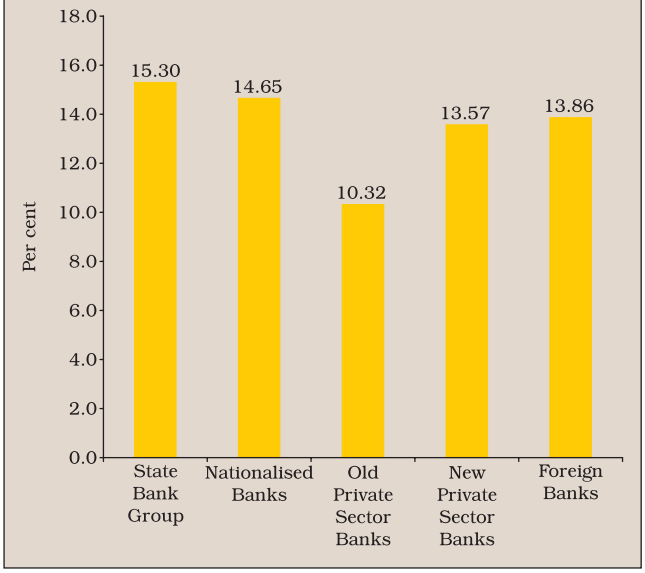
Year	Domestic Banks						All Domestic Banks	Foreign Banks	All Commercial Banks
	Public Sector Banks			Private Banks					
	State Bank Group	Nationalised Banks	All Public Sector Banks	Old Private Banks	New Private Banks	All Private Banks			
1	2	3	4	5	6	7	8	9	10
1991-92	12.72	10.45	11.02	26.77	*	26.77	11.62	42.26	14.77
1992-93	12.55	-52.44	-36.41	13.62	*	13.62	-34.04	-47.00	-36.10
1993-94	7.44	-33.14	-22.91	19.04	*	19.04	-21.44	24.44	-16.55
1994-95	15.23	1.31	4.28	29.76	*	29.76	5.41	19.73	7.07
1995-96	11.21	-5.46	-1.31	18.09	13.01	16.12	0.55	15.23	2.53
1996-97	17.02	6.16	9.37	15.51	19.50	16.88	10.17	10.73	10.25
1997-98	20.04	8.93	12.21	13.88	19.15	15.88	12.62	8.58	12.07
1998-99	11.10	6.26	7.78	8.41	16.66	11.70	8.24	10.96	8.59
1999-2000	17.25	7.98	11.10	15.19	14.23	14.73	11.66	12.97	11.83
2000-01	12.77	6.44	8.65	11.49	14.79	13.09	9.32	11.53	9.61
2001-02	17.20	12.98	14.45	18.56	7.19	10.99	13.69	14.61	13.81
2002-03	19.50	18.34	18.75	19.56	13.93	15.86	18.12	14.15	17.59
2003-04	20.25	21.22	20.88	19.26	13.52	15.46	19.68	15.30	19.13
2004-05	17.32	14.55	15.46	3.18	14.66	11.50	14.53	10.51	14.02
2005-06	15.82	13.68	14.38	8.13	12.39	11.38	13.55	12.62	13.43
2006-07	15.30	14.65	14.86	10.32	13.57	12.81	14.30	13.86	14.24

*: First published balance sheet data of new private sector banks were available from the year ended March 1996.
Source: Computed from Statistical Tables Relating to Banks in India (RBI).

new private sector banks. Decline in case of public sector banks was particularly due to higher wage bills, *inter alia*, on account of VRS payments during the period.

9.56 The RoE of banks in different countries varied widely between 1999 and 2006. The ratio during 2006 varied between 8.10 (Thailand) and 19.21 (Mexico). The RoE of Indian banks was comparable with the banks in the USA, Italy, Germany, and some EMEs such as Korea and Indonesia. The RoE in Brazil and Russia were much higher than many other countries, indicating the very high spread levels enjoyed by the banks in these countries, as alluded to earlier (Table 9.22 and Chart IX.20).

Chart IX.19: Return on Equity of Various Bank Groups – 2006-07



9.57 To sum up, the analysis of various accounting measures suggests a significant improvement in the efficiency/productivity of the Indian banking sector in the post-reform period, although the degree of improvement varied across the bank groups. The performance, especially of public sector banks, worsened in the initial years of reforms as eight public sector banks suffered net losses in 1992-93 and six in 1993-94. However, the performance improved thereafter gradually, especially beginning 2001-02. The most significant improvement was observed in intermediation cost, which has declined significantly in the last few years, reflecting the impact of intensifying competitive pressures. Despite this, however, the profitability of banks improved as was reflected in the return on assets. This was achieved by cutting operating costs and increasing recourse to non-interest sources of income measured by the cost to income ratio and the non-interest income to total asset ratio, respectively. The recovery of past dues locked in non-performing assets, reduction in statutory

Table 9.22: Return on Equity of Commercial Banks in Select Countries

(Per cent)

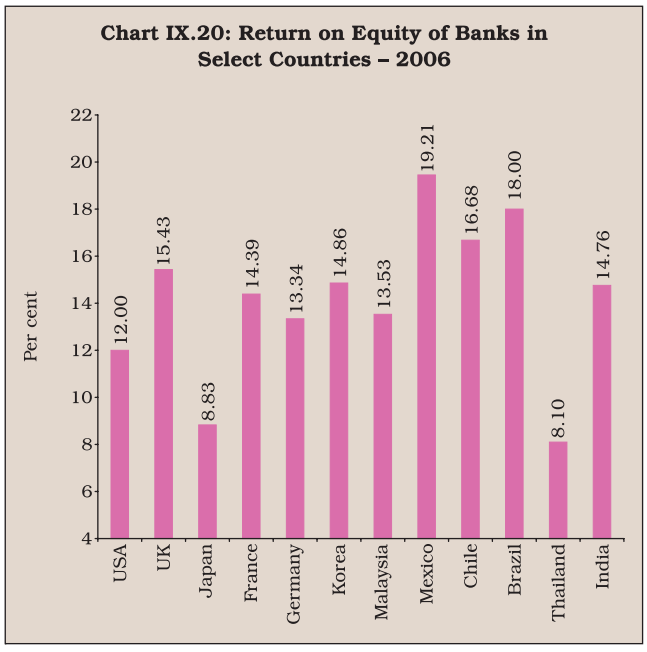
Country	1999	2000	2001	2002	2003	2004	2005	2006
1	2	3	4	5	6	7	8	9
ADVANCED ECONOMIES								
USA	8.81	10.22	6.97	7.25	14.36	18.45	14.08	12.00
Canada	*	13.52	12.89	9.77	14.61	17.28	14.37	18.28
UK	*	14.94	10.31	9.05	9.94	15.56	15.53	15.43
Italy	13.03	10.08	2.29	0.77	5.31	10.00	10.15	12.66
France	6.08	7.72	2.29	2.65	3.90	14.54	13.23	14.39
Germany	7.20	16.39	-3.73	-8.76	-6.31	2.61	9.17	13.34
Japan	2.57	-0.88	-15.45	-17.93	-2.88	2.95	10.79	8.83
EMERGING ECONOMIES								
Mexico	15.60	12.04	9.05	4.77	13.27	9.86	17.27	19.21
Chile	10.91	14.52	17.45	12.92	14.55	14.88	15.44	16.68
Korea	-24.75	-8.95	14.10	10.88	0.56	14.99	17.76	14.86
Thailand	*	1.35	27.05	3.98	9.61	16.25	15.66	8.10
Philippines	2.48	2.78	3.01	6.79	10.51	9.43	11.25	10.65
Malaysia	*	13.89	8.13	11.71	13.06	13.02	13.12	13.53
Indonesia	*	6.60	14.08	16.29	17.90	22.49	15.65	14.72
Brazil	15.87	6.96	10.49	24.72	17.70	17.39	19.73	18.00
Russian Federation	17.94	27.54	13.28	11.90	15.36	14.43	18.15	17.12
China	2.58	2.68	4.42	24.96	65.27	71.04	13.04	11.83
Memo:								
RANGE	**(-)24.75-17.94**	**(-)8.95-27.54**	**(-)15.45-27.05**	**(-)17.93-24.96**	**(-)6.31-65.27**	**2.61-71.04**	**9.17-19.73**	**8.10-19.21**
India	**14.18**	**9.65#**	**14.53**	**18.63**	**21.36**	**15.35**	**14.19**	**14.76**

* : Data are not available, or if available, are with a very small sample and hence not considered for analysis.

: The RoE declined drastically during 2000-01, due to decline in net profits of all bank groups (except new private sector banks), particularly due to a higher wage bill (on account of VRS during the period), while there was no commensurate increase in the capital of banks.

Source: Bank Scope.

pre-emptions in the form of CRR and SLR and reduction in corporate tax rates also played a significant role in improving the profitability. As a result of significant improvement over the years,



efficiency/productivity of the Indian banking sector as measured by the various ratios has moved closer to the global levels.

9.58 The improvement in different efficiency/ productivity measures, however, was different for different bank groups. Between 1991-92 and 2006-07, the largest decline in the NIM was noticed in the case of old private sector banks. However, it was nationalised bank group which showed the largest improvement in the cost to income ratio. The large increase in the business per employee was observed in the case of old private sector banks. Non-interest sources of income of new private sector banks registered the largest increase. The public sector banks exhibited the highest degree of improvement in the return on assets and return on equity. The performance of various bank groups in respect of most of the ratios has tended to converge. During 2006-07, new private sector banks were the most efficient in terms of intermediation cost (measured by net interest margin), followed closely by nationalised banks. It is significant to note that the cost of deposits of foreign bank group was about 100 basis points lower than that of public sector banks. This, however, was not

reflected in their lending rates, resulting in higher net interest margins. However, the operating cost to income ratio was the lowest for foreign banks and the highest for the State Bank Group. In fact, the State Bank group and foreign banks were the two groups, whose cost to income ratio increased between 1991-92 and 2006-07. This, to a large extent, reflected the labour cost, which was almost the same for both bank groups. However, foreign banks generate significantly a larger portion of income from off-balance sheet exposure than the State Bank and other bank groups, resulting in low operating cost to income ratio. Business per employee and business per branch of both foreign and new private bank groups were far better than those of public sector banks. This was despite the fact that labour productivity of public sector banks increased by about 10 times in a span of 15 years. This, to a certain extent, may be explained by the fact that public sector banks, unlike foreign and new private bank groups, maintain rural branches where the transaction size is small.

9.59 The profitability ratio of foreign bank group during 2006-07 was the highest on account of higher net interest margins combined with higher share of non-interest sources of income. However, the return on equity during 2006-07 was the highest for the State Bank group, followed by nationalised banks (Table 9.23).

Table 9.23: A Snapshot of Productivity Ratios of Commercial Banks in India

(per cent)

Ratio	Year	Domestic Banks						Domestic Banks	Foreign Banks	All Commercial Banks
		Public Sector Banks			Private Banks					
		State Bank Group	Nationalised Banks	All Public Sector Banks	Old Private Banks	New Private Banks	All Private Banks			
1	2	3	4	5	6	7	8	9	10	11
Operating Cost to Assets	1991-92	2.48	2.67	2.60	2.97	*	2.97	2.61	2.26	2.59
	1998-99	2.70	2.63	2.65	2.22	1.74	2.04	2.59	3.39	2.65
	2006-07	1.98	1.67	1.77	1.88	2.11	2.06	1.84	2.78	1.91
Cost to Income Ratio	1991-92	47.44	67.51	58.41	58.96	*	58.96	58.44	30.91	55.30
	1998-99	62.41	68.29	65.94	65.13	48.69	58.96	65.26	56.61	64.26
	2006-07	52.80	49.36	50.58	50.72	52.59	52.17	50.98	44.64	50.15
Labour Cost per Unit of Earning Assets	1991-92	2.41	2.34	2.36	2.86	*	2.86	2.38	1.08	2.30
	1998-99	2.70	2.52	2.58	1.83	0.39	1.30	2.44	1.37	2.35
	2006-07	1.51	1.23	1.32	1.26	0.71	0.84	1.21	1.56	1.23
Non-Labour Cost per Unit of Earning Assets	1991-92	1.02	1.05	1.04	1.17	*	1.17	1.05	2.18	1.12
	1998-99	1.09	0.91	0.98	1.07	1.88	1.36	1.02	3.27	1.20
	2006-07	0.79	0.70	0.73	0.96	1.80	1.60	0.93	2.36	1.03
Intermediation Cost	1991-92	5.92	5.66	5.77	6.13	*	6.13	5.79	13.28	6.24
	1998-99	3.49	4.23	3.96	3.86	4.36	4.03	3.98	6.32	4.19
	2006-07	2.97	3.32	3.20	3.63	3.61	3.61	3.30	5.50	3.43
Net Interest Margin (spread)	1991-92	3.80	2.86	3.22	4.01	*	4.01	3.26	3.90	3.30
	1998-99	2.85	2.78	2.81	2.17	2.01	2.11	2.73	3.52	2.79
	2006-07	2.79	2.58	2.65	2.74	2.36	2.45	2.60	3.74	2.69
Other income (Non-interest) to Total Income	1991-92	12.31	9.73	10.74	9.62	*	9.62	10.69	22.72	11.82
	1998-99	14.39	10.44	11.91	11.04	14.43	12.25	11.95	19.35	12.67
	2006-07	12.16	10.47	11.04	12.10	19.58	17.86	12.73	27.80	14.09
Business per Employee (Rs. Lakh)	1991-92	42.99	46.37	45.15	33.48	*	33.48	44.42	199.47	46.66
	1998-99	102.45	107.67	105.78	138.78	793.78	193.95	111.57	504.81	117.72
	2006-07	435.52	490.21	470.99	486.02	818.02	694.07	506.77	995.09	521.94
Business per Branch (Rs.Crore)	1991-92	10.53	8.27	8.93	4.87	*	4.87	8.59	149.96	9.12
	1998-99	24.92	19.23	20.90	19.04	66.34	25.24	21.32	349.04	22.75
	2006-07	77.14	62.78	66.83	52.31	293.96	133.16	75.04	1004.10	79.39
Return on Assets	1991-92	0.21	0.33	0.28	0.57	*	0.57	0.30	1.56	0.39
	1998-99	0.51	0.37	0.42	0.46	1.05	0.67	0.45	1.01	0.50
	2006-07	0.82	0.83	0.83	0.69	0.92	0.87	0.84	1.65	0.90
Return on Equity	1991-92	12.72	10.45	11.02	26.77	*	26.77	11.62	42.26	14.77
	1998-99	11.10	6.26	7.78	8.41	16.66	11.70	8.24	10.96	8.59
	2006-07	15.30	14.65	14.86	10.32	13.57	12.81	14.30	13.86	14.24

*: First published balance sheet data of new private sector banks were available from the year ended March 1996.
Source: Computed from Statistical Tables Relating to Banks in India (RBI).

9.60 Most of the performance indicators of the Indian banking sector compare favourably with banks in advanced and other emerging economies. For instance, the cost to income ratio in India was better than banks in many developed countries such as Canada, France and Germany. Similarly, in terms of operating cost to total assets, banks in India were better placed than those in several EMEs such as Mexico, Chile, Thailand, Philippines, Indonesia, Brazil and Russia. Although labour cost experienced a steady decline between 1999 and 2006, it was still above 1 per cent of earning assets in banks in India, unlike banks in many EMEs such as China, Korea and Malaysia and most of the advanced countries in the developed world. This suggests that there is a scope for improvement in labour cost. On the other hand, in terms of net interest margin (NIM), banks in China, Korea and Malaysia were better placed than those in India. The contribution of non-traditional sources to banks' income (non-interest income) was higher in India than in many advanced economies such as UK, Italy and Germany. Similarly, return on equity in India in 2006 was higher than that in many advanced economies such as US, Italy, Germany and Japan as well as most emerging market economies.

IV. MEASUREMENT OF EFFICIENCY AND PRODUCTIVITY OF THE BANKING SECTOR IN INDIA - ECONOMIC MEASURES

9.61 In the previous section, efficiency/ productivity was measured using the traditional accounting measures. However, such measures have limitations in that the choice of a single ratio does not provide precise information about various dimensions of the performance of a bank, which uses multiple inputs to produce multiple outputs. Moreover, these measures also do not differentiate between efficiency and productivity clearly. This problem is better addressed through economic measures that capture all aspects of banking operations in a single measure.

9.62 Among the several techniques for economic measures (refer Appendix IX.1), the data envelopment Analysis (DEA) approach used in this chapter has several advantages over others. One, it provides bank-level efficiency score. Two, it does not require a prior specification about the underlying technologies.

9.63 Under the DEA approach, a best practice frontier which represents optimal utilisation level of resources is prepared and efficiency of banks is measured relative to that best frontier (benchmark). If a bank lies on the frontier, it is referred to as an efficient bank, otherwise it is termed as less efficient. More away the bank is from the frontier, lower is its efficiency level (Box IX.6). Since, in practice, the true ideal technology is not observable, the DEA analysis attempts to define the feasible technology frontier.

9.64 In order to estimate the best practice frontier, labour, fixed assets, deposits and borrowings have been treated as inputs, while credit, investments and asset equivalent of off-balance sheet operations[5] have been used as outputs.

Efficiency Estimates in India

9.65 According to the DEA estimates, there has been a significant improvement in efficiency levels across the bank groups after the initiation of reforms. The improvement in efficiency was significantly more pronounced between 1998 and 2007 than between 1992 and 1998. During 1991-92, the cost-efficiency based on DEA estimates of the banking sector was 0.42 (implying that given the observed input-output bundles and feasible technology, 58 per cent of cost could have been reduced to produce the same level of output), which rose to 0.71 by 2006-07 (Table 9.24). In terms of bank groups, the gains in cost efficiency were more significant in the case of old private sector banks between 1992 and 2007 compared to other bank groups largely due to their low base in the early 1990s. Despite the large gains by private bank groups, public sector banks, particularly the State Bank group, continued to be the market leader insofar as absolute efficiency levels were concerned.

9.66 During 2006-07, the State Bank group was the most cost efficient with efficiency level of 0.85, followed by new private sector banks with the efficiency level of 0.83, nationalised banks with the efficiency level of 0.80, foreign banks with the efficiency level of 0.66 and old private sector banks with the efficiency level of 0.59 (Table 9.24). In other words, the old private sector banks were the least

[5] Asset equivalent of off-balance sheet operations has been arrived at by multiplying the ratio of non-interest income to total income with total assets of banks.

Box IX.6
Data Envelopment Analysis

Data envelopment analysis (DEA) is a non-parametric method of measuring efficiency of a decision making unit (DMU) such as bank/ firm. DEA employs mathematical programming to construct a best practice frontier from the observed data and to measure efficiency relative to the constructed frontier. The DEA frontier is formed by connecting the set of best practice observations (the piece-wise linear combination). Thus, the DEA efficiency score for a DMU or bank is not defined by an absolute standard but is defined relative to other banks. For an industry where one output is produced using two inputs, it can also be represented by a unit isoquant.

The best way to explain DEA is by way of ratio form. For each DMU, we would like to obtain a measure of the ratio of all outputs (y) over all inputs (x), such as u'y/v'x, where u is output weight and v is input weight. To select optimal weights, we specify the mathematical programming problem:

Max (u'y/v'x)

s.t. u'y/v'x $\leq$ 1, j=1,2……..N

u, v $\geq$ 0

This involves finding values for u and v, such that the efficiency measure of the i^{th} DMU is maximised, subject to the constraint that all efficiency measures must be less than or equal to one. One problem with this particular ratio formulation is that it has an infinite number of solutions. To avoid this, an equivalent envelopment form of this problem is estimated, *i.e.,*

Min Φ

s.t. $-y + Y\lambda \geq 0$,

$\Theta x - X\lambda \geq 0$

This may be explained with the following hypothetical example:

To evaluate the technical efficiency (φ) of firm C, the following linear programming problem is solved:

Table: The hypothetical input and output quantities for six firms

Firm	A	B	C	D	E	F
output 1	4	9	6	8	7	11
Output 2	2	4	3	6	5	8
Input 1	2	7	6	5	8	6
Input 2	3	5	7	8	4	6

Max φ

s.t. $4\lambda_A + 9\lambda_B + 6\lambda_C + 8\lambda_D + 7\lambda_E + 11\lambda_F - 6\varphi \geq 0$;

$2\lambda_A + 4\lambda_B + 3\lambda_C + 6\lambda_D + 5\lambda_E + 8\lambda_F - 3\varphi \geq 0$

$2\lambda_A + 7\lambda_B + 6\lambda_C + 5\lambda_D + 8\lambda_E + 6\lambda_F \leq 6$

$3\lambda_A + 5\lambda_B + 7\lambda_C + 8\lambda_D + 4\lambda_E + 6\lambda_F \leq 7$

$\lambda_A, \lambda_B, \lambda_C$ ..... $\lambda_F \geq 0$; Φ free

The output quantities of firm C appear as coefficients of $-\varphi$ in the left-hand sides of the inequalities, where its input quantities appear on the right-hand sides of the constraints. The optimal solution of this problem is

$\lambda^*_A = 1$; $\lambda^*_F = 0.667$; $\lambda^*_B = \lambda^*_C = \lambda^*_D = 0$; $\varphi^* = 1.889$

This means that if we construct a reference firm (say C*) by combining 66.7 per cent of the input-output bundles of firm F with input-output bundle of firm A, then this new firm would produce 11.33 units of y1 and 7.33 units of y2 using 6 units of x1 and 7 units of x2. Comparison of this potential output bundle with the actual output levels of firm C reveals that output y1 can be expanded by a factor of 1.889, while output y2 can be increased by a factor of 2.444. This is measured by φ^* in the optimal solution. Hence, a measure of technical efficiency of firm C is

$$TE(C) = 1/1.889 = 0.529$$

The DEA was first introduced into operations research literature by Charnes, Cooper and Rhodes (CCR Model, European Journal of Operations Research; 1978) (Ray; 2004). Although the original CCR model was applicable only to technologies characterized by constant returns to scale, Banker, Charnes and Cooper (BCC) (Management Science, 1984) extended the CCR model to accommodate technologies that exhibit variable returns to scale.

Although *prima facie*, DEA appears to be relatively new methodology, the intellectual underpinnings of DEA in economics date back to the 1950s. Debreu (1951) defined the 'coefficient of resource utilisation' as a measure of technical efficiency for the economy as a whole and any deviation of this measure from unity was interpreted as a deadweight loss suffered by society due to inefficient utilisation of resources. Farell (1957) constructed a linear programming model using actual input-output data of sample of firms. He approximated the underlying production possibility set by convex hull of a cone containing observed input-output bundles. A group of agricultural economists at University of California, Berkeley further improved upon Farell's measure. Aigner and Chu retained a parametric specification of production frontier but constrained observed data points to lie below the function. They proposed using mathematical programming to fit the specified function as close to the data as possible.

In other words, non-parametric analysis of efficiency using linear programming in economics bears a long history prior to the formal introduction of DEA into the literature.

References:

Banker, R. D., A. Charnes and W. W. Cooper. 1984. "Some Models for Estimating Technical and Scale Inefficiencies in Data Envelopment Analysis." *Management Science*, 30(9): 1078-1092.

Charnes, A., W. W. Cooper, and E. Rhodes. 1978. "Measuring the Efficiency of Decision Making Units." *European Journal of Operational Research*, 2(4): 429-444.

Debreu, G. 1951. "The Coefficient of Resource Utilisation." *Econometrica*, 19: 273-92.

Farell, M. J. 1957. "The Measurement of Productive Efficiency." *Journal of Royal Statistical Society*, 120(A): 253-81.

Ray, S., 2004, Data Envelopment Analysis, Techniques for Operations Research and Economics.

Table 9.24: Bank Group-wise Efficiency Levels

Bank Group	Efficiency Levels				Growth Rates of Efficiency (in per cent)		
	Efficiency Type	1991-92*	1997-98	2006-07	From 1992 to 1998	From 1998 to 2007	From 1992 to 2007
1	2	3	4	5	6	7	8
State Bank Group	Cost	0.52	0.57	0.85	10.62	48.53	64.30
	Technical	0.70	0.75	0.95	7.49	26.89	36.38
	Allocative	0.74	0.76	0.89	3.07	17.13	20.73
Nationalised Banks	Cost	0.53	0.60	0.80	11.71	34.82	50.61
	Technical	0.69	0.76	0.93	10.31	22.10	34.69
	Allocative	0.77	0.78	0.86	1.59	10.21	11.96
Old Private Banks	Cost	0.29	0.42	0.59	44.98	40.52	103.72
	Technical	0.49	0.52	0.72	4.72	40.08	46.70
	Allocative	0.59	0.82	0.81	37.99	-0.39	37.46
New Private Banks	Cost	0.45	0.53	0.83	18.84	57.15	86.76
	Technical	0.56	0.60	0.95	7.62	57.31	69.30
	Allocative	0.84	0.88	0.88	5.02	-0.45	4.55
Foreign Banks	Cost	0.43	0.50	0.66	16.34	31.11	52.54
	Technical	0.51	0.61	0.79	19.58	29.89	55.33
	Allocative	0.84	0.83	0.83	-1.42	-0.59	-2.01
All Banks	Cost	0.42	0.51	0.71	20.80	39.65	68.70
	Technical	0.57	0.63	0.84	9.53	33.38	46.09
	Allocative	0.73	0.82	0.84	12.03	3.22	15.64

* : In case of New Private Banks, data pertains to 1996-97.

cost efficient in absolute terms. Significantly, foreign banks were found to be less efficient than public sector banks.

9.67 With regard to relatively low efficiency levels observed in the case of foreign bank group, it may be noted that it is quite a heterogeneous group with efficiency levels varying from as low as 0.37 to the maximum level of 1.0. Moreover, banks with very low efficiency among the group are also the banks with very small size and limited business operations. The average efficiency level of foreign bank group, excluding these outliers (with low efficiency), which together do not account for more than 20 per cent of the overall size of this group (in terms of total assets), worked out to more than 0.66 in 1997-98 and almost 1.0 in 2006-07. Of the total 28 foreign banks, as many as 9 banks had efficiency score 1.0 during 2006-07; in 1997-98 only one foreign bank was with efficiency score of 1.0, which incidentally was the only bank with 1.0 efficiency score in any bank group. On the other hand, all the 28 public sector banks were in the efficiency range of 0.8 and 1.0, of which, 5 were with efficiency level of 1.0. As many as 24 public sector banks migrated from the efficiency score of 0.60-0.79 in 1997-98 to 0.80-1.0 in 2006-07. Of the six new private sector banks, three were with efficiency level of 1.0. No old private sector bank had efficiency level of 1.0. Out of total 17 banks in the industry, which recorded 1.0 per cent efficiency score in 2006-07, 9 were foreign bank group, 3 each from new private sector bank and State Bank group and 2 from the nationalised bank group (Table 9.25).

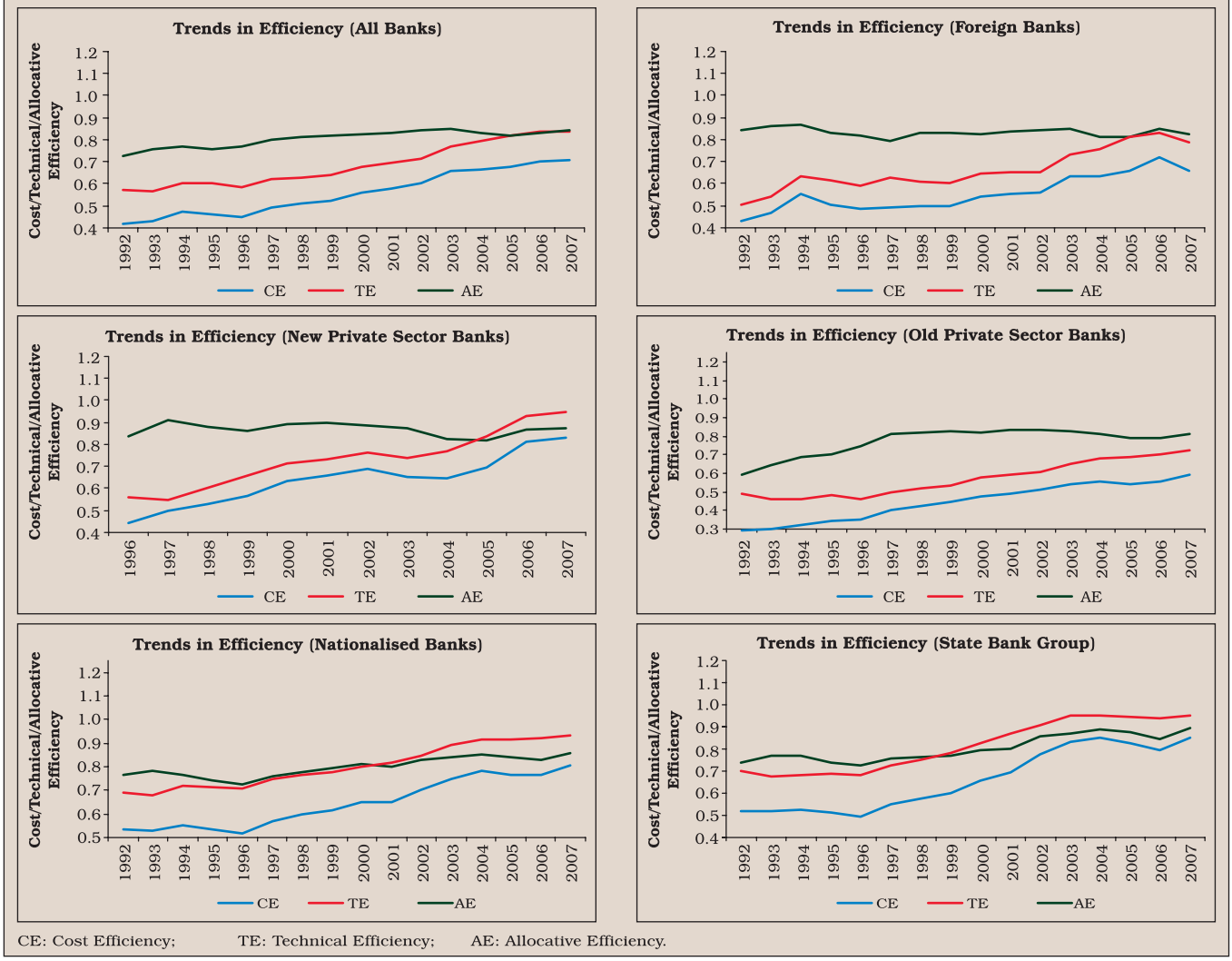
9.68 Cost efficiency estimates drawn through DEA could be decomposed into technical and allocative efficiency. Technical efficiency refers to the ability of a bank to obtain maximum output from a given set of inputs, while allocative efficiency refers to ability of the bank to use inputs in optimal proportions, given their respective prices. Most of the gains in the overall efficiency have emanated from improvement in technical efficiency (from 0.57 in 1991-92 to 0.84 in 2006-07) than in allocative efficiency (from 0.73 in 1991-92 to 0.84 in 2006-07). Relative gains in terms of technical and allocative efficiency provide further insight into the performance of different bank groups (Chart IX.21). Significantly, gains in the case of foreign and private banks were restricted to technical efficiency only. Allocative efficiency of these banks has always been high since the early 1990s. In the case of public sector banks, gains have been distributed over both technical and allocative efficiency. Gains in allocative efficiency of public sector

Table 9.25: Frequency Distribution of Efficiency

Efficiency score	State Bank Group			Nationalised Banks			Old Private Sector Banks			New Private Sector Banks			Foreign Banks		
	1991-92	1997-98	2006-07	1991-92	1997-98	2006-07	1991-92	1997-98	2006-07	1991-92	1997-98	2006-07	1991-92	1997-98	2006-07
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0-0.19	0	0	0	0	0	0	0	0	0	–	0	0	0	0	0
0.20-0.39	0	0	0	0	0	0	6	4	0	–	0	0	5	4	2
0.40-0.59	0	0	0	3	0	0	16	13	5	–	3	0	11	16	4
0.60-.0.79	7	7	0	15	17	0	2	7	8	–	5	0	4	10	6
0.80-1.00	1	1	8	1	2	20	0	0	6	–	0	6	1	5	16
of which:															
1.0	0	0	3	0	0	2	0	0	0	–	0	3	1	1	9
Memo:															
Average Top 5	0.74	0.78	0.98	0.78	0.8	0.98	0.63	0.65	0.89	–	0.64	0.97	0.71	0.88	1

banks could be attributed to recovery of past NPAs and improvement in credit risk environment as a result of which incremental NPAs declined sharply in the post-reform period. Sizeable gains made by public sector banks in allocative efficiency may also be a pointer that rural and priority sector lending, which

Chart IX.21: Bank Group-wise Trends in Efficiency (1992 -2007)



CE: Cost Efficiency; TE: Technical Efficiency; AE: Allocative Efficiency.

constitutes a significant proportion of total business of public sector banks, is a commercially sound and viable business proposition.

Efficiency and Ownership

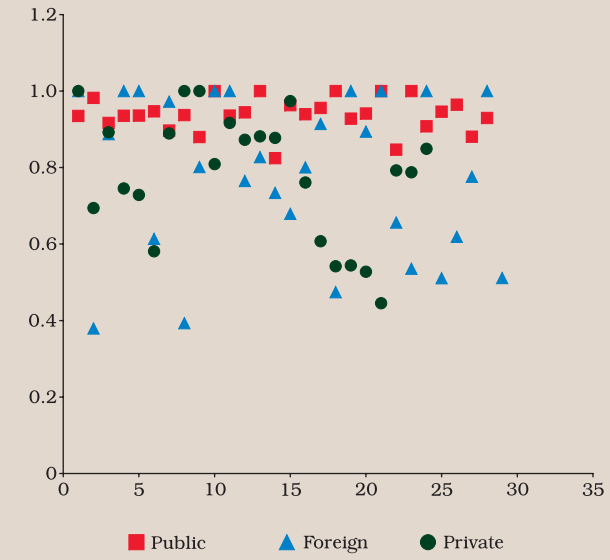
9.69 The literature suggests that ownership could be a significant factor explaining the differential performance of individual banks or bank groups. The theoretical underpinning of different ownership forms leading to different efficiency level of banks can be traced to the principal-agent framework. Managers in private institutions are supposed to be more constrained by the capital market discipline. On the contrary, a lack of owner's control makes management more free to pursue its agenda and have few incentives to be efficient. Based on this argument, private sector banks would be expected to be more efficient than public sector banking institutions.

9.70 Evidence in the case of India, however, suggests that ownership has no definite relationship with efficiency. During 2006-07, the State Bank group in the public sector was the most efficient, followed by new private sector banks, nationalised banks (in the public sector), foreign banks and old private sector banks (refer Table 9.22). However, aggregated information at times could be misleading due to large differences at individual bank level comprising the group. In particular, the foreign bank group is quite heterogeneous, as alluded to earlier. Therefore, the relationship between ownership and efficiency can be more clearly assessed at an individual bank level. The DEA efficiency analysis suggests that most efficient banks are found both in the public and private sectors. In all, there are seventeen most efficient banks, which belong to public, private as well as foreign bank groups. In fact, all the 28 least efficient banks are in the private sector (old private or foreign) (Chart IX.22 and Table 9.26). This would suggest that in the Indian context, the relationship between ownership and size is not significant.

What explains the Differences in Efficiency of Banks in India?

9.71 In the previous section, we assessed the efficiency of the banking sector as well as various bank groups. As in many other countries, efficiency levels of various bank groups and individual banks were found to be different. In the international context, there is a large body of literature that provides explanations as to why the efficiency levels could be different within and across the countries (Box IX.7).

Chart IX.22: Efficiency and Ownership



9.72 While there is no consensus about the factors that explain the underlying differences in efficiency, two specific factors have often been debated. These are size and diversification, *i.e.*, as to whether large and diversified banks are more efficient than smaller and specialised banks (Box IX.7). These two aspects have assumed added significance in view of the consolidation process that is underway in many countries. In fact, one of the reasons for the consolidation process that is underway all over the world is the desire to achieve economies of scale. Likewise, banks are diversifying into non-traditional activities also to reap the benefit of economies of scope. Researchers have found several cost efficiency gains associated with combining multiple product lines. One, a diversified bank with a common information system that can be used across product lines incurs the cost of gathering information only once. Two, delivery, marketing and physical inputs can be combined in production of a larger set of services. Finally, when risks in different services are imperfectly correlated, there is a potential for economies in risk management through a diversified risk portfolio. Profits of diversified organisation may also be less volatile insofar as they can efficiently diversify their risk and revenue profits. However, the empirical evidence of both economies of scale and scope is mixed.

9.73 In India also, banks are of different sizes. These banks, irrespective of their size, have diversified into new activities such as merchant banking, insurance and several other fee based

Table 9.26: Efficiency Ranks of Banks

Sr.No	Efficiency Rank	Efficiency Score (1 - Most Efficient) (0 – Least Efficient)	Bank Group	Sr.No	Efficiency Rank	Efficiency Score (1 - Most Efficient) (0 – Least Efficient)	Bank Group
1	2	3	4	5	6	7	8
1	1	1.000	Public Sector	41	25	0.894	Foreign Bank
2	1	1.000	Public Sector	42	26	0.892	Private Sector
3	1	1.000	Public Sector	43	27	0.889	Private Sector
4	1	1.000	Public Sector	44	28	0.888	Foreign Bank
5	1	1.000	Public Sector	45	29	0.882	Private Sector
6	1	1.000	Private Sector	46	30	0.881	Public Sector
7	1	1.000	Private Sector	47	31	0.880	Public Sector
8	1	1.000	Private Sector	48	32	0.877	Private Sector
9	1	1.000	Foreign Bank	49	33	0.873	Private Sector
10	1	1.000	Foreign Bank	50	34	0.849	Private Sector
11	1	1.000	Foreign Bank	51	35	0.847	Public Sector
12	1	1.000	Foreign Bank	52	36	0.827	Foreign Bank
13	1	1.000	Foreign Bank	53	37	0.825	Public Sector
14	1	1.000	Foreign Bank	54	38	0.809	Private Sector
15	1	1.000	Foreign Bank	55	39	0.801	Foreign Bank
16	1	1.000	Foreign Bank	56	40	0.801	Foreign Bank
17	1	1.000	Foreign Bank	57	41	0.793	Private Sector
18	2	0.982	Public Sector	58	42	0.788	Private Sector
19	3	0.974	Private Sector	59	43	0.776	Foreign Bank
20	4	0.972	Foreign Bank	60	44	0.765	Foreign Bank
21	5	0.965	Public Sector	61	45	0.761	Private Sector
22	6	0.963	Public Sector	62	46	0.745	Private Sector
23	7	0.956	Public Sector	63	47	0.734	Foreign Bank
24	8	0.947	Public Sector	64	48	0.729	Private Sector
25	9	0.946	Public Sector	65	49	0.694	Private Sector
26	10	0.944	Public Sector	66	50	0.679	Private Sector
27	11	0.941	Public Sector	67	51	0.656	Foreign Bank
28	12	0.939	Public Sector	68	52	0.619	Foreign Bank
29	13	0.937	Public Sector	69	53	0.613	Foreign Bank
30	14	0.936	Public Sector	70	54	0.607	Private Sector
31	15	0.936	Public Sector	71	55	0.581	Private Sector
32	16	0.936	Public Sector	72	56	0.544	Private Sector
33	17	0.935	Public Sector	73	57	0.542	Private Sector
34	18	0.930	Public Sector	74	58	0.536	Foreign Bank
35	19	0.928	Public Sector	75	59	0.528	Private Sector
36	20	0.917	Public Sector	76	60	0.511	Foreign Bank
37	21	0.917	Private Sector	77	61	0.511	Foreign Bank
38	22	0.914	Foreign Bank	78	62	0.474	Foreign Bank
39	23	0.908	Public Sector	79	63	0.445	Private Sector
40	24	0.897	Public Sector	80	64	0.393	Foreign Bank
				81	65	0.379	Foreign Bank

activities[6]. In this section, therefore, we specifically examine as to whether large and more diversified banks in India are more efficient. Further, since the level of NPAs is a drag on bank's performance, it is, therefore, also examined whether banks with large NPAs are less efficient. These investigations have been conducted using the technical efficiency scores obtained from DEA and ranking them in the descending order. Scatter diagram and rank correlation were used to compare the association between efficiency on the one hand and size, diversification measured by non-interest income and NPAs on the other.

Efficiency and Bank Size

9.74 As the theory suggests, size appears to have a significant association with efficiency for banks in India. There is a high degree of positive association between size and efficiency (Box IX.8, Chart IX. 23). That is, in general, large sized banks are more efficient than small sized banks. The rank correlation between size measured by total assets and efficiency worked out to be 0.74, 0.55 and 0.55 in 1992, 1998 and 2007, respectively.

Efficiency and Diversification

9.75 Financial innovations triggered by economic and technological forces have created new forms of intermediation and other fee-based activities not traditionally captured on the balance sheet such as loan securitisations, back up lines of credit and financial derivatives. Thus, traditional bank efficiency measures, excluding off-balance sheet activities, may not provide accurate evaluation of a bank's condition (Siems and Clark 1997).[7] Of late, off-balance sheet exposures have been increasing in Indian banks too.

9.76 Diversification also appears to bear a significant co-movement with efficiency of banks in India as is evident from the rank correlation coefficients of 0.67, 0.55 and 0.61 for 1992, 1998 and 2007 respectively. Thus, banks which have diversified into various other financial services and earn more fee-based income are also relatively more efficient (Chart IX.24).

Efficiency and NPAs

9.77 Net non-performing assets are expected to show a negative association with efficiency. However, in the Indian context, they do not show a clear relationship with efficiency as is evident from the scatter diagrams and the rank correlation coefficients. The rank correlation coefficients are negative but not significant enough to establish a firm relationship between the two variables (Chart IX.25).

9.78 An attempt was also made to ascertain the determinants of efficiency in India through a more rigorous method (panel least squares estimates, which take into account relationship for cross section of banks over the years). The analysis corroborates the earlier findings that size and diversification are important factors affecting efficiency. That is, large and well diversified banks are more efficient than the small and not so diversified banks, suggesting economies of scale and scope in the Indian banking sector. The regression analysis, however, also establishes a negative relationship between the size of NPAs and efficiency (Box IX.9).

Measurement of Productivity

9.79 Productivity is a measure as to how efficiently the banking unit transforms its inputs into outputs, as alluded to earlier. When a firm uses a single input for producing a single output, it is easier to calculate productivity level by simply taking a ratio of its output to input. However, in case of a bank, which uses multiple inputs and outputs, such a ratio would only provide a partial measure of productivity that ignores variations in other inputs used. To overcome this limitation, productivity could be measured by computing an aggregate index of total factor productivity. One of the methods to compute productivity indices in such cases is the Malmquist Productivity Index (Box IX.10).

9.80 Productivity scores for the banking sector as well as for various bank groups suggest that there

[6] Diversification of business could be within the same organisation, when it undertakes permissible non-banking activity, or it could also be at the group level, when a bank sets up separate subsidiaries to undertake non-banking activities. In this section, diversification refers to taking up of non-traditional activities within the organisation, which is more relevant from the efficiency point of view.

[7] It has been found that no efficiency differences between banks in size classes of more than US$ 25 million in total assets exist once off-balance sheet items are accounted for.

Box IX.7
What Explains the Differences in Efficiency of Different Banks? An International Perspective

Differences in measured efficiency of banking institutions broadly arise on account of (i) different efficiency concepts used; (ii) different measurement methods used to estimate efficiency; and (iii) a host of other exogenous and endogenous factors. One of the major sources of difference in the measured efficiency is the different concepts of efficiency used and measurement methods applied to test the efficiency. Estimates of efficiency have been found to be substantial across studies depending on the data source and also efficiency concepts and measurement methods used in the studies. Berger and Humphrey (1997) documented 130 studies on financial institution efficiency, using data from 21 countries, from multiple time periods and from various types of institutions including banks, bank branches, savings and loans, credit unions, and insurance companies. They concluded that the variations in the data sets from which efficiencies are measured make it virtually impossible to determine how important the different efficiency concepts, measurement techniques, and other factors are to the outcomes of these studies. However, another study, which explored the effects of a number of different efficiency measurement methods on three different efficiency concepts (cost, profits and alternative profit efficiency), concluded that choices made concerning measurement techniques, different functional forms and other variables usually make very little difference to efficiency (Berger and Mester, 1997).

Besides conceptual and measurement methods, the differences could arise on account of several other factors, both exogenous and endogenous. Differences in the regulatory environment can be a significant factor in the performance of banks in different countries. Banks in countries with fewer restrictions are expected to be more efficient than those with more restrictions. The competitive conditions of the market in which banks operate also play a role. It is expected that the market power is negatively related to cost efficiency but positively related to profit efficiency. Banks in less competitive markets can charge higher prices for their services, but might feel pressure to keep costs down. It has been empirically found that more competitive the banking system is, the more efficient it is. Thus, apart from conceptual and measurement methods, regulatory environments and competitive conditions appear to be the major sources of differences in efficiency of banking institutions across countries.

Exogenous conditions would be the same for all domestic banks. The differences in efficiency of different banks within the country, therefore, could be attributed to the endogenous factors. Some of the major factors that are believed to impact efficiency are financial capital, size, quality of service rendered, liability structure and NPLs. A bank's insolvency risk depends on its financial capital available to absorb losses. Insolvency risks affect banks' costs and profits through the risk premium the bank has to pay for uninsured debt. In addition to risk, a bank's capital level directly affects costs by providing an alternative to deposits as a funding source for loans. Interest paid on debt is reckoned as a cost, but dividends paid do not. On the other hand, raising equity typically involves higher costs than raising deposits. If the first effect dominates, measured costs will be higher for banks using a higher proportion of debt financing; if the second effect dominates, measured costs will be lower for these banks. The difference could also arise if some banks being more risk averse as they may hold a higher level of financial capital, may maximise profits or minimize costs, than others. Thus, to the extent, the capital structure of banks differs, it may impart upward or downward bias to efficiency. Several studies in the US have found that well capitalised banks are more efficient. It could also be the case that since less efficient institutions have lower profits, they have lower capital.

Size is normally associated with higher efficiency due to economies of scale. Large banks are in a better position to introduce technology and reduce costs than small banks. Improvements in information processing can reduce the costs of extending small business loans for larger banks. Similarly, improved automation also allows large banks to expand faster and at lower cost by setting up ATM machines in place of adding more expensive brick-and-mortar branch offices. Large banks are in a better position to take advantage of the new tools of financial engineering such as derivative contracts and other off-balance-sheet activities. Large size also confers diversification benefits as it allows banks to spread the cost across the products (economies of scope). Large banks normally also have large capital and, as alluded to earlier, better capitalised banks are more efficient. However, empirical evidence does not suggest a consistent relationship between size and efficiency. While a study found a significant positive relationship between size and efficiency (Berger et al, 1993), some other studies found a significant negative relationship between size and efficiency (Hermelin and Wallace, 1994; Kaparakis et al, 1994). Yet some other studies found an insignificant relationship between size and efficiency [Cebenoyen et al, (1993); Mester (1993); and P.L. Timme (1993)]. Yet another set of studies found that efficiency measures display very little potential scale biases financing large firms. It was found that as banks grow larger, they are equally able to control costs but it becomes harder to create revenues efficiently. Thus, the empirical evidence on size and efficiency is mixed (see also Box IX.9).

Another source of difference could be the level of non-performing loans. Non-performing loans and loan losses could be exogenous if caused by negative economic

(Contd...)

(...Concld.)

shocks (bad luck) or endogenous either because the management is inefficient (bad management) or because it has made a conscious decision to reduce short-term expenses by cutting back on loan origination and monitoring (skimpimg). Banks with problem loans tend to have high cost and low profits, consistent with bad management hypothesis. The skimping hypothesis – under which non-performing loans may be associated with low costs from choosing to put less effort into loan monitoring and control – was generally not supported by the data or its consequences were overwhelmed by bad management effects. That is, there is no much evidence of the skimping hypothesis. Thus broadly, it can be concluded that banks with low NPLs are more efficient.

There are also unmeasured differences in the quality because the banking data do not fully capture the heterogeneity in the bank output. For instance, commercial loans can vary in size, repayment schedule, risk, transparency of information, type of collateral and covenants to be enforced, among others. These differences are likely to affect the costs to the bank of loan origination, ongoing monitoring and control, and financing expense. Unmeasured differences in product quality may be incorrectly measured as differences in cost inefficiency. At least a part of the explanation may lie in differing degrees of service quality or market power. That is, if some banks are providing service qualities that are more in demand and, therefore, are able to charge higher prices, or if some banks are able to exercise market power to raise profits substantially through higher loan prices, this would yield higher efficiency.

There is limited evidence that banks operating in more concentrated markets are less efficient. The empirical findings on the impact of merger and acquisitions are also mixed. Not all the mergers have unambiguously yielded efficiency and profitability improvements (Rhodes, 1995). Nevertheless, the fact that in some cases mergers/ amalgamations activity has led to improved efficiency suggests that M & A activity is one of the factors that could explain differences in efficiency. The empirical findings suggest that the more complex structure of multilayered holding companies does not harm bank efficiency. The evidence also suggests that all else equal, publicly traded banks are more efficient. The differences in managerial ability and corporate governance practices are also the crucial factors in explaining the differences in efficiency.

References :

Berger, A. N., D. Hancock, and D. B. Humphrey. 1993. "Bank Efficiency derived from the profit function." *Journal of Banking and Finance*, 17: 317-47.

Berger, A.N., Humphrey, D.B., (1997). Efficiency of financial institutions. International Survey and Directions for Future Research. *European Journal of Operational Research 98*.

Berger, A. N., and L.J. Mester. 1997. "Inside the Black Box : What Explains Differences in the Efficiencies of Financial Institutions." *Journal of Banking and Finance*, 21: 895-947.

Cebenoyan, A.S., Cooperman, E.S., Register, C.A., Hudgins, S.C., 1993. The Relative Efficiency of Stock vs. Mutual S&Ls: A Stochastic Frontier Approach. *Journal of Financial Services Research 7*.

Hermalin, B.E., Wallace, N.E., 1994. The Determinants of Efficiency and Solvency in Savings and Loans. R and *Journal of Economics*, 25.

Kaparakis, E.I., Miller, S.M., Noulas, A.G., 1994. Short-run Cost Inefficiency of Commercial Banks: A Flexible Stochastic Frontier Approach. *Journal of Money, Credit, and Banking* 26.

Mester, L.J., 1993. Efficiency in the savings and loan industry. *Journal of Banking and Finance* 17.

Pi,L., Timme, S.G., 1993. Corporate Control and Bank Efficiency. *Journal of Banking and Finance* 17.

Rhodes, Stephen A. (1998): The Efficiency Effects of Bank Mergers. An Overview of Case Studies of Nine Mergers, *Journal of Banking and Finance*, 22, 273-291.

has been an across the board rise in productivity. Productivity change which was gradual till 1997-98, gathered momentum after 1997-98. Compared with 1991-92 levels, the rise in productivity of Indian banks was of the order of 5.5 per cent over the period till 1997-98, whereas it rose by 43.5 per cent by 2006-07. In terms of individual bank groups, the largest improvement was noticed in the case of foreign banks (70.6 per cent), followed by old private sector banks (44.7 per cent) and nationalised banks (35.4 per cent) (Table 9.27).

9.81 These productivity estimates based on Malmquist productivity index could be decomposed into two mutually exclusive and exhaustive components: changes in technical efficiency, *i.e.*, change in output for given inputs (catching up) and shifts in technology over time, *i.e.,* technological improvements or technical progress (innovation). Relative trends in technical efficiency and technical progress reveal that between 1991-92 and 1997-98, technical efficiency of the banking sector and all bank groups, other than State Bank group, improved.

Box IX.8
Does Size Matter? – Cross Country Empirical Evidence

A well known concept in production/cost theory relates to the operation of economies of scale (cost concept) or returns to scale (production concept), that is whether as output increases, the cost of production declines (economies of scale), increases (diseconomies of scale) or remains unchanged. Over the years, research has tried to explore the applicability of this concept to the production of banking services. The motivation behind larger banks being more scale efficient can be traced to a more efficient organisation of resources in large banks. For example, in small banks, where volumes cannot permit specialisation, the same machines and workers must often be employed for a variety of tasks such as tellers may be sorting cheques as well as auditing accounts part time. Large banks, on the other hand, may divide tasks so that employees and machines can be used in one facet of their operations. Similarly, some types of technological innovations such as computers may be economically more feasible for large banks. Kolari and Zardkoohi (1987) state that the law of large numbers accounts for certain scale economies. Large banks do not need to hold cash balances in the same proportion as smaller banks and hence to that extent, law of large numbers smoothens the transaction demand. Murphy examined the sources of economies of scale in the US banking industry, and suggested that for the processing of chequeing accounts, economies of scale arise partly from the use of different kinds of equipment and partly from the specialisation of labour and machines.

The first systematic study of scale economies was undertaken by Alhadeff who compared the costs of Californian branch and unit banks of different size using data covering the period 1938-50. The study found that branch banks produced greater output per dollar resources than unit banks. However, these early studies were criticized for using an exclusive measure like earning assets as a measure of output which tended to inflate the average unit cost of large banks. Schweiger and McGee (1961) and Gramley (1962) experimented with total assets as measure of bank output and found that large banks have a cost advantage over small banks. Benston found the presence of economies of scale in banking by fitting Cobb Douglass cost function. Bell and Murphy (1968) found branching to be more costly than unit-banking operations. Greenbaum (1997) concluded that economies of scale were generally exhausted after banks exceeded US$ 10 million in asset size because of high overhead unit costs, high transactions costs, lack of sufficient specialisation and limited diversification. However, in the early 1980s, translog functional form emerged as a more stronger\theoretical alternative to the hitherto used Cobb Douglass Production Function approach as it allowed the adaptation of U-shaped cost curve and the computation of economies of scope. Benston *et al* found evidence of the existence of U-shaped cost curves for US banks. US unit banks with more than US$ 50 million in deposits recorded diseconomies of scale, while those operating in branching states experienced small economies of scale. White examined the production technology of credit unions in Canada and found that large multi- product credit unions were more efficient than small, single-product credit unions.

However, the scale economies hypothesis concerns the number of banks that can operate given existing cost and demand conditions. It tells little, however, about inequalities within the existing size distribution of banks.

References:

Bell, F. W. and N. B. Murphy. 1968. "Economies of Scale and Division of Labour in Commercial Banking." *Southern Economic Journal*, 131-139, Oct.

Gramley L. E. 1962. *A Study of Scale Economies in Banking*. Federal Reserve Bank of Kansas City, USA.

Greenbaum. 1967. "A Study of Bank Cost." *National Banking Review*, 415-434. June.

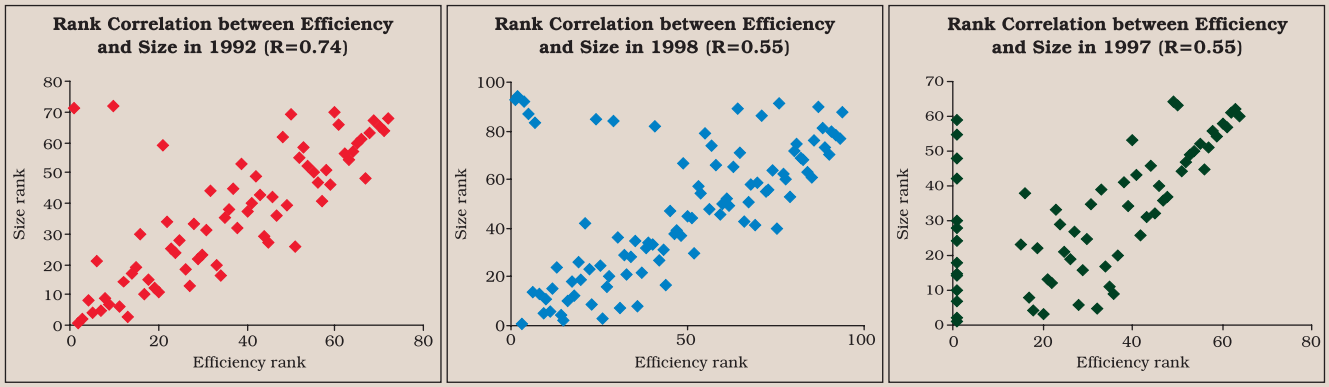
Kolari & Zardkoohi. 1987. *Bank Cost, Structure and Performance*. Lexington Books, Mass, USA.

Murphy. 1972. "Cost of Banking Activities: Interaction Between Risk and Operating cost: A Comment", *Journal of Money, Credit and Banking*, 4, August: 14-15.

Schweiger and McGee. 1961. "Chicago Banking", *Journal of Business*, 34(3): 203-366.

However, the trend reversed if the period of analysis is extended to 2006-07. Between 1997-98 and 2006-07, all bank groups were slow to catch up (technical efficiency) with steep rise in technical progress of the industry. Efforts at computerisation, which are mainly hardware installations, were largely channelled into book-keeping and reconciliation. The IT infrastructure was driven by technology and not business and customer needs. As a result, even infrastructure that was set up, was not used by customers to the extent necessary to break even. Hence, consequential catching up benefits were not accruing to banks (RBI, 2003; World Bank, 2002). The slower catching up with enhanced potential output levels, however, needs to be interpreted cautiously. It should be seen that apparent fall in efficiency levels (catching up) was against the enhanced level of potential output. Otherwise as shown in the earlier section on

Chart IX.23: Efficiency and Size



efficiency, there was a significant improvement in efficiency or utilisation levels, if compared to a constant benchmark or a frontier (Table 9.25 and Chart IX.26).

9.82 To sum up, the economic measures of efficiency and productivity substantiate the results arrived at through the accounting measures. That is, efficiency has improved across all bank groups when measured from a grand frontier for all banks for the period 1991-92 to 2006-07 and most of these efficiency gains have emanated after few years of reforms, *i.e.*, from 1997-98 onwards.

9.83 Beginning with the efficiency levels in 1991-92, efficiency gains were found to be the largest for old private sector banks. However, since their efficiency levels were very low at the beginning of the reform period, they still continue to lag far behind the other bank groups. As of now, the new private sector banks as a group are the most efficient, followed by the State Bank, nationalised banks, foreign banks and old private sector bank groups. In the foreign bank group, there are several banks with very low efficiency score, which pulled down the overall efficiency score of foreign bank as a group. Otherwise, nine of the seventeen most efficient banks were in foreign bank category. Significantly, gains in the case of foreign and private banks were restricted to technical efficiency only. Allocative efficiency of these banks has always been high since the early 1990s. In the case of public sector banks, gains have been distributed over both technical and allocative efficiency. Relatively more gains in allocative efficiency of public sector banks could be attributed to recovery of past NPAs and improvement in credit risk environment as a result of which incremental NPAs declined sharply in the post-reform period.

9.84 The analysis also found a positive and significant relationship of efficiency with size and diversification. That is, large and diversified banks, in general, were found to be more efficient. The results also suggested that NPAs have a negative impact on efficiency.

Chart IX.24: Efficiency and Other Income

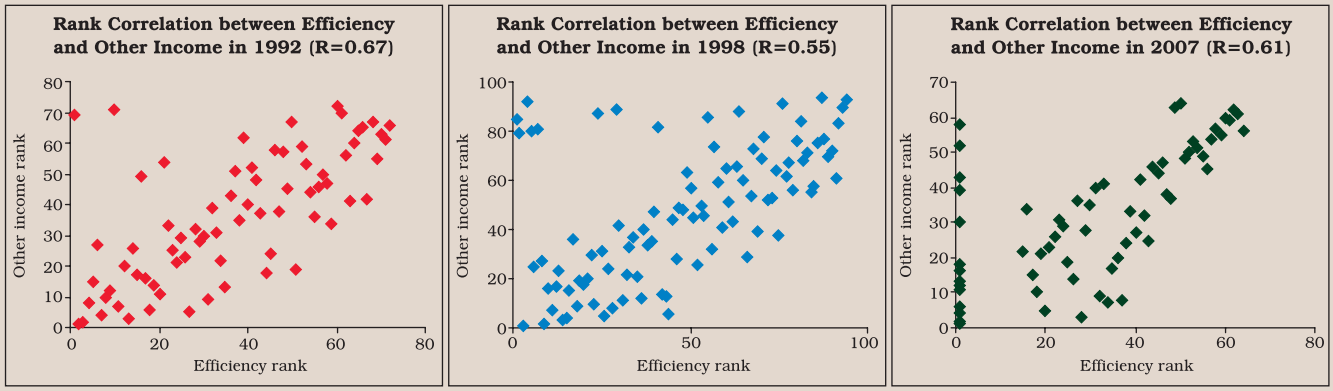
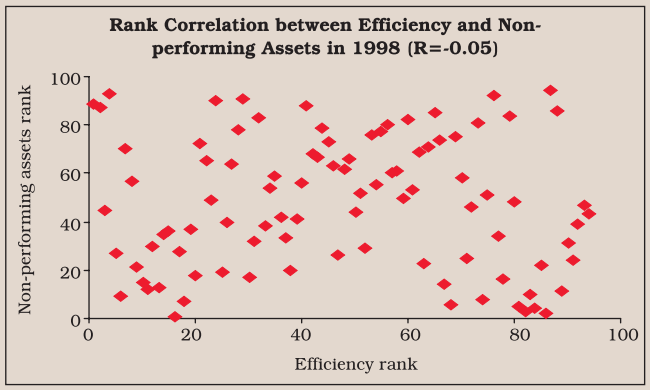
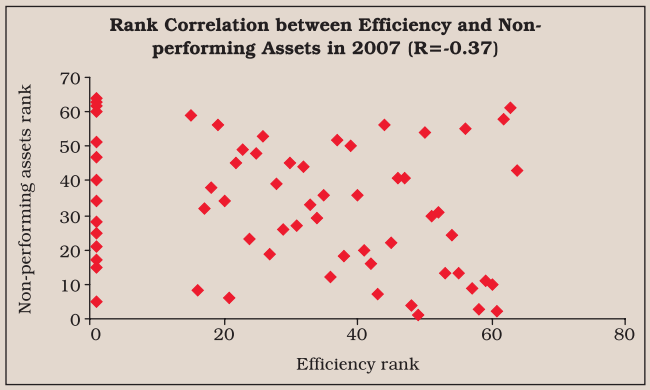


Chart IX.25: Efficiency and Non-performing Assets





9.85 The analysis suggests that efficiency level has no definite relationship with ownership of banks, *i.e.,* public or private in India. There are most efficient and least efficient banks both in the public and private sectors.

Box IX.9
Determinants of Efficiency of the Banking Sector in India

In order to ascertain the determinants of bank efficiency at aggregate level as well as bank group level, the panel least square model was used for the period 1996-2006. Technical efficiency for all the banks calculated from the grand frontier was utilised as the dependant variable, while total assets (as an indicator of the size of the bank), net non-performing assets to net advances (as a proxy for quality of management) and ratio of other income to total income (as a measure of diversification) were used as the explanatory variables. As per Hausmann test, random effects model was fitted for estimation.

The panel least squares estimates, which take into account relationship over the years, show that increase in total assets, a proxy for bank size, raises the technical efficiency. For one unit (Rs. 1 crore) increase in total assets, technical efficiency score increases by 0.0003. In terms of bank groups also, size was found to bear a significant positive influence on efficiency, especially for old private and foreign banks (Table). The literature also suggests that technical efficiency differences among banks cannot be explained solely in terms of differences in scale. Technological, managerial and off-balance sheet items also have significant impact on technical efficiency. Panel estimates for the period 1996-2006 suggest that decline in quality of management (proxied by increase in net non-performing loans) reduces the level of technical efficiency. Understandably, as NPAs come down, banks may recycle available resources, including tangible (provisions) and intangible capital (human capital) from monitoring NPAs to more productive uses, thereby raising efficiency levels of banks. This is broadly supportive of bad management hypothesis. However, bank group-wise estimates do not reveal a uniform picture. While bad loans bear a significant negative impact on efficiency in case of public sector banks

Table: Results of Panel Regression (Bank Group-wise)

(period: 1996-2006)

Dependent Variable	Constant	Total Assets	Net Non Performing Assets	Other Income to Total Income
All Banks	0.675	0.0003 *	-0.0046 *	0.003 *
	(43.33)	(10.92)	(-5.47)	(8.87)
State Bank Group	0.839	0.0005 *	-0.019 *	0.006 *
	(17.46)	(2.29)	(-7.52)	(2.78)
Nationalised Banks	0.719	0.0003 *	-0.006 *	0.006 *
	(36.68)	(8.04)	(-4.75)	(6.69)
Old Private Banks	0.493	0.004 *	-0.002	0.004 *
	(25.25)	(12.42)	(-1.296)	(4.28)
New Private Banks	0.628	0.0005 *	0.007	0.001 *
	(16.14)	(7.39)	(0.95)	(2.58)
Foreign Banks	0.533	0.002 *	-0.001	0.004 *
	(18.59)	(7.09)	(-0.913)	(6.69)

Notes: Figures in parentheses are 't' statistics.

* Significant at 1 per cent level.

(State bank and nationalised banks), the variable was found to be insignificant in the case of private (old and new) and foreign banks. This may be attributed to better risk management practices in such banks, which helps them to keep their balance sheets clean.

Similarly, diversification has also been found to bear a significant influence on bank efficiency. Fee and consumer based activities and off-balance sheet exposure thus appeared to have generated economies of scope. This would suggest that traditional bank efficiency measures, excluding off-balance sheet activities, may not provide accurate evaluation of a bank's condition.

Box IX.10
Malmquist Productivity Index

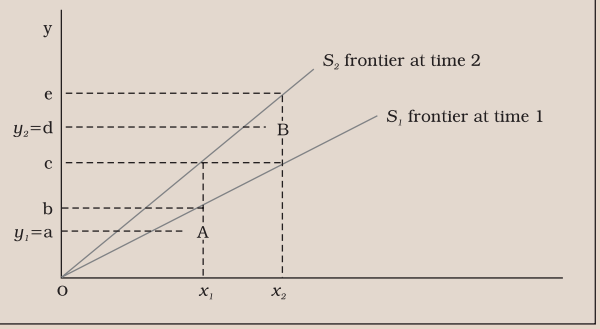
Three popular measures of total factor productivity used in the literature are Tornquist, Fisher and Malmquist indices.

Tornquist and Fisher use price information along with quantity data to construct indices of output and input. The ratio of the output and input quantity indices is the TFP index. However, both are descriptive measures of productivity change. Neither of the two measures requires the knowledge of the underlying production technology faced by the firm.

In contrast, the Malmquist Productivity Index (MPI) introduced by Caves, Christensen and Diewert (1982) is a normative measure that constructs a production frontier representing the technology and uses the corresponding distance functions evaluated at different input-output combinations for productivity comparison that is by comparing the proportion of output to input over two periods of time. The index ascertains up to what extent input in period 2 could be decreased by holding the output to the same level as in period 1. For computing the index, either of the periods could be taken as a reference point. In case technology in period 1 is taken as reference and computed value index exceed, it implies gain in productivity. On the other hand, index less than 1 indicates decline in productivity. An illustration using the one input and one output case is shown in Chart below.

Points A and B represent observations in periods 1 and 2, respectively. The rays from the origin S1 and S2 represent frontiers of production for periods 1 and 2, respectively. Relative efficiency of production at A compared to the frontier S1 (period 1) is d(y1, x1)=0a/0b. But compared with the frontier S2 (period 2), it is d2(y1,x1) = 0a/0c. The relative efficiency of production at B compared to the frontier S2 is d2(y2,x2) = 0d/0e. Compared with the frontier S1, the relative efficiency is d1(y2,x2) = 0d/0c. The Malmquist index of total factor productivity change is the geometric mean of the two indices based on the technology for periods 1 and 2, respectively. In other words:

Chart: Computation of Malmquist Index



$$M = [\{d1(y1,x1)\ d2(y1,x1)\}/\{d1(y2,x2)\ d2(y1,x1)\}]1/2 \quad .....(1)$$

Equivalently,

$$M=[d1(y1,x1)/d2(y2,x2)]\ [d2(y2,x2)\ d2(y1,x1)/d1(y2,x2)\ d1(y1,x1)]1/2 \quad .....(2)$$

Wherein, it is the distance function and the value of M in the Malmquist Productivity Index. A value greater than one (*i.e.*, M>1) represents productivity growth, a value less than one (M<1) indicates productivity decline and M=1 represents no productivity change. Change in M represents two elements, *i.e.*,

M = ET

Where,

M = The Malmquist Productivity Index

E = A change in technical efficiency, *i.e.*, change in output given the input between the period t and t+1 (the term outside the square bracket)

T = A measure of technological change in production technology (technological improvements) between the two periods (two ratios)

Reference:

Matthews, K., and M. Ismail, 2006. "Efficiency and Productivity Growth of Domestic and Foreign Commercial Banks in Malaysia." *Cardiff Business School Working Paper Series.*

9.86 The productivity of the banking sector as well as various bank groups improved between 1991-92 and 2006-07. However, most of the gains resulted from the period 1997-98 onwards. The rise in productivity emanated primarily from technical progress (innovation) while banks, particularly in the public sector, were lagging behind in catching up/absorption of enhanced technological capability into the system.

V. SOUNDNESS OF THE BANKING SECTOR IN INDIA

9.87 A key role of a country's financial regulator is to limit the systemic risk - the risk that arises with the spread of problems related to a few institutions to other institutions that are otherwise solvent and liquid. The regulator accomplishes this task by ensuring that institutions are sound or adequately capitalised to withstand any unanticipated risks both due to its own

Table 9.27: Total Factor Productivity Change

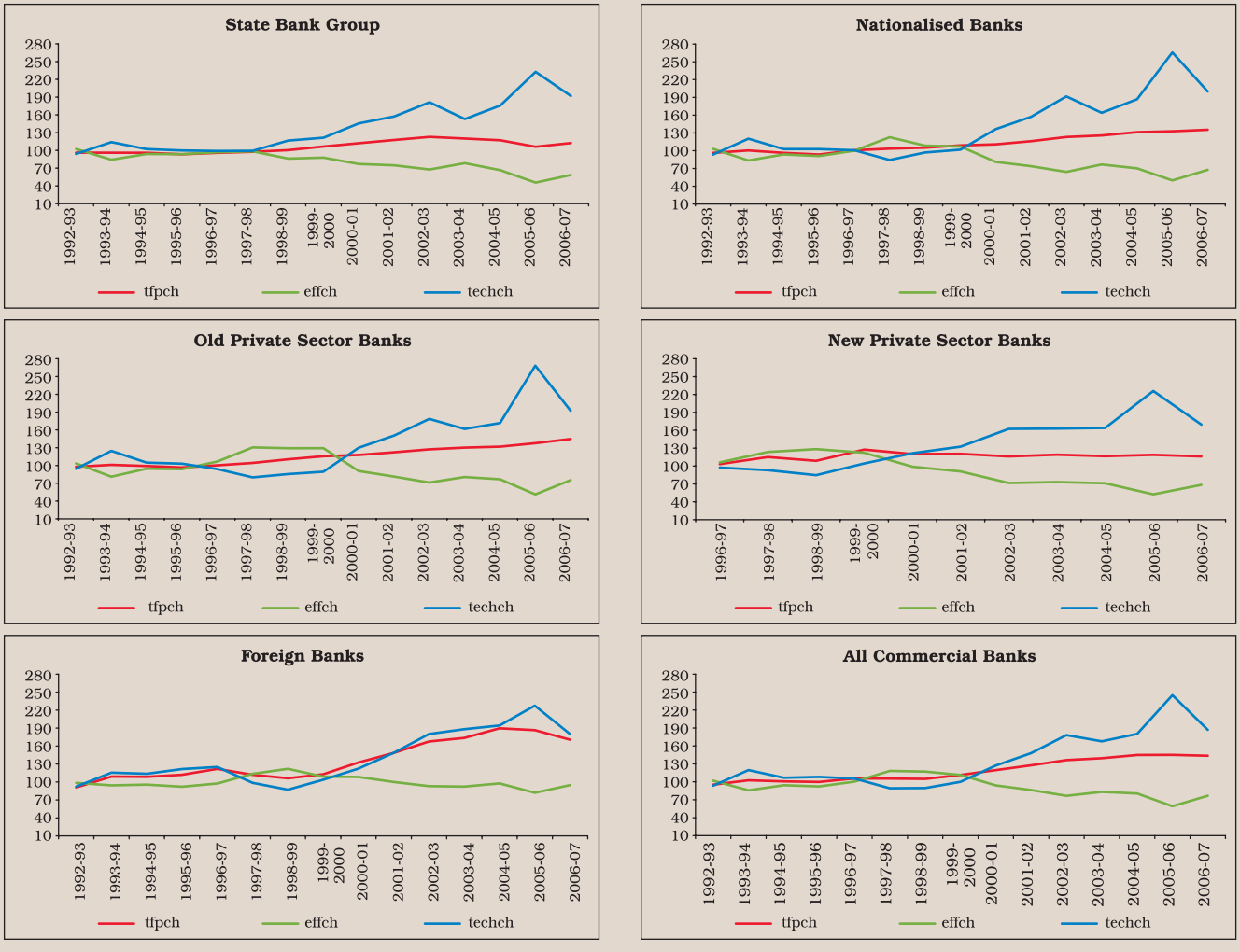
(Base: 1991-92=100)

Group	TFP Change Index		Technical Efficiency Change Index		Technological Change Index	
	1997-1998	2006-2007	1997- 1998	2006-2007	1997-1998	2006-2007
1	2	3	4	5	6	7
State Bank group	97.60	112.32	98.34	58.45	99.21	191.86
Nationalised banks	103.50	135.43	122.73	67.77	84.35	199.88
Old Private Sector Banks	104.34	144.72	130.52	75.34	79.97	192.14
New Private Sector Banks *	115.12	116.14	123.64	68.51	93.10	169.47
Foreign Banks	112.05	170.56	113.67	94.81	98.58	179.86
All	105.46	143.52	118.25	76.77	89.19	186.93

* The base year for the new private sector banks was 1995-96; for all other groups it was 1991-92.

operations or any disruptive market movements. However, with the growing globalisation of the financial sector, the concept of soundness has broadened. In addition to solvency, sound management today requires that the banks have in place systems and procedures that permit reaction

Chart IX.26: Bank Group-wise Trends in Productivity: 1991-92 - 2006-07



tfpch: TFP Change; effch: Technical Efficiency Change; techch: Technological Change.

with increased speed to market and price changes and also recover quickly from crisis that affects the system or the individual banks. This, in turn, requires that every bank evaluates the risks emerging from different operations and is able to map it into models of analytics, assumptions and parameters on which the risk exposure is predicated. For instance, in off-balance sheet deals, it is important to be aware of the soundness of counterparties with which the bank strikes the deals.

9.88 With the proliferation of new financial instruments and across the border activities of financial intermediaries, regulators are increasingly seized of the aspects related to the soundness of the banking system. Deregulation, market fluctuations, foreign exchange rate and interest rate volatility have provided a fertile ground for new financial instruments such as trading in swaps, options, futures and foreign exchange forwards as well as granting of standby commitments and letters of credit, collectively known as off-balance sheet items. Such instruments expose the institution to risk of accounting loss, which tends to exceed the amount recognised in the statement of financial position. It transfers risks to a different reference level due to a number of unknowns involved in off-balance sheet processes and consequently creates demands for novel risk management practices. Similarly, banks' operations today are spread over internationally, enlarging their arena of risk exposure to new rules of game, behavioural risk of clientele, apart from the more traditional operational risk. Given the growing integration of financial operations across markets and economies, any eventuality in one market or economy can have potential domino effect on domestic financial systems. Thus, the significance of sound institutions has never been felt as strong as now. In this section, therefore, we assess the soundness of banking institutions in the country in terms of capital to risk-wighted assets ratio (CRAR). Since poor asset quality has the potential to erode the bank's capital position, asset quality of banking institutions is also assessed.

Capital to Risk Weighted Assets Ratio (CRAR)

9.89 The capital adequacy ratio measures the amount of a bank's capital in relation to its risk-weighted credit exposures and is most widely used measure of soundness of banks. It determines the capacity of a bank to withstand the unexpected losses arising out of its operations. The risk weighting process takes into account, in a stylised way, the relative riskiness of various types of credit exposures that banks have, and incorporates the effect of off-balance sheet contracts on credit risk. The higher the capital adequacy ratio a bank has, the greater the capacity it has to absorb the unexpected losses before becoming insolvent. It, thus, provides a "cushion" for potential losses, which protects the bank's depositors or other lenders.

9.90 The CRAR of all the bank groups in India has improved over the years (Table 9.28). The CRAR of nationalised banks and old private sector banks, which was quite low at end-March 1996, gradually improved to more than 12 per cent by end-March 2007. On the other hand, the CRAR of State Bank

Table 9.28: CRAR of Commecial Banks in India

(Per cent)

End-March	State Bank Group	Nationalised Banks	Old Private Sector Banks	New Private Sector Banks	Foreign Banks	All Commercial Banks
1	2	3	4	5	6	7
1996	11.33	5.73	6.20	22.01	12.98	6.71
1997	11.64	7.45	8.07	14.39	14.67	8.70
1998	14.63	9.99	9.52	13.38	15.14	5.90
1999	12.72	10.43	9.55	11.67	16.10	12.92
2000	12.29	10.35	12.99	13.04	16.16	13.12
2001	12.94	10.32	14.21	11.94	16.17	13.07
2002	13.19	10.77	12.00	10.30	14.37	11.51
2003	14.01	12.14	13.19	8.80	18.53	12.28
2004	13.57	13.23	14.38	11.30	19.82	13.89
2005	12.06	13.10	12.16	12.46	17.42	14.07
2006	11.90	12.19	5.54	12.36	15.75	12.61
2007	12.42	12.01	13.66	12.17	13.80	12.88

Source: Computed from Statistical Tables Relating to Banks in India (RBI).

group, new private sector banks and foreign banks was always above the minimum stipulated level of 8 to 9 per cent (9 per cent from March 31, 2000). In the case of new private sector banks, one bank reported significantly low CRAR, which pulled down the group average at end-March 2003. However, subsequently, the bank was merged with the healthier bank, thereby imparting strength to the system as a whole.

9.91 A cross-country comparison reveals that at the end of 2006, the capital to assets ratio (CAR) varied significantly among countries between 5 per cent and 16 per cent[8] (Table 9.29). At the end of 2006, the capital to total assets ratio (CAR) in the banking system in most countries was more than 8 per cent. The CAR of banks in most of the developed countries ranged between 5 and 9 per cent. On the other hand, the CAR of banks in developing countries such as Mexico, Chile, Brazil and Russian Federation was at considerably higher levels. India's CAR at 8.29 per cent compared favourably with several advanced and emerging market economies.

Asset quality

9.92 The soundness of a bank may be seriously impaired if its asset quality is poor. Non-performing assets require provisioning/write-off, which affects banks' profitability and their ability to strengthen their capital position. In case the provisioning/write-off results in net losses, it could also erode bank's capital position. Therefore, apart from sound capital position, it is necessary that banks maintain high asset quality. In India, non-performing assets of commercial banks gradually declined over the years (gross NPAs from 15.7 per cent at end-March 1997 to 2.5 per cent at end-March 2007 and net NPAs from 8.1 per cent at end-March 1997 to 1.0 per cent at end-March 2007). The most significant improvement in asset quality was observed in respect of nationalised banks, followed by old private sector banks and the State Bank group. As a result, net NPA ratios of all bank groups have converged to around 1 per cent (Chart IX.27 and Table 9.30). The improvement in the asset quality is all the more significant as income recognition, asset

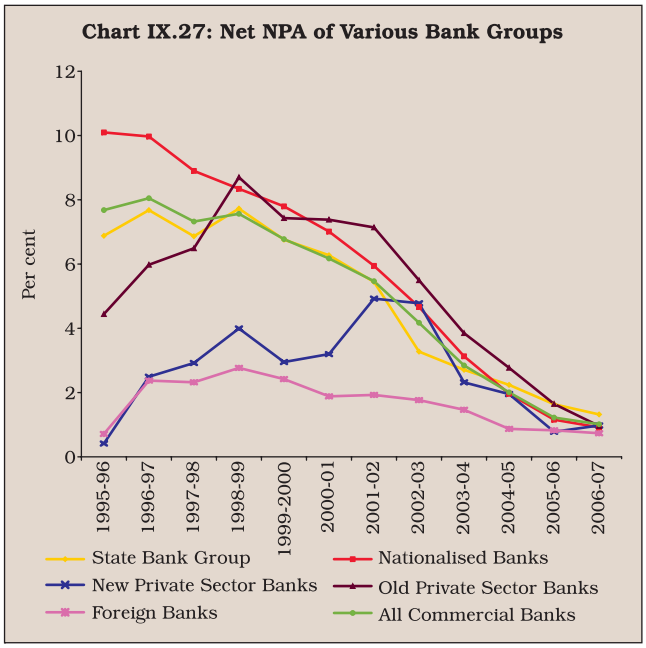
Table 9.29: Capital to Total Assets Ratio of Commercial Banks in Select Countries

(Percent)

Country	1999	2000	2001	2002	2003	2004	2005	2006
1	2	3	4	5	6	7	8	9
ADVANCED ECONOMIES								
USA	8.63	9.01	12.58	10.17	9.82	9.03	9.63	8.9
Canada	*	7.27	7.02	6.86	6.62	6.39	6.3	6.49
UK	*	7.66	8.46	9.03	4.82	6.6	6.04	5.8
Italy	6.96	7.03	6.49	6.72	7.95	9.16	8.29	8.67
France	5.2	6.45	5.45	5.65	5.97	4.96	4.9	5.04
Germany	5.31	6.17	6.25	5.78	5.88	5.37	5.63	5.22
Japan	*	*	*	*	*	*	*	*
EMERGING ECONOMIES								
Mexico	11.07	10.77	11.35	12.05	12.27	11.68	13.36	14.41
Chile	10.16	9.93	10.03	11.33	11.56	11.22	10.9	11.36
Korea	6.6	6.63	7.49	7.07	7.03	7.32	7.43	7.77
Thailand	10.67	10.2	9.56	9.62	10.52	9.67	10.26	10.74
Philippines	17.37	25.73	17.46	17.48	17.21	14.39	11.86	13.14
Malaysia	*	8.54	8.63	10.1	10.08	9.65	9.56	9.45
Indonesia	0.22	7.93	8.17	9.16	10.51	12.07	11.03	12.12
Brazil	10.3	9.33	10.38	10.81	11.64	11.75	11.92	12.38
Russian Federation	11.76	12.86	14.5	15.33	15.6	16.72	15.95	15.91
China	6.13	5.98	4.98	3.12	3.1	5.22	5.68	6.84
Memo:								
RANGE	**0.22-17.37**	**5.98-25.73**	**4.98-17.46**	**3.12-17.48**	**3.1-17.21**	**4.96-16.72**	**4.90-15.95**	**5.04-15.91**
India	**6.94**	**6.77**	**6.86**	**6.9**	**7.24**	**7.51**	**8.21**	**8.29**

*: Data are not available, or if available, are with a very small sample and hence not considered for analysis.
Source: Bank Scope.

[8] While CRAR is a better indicator of bank soundness, data on CRAR in different countries on a time series basis were not readily available. In view of this, the capital to total assets ratio was considered for international comparison.



classification and provisioning norms were tightened periodically. The improvement in asset quality has been brought about by initiating several institutional measures such as balance sheet cleansing through compromise settlements of chronic non-performing assets, corporate debt restructuring, setting up of debt recovery tribunals and enforcement of security interest for realisation of dues without the involvement of judiciary.

9.93 The ratio of impaired loans to gross loans, *i.e.*, the ratio of non-performing assets (NPAs) to total advances declined in almost all the select countries studied during the period 1999-2006. The ratio of impaired loans to gross loans in India is currently comparable with most of the developed countries such as France, Germany and Japan and better than several EMEs such as Brazil,Thailand, Philippines, Malaysia and Indonesia (Table 9.31).

Relationship Between Efficiency and Soundness

9.94 Internationally, cost efficiency studies have been instrumental in detecting the symptoms of a bank failure, if any, *ex-ante*. This has saved costs on bailout and regulatory intervention. Various bank failure prediction models have been constructed around CAMELS as it serves as an effective warning system that can complement the on-site examination process by identifying troubled institutions that need early examination or possible intervention. Studies have found that banks on the verge of failure bear a history of low efficiency parameters such as low net profit per employee, business per employee, high non-performing assets, among others. This is also evident from the case study of a failed bank (Box IX.11)

9.95 A large body of research literature exploring relationship between asset quality and efficiency suggests four alternative hypotheses, namely, bad management, bad luck, skimping and moral hazard, as alluded to earlier. As per bad luck hypothesis, extraneous events may cause an increase in problem loans for the bank which, in turn, may lead to additional operating costs on the additional

Table 9.30: Net NPAs as per cent of Total Advances of Commercial Banks in India

At end-March	State Bank Group	Nationalised Banks	Old Private Sector Banks	New Private Sector Banks	Foreign Banks	All Commercial Banks
1	2	3	4	5	6	7
1996	6.88	10.10	4.44	0.41	0.71	7.68
1997	7.68	9.97	5.98	2.49	2.37	8.05
1998	6.86	8.90	6.49	2.92	2.32	7.32
1999	7.73	8.34	8.70	3.99	2.77	7.56
2000	6.76	7.80	7.43	2.95	2.42	6.78
2001	6.27	7.01	7.38	3.20	1.88	6.17
2002	5.44	5.94	7.14	4.92	1.93	5.47
2003	3.28	4.66	5.50	4.78	1.77	4.17
2004	2.71	3.13	3.85	2.32	1.46	2.84
2005	2.24	1.97	2.77	1.95	0.87	2.01
2006	1.64	1.16	1.65	0.78	0.83	1.22
2007	1.32	0.92	0.96	0.98	0.73	1.02

Source: Computed from Statistical Tables Relating to Banks in India (RBI).

Table 9.31: Ratio of Impaired Loans to Gross Loans of Commercial Banks in Select Countries

(Per cent)

Country	1999	2000	2001	2002	2003	2004	2005	2006
1	2	3	4	5	6	7	8	9
ADVANCED ECONOMIES								
USA	1.30	1.39	1.50	1.53	1.12	1.21	0.61	0.68
Canada	*	1.37	1.68	1.75	1.30	0.84	0.58	0.51
UK	*	1.41	2.32	3.27	2.83	0.82	1.48	1.38
Italy	7.71	4.88	4.19	4.86	4.54	4.79	6.57	5.47
France	6.47	6.71	5.60	5.25	4.48	4.63	3.31	2.62
Germany	2.27	3.18	3.53	5.12	5.11	6.19	4.28	3.83
Japan	5.92	6.34	9.96	8.31	6.71	4.46	3.20	2.84
EMERGING ECONOMIES								
Mexico	12.33	9.42	4.90	4.89	3.27	2.62	1.84	2.00
Chile	2.07	1.91	1.74	2.00	1.81	1.30	0.99	0.81
Korea	26.68	11.33	3.23	2.87	2.79	2.10	1.37	0.97
Thailand	40.84	26.11	18.60	21.05	16.46	13.73	10.39	9.28
Philippines	16.12	14.90	20.60	6.95	7.36	12.29	9.55	8.03
Malaysia	*	10.76	13.88	12.89	11.66	9.66	7.68	6.52
Indonesia	42.02	21.28	12.69	6.94	6.04	4.39	8.29	6.79
Brazil	0.09	10.34	9.31	9.39	9.44	8.10	8.48	8.97
Russian Federation	3.70	1.58	1.17	1.69	2.00	1.40	1.82	1.84
China	20.24	17.29	12.29	13.98	5.07	4.33	3.12	2.76
Memo:								
RANGE	**0.09-42.02**	**1.37-26.11**	**1.17-20.60**	**1.53-21.05**	**1.12-16.46**	**0.82-13.73**	**0.58-10.39**	**0.51-9.28**
India	**12.80**	**11.40**	**10.40**	**8.80**	**7.20**	**5.20**	**3.32**	**2.55**

*: Data are not available, or if available, are with a very small sample and hence not considered for analysis.
Source: Bank Scope.

monitoring of delinquent borrowers, costs of seizing, maintaining and eventually disposing of collateral in the case of default, and additional costs of defending banks' safety and soundness record to bank

Box IX.11
Importance of Efficiency- The Case Study of a Bank

The importance of efficiency studies can be gauged from the case study of a failed bank. A bank became insolvent during early part of the current decade. However, the signs of growing weaknesses were clearly evident in the preceding four years from the year of failure, in terms of high NPAs, low business per employee, consistently declining profit per employee and business per branch (Table). The cost efficiency parameters estimated from DEA model also suggested a sharp decline in the cost efficiency score before it eventually failed.

Table :Efficiency Parameters of a Bank

	Profit per employee (million US $)	Business per employee (million US $)	Business per branch (million US $)	Total Contingent Liabilities per branch (million US $)	Total Assets per branch (million US $)	Net NPA to total Assets (per cent)	Cost Efficiency as per DEA
1	2	3	4	6	7	8	9
Year 1	9.47	830.91	12684.16	9453.84	10612.92	2.15	0.69
Year 2	-14.52	1258.00	15683.10	11697.00	97675.27	0.87	0.93
Year 3	6.85	1008.86	17930.18	9192.73	14351.45	3.75	0.49
Year 4	3.51	826.13	11994.56	3264.75	9250.03	9.23	0.42
Year 5	-20.75	776.03	10733.72	3766.66	8069.46	19.77	0.38
Year 6	-61.82	657.88	8820.96	2298.51	7350.16	27.99	0.37

supervisors, among others. Thus, under this hypothesis, one expects increase in non-performing loans, would cause decline in measured cost efficiency. Poor management practices may result in increased operating expenses which may be reflected in low measured cost efficiency immediately. Managerial lacunae may also result in inadequate loan underwriting, monitoring and control, poor credit scoring and choice of relatively high proportion of loans with low or negative present values. This is the bad management hypothesis and under this, low cost efficiency is expected to cause higher non-performing loans.

9.96 In terms of the skimping hypothesis, a bank may be cost efficient in the short run due to saving on resources devoted to underwriting and monitoring loans but only at the cost of future loan performance problems. Hence, under this hypothesis, low cost efficiency may be positively related to loan quality. The moral hazard hypothesis, as the name suggests, indicates tendencies of banks with low capital to assume greater risk, leading to higher non-performing loans. Hence, under this hypothesis, low financial capital may cause high non-performing loans.

9.97 The empirical tests reveal that both bad luck and bad management hypotheses are significantly valid for Indian banks. That is, poor macroeconomic performance results in an increase in NPAs and impinges on efficiency. Poor quality of management also results in higher non-performing loans (Box IX.12).

9.98 To sum up, the analysis of soundness indicators suggests that the CRAR of various bank groups improved significantly in the post-reform period. The ratio for the banking industry at end-March 2007 at 13 per cent and for various bank groups in the range of 12-14 per cent was significantly higher than the stipulated level of 9 per cent. The strengthening capital position was accompanied by a significant improvement in asset quality. Net NPAs of the Indian banking sector are now at the global levels. The empirical analysis revealed that both macroeconomic developments and quality of management affect the efficiency of the banking sector. That is, poor macroeconomic performance and poor quality of management result in low efficiency.

VI. FACTORS BEHIND THE IMPROVEMENT IN EFFICIENCY AND PRODUCTIVITY

9.99 The improved efficiency and productivity of the Indian banking sector in the post-reform period was due to several structural changes. The emergence of private sector banks and their growing significance in the overall structure has played a crucial role. From the very beginning, new private sector banks have been more efficient than many of

Box IX.12
Efficiency and NPAs Relationship in India

In order to test for the presence or absence of the four alternatives hypotheses, *i.e.*, bad luck, bad management, skimping and moral hazard, explaining relationship between asset quality and efficiency, Granger causality tests were conducted based on the panel VAR with technical efficiency (TE) and net non-performing assets (NNPA) as the variables. The period for the study was 1996-2006. The Granger causality results show that NPAs Granger cause efficiency and *vice-versa,* implying that both bad luck and bad management hypotheses were significantly true for Indian banks for the period under review (1996-2006).

Table: Results of Vector Auto Regression

Dependant Variables	TE	NNPA
Intercept	**0.0659***	**1.661***
	(5.544)	(4.29)
TE (-1)	**0.951***	**0.033**
	(20.528)	(0.022)
TE (-2)	**0.027**	**-5.469***
	(0.409)	(-2.569)
TE (-3)	**-0.027**	**3.745***
	(-0.5)	(-2.172)
NNPA (-1)	**0.002**	**0.599***
	(-1.37)	(-14.62)
NNPA (-2)	**-0.004***	**0.132***
	(-2.843)	(-2.98)
NNPA (-3)	**0.008**	**-0.0184**
	(-0.652)	(-0.483)

* : Significant at 1 per cent level.

Note : Figures in parentheses are 't' statistics.

Pairwise Granger Causality Tests

Sample 1996-2006

Null Hypothesis	F- statistic	P-value
NPA does not granger cause TE	3.04	0.028
TE does not granger cause NPA	5.73	0.001

the existing public sector, old private sector and foreign banks. The share of private sector banks in the industry gradually increased from 1.5 per cent at end-March 1996 to 16.9 per cent by end-March 2007. Therefore, as the share of new private sector banks rose, the overall efficiency of the banking sector improved. Besides, increased competition also put pressure on other banks to improve their performance, resulting in the overall efficiency of the banking sector. Owing to increased competition, banks' margins, especially in recent years, have come under pressure. Banks have endeavoured to counter these by expanding volumes, seeking non-interest sources of income and by improving operational efficiency. India has moved on to a higher growth trajectory. The robust economic growth has not only enabled banks to increase credit volumes but has also resulted in improved credit risk environment as a result of which the incremental NPAs have declined sharply. Banks have also been able to recover their past dues, encouraged by robust macroeconomic environment and various institutional measures initiated by the Central Government and the Reserve Bank. These factors have played a major role in improving the efficiency and profitability of the banking sector.

9.100 Increased application of technology also appeared to have played an important role in improving efficiency and productivity of the banking sector. Progress after 1997-98 was directly traceable to several technological changes that have taken place on a continuous basis. These include improvements in payment and settlement systems, customer service, internal controls and audit. Beginning with the MICR cheque clearing system, the Indian retail payment system got a major boost during the reform period with the introduction of technologically advanced and secure systems such as electronic fund transfer, electronic clearing system, the special EFT and card based systems that greatly enhanced efficiency levels in banking operations. The introduction of RTGS helped improve the cash management by banks. Another technology induced cost effective initiative was the introduction of virtual banking services through the establishment of ATMs, shared ATM networks, smart cards, stored-value cards, phone banking and ultimately internet and intranet banking. These services economised on the staff and branch infrastructure expenses and also boosted the volume of transactions per unit of input used. The Reserve Bank also operationalised the Very Small Aperture Terminal (VSAT) network to provide reliable communication backbone to the financial sector. To facilitate connectivity within the banking sector, the Reserve Bank, public sector banks and IDBRT collectively set up the Indian Financial Network (INFINET) based on satellite communication. Currently, INFINET is being migrated to a multi-protocol layer switching technology that offers economies of scale, apart from ease of operation. Such technological changes led to outward shift in the production frontier of banks.

9.101 As regards bank groups, the State Bank group and nationalised banks adopted technology long after foreign and new private sector banks. Hence, while foreign banks were mostly defining the grand technological frontier of the Indian banking system, public sector and nationalised banks closely pursued the frontier to stay competitive. Many public sector banks also computerised their branches and introduced core banking solutions. Although in the initial years, it pushed up the cost, it however, appeared to have resulted in cutting operating cost and improving efficiency in the subsequent years. New private sector banks such as ICICI Bank and HDFC Bank were relatively better off due to their access to the frontiers of technology assisted by foreign direct investment.

9.102 The Indian banking sector also witnessed several mergers and acquisitions in the post-reform period. As a result, merged entities have become large in size and able to reap the benefit of economies of scale. Diversification of banking business has been another factor which has contributed to the increased efficiency. One of the major elements in diversification of income was trading profits from treasury operations made during 2001-02 to 2003-04.

9.103 All interest rates, barring savings deposits, loan up to Rs. 2 lakh and export credit, have been deregulated. Deregulation of interest rates has enabled banks to price the products keeping in view the risk and return perceptions. It also enabled banks to introduce innovative deposit products. Significant reductions in the statutory pre-emptions in the form of CRR and SLR during the latter half of the 1990s and the early part of the current decade freed the resources of the banks to be deployed in the market[9]. Besides, the introduction of auction system for government securities also enabled banks to earn a market related interest rates on their SLR investments. These relaxations allowed banks to seek for more

[9] The CRR has been gradually raised in phases beginning September 2004. These might have had some impact on banks' margins.

profitable avenues of business. With rapid economic growth and deregulation of the credit market, new sources of credit such as housing loans, auto loans, educational loans, have emerged in a big way and banks have been able to expand their retail loan portfolio significantly. As retail loans fetch higher interest rates than conventional loans, banks were able to improve their net interest income and shore up their profits.

9.104 The structure of assets and liabilities also has implications for the efficiency of banks. Not all the liabilities of the banks carry the same cost. Short-term liabilities are less expensive than medium and long-term liabilities. Medium to long-term liabilities are also more interest rate sensitive than short-term liabilities. As discussed in Chapter IV, the share of short-term deposits (*i.e.*, with maturity less than 1 year) in total deposits increased gradually to 40 per cent by 2006 from 13 per cent in 1990. On the asset side, banks now extend loans not only for working capital finance but also for medium and long-term purposes. The share of medium and long-term in total loans increased from 17.4 per cent at end-March 1995 to 53.9 per cent by end-March 2007. To the extent banks extend medium and long-term loans, they do not have to take the onus of cash management, which entails both financial and administrative costs. Medium and long-term loans are also more expensive than short-term working capital finance, *i.e.*, they are more beneficial to banks. Thus, the shortening of the maturity profits of liabilities on the one hand, and the lengthening of asset profile on the other, have enabled banks to improve their profitability. This may have implications for asset liability management and the banks may be trading off between risk and return. However, in the international context, it has been seen that banks that are good at operations are also good at risk management. It is, therefore, believed that improved efficiency is not at the cost of risk management.

9.105 The improvement in the performance of public sector banks, in particular, has been a major factor in the overall improvement of the banking sector. Almost all public sector banks have gone public and raised capital from the market after the Banking Companies (Acquisition and Transfer of Undertakings) Acts 1970/ 1980 were amended in July 1994. Earlier, the State Bank of India (SBI) Act, 1955 was amended by promulgating an Ordinance in October 1993 to enhance the scope of the provision for partial private shareholding. This has not only strengthened their capital structure[10], but has also subjected them to market discipline which has encouraged them to improve their efficiency. As alluded to earlier, well capitalised and publicly traded banks tend to be more efficient. After the introduction of prudential norms in the early 1990s, twelve public sector banks reported net losses (14 banks in all). By 1999-2000, however, all the loss-making public sector banks were able to turn around. This helped in improving the overall efficiency of public sector banks as a group. Between November 15, 2000 and March 31, 2001, all public sector banks barring Corporation Bank, introduced voluntary retirement scheme. About 12 per cent employees took the offer before March 2001. This enabled the banks to rationalise the labour force which had a significant positive impact on the productivity of public sector banks.

9.106 Corporate income tax rates have also been brought down significantly over the years, which have resulted in improvement in the overall profitability of the banking sector.

9.107 On the whole, the confluence of several well articulated and some fortuitous factors contributed to the improved efficiency and productivity of the banking sector.

VII. THE WAY FORWARD

9.108 The analysis in the previous sections suggests that efficiency/productivity of the banking sector on the whole and of the various bank groups has improved significantly over the years. However, there is considerable scope for further improvement. Some of the areas which need attention by the banks are set out below.

Need to Reduce Intermediation Cost

9.109 The intermediation cost of the banking sector in India has come down significantly, reflecting the growing competitive pressures. However, the intermediation cost for banks, in general, in India is still high as compared with the banking systems in other countries. While the intermediation cost of all bank groups was high, it was particularly high for the foreign banks group[11]. High intermediation cost can affect the level of investment and hurt growth. The

[10] Some banks in the entry phase of reforms were recapitalised by the Government.

[11] Higher NIM in the case of foreign banks was on account of their large proportion of current accounts that enabled these banks to raise low cost deposits.

high intermediation cost also results in misallocation of resources as the borrower in order to cover the increased cost could choose the riskier projects, resulting ultimately into NPAs for the banking sector. Thus, high intermediation cost hurts both the banking sector and the economy. Banks, therefore, need to make concerted efforts to bring down the intermediation cost further to the global levels.

Need to Bring Down the Operating Cost

9.110 One of the major reasons of high intermediation cost is the high operating cost. Although banks have been able to bring down the operating cost, the operating cost to income ratio for all bank groups is still not in sync with the international best practice. The cost to income ratio of all bank groups was more than the best practice norm of 40 per cent (Ghosh, C.R, 2004). The lowest cost to income ratio was 45 per cent for foreign bank group, while the ratio of all other bank groups was more than 50 per cent. In order to reduce the intermediation cost and yet sustain profitability, it is necessary that banks bring down the operating cost. Technology can play a major role not only in reducing operating cost but also improving productivity. Banks, therefore, need to look at technology both from the point of view of increasing labour productivity and cutting operating cost in the long run. About 15 per cent of State Bank group branches and 20 per cent branches of nationalised banks are yet to be computerised. This needs to be pursued vigorously. As public sector banks complete the computerisation of remaining branches and implement core banking solutions, non-labour costs are expected to move up initially. However, in the long run, it should help bring down the operating costs.

Need to Improve Labour Productivity in Public Sector Banks

9.111 A major reason for high operating cost for public sector banks is the low labour productivity. Although the labour productivity of public sector banks has improved, it continues to be far below that of foreign banks and new private sector banks. Public sector banks, therefore, need to look into various aspects of labour productivity and take necessary measures to improve it further. Banking has become a very complex business and in order to survive competition, banks are required to introduce new products. Risk management is also becoming increasingly complex. Thus, the development of human resource skills assumes significance and public sector banks need to pay greater attention to the training requirements of their staff. Another factor which needs urgent attention is the pay structure in public sector banks. At present, the pay structure in public sector banks is fixed at industry level, irrespective of the capacity of a particular bank to pay and its efficiency level. This needs to be looked into.

Need to Increase Non-Interest Sources of Income

9.112 Banks' main source of income is net interest income, which provides stability to earnings. However, non-interest sources of income can help in sustaining the earnings. This is particularly the case when activity of non-interest source of income and the main activity are negatively co-related. At present, banks' non-interest sources of income constitute very small portion of their total income. This is particularly so in the case of public sector banks as their non-interest income ratio in 2006-07 was more or less at the same level as in 1991-92, although there were periods (between 2001-02 to 2003-04) when non-interest income ratio improved significantly mainly due to trading profits on Government securities. As net interest income margins are expected to come further under pressure in future, banks need to seek newer non-interest sources of income to sustain their profitability.

Need to Improve Overall Efficiency and Productivity Further

9.113 DEA estimates indicate considerable improvement in the efficiency of the banking sector with efficiency score rising from 0.42 in 1992 to 0.71 in 2007 (the maximum achievable efficiency level being 1.0). There is also evidence that banks in the public and private sectors are gradually catching up with their more efficient peers. However, the banking sector is still below the efficiency frontier and there is a scope to save inputs by 29 per cent to produce the existing level of output. At the individual bank level efficiency scores/levels vary considerably from as low as 0.38 to the maximum level of 1.0. Of the 81 banks, only 17 banks were on the efficiency frontier, while all other banks were below the efficiency frontier. Of these, as many as 22 banks operated at two-thirds of the feasible efficiency level, while four banks operated at less than one half the level of the most efficient banks in industry. These banks are in the private and foreign bank segments. The need is to bring improvement in the efficiency of all those banks which are far away from the efficiency frontier by identifying the underlying causes of their low efficiency.

9.114 The rising efficiency levels were accompanied by impressive growth in productivity as well. Productivity of the banking sector rose by more than 40 per cent between 1991-92 to 2006-07 with growth being more pronounced in the case of private sector banks. However, in general, growth in productivity was largely the result of innovation or technological progress while absorption of this enhanced technological progress in most of the banks lagged behind. Given this, the issue that needs to be asked is as to whether productivity improvements built just on the strength of technology are sustainable. The need is to achieve higher levels of technical efficiency. For this, it is necessary to focus on bringing appropriate changes in processes and improve human resource skills.

VIII. SUMMING UP

9.115 In an increasingly globalised and competitive world, it is imperative that financial institutions not only follow global practices, but also that they are globally competitive, efficient and sound. In order to achieve this objective, India initiated financial sector reforms, of which the banking sector was the key component. Reforms are now one and half decades old and the question needed to be asked as to how the banking sector has responded to the changed operating environment. Keeping this in view, a detailed analysis of efficiency, productivity and soundness of the banking sector in India was attempted in this chapter. The focus was to assess the efficiency, productivity and soundness parameters in the post-reform period for the entire banking sector as well as various bank groups. Besides, the analysis attempted to answer the three specific questions: (i) Are private sector banks more efficient than public sector banks? (ii) Are large sized banks more efficient than small banks? (iii) Are diversified institutions more efficient than those which specialise in niche areas? The analysis was conducted using the conventional accounting measures (ratio analysis) and economic measures.

9.116 The accounting measures revealed that there has been an all-round improvement in the productivity/efficiency of the banking sector in the post-reform period. At the time of initiation of financial sector reforms, most of the efficiency ratios did not compare well with the banks in most advanced countries and emerging market economies. The performance of the banking sector, especially nationalised banks, worsened in the initial years of reforms as they took time to adjust to the new environment. However, a distinct improvement was discernable thereafter, especially beginning 2001-02. As a result, various efficiency/productivity and soundness parameters have moved closer to the global levels. The most significant improvement has taken place in the performance of public sector banks, as a result of which the performance of various bank groups has now converged with that of foreign banks and new private sector banks in respect of most of the parameters.

9.117 The intermediation cost as also the net interest margin declined across the bank groups. Despite this, however, the profitability of the banking sector improved. Thus, it is not the higher interest rate spreads but rather increased efficiency that led to higher profitability. While competitive pressures led banks to finely price their products, increased volumes resulting from robust economic growth and large trading profits from treasury operations during 2002-03 to 2004-05 also enabled banks to sustain their profitability. Business per employee and per branch also increased significantly across the bank groups. As a result of all these factors, return on assets and return on equity improved during the post-reform period.

9.118 The improvement of various accounting measures, however, varied across the bank groups. In terms of cost ratios (operating cost to income), foreign banks were more efficient than domestic banks. Similarly, in terms of labour productivity also foreign and new private banks were ahead of their peer groups. Labour productivity reflected by business per employee in public sector banks was about one-half of that of industry's best performers, *viz*., foreign banks and new private banks. The apparent reasons could be traced to the transaction size, which is significantly large in the case of foreign and private sector banks as they deal largely with premium corporates and high net worth individuals.

9.119 In terms of net interest margins and intermediation cost, new private sector banks and public sector banks, respectively, were more efficient than the other bank groups. The cost of deposits of foreign banks in the industry was the lowest. However, this was not passed on the borrowers, leading to higher net interest spread. The empirical exercise suggested that the operating cost was the main factor affecting the net interest margin. Non-interest income and asset quality were the other determinants of net interest margin.

9.120 Efficiency and productivity based on economic measures corroborated the findings of the

accounting measures or financial ratios. That is, efficiency has improved across all bank groups when measured from a grand frontier for all banks for the period 1991-92 to 2006-07 and most of these efficiency gains have emanated after few years of reforms, *i.e.*, from 1997-98 onwards. The analysis suggests that in the Indian context, there is no relationship between ownership and efficiency. That is, most efficient banks were from all the three segments, *i.e.,* public, private and foreign. Most of the 30 banks that were at the bottom, in terms of efficiency, belong to the private sector. The evidence, however, suggests that size has a significant relationship with efficiency. That is, large banks were found to be more efficient. Similarly, diversified banks were also more efficient than not so diversified banks. The analysis also suggests that non-performing assets had a negative impact on efficiency. Productivity in banks rose many fold largely driven by technological innovation and enabling policy environment. However, while some domestic banks, especially public sector and new private sector banks, were able to reach the enhanced output potential, some other domestic banks were not able to catch up or utilise the enhanced output potential resulting from technological innovations. There are a number of inter-related factors, which in the backdrop of enabling policy environment, facilitated the growth in efficiency/productivity.

9.121 The soundness of the banking sector as well as all bank groups in terms of CRAR also improved over the years. There has also been significant improvement in the asset quality of banks, which is now close to the global levels. Providing evidence for both bad luck and bad management hypotheses, the analysis showed that macroeconomic factors as well as management skills affect asset quality in India.

9.122 Notwithstanding significant improvement, there are several areas which need attention of banks. The intermediation cost in India is still high as compared with banks in many other countries and banks should strive to bring it down to the global levels. Net interest margin of foreign banks, in particular, was very high. Their cost of funds is significantly lower than that of other bank groups. However, the low cost is not being passed on to the borrowers. The high intermediation cost of banks in India, to a large extent, was due to high operating costs. The need, therefore, is to bring down the high operating costs. One area of concern for public sector banks is the business per employee, which is almost one half of new private sector banks. Public sector banks, therefore, should strive to improve labour productivity and bring it on par with new private sector banks. Non-interest sources of income constitute a very small share in total income of banks in India. In future, net interest margins are likely to come under pressure. Banks, therefore, need to seek new non-interest sources of income to sustain their profitability. Although overall efficiency and productivity have improved, there is evidence to suggest that resources are not being utilised in the most efficient manner. That is, banks can increase output by reducing significantly the level of inputs. Several banks operated at the three-fourths of the efficiency levels of the most efficient banks. A special attention, therefore, needs to be paid to improve the efficiency of the least efficient banks by identifying the underlying causes. Similarly, there is a need for increased absorption of enhanced technological capability (innovation) by several banks to further augment productivity of the banking sector. This would call for changes in processes and improvement in human resource skills.

9.123 The challenge in future for the banking sector in India is to bring down the intermediation cost and at the same time maintain high profitability. This can be achieved only by improving efficiency and tapping non-interest sources of income. Higher efficiency and productivity of the banking sector could lead to enormous benefits for the resource allocation and growth potential of the real economy.

Appendix IX.1
Accounting *Versus* Economic Measures of Efficiency

Accounting Measures of Efficiency

Financial managers frequently resort to ratio analysis to assess the performance of business units. Some of the most frequently used ratios are liquidity ratio, return on assets (RoA), return on equity (RoE), among others. These ratios are computed from various items in balance sheet and profit and loss statement/income-expenditure statement. While in financial management, these ratios are not termed as accounting measures, economic literature on estimating productivity and efficiency terms them as accounting measures as these ratios are essentially computed from certain accounting entries in financial statements. These ratios are highly popular in financial analysis, even in economic literature, mainly on account of the ease with which they can be understood. Nonetheless, it needs to be recognised that these ratios are only relative measures of productivity and at best can only partly indicate the efficiency of business units. Moreover, these ratios may lead to the danger of imputing economic significance to accounting numbers. Further, they also suffer from accounting biases. That is, the accounting practices and norms in different economic environments can be significantly different and hence, comparison between the ratios computed from two business units operating in differing economic environments may not be suitable for drawing economic conclusions. Nonetheless, the popularity of the ratio analysis emanates on three counts. One, as long as accounting biases remain more or less the same over the years, meaningful inferences can be drawn by examining trends in raw data and financial ratios. Two, since similar biases characterise various firms in the same industry, inter-firm comparisons are useful. Three, experience seems to suggest that financial analysis 'works' if one is aware of accounting biases and makes adjustments for the same (Chandra, 2004). Further, their popularity also emanates from the fact that most of the supervisory systems across the globe have put in place regulatory frameworks (such as CAMELS rating) based on these ratios. In addition, some parametric and semi-parametric survival models such as extension of Cox Partial Hazards Model to banks also use these financial ratios for estimating regression outputs. Since it is difficult to precisely measure the productivity and efficiency of banks with accounting measures, alternative techniques, which compute total factor productivity of the banking unit, have evolved over the years.

Economic Measures of Efficiency

Modern efficiency measurement begins with Farell (1957) who drew upon the work of Debreu (1951) and Koopmans (1951) to define a simple measure of firm efficiency which could account for multiple inputs. Farell proposed that efficiency of a firm consists of two components, namely, technical efficiency which reflects ability of a firm to obtain maximal output from a given set of inputs, and allocative efficiency which reflects ability of a firm to use inputs in optimal proportions, given their respective prices. These two measures are then combined to provide a measure of economic efficiency. Economic efficiency, in turn, has two variants *viz*. cost efficiency and revenue efficiency. Cost efficiency is estimated through 'input oriented approach' wherein cost is minimised, while revenue efficiency follows 'output oriented approach' and the objective is to maximise revenue.

Output-oriented technical efficiency : Given the input bundle, the maximum output producible from the same input bundle measures the output oriented technical efficiency. Suppose that φ^* is the maximum value of φ such that $(xt, \varphi yt)$ lies within the technology set. Then $y^* = \varphi^* yt$ and the output-oriented technical efficiency of firm t is $TEt = TE(xt, yt) = 1/\varphi^*$. The output oriented measure of technical efficiency is obtained as

$\varphi^* = \max \varphi$

s.t $\Sigma\lambda j\, yj \geq \varphi y;\ \Sigma \lambda jxj \leq x;\ \Sigma \lambda j = 1;\ \lambda j \geq 0;\ (j = 1,2, \ldots\ldots\ldots\ldots N)$

Input- oriented technical efficiency: Under this, output bundle of the firm may be treated as an assigned task and the efficiency of the firm is judged by the maximum equiproportionate reduction in all of its inputs without reducing the output. It is measured as

s.t $\Sigma\lambda j\, yj \geq y;\ \Sigma \lambda jxj \leq \theta x;\ \Sigma \lambda j = 1;\ \lambda j \geq 0;\ (j = 1,2, \ldots\ldots\ldots\ldots N)$

Cost Efficiency: In measuring the input oriented technical efficiency, all inputs are treated equally and the objective is to reduce all inputs by the same proportion. If some inputs become non-substitutable beyond point that is the input becomes binding, then further reduction in any other input is not feasible. But when input prices are available, reducing the more costly input assumes a greater priority than reducing the less costly ones. In other words, cost efficiency measures the cost performance of a banking firm relative to the best practice (least cost) bank that produces the same output under exogenous conditions. Hence, the objective function in this case becomes minimising the cost of the target output bundle.

$C^* = \min w'x$

s.t $\Sigma\lambda j\, yj \geq y;\ \Sigma \lambda jxj \leq x;\ \Sigma \lambda j = 1;\ \lambda j \geq 0;\ (j = 1,2, \ldots\ldots\ldots\ldots N)$

Revenue Efficiency: In the measurement of output-oriented efficiency, the objective is to achieve the maximum rate of increase that would be feasible for all outputs. But as in the case of inputs, some outputs are more valuable than others, when output prices are available.

Various efficiency measures could be estimated with broadly two types of approaches - parametric and non-parametric approach.

Parametric: There are three main parametric approaches to the estimation of best practice frontier as explained below:

i) ***Stochastic frontier approach***: In this approach, the cost, profit or production function of the most efficient producers

is estimated and an institution's deviation from the frontier comprises two components, a random error and an inefficiency term. The part of the error term which represents deviations from the frontier is assumed to be drawn from a two-sided distribution, while the inefficiency is assumed to be drawn from a one-sided distribution, because inefficiency increases cost. The stochastic frontier approach can be estimated using cross-sectional data.

ii) ***Distribution free approach:*** Under this approach, efficiency differences are assumed to be stable over time, but no specific distributional assumptions are required (Goddard, Molyneux and Wison; Wiley 2001). The estimate of inefficiency for each firm is the difference between its average residual and the average residual of the firm on the frontier, with some truncation performed to account for the failure of the random component to average out to zero. Estimation through distribution free approach model requires panel data set.

iii) ***Thick frontier approach:*** The thick frontier approach (TFA) assumes that deviations from predicted costs within the lowest average-cost quartile of banks in a size class represent random error. Deviations in predicted costs between the highest and lowest quartile represent productive inefficiencies (Goddard, Molyneux and Wison; Wiley 2001). This approach imposes no distributional assumptions on either the inefficiencies or the random error. The TFA itself does not provide exact point estimates of efficiency for individual firms, but does provide an estimate of the overall level of efficiency.

Non-parametric: The main non-parametric approaches are data envelopment analysis (DEA) and free disposal hull (FDH). DEA employs mathematical programming to construct a best practice frontier from the observed data and to measure efficiency relative to the constructed frontier. The DEA does not require output or output prices for identifying the best practice production frontier. The best practice frontier is identified as piece-wise linear combination that connects the set of best practice observations, given the specifications of inputs and outputs. The outcome is to produce a convex production frontier for output oriented DEA and concave production frontier for input oriented DEA (Berger and Humphrey, 1997). As a consequence, DEA efficiency score for a decision making unit (DMU) is not defined by an absolute standard but is defined relative to other forms (Refer Box IX.6).DEA generates a within sample efficiency score between 0 and 1, with 1 being the most efficient.

Under FDH approach, the assumption of convexity is dropped and it is expected to allow for a better approximation of observed data and generate larger efficiency estimates than DEA. However, a significant advantage of DEA is that it does not superimpose a particular functional form on the data in determining the most efficient decision making units and so captures the interplay between inputs and outputs of different dimensions. On the other hand, DEA's major shortcoming is that it assumes data to be free of measurement error and could, therefore, give inaccurate results if the integrity of data is not assured (Avkiran; 1998).

References:

Gomez-Gonzalez, Jose E., Nicholas M. Keifer (2006): Bank *Failure: Evidence from the Colombian Financial Crisis*, Cornell University, Ithaca, New York.

Indian Institute of Banking and Finance (2005): *Financial Management*, Macmillan, Mumbai.

Prasanna Chandra (2004): *Financial Management: Theory and Practice*, Tata McGraw Hill, New Delhi.

Reserve Bank of New Zealand: Capital Adequacy Ratios for Banks – Simplified Explanation and Example of Calculation.

X REGULATORY AND SUPERVISORY CHALLENGES IN BANKING

10.1 The banking sector globally has undergone rapid transformation in the recent decades driven by the forces of globalisation and the advent of technology. The extensive framework of banking regulation, which was put in place in many countries in the 1930s, and which continued till the 1950s, involving controls on interest rates, capital movement, composition of portfolios and the segmentation of financial institutions, was eased considerably in the 1980s on the grounds that it would lead to a more efficient financial system. At the same time, it was recognised that the greater degree of freedom allowed to financial institutions as a result of deregulation needed to be accompanied by wider and stronger powers for the supervisory authorities. The changes in the nature of banking exposures, the growing complexity of transactions and the expansion of off-balance sheet business, particularly derivatives, also necessitated the strengthening of the existing capital requirements as well as banks' internal risk management systems. A relook at the way banks were regulated was also motivated by the number and magnitude of bank failures in the 1980s and the early 1990s, which were attributed by many observers to the moral hazard problems and the perverse incentive schemes (Alworth and Bhattacharya, 1998).

10.2 There are several reasons for the assumed uniqueness of banks and the need for their heavy regulation. Banks are critical for mobilising public savings and for deploying them to provide safety and return to the savers. The leveraging capacity of banks (more than ten to one) puts them in control of very large volume of public funds. In a sense, therefore, they act as trustees and as such must be 'fit and proper' for the deployment of funds entrusted to them. Banks also administer the payments system. The public confidence in individual banks and the banking system is, thus, crucial to a nation's economy. The speed with which a bank under a run can collapse is incomparable with any other organisation. For a developing economy like India, there is also much less tolerance for downside risk among depositors many of whom place their life savings with the banks. Hence, from a moral, social, political and human angle, there is a more onerous responsibility on the regulator (Mohan, 2004). They have to be effectively regulated and supervised in order to maintain public confidence in the banking system and depositors have to be protected from excessive risk-taking by banks, especially in view of information asymmetry (Mohan, 2007).

10.3 From the standpoint of the regulatory authorities, the uniqueness of banks arises from their role as intermediaries in creating liquid liabilities in the face of relatively illiquid individual assets and liquidity risks on both sides of their balance sheets. Some of the challenges that banking regulators have faced increasingly beginning the early 1980s arose from (i) deregulation of economic systems which produced riskier financial systems, partly resulting from greater competition among financial institutions; (ii) wave of financial innovation particularly in the area of derivatives; and (iii) a much more pronounced internationalisation of financial flows and a greater integration of financial markets. These challenges raised several doubts about the adequacy of banks' risk management procedures and contributed to several changes in the regulatory framework from time to time.

10.4 Supervisors have been facing an ever growing challenge to devise appropriate regulatory and supervisory structures for a financial industry that is in a constant state of change. In line with the developments in the banking system, regulators all over the world have employed new methods and approaches to achieve the basic objectives of regulation of banks. New thinking on banking regulation has emerged on several fronts. Among the important trends have been, and continue to be (i) a move away from regulation and towards supervision; and (ii) a move away from compliance with specific portfolio constraints and towards an assessment of whether the overall management of a financial firm's business is being prudently conducted. At the same time, greater attention is being given to disclosures, to allow markets and counterparties to better control excessive risk-taking. There are several reasons why old-style regulation is being adapted to the new realities of the marketplace. In the first place, the rapid development of new instruments and methods of risk management make mechanical application of balance sheet ratios inappropriate. Second, regulation inevitably creates incentives for financial engineers

to find a way around the rules. More generally, regulation is too blunt an instrument to capture the technicalities and the sophistication required to control risk in a complex financial organisation. Supervisors have to understand all aspects of a financial firm's business, and to foresee the multiple sources of risk it is likely to confront.

10.5 A significant change is the recognition of the role that market discipline can play to augment or, to a certain degree, replace government or regulators' oversight of the financial sector. The reason why market discipline is needed is that banks are prone to engage in behaviour that may exhibit moral hazard. As a result, banks may engage in excessive risk-taking. Banks collect deposits and invest these funds in risky assets. Market discipline is a mechanism that can potentially curb the incentive to take excessive risk by making risk-taking more costly for banks. Another trend that has attracted considerable attention in recent years is whether the financial supervision should be hived off from the central bank and entrusted to a separate supervisor. The recent events of severe market and regulatory failures in the US and Europe, where competing models of regulatory organisations are in place, point to the need for reform in both the models. While the single regulator model of the UK was steadily finding wider acceptance across the globe, the Northern Rock crisis has shown how information asymmetry and communication gap between the central bank, *i.e.*, the lender of the last resort, and the manager of financial stability, and the integrated financial regulator could be an inherent weakness of this type of financial supervision.

10.6 The regulatory and supervisory framework for banks in India has undergone considerable transformation during the last one and half decades in line with changes in the operating environment and international norms/practices relating to regulation and supervision of banks. The focus of regulation has shifted from micro to macro and prudential elements with a view to strengthening the banking sector and providing them with greater operational flexibility. To meet challenges arising from domestic and cross-border integration among financial intermediaries, financial innovations and technological advancements and the convergence of activities among providers of various financial services, appropriate mechanisms have been put in place. The latest trends in supervision of banks across the globe are also being keenly observed with a view to judging their relevance for India.

10.7 This chapter traces the recent thinking on the various regulatory and supervisory issues for banks in the global context and delineates the various regulatory and supervisory challenges faced by the Reserve Bank. The chapter is divided into seven sections. Following introduction, Section II presents the theory behind banking sector regulation. Section III details the recent developments in supervisory practices in the global context. The extant regulatory and supervisory framework in India is discussed in section IV. Section V delves into the regulatory and supervisory issues/challenges that have arisen in the Indian context. In the light of global and domestic developments, Section VI makes suggestions with a view to further strengthening the regulation and supervision in India. The chapter ends with the concluding observations in Section VII.

II. THEORY OF BANKING REGULATION

10.8 The basic rationale for bank regulation can be traced to the special role that banks play in an economic system, *i.e.*, as creators of liquidity. Banks play a unique and central role in an economy in general and in the financial system in particular. Banks are depositories of public money, which is then used by them to obtain returns by undertaking risk in lending and investment activities. Since they are highly leveraged, depositors' interests have to be protected though prudential regulation. Effectively, banks are special since they act as trustees of public money placed with them. Through its lending and deposit functions, the banking system influences the aggregate money supply and is, thus, an important link in the monetary transmission mechanism. Apart from regulation of banks from the monetary management viewpoint, traditionally the regulation of banks was also considered necessary for the protection of depositors, reduction of asymmetry of information and to ensure sound development of banking. Unsophisticated depositors of banks may not be able to monitor banks effectively due to asymmetric information. It is argued that while depositors could make some judgment about the condition of banks, the tasks would still be difficult and costly. Even if a depositor could make an assessment of the current value of a bank's assets *vis-à-vis* its liabilities, the condition could change as the banking business is dynamic with the banks continuously altering their asset holdings and taking on new depositors and creditors. In fact, in banking regulation, the objective of monetary stability has also been linked generally with the goal of depositor protection. It is argued that banking regulation should also provide a stable

framework for individuals and businesses to conduct monetary transactions.

10.9 Banks have been affected by problems such as bank runs or failures from time to time. The main causes of these problems have been poor credit control, connected lending, insufficient liquidity and capital, which, in turn, occur due to poor internal governance (Goodhart, *et al.*, 1998). Subsequently, when bank crises became widespread, financial regulation by authorities was considered critical to prevent systemic risk and avoid financial crises - as banks played a major role in the payments and settlement systems in almost all economies. Thus, the two main justifications for regulating banks are the inability of depositors to monitor banks and the risk of a systemic crisis (Santos, 2000).

10.10 Contemporary banking theory argues that financial intermediaries such as banks emerge endogenously to solve financial market imperfections that arise from various types of asymmetric information problems. These institutions arise to exploit such market information imperfections for economic gain. Banks, thus, emerge to provide the services of screening of potential borrowers, monitoring customers' actions and efforts, providing liquidity risk insurance and creating safe assets. However, optimality requires that the market provides banks with the right incentives to do the above functions. It is argued that with incorrect incentives, market failures will occur in the absence of regulation of individual banks and the banking system as a whole. It is the emergence of new market failures which justifies banking regulation (Freixas and Santomero, 2002).

10.11 There are several aspects that banking regulation is not intended to accomplish. First, preventing the failure of individual banks is not a primary focus of banking regulation, subject to the condition that depositors are protected and adequate banking services are maintained. Second, bank regulation should not substitute banker's decisions in operating a bank by government decisions. Finally, banking regulation should not favour certain groups over others. Banks also should not be protected from competition from other institutions.

10.12 Various theoretical models have been built to explain the framework of banking regulation that broadly encompasses various features: existence of a government safety net, restrictions on bank asset holdings, capital requirements, assessment of risk management framework, disclosure requirements, consumer protection and prudential supervision. Economic theory provides conflicting views on the need for and the effect of regulations on entry into the banking business. Some argue that effective screening of bank entry can promote stability. Others stress that banks with monopolistic power possess greater franchise value, which enhances prudent risk-taking behavior (Keeley, 1990). The opponents of entry restrictions, however, stress the beneficial effects of competition and the harmful effects of restricting entry (Shleifer and Vishny, 1998).

10.13 Countries regulate the activities that banks can undertake. However, there is no consensus in theory on what should be the right mix of the activities that a bank can perform. There are five main theoretical reasons for restricting bank activities and banking-commerce links. First, conflicts of interest may arise when banks engage in such diverse activities as securities underwriting, insurance underwriting, and real estate investment. Such banks, for example, may attempt to "dump" securities on ill-informed investors to assist firms with outstanding loans (John, *et al.*, 1994; Merrick and Saunders, 1985). Second, to the extent that moral hazard encourages riskier behaviour, banks will have more opportunities to increase risk if allowed to engage in a broader range of activities (Boyd, *et al.*, 1998). Third, complex banks are difficult to monitor. Fourth, such banks may become so politically and economically powerful that they become "too big to discipline." Finally, large financial conglomerates may reduce competition and efficiency. According to these arguments, governments can improve banking by restricting bank activities. Further, in a country with generous deposit insurance that intensifies moral hazard problems, broad banking powers provide excessive opportunities for risk taking (Boyd, *et al.*, 1998). Thus, it is argued that restrictions on bank activities enhance social welfare in countries with generous deposit insurance.

10.14 There are alternative theoretical reasons for allowing banks to engage in a broad range of activities, however. First, fewer regulatory restrictions permit the exploitation of economies of scale and scope (Claessens and Klingebiel, 2000). Second, fewer regulatory restrictions may increase the franchise value of banks and thereby augment incentives for more prudent behaviour. Lastly, broader activities may enable banks to diversify income streams and thereby create more stable banks.

10.15 In order to protect the interests of depositors, many countries have explicit deposit insurance

schemes. Deposit insurance schemes come at a cost, however. They may encourage excessive risk-taking behaviour, which some believe offsets any stabilisation benefits. Yet, many contend that regulation and supervision can control the moral hazard problem by designing an insurance scheme that encompasses appropriate coverage limits, scope of coverage, coinsurance, funding, premia structure, management and membership requirements. However, the impact of deposit insurance can vary with the institutional environment that exists in a country. If the rule of law, bank regulation and supervision, or the information environment is sufficiently weak, deposit insurance which reduces market discipline could so weaken monitoring of banks that it would make the banking system more vulnerable to crises (Demirguc-Kunt and Kane, 2002).

10.16 Some theoretical models stress the advantages of granting broad powers to supervisors for several reasons. First, banks are costly and difficult to be monitored by the depositors/investors. This leads to too little monitoring of banks, which implies sub-optimal performance and stability. Official supervision can ameliorate this market failure. Second, because of informational asymmetries, banks are prone to contagious and socially costly bank runs. Supervision in such a situation serves a socially efficient role. Third, many countries choose to adopt deposit insurance schemes. This situation (i) creates incentives for excessive risk-taking by banks; and (ii) reduces the incentives for depositors to monitor banks. Strong official supervision under such circumstances can help prevent banks from engaging in excessive risk-taking behavior and thus improve bank development, performance and stability.

10.17 Another purpose of regulation is to create a framework that encourages efficiency and competition amongst banks. Competition and efficiency depend, *inter alia*, on the number of banks operating in a market, the freedom of other banks to enter and compete and the ability of banks to achieve an appropriate size for serving their customers. The objective of customer protection is generally considered consistent with good banking principles. It is argued that disclosures and informed customers would be of benefit to bankers offering competitive services.

10.18 On the flip side, powerful supervisors may exert a negative influence on bank performance. Powerful supervisors may use their powers to benefit favoured constituents, attract campaign donations, and extract bribes (Shleifer and Vishny, 1998; Djankov, *et al.*, 2002; and Quintyn and Taylor, 2004). Under these circumstances, powerful supervision will be positively related to corruption and will not improve bank development, performance and stability. From a different perspective, Kane (1990) and Boot and Thakor (1993) focus on the agency problem between tax payers and bank supervisors. In particular, rather than focusing on political influence, Boot and Thakor (1993) model the behaviour of a self-interested bank supervisor when there is uncertainty about the supervisor's ability to monitor banks. Under these conditions, they show that supervisors may undertake socially sub-optimal actions. Thus, depending on the incentives facing bank supervisors and the ability of tax payers to monitor supervision, greater supervisory power could hinder bank operations.

10.19 It is important to bear in mind that while financial institutions do benefit from an appropriate regulatory regime, there is not much evidence that the existence of a regulatory jurisdiction makes institutions stronger and less prone to shocks (Fiebig, 2001). Some economists claim that there is no evidence that supervision works (Barth, *et al.*, 2004). Instead, they argue that regulations that promote market monitoring are associated with deeper financial systems and less likelihood of crises.

10.20 Some advocate more reliance on private-sector monitoring, expressing misgivings with official supervision of banks. They argue that a greater role for market discipline would act as a restraining factor for imprudent behavior by both managers and consumers of banking products. This model is, however, not widely followed. The banking sector is still considered far too important, socially and politically, to be left entirely to the working of the market mechanism. However, greater emphasis is being laid on market discipline, although there are limitations of private monitoring especially in emerging market economies. Supervisory agencies may also encourage private monitoring. Some supervisory agencies require banks to produce accurate, comprehensive and consolidated information on the full range of their activities and risk-management procedures. Some countries even make bank directors legally liable if information is erroneous or misleading. Also, some countries credibly impose a "no deposit insurance" policy to stimulate private monitoring. Countries with poorly developed capital markets, accounting standards, and legal systems may not be able to rely effectively on private monitoring. Furthermore, the complexity and opacity of banks may make private sector monitoring difficult

even in the most developed economies. From this perspective, therefore, excessive reliance on private monitoring may lead to the exploitation of depositors and poor bank performance.

10.21 The recent events in global financial markets in the aftermath of US sub-prime crisis have evoked rethinking on several regulatory and supervisory aspects of the banking industry. For instance, it has become important for the UK to consider an effective regime for shutting down failing banks and overhauling of its deposit insurance scheme. In the US, an important issue that has emerged is the streamlining of the supervisory system to overcome disadvantages of a fragmented regulatory authority, and extension of effective regulation of non-banking financial intermediaries. A great amount of attention is also being placed on the effectiveness of policies that are in place to manage any emergency such as deposit insurance and central bank funding. Another area of debate centres on whether regulatory regimes should be based on rules or principles. The supporters of a more formulaic approach believe that a system based on principles gives banks enough room to get around their obligations. On the other hand, those who support principle-based regulation argue that precise rules are inflexible and can be easily circumvented. Perhaps, a blend of the two approaches is required. Some observers are also questioning whether it was right to repeal the Glass-Steagall Act, which separated commercial and investment banking, though it is unclear how this division would have prevented the crisis (The Economist, 2008).

III. REGULATORY AND SUPERVISORY PRACTICES – RECENT DEVELOPMENTS

10.22 There has been new thinking on some of the aspects of banking regulation and supervision due to the changing nature of banking operations. The most basic forces affecting the shape of the banking sector are the same as those affecting the rest of the economy. First, the quickening pace of technological innovation, especially in data processing and communication, has had particularly profound effect on the financial sector. The financial sector is information intensive, and most of the innovations in recent years have been in the area of processing and transmission of information. Second, the growing acceptance of market processes as a basic determinant of resource allocation led to deregulation of the financial sector. The financial sector was among the most heavily regulated, with most countries having, until as recently as two decades ago, extensive controls on prices, entry to the industry, competitive practices, and portfolio composition. The impact of deregulation and innovation on banking and the rest of the financial sector have been profound. The range of products and services have widened markedly. Intermediation costs have declined enormously. Financial transactions have grown rapidly in relation to GDP. All of this has brought considerable benefits through more efficient origination and allocation of capital, greater availability of capital for investment and greater efficiency in the management of risks, among others.

10.23 As these fundamental drivers of change have brought about a major transformation in the way banks are run, the way they are structured and the range of products they offer, they have important implications for supervisory and regulatory authorities. Some of the recent trends include globalisation of banking operations and market integration, expansion in the scale of activities and proliferation of financial conglomerates and increasing complexity of financial products in line with financial innovations, among others.

10.24 First, globalisation is an important trend in the banking industry. A combination of liberalisation of financial markets over the past two decades and business opportunities in rapidly growing economies have led to an increasing proportion of global bank activities in foreign countries. This is particularly the case in the securities markets, although there have been other areas such as retail where the presence of global banks in local markets continues to grow. For the financial sector, globalisation means the decline in the barriers between different financial markets. Capital can flow more easily to locations where it receives the best reward; institutions have easier access to foreign markets; and boundaries between different kinds of financial activities are becoming blurred. To some extent, this is happening because financial engineering has rendered previous administrative controls obsolete; and to some extent it represents a willing acceptance of a more free market philosophy. The growing international nature of banking activities is clearly discernible from indicators such as (i) increase in cross-border bank lending as a proportion of total bank lending; (ii) increase in the proportion of banking assets held worldwide; and (iii) growing share of international profits in total profits of banks. In general, foreign banks operating in emerging markets bring expertise and financial resources that might not otherwise be available. They can also introduce more sophisticated risk

management tools that may have been developed for the larger financial group. While these benefits are significant, the scale of foreign banks' presence can have implications for host countries. As finance is becoming increasingly global and integrated, prudential supervision has to adapt to that reality.

10.25 Second, sectoral distinctions are becoming blurred. A few decades earlier, most financial intermediation was conducted through banks, with insurance companies and investment vehicles having well-defined roles. However, many different types of institutions, including non-financial firms, are now involved in both wholesale and retail markets. Importantly, the ability to deconstruct and re-combine risks has enabled financial intermediaries to expand and compete effectively in sectors beyond their own. While this trend has emerged under the regulatory umbrella or framework that provides the greatest benefit and flexibility, the supervisors have to guard against potential system-wide reduction in capital adequacy or undue risk concentration resulting from expansion into new areas.

10.26 Third, banks as well as securities firms are actively involved in origination, securitisation and active management of credit exposures. Advances in the processing of information have permitted the independent pricing of risk factors that were previously bundled together in the same instrument. The shift to capital market-based distribution of risk has been accompanied by increased velocity in intermediation, aided by new technologies that allow for greater automation and standardisation. The greater role of capital markets in intermediation also implies that many of the risks once held by banks are now held by other types of market participants. The greater reliance on the capital markets in credit origination and distribution has also served to unlock the creative potential of market participants. At the same time, the intensification of financial intermediation has given rise to an explosion in the demand for hedging (and position-taking) instruments. Nevertheless, the new financial instruments have enormously improved the technology of risk-management. The downside is that these same instruments, if not properly understood and used, increase the potential for loss, whether resulting from inadequate understanding or deliberate leveraged bets.

10.27 Fourth, financial systems appear to have become more pro-cyclical than before, capable of amplifying credit growth and leveraging market positions more intensely than before. In essence, the "marginal" risk that financial actors willingly engage is greater than before. To a degree, this is the result of innovations in financial technology, including the process of securitisation, which allow risks to be better distributed and managed. The more widespread use and trading of collateral is also a factor. It also reflects the intensification of competition, and perhaps a view among firms that they will be able to get out of risky engagements before they turn sour. Of course, pro-cyclicality works in both directions. Once the downturn sets in, the financial system seems more prone to liquidity erosions and reduced credit supply than in previous episodes of stress.

10.28 Finally, greatly increased speed of developments in the financial sector. The speed of transmission of news in the financial sector has always been high relative to other sectors. These days, market communication and execution can be almost instantaneous. The market players' judgement of strategic opportunities in their environment and their moves to take advantage of them have also speeded up due to new and cheaper technology as well as deregulation. Business models get adopted and discarded more quickly. This will test regulators and supervisors for whom the challenge is to create rules of the game that are robust.

10.29 The above trends in the financial sector have important implications for the focus of regulation and supervision and the way in which regulatory and supervisory responsibilities are allocated. Some of these issues are - the location of institutional responsibility for supervision; appropriate regulatory structure; the increased reliance on market discipline; and the principle-based approach *vis-à-vis* rule-based approach.

Separation of Supervision from Central Bank

10.30 The question of where authority for the supervision of banks and other financial institutions should reside has become the subject of intense debate. In many countries, responsibility for banking supervision rests with the central bank, while supervision over other financial institutions is typically vested with other agencies. However, in recent years, there are several cases of countries moving away from this model.

10.31 Although the early central banks were established primarily to finance commerce, foster growth of the financial systems and to bring uniformity in the note issue, central banks in several countries in the 20th century, notably the US, were founded to restore confidence in the banking systems after

repeated bank failures. As the incidence of banking crises started increasing, the statutory regulation of banks was considered necessary for the protection of depositors, reduction in asymmetry of information and for ensuring sound development of banking. In the 19th century, central banks had started focusing their attention on ensuring financial stability and their role had increasingly come to eliminate financial crises. The Bank of England used to adjust the discount rate to avoid the effects of crises and this technique was used by other European central banks as well. In the United States, a series of banking crises between 1836 and 1914 had led to the establishment of the Federal Reserve System. The experience of the Great Depression had a profound effect on banking regulation in several countries and commercial banks were progressively brought under the regulation of central banks. Thus, the prevention of systemic risk manifested by crises became the basic reason for central bank's involvement with financial regulation and supervision.

10.32 The experience of some other countries in delegating the responsibility of bank regulation was totally different. Despite the occurrence of banking crises and the need for central bank's intervention in resolving the crises, some countries established a separate regulatory authority outside the central bank to supervise the banking system, often several years before or after the creation of the central bank. The Canadian Government established the Office of the Inspector General of Banks in 1925 after the collapse of the Home Bank. The Bank of Canada was created nine years later (Georges, 2003). Canada's experience was not unique. A number of other countries, including Chile, Mexico, Peru, and the Scandinavian countries developed central banks and bank regulators completely separately. Thus, the experiences of countries in creating an appropriate structure and entrusting the responsibility of bank regulation and supervision vary considerably, although the basic motive has been to maintain systemic stability.

10.33 The literature is split on the relative advantages and disadvantages of the central bank being a bank supervisor (Box X.1). The most strongly emphasised argument in favour of assigning supervisory responsibility to the central bank is that as a bank supervisor, the central bank will have first-hand knowledge of the condition and performance of banks. The central bank's supervisory role makes it easier to get advance information from banks. This, in turn, can help it identify and respond to the emergence of a systemic problem in a timely manner. Furthermore, to the extent that the central bank acts as a lender of the last resort (LoLR), it may be desirable that some regulatory and supervisory functions remain with central bank in order to limit moral hazard incentives and to have an intimate knowledge of the condition of banks, which can be acquired only through its participation in the supervisory process. This argument assumes that it is not possible for a third party, responsible for bank supervision, to transfer information effectively to the LoLR, particularly during financial instability. In addition, contrary to the common view that monetary policy and policies toward financial stability should be seen separately, they are inseparable. At the very least, there is a strong case for better co-ordination of monetary policy and policies toward financial stability. An important lesson of the sub-prime crisis is that asset prices alone are unlikely to be sufficient to summarise the conditions of intermediaries. Balance sheet dynamics provide information on key components of GDP and the resilience of the financial system (Adrian and Shin, 2008). Those pointing to the disadvantages of assigning bank supervision to the central bank stress the possible conflict of interest between supervisory responsibilities and responsibility for monetary policy. However, such a conflict of interest may also exist even when central bank is not the regulator and supervisor for banks as the central bank will always endeavour to maintain the stability of the financial system. The conflict could become particularly acute during an economic downturn in that the central bank may be tempted to pursue a too-loose monetary policy to avoid adverse effects on bank earnings and credit quality, and/or encourage banks to extend credit more liberally than warranted based on credit quality conditions to complement an expansionary monetary policy.

10.34 In recent years, there has been a trend of passing over banking regulation from the central banks to other agencies. Under this arrangement, central banks are assigned the task of monetary policy and also remain lenders of last resort. This phenomenon has occurred in a few countries, notably Great Britain, Japan and South Korea. Countries which belong to the European Monetary Union (EMU) have *de facto* adopted this system since monetary policy is now carried out at the federal level (the European Central Bank), while banking supervision is undertaken at the national level.

10.35 In the UK, until the Fringe Banking Crisis in 1974-75, the Bank of England restricted its direct

Box X.1
Banking Supervision and the Central Bank

Combining the monetary and supervisory functions is best attributed to the central bank's concern for the 'systemic stability' of the financial system and the protection of the payments system. On the grounds of moral hazard, it is appropriate to provide 'lender of last resort' (LoLR) facilities only when a bank is illiquid, but not insolvent (*e.g.*, Bagehot, 1873). Hence, if the central bank supervises an institution, it may know more precisely whether an institution asking for credit is insolvent or just illiquid. However, regardless of the source of problems, the central bank may feel compelled to support failing participants to avoid systemic 'knock on' effects. Hence, to the extent that the central bank continues to operate the payments system and act as a LoLR, it is likely that it will want to maintain some regulatory and supervisory functions in order to limit moral hazard incentives and to have an intimate knowledge of the condition of banks, which can be acquired only through its participation in the supervisory process. This argument assumes that it is not possible for a third party, responsible for bank supervision, to transfer information effectively to the LoLR. However, it seems more plausible during periods of financial instability, since the speed and the degree with which the condition of an institution deteriorates is significantly higher during periods of financial instability. Moreover, it is in 'bad' times that institutions are more likely to 'cook' their books and hide their true condition. Hence, under these circumstances, direct supervision could help deliver the essential information on time. Using a cross-country micro dataset, it was found that countries where central banks were involved in supervision had, on average, fewer bank failures (Goodhart and Schoenmaker, 1995). It is also argued that banking supervisory information (early warning of problems with non-performing loans or changes in the lending pattern of banks) may improve the accuracy of macroeconomic forecasts and thus help the central bank to conduct monetary policy more effectively (Bernanke and Gertler, 1995). The central bank's involvement in supervision does not necessarily weaken its stance on monetary policy as a central bank's inflation performance and its role in supervision are two, more or less, separate issues.

On the other hand, the combination of control of monetary policy and the role of LoLR at the central bank has been criticised on the grounds that it raises inflationary concerns. A central bank committed to price stability will sterilise the injection of liquidity necessary for the stability of the system in the event of crisis so that there is no undesired increase in the money supply. If the LoLR function and supervision are combined, an intervention as LoLR may give rise to confusion in the expectations of the private sector regarding the central bank's monetary policy stance. Concerns have also been expressed that a conflict of interest may arise between the reputation of the central bank as guarantor of currency and financial stability. For example, concern for the reputation of the central bank as supervisor may encourage an excessive use of the LoLR facility so that bank crises do not put its supervisory capacity in question. It has been argued that the reputation of the central bank is more likely to suffer, than to benefit, from bank supervision.

A more general point is that the cyclical effects of micro (regulatory) and macro (monetary) policy tend to be in conflict. Monetary policy is usually countercyclical, while the effects of regulation and supervision tend to be procyclical, offsetting to some extent the objectives of monetary policy. In particular, during periods of economic slowdown, the financial condition of banks usually deteriorates. In this case, the bank's supervisor steps in and applies pressure on the institution to improve its condition. However, the bank's implementation of supervisory requirements results in even tighter credit during an economic recession. Following this line of argument, one might expect the central bank to use its supervisory role to complement monetary policy, *i.e.,* to be less strict in supervision when monetary policy is expansionary and *vice versa* (Goodhart and Schoenmaker, 1993).

References:

1. Ayadi, Rym and Pujals, Georges. 2004. "Banking Consolidation in the European Union, Overview and Prospects". *Research Report in Finance and Banking*, Centre for European Policy Studies (CEPS), No.34, April.
2. Bagehot, W. 1873. *Lombard Street: A Description of the Money Market*, London.
3. Bernanke, B. S. and Gertler, M. L. 1995. "Inside the Black Box: The Credit Channel of Monetary Policy Transmission". *Journal of Economic Perspectives*, Vol. 9 (Fall), 27-48.
4. Di Noia, C. and Di Giorgio, G. 1999. "Should bank supervision and monetary policy tasks be given to different agencies?". *International Finance*, Vol. 2, Issue 3, 361-378, November.
5. Goodhart, C.A.E and D. Schoenmaker. 1993. "Institutional Seperation between Supervisory and Monetary Agencies." *LSE Financial Markets Group Special Paper,* No. 52.
6. Goodhart, C.A.E and D. Schoenmaker. 1995. "Should the Functions of Monetary Policy and Banking Supervision be Separated?". *Oxford Economic Papers*, 47: 539-560.
7. Goodhart, A. E. Charles. 2000. "The organizational structure of Banking Supervision." *Occasional Paper*, No. 1, Basel Switzerland, Financial Stability Institute (FSI), November.
8. Ioannidou, Vasso P. 2003. "Does Monetary Policy affect the Central Bank's role in Bank Supervision?". *Journal of Financial Intermediation,* 14: 58-85, September.

supervision to a small number of merchant banks (the Accepting Houses) and to the discount market, stemming from the Bank's own credit exposures. The Banking Act, 1976 increased the formal role of the Bank of England in supervision and regulation of the banking system. The supervisory function was carried out by one single senior official, the Principal of the Discount Office, with a handful of staff. So, historically, the conduct of banking supervision did not, in practice, play a really large, or central, role in Central Bank activities because the structure both reduced the need for such an exercise and allowed it to be largely achieved through self-regulation (though this may have been particularly so in the UK, and less representative of other countries) (Goodhart, 2000b).

10.36 In 1997, the newly elected Labour Government in the United Kingdom transferred responsibility for the prudential supervision of commercial banks from the Bank of England to a newly established body, the Financial Services Authority (FSA). The FSA was to take on responsibility for, and combine, both the prudential and the conduct of business supervision for virtually all financial institutions (banks of all kinds, finance houses, mutual savings institutions, insurance companies, *etc.*) and financial markets.

10.37 The main driving forces behind the separation of supervision was the changing, more blurred, structure of the financial system, and continuing concerns with conflicts of interest. As the dividing lines between differing kinds of financial institutions became increasingly fuzzy (*e.g.,* universal banks), continuing banking supervision by the central bank led to both inefficient overlap between supervisory bodies, and a potential creep of central bank safety net and other responsibilities into ever-widening areas. With the accompanying trend towards central bank operational independence in monetary policy, continued central bank supervisory authority, it was believed, would enhance concerns about potential conflicts of interest, and raise issues about the limits of delegated powers to a non-elected body.

10.38 The U.S. Federal Reserve Board still plays a major role in banking supervision. In the United States, the central bank became an additional bank supervisory authority after multiple supervisory authorities had already been established. Only three countries (Italy, Netherlands and Spain) of the thirteen countries representing the Basel Committee have the central banks as the only authority responsible for bank supervision. Germany moved to a single supervisory agency, *viz.*, German Federal Financial supervisory Authority (BaFin), in May 2002 to supervise banking, insurance and securities firms. However, Deutsche Bundesbank, the central bank, continues to play a significant role in bank supervision. France, Italy and Spain have separate supervisors for banks, insurance companies and securities firms. In France, the Commission Bancaire supervises all credit institutions. The Commission, however, benefits from a considerable synergy with the activities of the central bank. In Italy and Spain, bank supervision is with the central bank. Belgium moved to a single supervisory system in January 2004 with the responsibility of supervising banks, insurance companies and securities firms resting with an autonomous public institution outside the central bank. China established a new bank supervisory authority in early 2004, but the central bank, which had been the sole authority, retained some limited supervisory responsibility (Barth, *et al.*, 2004). A survey of 198 countries reveals that banking supervision is outside the central banks in 52 countries. These countries, among others, include Australia, Austria, Belgium, Canada, Denmark, Hungary, Japan, Mexico, Panama, Turkey, United Kingdom and Venezuela (Central Banking Publication, 2008).

10.39 The recent episode of liquidity crisis in the Northern Rock, UK in July 2007 in the aftermath of US sub-prime crisis has, however, raised concerns about the effectiveness of coordination among the central bank as LoLR, the Treasury, and the FSA, and also the desirability of having supervision outside the central bank (Box X.2).

10.40 The UK, after supervisory functions were entrusted to a separate authority, adopted a more formalised approach based on the memorandum of understanding of the Tripartite Agreement between the HM Treasury, the Bank of England and the FSA, which establishes a framework for co-operation among them to work together towards the common objective of financial stability. It clearly sets out the role of each authority based on the principles of accountability, transparency, avoidance of duplication and information exchange. Under the agreement, the responsibilities of each authority are well defined. The agreement also calls for a regular exchange of information which will help the authorities to discharge their responsibilities as efficiently and effectively as possible. However, the interaction between the FSA, Bank of England and the Treasury, in the Tripartite Agreement, was seen as a key weakness following the Northern Rock collapse. Consequently, the FSA vowed to improve co-ordination with the Bank of

Box X.2
Northern Rock Liquidity Crisis

The US sub-prime mortgage market attracted many investors in the search for yield. The success of structured credit that offered high yields with high credit ratings created a huge demand for these products in particular sub-prime mortgages. It allowed banks to move increasingly from the traditional "lend and hold" model towards an "originate and distribute" model. This boosted the supply of credit and allowed risk to be more widely dispersed across the system as a whole. But it also involved a long chain of participants from the original lenders to end-investors. Investors at the end of this chain, who bore the final risk, had less information about the underlying quality of loans than those at the start and became dependent on rating agencies and their models. It also reduced the incentives on originators to assess and monitor credit risk carefully.

The delinquency rate in the US sub-prime mortgage market began to rise early in 2005, but there was no significant market response to these developments until mid-June 2007 when credit spreads began to widen. The trigger was the revelation of losses by a number of firms and a cascade of rating downgrades for sub-prime mortgage products and some other structured products. By early August 2007, growing concerns about counterparty risk and liquidity risk, aided by difficulties in valuing structured products, led to a number of other markets being negatively affected. In particular, there was a collapse in the market for collateralised debt obligations (CDOs), a massive withdrawal from the asset-backed commercial paper market, and a sudden drying-up of the inter-bank term money market. As large global banks continued to announce associated losses, concerns began to mount about the adequacy of their capital cushions.

Northern Rock, Britain's fifth-largest mortgage lender, had a positive medium-term outlook and a robust credit book in July 2007. In less than two months, however, there was a run on the Northern Rock, the first of its kind in over 100 years in the UK. The run on Northern Rock was the most dramatic symptom of the contagion gripping the financial markets in the UK on account of the sub-prime crisis in US. The bank had made good use of innovative structured products in funding its robust growth in the years prior to the crisis. The bank did not lend overseas but it was still impacted by the turmoil in America's mortgage market. When the sub-prime crisis spilled over into the securities and money markets, the bank, with its low deposit-to-loan ratio, was not able to renew its short-term financing and was forced to turn to the Bank of England for assistance. When the news broke, many customers quickly withdrew their savings. The UK had not experienced such panic-driven withdrawals since 1866. The Financial Services Compensation Scheme was not sufficient to calm the bank's customers.

By September 11, 2007, it became clear that private sector solutions, including securitisation, were not an option. On September 14, 2007, the Chancellor of the Exchequer, on the advice of the Governor, Bank of England and the FSA, Chairman, authorised the Bank of England to provide liquidity support facility to Northern Rock against appropriate collateral and at an interest rate premium to help it to fund its operations. The FSA judged that Northern Rock was solvent and had a good quality loan book. On September 17, 2007, the Chancellor announced that the Government would put in place arrangements that would guarantee deposits held with Northern Rock. On January 21, 2008, the treasury announced plans to back a private-sector rescue of Northern Rock through the sale of Government-guaranteed bonds to pay off the lenders about £24 billion debts. On February 22, 2008, the bank was nationalised as a result of two unsuccessful bids to take over the bank.

The single largest impediment in dealing with Northern Rock was the absence of a mechanism for intervening pre-emptively in a bank in trouble to separate the retail deposit book – the insured deposits – from the rest of the bank's balance sheet. A key lesson that can be learnt from the Northern Rock episode is that liquidity alongside capital should be central to the regulation of banks. Northern Rock did not face a problem of inadequate capital. But it was vulnerable to a shock that reduced the liquidity in markets for securitised mortgages.

References:

1. Memorandum from the FSA, UK to the Treasury Committee. 2007. Government of UK.
2. King, Mervyn. 2007. "Monetary policy developments". at the Northern Ireland Chamber of Commerce and Industry, Belfast, October.
3. Penn, Philip H. 2007. "Enhancing and strengthening banking supervisory capabilities in Pacific countries". at the Pacific Regional Banking Supervision Seminar, Apia, Samoa, October.
4. Gieve, John. 2008. "The return of the credit cycle – old lessons in new markets". at the Euromoney Bond Investors Congress, London, February.

England's financial stability directorate. According to some observers, the Northern Rock crisis has revealed that an 'incentive compatible' division of responsibilities has not been reached and the Agreement itself needs re-drafting. In resolving this issue, it has been argued by some that the decision to remove bank supervision from the Bank of England needs re-visiting, as does the issue of whether the authority responsible for financial stability should be divorced from bank supervision (*e.g.*, Mullineux, 2008).

10.41 The issue of LoLR has surfaced in the wake of recent sub-prime mortgage loan problem in the US, which led to a serious credit squeeze in the US and several other advanced economies. This posed a serious challenge for central banks across the world and has raised several issues in the context of the LoLR function. These issues broadly relate to the choice of instruments, bail-out, the size and manner of liquidity modulation to deal with potential gridlocks, the types of collateral, the type of institution to be supported, and the period of support, among others (Box X.3).

Box X.3
The Lender of Last Resort

The term 'lender of last resort' (LoLR) refers to a function of a central bank, whereby it lends money to support a financial institution facing temporary liquidity stress even after exhausting recourse to the market and whose failure is likely to have systemic implications. The term originated in the context of the establishment of the Bank of England when it was referred to as "*the dernier resort*" from which all banks could obtain liquidity during a crisis (Baring, 1797). The classical LoLR doctrine asserts that during periods of liquidity crisis faced by a "solvent but illiquid" bank, the central bank in its role as LoLR may support it by lending to it against good collateral, valued at pre-crisis levels, and at a penal rate (Thornton, 1802; Bagehot, 1873). The central bank, as the only institution able to create liquidity in the banking system, has an important role to play as LoLR, particularly if the liquidity problem threatens systemic stability. However, the role of LoLR entails significant moral hazard because the central bank might be seen as too willing to underwrite the banking system and bail out banks that are not as well run as others, thereby indirectly encouraging imprudent practices.

In the context of recent sub-prime crisis, the following five instruments have been used by the central banks to avoid serious spill-over of the turmoil in money or credit markets into the wider economy: (i) adjustment of borrowing and lending rates; (ii) money market operations designed to inject special liquidity in order to avoid a break-down in the payment systems among banks; (iii) modifications in the quality of eligible collateral; (iv) central banks' involvement without financial support in devising mechanisms for financial transactions among the largest of the financial intermediaries which automatically impact the second and third rung intermediaries; and (v) central banks' involvement by providing financial support to large financial intermediaries to influence finances of other financial intermediaries.

Several issues have come into sharp focus as a result of LoLR operations in the recent financial turmoil. First, central banks' liquidity operations have traditionally been in a limited range of securities and often conducted with a select group of institutions, relying on them to 'distribute' the liquidity to the rest of the system as needed. However, during the recent financial turmoil, central banks expanded the range of securities that could be accepted as collaterals. The US Fed, in particular, agreed to hold large values of mortgage-backed securities that the markets were struggling to sell and provided them with either cash or treasury securities that could be immediately converted into cash. Second, the LoLR facility is primarily meant for dealing with crises affecting banks on account of their special balance sheet characteristics relative to other financial intermediaries. However, during the recent global financial market turbulence, major central banks also supported non-banks (especially investment banks) on financial stability considerations and often lent support to unviable institutions due to systemic concerns. It has been argued that LoLR needs to be extended to non-banks as well, especially in the face of systemic consequences in the context of increasing disintermediation and the resultant blurring of the distinction between banking and non-banking services extended by both banks and non-banks as well as cross exposure.

While there is broad agreement on central banks' role as LoLR for ensuring financial stability, in practice, it is difficult to determine whether financial intermediary is solvent in a dynamic sense of being able to honour its obligations by rolling over its funding. Before acting as a LoLR, the central bank needs to make a clear judgement on some crucial issues such as (i) whether there are any systemic issues; (ii) whether the liquidity is to be provided to the market or to the institution; (iii) whether the institution is solvent but illiquid; and (iv) whether the security being offered is of good value. The main issue involved while acting as LoLR is to ensure that the central bank lends only to solvent but illiquid banks. However, at times it is difficult to distinguish an illiquid from an insolvent institution. This is especially when the financial markets are not working smoothly making it difficult to compute the market value of a bank's assets.

Since the need for emergency liquidity assistance arises suddenly and without adequate warning, timeliness in providing such assistance becomes critical while recognising that responses cannot be 'bookish' or manual-based. While the LoLR function is important for preserving financial stability; the manner and timing of its activation is unpredictable. Accordingly, the most important issue in the context of the LoLR function is to ensure that the central bank is empowered with a comprehensive, effective and independent mandate to perform this function in the interest of systemic stability while being conscious that considerable degree of judgement is involved in taking a decision on LoLR.

References:

1. Bagehot, Walter. 1873. *Lombard Street, A Description of the Money Market*. London.
2. Baring, Francis.1797. *Observations on the Establishment of the Bank of England and on Paper circulation of the Country*. London: Minerva Press.
3. Reddy, Y. V. 2007. "Global Developments and Indian Perspectives: Some Random Thoughts." Valedictory address by at the Bankers' Conference on November 27, Mumbai.
4. Thornton, Henry. 1802. *An Enquiry into the Nature and Effects of Paper Credit of Great Britain*. Hatchard, London. Reprint, George Allen & Unwin Ltd., London, 1939.

Supervisory Structure

10.42 An important feature of the structure of the banking industry until recently was the separation of the banking and other financial services industries, *i.e.,* securities and insurance. In the US, such separation was mandated under the Glass-Steagall Act of 1933. Many other countries also placed restrictions on combining banking with insurance and securities business. However, the pursuit of profit and financial innovation stimulated both banks and other financial institutions to encroach on each other's traditional area of operations. In many countries, restrictions on combining banking with insurance and securities business were withdrawn, resulting in the emergence of 'financial conglomerates' (Box X.4).

10.43 Conglomeration has been motivated by economic benefits of combining different financial activities under one roof so as to capture economies of scale and scope across business lines. These economies are generated by higher operational efficiency and by innovation of products that allow, for instance, capitalising on consumers' willingness to pay for 'one-stop shopping'. A financial conglomerate with a common information system that can be used across product lines incurs the cost of gathering information only once. Delivery, marketing and physical inputs can be combined in production of a larger set of services. Finally, when risks in different services are imperfectly correlated, there is a potential for economies in risk management through a diversified risk portfolio. Further, financial conglomeration has been considered as a means for earning profits and maintaining earnings through diversification. While advances in information technology have led to sophistication of financial services and substantial reduction of costs, they have also increased the investment burden on the financial service providers. Reducing this investment burden is believed to be another major factor responsible for financial conglomeration. The changes in financial needs have led to the emergence of new financial service providers and have also caused existing financial service providers to expand their organisations by integrating with other providers in different sectors, so that they can better respond to diversifying customer needs. The operations of financial service providers are also becoming more global as a consequence of greater cross-border movement of funds and information. Financial authorities have also helped to create an environment conducive to the integration of financial services and diversification of business by relaxing the regulations.

10.44 The operations of financial conglomerates, however, raise some serious concerns from the supervisory standpoint such as systemic risk posed by a large and complex structure, conflict of interest, regulatory arbitrage, double and excessive gearing, and contagion. When a financial institution becomes too large, the regulator might feel the need to extend liquidity support or financial safety net beyond usual policy measures to prevent system-wide financial crisis. Such an implicit insurance system gives large institutions an edge over small ones which are unrelated to their ability to manage risk, thereby increasing the vulnerability of the financial system. Large and complex financial institutions are also susceptible to the problem of weak internal controls, lack of flexibility and poor integration. As activities of the conglomerates become more complex and varied, it becomes more difficult for regulators to monitor them effectively. Conflict of interest is viewed as a fundamental weakness of a financial conglomerate. The conflict of interest arises when any entity within the financial conglomerate deals with another entity within the group on terms which are different from market terms or outside the usual approval process. At times such actions could be undertaken to bail out each other's clients. Another problem posed by financial conglomerates is the 'regulatory arbitrage', which refers to the shifting of certain activities or positions within a conglomerate where regulatory requirements are less strict or absent. Thus, a financial conglomerate may reduce aggregate capital requirements by booking risks where capital requirements are lightest. This problem arises due to 'double gearing' whereby same capital is used simultaneously to cover the capital requirements of the parent company as well as those of a subsidiary. This dual use of the same capital could lead to undercapitalisation of the conglomerate if the framework for consolidated supervision does not ensure elimination of double gearing. The problem of 'excessive gearing' arises when a parent company issues debt and downstreams the proceeds to the subsidiary/ies as equity. Another related problem is that of aggregation. That is, the risk assumed by a conglomerate may be larger than the sum of its parts (Malkonen, 2004). Yet another major issue arising out of operations of financial conglomerates is contagion. It entails the risk that financial difficulties faced by a unit within the conglomerate could have an adverse impact on the stability of the conglomerate on the whole. The adverse impact could be felt even by the healthy and well-functioning constituents of the group. Contagion results from the existence of extensive intra-group exposures.

Box X.4
Financial Conglomerates - Definition and Structure

There is no single universally accepted definition of a financial conglomerate (FC) as there are differing views as to what really constitutes a FC. The Tripartite Group (1995) defines a FC as "any group of companies under common control whose exclusive or predominant activities consist of providing significant services in at least two different financial sectors (banking, securities, insurance)". In the European Union, the following three requirements must be satisfied for a group to be considered a 'FC'. One, the group has at least one company engaged in either banking or securities and at least one company engaged in insurance. Two, a company engaged in banking, securities, or insurance is at the head of the group or the ratio of the balance sheet total of the financial sector entities in the group to that of the group as a whole (the total amount outstanding of banking, securities, and insurance services) exceeds 40 per cent. Three, for each financial sector, the average of the ratio of the balance sheet total of that financial sector to the balance sheet total of the financial sector entities in the group and the ratio of the solvency requirements of the same financial sector to the total solvency requirements of the financial entities in the group exceeds 10 per cent or the balance sheet total of the smallest financial sector entity in the group exceeds 6 billion euros.

The US financial laws do not use the term 'financial conglomerate'. The Financial Services Modernization Act of 1999 (known as the Gramm-Leach-Bliley Act or GLB Act) allows bank holding companies (BHCs) that meet certain requirements in terms of capital adequacy and other measurements to act as 'financial holding companies (FHCs)' that are allowed to establish subsidiaries for engaging in a broader range of businesses than those permitted to BHCs, including securities, insurance, and mutual funds. 'FHC' is merely a status that allows it to hold other companies offering a broad range of financial services. Likewise, financial laws in Japan do not use the term 'financial conglomerate'. Individual sectoral laws govern the scope of business open to holding companies and their subsidiaries, making Japanese financial laws more similar to the US model than the European ones.

FCs vary greatly in terms of scope, structure of their business and the size across the countries. FCs could be structured on three different lines, *viz.,* (i) the universal bank in which a bank undertakes non-traditional activities such as insurance and securities trading in-house in separate departments; (ii) the holding company structure in which the bank is in one subsidiary of a holding company and the non-traditional activities are carried out by other subsidiaries of the holding company; and (iii) parent-subsidiary (operating subsidiary) in which the non-traditional activities are located in separate subsidiaries of the bank (Figure 1).

A pure integrated structure or universal bank is the one that creates and distributes financial products within a single corporate structure. In some cases, a universal bank combines commercial and investment banking within a single corporation but conducts other financial activities through separate subsidiaries. While a universal bank necessarily involves a banking activity, a FC need not. Thus, all the FCs need not be universal banks, while all universal banks could be treated as FCs. None of the major industrial countries allows a single corporate entity to provide services in all three financial sectors of banking, securities and insurance.

In the holding company structure as found in the US, a bank and other financial companies become affiliates under the same holding company. The GLB Act of 1999 removed the restrictions that limited the ability of US financial service providers, to affiliate with each other. However, such affiliations can occur only within a FHC's structure. BHCs that qualify as a 'FHC' could engage in a broad array of financially related activities. To qualify as FHC, each depository institution subsidiary of the BHC must (i) be well capitalised and well managed; (ii) maintain at least a satisfactory Community Reinvestment Act rating ; and (iii) have a demonstrable record of providing low-cost basic banking services. A non-bank financial entity acquiring a bank is required to apply to the Federal Reserve Board to become a BHC. It could also file an application for a FHC if it meets the qualifying criteria.

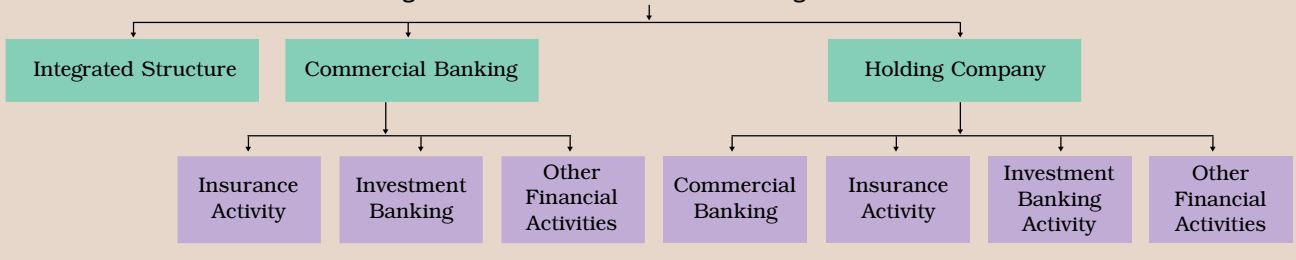
An example of parent-subsidiary conglomerate is found in the UK and several emerging market economies, including India, whereby a commercial bank or other financial entity is allowed to set up subsidiaries to deal in other financial products.

References:

1. Tripartite Group of Bank, Securities and Insurance Regulators. 1995. *The Supervision of Financial Conglomerates*, July.

2. Raj, Janak. 2005. "Is there a Case for Super Regulator in India? Issues and Options". *Economic and Political Weekly*, Vol. XLI, No. 35, 3846-3855, August 27-Septmber 2.

Figure 1: Structure of Financial Conglomerates



10.45 Each structure of financial conglomerates has its own advantages and disadvantages. The US was the first country to adopt the holding company structure and, therefore, has been the main centre for discussion on the 'parent-subsidiary structure' versus the 'holding company structure'. The main argument in favour of the holding company structure advanced in the US is that it is safer and more sound and that it encourages competition. This, in turn, is based on the premise that the federal safety net comprising Federal deposit insurance, access to the Federal Reserve's discount window and payments system may give banks certain financial advantages in the areas of funding and risk-taking over non-bank financial institutions. For these reasons, the operating subsidiary structure gives banks and their subsidiaries a competitive advantage over securities and insurance firms that remain independent of banks. The holding company structure that was supported by the Federal Reserve is believed to prevent the spread of the safety net and the accompanying moral hazard to the securities and insurance industries and assures a level playing field within the financial services industry. The Federal Reserve felt that it was critical that the subsidy implicit in the federal safety net be limited to those activities that a bank can conduct directly. It was of the view that operating subsidiaries would be a funnel for transferring the sovereign credit subsidy directly from the bank to finance any new principal activities into other entities thereby imparting a competitive advantage to such entities. This would inevitably lead to a weakening of the competitive strength of the US financial services industry as independent securities, insurance and other financial services providers would operate at a disadvantage to those owned by banks. The equity invested by banks in subsidiaries is funded by the sum of insured deposits and other bank borrowings that directly benefit from the subsidy of the safety net. Thus, inevitably, a bank subsidiary must have lower costs of capital than an independent entity and even a subsidiary of the bank's parent. One would, therefore, expect that a rational banking organisation would, as much as possible, shift its non-bank activity from the bank holding company structure to the bank subsidiary structure. Such a shift from affiliates to bank subsidiaries would increase the subsidy and the competitive advantage of the entire banking organisation relative to the non-bank competitors (Greenspan, 1997).

10.46 A holding company structure, according to the Federal Reserve, achieves the full benefits of modernisation and has a proven track record of protecting safety and soundness, insulating the federal safety net, and providing competitive equality among companies that choose to affiliate with banks and those that choose to remain independent. It is, therefore, argued that by requiring non-bank activities to take place in separately capitalised subsidiaries of the holding company, the risk taking effects of those activities could be insulated from the bank and will not impose additional claims on the federal safety net, *i.e.,* deposit insurance, the discount window and the payment system guarantees. The US regulators felt that the capital of the banking organisation and the federal safety net would be more seriously exposed to losses on securities and insurance activities under the parent-subsidiary relationship than under the holding company structure.

10.47 There are, however, also strong arguments in favour of the UK subsidiary-based model. It is argued that it represents the best practical universal banking approach and an organisational arrangement that can support important diversification gains, and at the same time is reasonably able to handle the regulatory imperfections, which make pure universal banking model untenable and the holding company structure inflexible. The operating subsidiary model, while requiring separation of activities between parent and subsidiaries, does not require the type of firewalls that are uniquely found in the holding company structure and has several advantages. First, by requiring that non-bank activities take place in separately capitalised subsidiaries of the bank, bank capital is in part protected from major unexpected losses in these areas. Second, by allowing a greater degree of integration between a bank and its non-bank subsidiaries, the potential to generate earnings through diversification effects is increased. Also, the potential for generating economies of scope, both on the cost and revenues sides, for the universal bank is enhanced. This, in turn, enhances the safety and soundness of the bank. Both diversification effects and economies of scope effects serve to reduce the probability that the safety net will be called into play. Forcing a financial services company - as a prerequisite for engaging in new activities - to transfer resources from its bank to its holding company would deplete the bank's resources, leaving the bank's earnings less diversified, and thus increasing risk to deposit insurance funds. Third, the UK model dovetails directly into the historical functional design of financial services regulation. Consequently, banking authorities could remain the primary regulators of the universal bank parent, while securities and insurance regulators for the securities market and insurance sector, respectively. Their policies could be coordinated through an appropriate mechanism such as lead regulator.

10.48 It is also argued that banks do not behave as if they enjoy subsidy. Even if there were a subsidy, the appropriate response should be to contain it carefully rather than to impose organisational constraints. Those who support operating subsidiary structure argue that potential losses in the operating subsidiary could be capped in such a way as to eliminate the exposure of the safety net. Investment by a bank in its operating subsidiary could be deducted from the regulatory capital of the bank, after which the bank's regulatory capital position must still be deemed "well-capitalised." Moreover, the bank would be prohibited from making good any of the debts of the failed subsidiary. However, the counter argument to this is that losses in, for example, securities dealing or insurance underwriting conducted in an operating subsidiary could occur so rapidly that they could overwhelm the parent bank before actions could be taken by the regulator. Put differently, losses in an operating subsidiary can easily far exceed a bank's original equity investment long before the supervisor has any such knowledge. The resulting bank safety and soundness concerns are only deepened by the extent to which past retained earnings of the operating subsidiary would have strengthened the capital of the parent bank - an ostensible reason for setting up operating subsidiaries. Such a build-up in capital could be used to support other bank activities, and then eliminated by subsequent losses in the operating subsidiary, leaving the bank in an under-capitalised position. Thus, in the holding company structure, it is opined, all non-bank activities are subject to the same regulatory system and would protect banks and the federal deposit insurance system from the risk of failure of an operating subsidiary engaged in non-banking activity.

10.49 Some others, however, feel that there is no evidence of a safety net subsidy as has been made out. Any benefit banks receive from the safety net is more than offset by regulatory costs. A study about the linkage between organisational structure and the bank safety net reports that, measured by variability in the return on assets, securities subsidiaries set up by banks are less risky than those organised as holding company affiliates (Whalen, 2000). However, securities subsidiaries set up by banks tend to have lower capital than holding company subsidiaries so that the overall risk of the former could be higher. They also tend to have higher funding costs. This would be consistent with the argument that the operating subsidiaries are riskier than their holding company affiliated counterparts. However, the findings are inconclusive regarding the main question of the safety net subsidy.

10.50 Traditionally, the regulation of financial intermediaries has been on institutional lines whereby regulation is directed at financial institutions, irrespective of the mix of business undertaken. As financial institutions normally specialised in a particular business line, therefore, the distinction between institutional and functional regulation was not of much relevance and regulating financial intermediary was not much different from regulating its main business. However, in the face of blurring of activities among providers of financial services and emergence of financial conglomerates or universal banks, the institutional structure has become a major issue of policy and public debate in several countries. The institutional approach to regulation is being objected to mainly on three grounds. The first is the competitive neutrality issue, *i.e.*, different institution-based regulators might apply different functional regulation for the same activity. It is argued that with the lines of demarcation between products and institutions getting blurred, it is possible that financial institutions offering similar services or products are supervised by different authorities. The existence of a range of supervisory authorities also poses the risk that financial firms will engage in some form of supervisory arbitrage by placing a particular financial service or product in that part of a given financial conglomerate where the supervisory costs are the lowest or where supervisory oversight is least intrusive. The second issue relates to the wasteful duplication, which means each regulator would need to apply the business rules appropriate for every function, which would be inefficient in terms of regulatory resources (Goodhart, *et al.*, 1998). Another important issue relates to the solvency of the institution. It is argued that many of the threats to the institution can be assessed adequately only on a group-wide basis. This includes the assessment not only of whether the group as a whole has adequate capital, but also of the quality of its systems and controls for managing risks and the calibre of its senior management (Briault, 1999). Some believe that the regulatory structure should mirror corporate structure. Therefore, there has been pressure for the reorganisation of regulatory agencies in several countries where regulation is based on institutional lines. To mitigate the problems posed by the blurring of activities among providers of various financial services and operations of financial conglomerates, four broad approaches have been suggested, *i.e.*, function-specific regulation, objective-based regulation, super regulator or unified regulation and lead/umbrella regulator (Box X.5).

10.51 Some countries have followed the approach of integrated supervision or 'mega' or 'super' regulator

Box X.5
Approaches to Financial Regulation

Under the function-specific regulation, each activity is regulated by a specialist regulator, *i.e.*, banking activities are regulated by banking regulators, investment activities by securities regulators and insurance activities by insurance regulators. Proponents of function-specific approach argue that whatever may be the change in the degree of regulation in future, a major change in the format of regulation from 'institution' to 'function' seems inevitable (Merton and Bodie, 1995). The function-specific approach, however, has been criticised on several grounds. Apart from the fact that the function-specific approach is more complex, fears have been expressed that specialised agencies supervising different parts of the business of financial conglomerates might lose sight of the institution as a whole. It is also argued that it is the institutions and not functions that fail or become insolvent, and, therefore, institutions as such need to be regulated for ensuring safety and soundness (Goodhart, *et al.*, 1998).

Taylor (1995 and 1996) argue for a regulatory structure-based primarily on the objectives of regulation. According to Taylor's model, known as 'twin peaks', there should be two separate supervisory bodies – one responsible for prudential supervision of most of the financial institutions and another for conduct of business of financial institutions. This model is criticised on the ground that the distinction between prudential supervision and conduct of business regulation in practice is not as neat and simple as Taylor's twin peaks model might suggest. Even without the emergence of financial conglomerates, a large number of financial service providers would require regulation both on prudential basis and conduct of business basis. It is also argued that there is a considerable overlap, both conceptually and in practice, between prudential and conduct of business regulation (Briault, 1999). Goodhart, *et al.,* (1998) argue that the 'twin peaks' model is too all-embracing and observe that most financial institutions are not conglomerates and propose a structure of regulation based on the different objectives of regulation. They suggest six separate regulators covering systemic risk (banks, building societies and credit unions); non-systemic prudential regulation (insurance companies); retail conduct of business; wholesale conduct of business; financial exchanges; and a competitive authority.

The term 'super' or 'mega' or 'conglomerate' regulator commonly refers to a structure that combines regulation in respect of all three or two supervisory responsibilities relating to banks, securities firms and insurance companies. It is argued that a single agency is in a better position, in principle, to avoid problems of competitive inequality, inconsistency, duplication, overlaps and gaps, all of which can arise in a regulation based upon separate regulatory agencies. It is further argued that accountability of a single regulator is more certain and it is difficult to pass the blame on to other regulators (Abrams and Taylor, 2000). Some of the major arguments advanced in favour of a 'single' regulator are economies of scale and economies of scope or synergies. The opposite view is that there is no pressing need to create mega prudential supervisory agency. It is argued that while financial institutions engaged in various activities have diversified, their core business remains dominant. The nature of risks is sufficiently different to warrant a differentiated approach to prudential regulation. Therefore, some feel that a single regulator might not be able to make the necessary differentiation among different types of institutions and the risks undertaken by them (Goodhart, *et al.*, 1998). Another argument relates to the 'moral hazard' problem, which is based on the premise that depositors and other creditors of all financial institutions supervised by the same regulatory authority may expect to be treated in an equivalent manner (Abrams and Taylor, 2000). The most crucial issue involved in the introduction of unified structure is whether it should be created within the central bank or outside it. This issue assumes significance mainly due to the involvement of central bank in supervision.

In between the extremes of a super regulator for all activities and separate regulator for each activity is the 'umbrella'/ 'lead' regulator. In the case of a lead regulator, individual regulatory agencies continue to exist, while one of the regulators is selected to coordinate the regulation and to have a group-wide assessment. The umbrella supervisor is an authority which is distinct from and above the functional supervisors and is fully responsible for supervision of the entire financial conglomerate. Thus, the term 'lead' regulator and 'umbrella' regulator have different meanings, although they may be performing the same functions.

References:

1. Abrams, K. Richard and Michael W. Taylor. 2000. "Issues in the Unification of Financial Sector Supervision." *IMF Working Paper, WP/00/213.* December.
2. Briault, Clive. 1999. "The Rationale for a Single National Financial Services Regulator", *Occasional Paper Series 2, Financial Services Authority*, UK, May.
3. Goodhart, C A E, P Hartmann, D Llewellyn, L Rojas, Suarez and S Weisbrod. 1998. ''The Institutional Structure of Financial Regulation'' in *Financial Regulation, Why, How and Where Now?* C.A.E.Goodhart (ed.). London. Routledge Publication.
4. Martinez, Jose de Luna and Thomas A Rose. 2003. 'International Survey of Integrated Financial Sector Supervision''. *Policy Research Working Paper 3096*, World Bank, July.
5. Merton R. C. and Z. Bodie. 1995. *A Conceptual Framework for Analysing the Financial Environment, The Global Financial System - A Functional Perspective*. Harward Business School Press.
6. Taylor, M. 1995. "Twin Peaks: A Regulatory Structure for the New Century." *Working Paper No. 20,* Centre for the Study of Financial Innovation, London, December.
7. ——.1996. *Peak Practice: How to Reform the UK's Regulatory System*. Centre for the Study of Financial Innovation, London, October.

combining all the three activities, *i.e.,* banking, insurance and securities. This has been done with the belief that an integrated supervisor is likely to be more effective in creating a level playing field across various financial sectors and limiting the possibility for regulatory arbitrage. In all, 37 countries follow the super regulator approach (Table 10.1). Of these, the super regulatory structure in 13 countries is within the central

Table 10.1: Countries with Super Regulator Structure*

Sr. No.	Country	Within the Central Bank	Outside the Central Bank
1	2	3	4
1	Austria		Financial Market Authority
2	Bahrain	Yes	
3	Belgium		Commission Bancaire, Financiere et des Assurances (CBFA)
4	Bermuda	Yes	
5	Bhutan	Yes	
6	British Virgin Islands		The British Virgin Islands Financial Services Commission
7	Brunei		Brunei International Financial Centre, Ministry of Finance
8	Cayman Islands	Yes	
9	Cook Islands		Financial Supervisory Commission
10	Denmark		The Danish Financial Supervisory Authority (DFSA)
11	Estonia		Estonian Financial Supervision Authority
12	Germany	Yes $	German Federal Financial Supervisory Authority (BaFin).
13	Gibraltar		Financial Services Commission
14	Guatemala		Superintendencia de Bancos de Guatemala
15	Guernsey		Guernsey Financial Services Commission
16	Honduras		National commission of Banks and Assurances
17	Hungary		Hungary Financial Supervisory Authority
18	Iceland		The Financial Supervisory Authority, Iceland
19	Ireland	Yes	
20	Japan		Financial Services Agency
21	Jersey		Jersey Financial Services Commission
22	Kazakhstan		Agency of Financial Supervision
23	Korea		Financial Supervisory Commission (an independent government agency) and its sub-Committee Securities and Futures Commission (SFC) as well as Financial Supervisory Service (a non-government agency)
24	Latvia		The Financial and Capital Market Commission
25	Liechtenstein		Financial Market Authority
26	Macau, China	Yes	
27	Malawi	Yes	
28	Maldives	Yes	
29	Malta		Malta Financial Services Authority for banking, investment services, offshore and insurance.
30	Nicaragua		The Superintendency of Banks and Other Financial Institutions for banks, securities and insurance.
31	Norway		Kredittilsynet (The Banking Insurance and Securities Commission of Norway)
32	Singapore	Yes	
33	Slovakia	Yes	
34	Suriname	Yes	
35	Taiwan		Financial Supervisory Commission regulates banks, securities firms and insurance companies. The Central Bank of China retains the responsibility for the stability of the financial system as a whole.
36	United Kingdom		Financial Services Authority (FSA)
37	Uruguay	Yes	

* : Combining banking, insurance and securities supervision.

$: The Deutsche Bundesbank will continue to supervise banks.

Source: Central Banking Publications. 2008. *How Countries Supervise their Banks, Insurers and Securities Markets 2008: The Who and How of Financial Supervision in more than 190 Jurisdictions*. London: Incisive Media Haymarket House.

bank, and in other countries, it is outside the central bank. However, in some of these countries such as Singapore and Norway, the super regulator structure existed long before the present wave of financial conglomerates. The rationale for combining supervision in these countries was small size of the financial sector and scarce supervisory resources.

10.52 Australia has adopted an objective-based regulatory approach. The supervisory structure followed by Australia is quite unique in the sense that it is not based on institutions or products, but rather on regulatory functions/objectives. Australia restructured the existing supervisory institutions by introducing two cross-sectoral bodies, one for prudential supervision of banks, insurance companies and pension funds and one for the supervision of securities firms and conduct of business requirements with a single overarching council above them.[1]

10.53 Most countries, however, continue to follow a system of multiple regulators. While no significant correlation between GDP per capita (a measure of the level of economic development) and the existence of multiple supervisors was found, it was observed that the existence of multiple supervisors was positively correlated with the total assets of all banks (a measure of the country's banking system) relative to GDP (Barth, *et al.*, 2006). However, in order to coordinate the supervision of financial conglomerates by multiple agencies, some countries have adopted the approach of a 'lead' regulator or 'umbrella' regulator. Under the 'lead regulator' model, one of the regulators takes responsibility for assessing the risk profile and capital adequacy of all the operations of a diversified group. Under this arrangement, if the main activity is commercial banking, the lead regulator is the bank regulator, who is then charged with the added responsibility of overseeing the entire group's operation and ensuring coordination of responses but without usurping the power of other regulators. The lead regulator's main role is to ensure that relevant regulatory information about the conglomerate is shared promptly amongst all the regulators concerned.

10.54 The Gramm Leach Bliley (GLB) Act in the US blends functional regulation with umbrella regulation. Functional regulation envisions that each subsidiary of the financial services holding company is separately regulated by financial regulator. For instance, the Securities and Exchange Commission (SEC) acts as a primary regulator of securities firms and the state insurance regulators are the financial regulators of companies engaged in insurance activities. The functional regulator has authority to set capital standards for, require reports from, and perform examination of, the particular subsidiary it oversees in the holding company structure. The functional regulator does not have authority, however, to set capital standards for, impose reporting requirements upon, or conduct examinations of, other entities in the organisation.

10.55 The Federal Reserve Board is the umbrella supervisor of both financial holding companies and bank holding companies. As an umbrella supervisor, the Federal Reserve Board can impose capital requirements on holding companies. Under the so-called "Fed-lite" provisions of the GLB Act, the Board also has the authority to require reports from and examine holding companies or their subsidiaries, subject to certain limitations. The umbrella supervision in the US is based on the premise that risks are managed on a consolidated basis by an organisation and such risks cannot be reviewed on an individual legal entity basis by different supervisors. That is, each regulator looking only at how the risk management process done in the entities they regulate may not be adequate. Consolidated oversight of such organisations is important because the risks associated with a broad range of financial activities can cut across legal entities and business lines.

10.56 In less than 10 years of putting in place the system of umbrella supervision, the regulatory structure in the US is being revisited in the light of recent financial market developments, especially the growing institutionalisation, which is pressurising the US regulatory structure, exposing regulatory gaps as well as redundancies, and compelling market participants to do business in other jurisdictions with more efficient regulation.It is now being felt that an objective-based regulatory approach would represent the optimal regulatory structure for the future. The Department of Treasury in its report released in March 2008, after exploring the various options, indicated that the US could move to an objective-based regulatory approach focusing on the goals of regulation. Such a regulatory

[1] In fact, in Australia many regulatory bodies were restructured into just four, each responsible for a particular regulatory function, *i.e.*, (i) for ensuring competition; (ii) for market conduct and consumer protection; (iii) for prudential regulation of deposit taking, insurance and superannuation; and (iv) for overseeing systemic stability. This is based on the view that markets/institutions fail on account of four main reasons, *i.e.*, anti-competitive behaviour, market misconduct, information asymmetry and systemic instability. However, the body for ensuring competition has jurisdiction not only over the financial sector but also the non-financial sector.

structure would focus on three key goals: (i) market stability regulation to address overall conditions of financial market stability that could impact the real economy; (ii) prudential financial regulation to address issues of limited market discipline caused by government guarantees; and (iii) business conduct regulation (linked to consumer protection regulation) to address standards for business practices. The Department of Treasury is of the view that in comparison with other regulatory structures, an objective-based approach is better able to adjust to changes in the financial landscape than a structure like the current US system which focuses on industry segments. The Federal Reserve should assume the role of financial market stability given its traditional central bank role of promoting overall macroeconomic stability. A new Prudential Financial Regulatory Agency (PFRA) is proposed to focus on financial institutions with some type of explicit government guarantees associated with their business operations. It also proposed a new Conduct of Business Regulatory Agency (CBRA). The CBRA should monitor business conduct regulation across all types of financial firms (Department of Treasury, 2008).

Supervision *vis-à-vis* Market Discipline

10.57 During the last fifteen years or so, increasing attention has been devoted by bank supervisors and regulatory authorities to the issue of market discipline. While different opinions exist on the best way to achieve it, most observers agree that bank supervisors should increasingly rely on market forces to supplement their traditional supervisory methods. Market discipline in the banking sector can be described as a situation in which private sector agents including depositors, creditors, and stockholders face costs that lie in the risks undertaken by banks and take action on the basis of these costs. For example, uninsured depositors, who are exposed to bank risk-taking, may penalise riskier banks by requiring higher interest rates or by withdrawing their deposits (Martinez Peria, *et al.*, 2001). Even insured depositors may respond to bank risk if there is some uncertainty or costs involved with recovering deposits in the case of bank failure. Hence, depositors who are highly sensitive to bank risk are likely to restrain banks' excessive risk-taking behavior. The direct and indirect effects of the market may be distinguished (Board of Governors of the Federal Reserve System Study Group, 1999). The direct effect is the influence that investors exercise on bank risk-taking by affecting the cost and/or quantity of funds. This may be referred to as market influence. The indirect effect is the interaction of supervisors' information with that of the market. Stakeholders in a firm can monitor and control the firm's behavior using market mechanisms. The ability of stakeholders, including debt holders and stockholders, to influence the cost and quantity of funds available to the firm and the valuation of its assets provides a market-based structure for corporate governance (market discipline). There are two interdependent reasons for the emphasis on market discipline. First, the activities of major international banks have become increasingly complex. As a consequence, the task of controlling their risk-taking behaviour has become increasingly difficult. Second, a trend towards stronger regulatory reliance on banks' own internal risk management systems has emerged.

10.58 Market discipline does not come naturally to banking. The safety net limits direct market discipline because it reduces the demand for disclosure and the risk-sensitivity of debt holders. Clearly, insured depositors have almost no incentive to penalise banks for excessive risk-taking. Further, the perceived certification of soundness provided by supervisory authorities may also reduce the demand for disclosures and the risk-sensitivity of debt holders. Compounding these disincentives for investors to evaluate bank risks, the *raison d'etre* of banks is that these institutions provide credit in environments characterised by asymmetric information. Therefore, banks are inherently opaque and difficult to assess.

10.59 Banking supervisors around the world have recognised the importance of market discipline in encouraging sound risk management practices and in promoting the stability of financial markets. Effective market discipline can complement bank supervision and regulation. But its pre-requisite is to have the information necessary to understand the risks in the entity that the market is observing. With sufficient, timely, accurate, and relevant information, market participants can better evaluate counterparty risks and adjust the availability and pricing of funds to promote better allocation of financial resources. Lenders and investors have an obvious interest in meaningfully assessing a firm's risk-management performance, underlying trends, cash flow, and income-producing potential. In this regard, transparency is essential to providing market participants with the information they need to effect market discipline.

10.60 The Basel Committee on Banking Supervision "emphasises the potential for market discipline to reinforce capital regulation and other supervisory efforts in promoting safety and soundness in banks and the financial system". The Basel Committee has taken the view that enhancing market discipline is important in a

world where supervisory resources are limited and banking activities are becoming more and more complex. This view is reflected in Pillar 3 of the new Basel Accord as detailed in Chapter V. The Basel II Accord shifts some of the burden of bank oversight from supervisors to markets. However, an important issue is whether market discipline can be effective and under what conditions it might not be.

10.61 There are some key issues that have arisen in the context of effectiveness of market discipline. The existence of moral hazard and the effectiveness of market discipline are intimately related. In the absence of bankruptcy costs and corporate governance problems between bank shareholders and bank, if bank deposits are uninsured and the bank's risk choice is observable by depositors, the bank's risk choice will be efficient. The reason is that banks internalise the impact of their risk choice on depositors since these, in turn, will demand higher compensation if the bank incurs higher risk. In such a world, there is perfect market discipline and no moral hazard (Blum, 2002 and Cordella and Yeyati, 1998). Conversely, if deposits are insured or the bank's risk choice is not observable by depositors, then the bank will choose a higher risk profile at the expense of depositors. The reason is that depositors will not demand a higher return in response to higher risk choices by the bank. In such a world, there is no market discipline and the bank's choice of its risk of default is subject to moral hazard.

10.62 Theoretically, the effectiveness of market discipline in containing excessive risk-taking hinges on (a) the extent of the government safety net (insurance); (b) the degree to which the bank is financed by uninsured liabilities (funding); and (c) the extent of observability of bank risk choices (disclosure). Market discipline is likely to be more effective, the lesser the degree of explicit or implicit government guarantees relating to bank liabilities, the greater the amount of uninsured liabilities in the bank's balance sheet and the greater the degree of bank disclosure.

10.63 Empirical evidence suggests that moral hazard exists and that market discipline plays a role in mitigating banks' risk of insolvency. It has been observed that (a) the explicit or implicit government guarantees lead banks to choose lower capital buffers; (b) a higher share of uninsured funding has a disciplining effect leading banks to choose larger capital buffers for given risk; and (c) banks which disclose more information and thus are subject to stronger market discipline limit their probability of defaults by choosing a higher capital buffer. All of these effects are weaker when one looks at the sub-sample of banks for which the market believes that government support will lead to a bail-out, effectively insuring investors.

10.64 The effect of an extensive deposit insurance scheme on bank risk is somewhat mixed – (a) there is a stronger support for the notion that implicit government guarantees, resulting from banks being too big to fail, induce these banks to choose a higher probability of default, as measured by the ratio of non-performing loans for a given capital ratio; (b) overall, it is not clear that uninsured funding sources lead to lower default risks of banks; (c) there is a strong support for the hypothesis that banks disclosing more information have lower realised risk. Furthermore, market discipline is stronger when banks are not likely to be bailed out by the government. Disclosure is of particular importance when banks approach insolvency since other measures of market discipline may be less effective.

10.65 Enhancing market discipline through more disclosure and/or uninsured liabilities has been argued to be beneficial in that both mechanisms provide incentives for firms to maintain adequate solvency standards. But the beneficial effect of these policy initiatives is likely to be stronger for banks that do not enjoy implicit government guarantees. This has important consequences on how to optimise the mix between Pillar 2 and Pillar 3 (refer Chapter V for details) of the New Basel II Accord. If implicit government guarantees cannot credibly be abolished or indeed are necessary to prevent systemic banking crises and the large economic costs that are associated with them, banks that are subject to such guarantees are likely to be less influenced by market discipline. Close supervisory oversight of these banks will, therefore, need to remain a crucial ingredient in the regulatory framework. In addition, some forms of market discipline are less effective for banks which are close to insolvency. This reinforces the importance of minimum capital requirement as a prerequisite for the effectiveness of market discipline (Pillar 1 of the New Basel II Accord).

10.66 A promising approach to enhance market discipline, which has received considerable attention of late, is to adopt a subordinated debt policy. Central bankers at the Federal Reserve System advocated a more specific policy mandating that large banks should issue subordinated debt securities. The 1999 GLB Act called for the Federal Reserve Board and the Secretary of the Treasury to study the feasibility and desirability of subordinated debt proposals. The study, released in January 2001, concluded that adoption of a subordinated debt policy might potentially improve the safety and soundness of the banking system (Box X.6).

Box X.6
Subordinate Debt as a Means of Market Discipline

Subordinated debt is bank liability representing borrowing that, in the event of default, would be paid only after all other liabilities have been discharged. Aware of the potential for significant loss, investors in subordinated debt are especially sensitive to the risk of default, and their perception of risk will be reflected in lower market valuations and hence higher yields for subordinated debt. In discussions of subordinated debt, regulators note the potential for indirect market discipline (Federal Reserve Study Group, 1999), which occurs when regulators or stakeholders use the yields on a bank's subordinated debt as a signal of its condition. If all large banks were required to issue the same type of subordinated debt, regulators would have an easy means of comparing banks' default risk. The banks with the highest yields on subordinated debt could be singled out for prompt corrective action or more rigorous supervision.

Subordinated debt is viewed as having several advantages over uninsured deposits as a means of promoting both direct and indirect market discipline.

First, subordinated debt being the most junior of all bank liabilities, its yield should be more sensitive to changes in risk than are the yields of large denomination deposits. These bondholders are the least likely to be bailed out in the event of bank failure, and the most likely to demand disclosures of a bank's condition. Subordinated debt issued in place of insured deposits thus provides an extra "cushion" for the deposit insurance fund in the event of bank failure. However, the hypothesis that the yield of subordinated debt is more sensitive to risk than the return on uninsured deposits has been found to be difficult to confirm empirically.

Second, subordinated debt, having longer maturity, is less susceptible to runs. During any month, the value of subordinated debt that needs to be rolled over would be a small proportion of the total outstanding. Hence, the bank is not pressed to redeem the debt all at once and has more time to resolve its problems. A deterioration in a bank's condition can be met with price adjustments as investors value its outstanding debt at lower prices or with quantity adjustments as investors curtail their lending.

Third, subordinated debt holders do not partake in the upside gains associated with risk-taking. Hence, in principle, the issuance and secondary market spreads on subordinated debt should be particularly sensitive to banking organisation risk. In contrast, since equity holders may also benefit from the upside gains associated with risk-taking, equity issuance may provide inadequate direct market discipline, and the signals of bank risk derived from secondary market prices may be blurred and difficult to interpret.

Fourth, subordinated debt is also attractive from a market discipline perspective because there exists a well-established, deep, and fairly liquid market for such instruments. The standardisation of publicly traded subordinated debt of banking organisations is also striking and desirable from a market discipline perspective. The majority of U.S. bank or (more commonly) holding company subordinated debt instruments being issued today are fixed-rate, non-callable, 10-year maturity bonds. These two features of the market, liquidity and standardisation, facilitate the comparison by market participants of secondary market subordinated debt spreads.

While the concept of market discipline through subordinated debt is promising, a number of practical concerns arise. First, for indirect market discipline, the signaling information from bank stocks has two advantages over the signaling information from bank debt securities. One, the number of banking organisations that issue debt publicly, including both subordinated notes and debentures (SNDs) and Certificates of Deposit (CDs), is relatively small compared to the number that have publicly traded equities. Two, because the market for bank equities is more liquid and is covered by more professional analysts than the market for bank debt, stock prices tend to be more efficient than bond prices in reflecting firm-specific information. Thus, in terms of both data availability and data quality, bank stocks are relatively more relevant than bank debt for indirect market discipline. Second, the possibility that the regulators will bail out the debt holders if a bank gets in trouble, even if the government has no explicit authority to do so. Although this is a valid concern, it is believed that the problem is with the institutional incentives during periods of crises and not with a subordinated debt *per se*. Finally, additional concerns include the costs of issuing debt and the potential for insider trading.

It is, by and large, believed that more research is needed to make the case for a policy to enhance market discipline through subordinated debt and to pin down the design features of a specific policy for such instruments. Nevertheless, the merits of subordinated debt may not be ignored in the direction of achieving market discipline in the banking sector.

References:

1. Federal Reserve Bank of San Francisco (FRBSF) Economic Letter. 2002. "The Promise and Limits of Market Discipline in Banking". No. 36, December.
2. Maclachlan, Fiona C. 2001. "Market Discipline in Bank Regulation, Panacea or Paradox?". *The Independent Review*. Vol. 6, No. 2, Fall 2001, 227–234.
3. Meyer, Laurence H. 1999. "Market Discipline as a Complement of Banking Supervision and Regulation". Remarks before the conference on Reforming Bank Capital Standards in New York, June.
4. Rodríguez, L. Jacobo. 2002. "International Banking Regulation - Where's the Market Discipline in Basel II?". *Policy Analysis*, No. 455, Cato Institute, October.

10.67 The effectiveness of market discipline crucially depends on the robustness of the financial infrastructure that underpins transactions such as the legal and judicial framework, the accounting standards used to value financial assets, the availability of relevant statistics; the payment and settlement system; and principles of corporate governance, among others. Accounting practices are another major source of problems as capital ratios do not mean very much if a bank's lending portfolio is inappropriately valued. Market discipline dependent on disclosure and transparency will be largely ineffective if faulty accounting masks the true state of balance sheets. Thus, weaknesses in the financial infrastructure can make ineffective the most careful supervisory oversight.

Principle-based Regulation

10.68 As a concept, principle-based regulation emphasises moving away from detailed and prescriptive rules and supervisory actions. It focuses more on the outcomes that the regulators want to achieve, leaving the judgement calls on how to achieve those outcomes to the management of the firms. The Financial Services Authority (FSA) of the UK, which is the integrated regulator for financial services, pioneered the shift to a principle-based approach to regulation, which complements the risk- and evidence-based models. In the last few years, the FSA has increasingly focused its supervisory and enforcement tools based on principles and the outcomes. Principle-based regulation is not new in the UK. Most of the 11 high-level principles of the FSA for firms that have been in place since 2001 were present even in the earlier regulatory system overseen by the Securities and Investments Board.

10.69 The 11 principles of the FSA are general statements of the main regulatory obligations that apply to every authorised firm. The principles set out in simple terms the high level standards that all firms must meet. If any firm contravenes one or more of the principles, it could face enforcement action, which could, for instance, result in firm's authorisation being removed. The principles focus on what FSA regulations are trying to achieve and so are expressed in terms of outcomes and behaviours rather than processes or procedures. The 11 principles of business of the FSA cover aspects of integrity, skill, care and diligence, management and control, financial prudence, market conduct, customers' interests, communications with clients, conflicts of interest, customers, clients' assets, and relations with regulators.

10.70 The implementation of principle-based regulation requires clearly articulated outcomes that regulators want to achieve and against which their performance can be measured. The FSA has increasingly become explicit to target and deliver regulatory outcomes that align to its statutory objectives. This is driven by three strategic aims that have provided a consistent framework for FSA activities since 2003. These are: (i) promoting efficient, orderly and fair markets; (ii) helping retail consumers achieve a fair deal; and (iii) making the FSA a more effective organisation that is easier to do business with. To help the FSA, both to embed principle-based regulation and to track its progress in a structured and consistent way, the FSA has now taken an additional step by defining nine outcome indicators, three under each aim (Table 10.2).

Table 10.2: Strategic Aim and Indicators of Principle-based Regulation

Strategic Aim	Indicator Number	Definition
Help retail consumers achieve a fair deal	1	Consumers receive and use clear, simple and relevant information from the industry and from us.
	2	Consumers are capable and confident in exercising responsibility when dealing with the financial services industry.
	3	Financial services firms treat their customers fairly and so help them to meet their needs.
Promote efficient, orderly and fair markets	4	Firms are financially sound and well managed.
	5	Firms and other stakeholders understand their respective responsibilities and mitigate risks relating to financial crime and arising from market conduct.
	6	Financial markets are efficient, resilient and internationally attractive.
Improve our business capability and effectiveness	7	The FSA is professional, fair, efficient and easy to do business with.
	8	The FSA is effective in identifying and managing risks to our statutory objectives.
	9	The costs and benefits of regulation are proportionate.

Source: Financial Services Authority. 2007. *Principles-based Regulation – Focusing on the Outcomes that Matter*. UK, April.

10.71 According to its proponents, there are several merits of principle-based approach to financial regulation. These are: (i) it is easier to generate a set of principles rather than a set of detailed rules; (ii) understanding a set of principles is easier for all stakeholders; (iii) it is flexible, making it particularly suitable for a heterogeneous banking industry by allowing it to develop its own compliance ethos within the context of its own markets, legislative backgrounds and cultures; (iv) it encourages a co-operative and outcome-oriented relationship between a firm and its regulator and facilitates mutual understanding among regulators; and (v) it provides a basis for open dialogue between the regulator and the regulated and promotes a co-operative and educative approach to supervision.

10.72 On the other hand, principle-based approach also means greater uncertainties for the regulated institutions and the need for having a team of highly competent examiners/inspectors who will be able to understand the business model of the regulated institutions and be able to apply principles to reach supervisory conclusions. Owing to the inherent uncertainty, the distinction between minimum standards and the best practices may start fading, leaving the institutions to work out standards for themselves. The move towards principle-based regulation could also result in concerns over accountability in a number of ways. Principle-based approach may also become open to abuse by not so well-intentioned firms for whom enforcement action based on more detailed rules could be more appropriate. Principle-based regulation imposes onerous demands on, and requires adequate protection for, the staff of supervisory agencies. They are required to understand each regulated firm, and make discretionary judgments about whether its business plan and *modus operandi* are consistent with the principles established by the regulator. This requires an elaborate system of transparency and checks and balances in order to prevent abuse.

10.73 The enabling conditions for the introduction of principle-based regulation are (i) the building up of adequate infrastructure; (ii) identifying the market activities that are amenable to regulation using high-level statements of principles; (iii) capability of the regulator to implement risk-based regulation; and (iv) the capacity of regulatory staff to operate in an environment that places a premium on analysis and the exercise of discretion in the public interest and a commitment towards principle-based regulation. Moving towards principle-based regulation also requires a change in culture for regulatory bodies as well as the firms. It has significant implications for the way in which regulators work with firms on a day-to-day basis. The regulators may look for firms to take greater responsibility in meeting their regulatory obligations. The regulators' own approach also needs to be directed away from enforcement of detailed procedural points and towards the regulatory outcomes. Well managed firms that engage positively and openly with regulators should expect to gain from the principle-based approach in the form of a regulatory dividend, for example relatively lower levels of regulatory capital, less frequent risk assessments, greater reliance on firms' senior management or a less intensive risk mitigation programme (FSA, 2007).

10.74 Rule-based and principle-based supervisory approaches are not mutually exclusive. They are rather complementary. The regulators, therefore, need to identify the areas in which these supervisory approaches are effective and boost the effectiveness of the regulations in their entirety, based on the optimal combination of these two approaches. Significantly, the FSA continues to rely on detailed rules running into over 8,000 pages and prescriptive processes in certain cases. Detailed regulatory rules can be embedded in principle-based regulation as well. The FSA is, therefore, not a purely principle-based regulator and in certain areas, it continues to rely on detailed rules and prescriptive processes to ensure adequate consumer protection or sufficient consistency and comparability between regulated entities. It is perceived that it will not be possible for the FSA to get away from detailed rules entirely and rule-based approach would have an important continuing role in certain aspects of the regulatory regime. In reality, there will always be a mixture of detailed rules and principles in the regulatory regime.

10.75 The UK is the only country that has adopted principle-based platform for financial regulation. Furthermore, one decade is not a sufficient period to draw firm conclusions about its unquestioned superiority. The recent episode of liquidity crisis in the Northern Rock has raised concerns about the effectiveness of principle-based regulation. Both rule-based and principle-based regulations have their advantages and disadvantages. While the rules provide legal certainty, they are non-flexible. In contrast, the principle-based regulation would be more adaptable, but would require active participation of management and the regulators for its successful implementation. As market players compete with one another, principle-based regulation is prone to different interpretations than what is intended. Experience indicates that it would be impractical to take a doctrinaire view on which approach is better - rule-based or principle-based. As long as the basic objectives of

banking supervision and regulation, *viz.,* maintaining financial stability, preventing crisis and bank runs, protection of depositors' money, are met, it does not matter much as to whether they are achieved by any one or combination of regulatory approaches.

Safety Net

10.76 The safety net arrangements are often provided by the Governments with the public policy purpose of promoting economic growth and financial stability. Constructing and managing a proper 'bank safety net' - a set of policies designed to protect banks from adverse shocks - presents the Government with a unique set of challenges. These policies are designed to prevent or reverse losses in bank capital, widespread disintermediation from banks and bank failures. The safety net lowers the risk premium on bank liabilities, encouraging banks to operate with higher-risk portfolios and lower capital. The safety net thus enables banks to accumulate larger, riskier asset portfolios than would be possible in an intermediation process driven solely by market forces. In the absence of safety net, these higher lending risks would have to be reflected in some combination of higher deposit costs, more liquid asset holdings, or a larger capital base. While the nature of safety net arrangements can take different forms, they typically include a combination of: (i) bank access to a lender of last resort; (ii) final, riskless settlement of payment system transactions; (iii) prudential supervision of banks; and (iv) deposit insurance.

10.77 Deposit insurance system, which was first adopted in the US in the aftermath of severe banking crises during the Great Depression, has been adopted in many other countries. The pace of adoption of explicit deposit insurance system has accelerated in the last decade (Box X.7).

Box X.7
Growth of Deposit Insurance Systems

The first national deposit insurance system in the world was the Federal Deposit Insurance Corporation (FDIC), US, which was created in 1933 during the Great Depression to restore public confidence in the US financial system and to protect small depositors. At the time of its creation, the US was in the midst of the largest financial crisis in its history. During the first few months of 1933, 4,000 US banks suspended operations and bank runs had become commonplace. The issue then was how to restore confidence in the US banking system. Without a doubt, the FDIC helped restore public confidence in the US financial system. In 1934, the year after the FDIC was created, only nine banks failed compared to 4,000 bank closures during the nine months prior to its creation. Deposit insurance effectively ended bank runs in the US. The FDIC is widely viewed as one of the most successful legacies of that era.

The adoption of explicit deposit insurance systems around the world has steadily increased since the 1960s. The number of countries adopting explicit deposit insurance increased to 10 by 1970, 18 by 1980, 36 by 1990 and 70 by 2000. According to the International Association of Deposit Insurers (IADI), as on May 1, 2008, 119 countries either have, or are considering or planning, deposit insurance schemes, *i.e.,* 99 in operation, 8 pending, 12 planned or under serious study. The pace of adoption of explicit deposit insurance systems around the world has accelerated in recent years, as many countries moved to establish systems after experiencing financial crises, or witnessing crises in other countries. The Mexican peso crisis in the early 1990s served as an impetus to the adoption of deposit insurance systems in Central and South America. The Asian financial crisis in 1997 led to the establishment or strengthening of deposit insurance systems in Asia. A number of African countries established deposit insurance systems to strengthen financial stability and depositor protection. In 1994, the European Union adopted a directive requiring the establishment of deposit guarantee schemes in its member countries. The fall of the Soviet Union led many countries in central and eastern Europe to establish deposit insurance systems as part of their financial regulatory reform programs. China, for example, has been working for some time to establish a deposit insurance system as part of efforts to strengthen its banking sector. Other countries with deposit insurance systems under study, planned or pending include South Africa, Thailand, Egypt, Bolivia, Costa Rica, and New Zealand.

Furthermore, there are a number of countries with more than one deposit insurance system in operation (for instance, Austria, Canada, Germany, Italy and the United States). On the other hand, one deposit insurance system can cover more than one country (for instance, the Marshall Islands, Micronesia and Puerto Rico are insured by the US FDIC; and Cameroon, Central African Republic, Chad, Congo, Equatorial Guinea and Gabon will be covered by a single system).

References:

1. Gruenberg, Martin J. 2007. *The International Role of Deposit Insurance*. The Exchequer Club, Washington D.C., November.
2. Website of International Association of Deposit Insurers (IADI), www.iadi.org.

10.78 In recent years, however, design of deposit insurance has come under close scrutiny. Deposit insurance systems are designed to minimise or eliminate the risk that depositors placing funds with a bank will suffer. Deposit insurance can enhance stability by preventing bank runs. Bank runs are generally caused by a combination of two factors. First, loans, the primary asset of banks, are illiquid in that they cannot be sold quickly without a loss in value. Second, the ability of most depositors to withdraw their deposits either on demand or at short notice. Public concern about the safety of deposits - whether based on fact or only on rumour - can lead to bank runs. Similarly, concerns about one bank have at times led to concerns about others, resulting in so-called 'contagion runs'. No amount of prudential supervision can provide protection against runs that is equivalent to deposit insurance. Under a formalised deposit insurance programme, all institutions have access to depositor protection in the amounts specified by the coverage rules and the explicit rules of the deposit insurance programme provide added certainty regarding the resolution process for failed banks. This can be extremely important for maintaining stability when a banking crisis threatens. By providing a guarantee that depositors are not subject to loss, deposit insurance, on the positive side, removes the incentive to participate in a bank run. However, on the negative side, it eliminates the need for depositors to monitor bank risk-taking (Box X.8).

10.79 The design of deposit insurance system differs across countries (Box X.9). When countries choose not to introduce explicit deposit insurance, insurance is implicit. In either case, the benefits banks gain depend on how effective the government is at managing bank risk-shifting. Explicit deposit insurance schemes appeal increasingly to policymakers mainly on account of two factors. First, an explicit scheme supposedly sets the rules of the game regarding coverage, participants, and funding. Second, an explicit scheme is appealing in a political economy because it protects small depositors without immediate impact on the government budget.

10.80 Despite variations in deposit insurance systems internationally, the experience has shown that there are some general principles that can maximise the effectiveness of deposit insurance in promoting stable banking systems. The specific design features that work best will vary from country to country, but the key challenges always have to be addressed. First, the deposit insurance system should function within a suitable legal framework with appropriate accounting rules, prudential bank supervision, and consumer protection. Second, the deposit insurance system should be well understood by the public. Third, the deposit insurance coverage provided by the system must be adequate to provide assurance to most depositors. Fourth, the process for closing banks and promptly paying depositors and other claimants must also be efficient and clearly understood. Fifth, the deposit insurer must have access to information on insured institutions as necessary to monitor risk exposure. Sixth, most successful deposit insurance programmes must include reliable funding sources for timely action in the event of bank failures. Seventh, a deposit insurance system should establish standards for institutions to qualify for insurance such as capital, internal controls, and sound risk management. Finally, the deposit insurance system should have strong corporate governance.

10.81 In the context of the Northern Rock crisis, the coverage of deposit insurance scheme as also speed of settlement of claims have assumed importance. First, UK depositors were only fully covered up to 2000 pounds and then for 90 per cent of the next 33,000 pounds. As a result, many if not most, depositors stood to lose some money if a bank failed in the UK. Second, depositors were apparently concerned that their insured deposits would take up to six months to be paid due to UK's deposit insurance funding scheme. As a result, the UK had to extend full blanket coverage to all Northern Rock depositors. The UK subsequently increased full deposit insurance coverage nationally for all banks to 35,000 pounds. Thus, to reduce panic among the customers, the deposit insurance coverage for Northern Rock customers was hived off by the government to guarantee all deposits in addition to the cover already available. The biggest problem in dealing with Northern Rock was the absence of a mechanism for intervening pre-emptively in a bank in trouble to separate the retail deposit book – the insured deposits – from the rest of the bank's balance sheet. The ability to do this is central to the way the US and other systems operate, where the authorities are obliged to step in early - "prompt corrective action" - to protect depositors. One tool at their disposal, currently unavailable in the UK, is a special insolvency law for

Box X.8
Deposit Insurance - Advantages and Disadvantages

A well-designed, explicit deposit insurance system that is understood by the public is likely to be the most effective in helping to prevent bank runs, limiting the severity of financial crises and the resolution costs of bank failures, and contributing to overall financial stability. The advantage of deposit insurance is that the threat of bank runs is eliminated as long as the guarantees remain credible.

The public policy motivations behind the safety net can be divided into two categories. First, it may be desirable to assist distressed banks because of the social costs to bank borrowers of the decline in bank lending. This argument presumes that lost banks and bank capital attendant to adverse shocks cannot be replaced easily by the expansion of other banks, possibly because of the high cost of raising capital in the aftermath of an adverse shock (Calomiris and Wilson, 1998). From this perspective, the purpose of the safety net is to reverse undesirable shocks (whether exogenous or the result of endogenous runs) - to provide *ex post* bailouts. Second, the safety net is designed to promote the efficiency of the banking system by limiting endogenous declines in the banking sector (avoidable disintermediation and bank failures that are attributable to asymmetric information and bank runs). These motives for bank safety net policy have been termed as the 'bank-credit" motive and the 'run-prevention' motive (Calomiris, 1999).

The protection of private savings is another argument sometimes invoked to motivate the bank safety net. One version of this argument emphasises the lack of sophistication of small savers, and hence the desirability of creating a clearly riskless depository account. The small-saver argument is probably best interpreted as a means of providing political cover for the subsidies banks receive *via* the safety net.

While deposit insurance systems as well as the other elements of a financial safety net arrangement contribute to stability and thereby promote economic growth, they can also generate perverse effects. By providing protection to market participants, costs of pursuing riskier strategies are reduced and excessive risk-taking might be incentivised - the moral hazard problem. With their deposits protected against loss, insured depositors have little incentive to monitor bank risk-taking, and may simply seek the highest return possible on their deposits. Thus, deposits may tend to flow away from conservatively managed institutions towards those willing to pay higher returns by assuming more risk. Deposit insurance can thus exacerbate moral hazard by altering the normal risk-return trade-off for banks, reducing the costs associated with riskier investment strategies. These incentives are inherent to some degree in the nature of all types of insurance, and even the best structural designs for deposit insurance systems cannot be expected to eliminate moral hazard. Therefore, supervision and regulation of insured institutions as well as some degree of market oversight are essential for controlling moral hazard in order to maintain safety and soundness.

A safety net that is structured to prevent all failures is likely to stifle innovation and reduce the responsiveness of the banking industry to changing customer needs and other developments in the marketplace. To avoid such rigidity, an exit mechanism needs to be formulated and incorporated into the system. A properly balanced deposit insurance program can provide order in winding up the affairs of a failing institution, and can thus facilitate the establishment of an effective exit mechanism.

References:

1. Ketcha Jr, Nicholas J. 1999. "Deposit Insurance System Design and Considerations". *BIS Policy Paper*, No. 7, November.
2. Calomiris, Charles W. 1999. "Building an Incentive-compatible Safety Net". *Journal of Banking & Finance*, 23,1499-1519.
3. Calomiris, Charles W. and Wilson, Berry. 1998. "Bank Capital Portfolio Management: The 1930s Capital Crunch and Scramble to Shed Risk". *NBER Working Paper,* No. 6649, July.

banks. The UK Government has already initiated measures towards review of their existing deposit insurance system.

10.82 An important development in the pricing of deposit insurance systems has been to link deposit insurance premiums to the risk posed by a banking entity. One way to control a government's exposure to deposit insurance losses and to avoid a safety net subsidy is to require the banks to pay a higher deposit insurance premium as its risk of failure increases. Risk-based premiums are similar to market discipline in that both require banks to pay default-risk premiums on their liabilities, thereby reducing the incentive for excessive risk-taking. Moreover, risk-based insurance reinforces market discipline because it reduces a bank's incentive to substitute insured deposits for uninsured debt when its risk increases.

10.83 The pricing of deposit insurance can affect the capital of the banking industry and it may be

Box X.9
The Design of Deposit Insurance

The experience of boom-and-bust banking crises of the 1990s and the severity of problems that surfaced in the national banking systems implied that a heavy price was borne by the taxpayers to resolve the problems. That is why policymakers have become strongly concerned about finding the optimal design for their national deposit insurance systems (DIS). To perform its primary function of compensating the deposits lost in failed banks, deposit insurance needs a mechanism to raise financial resources for this purpose. A DIS funding mechanism should support the public trust in the deposit insurance by ensuring that there would be enough financial resources for a timely and full compensation of all the insured deposits of a failed bank. This condition is essential because the public trust in deposit insurance is what makes the system work.

The design of the funding mechanism of explicit DIS over the world varies in several dimensions. First, by the source of premium contributions, there are systems whose expenses are covered only from private sources (the vast majority of the world DISs) and those with public or mixed financing (in Chile, Lebanon, Oman and Paraguay). In addition, the private-source contributions to a DIS are typically calculated as a fraction of either the insured deposits (42 systems) or the total deposits (41 systems). The nations, which stick to the insured deposit basis, believe that only the insured depositors who get most benefits of deposit insurance should pay. Those, which use the total deposit basis, however, find it easier operationally and regard it as preventing speculative switches by the banks between the insured and the uninsured deposits.

Second, there are differences in the way a DIS agency is provided with additional liquidity when its own resources have been depleted. In some nations, for instance, the Czech Republic, El Salvador, Latvia, Peru, Sweden, *etc.,* the DIS can borrow from the government (budgetary accounts or the central bank). In other countries, for instance, Austria, Colombia, Finland, Hungary, Lithuania, Mexico, the DIS is entitled to borrow from the markets (from the member-banks or through bond issues) but can enjoy the government's guarantee on these borrowings. In some other nations, *viz*., Argentina, Cyprus, France, Gibraltar, Greece, Iceland, Netherlands, Switzerland, *etc*., the deposit insurance legislation requires the emergency liquidity to be raised from private sources. However, only in the case of Argentina, the legislation explicitly denies public support for the DIS. In other cases, either there is an implicit public support for the largest, core national banking institutions, for instance, France, Greece, *etc*., or the DIS is entitled to reduce the payout money *pro-rata* when the system is short of funds, *e.g*., Costa Rica and Morocco. Therefore, in general, one can observe a tendency in the world's DIS design to the provision of the public liquidity support to back the ordinary (private) liquidity sources of the system.

Third, the design of a DIS funding scheme may vary depending on the strategy of reserve accumulation. While some of the countries (such as Austria, Bahrain, Cyprus, Luxembourg and Switzerland employing the so-called *ex-post* funding arrangement) explicitly link the rate of aggregate contributions to the current funding needs of the system, the other countries vary the rate of contributions depending on the level of reserve fund accumulation (such as Bulgaria, the Czech Republic, Iceland, Kazakhstan, Mexico, Ukraine, Belgium, Finland, Macedonia, Spain, the USA, *etc.).* However, some DIS do not set an explicit link between the aggregate contribution rate and funding needs and rely on a steady rate *ex-ante* funding scheme (or on *ad-hoc* adjustments).

Finally, the DIS exhibit some differences in the way the accumulated reserve fund is managed. Whereas the overall trend is to invest the premium revenues in the liquid and safe assets, countries differ in their understanding of the liquidity and safety. Besides universally used investments in government securities, at least twelve systems hold money in the interest-bearing obligations of the central banks. Other thirteen systems (those of Bulgaria, Gibraltar, Greece, Hungary, the Slovak Republic, Taiwan, Tanzania, among others) permit partial investments of the reserves in the obligations of the member-banks, but two systems (those of Poland and Portugal) go further and allow member banks to keep a part of their required contributions on books under the condition of safe securities collateral. At the same time, any investments in the member-bank obligations are prohibited in the DIS of Estonia, Finland, and Guatemala.

In sum, the experience in the DIS funding arrangements shows a general tendency towards a privately funded system with the emergency liquidity support from the government and investments in Government securities.

References:

1. Frolov, Mikhail. 2004. "Funding Deposit Insurance: Designing Options and Practical Choices". *KUMQRP Discussion Paper Series*, DP2003-21, Keio University, Market Quality Research Project, February.
2. Laeven, Luc. 2002. "Pricing of Deposit Insurance". *Policy Research Working Paper,* No. 2871, World Bank, July.
3. Chan, Yuk-Shee; Greenbaum, Stuart I and Thakor, Anjan V. 1992. "Is Fairly Priced Deposit Insurance Possible?". *The Journal of Finance*, Vol.47, No.1, March.

tempting to use pricing as an instrument of smoothing harsh swings in the financial conditions. Thus, proponents of the steady-rate approach (*e.g.*, Blinder and Wescott, 2001; and Shaffer, 1997) stress that varying the contribution rate would become procyclical, *i.e.*, falling down when the banking conditions are strong and rising up when the conditions are weak. But smoothing the variations (or even making them counter-cyclical) would create an additional breathing space for the banks encountering high loan losses due to an economic downturn. Thus, steady-rate policy could lower the probability of bank failures and (provided that there are strong contagion and other external effects of bank insolvencies) help to minimise the overall costs of the deposit insurer. Another concern regarding the variable aggregate rates is that sharp jumps in the required premiums may result in an unfair burden for some bank customers, and in particular for small business borrowers who have no financial alternative to the bank credit. Some, however, argue that risk-based deposit insurance system mitigates the procyclical impact of risk-based prudential capital requirements. The New Basel Accord has raised concerns regarding potential harm of capital regulations during business cycle downturns. Because agency costs of issuing new equity are high when financial conditions deteriorate, banks tend to shrink their risk-sensitive assets in response to higher required capital ratios, a reaction that could exacerbate a downturn by cutting off credit to bank dependent borrowers. It has been shown that setting fair deposit insurance premiums is less procyclical than setting fair capital standards (Pennacchi, 2005). Hence, procyclicality can be reduced if regulation allows increased bank risk to be reflected in higher deposit insurance premiums, not just higher capital requirements.

10.84 In view of moral hazard problem, several countries over the years have switched over to the risk-based deposit insurance system. In 1995, only the US had risk-based deposit insurance system. However, now 29 countries follow the risk-based deposit insurance system. There is, however, no uniform basis for adjusting premiums, which are linked to different parameters such as asset quality/capital adequacy and Capital Adequacy, Asset Quality, Management, Earnings, Liquidity, Systems and Control (CAMELS) rating (Table 10.3).

10.85 To sum up, several significant developments have occurred in the last few years in the area of regulation and supervision. First, in some countries such as the UK, supervision has been separated from the central bank partly due to the emergence of financial conglomerates that are seen to need unified regulation and supervision, and partly due to perceived conflict of interest between monetary policy and regulation and supervision of banks. However, the failure of Northern Rock has raised serious issues about the co-ordination mechanism between the supervisory authority and the lender of the last resort, and desirability of separation of supervision from the central bank. There are differing views on both sides and no consensus has emerged on what works better. Second, on the issue of single or multiple regulator/s for various types of financial firms, there is also no clear and conclusive evidence that one is better than the other. Experience shows that there are all kinds of models. For instance, in some countries, regulation of banking and insurance is combined in one agency, while the securities market regulation is with some other agency. In some other countries, regulation of banking and securities markets is combined in one agency, while insurance sector is with some other agency. At least, 37 countries now have combined regulators for banking, insurance and securities markets. The US has followed a system of umbrella supervision, while some other countries have a system of lead regulation. Australia has followed objective-based regulation. Third, principle-based supervision has been adopted by the FSA in the UK. It is perhaps the only country in the world to have adopted a principle-based approach. However, it has not been possible for the FSA to get away from detailed rules and is reported to have a rule book having more than 8,000 pages. Four, greater emphasis is now also being placed on market discipline to complement supervision, although its effectiveness depends on the robustness of the financial infrastructure that underpins financial transactions. Finally, in recent years, the number of countries adopting deposit insurance system has expanded significantly. Also, in the last few years, several countries have switched over to the risk-based deposit insurance system. However, on most of these aspects, it is difficult to take a doctrinaire view for at least two reasons. One, it has not been possible to establish the superiority of any one approach/structure over the other in a conclusive manner. Two, in different countries, different approaches/structures have evolved over time depending on the size and nature of the financial system and the prevailing conditions.

Table 10.3: Countries with Risk-based Premium under Explicit Deposit Insurance System

Country	Assessment Base	Annual Premium (% of assessment base)	Basis for adjusting Premiums
Argentina	Insured deposits	0.3 plus 0.36-0.72	CAMEL like ratios and risk assets
Belarus	Household deposits	Risk based: 0 for two state banks. 0.1% to 0.3% of household deposits for other banks, depending on the bank's household deposits to capital ratio	–
Bolivia	Deposits	–	–
Bulgaria	Insured deposits	Risk based to 0.5 per cent	–
Canada	Insured deposits	0.04 to 0.33	CAMEL like ratios, asset concentration, regulatory rating and adherence to standards
Colombia	Insured deposits	Risk-adjusted	Independent rating (is pending)
Ecuador	Deposits	0.65 +risk adjusted	Risk rating
El Salvador	Deposits	0.1 (can be raised to 0.3) + risk-based mark up	Sub-standard securities
Finland	Insured deposits	0.05 to 0.3	Solvency ratio
France	Deposits plus 1/3 loans	Risk-adjusted	CAMEL like ratios
Germany	Insured deposits	0.008 (statutory scheme); 0-0.1 (private sector)	Risk category and length of membership
Hungary	Insured deposits	0.16-0.19 (decreasing by size)+ risk-adjustment	Capital adequacy
Italy	Insured funds	Ex post, adjusted for size and risk	CAMEL and maturity transformation
Kazakhstan	Insured deposits	0.125-0.375	CAMEL like ratios
Macedonia	Insured deposits	0.01-0.025	CAMEL like ratios
Marshall Islands	Deposits	Risk based, 0 to 0.27 per cent	–
Mexico	Deposits & other liabilities	0.4-0.8	Determined by Ministry of Finance
Micronesia	Deposits	Risk based, 0 to 0.27 per cent	–
Norway	Risk-weighted assets and deposits	0.5 of risk-weighted assets and 0.15 of deposits	Risk-weighted assets
Peru	Insured deposits	0.65 plus risk-adjustment	Determined by supervisor
Poland	Risk-weighted assets and deposits	Up to 0.4	Risk-weighted assets
Portugal	Insured deposits	0.08 to 0.12	CAMEL like ratios
Romania	Insured deposits	0.3 to 0.6	CAMEL like ratios
Sweden	Insured deposits	0.5 (maximum)	Capital adequacy
Switzerland	Gross earnings and balance sheet items	Ex post, on demand, varies	Earnings and some discretion
Taiwan	Insured deposits	0.05-0.06	Capital Adequacy Ratio and early warning system
Turkey	Insured savings deposits	1.0-1.2	Capital adequacy
United States	Domestic deposits	0.00-0.27	CAMEL like ratios
Uruguay	–	–	–

Sources: 1. Laeven, Luc. 2002. "Pricing of Deposit Insurance". *Policy Research Working Paper No.2871*, World Bank, July.
2. Demirguc-Kunt, Asli, Karacaovali and Luc Laeven. 2005. "Deposit Insurance around the World: A Comprehensive Database". P*olicy Research Paper No.3628*, World Bank, June.

IV. EXTANT REGULATORY AND SUPERVISORY FRAMEWORK IN INDIA

Regulatory Framework for Scheduled Commercial Banks

10.86 The regulation and supervision of commercial banks in India has traditionally been carried out by the Reserve Bank as mandated in the Banking Regulation Act, 1949 and the Reserve Bank of India Act, 1934. The main elements of regulatory framework, which has evolved from time to time, comprise branch authorisation policy, prudential norms, corporate governance, foreign investment norms, priority sector norms, and statutory requirements, *viz.*, cash reserve ratio (CRR) and statutory liquidity ratio (SLR).

10.87 The minimum statutory requirements for setting up new banks in India are stipulated in the Banking Regulation Act, 1949. The Reserve Bank spells out the eligibility criteria for entry of new banks as and when fresh applications from prospective entrants are invited.

10.88 With the objective of liberalising and rationalising the branch authorisation policy, a revised policy framework was put in place in September 2005, which was consistent with the medium term corporate strategy of banks and public interest. In terms of this policy, the extant system of granting authorisations for opening individual branches from time to time was replaced by a system of giving aggregated approvals, on an annual basis, through a consultative and interactive process. Further, in terms of the revised policy, banks are not required to approach regional offices of Reserve Bank for licences for opening branches and off-site automated teller machines (ATMs). Notwithstanding the above system of submission of annual branch expansion plans by banks, they are free to approach the Reserve Bank for any urgent proposals regarding opening of branches, especially in rural/under-banked areas (districts) anytime during the year, in addition to the approvals given under the annual plan. Further, banks are not required to obtain the Reserve Bank's prior permission for installation of ATMs installed at authorised branches/extension counters (on-site ATMs). However, prior approval of the Reserve Bank is required for installation of off-site ATMs. The branch authorisation policy for Indian banks is also applicable to foreign banks, subject to certain conditions.

10.89 Banks are subject to prudential norms prescribed by the Reserve Bank on income recognition, asset classification and provisioning. These norms have been strengthened over time to match the international standards. Banks are required to classify their assets into four broad categories, *viz.*, (i) standard assets, (ii) sub-standard assets, (iii) doubtful assets; and (iv) loss assets. Other than standard assets, the remaining three categories are non-performing assets (NPAs). An asset is classified as NPA if the instalment of principal or interest remains overdue for a period of more than 90 days. A sub-standard asset is one which has remained NPA for a period less than or equal to 12 months. An asset is treated as doubtful if it remains in sub-standard category for more than 12 months. A loss asset is defined as the one where the loss has been identified by the bank or internal or external auditors or the Reserve Bank inspection but the amount has not been written off wholly. Banks are required to make a general provision of 10 per cent on total outstanding for sub-standard assets. However, in case the sub-standard exposures are 'unsecured', they would attract a provision of 20 per cent. The provisioning requirements vary from 20 to 100 per cent on secured portion of advances classified as 'doubtful' depending on the period for which an asset has remained 'doubtful', 100 per cent on unsecured portion of doubtful assets and 100 per cent on loss assets. Apart from specific provisioning for NPAs, banks are also required to make general provisioning for standard assets at the rate of 0.25 per cent to 2 per cent for the funded outstanding on a global loan portfolio basis. The standard assets provisioning is prescribed at 0.25 per cent for direct advances to agricultural and small and medium enterprise (SME) sectors; at 1 per cent for residential housing loans beyond Rs.20 lakh; at 2 per cent for advances to specific sectors, like personal loans (including credit card receivables), loans and advances qualifying as capital market exposures, commercial real estate loans, loans and advances to non-deposit taking systemically important non-banking financial companies (NBFCs); and at 0.40 per cent for all other advances.

10.90 The Indian banks with international presence and foreign banks operating in India currently follow the Basel II capital adequacy norms which came into force from end-March 2008. They are required to follow the standardised approach for credit risk and basic indicator approach for operational risk (see Chapter V for details). All other banks on Basel I are required to migrate to Basel II framework by end-March 2009. As against the international norms of capital to risk-weighted assets ratio (CRAR) of 8 per cent, the CRAR for banks in India has been stipulated at 9 per cent for banks both under Basel I and II.

10.91 In view of better risk management, banks in India are required to limit their exposure to different industries, sectors, NBFCs, individual borrowers, group borrowers and the capital market. As per the extant norms, the credit extended to a single borrower should not exceed 15 per cent of capital funds. In the case of a group borrower, this limit is fixed at 40 per cent of the total capital funds. In addition, banks may, in exceptional circumstances, with Board's approval consider enhancement of the exposure to a borrower/group of borrowers by 5 per cent of capital funds. Banks can extend an additional 5 per cent and 10 per cent to a single borrower and a group of borrowers, respectively, if the additional amount is for financing infrastructure. Further, banks

are also advised to limit their exposure to specific sectors such as textiles, jute, tea, among others, in such a manner that the risk is evenly spread over the sectors. Similarly, the exposure of the bank to a single NBFC/NBFC-Asset Financing Company (AFC) is fixed at 10 per cent/15 per cent, respectively. In this case also, an additional 5 per cent is permissible if the additional amount is going to finance infrastructure. The exposure of banks to the capital market in all forms is fixed at 40 per cent of its net worth as on March 31st of the previous year. However, within this overall ceiling, bank's direct investment in shares, convertible bonds/debentures, units of equity-oriented mutual funds and exposure to venture capital funds (VCFs) should not exceed 20 per cent of its net worth.

10.92 Banks can invest in a variety of instruments such as government securities, other approved securities, shares, debentures and bonds, subsidiaries/joint ventures and other instruments like commercial paper and mutual fund units, among others. Banks are required to classify their entire investment portfolio into 'held-to-maturity' (HTM), 'available for sale' (AFS) and 'held for trading' (HFT) categories. Banks are required to follow the prudential norms for the classification, valuation and operation of investment portfolios as laid down by the Reserve Bank from time to time. As per the extant guidelines, banks are allowed to frame their own investment policies stating clearly the broad investment objectives to be followed while undertaking transactions on their own and on behalf of clients, procedures to be followed by various functionaries, prudential limits and reporting system.

10.93 In order to attain a well-diversified ownership structure, no single entity or a group of related entities can have shareholding or control, directly or indirectly, in excess of 10 per cent of the paid-up capital of a private sector bank. A bank cannot have shareholding in excess of 5 per cent in any other bank in India. Private sector banks are required to undertake a process of due diligence to determine the suitability of the person for appointment/re-appointment as a director on the Board based on qualification, expertise, track record, integrity and other 'fit and proper' criteria and also obtain necessary information and declaration from the directors for the purpose. Fit and proper criteria are also applied to elected directors on the boards of nationalised banks under Banking Companies (Acquisition and Transfer of Undertakings) Act, 1970/ 1980 and associate banks of State Bank of India (SBI) under the State Bank of India (Subsidiary Banks) Act, 1959. Foreign investment limit from all the sources in private banks cannot exceed 74 per cent. Foreign banks are permitted to operate in India through one of the three channels, *viz*., (i) branch/es; (ii) a wholly owned subsidiary; or (iii) a subsidiary with aggregate foreign investment up to a maximum of 74 per cent in a private bank.

10.94 The Banking Regulation Act provides the legal framework for the merger and amalgamation of banking companies in India. There are two types of amalgamations, *viz*., voluntary and compulsory. Under the voluntary amalgamation, the amalgamation policy has to be approved by two-third of the shareholders of both the banking companies and approved by the Reserve Bank. Under the compulsory amalgamation, the Central Government, on an application made by the Reserve Bank can announce moratorium on a banking company for a certain period. During the period of moratorium, the Reserve Bank is required to prepare an amalgamation/reconstruction plan. The plan is submitted to the Government of India and if approved by the Government, amalgamation comes into force (see Chapter VIII for details).

10.95 Banks in India are required to meet the prescribed targets for lending to the priority sector. The overall ceiling on priority sector lending has been fixed at 40 per cent and 32 per cent for the domestic and foreign banks, respectively. These targets are calculated as a percentage of adjusted net bank credit (NBC) or credit equivalent amount of off-balance sheet exposures, whichever is higher.

10.96 All commercial banks, including the branches of foreign banks functioning in India, local area banks and regional rural banks are covered under the Deposit Insurance Scheme. All eligible co-operative banks as defined in Section 2(gg) of the Deposit Insurance and Credit Guarantee Corporation (DICGC) Act are covered under the Deposit Insurance Scheme. Under the provisions of Section 16(1) of the DICGC Act, the insurance cover is limited to Rs.1,00,000/- only per depositor for deposits held in 'the same capacity and in the same right' at all the branches of the bank taken together. The DICGC insures all bank deposits such as savings, fixed, current, recurring, except the deposits of (i) foreign Governments; (ii) Central/State Governments; (iii) State Land Development Banks with the State co-operative banks; (iv) inter-bank deposits; (v) deposits received outside India; and (vi) deposits specifically exempted by the DICGC with the previous approval of the Reserve

Bank. The DICGC collects insurance premia from insured banks for administration of the deposit insurance system. The premia to be paid by the insured banks are computed on the basis of their assessable deposits at the flat rate of 10 paise per Rs.100 assured. The premium paid by the insured banks to the DICGC is required to be borne by the banks themselves and is not passed on to the depositors.

10.97 The asset-liability management (ALM) framework is in place to guard against asset liability mismatches. It is complemented by a comprehensive risk management system to take care of credit risk, market risk and operation risk. A system of prompt corrective action (PCA), involving initiation of certain structured actions in case of banks which hit trigger points in terms of three parameters, *viz.*, (a) CRAR; (b) ratio of net NPAs to net advances; and (c) return on assets, is in place.

10.98 Banks are required to maintain CRR which is currently 9.0 per cent of net demand and time liabilities, and the SLR which is currently 25 per cent of their net demand and time liabilities. Banks are free to decide their deposit interest rates, except the saving deposit interest rate, which has been fixed at 3.5 per cent. Banks are also free to decide their lending rates, except those pertaining to exports, small loans up to Rs. 2 lakh and the differential rate of interest (DRI) scheme.

Supervisory Framework for Scheduled Commercial Banks

10.99 The supervisory jurisdiction of the commercial banks laid down in the Banking Regulation Act, 1949 requires the Reserve Bank to inspect the banking companies[2] both inside and outside India. Such powers, however, are exercised by the Board for Financial Supervision (BFS) constituted as a Committee of the Central Board of Directors of the Reserve Bank in 1994 (Box X.10).

10.100 As on March 31, 2007, the BFS had supervisory jurisdiction over 82 scheduled commercial banks (52,036 branches), 1,813 urban co-operative banks (7,453 branches), 12,968 NBFCs, 7 financial institutions (FIs) and 6 primary dealers. The BFS was assisted by 3,326 officials (Department of Banking Supervision – 1,037; Department of Non Banking Supervision – 456; Internal Debt Management Department – 44; Department of Banking Operations and Development – 330; Rural Planning and Credit Department – 751; and Urban Banks Department -738).

10.101 The supervisory framework that operates under the aegis of the BFS has complex and multiple objectives. First, the basic strategy of the BFS is to provide an integrated supervisory focus on the financial system. In the individual sectors, while the supervision of the individual banks/FIs/NBFCs is the primary target, an equally important objective of the BFS is the intra-sector integrated supervision.

10.102 At present, the supervisory approach of the Reserve Bank in respect of commercial banks is to exercise oversight through two tracks – formal and informal. While the formal track comprises on-site inspection and off-site monitoring, the informal/ unstructured approach includes interactions with the banks' executives at the senior and top management level, including those in the quarterly informal discussions with the Chief Executive Officers (CEOs) of the banks, market intelligence and *ad hoc* collection of information, among others.

10.103 The basic objective of supervision of banks is to assess the solvency, liquidity and operational health of banks. The on-site inspection of banks referred to as Annual Financial Inspection (AFI) is conducted annually (except in the case of SBI in which case it is done once in two years). A team of inspecting officers from the Reserve Bank led by the Principal Inspecting Officer (PIO) visits the bank and conducts the inspection based on the CAMELS, the modified version of internationally adopted CAMEL model to suit the needs of the Indian banking system. The focus of the AFI in recent years has been on supervisory issues relating to securitisation, business continuity plan, disclosure requirements and compliance with other existing guidelines. In order to have an overall perspective, operating units such as branches, treasury units, dealing rooms and other offices such as controlling offices of the bank throughout the country are also taken up for inspection generally by additional teams. The operating units and other offices are selected through sampling techniques largely to cover the major part of the banks' credit portfolio. Such on-site inspections mostly involve examination of the

[2] For the purpose of this section, the expression "banking company" shall include-
(i) in the case of a banking company incorporated outside India, all its branches in India; and
(ii) in the case of a banking company incorporated in India- (a) all its subsidiaries formed for the purpose of carrying on the business of banking exclusively outside India; and (b) all its branches whether situated in India or outside India

Box X.10
Board for Financial Supervision and its Major Initiatives

The Board for Financial Supervision (BFS) was constituted in November 1994 as one of the Committees of the Central Board of Directors of the Reserve Bank. The Board is drawn from the members of the Central Board of the Reserve Bank with the Governor as Chairman and one of the Deputy Governors as full time Vice-Chairman. Other Deputy Governors of the Reserve Bank are its *ex-officio* members and four non-official directors of the Central Board of Directors of the Reserve Bank are co-opted as members.

The BFS functions under the RBI (BFS) Regulations, 1994. The provisions of these regulations are in addition to and not in derogation of the RBI General Regulations, 1949. The Board exercises the powers of supervision and inspection under the RBI Act, 1934 and the Banking Regulation Act, 1949 in relation to the different sectors of the financial system. It also performs other functions and exercises powers as specified by the Central Board of Directors from time to time. Three members of whom one has to be the Chairman or Vice Chairman form a quorum for transacting the business of the Board. The Board submits a report to the Central Board every half-year. The Board ordinarily meets at least once every month. As of June 30, 2008, the Board has held 161 meetings.

The BFS was initially given the mandate for supervision of commercial banks, FIs and NBFCs. Subsequently, urban co-operative banks and primary dealers were also brought under the purview of the BFS. The BFS considers inspection reports and other supervisory issues placed before it by the supervisory and regulatory departments. Subject to the provisions of the RBI (BFS) Regulations, 1994, an Advisory Council consisting of five members, eminent in the fields of law, accountancy, banking, finance and management for tendering advise to the BFS was constituted. When the tenure of the Council expired in March 1998, the need for the continuation of the Advisory Council was reviewed and it was decided to discontinue the institutional arrangement in the form of Advisory Council.

The Board has the powers to constitute sub-committees as deemed necessary to assist it in its work. Accordingly, the BFS constituted an Audit sub-Committee in January 1995 with the Vice Chairman of BFS as the Chairman of the sub-Committee and two non-official members of the BFS as other members. The sub-Committee has been reconstituted from time to time. The main focus of the Audit sub-Committee is on up-gradation of the quality of the statutory audit and concurrent audit/internal audit function in banks, NBFCs and FIs, fixing remuneration, approval of the panel of the statutory auditors and branch auditors as also the accounting and the disclosure standards. The Audit sub-Committee meets as and when detailed examination on these issues is required. The Audit sub-Committee of the BFS has reviewed the system of concurrent audit, norms of empanelment and appointment of statutory auditors, the quality and coverage of statutory audit reports, and the important issue of greater transparency and disclosure in the published accounts of supervised institutions.

Prior to the constitution of the BFS, the supervision of commercial banks was mainly through the on-site inspections conducted at periodical intervals. The BFS, in its first meeting, approved a new strategy of supervision, the key elements of which included (i) the setting up of an off-site surveillance function based on in-house monitoring of banks and other credit institutions; (ii) building a "memory" on all supervised institutions and setting up a market intelligence and surveillance unit; (iii) restructuring the system of bank inspections in terms of focus, process, reporting and follow up; (iv) strengthening the statutory audit in banks and enlarging the role of auditors in the supervisory process including using them as agents; and (v) strengthening the internal defences within the supervised institutions such as corporate governance, internal control and audit function, and management information and risk control systems, as an extension of the task of supervision. The BFS has taken several other initiatives to strengthen the supervisory framework (Annex X.1).

operating processes and the transactions. For the purpose of sampling, reported incidents of fraud, level of NPAs and exposure to sensitive sectors, among others, are also factored. Major findings of these inspections are documented separately and communicated to banks for necessary rectification. At the same time, the findings are taken by the Inspection Team of the bank as critical inputs for the inspection of the bank as a whole. The timeframe for carrying out the inspection of the corporate head office of the bank generally ranges between two to three months. The inspection report is generally finalised within four months.

10.104 On completion of the inspection, the inspection report is issued to the bank for perusal, corrective action and compliance. Further, a detailed discussion on the findings of the inspection and the road ahead is laid down by the Reserve Bank with the CEO/Chairman-cum-Managing Director (CMD) and other senior functionaries of the bank and a monitorable action plan is decided and/or supervisory action is taken, wherever warranted. The major findings recorded in the inspection report along with the responses of the CEO/CMD of the bank are placed before the BFS. Based on the findings of the inspection and other inputs, a supervisory rating is assigned to the bank.

10.105 All inspection findings on banks and FIs are brought before the BFS in the form of bank/FI-wise memorandum for review and directions. Based on the inspection observations, the BFS can direct placing of weak banks/certain banks with critical concerns under a monthly monitoring mechanism for more focused and consistent monitoring and follow-up. The progress in compliance to the issues plaguing these banks is reviewed by the BFS on a monthly basis till the bank/s is/are brought out of the monthly monitoring mechanism. A "prompt corrective action" framework was also operationalised under the aegis of the BFS in 2002 so as to trigger corrective action on banks at the earliest possible sign of weakness and to prevent any major deterioration in a bank's performance.

10.106 Off-site monitoring involves assessment of the financials at quarterly intervals and in some cases at monthly intervals. The off-site surveillance and monitoring system (OSMOS), which was set up in 1995 as part of crisis management framework for early warning system and as a trigger for on-site inspections of vulnerable institutions, is based on the prudential supervisory reporting framework covering capital adequacy, asset quality, loan concentration, operational results, connected lending, profile of ownership, control, management, liquidity and interest rate risks. The primary objective of the off-site returns is to estimate the financial condition of the banks in between on-site examinations of banks and to set priorities for the allocation of scarce supervisory resources.

10.107 The current supervisory strategy of the Reserve Bank in respect of the commercial banks is to make the supervisory process as continuous as possible even while continuing with the CAMELS model of on-site supervision, which is an annual evaluation of the financial health of the banks. To render the process continuous, banks are required to submit quarterly and in some cases monthly returns in structured format on their capital adequacy position *vis-à-vis* risk weighted assets, liquidity position, large exposures and non-performing assets. These returns are analysed and supervisory concerns are conveyed to the banks for taking action as appropriate. These data and the observations arising out of the analysis are used as inputs by the inspection teams at the time of inspection of the head office or the corporate office of the banks.

Regulatory and Supervisory Framework for Regional Rural Banks

10.108 Regional Rural Banks (RRBs) are established by notification of the Government of India under the Regional Rural Banks Act, 1976. As such, these banks do not require any license from the Reserve Bank for the conduct of banking business. The capital for these banks is contributed by the Union Government, the State Government and a sponsor bank in the ratio of 50:15:35. While the RRB itself does not require a license, opening of branches requires license from the Reserve Bank. The regulation of these banks is vested in the Reserve Bank by virtue of powers vested in it under the Banking Regulation Act, 1949 and the Reserve Bank of India Act, 1934. The supervision of these banks has been entrusted to National Bank for Agriculture and Rural Development (NABARD) under Section 35(6) of the Banking Regulation Act, 1949, without prejudice to the similar powers of the Reserve Bank.

10.109 While income recognition and asset classification norms are applicable to RRBs as in the case of commercial banks, capital adequacy norms have so far not been made applicable to them. However, RRBs are required to disclose their capital adequacy in their balance sheets with effect from the year ended March 31, 2008. As compared with requirement of 40 per cent for domestic commercial banks, RRBs are required to lend 60 per cent of their advances to the priority sector. However, there are no penal provisions for not achieving the norms.

Regulatory and Supervisory Framework for Urban Co-operative Banks

10.110 The urban co-operative banks (UCBs) along with other co-operative banks were brought under the regulatory ambit of the Reserve Bank by extending the provisions of the Banking Regulation Act, 1949 with effect from March 1, 1966. As per the statutory provisions, while banking related activities such as issue of license to start new banks/branches, matters relating to interest rates, loan policies, investments, prudential exposure norms *etc*. are regulated and supervised by the Reserve Bank, powers in connection with the issues such as incorporation, registration, management, amalgamation, reconstruction or liquidation are exercised by the Registrar of Co-operative Societies of the State concerned in terms of the respective Co-operative Societies Act of the State and Central Registrar in the case of Multi-State banks.

10.111 The current regulatory regime for UCBs is based on the 'Vision Document' released in March 2005, which, *inter alia,* provides for a two track differentiated regulatory framework for UCBs categorised as Tier I and Tier II based on deposit level and areas of operation. In order to achieve the objective

of rationalising the regulatory and supervisory framework for UCBs, they were classified as Tier I banks (unit banks, *i.e.*, banks having branch/es within a single district, with deposits up to Rs.100 crore) and Tier II banks (*i.e.*, all other UCBs). While both Tier I and Tier II UCBs are subject to the same capital adequacy requirement and prudential guidelines on exposure norms, Tier I UCBs are subject to stricter loan impairment norms, provisioning requirements on standard advances, enhanced risk weight on commercial real estate advances and disclosures in their balance sheets.

10.112 The 'Vision Document' also provides for Memoranda of Understanding (MoU) between the Reserve Bank and the other regulators, *viz.*, the State Governments and the Central Registrar of Co-operative Societies (CRCS). The MoU is a working arrangement between the Reserve Bank and the State Government/ CRCS to ensure that the difficulties arising out of duality of control over UCBs are suitably addressed and resolved. In terms of the MoU, the Reserve Bank undertakes to constitute a State Level Task Force for Urban Co-operative Banks (TAFCUB) with representatives from the Reserve Bank, State Government and the urban co-operative banking sector for identification and drawing up of a time bound action plan for the revival of potentially viable UCBs and providing non-disruptive exit route for non-viable UCBs. The MoU also seeks to encourage and facilitate human resources development and information technology (IT) initiatives in UCBs. So far, nineteen State Governments comprising 1,597 UCBs have entered into MoU with the Reserve Bank, thereby covering 90.0 per cent of the total number of UCBs representing 95 per cent of the total deposits of the sector.

10.113 In order to take appropriate supervisory steps based on banks' financial conditions, banks are classified into four grades, *viz.*, Grade I, II, III and IV on the basis of capital adequacy, level of NPAs, history of profit/loss and, statutory inspections or scrutiny of books of accounts of UCBs conducted by the Reserve Bank[3]. The measures taken by the Reserve Bank insofar as the banks in Grades II, III and IV are concerned can be grouped broadly into two categories; (a) those aimed at strengthening the financial position of the banks; and (b) those aimed at limiting the growth of assets and liabilities. The periodicity of on-site inspections of UCBs is as follows: once in a year for scheduled UCBs; once in a year for Grade III/IV non-scheduled UCBs; once in 18 months for Grade II banks; and once in two years for other banks. A system of graded supervisory approach is followed while taking supervisory action in respect of Grade III and IV banks in non-MoU States. The Reserve Bank has also evolved a supervisory rating system based on CAMELS methodology to assess the aggregate strength and soundness of the urban co-operative banking system as a whole.

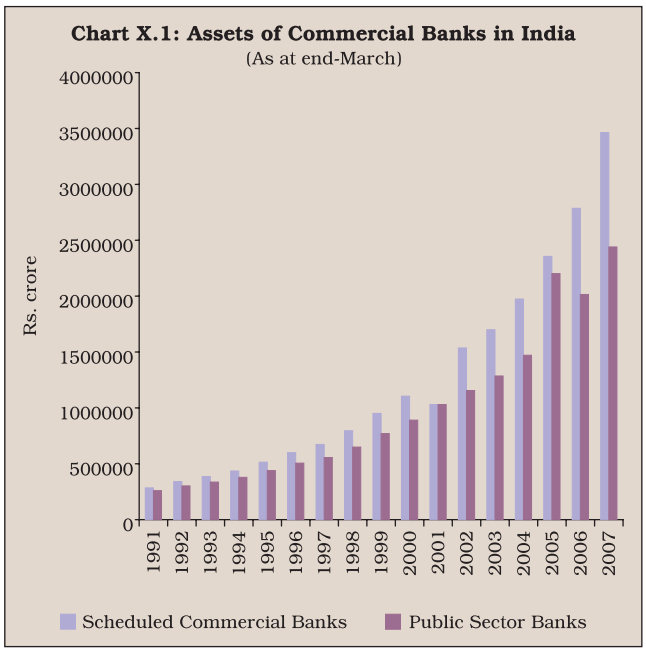
V. REGULATORY AND SUPERVISORY CHALLENGES

10.114 The primary objective behind regulation and supervision of banks has been to promote the safety and soundness of the financial system. The banking sector in India has witnessed a rapid growth in terms of volumes and spread of business. The range of products that banks deal in has also expanded substantially. The domestic banking system is increasingly getting integrated with the global banking system. The distinctions among banks and other financial service providers are also getting increasingly blurred. All these pose new challenges for the banking regulator in India.

Supervisory Challenges Posed by the Expanding Banking Sector

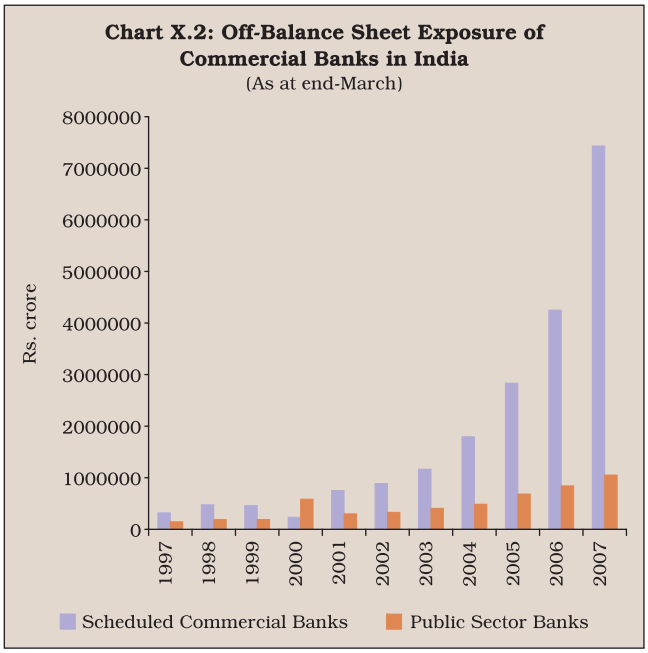
10.115 Progressive de-regulation, cross-border dealings and globalisation, wider range of products and services, and improvement in technology and communication over the years have brought about several changes in the operations of banks – both balance sheet and off-balance sheet. The size of the balance sheet of banks in India has expanded significantly, especially in the last few years (Chart X.1).

[3] Sound banks having no supervisory concerns are classified as Grade I. Banks meeting any one of the following parameters are classified under Grade II (problem banks): (i) CRAR of one per cent below the prescribed norms, or (ii) net NPAs of 10 per cent or more, but below 15 per cent, or (iii) incurred a net loss for the previous financial year, or (iv) defaults in the maintenance of CRR/SLR in the previous financial year and/or there is more or less a continuous default in maintenance of CRR/SLR during the current year. Banks meeting any two of the following conditions are classified under Grade III: (i) CRAR of less than 75 per cent of the minimum prescribed but 50 per cent or above the level required; or (ii) net NPA of 10 per cent or more, but less than 15 per cent; or (iii) incurred net losses for two years out of the last three years. Banks meeting the following conditions are classified under Grade IV: (i) CRAR of less than 50 per cent of the prescribed limit, and (ii) net NPA at 15 per cent or more or incurred net losses for the last three consecutive years.



10.116 Along side assets, off-balance sheet exposures of scheduled commercial banks have also increased sharply over the years (Chart X. 2).

10.117 The risks faced by banks have also increased manifold. Banks have spread their presence geographically in terms of branch networks organically and through third party service providers inorganically. Aided by technology and telecommunication, banks have reached out to millions of customers through the internet, mobile



connectivity and ATMs at places even where they may not have physical presence. Number of ATMs increased by 53.5 per cent from 17,642 at end-March 2005 to 27,088 at end-March 2007. With each new customer added to the banks' books either on the liability side or the asset side or off-balance sheet through contracts for some financial service, banks' business is expanded. There has been increasing use of third party service providers by the banks for transaction processing, data processing, document processing and storage, loan application processing and internal audit, among others. Indian banks are also venturing overseas and setting up offices/ branches in more and more countries. Banks have also expanded beyond the national boundaries to set up branches abroad. Several foreign banks are showing willingness to set up office in India. Besides the geographical expansion, banks have expanded across the sectors of the financial system through product innovations, cross-selling of products and financial conglomeration. The business and risk profile of banks is also undergoing a change with more and more banks expanding into newer areas. The number of subsidiaries set up by banks, which were 37 at end-March 1998, increased sharply to 131 by end-March 2008. Banks have also, of late, been bringing in new products/innovative financial instruments. The expansion of banks across geographical locations and products has not only added complexity to their operations but has also tended to make their operations somewhat obscure.

10.118 The rapid expansion of the banking sector poses a challenge to the Reserve Bank/BFS. Given the limited supervisory resources, it becomes a challenging task to exercise oversight on the expanding banking sector. This is especially because the Reserve Bank subjects all the banks to annual inspections under the CAMELS model and inspects a sizeable number of branches, controlling offices and other operating units of each bank in every inspection cycle in a very extensive manner, replicating the CAMELS model as far as applicable.

10.119 Apart from the expanding size, the increasing complexity of operations also poses a challenge. Over and above the traditional skills, the supervisor is required to possess specialised skills relating to financial risk management. The growing complexity also requires supervisors to possess quantitative skills to examine/validate various risk models evolved/ adopted by the banks. The demand for supervisory resources, which are already scarce, is expected to rise once Basel II becomes fully operational. The need

for specialised skills both by the Reserve Bank and banks is expected to increase competition for skilled persons between the supervisor and the industry. Therefore, attracting and retaining the skilled staff would be a major challenge that the Reserve Bank would have to contend with.

10.120 In view of the increased competition, the supervisor would need to make difficult choices as to how much it should invest in which staff and for what skill, given the increased probability of losing supervisors with enhanced skills. Some supervisory agencies have evolved a strategy of not recruiting highly skilled people but people having potential to develop skill. As the scheme operates, they recruit ordinary graduates but later encourage and finance them to acquire professional qualification from universities through tie-ups. While this removes the constraints supervisors would otherwise face in the open market recruitment for skill, the risk of losing the qualified personnel to the market subsequently still remains a real one.

10.121 These solutions are, however, not easy to adopt as the public policy agencies need legal and political mandate for such engagements. Moreover, the outside staff will have to adapt to the regulator's work culture and acquire regulator's domain knowledge before they appreciate the regulatory objectives and deliver the regulatory outputs as needed. Also, inducting the external resources, *albeit* for short-term, in itself is a costly process. Besides, the real utility of the outcomes insofar as supervisory objectives are concerned is yet to be established.

10.122 Many jurisdictions all over the world have sought to rationalise the supervisory processes to address the paucity of resources *vis-à-vis* increasing supervisory responsibility. The Core Principles of Bank Supervision issued in October 2006 explicitly set out in Principle 24 that the supervisory resources should be allocated as per the risk profiles of the supervised entities. The risk-based approach to supervision aims at differentiating banks in accordance with their risk profiles and induces a flexible approach in deciding the quantum of supervisory attention and application of supervisory tools. To be specific, the concept of risk-based supervision (RBS) moves from a broad-based, uniform, annual, on-site inspection focused on verification of transactions and asset valuation to a discriminatory cycle of supervision focused on targeted areas of operations identified by the risk perceptions of the supervisor. Another characteristic of this supervisory process is that it mostly does not target the evaluation of the financial health or soundness of the supervised entity unless there are clear circumstances and information indicating significant deterioration in the health of the institution. Therefore, generally, the supervision is mostly confined to the examination of the management and control processes with certain samples of transaction testing at varying degrees, depending on the area under examination. Many jurisdictions have adopted the RBS model to achieve optimum allocation of resources.

10.123 In India, while the traditional CAMELS process is still in use, there is a definite move towards more rational allocation of supervisory resources through the risk oriented approach. Under the guidance of the BFS, the Reserve Bank has been attempting to shift to the RBS. The process involves continuous monitoring and evaluation of the appropriateness of the risk management system in the supervised institution in relation to its business strategy and exposures with a view to assessing its riskiness. The parallel pilot run of the RBS has continued along with the CAMELS model of supervision. After assessing the preparedness of banks, RBS has been taken up for 27 banks so far. Based on the experience gained through the pilot run of RBS, it has been decided to review the model that was attempted to be used in India for making the supervisory process risk-based. Accordingly, an internal working group has been set up to study systems in other countries and recommend an appropriate framework in the Indian context for risk- based supervisory process. Recent events in the financial systems of the matured markets, including the Northern Rock crisis in the UK, have raised the key questions about the efficacy of supervisory processes adopted in those countries. Besides, a more fundamental question that has come to the fore and has generated considerable debate is whether there can be a 'one-size-fits-all' model for all countries for risk-based approach to banking supervision. In fact, the revised Core Principles have explicitly made reference to this issue and have given up RBS as one of the principles with the observation that there is no universally acceptable model for risk-based approach to supervision. Currently, the Reserve Bank is revisiting its own supervisory processes which have evolved over the years. A preliminary evaluation suggests that India has to evolve its own approach to risk-oriented supervisory process suited to its socio-cultural and economic settings.

10.124 Given the state of evolution of risk management standards, risk orientation in the banking system, including the supervisory structure, the approach will have to be very gradual. It is also difficult to accept some of the key characteristics of the advanced countries' model. For instance, the advanced countries' model envisages, for the sake of optimal utilisation of resources, no on-site supervision of some low risk banks, or on-site visits instead of on-site examination. These differentiations are made on the ground that some banks are not needed to be evaluated repeatedly in a routine manner for ascertaining their financial health. This strategy may not be an optimal solution for India for two reasons. One, the past events have shown that there could be rapid deterioration of health of a bank even days after supervisory evaluation had shown that the bank was in very good health. The complex products, leveraged exposures and complex inter-linkages that banks have established with the non-banking sector and other entities in the financial sector could suddenly generate huge risks for a bank and make them illiquid, which, in turn, could drive it to the state of insolvency in no time. Therefore, simple process evaluation envisaged in respect of low risk banks or high risk banks with good risk management processes may not be suitable for India. In India, the statute coupled with the evolved supervisory policy (delegated legislation) requires the Reserve Bank to make the solvency evaluation of all banks at same frequency/periodicity and intensity. Two, the advanced countries' model envisages politically mandated supervisory regime that does not guarantee zero failure banking system. This may not be acceptable in the Indian conditions.

10.125 Though the risk based allocation of resources is one of the solutions, it may not be the only solution. Conducting the supervision off-site through automated means and using the IT solutions could be more effective and less time consuming without deployment of many supervisors. In fact, the on-site part of the RBS is reinforced through the off-site supervision. This is a typical example of how the supervisory processes can be internally integrated to achieve greater output than what each of the processes would deliver (Box X.11).

Issues Relating to Financial Conglomerates and the Supervisory Structure

10.126 Banks in India started diversifying by setting up subsidiaries/affiliates in the 1980s when the Banking Regulation Act, 1949 was amended to allow banks to conduct non-traditional businesses. Similar changes also occurred in other sectors. Mutual funds were initially allowed to be set up by public sector banks in the late 1980s and subsequently in the private sector in the early 1990s. The insurance sector was also thrown open to the private sector in the 1990s. As a result, many groups/financial conglomerates emerged over the years. Since a non-bank member of a group can endanger the stability of a bank, the Reserve Bank in 2000 mandated that a parent bank should consolidate all subsidiaries, barring those specifically permitted to be excluded under Accounting Standard (AS) 21. In 2006, NBFCs promoted by the parent/group of a foreign bank operating in India, which is a subsidiary of the foreign bank's parent/group or where the parent/group is having management control, were brought under the ambit of consolidated supervision. Consequently, the concerned foreign banks are required to submit the consolidated prudential returns and also comply with the prudential regulations/norms prescribed to the consolidated operations of that bank in India. These foreign banks in India need not prepare 'consolidated financial statements' under AS 21. They may consolidate the NBFCs with the bank's Indian operations on a line by line basis for the purposes of consolidated prudential regulations by adopting the principles of AS 21 as applicable to consolidation of subsidiaries. Consolidated supervision signifies a comprehensive approach to banking supervision which seeks to evaluate the strength of the entire group, taking into account all the risks which may affect a bank, regardless of whether these risks are carried in the books of the bank or related entities.

10.127 In view of the intra-group transactions and exposures (ITEs) and their ability to exploit regulatory gaps, the segmented approach to regulation of financial conglomerates had serious limitations. Therefore, in order to address these broad supervisory issues, the three major financial sector supervisors in India, *viz.,* the Reserve Bank, Securities and Exchange Board of India (SEBI) and Insurance Regulatory and Development Authority (IRDA), decided to establish a special monitoring system for systemically important financial intermediaries (SIFIs). The financial conglomerate (FC) monitoring framework was put in place in India in June 2004. The FC monitoring framework was further fine-tuned during 2006-07 based on the experiences gained in the course of the supervision of FCs in India. The definition of FCs was also revised. In terms of the revised definition, an FC is defined as

Box X.11
Integration of Supervisory Methodologies

Supervisory tools include on-site examinations and off-site surveillance from both macro and micro perspectives. On-site examinations are particularly important in developing countries, because insolvency of financial institutions in developing countries usually occurs due to credit losses. Proper understanding of credit losses in general and assessment of asset quality leading to supervisory demand for additional provisioning for NPAs is best achieved through on-site examination and verification. By determining asset quality and the condition of an institution, bank supervisors provide critical information to policymakers on the health of the financial system.

Traditional on-site examination tools which are generally employed in many countries focus on compliance with banking regulations and directives. As a result, prudential concerns for safety and soundness are often understated in the supervisory documents. Even in cases where supervisors attempt to address safety and soundness concerns, the examination process only provides a "snapshot" of the institution's condition as on a particular date without addressing potential risks and the management systems needed internally by the bank to control risk in a dynamic environment. For example, examiners may determine the condition of a bank's loan portfolio but may not evaluate the lending policies and practices that lead to loan problems or that may give rise to future loan problems.

To improve the effectiveness of on-site examination activities, supervisors need to move away from checking compliance with laws to assessing risk. To accomplish this, bank supervisors need to embrace a top-down approach that places emphasis on the direction and policies formulated by the board of directors and executive management. It is also important to review the business and strategic plans of individual banks and assess the capabilities of management to fulfill objectives. Banks need to be encouraged to establish and strengthen their own internal management systems as the first lines of defense against unsound, unsafe, or illegal banking practices. Management systems must encompass written policies and procedures, formalised planning and budgeting, internal loan review, compliance systems, internal and external audit activities, and internal controls.

Since the task of bank supervisors is to ensure the safety and soundness of the financial system – as opposed to individual banks – and to protect depositors - as opposed to shareholders of banks - supervisory activities should focus on the areas of greatest risk to the system, for example, large financial institutions or banks whose activities may lead to contagion. Within individual banks, efficient use of scarce supervisory resources should be made by targeting examination efforts to the areas of greatest risk, for example, asset quality, interest rate risk, foreign exchange activities, and so on. The examination should focus on the condition of the consolidated institution by examining those branches that have a significant impact on the institution's overall position, while the remaining branches could be evaluated on a sample basis.

In most developing countries, written examination procedures are less than adequate, or lacking altogether, so that the examiner must rely on his or her experience, knowledge, and skills. This leads to lack of uniformity and consistency in the conduct of on-site examinations from one examiner to the other. The lack of written examination procedures also deprives new staff of an essential training tool. A complementary aspect to written examination procedures is the documentation of work performed. Documentation may also be necessary to support legal enforcement actions proposed by the supervisors.

Off-site surveillance complements the on-site examinations by providing early warning of actual or potential problems and a means for monitoring and comparing financial performance. However, off-site surveillance should not be viewed as a means to replace on-site examination as the primary form of supervision in a developing country. The quality of information and integrity of data provided by banks in all countries must be verified. In developing countries, the information is often incomplete and inaccurate. Often, banks do not have the internal accounting and control systems to ensure timely and accurate preparation of information. In most developing countries, prudential reports, which form the basis for most off-site surveillance activities, are limited to those concerning liquidity, reserve requirement computations, and credit guidelines. Analysis often consists of simply checking compliance with certain balance sheet ratios. Rarely is information gathered to meaningfully appraise risk. Therefore, in most cases, it would be inappropriate to rely on off-site surveillance as more than a complement to on-site examinations.

a cluster of companies belonging to a Group[4], which has significant presence in at least two financial market segments. Banking, insurance, mutual fund, NBFC deposit taking and non-deposit taking are considered as financial market segments. The FC monitoring framework provides for a 'designated

[4] A Group is an arrangement involving two or more entities related to each other through any of the following relationships: Subsidiary - parent (defined in terms of AS 21), Joint venture (defined in terms of AS 23), Associate (defined in terms of AS 27), Promoter-promotee, a related party (defined in terms in AS 18), common brand name, and investment in equity shares of 20 per cent. A Group entity is any entity involved in the above arrangement.

entity' (quite often the parent or the dominant entity in the Group) which is entrusted with the task of collection and submission of data/information in the prescribed format to the principal regulator of the group. The Reserve Bank, SEBI and IRDA, the regulators for banking, securities and insurance market segments, respectively, are the three principal regulators for the present. There is, however, a provision to co-opt Pension Fund Regulatory and Development Authority (PFRDA) at a later stage as another principal regulator. The FC monitoring framework comprises three components (i) off-site surveillance through receipt of quarterly FC returns; (ii) periodic review by a Technical Committee having members from the Reserve Bank, SEBI and IRDA on concerns arising out of analysis of FC data, and other significant information in the possession of the principal regulators, which might have a bearing on the group as a whole; and (iii) holding of half-yearly discussions by the principal regulator, with the CEO of the FC in association with other principal regulators to address outstanding issues/supervisory concerns.

10.128 While the consolidated supervision framework focuses on the consolidated financial position of the banking group, the conglomerate monitoring mechanism is broader in scope and coverage. The conglomerate supervision tracks the ITEs, financial and non-financial linkages amongst the group entities and commonality of directors, among others. However, at present, there are no prudential regulations for undertaking supervision of FCs. An internal group in the Bank is studying the supervisory practices across the countries for regulation and supervision of the FCs. Their recommendations would be examined in consultation with SEBI and IRDA and appropriate action would be initiated to strengthen the conglomerate monitoring mechanism.

10.129 Several issues have arisen relating to operations of FCs and the monitoring arrangement evolved for them. First, the system of sectoral supervision provides opportunity for regulatory/ supervisory arbitrage. The issue is how to reconcile the differences in approach to prudential regulations/ norms followed by sectoral regulators. Second, while consolidated supervision guidelines are applicable to banking groups where bank is a parent/controlling entity, it excludes insurance entity from its prudential regulations. Consolidated supervision also does not look at ITEs for supervision purpose. The conglomerate monitoring mechanism, in turn, focuses on ITEs, but group-wide prudential regulations are not in place.

10.130 Third, there are important cross-border supervision issues associated with conglomerate supervision. Principles 23 to 25 of Basel Core Principles for Effective Supervision (BCP), *inter alia,* reiterate that as part of consolidated banking supervision, banking supervisors must monitor and apply appropriate prudential norms to all aspects of the business conducted by their banking organisations worldwide, including at their foreign branches, joint ventures and subsidiaries in order to ensure that these activities are conducted in a safe and sound manner. This entails establishing contacts and exchange of information with various other supervisors involved, including host country supervisory authorities. In many jurisdictions, bilateral arrangements have been made between supervisors for defining the scope of information to be shared and the conditions under which such sharing would normally be expected.

10.131 A more fundamental issue that has arisen recently is the appropriate structure of FCs in the Indian conditions. India has followed parent-subsidiary structure. Many of the issues arising from the operations of financial conglomerates stem from the basic character of FCs themselves as they deal with banking, insurance and other financial products within the same group but under different corporate structures. In view of these concerns, the Reserve Bank, in September 2007, released a discussion paper on 'Holding Companies in Banking Groups', wherein it was indicated that it will be useful to explore the possibility of adopting a bank holding company (BHC)/financial holding company (FHC) model.

10.132 As alluded to earlier, the holding company structure of financial conglomerates poses the least risk and avoids the benefit of safety net subsidy being passed on to the subsidiaries. Purely from the standpoint of safety and soundness and the level playing field between banks and non-banks, the holding structure is more appealing. However, from the organisational flexibility standpoint, the parent-subsidiary structure is found to be a more efficient way of delivering various financial services.

10.133 Under the present parent-subsidiary structure, the parent company is required to raise resources not only for its own expansion but also invest in subsidiaries. The holding company structure frees up the bank capital as the holding company will directly invest in various subsidiaries. In the holding company structure, risks are isolated from one another with regard to their losses and obligations and allow the group to undertake various activities. This, therefore, could facilitate faster expansion of financial services.

However, at the same time, the requirement of holding company structure may discourage, especially, small players to diversify. The parent-subsidiary structure itself entails some costs and duplication of efforts (for instance, multiple boards of directors, multiple establishments and multiple advertising). The empirical findings also suggest that branch banking organisations (integrated structure) exhibit significantly greater overall efficiency, suggesting that fully integrated structure are better able to control costs than holding companies (Berger, *et al.,* 1993). However, given the serious risks posed by the fully integrated structure, the additional costs of operating subsidiary structure are fully justified. That is, efficiency gains of fully integrated structure are foregone for the sake of stability. However, it is difficult to say the same thing about the parent-subsidiary structure and the holding company structure. Therefore, at this stage, it is not clear as to how the requirement of holding company structure would impact the further expansion of the financial sector.

10.134 The FC structure in India is also complex. There are both bank-led and non-bank-led FCs. Also, while some banks/non-banks have set up wholly owned subsidiaries for undertaking non-traditional activities, others have only majority stake in the subsidiaries floated. In the case of some FCs, promoters have only a minority stake in the promoted entities but share a common brand. For instance, HDFC Ltd., a housing finance company, has set up affiliates to engage in banking and insurance activities. HDFC, together with two wholly owned subsidiaries, however, holds 23.7 per cent equity in its promoted bank, but shares a common brand name with it as also with its insurance subsidiary in which it holds 79 per cent equity.

10.135 The holding company structure also raises several other issues. At present, there are foreign direct investment (FDI) limits in banks and insurance companies. The limits are 74 per cent in private banks and 26 per cent in insurance companies. How such FDI limits are to be fixed in a holding company is not clear. The holding company structure might also raise some taxation issues. For instance, whether tax would be payable at the subsidiary level or the holding company level. Taxation at the holding company level would allow losses in one subsidiary to be set off against the profits of another subsidiary. However, if such tax is to be paid at the subsidiary level, no such benefit may be available. Likewise, there would also be an issue whether dividend distribution tax would be payable only at the subsidiary level or it would be payable by the holding company. It is also not clear as to how public sector banks would form a holding company.

10.136 The adoption of the holding company structure would require supervision of the holding company for group-wide perspective and for prescribing capital requirements for the holding company. This, in turn, would require that one of the supervisors is designated as the umbrella supervisor. This would require legislative amendments. That is, while the parent-subsidiary structure is consistent with the multiple regulators framework, the introduction of the holding company structure would require appropriate legislative amendments.

10.137 In response to the emergence of FCs, some countries have adopted the institution of a super regulator. There have been some suggestions that India should also follow a system of super regulator (Mor and Nitsure, 2002). It is the blurring of distinctions among providers of various financial services and the complexity, which have led a unified regulatory body in some countries. Although there has been some blurring of distinctions among providers of various financial services and emergence of FCs in India, the blurring has not been to the extent so as to introduce a super regulator (Raj, 2005). The financial structure in India has not yet become as complex as in developed countries and there has been more reliance on standard commercial banking than in developed economies. The arguments in terms of efficiency for a unified financial supervisory authority are not so strong for a developing country like India as for other countries. A crucial issue to be addressed while creating unified supervisory structure is whether it should be created within the central bank or outside. If the unified structure is created within the central bank, it would lead to a serious moral hazard problem. On the other hand, if the unified structure is created outside the central bank, it would adversely affect Reserve Bank's supervisory capacity in respect of the banking sector and the ability to effectively manage the crisis situations. Thus, the answer to the question whether unified supervisory structure should be created within the central bank or outside is not an easy one and presents two very difficult choices with serious ramifications for the stability of the financial system. In the UK, where banking supervision has been separated from the central bank, a mechanism by involving the central bank has been worked out for managing the crisis situations. However, the failure of Northern Rock in the UK exposed serious limitations of such an arrangement. There are also

some serious practical problems faced by the policy-makers in unifying different supervisory agencies. A survey shows that legal constraints, departure of experienced personnel, lack of vision and clarity during their early years of existence as well as serious budgetary problems affecting the ability to operate efficiently were some of the major problems faced while creating unified structures (Martinez and Rose, 2003). It is possible that a single regulator that is to supervise all types of intermediaries, loses focus of the banking sector, which is most important from the systemic point of view and which dominates the Indian financial sector. The institution of a single regulator has not been tested of any serious crisis as yet. A single regulator also means that the responsibility of monetary stability and financial stability vests with two separate authorities. They may, at times, work against each other.

10.138 While several arguments have been advanced in favour of and against the super or integrated supervisor, the following points are important in assessing the model of integrated supervisor. First, the merging of standalone agencies into an integrated supervisory structure involves a major reorganisation of functions and is fraught with serious risks. Second, there is no single best form of integrated regulatory agency. Unified supervisory structure has been adopted differently in many countries, its application has varied from country to country and there is no single right way of introducing or implementing unified model of financial services supervision. Factors that accounted for the differences include differences in starting points, differences in industry structures and differences in objectives. For instance, Australia has adopted a unique supervisory structure, which is not based on institutions or products, but rather on regulatory objectives. Likewise, some countries have created unified structure within the central banks such as Singapore, others have created outside the central bank such as the UK. Third, notwithstanding the integrated supervisory structures created in some countries, it continues to be believed that while supervisory structure within the central bank creates a serious moral hazard problem (which is based on the premise that public will tend to assume that all creditors of institutions supervised by the central bank will receive the same protection), integrated supervisory structure outside the central bank erodes the synergies between banking supervision and monetary policy. Finally, a very strong argument against the integrated supervisory structure is that the nature of risks is sufficiently different to warrant a differentiated approach to prudential regulation. That is, while banking institutions have to be supervised for prudential reasons, other institutions such as mutual funds and securities firms are required to be supervised for providing adequate disclosures to investors. Therefore, it is strongly felt by many experts that a single regulator might not be able to make the necessary differentiation among different types of institutions and the risks undertaken by them, which could be detrimental to the overall stability of the financial system.

Challenges of Electronic Banking

10.139 Electronic banking (or e-banking) revolution has changed the entire spectrum of banking business in a fundamental way. Under this system, the banking business can be done even without the physical contact of the customer and the bank, and from anywhere in the world. E-banking encompasses a wide range of activities such as internet banking, ATMs, credit/debit cards, electronic fund transfer, *etc*. Of late, mobile banking has also emerged as a popular mode of banking. E-banking offers many benefits to both banks and customers. While the banks reap advantages such as lower cost of banking operations (or conversely economies of scale) and greater reach to the customers, the customers reap advantages such as easy access to banks, saving of time and faster response from the banks, among others.

10.140 It is evident from the experiences of different banks that along with the benefits, e-banking carries many risks. In particular, e-banking increases and modifies some of the traditional risks associated with banking such as strategic risk, operational risk and reputational risk. Some of the banking risks raised/heightened by the e-banking services are operational risk, security risk, legal risk and cross-border risk. The operational risk arising from technological failure may take the form of inaccurate processing of transactions, non-enforceability of contracts, compromises in data integrity, data privacy and confidentiality, and unauthorised access/intrusion to bank's systems and transactions, among others.

10.141 Confidentiality, integrity and authentication are very important features of the banking sector and were successfully managed in the traditional banking (Nitsure, 2003). The consumer expects efficient management of these features in the e-banking system. The failure of the underlying technology may pose serious challenges in managing these features of the banking sector raising serious security issues for the banks. This may arise on account of unauthorised access to a bank's critical information

stores such as accounting system, risk management system, portfolio management system either internally or externally. Outsourcing of e-banking services can also heighten the security risk involved in the e-banking business. The risk involved in outsourcing may be higher for those banks whose in-house technical expertise is poor. The in-house technical expertise can always be an overseer for the performance of the third party involved in the transactions.

10.142 Importantly, apart from modifying the banking risks, e-banking services raise some macroeconomic challenges. First, the mode of financial operation of the households and firms may take a variety of different forms in the e-banking system. This may delink the financial operations of the households and firms from the purely financial operations of the central bank, making the monetary policy of the central bank weaker. Second, in e-banking, the cost of financial transactions is very low as compared to the traditional banking. Further, cross-border transactions may also become much cheaper and easier under the e-banking operations. Thus, the movement of international capital flows may become much smoother and faster making the monetary policy less effective. Third, e-banking services are mainly confined to the educated elite of the society. Thus, while the educated elite group of the society enjoys the low transaction costs of the financial operations, the poorer classes may have to bear the major part of the cost of financial transactions (Nitsure, 2003).

10.143 In the context of developing countries, e-banking may raise some additional challenges due to the general technological backwardness and the lack of awareness of the population. Unless a country has the ability to adapt the global technology to the local circumstances, the country will not be in a position to reap the advantages of e-banking. An adequate level of infrastructure and human capacity building would be required for adapting the global technology to the local circumstances. It is observed that many of the corporates and consumers in some of the developing countries either do not trust or do not have access to the necessary infrastructure to be able to process e-payments. The ability to strengthen public support for e-finance is also important for developing trust among the people on e-banking services. The developing countries will also need to develop a necessary level of regulatory and institutional framework to handle the challenges posed by e-banking. Further, since the labour-intensive SMEs have a greater role to play in the economic development of developing countries through employment generation, they may take additional measures to mainstream SMEs towards e-banking (UNCTAD, 2002).

10.144 There is considerable ambiguity and uncertainty regarding the legal rights and obligations relating to e-banking since it is a relatively new development. The potential sources of legal risks are laws regarding protecting consumer privacy, disclosure of information, validity of some agreements formed *via* electronic media and authentication of system by digital signature. Another risk involved in e-banking is the identity of the person making a request for a service or a banking transaction over the internet. This information is crucial to the legal validity of a transaction and thus, the lack of it is a source of risk to a bank. Non-repudiation is another source of risk, which involves creating a proof of communication between the two parties, which cannot be denied later. Anybody can make a proof of such communication between a bank and its customer raising many security issues for the bank. Thus, the bank's system must be technologically equipped to handle these aspects.

10.145 Cross-border e-banking may raise some legal issues because of the jurisdiction ambiguities with respect to the responsibilities of different national authorities and uncertainty about the legal requirements in different countries. The legal risk associated with cross border e-banking transactions may also arise with non-compliance of different national laws and regulations, including consumer protection laws, record-keeping and reporting requirements, privacy rules and money laundering laws. Cross-border e-banking may also accentuate credit risk, since it is difficult to appraise an application for a loan from a customer in another country as compared to a customer from a familiar customer base.

10.146 In the pre-internet era, innovations in banking were implemented over a long period of time after doing sufficient trials and in-depth testing. However, in the e-banking era, banks are under tremendous competitive pressure to provide innovative services to customers. Thus, in most cases, in-depth testing of the new technology may be compromised to survive in the highly competitive environment. Any of the above mentioned problems may significantly impact the reputation of a bank. Customer dissatisfaction in respect of the online services provided by the bank, security breaches, fraud, identity misrepresentation, *etc.* may lead to negative opinion about the bank among customers (Schaechter, 2002).

10.147 It is obvious that banks as well as the regulators have to equip themselves before getting into the business of e-banking. Recognising this, Electronic Banking Group (EBG) of the Basel Committee on Banking Supervision (BCBS) released a report of Risk Management Principles for e-banking in 2003 (Box X.12). The EBG has focused on Board and management oversight, security controls and legal and reputational risk management while presenting the risk management principles for e-banking. The report calls for additional attention of the board of directors on the important aspects of the regulation and supervision of e-banking such as the overall risk appetite of the bank, integration of e-banking risks to the overall risk profile of the bank, in-house technical expertise and security control procedures, among others. For ensuring security of the e-banking transactions, banks should emphasise on

Box X.12
Report of the Electronic Banking Group of BCBS on "Risk Management Principles for Electronic Banking"

The principles put forward by the Electronic Banking Group (EBG) of Basel Committee on Banking Supervision (BCBS) can be categorised into three groups: (1) board and management oversight, (2) security controls, and (3) legal and reputational risk management.

According to the EBG, vigilant management oversight of the board of directors is very important in facing the challenges posed by e-banking. Since e-banking modifies and raises some of the risks faced by the banking operations, the board of directors should undertake a review of the risk appetite of the bank before entering into the e-banking business. Further, the additional requirements for the risk management of e-banking operations should be tailored with the overall risk management strategy of the bank. Additional care may be taken to explore the risks related to cross border e-banking services before getting into the business abroad. EBG further emphasised that the expertise of the staff and management should be commensurate with the technical nature and complexity of e-banking services. The vigilant monitoring of systems operability, customer satisfaction and appropriate incident reporting to the board are very important to maintain the reputation of the bank. The board of directors should take adequate interest in maintaining security control infrastructure with the latest available technological innovations to safeguard the bank's electronic data base and e-banking operations from both internal and external threats. Further, the board of directors should also establish 'comprehensive and ongoing due diligence and oversight process' for managing the risks related to outsourcing of some of the e-banking services to the third parties.

As a first measure to manage the security risks raised by e-banking services, EBG suggested that the banks should have measures to authenticate the identity of the customer. This is extremely important in the case of cross border e-banking operations where the probability of unauthorised persons getting access to the bank's system is very high. The EBG suggested that the banks can use a variety of methods such as personal identification numbers (PIN), passwords, smart cards, biometrics, digital signature, *etc.* for ensuring the identity of the customer. Equally important is the authentication of the transaction, *i.e.*, proof of origin and delivery of the electronic transaction. The segregation of duties, especially between those who initiate static data and those responsible for verifying its integrity within the e-banking operations is important in eliminating the fraud. Thus, banks should ensure that appropriate measures are in place to promote adequate segregation of duties. Further, banks should ensure that proper authorisation controls and access privileges are in place for e-banking systems, databases and applications. The failure to ensure this may allow unauthorised individuals to alter their authority, circumvent segregation and gain access to e-banking systems. Banks should also give adequate attention to maintain the data integrity of e-banking operations, records and information. Proper audit trails and measures to preserve the confidentiality of key banking information should be in place for all e-banking transactions.

To protect the legal and reputational risks of the bank, the banks should provide adequate information about the bank's identity and its regulatory status in the website to allow the customers to take an informed decision whether to avail the e-banking services of the bank. Further, banks should adhere to the customer privacy requirements of each jurisdiction, wherever the bank is providing e-banking services. Another important factor in maintaining the reputation of the bank is the consistency and timeliness in providing the e-banking services to the customers. Thus, the banks should ensure that they have adequate capacity to provide e-banking services in a timely and consistent manner in accordance with the customer expectations. Further, the bank should also have adequate infrastructure to handle any type of contingency that may hamper the smooth functioning of e-banking operations.

Reference:

Basel Committee on Banking Supervision. 2003. *Risk Management Principles for Electronic Banking.* BIS, July.

the identification of the customer, authentication of the electronic transaction, segregation of duties and data integrity. The Report also emphasised the need to take additional measures to appropriately handle the legal and reputational risk of the bank. The broad tools to address these new dimensions of risks raised by e-banking services may be categorised into adaptation, legalisation, harmonisation and integration (Nsouli and Schaechter, 2002).

10.148 In India, the Information Technology Act, 2000 is an Act meant for providing legal recognition to electronic commerce which, *inter alia,* includes the electronic mode of transaction, electronic storage of information and electronic filing of documents, among others. Since electronic commerce is widely used in the banking business, the provisions of this Act become relevant for the effective functioning of e-banking in the country. The Act laid down the basic contours of the legal framework conducive to e-commerce in India. Since the Act provides only a basic legal framework for the e-commerce in the country, it may not be useful to handle all specific challenges faced by e-banking *per se*.

10.149 The Reserve Bank also issued guidelines to handle the challenges raised by internet-banking. In particular, the guidelines focused on technology and security issues, legal issues and regulatory and supervisory issues. According to the Reserve Bank's approach, only such banks which are licensed and supervised in India and have physical presence in India will be permitted to offer internet banking products to residents of India. The products should be restricted to account holders only and should not be offered in other jurisdictions. The services should only include local currency products. The "in-out scenario" where customers in cross-border jurisdictions are offered banking services by Indian banks and the "out-in scenario" where Indian residents are offered banking services by banks operating in cross-border jurisdictions are generally not permitted and this approach will apply to internet banking also. Overseas branches of Indian banks will be permitted to offer internet banking services to their overseas customers, subject to their satisfying, in addition to the host supervisor, the home supervisor.

10.150 Banks need not obtain permission from the Reserve Bank for providing e-banking services to the customers. However, banks' internet policy should be approved by its board with the following broad elements: (i) the policy should fit into the bank's overall IT and information security policy and ensure confidentiality of records and security systems; (ii) policy should also take into account the operational risk; (iii) policy should clearly lay down the procedure to be followed in respect of 'know your customer' requirements; and (iv) it should also meet the other parameters laid down by the Reserve Bank.

10.151 In India, public sector banks are in the process of transforming their vast customer base into electronic format, which is a necessary condition for providing e-banking services to the customers. However, public sector banks are faced with the challenge of 'system hanging' due to their large size. However, private sector banks and the foreign banks are far ahead in providing services electronically to their customers.

10.152 E-banking services would continue to pose several challenges for the banks and the Reserve Bank, especially because the underlying technology itself is in a state of constant flux. There is a need for each bank to understand the changing technology, the likely impact of the new technology on the risk profile of the bank and device appropriate mechanisms to take care of the new dimensions of risk profile to handle the emerging situation successfully. The failure to understand the new dimensions of technology may increase the risk involved in providing e-banking services by the bank. Owing to the cross-border risks associated with the e-banking services, international harmonisation of e-banking regulation is necessary. This can be achieved by increasing the co-operation among the regulators of different countries. Developing international best practices on the regulation and supervision of e-banking services may also help in harmonising the regulation of e-banking services across countries. The risks raised by e-banking services need to be integrated to the overall risk profile of the bank. The bank's management should have a strategic view regarding the business plans for the e-banking services. Risks associated with the outsourcing of activities should also be considered while planning the overall risk management strategies of the bank. Though the proliferation of mobile banking poses same risks as e-banking, these risks are magnified in respect of mobile phones on account of its greater spread.

Home-Host Country Issues

10.153 In view of the rapid integration of financial markets across borders, cross-border supervision has assumed importance of late. While supervisors across different countries have been evolving practices and processes for mutual co-operation, the need for putting in place a formal and structured framework

for co-operation is increasingly being felt by the supervisors worldwide.

10.154 The internationalisation of financial operations poses several challenges. One, as the interdependence among different countries increases, the problems in the banking system in one country are more likely to spill over to the other countries where the bank or group is active. The cross-border contagion effects are likely to be larger as banks are actively involved in several countries. Second, decisions and actions by national authorities are likely to have considerable implications for the financial stability in foreign economies. This is, of course, particularly true in cases where foreign operations are run through branches, meaning that they are subject to foreign supervision. Three, the practicalities of supervision and crisis management become greatly complicated as the number of relevant authorities increase. In normal times, this means that the regulatory burden for the financial firms increases. Also, the need for supervisory co-operation increases, which demands new supervisory procedures and the creation of common supervisory cultures. In times of financial crises, sharing information and coordinating action becomes a difficult priority. Four, conflicting national interests emerge as banks become truly cross-border. The national authorities are unlikely to take the full external effect of their actions in other countries into account. Different countries may also have different priorities in terms of resources for supervision and crisis management or in terms of their regulatory structures. One reason may be that the financial systems differ quite significantly between countries. Additionally, in crisis management, the use of public funds can never be completely ruled out. In a cross-border context, serious conflicts of interest can arise when it comes to agreeing on how to share the potential burden of such interventions.

10.155 All these challenges have a common theme – domestic financial stability is increasingly becoming dependent on the activities of banks and authorities in foreign countries. Also, given the roles and responsibilities of these authorities, conflicts of interest are likely to occur. The typical illustration of this problem is a bank being of limited size in the home country while having a systemically important branch abroad. While a potential failure of the bank would not create any substantial disturbance in the home-country, the consequences to the host country could be serious. In the event of failure, the host country is likely to end up with the bulk of the responsibility for resolving the crisis and the incentives to conduct close supervision of the bank would be substantial. For the home country, on other hand, the same incentives may not exist.

10.156 These challenges are being addressed through various means. One alternative is to prohibit foreign branches from doing business domestically or extending home-country responsibility. Another alternative would be to gradually move towards the creation of a common international body with a mandate to conduct supervision of banks with substantial cross-border activities. The simple rationale of this is that the creation of such a body is the only way to fully manage the conflicting national interests. Further, a single authority supervising cross-border banking groups would most certainly increase the comprehensiveness and the effectiveness of the supervision. For the firms subject to supervision, it could mean that the regulatory burden would eventually be reduced considerably.

10.157 The ongoing financial crisis provides an example of the role of cross-border co-operation especially in times of crisis. When the international financial markets turned volatile in mid-2007 on account of uncertainties about the size and distribution of losses from the US sub-prime mortgage market, the fallout from strains in the US sub-prime mortgage market led to spikes in yields on structured credit products and in other high risk credit markets, particularly in the US and the Euro area. Rising concerns about counterparty risks led to the drying up of liquidity in various segments of the financial market, which forced major central banks to step in to inject liquidity to manage volatility. Central banks in the US and other affected economies took measures by injecting liquidity to stabilise inter-bank markets. Open market operations of increased size and maturity were also undertaken by the Bank of England, the European Central Bank and the US Federal Reserve System. However, actions by central banks individually failed to quell the markets. In the situation of heightened tensions and serious impairment of functioning of the money markets, five central banks, *viz*., the Bank of Canada, the Bank of England, the European Central bank, the US Federal Reserve System and the Swiss National Bank announced measures on December 12, 2007 in a collaborative manner to address elevated pressures. The European Central Bank, the Federal Reserve and the Swiss National Bank announced an expansion of their liquidity measures in May 2008 in view of the persistent liquidity pressures in some term-funding markets.

10.158 The Basel Core Principles for Effective Bank Supervision in 1997 highlighted the importance of

cross-border supervision through Principles 23-25. Banking supervisors were advised therein to practice global consolidated supervision over their internationally active banking organisations, adequately monitoring and applying appropriate prudential norms to all aspects of the business conducted by these banking organisations worldwide, primarily at their foreign branches, joint ventures and subsidiaries by establishing contact and information exchange with the various other supervisors involved, primarily host country supervisory authorities. Similarly, it recommended banking supervisors to require the local operations of foreign banks to be conducted in the same high standards as those required of domestic institutions and have powers to share information needed by the home country supervisors of those banks for the purpose of carrying out consolidated supervision.

10.159 Recognising that the Basel II Accord would require more co-operation and co-ordination between home country and host country supervisors, especially in the case of complex banking groups, the BCBS in its paper on 'High-level principles for the cross-border implementation of the New Accord' issued in 2003, accentuated the need for such co-operation. The Committee believed that fostering closer practical co-operation between supervisors was essential to implement the New Accord as effectively and efficiently as possible. In its paper on 'Home-Host Information Sharing for Effective Basel II Implementation' issued in June 2006, the BCBS observed that the need to develop cross-border understandings on the application of capital standards to international banking groups was recognised as an essential element of the successful implementation of Basel II.

10.160 The revised Core Principles for Effective Banking Supervision in 2006 have retained the focus of cross border supervision. Principle 25 thereof, relating to Home-Host relationships, has mentioned that cross-border consolidated supervision requires co-operation and information exchange between home supervisors and the various other supervisors involved, primarily host banking supervisors. It has reiterated the contents of the 1999 Core Principles that banking supervisors must require the local operations of foreign banks to be conducted on the same standards as those required of domestic institutions.

10.161 Under Pillar 2 of Basel II, in order to make a supervisory assessment of the internal capital adequacy assessment process (ICAAP) of banks, there would be a need for formal dialogue between home and host country supervisors in order to make a subjective and qualitative assessment. Potentially, there could be significant conflicts between rules/regulations as well as supervisory assessments of home/host country supervisors. Such conflicts would need to be resolved/reconciled expeditiously. Keeping these issues in view, the Reserve Bank, in its Mid-Term Review of the Annual Policy, October 2007, announced the constitution of a Working Group to lay down the road-map for adoption of a suitable framework for cross-border supervision and supervisory co-operation with overseas regulators, consistent with the framework envisaged by the BCBS.

Flat Rate and Risk-based Premium Deposit Insurance System

10.162 In India, DICGC charges premium from the insured banks on a flat rate basis. The advantage of the flat rate premium system mainly lies in the relative ease in its administration. The main disadvantage of this system is that it involves cross-subsidisation of deposit insurance by the low risk banks to high risk banks, encouraging excessive risk taking by the latter. However, it may also be argued that the cross-subsidisation of premium on account of the flat rate system is the price paid by low risk banks for ensuring a more stable and equitable banking system. This is perhaps more relevant in an environment where different non-competing categories of banks co-exist and it is not possible to apply the same set of prudential norms for their regulation and supervision.

10.163 Several deposit insurance systems, including the Federal Deposit Insurance Corporation (FDIC) of the US, have switched over to a system of premium based on risk profile of individual banks. With the sophistication in techniques for risk management and banking supervision, more and more countries are adopting the system of risk-based premium. At present, the differential premium system administered by FDIC incorporates a matrix comprising mainly capital adequacy and supervisory rating for assessing the premium. For institutions that have at least US$10 billion in assets and one or more current long-term debt issuer rating assessment, premium rates are based on these ratings and weighted average CAMELS component ratings. The differential premium system currently in vogue in Canada Deposit Insurance Corporation (CDIC) categorises member institutions into one of four premium categories. Except under special circumstances, the classification is based on a system that scores a member institution

according to a number of factors, including capital adequacy, profitability, asset quality and concentration. In the case of France, the assessment of differential premium is done on the basis of a combination of prudential and financial risk analysis ratios, which are applied to the amount of deposit with each member bank. In Argentina, all institutions contribute a basic premium to the deposit insurer with additional premia determined by a combined qualitative/quantitative differential premium system. Although several deposit insurance systems across the world have adopted the risk-based premium system, a large number of countries continue to follow the flat rate system.

10.164 The most difficult task in developing a system of differential premium based on risk profile of banks pertains to finding appropriate methods for quantifying the risk posed by any individual bank. Also, such a system is not easy to administer as it is highly information intensive. However, with an increasing move towards risk-based premium system across the globe, considerable work has been done for developing methodologies for this purpose.

VI. THE WAY FORWARD

10.165 There have been several episodes of banking crisis in various parts of the world in recent years. Such episodes have brought to the fore the loopholes in the regulatory and supervisory frameworks that partly allowed such episodes to occur. At times, the lagged response of the regulators failed to prevent banking crises from spreading to other segments of the financial system and to the rest of economy. The increased complexity of financial products and markets poses several challenges to the regulators and supervisors. As reported in the Report of the Financial Stability Forum[5], supervisors and regulators need to make sure that the risk management and control framework within financial institutions keeps pace with the changes in instruments, markets and business models, and that firms do not engage in activities without having adequate controls.

10.166 The turmoil in international financial markets since the middle of 2007 has also raised several concerns relating to financial stability and financial regulation. The sudden loss of confidence among traditional counterparties once the crisis surfaced reflected extreme information asymmetry arising from the complex layering of risk diffusion and high leveraging and the breakdown of risk assessment by reputed agencies and the like. The speed with which the crisis unfolded and the extensive involvement of large, reputed and regulated financial institutions reflected regulatory shortcomings, which necessitated unconventional responses from central banks. These developments have raised serious concerns relating to the ability and flexibility of national financial systems to withstand shocks emanating from such unusual developments. They have also spurred rethinking on some aspects of financial regulation, particularly as they relate to the maintenance of financial stability (Mohan, 2007).

10.167 The ongoing financial crisis, apart from exposing various sources of market failures, has brought to light several regulatory shortcomings. First, the regulators recognised some of the underlying vulnerabilities in the financial sector but failed to take effective action, partly because they may have overestimated the strength and resilience of the financial system or they assumed that the risks were well distributed among entities outside the banking system. Many analysts and policymakers had raised concerns about excessive risk taking, loose underwriting standards, and asset overvaluations, all of which, in the absence of timely effective actions, laid the seeds for crisis. Second, the limitations in regulatory arrangements, including the capital adequacy framework, contributed to the growth of unregulated exposures, excessive risk-taking and weak liquidity risk management. Third, weaknesses in the application of accounting standards and the shortcomings associated with the valuation and financial reporting of structured products played a significant role in the current turbulence through pro-cyclical valuations and lack of full disclosure of banks' true risk profile through the cycle. Fourth, the crisis revealed the need to adapt some of the tools and practices of central banks to manage system liquidity in the light of banks' cross-border operations. The recent experiences have highlighted the differences in emergency liquidity frameworks of central banks, on aspects such as range of collateral, range of eligible counterparties, and the differences in central bank practices. Fifth, supervisors did not adequately address deterioration in risk management standards in the regulated entities and shortcomings in consolidated supervision. Sixth, deficiencies in crisis management and bank resolution frameworks, including deposit insurance, have been observed,

[5] Report of the Financial Stability Forum on Enhancing Market and Institutional Resilience, April 2008.

especially where central banks do not have a central supervisory role. Finally, the complex inter-relationship between regulation, the inappropriate accounting practices, and regulators' excessive dependence on external ratings may have exacerbated the market turbulence (Reddy, 2008).

10.168 Several important issues have been thrown up by the ongoing financial crisis, which are currently being debated. First, an unresolved issue is how to cope with liquidity stresses under unusual circumstances. The regulators need to judge the effectiveness of emergency policies, like deposit insurance and central bank funding. The regulators have to be more vigilant about maturity mismatches between banks' assets and liabilities and look at cash flows in off-balance sheet as well as on-balance sheet liabilities. How banks manage liquidity internally may also require closer attention of the regulators. Second, it is also being debated whether 'procyclicality' of capital requirements is one of the factors with inherent tendency to escalate the impact of booms and busts. It is being argued that defences should be built before the need to put them in use arises rather than after the event. A related issue is mark-to-market accounting for assets in a situation when there isn't any functioning market. In severe 'bust' scenarios, marking down may raise concerns which may lead to more marking down potentially beyond the real value of the asset. Third, the role of non-banks in the financial system is also being examined from a regulatory perspective. While banks have traditionally been heavily regulated, there was no regulatory control or relatively little regulatory or supervisory control over non-banks, even though non-banks had become a much more important element in the financial system. There are questions whether non-banks should also be bailed out by the central banks and governments, which raise serious moral hazard concerns (Volcker, 2008). Fourth, it is being debated whether institutions should be allowed to become so big and so complex that their problems can have system-wide repercussions. A rethinking is, therefore, taking place on the advantages of smaller banks though in bigger numbers. Finally, the role of credit rating agencies is being subjected to critical reassessment. There is active discussion on the need for credit rating agencies to clearly differentiate the ratings for structured products, improve the disclosure of their rating methodologies, and assess the quality of information provided by originators, arrangers, and issuers of structured products.

10.169 In order to respond to the crisis, a wide menu of solutions and prescriptions has been offered by various stakeholders. First, risk management frameworks, including the governance arrangements in banks and financial institutions, need to be reviewed by the managements in the light of recent experiences. Second, supervisors need to play a more active role in scrutinising the risk management practices, including stress testing and governance arrangements, off-balance sheet entities and structured products. At the same time, it is crucial to recognise that risk management cannot be achieved solely by regulation. Consolidated supervision and prudential reporting need to be applied to off-balance sheet entities associated with financial institutions and to loans sold with implicit or explicit recourse. There is a need to review the prudential norms linked to external ratings assigned by the credit rating agencies (CRAs). Third, supervisors should encourage institutions to develop more robust models which use more prudent and reliable assumptions and stress testing methodologies; and monitor more closely the internal processes and controls for managing risk. Fourth, there is a need to rationalise the regulatory and supervisory prescriptions with a view to reducing the scope for arbitrage. This also calls for closer coordination of the relevant supervisors/supervisory arms. Fifth, it is necessary to correct the imbalances in the incentive mechanisms at various levels. Sixth, greater transparency is not only necessary to make the markets more efficient and to optimise the allocation of capital, but it is also considered to be the best insurance policy against irrational herd behaviour and unjustified contagion in times of stress. Seventh, there is a need to collectively review and resolve the element of pro-cyclicality in prudential regulations, accounting rules, and the attitude of the authorities that tend to apply these. Eighth, it is necessary for the CRAs to improve their governance and rating methodologies. Ninth, arguably it is useful to re-visit the relevant accounting standards and explore the scope for applying fair value accounting through the cycle so as to mitigate pro-cyclicality. Tenth, supervisors should have clear authority to intervene at the first sign of weakness, preferably much before the institution's net worth turns negative. Finally, deposit insurance systems should aim to limit the likelihood of retail depositor runs in troubled banks through adequate coverage, and have the capacity to pay depositors quickly (Reddy, 2008). It is also being postulated that regulatory instruments should be used to address financial asset market bubbles and credit booms. It has been suggested that supplementary capital requirements and liquidity requirements should be imposed on all systemically important highly leveraged institutions – commercial

banks, investments banks, hedge funds, private equity funds, among others. These supplementary capital and liquidity requirements could either be managed by the central bank in counter-cyclical fashion or be structured as an automatic financial stabiliser (Buiter, 2008).

10.170 Several measures have been initiated to strengthen the banking system in India recently. One, banks were urged to review large foreign currency exposures and put in place a system for monitoring such unhedged exposures on a regular basis so as to minimise risks of instability in highly uncertain conditions. Banks were also urged to carefully monitor corporate activity in terms of treasury/trading activity and sources of other income to the extent that embedded credit/market risks pose potential impairment to the quality of banks' assets. Two, comprehensive guidelines on derivatives, laying down broad generic principles for undertaking all derivative transactions, management of risks and sound corporate governance requirements as also adoption of suitability and appropriateness policy, were put in place.

10.171 In the wake of the turmoil in global financial markets, the FSF brought out a report in April 2008 indentifying the underlying causes and weaknesses in the international financial markets. The Report contained, *inter alia,* proposals of the FSF for implementation by end-2008 regarding strengthening prudential oversight of capital, liquidity and risk management, enhancing transparency and valuation, changing the role and uses of credit ratings, strengthening the authorities' responsiveness to risk and implementing robust arrangements for dealing with stress in the financial system. The Reserve Bank has put in place regulatory guidelines covering many of these aspects, while with regard to others, actions are being initiated. In many cases, actions have to be considered as work-in-progress. In any case, the guidelines are aligned with global best practices while tailoring them to meet country-specific requirements at the current stage of institutional development.

10.172 The regulatory and supervisory framework in India as evolved from time to time has served the country well. However, going forward, there will be several issues that would need to be addressed to ensure the stability and long-term growth of the banking sector.

Supervision needs to continue with the Reserve Bank

10.173 Some countries have separated the supervision from the central bank and entrusted it to an independent authority primarily to avoid the conflict between regulatory function and the objectives of monetary policy. Separation of banking supervision from the central bank may adversely affect its information flows. As generally Governments want the central banks to act on their behalf, central banks with supervisory functions in developing economies are likely to have better funding, more reliable and better expertise in the areas of financial supervision and regulation. Here, it needs to be noted that in recent years in at least two countries (Finland and Hong Kong in 1993), a shift in institutional responsibility for bank supervision has occurred. Banking supervision in these countries outside the central banking was not working satisfactorily and, therefore, it was moved to the central bank or a subsidiary of the central bank. In both Finland and Hong Kong, the decision to move banking supervision into the central bank reflected the view that there were important synergies between bank supervision and monetary policy responsibilities, apart from the dissatisfaction with the performance of the previous supervisory arrangement.

10.174 Emerging countries have been more prone to systemic disturbances, especially in the aftermath of an initial liberalisation of the banking system. Therefore, the main focus of banking supervision in such countries has perforce been on systemic stability rather than on customer protection and conduct of business issues. Thus, the connections between supervision and monetary policy, including LoLR operations, are more frequent and evident than in developed countries. In the case of less developed countries, more weight needs to be placed on ensuring the quality of the supervisory staff, *i.e.,* professional skills, independence from external pressures and adequate funding. These considerations point strongly towards retaining banking supervision with the central bank in emerging countries (Goodhart, 2000a).

10.175 The supervisory activities of the Reserve Bank have benefited from its price stability objective and it is recognised that safety and soundness of banks must be evaluated jointly with its responsibility to ensure stability and growth in the economy. The Reserve Bank with joint responsibility for monetary policy and supervision has both the insight and the authority to use techniques that are less blunt and more precisely calibrated to the problem at hand. Such tools improve its ability to manage crises and, more importantly, to avoid them. In this backdrop, the suggestions of separating banking sector regulation from the conduct of monetary policy by some

observers needs to be judged in light of the history, legacy and efficiency of the current regulatory system in India. In this context, it is also relevant to note that the UK itself has now been subject to severe criticism in the episode involving the Northern Rock for failure of coordination among the regulators (Mohan, 2007).

10.176 Since the Reserve Bank has the joint responsibility of monetary policy and supervision, it is also in a position to adopt prudential measures aimed at strengthening the financial system in combination with monetary policy tools. For instance, provisioning requirements for banks' exposure on standard advances in specific sectors were enhanced along with the increase in the repo rate and the CRR. When the central bank has proximity to markets and to banks, there are important synergies for the formulation of monetary policy because the central bank will be sensitive to key financial sector developments. Moreover, the central bank's supervisory role also makes it easier to get useful information for monetary policy from banks. The Reserve Bank as banking regulator and supervisor receives continuing information on banking activities. It can also obtain information quickly from leading systemically important institutions on exposures of relevance in times of turmoil. Thus, there is a high scope for prompt corrective action (Mohan, 2007).

Financial Conglomerates

10.177 The boundaries between banks and non-bank financial institutions have blurred as the banks have forayed into different types of non-banking financial services. Similarly, non-banking financial institutions have been dealing in various products resembling banking products. Several financial conglomerates have also emerged. In view of such 'conglomerisation' of financial activity, co-ordination among the regulators assumes paramount importance. To meet this challenge, some countries have instituted a 'super regulator' system. Some countries such as the US have instituted a system of umbrella supervision. Australia has followed an objective-based regulation. Although there has been blurring of distinctions among providers of various financial services in India, it has not been to the extent so as to replace the existing multiple regulators with a single regulator or any other regulatory structure. There are several issues involved in the institution of super regulator or any other structure as alluded to before, for which it is felt desirable to maintain the existing system of institution-based regulation. However, at the same time, in future the major challenge would be to ensure that financial conglomerates are regulated adequately. The existing monitoring mechanism for financial conglomerates has some limitations, although an attempt is being made to take a group-wide perspective through inter-regulatory discussions and co-operation.

Consolidated Supervision

10.178 The Core Principles for Effective Banking Supervision issued by the Basel Committee on Banking Supervision have included consolidated supervision as an independent principle. In view of increased focus on empowering supervisors to undertake consolidated supervision of bank groups, the Reserve Bank had introduced, as an initial step, consolidated supervision, consolidated accounting and prudential measures, including the group capital adequacy and other prudential ceilings (quantitative methods) for aggregated risks for the banking group such as concentration risk (prudential ceilings for individual borrowers and borrowers belonging to business groups) and risk of exposures to the sensitive sectors. There is need to enhance the consolidated supervision by prescribing more prudential measures such as prudential ceilings for sectoral and geographical concentrations for the bank groups.

10.179 There is also need to enhance the effectiveness of the supervisory system for bank-led conglomerates by integrating the process of consolidated supervision with the financial conglomerate monitoring mechanism. While the banking groups are covered under the consolidated supervision, the Reserve Bank, in consultation with other sectoral regulators, has put in place an off-site monitoring mechanism for the financial conglomerates. This also included the monitoring of financial conglomerates which are bank-led.

Principle-based Regulation

10.180 The UK has pioneered a move towards "principle-based" regulation from the traditional "rule-based" regulation. The perceived merits of principle-based regulation are that it provides more flexibility and is easier to understand and implement. It, however, pre-supposes greater reliance on the discretion and judgement of the supervisors and regulators in interpreting the broad principles. It, therefore, imposes onerous demands on the staff of supervisory agencies, who need to be technically skilled to understand the business model of the regulated institutions and apply principles to reach supervisory conclusions.

10.181 Despite its perceived advantages, the UK is the only country to have implemented principle-based regulation and that too only about a decade ago. The effectiveness of principle-based regulation has come under severe criticism following the Northern Rock crisis. A principle-based approach can complement the use of rules, which can provide needed clarity. The FSA itself has not dispensed with detailed rules entirely. Like all other banking regulators, India has followed a rule-based regulatory approach, though it has been argued in certain quarters that the Indian regulatory framework should migrate to principle-based regulation. The migration to an entirely principle-based regulatory regime may neither be desirable nor practical, given that there is very limited experience available internationally on its practicality and that too only in the UK. However, an appropriate mix of the rule-based and principle-based regulatory regimes needs to be explored.

Deposit Insurance

10.182 Deposit insurance serves two different but interrelated purposes (i) to protect small and unsophisticated bank depositors against losing a potentially important part of their wealth; and (ii) to avoid bank depositor runs. While there is no doubt that the deposit insurance is a necessary element of the regulatory framework, it is increasingly being realised that a deposit insurance scheme can have serious adverse effects. The system of deposit insurance should be designed in such a way that it mitigates the problem of moral hazard associated with it.

10.183 The deposit insurance system, which, at present, is being followed in India, is based on a flat rate of premium applicable to all banks taking insurance from DICGC. The system covers scheduled commercial banks, urban co-operative banks and RRBs. Competition in the banking sector has been intensifying and it may encourage banks to undertake riskier activities. It is, therefore, felt that it may be desirable to move to a risk-based system of deposit insurance. To begin with, such a system could be introduced for scheduled commercial banks. Subsequently, it could be considered for urban co-operative banks and RRBs.

10.184 The integration of risk-based deposit insurance with risk-based capital standards reduces procyclicality as alluded to before. Given the premise that deposit insurance should be subsidy-free or 'fair', the procyclical impact on banks from setting risk-based deposit insurance premiums is lower than the procyclical impact from setting risk-based capital requirements. The implication is that, from a procyclicality point of view, it is better to allow both insurance premiums and capital requirements to vary over the business cycle rather than fix insurance premiums and vary only capital requirements.

10.185 The feasibility of moving to risk-based premium may also have to be examined in the light of adequacy of the Deposit Insurance Fund. It may be mentioned that deposit insurance premium is exempt from income tax in most of the countries. However, in a few countries, including India, it is treated as income of the deposit insurer, resulting in outgo of a substantial part of the premium receipts for payment of income tax, inhibiting the growth of Deposit Insurance Fund to the desired level.

Home-Host Co-ordination Issues

10.186 The internationalisation of the banking sector requires greater cross-border co-operation in supervision of banks. While globalisation of financial activity brings efficiency gains, it also enhances contagion risk. The smooth operation of the financial system, therefore, requires exchange of information and coordination in decision making among home and host countries. In a crisis, it is essential that the authorities in different countries understand each other's assessments of the situation and, if possible, reach a common view. Globally, it is being felt that the present supervisory arrangements are not designed to prevent the cross-border externalities that financial crises may result in. Furthermore, there are deficiencies in how the supervision of internationally active banks works in practice, which can partly be explained by limitations in legislation and partly by lack of enough co-ordination among supervisors.

10.187 In the Indian context, though there has been exchange of supervisory information on specific issues between the Reserve Bank and a few other overseas banking supervisors, no formal arrangement/MoU has so far been entered into between the Reserve Bank and outside supervisory authorities for cross-border supervisory cooperation. This is because of the legal impediments with regard to sharing of credit information and permitting an agency other than the Reserve Bank to inspect a bank in India.

10.188 With Indian banks expanding their scope and scale of operations abroad through their branch network or through their subsidiaries, there is a need to subject such operations to comprehensive on-site

inspection in order to meet the demands of consolidated supervision. This need is felt all the more in respect of banking conglomerates having overseas offices, subsidiaries and associates. Further, with the implementation of Basel II norms, Indian banks operating abroad/foreign banks operating in India would be subjected to dual (home/host) country regulatory and supervisory prescriptions for all the three Pillars. This would necessitate (i) dialogue between the Reserve Bank and other overseas regulators for harmonisation/reconciliation; (ii) exchange of supervisory information between the Reserve Bank and other overseas regulators; and (iii) formal visits/information sharing by local supervisors to the overseas branches/offices of Indian banks and *vice versa*.

E-banking

10.189 E-banking opens up many opportunities for the banking sector through technological innovations. However, along with the benefits, it carries many risks too. Thus, the success of e-banking lies in effectively utilising the benefits offered by it, while successfully tackling the risks associated with the financial operations. Such risks are greater in the case of mobile banking as it involves much larger number of people as also greater spread. The challenge both for the bank and the Reserve Bank would be to remain vigilant to the risks posed by technological innovations.

VII. SUMMING UP

10.190 A series of banking crises that occurred in the last two decades around the world have shown that banking crises have systematic and disruptive effects on the financial system as well as the real economy. The fact that the economies have become more dependent on the financial systems implies that, if the financial system malfunctions, the adverse consequences are likely to be more severe than they used to be. The past decade or so has provided ample evidence of the costs of financial instability. To avoid or lessen the likelihood of a banking crisis and its negative impact on the economy, almost all the countries in the world have regulated banks by restricting their activities and entry, imposing capital adequacy requirements, and supervising their operations and management. Most countries have explicit or implicit deposit insurance in place as also the resolution procedures, including bailouts, of insolvent banks.

10.191 The basic rationale for exercising fairly close regulation and supervision of banking institutions, all over the world, has been their "special" nature as they accept uncollateralised public deposits, are part of the payment and settlement systems, and are an important channel for monetary policy transmission. Preventing the spread of contagion through the banking system, therefore, becomes an obvious corollary of regulating the banks to pre-empt any systemic crisis. Of course, a well-regulated and efficient banking sector also enhances the allocative efficiency of the financial system, thereby facilitating economic growth (Leeladhar, 2007). Ensuring safety and soundness of the banking system, therefore, becomes a predominant objective of the financial regulators. While the framework for exercising regulation and supervision over banks has evolved over the decades in tandem with the market and technological developments, the fundamental objective underlying the exercise has hardly changed.

10.192 In recent years, new thinking has emerged on several aspects of regulation and supervision. A major challenge faced by the regulators all over the world is to design an appropriate regulatory structure that takes care of the rapidly changing financial landscape. Some countries have adopted a single regulator approach to mirror the changes in the corporate structure. Australia has followed a unique objective-based regulatory structure. The US, which followed an umbrella supervisory approach a few years ago, now feels that in the long-run, the regulatory structure could move to objective-based regulation. Some countries such as the UK hived off supervision from the central bank to avoid conflict of interest with monetary policy. However, the recent Northern Rock experience shows that such a system has its own shortcomings as lack of co-ordination between the lender of the last resort and the supervisory authority was believed to be one of the factors behind the failure of the bank. Given the scarce supervisory resources and rapid product innovations, increased emphasis is being placed on market discipline to complement supervision. The fast evolving financial sector and the ever expanding rule books of regulatory bodies have forced some countries to adopt principle-based regulation. Another major development relates to the safety net. In recent years, the number of countries introducing the explicit deposit insurance system has increased sharply. While the design of the deposit insurance system is country-specific, many countries have switched over from the flat deposit insurance system to a variable rate deposit insurance system.

10.193 The Reserve Bank has progressively refined the regulatory and supervisory framework to ensure a safe and sound banking system comparable with

the best in the world. However, new challenges keep emerging following the fast pace of financial sector developments. Going forward, the Reserve Bank faces several challenges. These would be to (i) find appropriate mechanism to regulate the financial conglomerates; (ii) evolve home-host country co-operation for resolving issues arising from growing cross-border operations of banks; and (iii) build safeguards against risks arising out of rapidly growing e-banking, especially mobile banking services. These challenges could be met by initiating appropriate measures. Given the synergies between formulation of monetary policy and supervision, it is felt that the supervision of the banking sector should continue to remain with the Reserve Bank. Going forward, it would have to be ensured that financial conglomerates are regulated adequately. Several home-host country issues would arise which would necessitate dialogue and exchange of information with other overseas regulators. The use of e-finance products in the coming years is expected to increase significantly, which could expose banks to certain risks. It is, therefore, necessary for the Reserve Bank and the banks to be vigilant against such risks.

ANNEX X.1
Major Initiatives by the Board for Financial Supervision

The Board for Financial Supervison (BFS) has played a major role in strengthening the financial sector. Some of the decisions/directions given by BFS, since its inception, are as under:

Supervision

- An off-site surveillance function for banks in India was set up, the major components of which included establishing a system for in-house monitoring of banks and other credit institutions based on a prudential supervisory reporting framework, building a "memory" on all supervised institutions, and setting up a market intelligence and surveillance unit.
- The system of bank inspections in terms of focus, process, reporting and follow-up based on CAMELS model was set up, which evaluates banks' Capital Adequacy, Asset Quality, Management, Earnings, Liquidity and Systems and Control, but excludes the audit elements existing under the earlier inspection system. Subsequently, this was extended to financial institutions as well.
- The role of statutory auditors of banks was enlarged in the supervisory process by using them as agents. The Audit Sub-Committee reviewed, *inter alia*, the position and the need for more disclosure and transparency in the final accounts of banks and decided that seven additional financial ratios should be disclosed in the 'notes on account' in the Annual Reports of banks from the year 1997-98. All Indian private sector banks were advised about the minimum eligibility norms prescribed for audit firms to be appointed as their statutory auditors from 2001-02 onwards.
- The internal defenses within the supervised institutions such as corporate governance, internal control and audit function, and management information and risk control systems, were strengthened as an extension of the task of supervision.
- The system of half-yearly review introduced for the listed scheduled commercial banks in September 2001 and the format of review reports approved by the Sub-Committee was finalised in consultation with the Securities and Exchange Board of India (SEBI).
- To ensure consistency in the regulatory intervention process across banks, in December 2002, the BFS approved a framework for prompt corrective action containing a schedule of corrective structured actions and discretionary actions at different trigger points. Keeping in view the emerging supervisory concerns, the BFS also decided to place banks which were showing serious concerns under monthly monitoring. Under this system, certain key financial parameters of the banks like capital to risk-weighted assets ratio (CRAR), exposure to sensitive sectors, managerial problems and promoters' share holdings are analysed at the end of each month to monitor the progress made by them. Supervisory concerns in respect of these banks identified through the analysis of key financial parameters are placed before the BFS every month for its consideration and for providing guidance.
- BFS provided significant thrust for improving housekeeping in banks by reviewing analytical reports on balancing of books, reconciliation of inter-branch and Nostro accounts and providing further necessary direction. As part of monitoring of frauds, banks were advised to implement the recommendations of the Committee on Legal aspects of Bank Frauds (Chairman: Dr. Mitra) that could be implemented without any legislative changes.
- Under the BFS guidance, the RBS process was introduced on a pilot basis in select banks during 2003-04, initially in parallel with the present system of inspection under CAMELS/ Capital Adequacy, Asset Quality, Liquidity, Compliance and System (CALCS).
- In 2006-07, the BFS directed that the second round of supervisory review process (SRP) with regard to banks' exposures to sensitive sectors be initiated for select banks, based on off-site data. The process covered on-site focused examination to assess the risk exposures of the individual banks with reference to their actual control environment, procedures, and compliance with internal and regulatory norms. Accordingly, on-site scrutinies were conducted in select banks, which brought out that banks had put in place certain policies to mitigate the risks associated with their increased exposure to the real estate sector.
- In order to capture the vast and significant changes taking place in the banking sector, the supervisory rating model based on CAMELS/CALCS used for the purpose of rating the commercial banks in India during the Annual Financial Inspection (AFI) was revised comprehensively to ensure greater objectivity in assessment by introducing benchmarks based on industry averages/frequency distributions.
- The risk profile templates and supervisory risk rating system were revised and a new methodology for risk mapping and risk aggregation was formulated. Banks were advised to use the revised format for undertaking risk profiling exercise.

Prudential Measures

- The capital adequacy standards and disclosure parameters for banks were set up. A new supervisory mechanism for NBFCs and methodology for supervisory on-site through outside chartered accountants were also instituted. The BFS also approved the modalities for issuance of certificates of registration to NBFCs.
- In 2004, taking note of the large UCBs facing serious problems with regard to solvency and liquidity, the State Governments concerned were advised to infuse capital funds to ensure that the banks attained the minimum CRAR level.
- Recognising the risk facing the banks due to their exposures to the real estate sector, provisioning requirements and risk weights on real estate exposures were tightened.
- Taking note of the need for enhanced capital funds under Basel II, banks' capital raising options were considered by the BFS and detailed guidelines on introduction of additional instruments for raising capital, *i.e.*, Innovative Tier 1 instruments and upper Tier 2 instruments were issued to banks. Detailed guidelines were also issued to banks rationalising the usage of floating provisions and it was stipulated that the floating provisions could be used only for contingencies under extra-ordinary circumstances for making specific provision in the impaired assets after obtaining the board's approval and with prior permission of RBI, and that the banks' boards should lay down an approved policy defining extra ordinary circumstances and regarding the level to which floating provisions should be created. As regards appropriation of reserves, it was decided that in order to ensure that recourse to drawing down the Statutory Reserves is done prudently and is not in violation of any of the regulatory prescription. Banks, in their own interests, should take prior approval from the Reserve Bank before any appropriation is made from the statutory reserves.
- Under the Basel framework, the adequacy of capital and the probability of losses incidental to a bank's operations are related to the riskiness of its assets. This weighted assets approach did not give adequate attention to the concentration of risk on the liability side of banks. In the context of the increasing importance and awareness of the concentration risk on the liability side of banks, the Board examined the matter in detail and in order to reduce the extent of concentration on the liability side of the banks, more particularly Inter-Bank Liabilities (IBL), it was prescribed that IBL of a bank should not exceed 200 per cent of its networth as on 31st March of the previous year. However, individual banks may, with the approval of their boards of directors, fix a lower limit for their inter-bank liabilities, keeping in view their business model. The banks whose CRAR is at least 25 per cent more than the minimum CRAR (9 per cent), *i.e.*, 11.25 per cent as on March 31, of the previous year, are allowed to have a higher limit up to 300 per cent of the net worth for IBL. The limit prescribed above includes only fund-based IBL within India (including inter-bank liabilities in foreign currency of banks operating within India). In other words, the IBL outside India are excluded. The existing limit on the call money borrowings prescribed by the Reserve Bank operates as a sub-limit within the above limits.
- While the risk weights on housing loans extended by banks to individuals against mortgage of housing properties and investments in mortgage-backed securities (MBS) of Housing Finance Companies (HFCs), recognised and supervised by NHB were increased to 75 per cent for capital adequacy purposes, they were reduced to 50 per cent in respect of housing loans up to Rs. 20 lakh to individuals (subsequently raised to Rs.30 lakh) against the mortgage of residential housing properties, banks' investment in mortgage backed securities, which are backed by housing loans and are issued by the housing finance companies regulated by the National Housing Bank (NHB). Risk weight for commercial real estate was set at 150 per cent. Further, provisioning requirement for 'standard assets' was increased from 0.40 per cent to 1 per cent for commercial real estate loans and individual housing loans beyond Rs.20 lakh.

Corporate Governance

- Based on the recommendations made in the report of the Consultative Group of Directors of Banks/FIs (Chairman: Dr. A S Ganguly) on Corporate Governance, public and private sector banks were advised in June 2002 to initiate necessary actions for setting up an effective corporate governance framework.
- A comprehensive policy framework was formulated with regard to ownership of and governance in private sector banks envisaging diversified ownership and restrictions on cross-holding by banks.
- During the year 2004-2005, the BFS turned its attention towards ownership and governance in banks; further progress towards international best practices in prudential norms; greater deregulation and rationalisation of banking policies; and compliance with know your customer (KYC) norms. It was decided that banks that have governance concerns because of dominant ownership or other reasons should be kept under close monitoring. The

BFS, therefore, emphasised the desirability of diversified ownership in banks, 'fit and proper' status of important shareholders, directors, CEO and the need for a minimum capital/net worth criteria. Guidelines on credit cards were issued in November 2005 covering issues such as unsolicited cards and disclosure of various charges including interest charged on an annualised basis. Guidelines were also issued laying down the process for mergers, determination of swap ratios and disclosures. Furthermore, guidelines for purchase/sale of non-performing financial assets by banks, including valuation and pricing aspects and prudential norms were finalised. Guidelines on outsourcing of services by banks were also issued.

Local Area Banks

- In 1996, based on the recommendation of a Review Group, it was decided that issue of licenses be suspended till the existing Local Area Banks are brought to function on a sound basis.

VRS for Public Sector Banks

- The BFS recommended measures to deal with the accounting and regulatory implications of implementing voluntary retirement scheme (VRS) in public sector banks (PSBs). These broadly related to disclosures, allocation of expenditure and providing relief to banks as one-time burden without compromising regulatory standards.

Financial Conglomerates

- The BFS also took note of the risks arising on account of the intra-group transactions of banks. A monitoring mechanism for entities identified as Financial Conglomerates was put in place. As part of operationalisation of the same, the Reserve Bank obtains data/ information from the Designated Entities (DEs) for the 17 FCs (presently 8 FCs) under its purview. The analysis of FC returns raised certain issues like commonality of auditors, commonality of directors, certain directors being employees in other group companies, intra-group movement of executives having implications for 'arm's length' relationship/confidentiality of customer data, commonality of back-office arrangements/service arrangements between group companies, significant investments in the units of group mutual fund company and mortgage-backed securities issued by group company, non-reporting of certain intra-group transactions, including large Letter of Comfort transaction, *etc.* The half-yearly discussions held with the CEO of the DEs in association with other principal regulators to address outstanding issues/ supervisory concerns and for strengthening of the FC monitoring mechanism had thrown up certain issues, *viz*., absence of group-wide oversight mechanism, absence of enterprise-wide risk management, lack of group compliance policy, absence of a policy on intra-group transactions and exposures, lack of group-wide capital assessment, applicability of "fit and proper" criteria for the directors, CEO and shareholders, issues relating to group-wide liquidity management policy, identification and management of concentration risk, implementation of RBI's guidelines on outsourcing/ capital market exposure, frauds in the group entities, among others.

Urban Co-operative Banks

- The role and importance of urban co-operative banks (UCBs) in the Indian banking system has been duly recognised. However, several of the UCBs were found to be not having adequate capital funds. The issue of augmenting the capital funds of UCBs was considered. It is felt that UCBs should be allowed to issue four new instruments, *viz*., non-convertible debentures/bonds, special shares, redeemable cumulative preference shares and long-term deposits. The special shares, which are non-voting in nature and perpetual, are suggested to keep them different from ordinary shares to enable UCBs to raise capital at a premium. It was further felt that the Reserve Bank may make an exception with regard to rating requirement to enable the commercial banks to invest in the special shares and Tier II bonds issued by UCBs within the ceiling prescribed for investment in unlisted securities and that funds raised through new instruments should be exempted from CRR/SLR. The issues are under further deliberations of the Board.

Training Policy

- A training policy for officers was initiated to enable the officers to achieve the level of competence required to fulfill their individual roles and career expectations.

XI OVERALL ASSESSMENT

11.1 An efficient and sound banking system plays a vital role in promoting economic growth, intermediating financial flows, supporting the payment system and in the conduct of monetary policy. Banks are effective in dealing with information problems in lending and the incentive problems leading to moral hazard behaviour of borrowers. An efficient functioning of the banking sector results in enormous benefits in terms of more efficient allocation of resources. Banks have played an important role in the economic development of some developed countries such as Germany and Japan and most emerging market economies, including India. Apart from financing growth, the banking system is the conduit through which monetary policy impulses are transmitted to the rest of the financial system and ultimately the real economy. Banks are also the main participants in the payment and settlement systems. A secure, safe and efficient payment and settlement system is a major pre-requisite for the stability of the financial system. Banks are, thus, important from the point of view of economic growth and both price and financial stability.

11.2 An important role played by banks in economic development of emerging market economies stems from several factors such as savers' eagerness for assured income; liquidity and safety of funds because banking institutions enjoy either implicit or explicit guarantee of government; and inadequate capacity of savers to manage financial risks. Banks are special in emerging markets since they take a leading role in the development of other financial intermediaries and financial markets. Further, corporate and other segments have to increasingly depend on the banking sector to meet their financing requirements due to the absence of well developed equity and bond markets.

11.3 Over the years, the banking systems all over the world have witnessed a significant transformation underpinned by various factors such as deregulation, technological innovations and globalisation. These developments have resulted in increased competitive pressures. Banks, therefore, have been introducing innovative products, seeking newer sources of income, diversifying into non-traditional activities and economising on capital. All these developments have posed several regulatory and supervisory challenges.

11.4 The banking system in India has evolved over the years passing through various phases as discussed in the earlier chapters. Social control, nationalisation of banks, priority sector lending targets and the various initiatives taken by the Reserve Bank/ Government since the late 1960s led to a significant spread of branch network and extension of services in the rural areas. This helped spread the banking habits and large mobilisation of savings. Besides, the banking system in India also played a major role in widening the entrepreneurial base of the country. The diversification and development of the Indian economy were, *inter alia,* due to the active role that banks played in financing economic activities in different sectors. However, the health of the banking sector became fragile by the early 1990s as reflected in low profitability, large non-performing assets, low capital base and low operational efficiency. Comprehensive reforms in the banking sector were, therefore, introduced. A well calibrated and gradual approach to banking sector reforms led to the emergence of a strong and resilient banking system over the years.

11.5 The Indian banking system now faces several new challenges. Banks need to raise large resources to cater to the financing requirements of the growing economy. Banks also face the challenge of implementation of Basel II, which becomes fully operational from March 31, 2009. The changed operating environment has also necessitated the strengthening of the risk management practices. Banks also need to put in place adequate safeguards as the country progressively moves towards fuller capital account convertibility. The blurring of distinctions among banks and non-banks, emergence of financial conglomerates and introduction of several innovative financial products have also posed several regulatory and supervisory challenges. Another major challenge is to bring the hitherto financially excluded people within the banking fold. This concluding chapter summarises the main findings of the analysis contained in the previous chapters, covering both the progress made so far and the road ahead.

Evolution of Banking in India

11.6 The beginning of commercial banking of a joint stock variety in India could be traced back to the early 18th century. Evolution of the co-operative

banking movement in India could be traced to the last decade of the 19th century. The first formal regulation for banks was the enactment of the Companies Act in 1850. The period leading up to independence was a difficult period for Indian banks. A large number of small banks sprang up with a low capital base. This period saw the two World Wars and the Great Depression of 1930s. Many banks failed during the period. Apart from global factors, several other factors were also at play. Partly to address the problem of bank failure, the Reserve Bank of India was set up in 1935.

11.7 At the time of independence, the entire banking sector was in the private sector. The banking scenario in the early independence phase raised three main concerns: (i) bank failures had raised concern regarding the soundness and stability of the banking sector; (ii) there was large concentration of resources in a few business families; and (iii) the share of agriculture in total bank credit was miniscule. The major development during this period was enactment of the Banking Regulation Act. Banks continued to fail even after independence although the number of banks that failed declined. The Banking Companies Act, 1949 was amended in the early 1960s empowering the Reserve Bank to cause compulsory amalgamation of banks. As a result, weak banks (most of which were non-scheduled) were weeded out through amalgamations/liquidations. The number of non-scheduled banks declined sharply from 474 in 1951 to 20 in 1967. The number of bank branches grew from 4,061 in 1952 to 6,985 in 1967. However, the pattern of bank branches in rural and urban areas remained broadly the same. The share of agriculture in total bank credit also remained broadly the same between 1951 and 1967. Thus, two of the three major issues at the time of independence continued to cause concern even after 20 years of independence.

11.8 The next phase of banking in India began with social control over banks in 1967, whereby 51 per cent members of the board of directors of a bank were to consist of persons who had special knowledge or practical experience in one or more of matters such as accountancy, agriculture and rural economy, banking co-operation, economics, financial and small scale industry. The social control experiment, however, did not yield the desired results. In 1969, 14 major banks were nationalised. Subsequently, six more banks were nationalised in 1980. This brought the major segment of Indian banking sector under the direct control of the Government. A massive expansion of branch network followed after nationalisation of banks in 1969. As a result, the average population per bank office declined from around 1,36,000 in 1951 to 65,000 in 1969 and further to 14,000 at end-December 1990. Most of the new branches were opened in rural areas. As a result, the share of rural branches in total branches reached around 58 per cent in December 1990 from about 18 per cent in June 1969. Apart from nationalisation of banks in 1969 and 1980, several other controls were also exercised such as priority sector lending and differential interest rates scheme. Norms relating to financing of working capital of corporates were also introduced. While persuing multiple objectives, the deposit and lending rate structure became quite complex. The CRR and SLR were also raised frequently to reach historically high levels. As a result of all these factors, banks' profitability declined, their asset quality deteriorated and their capital position became weak. Lack of adequate competition resulted in decline in efficiency and profitability. Realising the adverse impact of various measures on the performance of the banking sector, some efforts were made to liberalise the sector in the second half of the 1980s.

11.9 The main challenge in the next phase, that began in 1991-92, was to strengthen the banking sector. For this purpose, prudential norms were introduced in a phased manner. Efforts were also made to create competitive conditions by allowing entry of new private sector banks, increased presence of foreign banks and providing operational flexibility to public sector banks. In a liberalised environment, banks are faced with several risks. Efforts, therefore, were also made to strengthen the supervisory processes. At the end of the first sub-phase (up to 1997-98), profitability of the banking sector improved significantly. Capital adequacy ratio and asset quality of banks also improved. However, non-performing loans of banks were still far higher than the international standards. Although, on the whole, the capital adequacy ratio of the banking sector was above the stipulated norm, some banks could not meet the capital adequacy norms. Competition in this phase also remained muted. However, some banks developed risk aversion as a result of which credit growth slowed down significantly.

11.10 The second sub-phase began in 1998-99. In early 1998, the need was felt to strengthen prudential norms on the lines of international best practices. The East Asian crisis in the latter half of the 1990s had underlined the risk a weak banking sector could pose to the real economy. However, while strengthening the prudential norms, the need was to ensure that the problem of risk aversion did not aggravate. Appropriate institutional arrangements were, therefore, put in place to enable banks to recover their

past dues. These measures had a positive impact as banks were able to recover large funds locked up in non-performing assets. As the asset quality began to improve, banks began to expand their loan portfolio. Competition in this phase also intensified. Still, however, the profitability of the banking sector improved, which, among others, was on account of increased credit volumes, improvement in asset quality and diversification. The capital position of the banking sector also improved significantly. Thus, in this phase, financial health and soundness of banks improved significantly.

11.11 Another major challenge in this phase was to increase the flow of credit to the agriculture and the SME sectors, which had decelerated in the 1990s. Concerted efforts, therefore, were made to improve the flow of credit to agriculture and SMEs. Although the banking sector has made significant progress over the years, a large segment of the population is still seen to have inadequate access to banking and other financial services. Initiatives are, therefore, being taken to expand the outreach of the banking system to the unserved, in both the rural and urban areas.

11.12 Two major issues arose in the Indian context with regard to corporate governance practices in banks. These related to concentration of ownership and the quality of management controlling the bank. Guidelines for ownership and governance in private sector banks were issued in 2005. Appropriate measures were initiated to ensure that ownership was well-diversified and that the directors and owners of the banks adhered to the 'fit and proper' criteria.

11.13 Confidence in the urban co-operative banking sector in early 2000 was eroded due to a run on a multi-state co-operative bank. In order to restore the confidence in urban co-operative banks and overcome the problem of dual control, the Reserve Bank has now instituted a system for regular and systematic consultation with the State Governments. It has signed Memoranda of Understanding (MOU) with the State Governments for constituting Task Forces on Urban Co-operative Banks (TAFCUBs), which are expected to pro-actively address any issues arising in urban co-operative banks in their respective states. So far, 19 States have signed MOUs with the Reserve Bank paving the way for TAFCUBs. This has helped restore confidence in urban co-operative banks. The use of technology is also increasing significantly in this phase as reflected in computerisation of branches, increase in the number of ATMs and introduction of electronic modes of transfer of funds (real time gross settlement system and national electronic funds transfer).

Managing Resource Mobilisation

11.14 Recognising the central role played by the banking system in supporting the growth process by stepping up the savings rate through deposit mobilisation from the household sector, the major surplus sector of the economy, the deposit growth of SCBs in the post-nationalisation period could be analysed broadly in four phases. In the first phase (1969-1984) beginning immediately after the nationalisation of banks in July 1969, deposit growth accelerated sharply as the rapid branch expansion that followed nationalisation enabled banks to tap savings from the rural areas. Reflecting large branch expansion, the population per office declined from 65,000 in 1969 to 16,000 in 1984. In the second phase (1985-1995), deposit growth decelerated as banks faced increased competition from alternative savings instruments, especially capital market instruments (shares/debentures/units of mutual funds) and non-banking financial companies. This was the phase of disintermediation as savings instead of being deployed in bank deposits, were increasingly deployed in alternative financial instruments. Deposit growth decelerated further during the third phase (1995-2005) in the wake of competition from post office deposits and other small savings instruments, which carried significantly higher tax-adjusted returns than bank deposits. Despite deceleration, bank deposits, however, maintained their share in the savings of the household sector. However, there was a significant change in both the ownership pattern and maturity pattern during this phase. The share of bank deposits held by the Government and corporate sectors increased significantly, while that of deposits held by the household sector declined significantly even as the share of bank deposits in the household sector financial savings remained broadly unchanged. The maturity profile of deposits also underwent a change as the share of time deposits in total deposits increased significantly. Within time deposits, the share of term deposits also increased. Further, within term deposits, a significant shortening of the maturity profile occurred in favour of short-term deposits. The shift in the maturity profile was largely on account of increase in the share of the Government and corporate sectors, and the concomitant decline in the share of the household sector in term deposits.

11.15 In the most recent phase (2005-2008), deposit growth accelerated significantly in response to vigorous resource mobilisation efforts by banks to meet the increased demand for credit. Deposit growth

was further facilitated by the extension of tax benefits available on post office deposits to bank deposits of more than five-year maturity. The accelerated growth of bank deposits was despite the sharp increase in resources mobilised by mutual funds and corporates through new capital issues. The growth of post office deposits and other small savings decelerated. As a result, the share of bank deposits and capital market instruments in the financial savings of the household sector increased sharply and that of claims on the Government declined significantly.

11.16 Banks have a major role to play in meeting the resource requirements of a growing economy. Although bank deposits have all along been the mainstay of the savings process in the Indian economy and banks have played an increasingly important role in stepping up the financial savings rate, physical savings, nevertheless, have tended to grow in tandem with the financial savings. A major challenge, thus, is to convert unproductive physical savings into financial savings. Also, in view of the shrinking share of the household sector deposits in total deposits, banks need to explore ways of broadening the depositors' base, especially in rural and semi-urban areas, by offering customised products and features suitable to individual risk-return requirements. Furthermore, the changing demographics and employment patterns have also provided opportunities for banks to reorient their role as financial intermediaries beyond the traditional confines of passive deposit mobilisation by providing new financial products demanded by the relatively young working population.

11.17 Banks need to continue to avoid excessive dependence on borrowings as they can expose themselves to serious risks as was observed in the case of Northern Rock bank in the UK. Finally, the substitution of funds from banks to non-bank instruments was observed in the recent past and such trends may also occur in future. This would call for greater care in the assessment and interpretation of monetary aggregates.

Managing Capital and Risk

11.18 The importance of maintaining bank capital in line with the risks involved in the banking business has assumed greater significance in view of the need for maintaining the safety and soundness of the financial system. The Basel I framework was adopted in over 100 countries. However, over the years, several deficiencies of Basel I surfaced partly due to its inherent features and partly due to rapid financial innovations. The major limitation of Basel I was its 'one-size-fits-all' approach. The inadequacies of Basel I also became evident following the recent financial turmoil as it failed to capture off-balance sheet exposures. The Basel II framework, finalised in July 2006, attempts to align regulatory capital more closely with the inherent risks in banking by using enhanced risk measurement techniques and a more disciplined approach to risk management. In addition, Basel II has in place a variety of safeguards, which also have the benefit of reinforcing supervisors' objectives of strengthening risk management and market discipline.

11.19 In keeping with the international best practices, India also decided to implement Basel II. Foreign banks operating in India and Indian banks having operational presence outside India have already adopted the standardised approach (SA) for credit risk and the basic indicator approach (BIA) for operational risk for computing their capital requirements with effect from March 31, 2008. All other commercial banks (excluding local area banks and regional rural banks) are expected to adopt Basel II not later than March 31, 2009. The parallel runs for these banks are in progress. A significant improvement in risk management practices, asset-liability management and corporate governance in Indian banks under regulatory pressure to adopt Basel II framework has been observed.

11.20 As banks would have to maintain capital for operational risk, overall capital requirements are expected to go up, even if there is an expected decline in the capital required on account of credit risk. Since most of the banks in India are at present operating at capital adequacy ratios higher than the prescribed level, meeting the Basel II requirements is not an issue in the immediate future. In the medium to long-term, however, banks would need to raise capital resources to keep pace with the expansion of their business. An assessment made in the Report suggests that the total capital requirements in the five years 2007-08 to 2011-12, are projected to go up by about Rs.5,70,000 crore assuming that banks maintain CRAR at 12 per cent, while the total capital requirements by public sector banks are projected to go up by about Rs.3,70,000 crore. As regards the various options available to banks, more than 85 per cent of capital requirements in the past were met by banks through internally generated resources. Apart from internal resources, banks also have headroom available to raise Tier 1 capital under innovative perpetual debt instruments (IPDI) and perpetual non-cumulative preference shares (PNCPS). In addition, some public sector banks have some headroom

available to raise capital from the market and dilute the Government shareholding to 51 per cent.

11.21 While the Basel II framework, by making the capital requirements risk sensitive, would enhance the stability of the financial system, its implementation also raises several issues/challenges. India follows a three track approach with commercial banks, co-operative banks and regional rural banks having been placed at different levels of capital adequacy norms. The varying degree of stringency in capital regulation for different categories of banks raises the possibility of regulatory arbitrage. Non-Basel entities [RRBs and rural co-operatives banks such as state co-operative banks (StCBs) and district central co-operative banks (DCCBs)], therefore, need to be subjected to Basel norms. Subsequently, based on the experience of implementing Basel II framework in respect of commercial banks, a view could be taken on the application of Basel II norms for other banks. The role of credit agencies is crucial under the standardised approach for measuring credit risk. Banks would have to continuously and constantly upgrade their skills, technology and risk management practices in line with market developments. Apart from the adequate skills to be developed by the banks and by the Reserve Bank, the increased cost of adopting advanced approaches along with other incumbent risks and uncertainties require adequate safeguards to be put in place before these approaches are adopted. These, among others, could include prescribing the leverage ratio so that the capital held does not fall significantly. The problems relating to pro-cyclical lending behaviour, which is inherent in the Basel II framework, could be countered by banks by managing regulatory capital position in such a way that they remain adequately capitalised during economic downswings so that they are not required to raise capital. Supervisors could also prescribe additional capital under Pillar 2 during a phase of business cycle expansion. The implementation of Basel II norms is likely to create tensions on home-host co-ordination issues and it would be a challenge to mitigate such tensions.

Lending and Investment Operations of Banks

11.22 Banks in India have traditionally been the main source of credit for various sectors of the economy and their lending operations have evolved in response to the changing needs of the economy. Credit extended by scheduled commercial banks witnessed three distinct phases from the early 1990s. Bank credit growth was erratic in the first phase (from 1990-91 to 1995-96). In the second phase (from 1996-97 to 2001-02), credit growth decelerated sharply and remained range-bound due to the industrial slowdown, high level of NPAs and tightening of prudential norms, which made banks risk averse. The third phase (from 2002-03 to 2006-07) was generally marked by high credit growth attributable to several factors, including pick-up in economic growth, sharp improvement in asset quality, moderation in inflation and inflation expectations, decline in real interest rates, rising income of households and increased competition with the entry of new private sector banks.

11.23 Economic reforms and the evolving economic structure had a profound impact on bank credit to the various sectors during the 1990s and the current decade. Institutional credit to agriculture has made considerable progress since the mid-1960s. Based on the All India Debt and Investment Surveys (AIDIS) by the National Sample Survey Organisation (NSSO), the share of borrowings of cultivator households from institutional sources increased from 7.3 per cent in 1951 to 66.3 per cent in 1991, but declined to 61.1 per cent in 2002. Between 1991 and 2002, borrowings by cultivator households increased sharply, especially from non-institutional sources. The increase in household indebtedness was largely on account of consumption and similar other expenditures. It is, therefore, possible that the increase in indebtedness of cultivator households to non-institutional sources was also partly on account of increase in consumption expenditures, which could not be easily financed from institutional sources. As a result, the share of non-institutional sources in the indebtedness of cultivator households increased between 1991 and 2002 even as indebtedness of cultivator households to institutional sources grew at a higher rate between 1991 and 2002 in comparison with 1981-91. Furthermore, credit growth by scheduled commercial banks to agriculture accelerated sharply after 2002 (the reference year for the latest NSSO survey). As a result, the share of credit to the agricultural sector in total credit by scheduled commercial banks and credit intensity of the agricultural sector improved significantly. However, some disquieting features have also been observed. First, the share of long-term loans in total credit to agriculture declined almost consistently between 1991 and 2006 – the share in 2006 was less than half of that in 1991. Second, the share of marginal farmers in direct finance to farmers in terms of amount disbursed and in total number of credit accounts held by them showed little perceptible improvement. Third, the share of small

borrowal accounts relating to agriculture (agricultural borrowal accounts with a credit limit up to Rs. 2 lakh) in total agricultural borrowal accounts declined in the current decade. However, this decline would partly be on account of loans moving to higher credit limit size classes on account of inflation, specifically in the case of small borrowal accounts with a credit limit size of less than Rs. 25,000.

11.24 Although the share of credit to industry in total bank credit declined, credit intensity of industry increased sharply. A cross-country survey suggests that the reliance of industry on the banking sector in India was higher than that in many other countries. Banks in India have increased exposure to the infrastructure sector in recent years. However, increased credit intensity of industry could not be explained by increased exposure to infrastructure alone. Credit growth to the SME sector, which slowed down significantly between 1996-97 and 2003-04, picked up sharply from 2004-05. However, the share of the SME sector in total non-food bank credit declined almost consistently from 15.1 per cent in 1990-91 to 6.5 per cent in 2006-07 and also in total priority sector advances from 43.6 per cent at end-March 1998 to 17.9 per cent at end-March 2006. It picked up marginally to 18.6 per cent at end-March 2007. This suggests that it is the large corporates that have increased their dependence on the banking sector. The major development that has taken place over the last decade is the diversification of credit in India towards retail credit. The share of retail credit comprising housing loans, credit to individuals, credit cards receivables and lending for consumer durables, in total bank credit increased from 6.4 per cent in 1990 to 22.3 per cent in 2007. On the whole, agriculture, large corporates and retail sector benefitted from credit expansion, while credit growth to the SME sector remained tepid until recently.

11.25 Banks' investment portfolio (other than that mandated by the minimum statutory requirement) was adjusted mainly in response to the requirement of the loan portfolio. Banks continued to remain invested in SLR securities at high levels between 1993-94 and 1997-98 when the SLR was brought down significantly. This was mainly because demand for bank credit slowed down and banks became risk averse due to impairment of their asset quality. However, banks liquidated the surplus stock of government securities during 2002-03 to 2006-07, when credit demand picked up and their asset quality improved. Non-SLR investments by banks were adjusted quickly in response to their requirement of SLR portfolio and credit demand.

11.26 Notwithstanding some pick-up in credit growth to the agriculture and SME sectors in recent years, there is need for more concerted efforts to increase the flow of credit to these sectors given their significance to the economy. Creating enabling conditions, *i.e.,* providing irrigation facilities, rural roads and other infrastructure in rural areas, is necessary to augment the credit absorptive capacity. In India, devising products to suit the specific needs of the farmers is critical. There is also a need for comprehensive public policy on risk management in agriculture. Computerisation of land records can go a long way in smoothening the flow of credit to agriculture.

11.27 Banking institutions need to improve their credit assessment capabilities to improve the flow of credit to SMEs. It is necessary to scientifically assess the small-scale enterprises and 'not to equate SSI with high risk' merely on perception. Use of cluster based lending has proved quite effective in many countries as also in India as revealed by a number of empirical studies. The need is to encourage the growth of such clusters. Small business credit scoring has proved its utility in many economies for expanding SMEs' access to formal credit. As credit information companies develop in India, better and more systematic credit information on SMEs should become available. Asset-based lending is very successful in the US and some other developed economies. Banks in India could also adopt this method for informationally-opaque SMEs.

11.28 In view of the increased exposure of banks to infrastructure, banks need to guard against asset-liability mismatches. There is a need to consider transferring of risk from the balance sheet of the banks to other players in the financial system. The industrial sector continues to rely heavily on the banking sector in contrast to many developed and emerging economies, where the reliance of industry on the banking sector has declined. Therefore, industry needs to gradually reduce its dependence on the banking sector to enable it to meet the growing requirements of agriculture, infrastructure and the SME sector, which are unable to tap funds from other sources.

Financial Inclusion

11.29 Financial inclusion is widely recognised as a crucial element in ensuring equitable growth. Although there is extensive literature on the subject, there is no universally accepted definition of financial inclusion/exclusion. This has also hindered the measurement of financial inclusion/exclusion. In the Indian context, financial inclusion has been described

as the provision of affordable financial services, *viz.*, access to payments and remittance facilities, savings, loans and insurance services by the formal financial system to those who are excluded. Following a multi-pronged approach, several policy initiatives have been undertaken to promote financial inclusion in India from time to time, although the term 'financial inclusion' was not in vogue until 2005. An assessment of the progress in financial inclusion, however, is hampered by the lack of relevant data/information. Accordingly, an attempt has been made in this report on the basis of some proxy indicators and data/information available from various sources including NSSO surveys on household indebtedness and data from banks and other financial institutions. Various data sets/sources suggest different extent of financial inclusion due to methodological/definitional differences. There is, therefore, need to exercise utmost caution while drawing any firm conclusion about the extent of financial inclusion/exclusion based on any single source.

11.30 The available information suggests that financial inclusion improved considerably from the late 1960s to the early 1990s as reflected in the expansion of formal financial services. This trend continued in the 1990s. However, according to the 59th round of the All India Debt and Investment Survey of the NSSO, the share of number of households accessing credit from non-institutional sources increased sharply in 2002 in comparison with 1991 (the reference year of last survey). This increase was mainly due to increased indebtedness of households for consumption and similar other purposes for which finance could not be easily availed of from formal sources. As a result, household indebtedness to non-institutional sources increased between 1991 and 2002 even as institutional credit to households between 1991 and 2002 expanded broadly at the same rate as between 1981 and 1991. Within institutional sources, bank credit grew at a marginally lower rate between 1991 and 2002 compared with that between 1981 and 1991, which needs to be viewed in the context of banks' increased focus in the 1990s on the strengthening of their balance sheets on account of application/tightening of prudential norms. Marginal deceleration in household indebtedness to banks between 1991 and 2002 was in line with the deceleration in overall bank credit.

11.31 Once the financial health of banks improved, they began to expand their credit portfolio again. The Reserve Bank and the Government also initiated several measures to bring more and more people within the banking fold. An analysis of Basic Statistical Returns data beyond 2002 reveals that credit penetration (credit accounts per 100 persons) and credit flow to the rural and agriculture sector improved significantly between 2002 and 2007, that is, after the release of the NSSO data. Responding to the initiatives taken in recent years, the number of credit accounts with all organised financial institutions (commercial banks, regional rural banks, urban co-operative banks, PACS, MFIs and SHGs) per 100 adults improved from 18 in 2002 to 25 in 2007. The data also suggest a significant strengthening of the micro-finance movement. Apart from credit penetration, significant improvement is also observed in deposit penetration. The number of savings accounts in all formal institutions increased to 54 per 100 persons (82 per 100 adults) in 2007 from 51 per 100 persons (80 per 100 adults) in 1993. Around 22 per cent people in the country who are below the poverty line have little or no capacity to save. After excluding the people below the poverty line, there are a little over 100 savings accounts per 100 adults.

11.32 While there has been significant improvement in financial inclusion in recent years, going forward, several challenges remain which need to be addressed. First of all, a proper assessment of the problem of financial exclusion is necessary for initiating appropriate policy responses for promoting financial inclusion. At present, however, there is no single comprehensive source of such information. There is, therefore, a need to conduct specific survey for gathering information relating to financial inclusion/exclusion. Alternatively, the scope of the decadal census could be expanded to include information on financial inclusion/exclusion.

11.33 One of the major hindrances to financial inclusion is high operating cost as institutions have to reach out to far flung areas and deal in small transactions. The key to enhanced financial inclusion is, thus, reduction in transaction costs. Here, technology can play a major role. From the perspective of institutional development, RRBs and co-operative banks, which were established to expand the outreach of financial services in the unbanked sectors/segments, are expected to play a greater role in promoting financial inclusion in future. However, all these institutions and banks would need to design appropriate products tailor made to suit the requirements of the people with low income so that they are not driven to non-institutional sources. Financial literacy and credit counselling, by educating the poor people, can also go a long way in creating

the right conditions for financial inclusion. There is also the need to improve the absorptive capacity of financial services by providing basic infrastructure. Investment in human development such as health, water, sanitation and education, would, in particular, be helpful. In future, faster growth in income and increase in non-farm based activities in rural areas would lead to increase in demand for credit. Banks, therefore, would have to mobilise increasingly larger resources to meet the growing credit demand. Simultaneously, banks would also need to enhance the risk assessment and risk management capacities in order to maintain credit quality and sustain the credit growth.

Competition and Consolidation

11.34 Mergers and acquisitions across the globe have taken place at an accelerated pace since the beginning of the 1990s, driven mainly by competitive pressures. As a result, the total number of banks operating all over the world have declined. Cross-country evidence shows that the consolidation process has been an outcome of market forces in some countries, while in some other cases, it was mainly led by the Government. There has been a significant increase in the number of bank amalgamations in India in the post-reform period. While amalgamations of banks in the pre-1999 period were primarily triggered by the weak financials of the banks being merged, in the post-1999 period, mergers occurred between healthy banks, driven by the business and commercial considerations.

11.35 Despite a number of bank mergers and acquisitions, the Indian banking system has become less concentrated during the post-reform period. In fact, the degree of concentration in the Indian banking system, based on concentration ratio and Hirschman-Herfindhal Index, was one of the lowest among the select countries studied for the year 2006. The level of competition declined somewhat in the initial years of reforms, but improved significantly thereafter. Based on the empirical evidence, Indian banking industry could be characterised as a monopolistic competitive structure, as is the case with most other advanced countries and EMEs. An empirical analysis also suggests that mergers and amalgamations had a positive impact on efficiency both in terms of increase in return on assets and reduction in cost, when the transferees were public sector banks.

11.36 A number of critical issues have emerged in the process of bank consolidation in India. These relate to the nature and extent of further consolidation; continued government ownership of public sector banks; further opening of the banking sector to foreign banks; and combining of banking and commerce. The consolidation process in the banking sector that is already underway could accelerate in future in view of several developments such as the planned review of the roadmap of foreign banks and implementation of Basel II. In the medium to long-term, the ownership pattern of public sector banks may also change. While some consolidation of the banking sector may be necessary, it would be appropriate to have a policy in place to ensure that the competition is not undermined any time in the future.

11.37 The issue of ownership in public sector banks needs to be viewed against the changed operating environment. The ownership of public sector banks is not an issue from the efficiency viewpoint as public sector banks in India now appear to be as efficient as new private and foreign banks, as revealed by the various measures. However, the operating environment for banks has been changing rapidly and banks need flexibility to respond to the evolving situation. Another issue that needs to be considered is the funding of capital requirements of public sector banks given the present floor of 51 per cent on Government equity in public sector banks. In the medium-term, this can become an issue hampering the growth of public sector banks, if the Government is not able to provide adequate capital for their expansion.

11.38 The roadmap of foreign banks is due for review in 2009. This would involve several issues. The increased presence of foreign banks, by intensifying competition, may accelerate the consolidation process that is underway. However, at the same time, this may also raise the risk of concentration if mergers/ amalgamations involve large banks. The experience of some other countries also suggests that the emergence of large banks due to consolidation has resulted in reduced lending to small enterprises significantly. All these issues would need to be carefully weighed at the time of review.

11.39 The policy relating to ownership of banks by commercial interests may have to take full account of international practices, given the issues relating to potential conflict of interests, increased potential of contagion effects and increased concentration.

Efficiency, Productivity and Soundness of the Banking Sector in India

11.40 The efficiency and productivity of SCBs in India was analysed empirically, using both accounting

and economic measures. The accounting measures reveal that there has been an all-round improvement in the productivity/efficiency of the SCBs in the post-reform period. At the time of initiation of financial sector reforms, most of the efficiency ratios did not compare well with the most advanced countries and emerging market economies. The performance of banks, especially nationalised banks, worsened in the initial years of reforms as they took time to adjust to the new environment. However, a distinct improvement was discernable, especially beginning 2001-02. The efficiency/productivity parameters have moved closer to the global levels. The most significant improvement has occurred in the performance of public sector banks. The performance of public sector banks in terms of most of the parameters has converged with those of the foreign banks and new private sector banks.

11.41 Intermediation cost as also the net interest margin declined across bank groups. Despite this, however, profitability of the banking sector improved. Thus, it was not the higher interest rate spreads but the increased business volumes and improvement in efficiency that led to higher profitability. While competitive pressures led banks to finely price their products, increased volumes resulting from robust economic growth and large trading profits from treasury operations during 2002-03 to 2004-05 also enabled banks to sustain their profitability. Business per employee and per branch also increased significantly across bank groups. As a result of all these factors, return on assets and return on equity improved during the post-reform period.

11.42 The improvement of various accounting measures, however, varied across bank groups. In terms of cost ratios (operating cost to income), foreign banks were more efficient than domestic banks. Similarly, in terms of labour productivity, foreign and new private banks were ahead of their peer groups. Labour productivity reflected by business per employee in public sector banks was about one-half of that of industry's best performers, *viz.*, foreign banks and new private banks. The reason for this was the transaction size, which is significantly larger in the case of foreign and new private sector banks as they deal largely with premium corporates and high net worth individuals. In terms of net interest margins and intermediation cost, new private sector banks and public sector banks, respectively, were more efficient than the other bank groups. The cost of deposits of foreign banks was the lowest. However, this was not passed on to the borrowers, leading to higher net interest spread. An empirical exercise suggested that the operating cost was the main factor affecting the net interest margin. Non-interest income and asset quality were the other determinants of net interest margin.

11.43 Efficiency and productivity, measured by using non-parametric Data Envelopment Analysis (DEA) method, corroborated the findings of the accounting measures or financial ratios. Efficiency improved across all bank groups and most of these efficiency gains emanated a few years after the reforms, *i.e.*, from 1997-98 onwards. Technological innovations along with increased efficiency levels led to across the board rise in productivity of bank groups. While most of the domestic banks, including public sector and new private sector banks were able to catch up with enhanced output potential, some banks lagged in keeping pace with the technological innovations. The empirical analysis suggests that in the Indian context, there is no relationship between ownership and efficiency as most efficient banks relate to all the three segments, *i.e.,* public, private and foreign. In fact, the 28 least efficient banks belonged to the private and foreign bank segments. On the other hand, there exists a positive and significant relationship between size and efficiency as also between diversification and efficiency. This implies that large and diversified banks are more efficient. Various factors contributed to improved efficiency and productivity. These included technological advances, reduction in statutory pre-emptions, reduction in non-performing assets, shortening of maturity profile of deposits and lengthening of asset profile.

11.44 The soundness of the Indian banking sector improved both at the aggregate level and across bank groups as was reflected in the CRAR. Providing evidence for both bad luck and bad management hypotheses, the analysis reveals that macroeconomic factors as well as quality of management affect asset quality of banks.

11.45 Notwithstanding significant improvement, there are several areas which need to be addressed. The intermediation cost in India, driven largely by the high operating costs, is still high by global standards. There is, therefore, a need to bring down the operating cost. As competition intensifies, net interest margins of banks are likely to come under further pressure in the future. Banks, therefore, need to seek new non-interest sources of income to sustain their profitability. Although the cost of funds for foreign banks is significantly lower, the benefit of low cost of funds

was not passed on to the borrowers, as was reflected in the high net interest margin. Although overall efficiency and productivity improved, there was evidence to suggest that resources were not being utilised in the most efficient manner. In the case of public sector banks, one area of concern is the low business per employee, which is almost one half of that of new private sector banks. Public sector banks, therefore, have to strive further to improve labour productivity and bring it on par with the new private sector banks. Similarly, there is a need for increased absorption of enhanced technological capability (innovation) by several banks to further augment productivity of the banking sector through changes in processes and improvement in human resource skills. The challenge in future for the banking sector in India is to bring down the intermediation cost and at the same time maintain high profitability. This can be achieved only by improving efficiency and tapping non-interest sources of income.

Regulatory and Supervisory Challenges in Banking

11.46 The financial landscape in the last few years has changed significantly which has posed new challenges for the regulators. The banking supervisors across the globe are facing the challenge of devising appropriate regulatory and supervisory structures for a financial industry that is constantly changing. Therefore, there has been re-thinking on several aspects of regulation and supervision. In some countries such as the UK, supervision has been hived off from the central bank to avoid conflict of interest with monetary policy. In response to blurring of distinctions among providers of financial services and emergence of financial conglomerates, a single regulator approach has been adopted in some countries. Some other countries (for instance, Australia) have adopted objective-based regulation. Increased emphasis is being placed on market discipline to economise on scarce supervisory resources. Greater attention is also being paid to disclosures, to allow markets and counterparties to better control excessive risk-taking by acting as disciplinary agents. Supervisors are also trying to assess all aspects of a financial firm's business and foresee the multiple sources of risk rather than merely ensuring compliance with regulatory parameters. The fast evolving financial sector and the ever expanding rule books of the regulatory bodies have made some countries such as the UK adopt principle-based supervision.

11.47 The recent events in global financial markets in the aftermath of the US sub-prime crisis have evoked re-thinking on several regulatory and supervisory aspects of the banking industry. First, an unresolved issue is how to cope with liquidity stresses under unusual circumstances. Second, it is also being debated whether 'pro-cyclicality' of capital requirements is one of the factors with inherent tendency that escalates the impact of booms and busts. Third, regulation of complex products and monitoring of derivatives is another issue. Fourth, the role of non-banks in the financial system is also being examined from a regulatory perspective. Fifth, it is being debated whether institutions should be allowed to become so big and so complex that their problems could have system-wide repercussions. The Reserve Bank has been keenly observing the latest trends in banking supervision across the globe with a view to judging their relevance for India.

11.48 The Reserve Bank, like other bank supervisors, has been proactively responding to the various changes in the financial system by bringing about necessary changes in the regulatory and supervisory framework. There has been a shift in the regulatory focus from micro regulation to macro management based on prudential elements, with a view to strengthening the banking sector and providing it with greater operational flexibility. Mechanisms have also been put in place to meet challenges arising out of globalisation and liberalisation, financial innovations and technological advancements, and growing financial conglomeration.

11.49 A major challenge in the years ahead would be to ensure that financial conglomerates are regulated adequately. The existing monitoring mechanism for financial conglomerates has some limitations, although an attempt is being made to take a group-wide perspective through inter-regulatory discussions and co-operation.The growing use of e-finance products poses certain risks for banks, which would require appropriate safeguards.

Some Final Reflections

11.50 The Report has attempted to analyse the various aspects of Indian banking such as management of resource mobilisation; management of risk and capital, lending and investment operations of banks; financial inclusion; consolidation and competition; efficiency, productivity and soundness; and regulatory and supervisory challenges. This analysis was attempted against the backdrop of the evolution of the Indian banking sector beginning the

18th century with a focus on the post-independence period. The analysis suggests that the Indian banking sector has witnessed several structural changes from time to time. India now has a well developed banking infrastructure, conducive regulatory environment and sound supervisory system. Banks have become efficient and sound which make them comparable to the best in the world. Banks in India have benefitted from the robust growth in the last few years, which enabled them to produce strong financial performance. Banks responded to the increased competition by diversifying and expanding through inorganic (acquisitions) and organic growth of existing businesses. While some of the changes were triggered by endogenous factors, others were on account of exogenous factors or were part of global developments. Technological development was perhaps the single most important exogenous factor that affected the banking sector. On the other hand, endogenous changes were in the form of mergers and acquisitions, blurring of distinctions among providers of financial services and the emergence of financial conglomerates. While banks have been able to cope with the changed environment, the fast evolving financial landscape would continue to pose several challenges in future.

11.51 The end result of the rapidly changing financial landscape would be increased competition, both within the banking industry and with non-banks. A higher degree of competition may put pressure on margins, which in turn, would impinge on profitability of banks. Banks, therefore, need to restructure on the cost side. High operating cost and diversification of activities would be some of the aspects, which banks need to focus on in the years ahead to remain competitive and profitable. Banks also need to combine their inputs in a better way to increase productivity and efficiency. The increase in the technology intensity is crucial in order to reduce the operating cost and achieve higher productivity. Some critical factors, however, need to be addressed while dealing with IT, including appropriate security and integrity of the system, disaster recovery management and business continuity plans. Integrity of the data processed and stored in IT systems need to be ensured by the banks at all times and adequate back up, including real time replication, is required to be put in place. The broad outlines have already been provided in the "Financial Sector Technology Vision Document (2008-10)". Though Indian banks have done exceedingly well in terms of containment of NPLs, maintaining asset quality would continue to pose a constant challenge for banks.

11.52 Banks are expected to face increased competition from the capital market. Changes in demographics that are underway would alter customers' financial needs which would have implications for the products and the delivery channels. The dependency ratio in India is likely to decline in the next few years. With greater financial wealth and higher proportion of young popoulation, households will tend to shift their preference towards riskier assets and consequently there will be a shift away from holding of bank deposits to other high risk, high return products. Thus, in future, the disintermediation process may gain further momentum, whereby the borrowers will bypass banks and obtain finance directly from the capital markets. The challenge for the banking industry would be to provide competitive products and services and if they fail to do so, they will lose market share to other segments. The overall deposit mobilisation may not be affected as money would ultimately come back to the banking system from corporates/capital market intermediaries in the form of current/savings deposits as was observed in the recent past. This may also reduce the cost of borrowings as such deposits are less risk-sensitive and less expensive. However, banks would lose a stable source of funding and would expose themselves to a serious asset-liability mismatch, unless the asset side is also restructured.

11.53 The use of technology based services such as ATM, internet and mobile phone is likely to gain more prominence. This is also expected to intensify competition. Competition does not necessarily require the physical presence of banks but simply that they are able to handle the entire market freely. As banks grow in size and operate in multiple markets, they would have access to non-deposit liabilities. If the recent experience of Northern Rock is any guide, banks need to avoid excessive dependence on non-deposit liabilities. In case banks are forced to resort to such liabilities, it should be within the prudent limits and appropriate measures also need to be taken to manage the risk arising out of such borrowings.

11.54 The process of mergers and acquisitions in the Indian banking sector, which has gained momentum since 1999, is expected to accelerate further. It is important that mergers and acquisitions in the banking sector in future are market-led and based on commercial considerations, rather than prompted by the Government or the regulator, except perhaps where there is a systemic crisis (Reddy, 2004). Though consolidation in the public sector banking segment, which accounts for a major share

of total assets of the banking system, is still a work-in-progress, there are enabling legal provisions for the purpose in the respective statutes of public sector banks. The process of consolidation may also acquire cross-border dimension in future.

11.55 The recent trends also suggest that technological developments and financial innovations would increase the overall complexity and the risks to which the banking sector could be exposed in future. The focus, therefore, as in recent years, should continue to be on strengthening the safety and soundness of the banking sector so that the benefits of increased competition and greater efficiency can be fully realised. In other words, changes to improve competition and efficiency in the banking sector would need to be balanced by the enhanced safety and soundness of the system. It is the banks themselves, rather than the regulator or supervisor, that are mainly responsible for their performance as well as financial health. In view of growing complexity, risk measurement and risk management at the institutional level and governance practices in banks need to be on the top of the agenda. The major challenge would be to exploit the opportunities that would emerge, while managing the risks.

11.56 The Reserve Bank has always endeavoured to align regulation and supervision of banks in India with the global best practices, while tailoring them to meet country-specific requirements through a consultative process. This has worked well and needs to be pursued in future. However, going forward, the Reserve Bank would have to address some complex issues such as regulating the financial conglomerates adequately. The home-host issues arising from cross-border presence of international banks will also have to be addressed.

11.57 The recent global financial turmoil has revealed that in times of heightened stress, liquidity shortages may spill over to funding shortages, affecting the solvency of banks and financial institutions. Globally, central banks have addressed both these shortages through various initiatives. In the wake of turmoil in global financial markets, the supervisors are facing several issues such as strengthening prudential oversight, liquidity and risk management, enhancing transparency and valuation, changing the role and uses of credit ratings, strengthening the authorities' responsiveness to risk and implementing robust arrangements for dealing with stress in the financial system. Recent financial market developments also raise several issues and concerns. First, according to the IMF's assessment, experience from the past episodes may not provide much guidance for the current unprecedented situation as the twin engines of the financial system, *viz*., the banking system and the securities market, are both faltering at the same time. Second, while the practice of increased use of innovative credit instruments and complex layering of risk diffusion have reduced information costs, they have also enabled the investor or risk taker to become progressively remote from the ultimate borrowers where the actual risks reside. In this situation, the identification and location of risks in the whole chain is becoming increasingly challenging. Third, the role of rating agencies has also come under scrutiny. Fourth, confidence is also falling in the strength of the insurers that guarantee payments on bonds. Fifth, the increased complexity of financial products and markets poses greater challenges to the regulators and supervisors to keep pace with the evolving risks to markets and institutions. Sixth, an important lesson emerging from the recent financial market developments is that the focus should not be on how the turmoil should be managed, but on what policies could be put in place to strengthen the financial system on a longer-term basis regardless of specific sources of disturbances. These issues point towards the challenges that lie ahead to preserve the safety and soundness of the financial system.

11.58 The banking and financial policies in the near term would need to place greater emphasis on strengthening the banking sector further without stifling the initiative for innovation. The continuous refinement and strengthening of the regulatory and supervisory framework in accordance with the evolving conditions would be imperative. Besides further strengthening of all categories of banks, improved credit delivery, conducive credit culture, customer service and financial inclusion would need to be placed prominently in the future policy agenda for the Indian banking sector.