RESERVE BANK OF INDIA

BULLETIN

JANUARY 2023

VOLUME LXXVII NUMBER 1

The Reserve Bank of India Bulletin is issued monthly by the Department of Economic and Policy Research, Reserve Bank of India, under the direction of the Editorial Committee.
The Central Board of the Bank is not responsible for interpretation and opinions expressed. In the case of signed articles, the responsibility is that of the author.

For subscription to Bulletin, please refer to Section 'Recent Publications'

The Reserve Bank of India Bulletin can be accessed at **https://bulletin.rbi.org.in**

CONTENTS

SPEECHES

South Asia's Current Macroeconomic Challenges and Policy Priorities
Shaktikanta Das

Fintech & Regulation
T. Rabi Sankar

Challenges and Opportunities in Scaling up Green Finance
M. Rajeshwar Rao

*South Asia's Current Macroeconomic Challenges and Policy Priorities**

Shaktikanta Das

I am delighted to have been invited by the IMF to join this distinguished gathering here today to discuss pathways to resilient, sustainable and inclusive growth in South Asia. I am happy to note that the conference proceedings will be anchored by the research findings and policy recommendations of the book titled "South Asia's Path to Resilient Growth". In the current international setting, global trade and growth outlook appear uninspiring, and policies have to be conducted amid a whirlwind of uncertainty. At such critical times, conferences of this nature can help us better understand the evolving scenarios and policy trade-offs. In my address today, I shall briefly cover some of my thoughts on South Asia's Current Macroeconomic Challenges and Policy Priorities.

Looking back into history, the South Asian region has been a key hub of ideas, commerce, art and culture, etc. The Indus Valley civilisation was among the three earliest civilisations on earth and was the most extensive. In the so called middle ages, trade and commerce flourished in a variety of commodities such as spices, precious metals and other minerals, handicrafts and food items. Overall, the South Asian region has had an outsized influence on the progress of civilisation and trade in the world. Currently, the region accounts for about 25 per cent of world population. With a median age of 27 years, it is one of the youngest regions in the world. The average growth rate of the region has accelerated from 3 per cent in the 1970s to about 7 per cent in the latest decade (pre-pandemic). Consequently, per-capita income levels have risen alongside notable progress on key development parameters. As per the IMF estimates, South Asia contributes nearly 15 per cent to global growth, led by India and Bangladesh. The region also receives one-fifth of total remittance flows in the world.

The South Asian region has grown, responding to formidable global challenges in the past. Following the food crisis of the 1960s, the region successfully implemented the Green Revolution. After the oil shocks of the 1970s, emigration from South Asia to West Asia became one of the largest market-driven labour flows. This, in turn, led to a significant increase in remittance flows to the region. The Asian financial crisis of 1997 impacted the South Asian countries in terms of surges in capital outflows and exchange market pressures. Over the years, as a crisis prevention strategy, the South Asian countries prioritised sound macroeconomic policies and embraced financial sector reforms focusing on competition, prudential regulation, enhanced transparency, audit and accounting standards. These measures helped in preserving macro stability while sustaining integration of domestic economies with the global economy.

In recent years, multiple shocks, in particular the COVID-19 pandemic and the war in Ukraine, have dampened the economic prospects of the South Asian region, as in other parts of the world. Some countries in the region have also been contending with the ramifications of unsustainable debt and climate change induced events. Consequently, they have been seeking recourse to the IMF's financing facilities. Notwithstanding these challenges, as per the World Economic Outlook database (October 2022) of the IMF, India, Bangladesh and Maldives would be among the fastest growing economies in the world in 2022 and 2023. According to the Asian Development Bank's December 2022 outlook, the South Asian region's GDP

* Keynote Address by Shri Shaktikanta Das, Governor, Reserve Bank of India – January 06, 2023 - at the high-level Conference co-organised by International Monetary Fund (IMF) Asia and Pacific Department (APD) and IMF South Asia Regional Training and Technical Assistance Centre (SARTTAC), New Delhi

is projected to grow at 6.5 per cent in 2022 and 6.3 per cent in 2023.

The World Bank estimates that regional co-operation could be a win-win situation for all countries of the region[1]. For example, intra-regional trade is currently only one-fifth of its potential, implying an annual shortfall of US$44 billion. The World Bank assessment also suggests that a common electricity market for Bangladesh, Bhutan, India and Nepal can yield savings of US$17 billion in capital costs. Investment in transport and logistics could help reduce the cost for container shipments in South Asia. According to a study by the IMF (2019) on South Asia, more than 150 million people will enter the South Asian labour force by 2030. The dependency ratio is expected to continue ebbing for almost two decades, indicating the strong demographic dividend the region is set to reap.

Policy Priorities

I would now like to focus on some of the desirable policy priorities for the South Asian region. I have identified six such policy priorities.

Taming Inflation

Multiple external shocks in the form of COVID related global supply chain disruptions, food and energy crisis following the war in Ukraine, and financial market volatility arising from the aggressive monetary policy tightening have exerted sustained price pressures in the South Asian economies, as in other parts of the world. During the first three quarters of 2022, food price inflation in South Asia averaged more than 20 per cent. The region's heavy dependence on imported fossil fuels has made it vulnerable to imported fuel inflation. For successful disinflation, credible monetary policy actions accompanied by targeted supply side interventions, fiscal, trade policy and administrative measures have become the key instruments. While the recent softening of commodity prices and supply chain bottlenecks should help in lowering inflation going ahead, risks to growth and investment outlook may rise if inflation persists at high level. Prioritising price stability, may therefore be the optimal policy choice in the current context for the region. The approach to disinflation, however, needs to be mindful of the rising risks to the growth outlook in an environment of deteriorating prospects for global growth and trade activity.

Containing External Debt Vulnerabilities

The surge in external debt in recent years and associated vulnerabilities have undermined macroeconomic stability in several countries of the South Asian region. External debt, which was already elevated in low- and middle-income countries (that include all South Asian economies) in the pre-pandemic period, surged to US$ 9.3 trillion in 2021 from US$ 8.2 trillion in 2019, an increase of US$ 1.1 trillion.

The Debt Service Suspension Initiative (DSSI) was set up by the G20 in May 2020. Up to December 2021, an estimated US$ 12.9 billion of debt service was deferred. According to the World Bank, 60 per cent of the 73 DSSI-eligible countries are at high risk of debt distress or are already experiencing it. It is estimated that total external debt service payments on public and publicly guaranteed debt by poorest countries may rise by 35 per cent to over US$ 62 billion in 2022 and to remain high up to 2024 due to rising global interest rates and the compounding of interest on DSSI debt service deferrals.

Even though the participation of private creditors was encouraged in the DSSI, their response has not been encouraging. There has been a notable shift in the creditor composition of low- and middle-income countries between 2010 and 2021. The share of

[1] Source: https://www.worldbank.org/en/programs/south-asia-regional-integration/overview

lending by private creditors in long-term public and publicly guaranteed debt was 61 per cent in 2021 (46 per cent in 2010) and the share of debt owed to bondholders was 47 per cent in 2021 (29 per cent in 2010).

A distinct shift in the creditor base over time in favour of private lenders and non-Paris Club official creditors has added a new dimension to debt restructuring processes for the low-income International Development Assistance (IDA)-eligible debtor countries. The share of debt owed to non-Paris Club creditors rose to 68 per cent in 2021 from 42 per cent in 2010. The increasing reliance on private creditors has raised debt servicing costs and complicated creditor coordination in debt resolution efforts. During 2010-2021, the average maturity on loans from private creditors was 12 years as compared with 26 years for loans from official creditors, and the average interest rate on loans from private creditors was 5 per cent *vis-à-vis* 2 per cent on loans from official creditors.

The role of multilateral organisations, particularly the IMF and the World Bank, becomes crucial in making debt treatment efforts more effective, while also strengthening the mechanism of recording, reporting and analysis of debt data so as to enhance transparency and preserve debt sustainability. The IMF's role in capacity building in the region, with a focus on region specific macro dynamics, policy effectiveness challenges, and economic aspirations of the nations would also be helpful.

Raising Productivity

While sustained and broad-based economic recovery remains the current policy focus, it is necessary to undertake deep structural reforms to raise the potential growth trajectories of the economies in the South Asian region. Ongoing global realignment of supply chains, green transition and advances in technology offer new opportunities for investment and growth, but policies would need to create the congenial climate for attracting new private investment, with public sector taking the lead in areas that can create large positive externalities, such as infrastructure, education, and health.

In this context, let me highlight some specific areas of policy priority. First, undertaking desirable structural change would require an improvement in resource allocation – moving production from low productive sectors to high productive sectors and promotion of innovation. Second, skill mismatches – a major constraint to resource reallocation – would warrant policy focus on education and skill upgradation. This is particularly important to the South Asian region, as the favourable demography of the region would require that production processes must be labour-intensive while being globally competitive. Third, while free trade and FDI have been conventionally congenial for diffusion of technology and augmentation of productivity, the region's investment on R&D must also increase from the current low levels, and the policy environment for scientific research and start-ups must be made more rewarding. Fourth, investment in physical infrastructure – energy, transportation, telecommunication – which are prime drivers of productivity growth have to be enhanced.

Infrastructure in the contemporary world of digital revolution would also include digital infrastructure – data centres, cellular towers and fibre connectivity, with an emphasis on scalability and resilience. Fintech, E-commerce, Ed Tech, Health Tech and Food Tech are the new age growth propellers and need quality internet connectivity and reliable digital payments.

Strengthening Cooperation for Energy Security

The South Asian region has a high reliance on fossil fuels and imported energy, making the region vulnerable to volatile oil, gas and coal prices. In view of the dominating influence of geopolitical factors in

driving global energy market dynamics, the region needs to strengthen energy cooperation arrangements so as to enhance resilience to external shocks.

India and Bangladesh have already agreed to enhance the sub-regional connectivity in the energy sector by linking the power grids of the two countries synchronously. The India-Bangladesh Friendship Pipeline Project (IBFPP) – a 130 km pipeline joining Siliguri in West Bengal and Parbatipur in Bangladesh – would have a capacity to export petroleum products of one million metric tonnes per annum. Other examples of cooperation include transportation of petroleum, oil and lubricants across national jurisdictions. Similarly, cross-border petroleum products pipeline and joint venture hydroelectric projects are testimony to the immense scope for energy cooperation in the region.

Harmonisation of testing processes, performance and conservation standards, and labelling criteria for electrical appliances in the region can contribute to regional energy security by promoting cost savings and by boosting efficiency and trade. Integration of national power systems in the region could facilitate leveraging of untapped surplus hydropower while giving a fillip to development of solar and wind resources. Programmes of bulk procurement and distribution of energy-efficient appliances can be adopted by countries in the region. India, for example, has the UJALA (Unnat Jyoti by Affordable LEDs for All) scheme for distribution of LED bulbs at an affordable price.

Cooperation for a Greener Economy in the Region

South Asia is one of the most vulnerable regions to climate change because of its large population and degradation of natural resources. Extreme climate events – floods, droughts, heat waves and unseasonal rains – have increased over the past century. As per the estimates of the International Finance Corporation (IFC), between 2018 and 2030, the funding requirements for investment in renewable energy, greening the vehicle fleet and making future building stock green and resilient to climate change risks in South Asia alone would be over US$410 billion, US$670 billion and US$1.5 trillion, respectively. Besides financing, access to technology and key minerals would also be critical for successful green transition. Robust regional disaster management systems could help in ensuring timely and effective response to devastating climate events. India spearheaded the global initiative and launched a Coalition for Disaster Resilient Infrastructure (CDRI) in 2019. Another initiative, the International Solar Alliance (ISA) in partnership with the Global Energy Alliance for People and Planet (GEAPP) aims at solarising the world. The South Asian region must strengthen cooperation to make green transition of the region faster and at reasonable cost.

Promoting Tourism

Tourism is one of the major contributors to the GDP of some of the South Asian nations such as Maldives, Nepal, Bhutan and Sri Lanka. As a sector, tourism is a huge creator of employment. The entire region has rich untapped potential in tourism. In the recent period, the tourism sector has somewhat revived in the region, but is yet to reach pre-COVID levels. Intra-regional tourist flows also remain below potential. Regional initiatives such as religious tourism circuits spanning countries that have common historical and cultural footprint, adventure tourism circuits and medical/spiritual/Ayurveda circuits can help boost the tourism industry and create a vibrant regional value chain.

Conclusion

With the global trade outlook for 2023 overcast, greater intra-regional trade in South Asia can enhance opportunities for growth and employment in the region. At the central bank level, a key dimension of cooperation in the region has been learning from

each other on common goals and challenges, such as infrastructure financing, digital financial inclusion, reducing the cost of cross-border remittances (by linking with UPI system) and unconventional monetary policy, to name a few. Rupee settlement of cross border trade and Central Bank Digital Currency (CBDC) where the RBI has already started moving forward, can also be areas of greater cooperation in the future.

The book to be released today provides plenty of new ideas for forging cooperation in the region and seeking solutions to common problems through right policy interventions. I appreciate the efforts of the authors whose contributions made this book possible. I do believe that the discussions during the day on policy choices will help us in reshaping the future prospects of the South Asian region.

Thank you.

*Fintech & Regulation**

T. Rabi Sankar

Year-ends are usually a time for introspection and 2022 clearly offers a lot of food for thought. On the bright side, humanity seems to be finally putting the horrors of Covid behind it. The rest of the story is not so bright. The specter of war and geopolitical tension has reared its head again. We were told in the late 1990s that business cycles were dead and inflation has been conquered. After the financial crisis in advanced economies, the focus shifted to deflation. When 2021 was drawing to a close the consensus among policymakers was that rising prices was a transient episode. That changed fast as inflation zoomed to multi-decade highs and was back in contention as the primary macroeconomic problem to be fixed. Rising interest rates, volatile exchange rates led by a strong Dollar and the consequent rise in debt burden has turned the narrative on its head. Inflation, it would appear, is giving a reality check to economists and policymakers alike.

In the much narrower world of fintech, with a much shorter history, one story- the story of cryptocurrencies, runs in parallel. We were closing 2021 with a narrative that 'TradFi' (Traditional Finance) was slow, inefficient and clumsy and 'DeFi' (Decentralised Finance) and DAOs was the path forward, riding on cryptocurrencies with their blockchain technology. Crypto prices, in their own jargon, were mooning and investors were HODLing. Since May 2022, cryptos have lost more than two-thirds of their value, and the ecosystem is unravelling. The technology that was designed to herald the end of Governments and regulators and intermediaries is frantically seeking to be regulated! Arthur Clarke, the science-fiction writer, said, "any sufficiently advanced technology is indistinguishable from magic." He would have perhaps used the word 'voodoo' if he were to go by the promises peddled by crypto boosters.

But crypto-technology, of which cryptocurrencies were but one use case, is just one strand of the wider field of fintech. Financial sector has been going through a process optimisation using technology throughout its history. Over the course of the 1980s and 1990s, banks in India have evolved through Advanced Ledger Positing Machines (ALPM) to Data Base Management Systems to Total Branch Automation and finally to Core Banking Solution (CBS). A logical extension of this journey, as internet and mobile phone connectivity exploded, were internet and mobile banking. As of October 2022, there were approximately 33 crore active users of mobile banking services and approximately 7.5 crore active users of internet banking services. The revolution in data storage and processing capabilities has enabled non-banks to offer financial services such as peer-to-peer (P2P) lending, crowdfunding, alternative credit scoring, open banking *etc.* In the area of payments, the transformation has been particularly striking, with 24*7*365 RTGS/NEFT, UPI, digital pre-paid instruments, QR Scan & Pay, Bharat Bill Payment System (BBPS), AePS ushering in a new era of digital payments. New information technologies like cloud computing, APIs, big data and AI/ML methods will ensure that FinTech would be the dominant theme in delivery of financial sevices in the future.

Fintech is generally described as an industry that uses these technologies to make financial systems and the delivery of financial services more efficient. The rise of fintech – lending platforms, open banking, payment apps - is a major source of disruption to the banking industry. But these new business models and the transformation of existing businesses have brought new challenges for regulation. Regulators

* Speech delivered by Shri T. Rabi Sankar, Deputy Governor, Reserve Bank of India at the Business Standard Summit on December 21, 2022 in Mumbai. Inputs from Shri Suvendu Pati, Chief General Manager, Fintech Department, Shri Chandan Kumar, General Manager, Department of Regulation and Shri K Vijaykumar, General Manager, Department of Payments & Settlement Systems are gratefully acknowledged.

need to ensure that non-bank entities lying outside the regulatory perimeter for banks do not undermine the role of banks, raising financial stability concerns. At the same time, there is the need for these efficiency-inducing new technologies to be incentivised. Clearly, the entity based regulation of banks with its focus on health parameters like capital adequacy, leverage, liquidity or financial integrity requirements like KYC, AML/CFT requires to be adapted to the presence of fintech entities that are not subject to the same regulatory requirements. The concept of activity based regulation with the basic theme of 'same activity same regulation' has gained currency. The fundamental point is that any entity providing banking services needs to be subject to similar regulation as banks. An arrangement where regulation of non-bank fintechs are not aligned to the regulation of banks (or their subsidiaries) offering similar services will create inefficiencies and risks associated to regulatory arbitrage. Simultaneously, new risks associated with use of information technology like cyber crimes and frauds also need to be addressed if the wider population is to be encouraged to adopt digitisation.

How do we at RBI seek to address these challenges? RBI's plays a dual role – as a developer of the financial system as well as a regulator. Its regulation is premised on three principles. First, innovation is to be encouraged. Second, innovation should be assimilated in the financial system in a non-disruptive manner. And third, the course of digitisation should at every step ensure customer protection.

Encouraging Innovation

In the payment space RBI has played a role that is well recognised. Introduction of RTGS, NEFT, CTS have been achieved with its own initiative. Extending RTGS and NEFT to 24x7 has opened up scope for the growth and internationalisation of financial markets. Setting up appropriate institutions has been another prescient move by RBI. IDRBT, set up in 1996, and focused exclusively on banking technology has led the initial stage of technology adoption in the banking system through the creation of INFINET, National Financial Switch *etc.* NPCI, founded in 2008, has been the pioneer in digitisation of retail payments system in India, with its UPI, RuPay cards, AePS, BBPS and many other systems establishing India as the leading country in retail payment innovations. RBI came up with the guidelines on Account Aggregator as early as in 2016. With the traction that this ecosystem is witnessing, AAs are poised for bringing in the next set of innovation in the financial services segment. P2P regulations came in 2017 when the sector was relatively at the nascent stage in India. A Regulatory Sandbox framework was created in 2019 to incentivise adoption of innovative financial products or services in a controlled environment. The Reserve Bank Innovation Hub (RBIH) was set up for collaborating with financial sector institutions, technology industry and academic institutions for exchange of ideas and development of prototypes related to financial innovations. RBI, as well as the institutions it has created hold regular competitive events like the Hackathon to provide a channel for the fintech and start-up sector to showcase innovations.

Non-Disruptive Innovation

No regulator has the luxury of letting innovation disrupt the financial system in the hope that market might reach its own equilibrium eventually. For instance, we cannot afford to let loose DeFi technologies on the financial institutions with virtually no understanding of how a bank-less system would operate. Apart from the unacceptable financial stability risks, this would amount to a regulator working towards its own irrelevance. It is necessary that a regulator controls the manner and pace of absorption of new technology. Allowing disruptive technology without clarity on whether the alternative is even feasible, let alone desirable, would be an unacceptable gamble. A key element for smooth absorption of

new technology is to ensure a level playing field. If offering credit cards requires a banking (or similar) licence, allowing a non-licensed entity to offer them would amount to undermining the banking system, as it would be placed at a competitive disadvantage. Similarly, digital payments are essentially a banking service in the sense that they involve movement of funds from one deposit account to another. Deposit accounts are a necessity, technology merely a tool; deposit accounts can be used to make payments even without technology, but not the other way round. Facilitating a non-bank to use its technology to move bank deposits would amount to creating a competitive edge for the non-bank. It may be argued that non-banks could avoid use of bank deposits by maintaining deposit like funds, say, wallets. Then non-banks would be deposit taking entities, that is, they would be effectively banks which would require a banking licence. A less disruptive and more efficient mechanism is to facilitate banks to collaborate (or acquire) the new technology. Banks could also outsource or internalise the new technology. Would it disincentivise innovation? Not likely, if the non-bank technology is appropriately priced.

This brings us to the key issue of regulatory arbitrage. If we want to avoid the inefficiencies caused by differential regulations for similar activities, a non-bank undertaking banking functions, needs to be licensed and regulated like a bank. Without the license, it should not be allowed to undertake banking activities. This for example, is what RBI did recently when it clarified that PPIs cannot be funded out of credit lines, because it enabled an entity to undertake a licenced business without a licence. That regulation clearly established the principle of 'same activity, same regulation'.

More generally, as long as innovations are compensated with appropriate market determined pricing, maintaining consistency in regulation would encourage innovation and enable absorption of new technology non-disruptivly.

Customer Protection

Experience has taught us that market forces are unsuited to protect consumer interest in the absence of regulation. Whether it is the derivatives market or the LIBOR setting, unregulated markets eventually lead to outcomes that are inefficient for customers. RBI's guidelines on storage of payments data are intended to secure users' payment data. RBI's warnings on cryptocurrencies and its public stance were guided as much by policy sovereignty as by the need to protect uninformed investors from being soaked. RBI was perhaps the first central bank to openly call for complete prohibition of cryptocurrencies in India. It is now recognised globally that a total ban is a valid policy option. It is a distinct possibility that ambiguous or equivocal stance of regulators globally has contributed to the surge in demand and valuation in crypto products in recent years. RBI's caution has perhaps contained the damage in India.

In the payments space, India is one of the few countries that protects users through two-factor authentication. Although now it is recognised as an innovative regulation, at the time RBI introduced it, about a decade back, there was a push-back and criticism. Similarly, the recent measures such as better customer control on card usage, shorter Turn-Around-Times for transaction failures, tokenisation are all initiatives intended to protect the customer.

Regulation of digital lending apps is another example of regulations aimed at responsible practices and customer protection. A key innovation for financial inclusion and providing credit to entities that lack access to the traditional financial system, these apps nonetheless raised a host of business conduct issues such as unfair business practices, opaque interest rates, and unethical recovery practices. As a percentage of overall loan portfolio of banks and NBFCs, digital

lending represents 0.31 per cent[1] and 0.55 per cent, respectively in FY 2017. While still rather small, their potential needs to be realised, but in a responsible manner. RBI had earlier, in June, 2020, advised banks and NBFCs to adhere to fair practices codes and outsourcing guidelines. Given the emerging concerns, comprehensive directions were issued in September, 2022. These regulations specified the entities that were permitted to lend, transparent loan and pricing norms and fairness in treating customers.

In this context, an unexpected regulatory challenge has been what one might characterise as compliance-aversion. Financial entities traditionally subject to regulation understand that regulation serves the larger objective of systemic stability and development. Entities outside the financial space are still learning to adapt to a regulated environment. Consequently, their initial reaction to a regulation is objection. Ironically enough, the narrative created to justify such objection is usually customer inconvenience, even by industry bodies. The norms prescribed for recurring payments were criticised as inconvenient to customers. The norms prescribed for recurring payments were criticised as inconvenient to customers until a survey[2] revealed that more than 80 per cent of customers welcomed the move. Although to a lesser extent, similar friction is occasionally exhibited even by regulated entities as can be seen in banks' shunning of the FX Retail[3] platform which would significantly improve the price for retail buyers/sellers of forex. RBI's approach to regulatory aversion is to patiently ease in regulations, giving the eco-system adequate time to adjust.

Global Coordination

A unique challenge for regulating fintechs is the need for global coordination. Since these services are on-line, and as in case of cryptocurrencies they span across national boundaries, effective regulation would require global coordination. Since technology by its very nature evolves faster than regulations, regulators would usually be lagging behind. A global common understanding of the risks involved and about the nature of regulation is necessary for it to be effective. The issue is further complicated by differential impact of such technology for different countries. For instance, stablecoin would not pose as much of a threat to the country whose currency is used as a peg, as it would to other countries. Evolving common understanding on the risks posed by fast mutating technology is likely to remain a major challenge.

Internationalisation of Innovations

RBI's developmental role has prodded it to not only take many technology initiatives itself, it has also started the process of extending the global reach of India's premiere innovations. Internationalisation of Indian Payment Systems is a policy objective of RBI. After successful enablement of QR Code based payments through UPI at merchant locations in Singapore, UAE and Bhutan, RBI is collaborating with Monetary Authority of Singapore to enable cross-border person to person remittances in an instant and cost-effective manner. Additionally, we have allowed to deploy a UPI-like system for Nepal. Engagements are ongoing with multiple countries for UPI QR based payments, person to person payments, and developing UPI like systems.

To provide a more efficient alternative to private cryptocurrencies, RBI has embarked on the journey to introduce CBDC (Digital Rupee). It is expected to work as another efficient choice along with existing payment products. Digital Rupee can facilitate transactions in locations with limited or no

[1] RBI report on Working Group on Digital Lending including Lending through Online Platforms and Mobile Apps released on November 18, 2021

[2] https://economictimes.indiatimes.com/industry/banking/finance/banking/more-than-80-indians-support-rbi-move-to-stop-auto-debit-localcircles-survey/articleshow/87314836.cms

[3] RBI Circular dated June 20, 2019 on Rollout of the foreign exchange trading platform for retail participants – FX-Retail (https://rbi.org.in/Scripts/NotificationUser.aspx?Id=11597&Mode=0)

internet connectivity and therefore, further financial inclusion. Going forward, it can be effectively used for delivery of Government subsidies and benefits using the feature of programmability which will lead to targeted or specified use of funds. Among the various benefits of CBDC, perhaps the most important is its potential to make cross-border payments faster and cheaper. Here again, a necessary precondition is that other countries develop their own CBDCs and there is a global understanding on the need to make CBDCs interoperable (basically by linking the various CBDC systems) and develop standards for effective interfacing.

Conclusion

Being a regulator, as well as a central bank, RBI's regulations focus on safeguarding national interests as well as being responsive to user needs. In the area of Fintech, creating an ecosystem to incentivise and harness innovation is a prime driver of our regulatory approach. In this era of global financial markets and fintech revolution, RBI's mandate is to protect sovereignty and serve public interest. Our efforts are aimed at making regulation consultative and collaborative, and maintain policy independence.

*Challenges and Opportunities in Scaling up Green Finance**

M. Rajeshwar Rao

A very good morning to all the distinguished dignitaries and participants at this BFSI Insight Summit being organised by the Business Standard. I am very happy to be amidst you today *albeit* virtually. In recent times, this event has become a well-regarded platform for debate and deliberation on contemporary issues in finance and has generated useful insights from the wisdom of distinguished speakers who have graced the previous summits.

As we look back over the past decade and a half, what is really striking is the fact that the financial sector has been buffeted by several financial storms which it has bravely weathered. After each episode, the endeavour had been to ensure that the institutions emerge stronger and more resilient, so as to support the continuing narrative of recovery and growth. The episodes of crisis of late have become more frequent with lesser breathing space afforded to the institutions to recover, recoup and be future ready. The evolving situation demands that both the regulators and the regulated entities remain ever ready and well equipped to face the emerging challenges, be it the growth of fintech, digitalisation of financial services, customer service or the challenges of cybersecurity in the financial services sector. But the key risk which I would like to discuss today is the impact of climate change and what it can mean for the financial services industry. In a way I am revisiting a topic on which I spoke about a year back[1] - climate risk and green finance. While this issue may still be the new kid on the block as far as the deliberations in such financial gatherings are concerned, it is fast becoming a key issue which is being discussed globally and the urgency of the situation is more apparent to one and all.

The recent Conference of Parties (COP-27) Summit in Egypt and the United Nations Environment Programme's 'Emissions Gap Report 2022 - The Closing Window' released in October 2022[2] have once again brought to fore global attention on the measures required and the need for urgent action. The hierarchy of actions and the agencies responsible for the same is getting crystallised while there is a greater degree of agreement on the manner in which to proceed further starting from taking effective steps for reducing carbon emissions, to fostering sustainable patterns of production and consumption and transitioning to a sustainable lifestyle in a cleaner and greener earth. It is also clear that there is no room for differences on the issue and only our collective efforts can address the challenge of climate change.

Having said that, the question that emerges is what would be the role of different institutions in achieving these objectives? While the overarching policy approach would be guided by sovereign efforts and coordinated by decision-making bodies such as the COP, the financial world needs to ask the obvious question to itself - how can we help? As custodians of financial stability, central banks and policymakers would also be required to evaluate and examine the instruments or strategies they should leverage or focus upon to meet sustainability goals without compromising on their existing policy mandates. These are some of the dilemmas that I would like to highlight today in my remarks.

Given its wide ranging economic and financial implications, climate-related financial risks are already

---

* Remarks delivered virtually by Shri M. Rajeshwar Rao, Deputy Governor, Reserve Bank of India on December 22, 2022 at the Business Standard BFSI Insight Summit at Mumbai. The inputs provided by Sunil Nair, Brij Raj and Pradeep Kumar are gratefully acknowledged.

[1] https://rbi.org.in/scripts/BS_SpeechesView.aspx?Id=1127

[2] The report can be accessed at https://www.unep.org/resources/emissions-gap-report-2022

engaging the attention of international standard setting bodies, central banks, and supervisors globally with the focus on the need to promote the transition to a sustainable global economy. The Reserve Bank too had come out with a Discussion Paper[3] on Climate Risk and Sustainable Finance earlier this year. Besides, RBI had also undertaken a Survey on Climate Risk and Sustainable Finance among leading scheduled commercial banks. There is a general consensus that banks and financial institutions will play a key role in financing the transition to a low-carbon economy and supporting the national climate commitments.

While no entity is immune from climate risks, we in India are particularly vulnerable to the climate change related physical risks[4] and hence there is a need to be more alive to the urgency of action[5] given our long coastline, high share of fossil fuels in energy systems, and relatively high dependence of rural livelihoods on agriculture. Climate trends and events have a direct bearing on the economy and resultantly have an impact on the financial institutions and the financial system. According to a report[6], the transformation of the global economy needed to achieve net-zero emissions by 2050 would be universal and significant, requiring $9.2 trillion in annual average spending on physical assets, which is $3.5 trillion more than what is being spent today. In the case of India, the Council on Energy, Environment and Water[7] has already estimated that a total investment of US$ 10.1 trillion would be needed to meet our net zero commitments by 2070. This underscores the urgency of efforts for transitioning to a low carbon economy. Ensuring access to adequate transtition finance and supporting technology would be critical in this process.

Going forward, there are two key aspects which banks would need to focus on - first, relying on their time-tested expertise in financial intermediation by acting as an effective conduit for channelising finance to carbon efficient sectors and industries in alignment with national policies and goals; and second, improving the management of financial risks in their books which may originate from climate change. Such risks range from the direct physical risks emanating from adverse climate-related events to loss of reputation and legal risks. Obviously, the strategies for mitigating these risks would have to be encompassed by sound public policy objectives and all stakeholders would need to play their role in helping the country traverse and transform into a climate-resilient economy.

Challenges for Financial Intermediaries and Banks

Estimating the timing, frequency and severity of climate-related events is a challenging proposition given the uncertainties involved in the process. While significant progress has been achieved globally on developing scenarios and forward-looking approaches for modelling climate risks, the requirement of past data and the unpredictable nature of climate change makes estimation of climate events and their financial impact a challenging endeavour. Nonetheless, there is no alternative but to continue working on this path of self-discovery and slowly gaining momentum as we cannot afford to be inactive anymore.

The work at a global level which is being co-ordinated by the Financial Stability Board (FSB) and endorsed by the G-20, rests on four building blocks needed for addressing Climate-Related Financial Risks. These four building blocks, *viz.*, Disclosures,

[3] Reserve Bank of India - Press Releases (rbi.org.in)

[4] Physical Risks are economic costs and financial losses resulting from the increasing severity and frequency of: extreme climate change-related weather events (or extreme weather events) such as heatwaves, landslides, floods, wildfires and storms (*i.e.* acute physical risks); longer-term gradual shifts of the climate such as changes in precipitation, extreme weather variability, ocean acidification, and rising sea levels and average temperatures (*i.e.* chronic physical risks or chronic risks); and indirect effects of climate change such as loss of ecosystem services (*e.g.* desertification, water shortage, degradation of soil quality or marine ecology). (https://www.bis.org/bcbs/publ/d517.pdf)

[5] The Global Climate Risk Index 2021 Report can be accessed at https://www.germanwatch.org/en/19777

[6] https://www.mckinsey.com/capabilities/sustainability/our-insights/the-net-zero-transition-what-it-would-cost-what-it-could-bring

[7] https://www.ceew.in/cef/solutions-factory/publications/investment-sizing-india-s-2070-net-zero-target

Data, Vulnerabilities Analysis and Regulatory and Supervisory Practices and Tools which to my mind are pre-requisites for a resilient financial system when augmented by informed decision making. Let me discuss a bit further on these aspects.

An appropriate and adequate disclosure framework must have three key attributes - first, it should have inter-temporal consistency, second, it should be comparable and the third and most important is that it should be useful for decision making. Climate-related disclosures by firms, that largely contain these attributes, would help policymakers in understanding the enormity of the task ahead in terms of the transition funding requirements. Further, this would help banks understand the level of carbon intensity in the business ventures in case they are to fund them so that they are able to differentiate and appropriately price in such risks.

Internationally, a significant body of work has been done on disclosures. The FSB's Task Force on Climate-related Financial Disclosures (TCFD) and the International Sustainability Standards Board (ISSB) under the IFRS Foundation have been leading this work along with other standard setting bodies. In March 2022, the ISSB published Exposure Drafts on its first two proposed standards. The first sets out general sustainability-related disclosure requirements while the other specifies climate-related disclosure requirements. Given the global nature of funding markets and cross-border flows of capital, the idea is to agree upon a common global baseline disclosure requirement which is interoperable among jurisdictions for comparability and consistency. The Reserve Bank, as a part of standard setting bodies has also been contributing and learning from global discussions and experiences. In our recently published Discussion Paper on Climate Risk and Sustainable Finance we have elaborated on how climate-related disclosure is an important source of information for different stakeholders (*e.g.*, customers, depositors, investors, and regulators) of REs to understand relevant risks faced by them and their approach to addressing such issues.

For the corporates, beginning from the current financial year FY 2022-23, SEBI has mandated Business Responsibility and Sustainability Reporting (BRSR) for the top 1000 listed companies (by market capitalisation) in India. The disclosures under the BRSR framework would incentivise green financing and help banks and financial institutions in estimating their climate-related exposure to these listed companies.

While consistent and comparable disclosures, the **first building block,** would enable financial institutions make firm level risk assessments, the **second building block**, data, is required for making macro level assessment of risks. Like any financial risk, reliable and comprehensive data on climate risk related exposures would aid in making sound policy interventions and undertaking climate scenario analysis and stress testing for the assessment of risks from climate events. This however is, easier said than done. While global efforts are underway to create data repositories and provide guidance on collection of data for better comparability; availability of high quality, granular and sufficient data remains a challenge as of now. Availability of granular data also remains crucial for modelling the forward-looking nature of climate events and developing metrics for monitoring climate-related financial risks.

The third building block, vulnerabilities analysis, is again a macro level exercise to understand the financial stability risks arising out of climate events and their impact on financial systems. It is focused on analysis and stress testing using various scenarios to help in better assessment of potential pressure points in the financial system and in understanding interlinkages between financial sector and real sector. While the development of climate scenario analysis, stress testing scenarios and analytical tools are still

in their infancy, the need for integrating them with regular monitoring exercises and overall financial risk assessment has been well recognised. One particular challenge in modelling climate-related risks is the long time horizon which has to be considered. The climate events may often span across decades, if not centuries, and this may make the data collection exercise quite difficult and the outcomes more uncertain.

The fourth and final building block consists of initiatives which are being undertaken or planned by the regulators and supervisors to facilitate transition. In a way, this is a culmination of the work taken up under the three building blocks discussed above. The regulators may need to fine tune the existing prudential policies to integrate the climate risks into the regulatory frameworks. At the same time, from a supervisory perspective, the expectations may have to be set and communicated to all regulated entities regarding climate-related risks, encompassing organisational strategy, governance, risk management and assurance functions. The global efforts undertaken so far seem to suggest that integrating climate-related risks and capturing them by fine tuning existing prudential frameworks may be possible.

The Basel Committee on Banking Supervision (BCBS) has published Principles for the Effective Management and Supervision of Climate-related Financial Risks in June 2022. In October 2022, the Financial Stability Board (FSB) published its Final Report on Supervisory and Regulatory Approaches to Climate-related Risks. Earlier in March 2022, the NGFS published a 'Statement on Nature-related Financial Risks', which acknowledges that failure to account for, mitigate, and adapt to nature-related risks could have significant macroeconomic implications and become a source of financial stability risk. While guidance has been made available, regulated entities may need time, resources, and capacity to integrate climate-related considerations into their decision-making frameworks and customer facing business lines.

Private Sector Initiatives

In the private sector, decarbonisation and digitalisation are emerging as megatrends that could compel sectors and corporates to undertake structural changes and fundamentally alter their traditional business models. It is heartening to note that some of the leading Indian companies in the hard to abate sectors like steel and cement[8], for example, are working on an ambitious decarbonisation agenda aimed at reducing the carbon footprint in their production process.

Banks and financial institutions may have to to step up their engagement with their corporate customers on ensuring sustainability-focused financing and other support services to help them transition towards a low-carbon economy while reducing their own carbon footprint. The financial sector can channel resources towards green projects / businesses by offering suitable and customised products to businesses.

Over the past three years, the Sustainability-Linked Bonds and Sustainability Linked Loans (SLBs and SLLs) market has been a fast-growing segment globally in the sustainable finance market[9]. India too, has seen the introduction of sustainable finance instruments such as sustainability-linked loans. Liberalised External Commercial Borrowings (ECB) norms have also enabled Indian companies to raise offshore finance through green bonds, social bonds, sustainable bonds, and sustainability-linked bonds. In line with global trends, the issuance of sustainable debt has risen sharply in India during Calendar Year 2021 taking it to the 2nd place among emerging economies in cumulative Green Bond

[8] The steel and cement sectors are energy and emission intensive. They are also hard-to-abate, meaning that decarbonisation of these sectors requires deep systemic changes in the way these materials are produced, used, and recycled.

[9] https://www.linklaters.com/en/about-us/news-and-deals/news/2022/july/global-sustainable-bond-market-raises-442-billion

Issuances[10]. Mechanisms such as blended finance[11] and risk-sharing facilities are also being utilised to finance climate and sustainability-related projects.

The above initiatives from the financial sector in India and across the globe make one believe that the private sector is very much alive to the challenges ahead of us.

Public Sector Initiatives in India

To move the needle towards net zero, we must progressively decarbonise all sectors of the economy, including the hard-to-abate ones. This means that we would need to incentivise banks to provide support in terms of transition finance for businesses and sectors that are not so green, to adopt cleaner technologies, increase energy efficiency and become greener over time. Green finance can play a crucial role in making India's economy resilient to climate change impacts. During the COP26 Summit in November 2021, the Hon'ble Prime Minister had announced that by the year 2070, India will achieve the target of net-zero. This would necessitate creating an enabling ecosystem for financing India's transition to a green economy.

In India, both the Government and Reserve Bank of India have been participating in the global discussions on climate risks and have already taken quite a few initiatives in this regard. The Government, in the Union Budget for 2022-23 announced that climate action would be a key priority and proposed that as a part of its overall market borrowings in 2022-23, Sovereign Green Bonds (SGBs) will be issued for mobilising resources for green infrastructure. The proceeds will be deployed in public sector projects which will help in reducing the carbon intensity of the economy. This is by no means a small step. Over time, the SGBs would provide a pricing reference for the private sector entities in India for their INR denominated borrowing for ESG linked debt. Thus, the issuance of SGBs would help in creating an ecosystem which fosters a greater flow of capital into green projects and entities undertaking such projects.

Recognising the need for concerted efforts in the area, the Reserve Bank has concomitantly set up a Sustainable Finance Group (SFG) within its Department of Regulation in May 2021 to lead the regulatory initiatives in area of climate risk and sustainable finance in the Indian context. As I mentioned previously, RBI had already released a Discussion Paper on Climate Risk and Sustainable Finance in July 2022 covering a gamut of issues on the RBI's website for comments of stakeholders. It is heartening to mention that we have received comments from a large number of regulated entities and other stakeholders. These are being carefully examined before we frame any regulatory guidance on climate risk and sustainable finance.

Along with the Discussion Paper, we had also released the results of a survey undertaken to assess the approach, level of preparedness and progress made by leading scheduled commercial banks in India for managing climate-related financial risk. The survey, which covered 12 public sector banks, 16 private sector banks and 6 foreign banks, provided useful insights and the feedback from this exercise will help in shaping our regulatory and supervisory approach.

Another notable feature for our financial ecosystem is that while rest of the world is still grappling in developing new instruments to funnel funding to green and sustainable companies and projects, we already have a well-accepted incentive-based instrument in the form of Priority Sector

[10] Source: Emerging Markets Green Bonds Report 2021, June 2022 published by the IFC. The report can be accessed at https://www.ifc.org/wps/wcm/connect/industry_ext_content/ifc_external_corporate_site/financial+institutions/resources/emerging+market+green+bonds+report+2021

[11] Blended finance involves the use of concessional and catalytic capital to draw in private capital for financing projects with sustainable outcomes as also assist with technology transfer and institutional support, to reduce risk and enhance bankability.

Lending (PSL) norms to encourage lending to such projects. Over the years, we have been taking various policy measures to promote and support green finance initiatives through this route. For example, renewable energy projects have been included as a part of Priority Sector Lending (PSL). In 2012, Reserve Bank included loans sanctioned by banks directly to individuals for setting up off-grid solar and other off-grid renewable energy solutions for households and in 2015, the PSL criteria was expanded to bank loans up to a limit of ₹15 crore to borrowers for purposes like solar / bio-mass based power generators, windmills, micro-hydel plants and for non-conventional energy based public utilities, *viz.*, street lighting systems, and remote village electrification. In 2020, this limit for bank loans was doubled to ₹30 crore. It is heartening to note that in recent years, leading banks in India have also begun stepping up their exposure to the renewable energy sector.

Enablers for Scaling up Green Finance in India

Banks and financial institutions have always been the backbone of India's economic growth and as the country pivots to sustainable growth, they will have to take a lead and accelerate green lending. To support this acceleration, a number of structural changes may be needed in the traditional lending approach, including evaluation and certification of the green credentials of projects. In order to give focused attention to scaling up green finance, banks and financial institutions would have to invest in human resources and capacity building efforts as well as integrate environmental and social risk considerations into their corporate credit appraisal mechanisms.

A formal definition of green finance along with a taxonomy[12] is the need of hour as it would enable more precise tracking of finance flows to green sectors in India, which in turn, would help design effective policy, regulations and institutional mechanisms directed towards increasing both public and private investments. A taxonomy would also help banks and financial institutions in better assessing the climate risk in their loan portfolio, scaling up green and sustainable finance and mitigating the risk of greenwashing.

Another key challenge in scaling up green finance is the availability of a robust ecosystem for third party verification / assurance and impact assessment and the green credentials of businesses and projects. This would also address potential greenwashing concerns and ensure unhindered flow of capital and funding to the entities.

The challenge regarding the availability of data and disclosures would also need to be addressed quickly. In this context, the disclosure standards prescribed by SEBI for top 1000 listed entities by market capitalisation is a welcome step. I am confident that the listed entities would not only adhere to the mandatory disclosures but would also not hesitate to follow those which are additional and voluntary in nature.

Green finance must be scaled up rapidly to meet India's climate targets under the updated Nationally Determined Contribution communicated to the United Nations Framework Convention on Climate Change (UNFCCC) in August 2022. The enhanced ambition requires mobilisation of green finance at a much faster pace. For example, green infrastructure investment trusts could help scale up green finance as also deepen the local bond market. But in the end, all these ideas need a clear intent from all stakeholders in order for it to be implemented and sustained.

Concluding Remarks

To sum up, climate change may result in physical and transition risks that could have implications

[12] A taxonomy is a classification system, establishing a list of environmentally sustainable economic activities. It plays an important role in helping an economy scale up sustainable investment and provides all stakeholders with appropriate definitions for the economic activities which can be considered environmentally sustainable.

for the physical safety and financial soundness of individual regulated entities as well as for the stability of financial system. Thus, there is a need for regulated entities to develop and implement comprehensive frameworks for understanding and assessing the potential impact of climate-related financial risks in their business strategy and operations.

We need to be conscious that climate risk is the biggest challenge confronting us and addressing it decisively is our joint responsibility. Financial sector has a key role to play as it is the sector which finances businesses and can influence their activities. Banks would have their role cut out in handholding the businesses and arranging for the transition finance required by the firms as they try to shift their strategies to make them more sustainable and planet friendly. The central banks can play a significant role in shaping the response of financial sector to the challenges posed by risks emerging from the climate change through appropriate guidance and regulations.

The Indian economy is at a stage where we need to grow rapidly but the challenge before us is to think of ways to incorporate climate risk and ESG-related considerations into commercial lending and investment decisions while simultaneously balancing the needs of credit expansion, economic growth, and social development. Collective engagement would help build on our early progress and go a long way in addressing the challenges of climate change.

Let me conclude now and leave you with these points to ponder as you continue with your deliberations during the course of the ensuing discussions at this event.

Thank you for inviting me to share my thoughts at this summit and thanks for a patient hearing.

ARTICLES

*State of the Economy**

A slowdown in growth with possibilities of recession in large swathes of the global economy has become the baseline assessment even as inflation may average well above targets. Emerging markets are appearing more resilient than in the year gone by, but their biggest risks in 2023 stem from US monetary policy and the US dollar. In India, the softening of commodity prices and other costs amidst strong revenues appears to have boosted corporate performance. Macroeconomic stability is getting bolstered with inflation being brought into the tolerance band and lead indicators suggesting that the current account deficit is on course to narrow through the rest of 2022 and 2023.

Introduction

After a roller coaster 2022, what will 2023 turn out to be? The year has begun with predictions of a slowdown in global growth that will fight just shy of the painful contractions of 2009 and 2020 imposed by the global financial crisis and the COVID-19 pandemic[1], respectively. Warnings are out about large swathes of the world likely to be in recession; some of them are already into downturns[2]. Other views in this strand point to still festering geopolitical risks, the commodities shock – both shortages and costs – the loss of macroeconomic stability, an imminent tipping point in financial asset valuations long buoyed by the afterglow of pandemic liquidity policies, and to surveys of economists, to justify the inevitability of a recession in 2023 – 'a grim and potentially dangerous year'[3]. While inflation was the dominant economic and financial issue of 2022, recession will overthrow it and take the driver's seat of the global discourse in 2023[4]. Global growth may turn out to be 2 per cent or lower, while inflation in the advanced world may average above 4 per cent and 8 per cent among emerging and developing economies[5].

Financial markets are contesting this view on the global outlook for 2023. They take cues from the moderation in inflation - however modest; the ebbing of commodity prices and supply chain pressures; and early signs of slowing activity and trade to believe that central banks have done their most in 2022 in tightening monetary and financial conditions and that they will be forced to pause and ease off during 2023. Bond markets are shrugging off central bank guidance and eyeing lower terminal rates than implied in the latter's hawkishness - easing yields and a surge of issuances marks the onset of the new year. Equity markets also seem to be still pricing in a soft landing as fund managers girdle up to recoup the losses of 2022. Importantly, the US dollar is retreating from 20-year highs and many emerging market currencies are reversing the losses of December 2022. Portfolio flows return to hunt growth differentials *vis-à-vis* advanced economy markets. The 2022 debate between 'team transitory' and 'team permanent' on inflation is going to be displaced in 2023 by 'short and shallow' *versus* 'long (or several) and deep' on recession.

Macroeconomic projections, however sophisticated, tend to be linear and hence fragile in a world in which non-linearities hold sway. Powerful forces are being unleashed that can potentially reshape the global order. The upsurge of international hostilities in 2022 is rearranging geopolitical configurations, with profound implications for

* This article has been prepared by G. V. Nadhanael, Subhadhra Sankaran, Shashi Kant, Kunal Priyadarshi, Garima Wahi, Ramesh Kumar Gupta, Pankaj Kumar, Harendra Behera, Satyarth Singh, Prashant Kumar, Anoop K Suresh, Rishabh Kumar, Shelja Bhatia, Ramesh Golait, Priyanka Sachdeva, Abhinandan Borad, Pratibha Kedia, Avnish Kumar, Amit Pawar, Deepika Rawat, Sakshi Awasthy, Manjusha Senapati, Manish Tripathi, Vineet Kumar Srivastava, Samir Ranjan Behera, Deba Prasad Rath and Michael Debabrata Patra. Views expressed in this article are those of the authors and do not represent the views of the Reserve Bank of India.

1 Global Economic Prospects, World Bank, January 2023.

2 Kristalina Georgieva, Managing Director, International Monetary Fund at CBS News, January 1, 2023.

3 The Economist, January 7, 2023.

4 Mohammad El-Erian, Financial Times, January 9, 2023.

5 World Economic Outlook, IMF, October 2022.

economic activity, commerce and finance. Climate may energise a people's Movement of unprecedented scale and scope in 2023[6], but most of the world will have to accept the short-term imperative of fossil fuels for energy security before adopting longer-term strategies for reliance on cleaner, renewable sources that are – most importantly – secure.

On the bright side, investing in renewables is becoming a win-win proposition. It is increasingly likely that it will be driven by strategic public policy, but with the clear danger of leaving behind stranded polluting energy assets over the next decade as emission targets bite. On the flip side, 2023 is likely to be a year of low capital expenditure worldwide, with businesses deterred by the uncertainties surrounding geopolitical dynamics and green transition. They will have to defend against still-elevated costs and increased expenditures on inventories and receivables to the detriment of capital spending.

Another instance of forecasting being overwhelmed by outcomes is the pace of growth of world trade volume which is projected to more than halve (1.6 per cent) in 2023 from 4 per cent a year ago[7]. Muscular forces in the form of trade and industrial policies that are reordering the international trading environment may, however, produce large forecast error swings on either side of this projection. Massive subsidies, incentives and export restrictions are being unleashed for green energy, electric cars and semiconductors to ensure that production should be local. OPEC-type groupings are likely to emerge in respect of strategic materials. The immediate consequence could spiral into tit-for-tat protectionism worldwide. Globalisation may soon become extinct or at least endangered.

Yet another force that may alter the contours of international trade as we know it today is its plumbing – seaborne traffic. Container ports are being developed to be closely held in response to the supply chain shock of the pandemic. This explains the rising popularity of inland "dry ports", where goods are put in containers ahead of time, ready to be loaded onto ships as they arrive at the pier without needing to be stored for days at the port itself. Much of the dry-port development is occurring in Asia: the centre of gravity of international shipping is shifting eastwards. Nearly 60 per cent of Asia's exports flow within the region. A boom in investment in warehouses for storage and hubs for distribution and fulfilment in the region is already under way. Investments by shipping giants are pointing in the same eastward direction. The outlook for world trade in 2023 looks leaner, smarter and more eastern.

For emerging and developing economies, the biggest risks in 2023 are US monetary policy and the US dollar. Some of them have shown remarkable resilience during 2022 in coping with global spillovers from these sources, and in calibrating monetary policy to domestic growth-stability trade-offs in a period of high inflation levels and volatility. Across the global south, however, hunger is becoming a function of prices rather than availability. In some parts of this world, debt distress will cause many countries to continue to teeter on the edge of crisis as they negotiate debt relief with bilateral lenders before a multilateral bail-out is feasible. The difficulty of servicing external debt is compounded by the fact that interest rates are decided extra-nationally. It is estimated that the combination of weaker external demand, elevated inflation, depreciated currencies and domestic headwinds will cost these economies up to a full percentage point in per capita income growth. This can stall convergence of some of these economies with advanced economies to a point of no return. The cumulative loss of GDP between 2020 and 2024 is estimated to be as much as 30 per cent of 2019 GDP. Taken together, long lasting effects are feared, perhaps a lost decade[8]. The brewing debt crisis also

6 Brian Eno, The Economist, November 18, 2022.

7 Global Economic Prospects, World Bank, January 2023.

8 Martin Wolf, The Financial Times, January 10, 2023.

means that one out of five EMDEs is effectively locked out of global debt markets, presaging a prolonged period of investment starvation and loss of potential output.

Yet, against all these odds, emerging market equities have rallied in the beginning of 2023, with the MSCI emerging market index ahead by more than 21 per cent in the first few days of January 2023 relative to the intraday low touched on October 25, 2022. There is increasing enthusiasm among fund managers that emerging markets are launching into a secular outperformance over advanced economy assets. Nonetheless, these economies need to be mindful of external conditions to which they are more vulnerable relative to advanced counterparts.

The most important downside risk to monitor is a slowing global economy, and in the absence of a central bank put, they can brace up for a tightening of the external demand constraint on their aspirations to grow out of pandemic lows. The question that confronts 2023 is: after 2022's rough ride, will these economies rebound this year? There are early promising starts: lowered leverage; more modest equity valuations relative to advanced peers (10X versus 17X) and an economic recovery that seems to have taken hold in the last quarter of 2022 even as inflation has modestly receded and currencies are stabilising. Moreover, a capital flows redux is widely expected after the rout of 2022 as investor appetite improves, mispricing of emerging market assets due to fright in the face of global spillovers corrects, and the outlook for advanced economy markets weakens over the year ahead.

Against this backdrop, we turn to recent developments in the global economy and sectoral changes in the domestic economy as 2023 gets going. This will provide the tableau for crystal gazing into what 2023 holds for the Indian economy in the concluding section. The rest of the article is organised into four sections. The immediately following section presents the latest global developments, followed by two sections on domestic economic developments along with inflation dynamics, and financial developments, including payment system progress all of which set the stage for imagining the outlook for India in 2023 in the concluding section.

II. Global Setting

Weakening demand conditions, some lingering supply bottlenecks and resurgent COVID infections characterise the global outlook for 2023. Central banks are moderating the pace of monetary policy tightening as inflation eases grudgingly across the globe in sync with moderating commodity prices, although it remains in high reaches and well above targets. Accordingly, their forward guidance has reiterated their commitment to break inflation and anchor inflation expectations.

The IMF expects one-third of the world to be in recession in 2023.[9] In its latest Global Economic Prospects (GEP) released on January 10, 2023 the World Bank points to a prolonged slowdown in the global economy with growth pegged at 2.2 per cent in 2023 – the third lowest in three decades (Table 1). For advanced economies (AEs), growth has been revised downwards by 170 basis points relative to June 2022 projections to 0.5 per cent whereas for emerging market economies (EMEs), it has been lowered by 80 basis points to 3.4 per cent.[10]

During Q3:2022, growth in the OECD countries remained flat at 0.6 per cent. Against this backdrop, our model based nowcast[11] projects global GDP

9 https://www.bbc.com/news/business-64142662

10 For AEs and EMEs, the aggregate growth rates are calculated by using GDP weights with average 2010-19 prices and market exchange rates.

11 The model-based nowcast is an average of ARIMA models augmented with global indicators, such as PMI Manufacturing, global IIP, global supply chain and economic and political uncertainty indices. Exogeneous variables, when unavailable, were imputed using moving average method. For details, see Ramesh Kumar *et al.*, "Nowcasting Global GDP", RBI Bulletin, June 2022.

Table 1: GDP Growth Projections – Select AEs and EMEs

(Per cent)

↓ Country / Region Month of projection→	2022		2023	
	Jun-2022	Jan-2023	Jun-2022	Jan-2023
World*	3.1	3.1	3.4	2.2
Advanced Economies				
US	2.5	1.9	2.4	0.5
Euro area	2.5	3.3	1.9	0.0
Japan	1.7	1.2	1.3	1.0
Emerging Market Economies				
Brazil	1.5	3.0	0.8	0.8
Russia	-8.9	-3.5	-2.0	-3.3
India#	7.5	6.9	7.1	6.6
China	4.3	2.7	5.2	4.3
South Africa	2.1	1.9	1.5	1.4

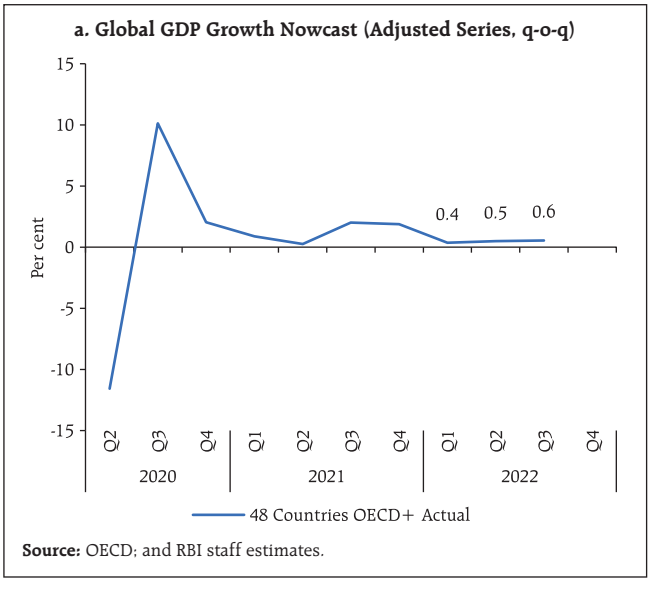
Note: *: PPP weighted. #: India's data is on a fiscal year basis.
Source: World Bank.

growth momentum to remain unchanged in Q4:2022 (Chart 1a & 1b)[12].

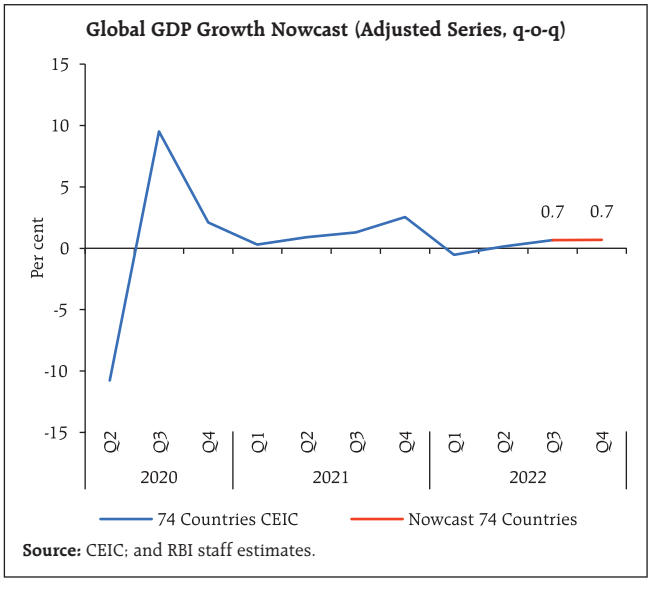
Among high frequency indicators, the global composite purchasing managers' index (PMI) at 48.2 in December continued to contract as output decreased for the fifth successive month (Chart 2). The global manufacturing PMI fell to a 30-month low of 48.6 in December, remaining in the contractionary zone for the fourth successive month as new orders fell across all sectors.

World merchandise trade volume growth slowed to 3.2 per cent year-on-year (y-o-y) in October 2022 due to negative momentum as well as an unfavourable base effect (Chart 3a). The Baltic Dry Index – a measure of shipping charges for dry bulk commodities – had edged up in late November - early December 2022 on hopes of a pickup in global demand, but it has fallen in recent weeks on weaker global growth prospects (Chart 3b). According to the World Trade Organization (WTO), the world services trade barometer indicates successive moderation in services growth in the third

Chart 1: Global GDP Nowcasts



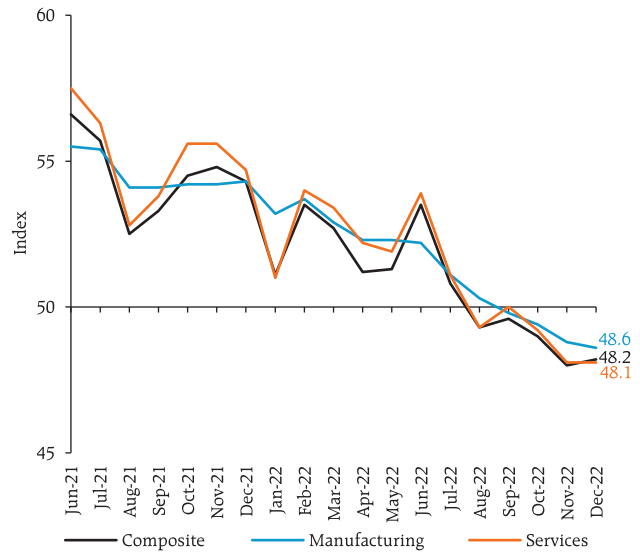
Source: OECD; and RBI staff estimates.



Source: CEIC; and RBI staff estimates.

[12] Our model-based growth forecast for 2022 is 2.8 per cent based on market exchange rates.

Chart 2: Global PMIs

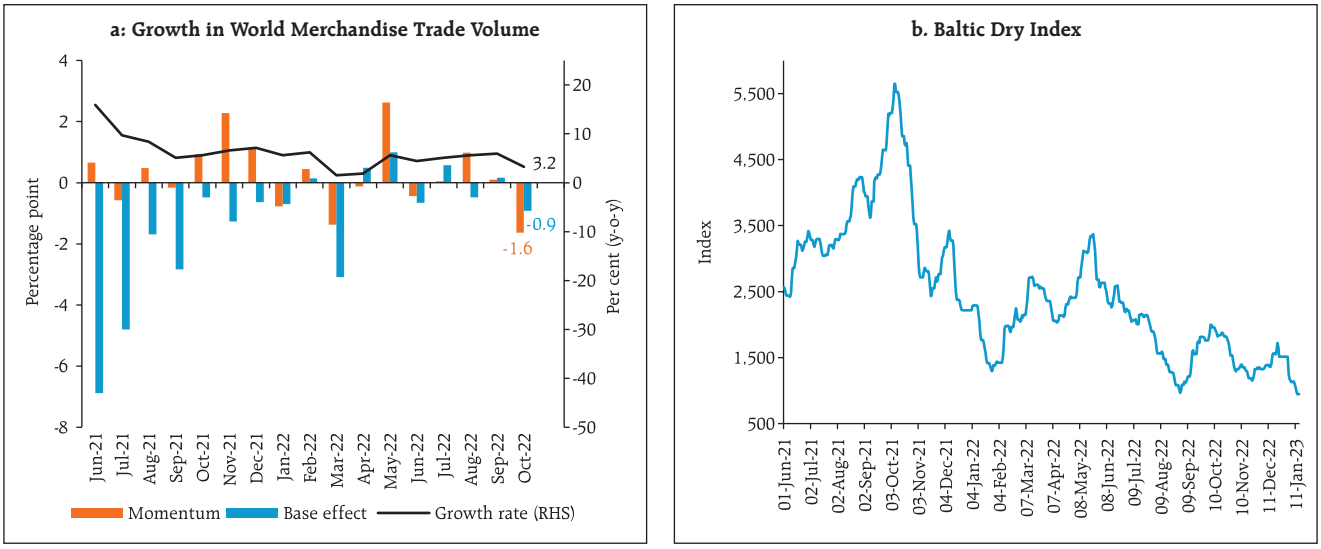


Source: IHS Markit.

and fourth quarters of 2022, in line with slowing merchandise trade volume growth. PMI sub-indices also indicate a fall in international trade volumes.

Global commodity prices remained range bound in December, as slowing global growth dampened demand while Russia-Ukraine tensions posed upside risks (Chart 4a). Crude oil prices traded at an average of US$ 80.9 per barrel in December, taking cues from both demand concerns and imposition of the price cap by G7. Crude oil prices reversed the gains of 2022, ending the year 9.7 per cent lower on a y-o-y basis (Chart 4b). Gold prices inched up in December on safe haven demand amidst rising COVID-19 cases and easing US dollar (Chart 4c). The FAO[13] food price index declined for the ninth consecutive month in December 2022, led by a steep fall in vegetable oil prices and declines in cereals and meat prices which were partially offset by moderate increases in sugar and dairy prices (Chart 4d). Nevertheless, the index averaged 14.3 per cent higher in 2022 *vis-à-vis* the previous year.

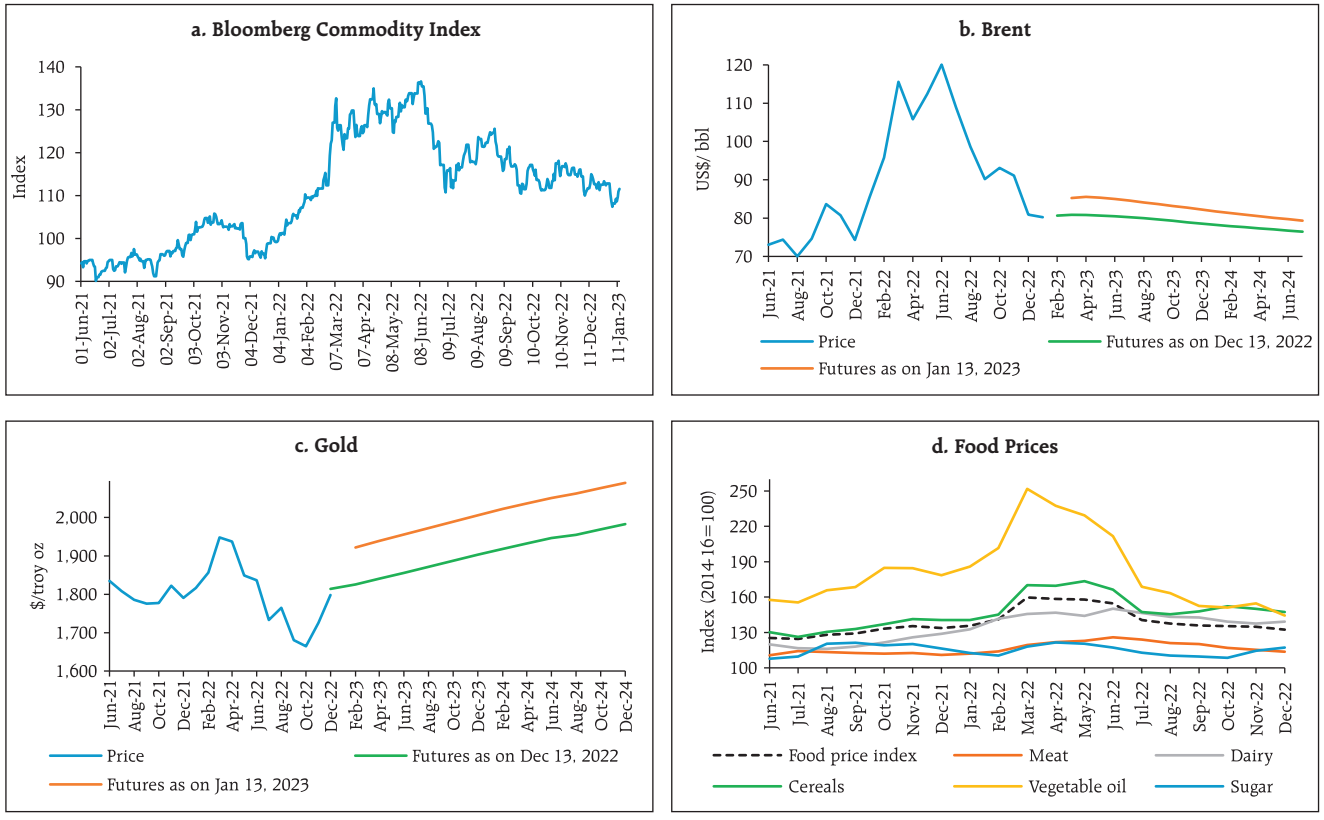
Chart 3: World Trade and Shipping Costs



Sources: CPB Netherlands; and Bloomberg.

[13] Food and Agricultural Organization (FAO) sub-indices include cereal, vegetable oil, dairy, meat and sugar price indices.

Chart 4: Commodity and Food Prices



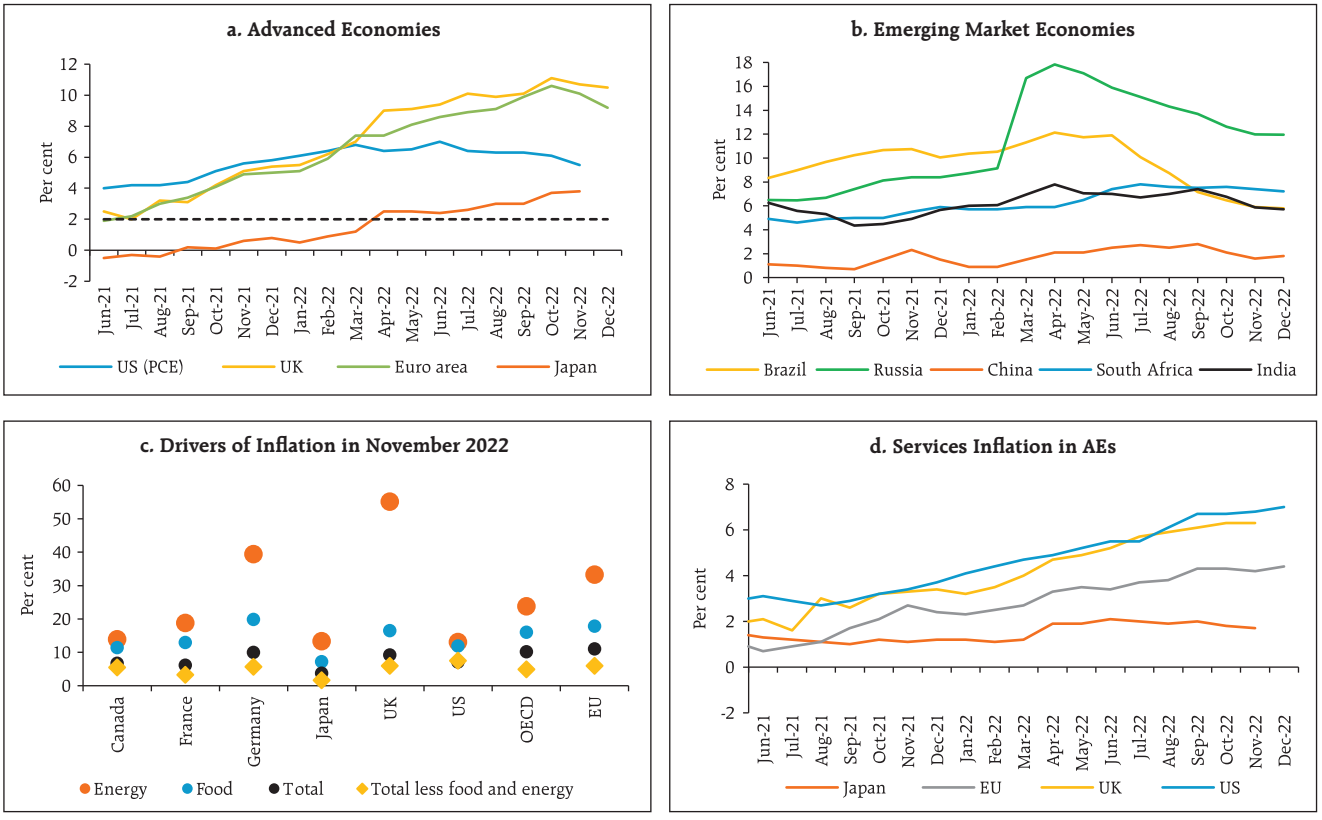
Sources: Bloomberg; World Bank Pink Sheet; and FAO.

As pandemic-induced supply chain bottlenecks eased, food and energy prices moderated and headline inflation eased across AEs and EMEs. The US CPI inflation eased markedly for the sixth consecutive month to 6.5 per cent in December 2022 from 7.1 per cent in November. Inflation based on US personal consumption expenditure (PCE) index eased to 5.5 per cent in November from 6.1 per cent in October (Chart 5a). In the Euro area, inflation slowed to 9.2 per cent in December 2022 from 10.1 per cent in November, driven by negative momentum in energy prices. In the UK, inflation edged down to 10.5 per cent in December 2022 from 10.7 per cent in November, led by transport prices. Japan, on the other hand, recorded a four-decade high CPI inflation of 3.8 per cent in November. Among the emerging economies, inflation eased further in Brazil (5.8 per cent), Russia (11.9 per cent) and South Africa (7.2 per cent) in December 2022 (Chart 5b). In China, however, inflation edged up marginally to 1.8 per cent in December 2022.

Elevated energy prices, particularly in the EU and UK, still contribute substantially to overall inflation (Chart 5c). The outlook remains uncertain even though increased gas storage is being augmented by demand-reduction initiatives and continental Europe transiting to liquified natural gas (LNG) replacing Russian gas. Also, despite the moderation in headline numbers, services inflation in AEs remains sticky (Chart 5d).

Beginning early December, hawkish commentaries from AE central banks imparted a pessimistic bias to global equity markets, which shed gains to the tune of 4 per cent in December. AE markets in the Morgan

Chart 5: Inflation



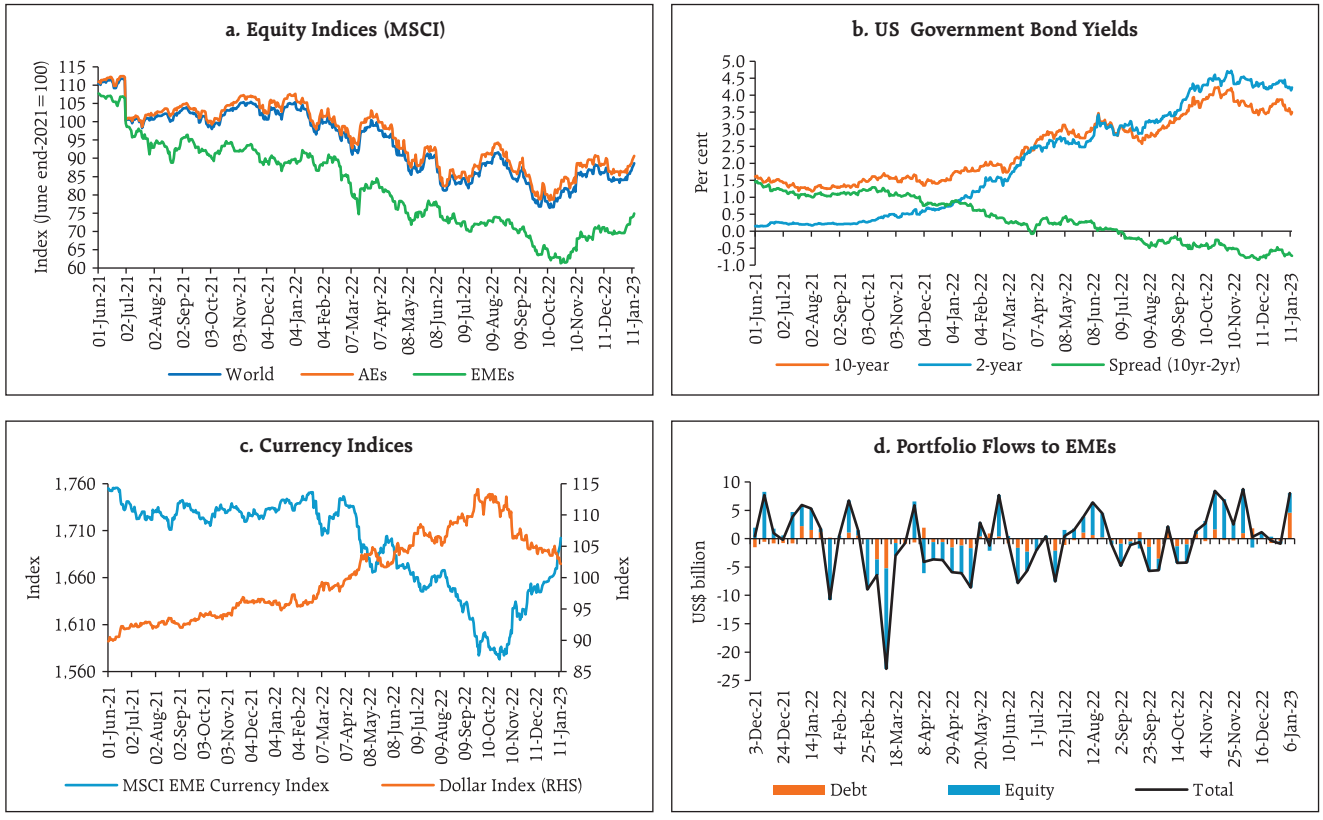
Sources: Bloomberg; and OECD.

Stanley Capital International (MSCI) index ended 4.3 per cent lower while EME equities fell by 1.6 per cent from November 2022 (Chart 6a). Markets rallied in the first few days of January 2023 on expectations of a less hawkish stance of the Fed.

During December 2022, the 10-year G-sec yields hardened across major AEs as investors flocked to Japanese markets after the Bank of Japan (BoJ) expanded its tolerance range of 10-year Japanese Government bond yield fluctuations from ± 0.25 percentage points to ± 0.5 percentage points. The 10-year US treasury yield shot up by 27 basis points while the 2-year G-sec yield rose by 12 bps, thereby reducing the magnitude of yield curve inversion (Chart 6b). The US dollar, which reversed its rally in October, continued to lose strength, shedding 2.3 per cent in December. Concomitantly, the MSCI currency index for EMEs gained momentum, rising 1.7 per cent on the back of capital inflows (Chart 6c & 6d).

Central banks of most AEs and EMEs have slowed the pace of monetary policy tightening in recent months (Chart 7a). Israel increased its policy rate by 50 bps in January 2023, taking it to the highest level since 2008. South Korea and Norway raised their key rates by 25 bps in January 2023 and December 2022, respectively. Japan has continued to diverge by maintaining an accommodative stance; however, it expanded its range of 10-year government bonds yield fluctuations, as stated earlier.

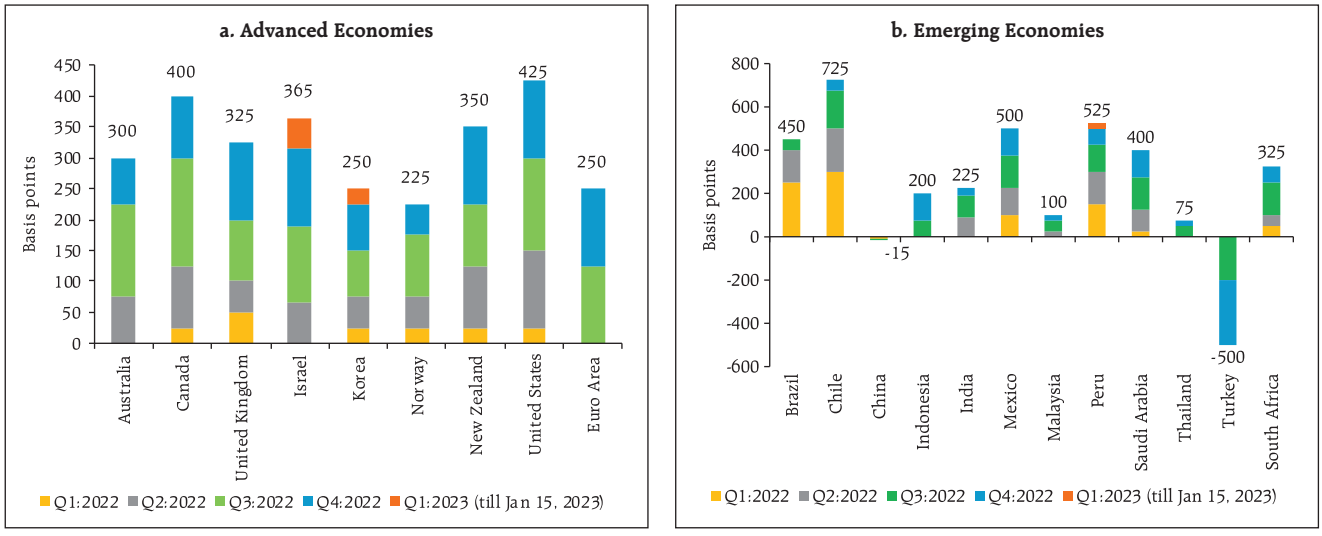
Chart 6: Financial Markets



Sources: Bloomberg; and IIF.

Most EME central banks have also continued with policy tightening while a few have paused (Chart 7b). Peru hiked its policy rate by 25 bps in January 2023. In December 2022, Mexico and

Chart 7: Synchronised Policy Tightening



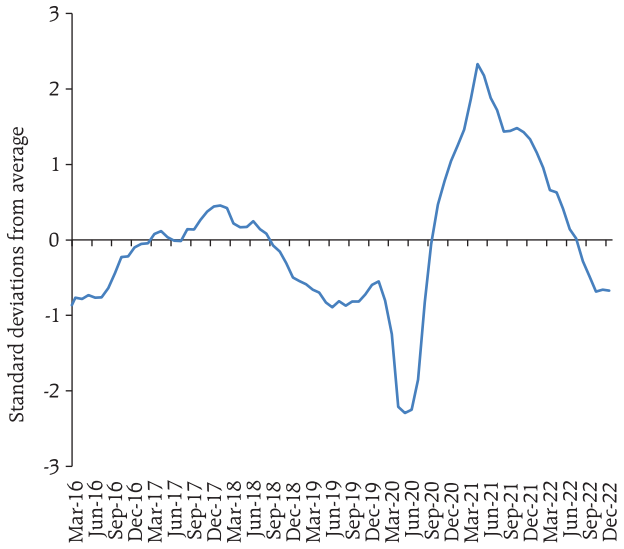
Note: *: Data upto Jan 15, 2023.
Source: Bloomberg.

Indonesia moderated their hikes in policy rates to 50 bps and 25 bps, respectively, even as Hungary kept its rate unchanged. China continued with monetary accommodation.

III. Domestic Developments

The Indian economy exhibited resilience, with growth impulses stemming from domestic drivers. Supply responses are improving with our index of supply chain pressure for India (ISPI) declining to below historical average levels since August (Chart 8). In consonance, the economic activity index extracted from high frequency indicators (HFIs) in a dynamic factor model showed an uptick in activity in November 2022 (Chart 9a). Accordingly, our nowcast of GDP growth for Q3:2022-23 is placed at 4.5 per cent (Chart 9b).

Chart 8: Index of Supply Chain Pressure for India



Source: RBI staff estimates.

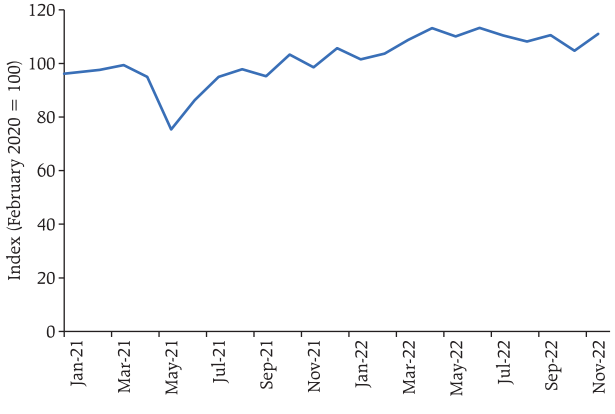
Aggregate Demand

As per the first advance estimates of national income released by the National Statistical Office (NSO) on January 6, the Indian economy is projected to clock a growth of 7.0 per cent in 2022-23 (Chart 10). Consequently, real gross domestic product (GDP) surpassed its pre-pandemic (2019-20) level by 8.6 per cent.

Private final consumption expenditure (PFCE) – the mainstay of aggregate demand – staged an uptick, registering a growth of 7.7 per cent on the back of a buoyant revival in contact-intensive activity, including travel and tourism, and an upbeat festival season.

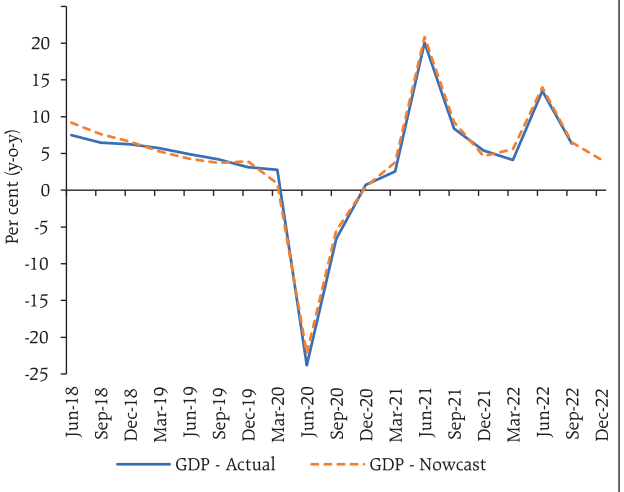
Chart 9: Economic Activity and GDP Nowcast

a: Economic Activity Index



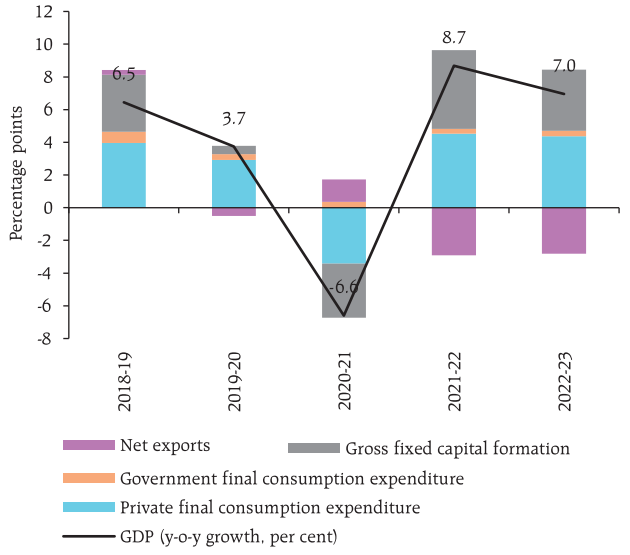
Note: The activity index is constructed by extracting the common trend underlying a set of selected high frequency indicators of economic activity using a Dynamic Factor Model (DFM).
Source: RBI staff estimates.

b: GDP – Actual and Nowcast



Source: NSO; and RBI staff estimates.

Chart 10: Weighted Contribution to GDP Growth



Source: NSO.

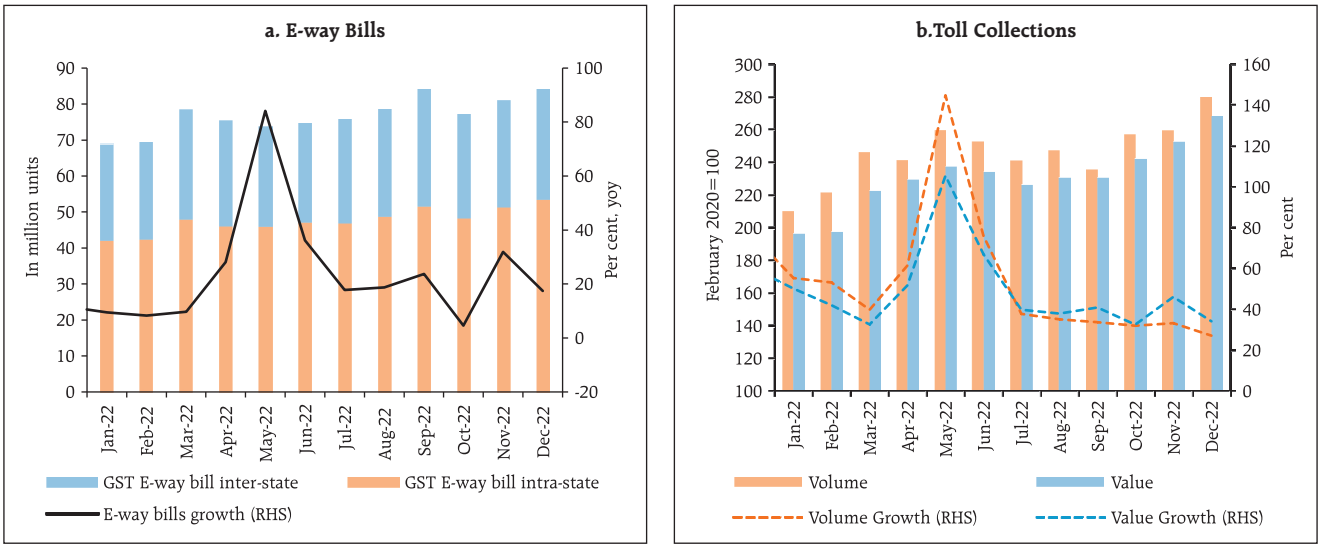
Growth of government final consumption expenditure (GFCE) at 3.1 per cent remained muted as the fiscal consolidation was accompanied by a reorientation of focus on capital expenditure. Gross fixed capital formation (GFCF) remained strong with double-digit growth, primarily aided by the government's thrust on infrastructure. Accordingly, the real GFCF to GDP ratio increased to 33.9 per cent in 2022-23 from 32.5 per cent in the preceding year.

On the other hand, multiple headwinds – commodity price shocks; tightening financial conditions; and resurgence of COVID-19 in some economies – thwarted external demand in 2022-23. India's exports, after exhibiting a remarkable recovery post-COVID with growth of 24.3 per cent in 2021-22, moderated to 12.5 per cent in 2022-23. With the growth in imports at 20.9 per cent outpacing the growth in exports, the drag from external demand was at an unprecedented high of 7.1 per cent of GDP.

Turning to recent developments, E-way bill volumes reflected sustained growth in underlying economic activity, breaching the 80 million mark in December for the second consecutive month. This was led by an increase in the movement of goods within States (Chart 11a). Toll collections strengthened both in volume and value terms, recording a high of ₹4,939.8 crore in December 2022 (Chart 11b).

Lead indicators for the transport sector, however, paint a mixed picture. Fuel consumption rose in

Chart 11: E-way Bills and Toll Collections



Sources: GSTN; RBI; and RBI staff estimates.

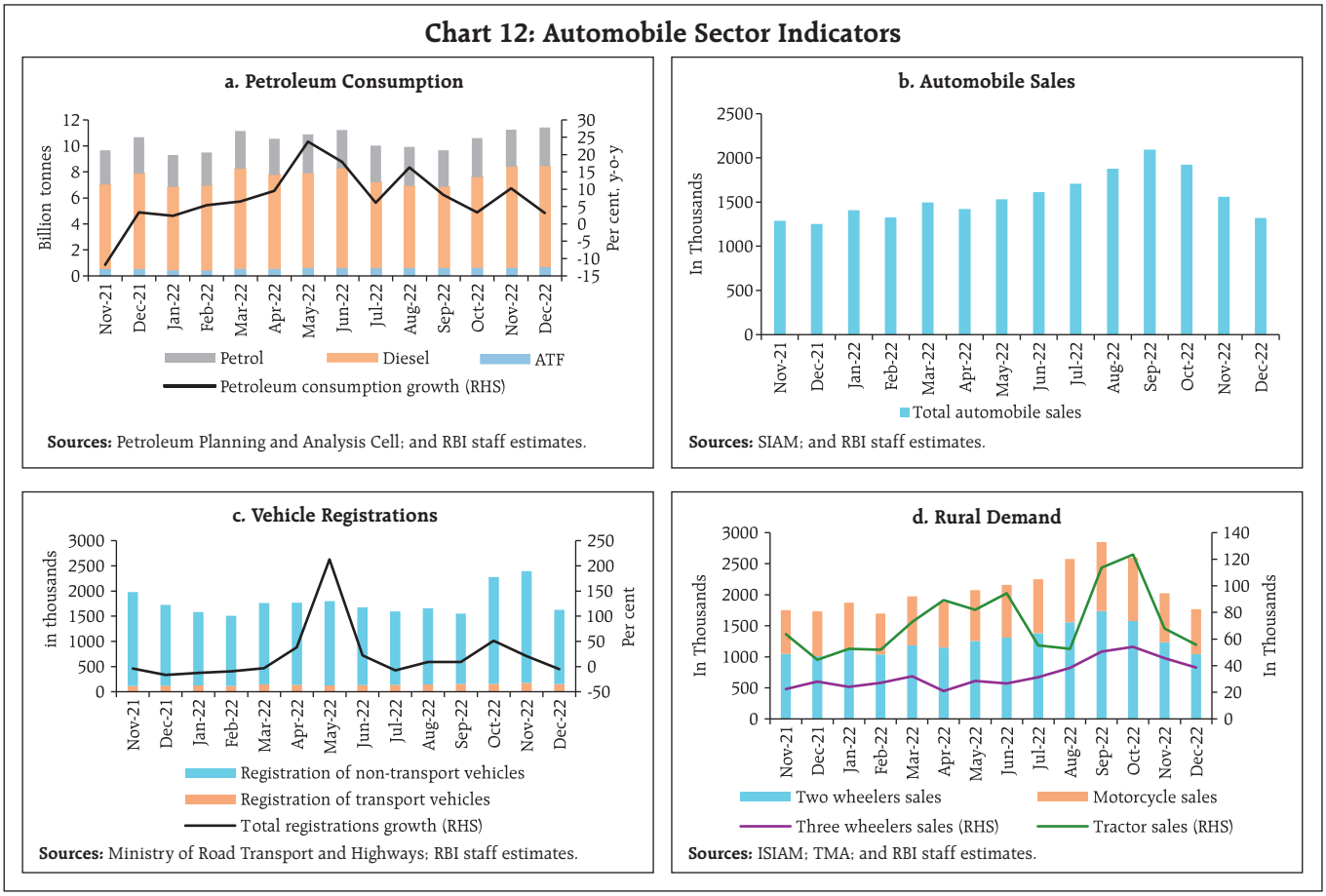
December, with petrol and diesel consumption remaining elevated, aided by agricultural demand from *rabi* sowing (Chart 12a). Sales of automobiles recorded a sequential drop, in spite of strong demand for sports utility vehicles (SUVs) and mid-segment cars (Chart 12b). Vehicle registrations declined for both transport and non-transport vehicles as pent-up demand lost steam (Chart 12c). Even though the festival season brought some respite, sales of two wheelers, three wheelers, motorcycles and tractors remained muted due to weak rural demand (Chart 12d).

In the trade, hotels and transport sector, hotel occupancy rates crossed the pre-pandemic average for the first time (since February 2020) buoyed by an increase in corporate travel. However, occupancy was 6.5 percentage lower than in November 2019, indicating a sub-par seasonal recovery. Revenue per available room (RevPAR) dipped marginally below pre-pandemic levels while average room rates stayed above 2019 levels for the eighth straight month (Chart 13).

Sales of fast-moving consumer goods (FMCG) products recovered sequentially in December[14], increasing in value by 1.4 per cent over November levels. Growth was led by urban sales, while the rural segment contracted by 0.2 per cent. Overall FMCG demand remains suppressed with y-o-y contraction in all categories – packaged goods; home care; personal goods; and confectionery.

As per the household survey of the Centre for Monitoring Indian Economy (CMIE), the all-India

Chart 12: Automobile Sector Indicators



Sources: Petroleum Planning and Analysis Cell; and RBI staff estimates.

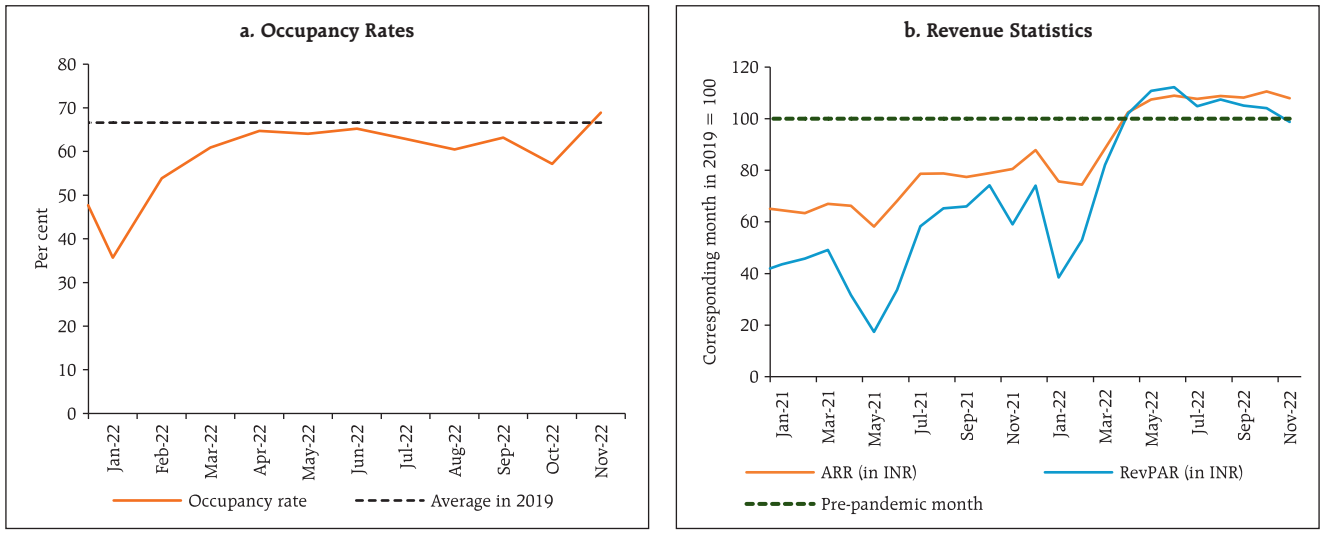
Sources: SIAM; and RBI staff estimates.

Sources: Ministry of Road Transport and Highways; RBI staff estimates.

Sources: ISIAM; TMA; and RBI staff estimates.

[14] As per Bizom, a retail intelligence platform.

Chart 13: Hotel Sector Indicators

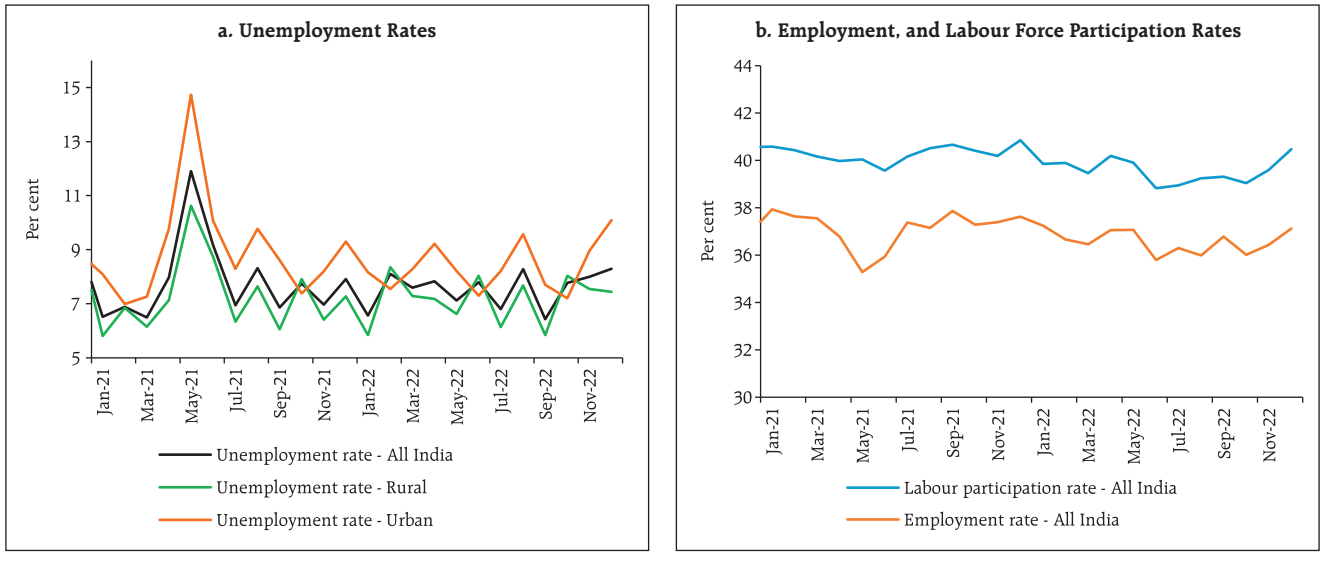


Note: ARR: Average room rate.
Sources: HVS Anarock; and RBI staff estimates.

unemployment rate increased marginally to 8.3 per cent in December from 8.0 per cent in November 2022, led by an increase in urban unemployment (Chart 14a). The rise in the unemployment rate was driven by an increase in the labour force participation rate (LFPR) to 40.5 per cent in December from 39.6 per cent in the previous month even as the absolute number of employed workers was higher in both rural and urban areas (Chart 14b).

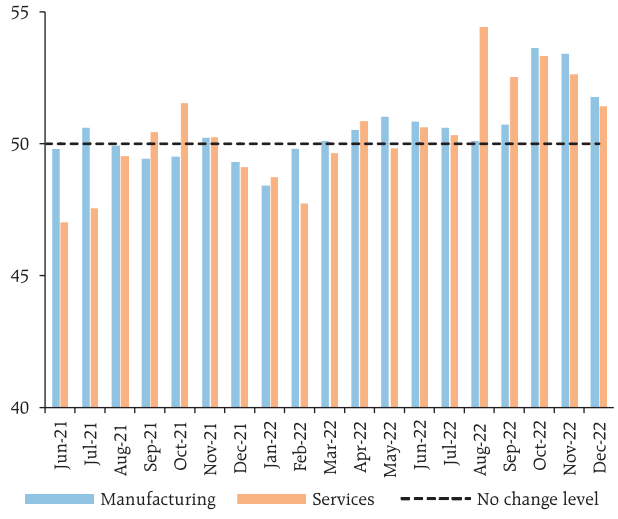
Organised employment reflected in the employment sub-index of the purchasing managers' index (PMI) expanded in December 2022 for both manufacturing and services, *albeit* with a sequential moderation (Chart 15).

Chart 14: Labour Market Conditions



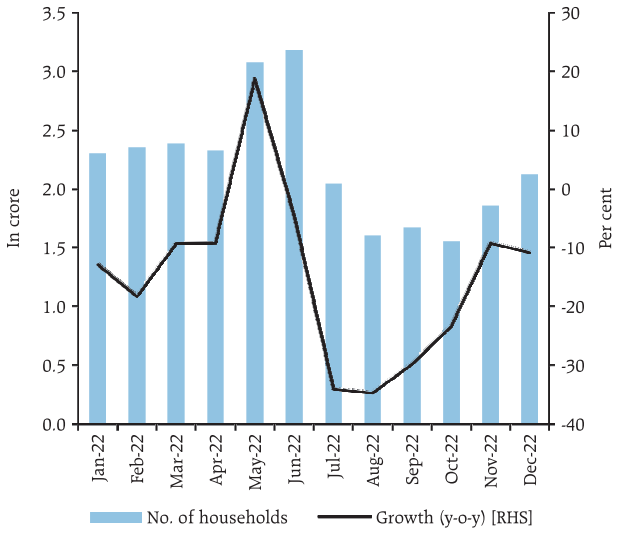
Source: CMIE.

Chart 15: PMI Employment Indices



Note: PMI value of above 50 indicates expansion.
Source: S&P Global.

Chart 16: Demand for Work under MGNREGS



Source: Ministry of Rural Development.

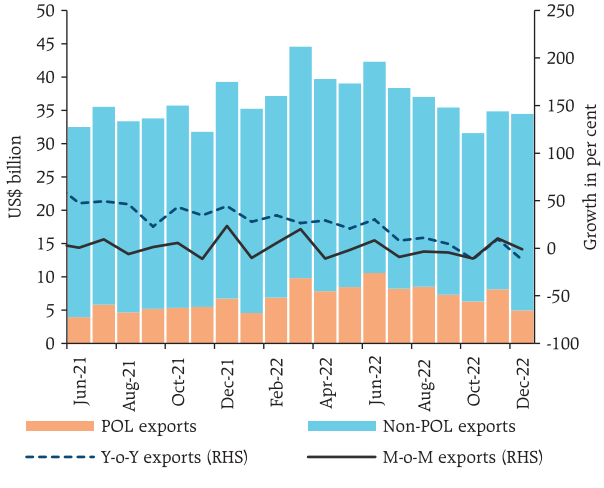
As sowing activity for the *rabi* season nears conclusion, demand for work under the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) has been rising on a sequential basis; however, it remained lower than a year ago, indicating better job opportunities in the labour market (Chart 16).

India's merchandise exports at US$ 34.5 billion contracted by 12.2 per cent on y-o-y basis in December 2022, as an unfavourable base effect interacted with a negative momentum (-1.1 per cent m-o-m) (Chart 17).

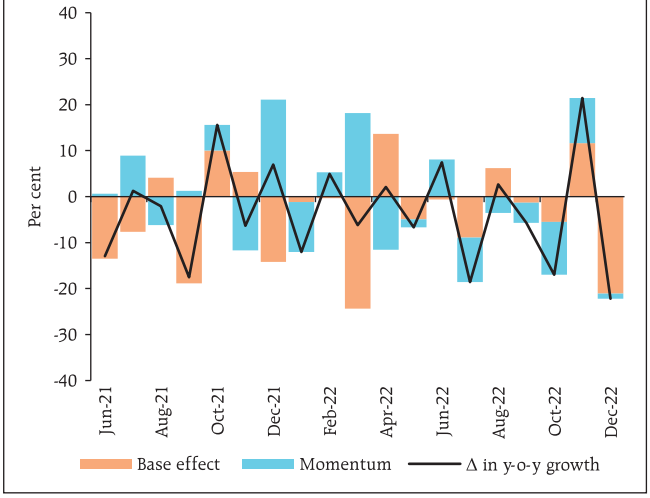
Electronic goods, rice and iron ore were the primary commodities which contributed positively,

Chart 17: Merchandise Exports of India

a: Trend in Exports

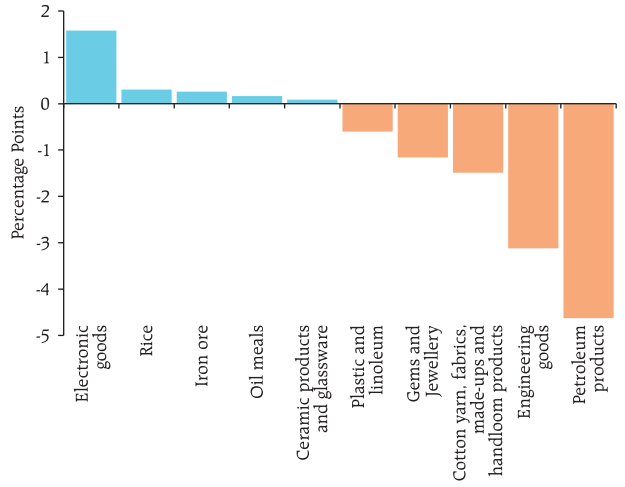


b: Decomposition of Sequential Change in Export Growth (y-o-y)



Source: DGCI&S.

Chart 18: India's Merchandise Exports – Contributions (December 2022 over December 2021)



Source: DGCI&S.

Chart 19: Services Exports and Imports

Source: RBI.

while petroleum products, engineering goods, cotton yarn and fabrics weighed down export growth (Chart 18). Overall, non-oil exports witnessed contraction of 9.2 per cent on y-o-y basis in December 2022 and remained below US$ 30 billion for the fifth consecutive month.

Exports of gems and jewellery at US$ 2.5 billion contracted by 15.2 per cent in December 2022. According to the Gems and Jewellery Export Promotion Council (GJEPC), global headwinds from slowing markets such as the US contributed to the decline. The exports of engineering goods grew by 12.4 per cent (m-o-m) in December but at US$ 9.1 billion, they remained in contraction for the sixth consecutive month on a y-o-y basis. Eleven major commodities accounting for 18.2 per cent of the export basket, however, witnessed y-o-y expansion in December 2022. During April-December 2022, merchandise exports at US$ 332.8 billion reached 71 per cent of the export target set for 2022-23.[15]

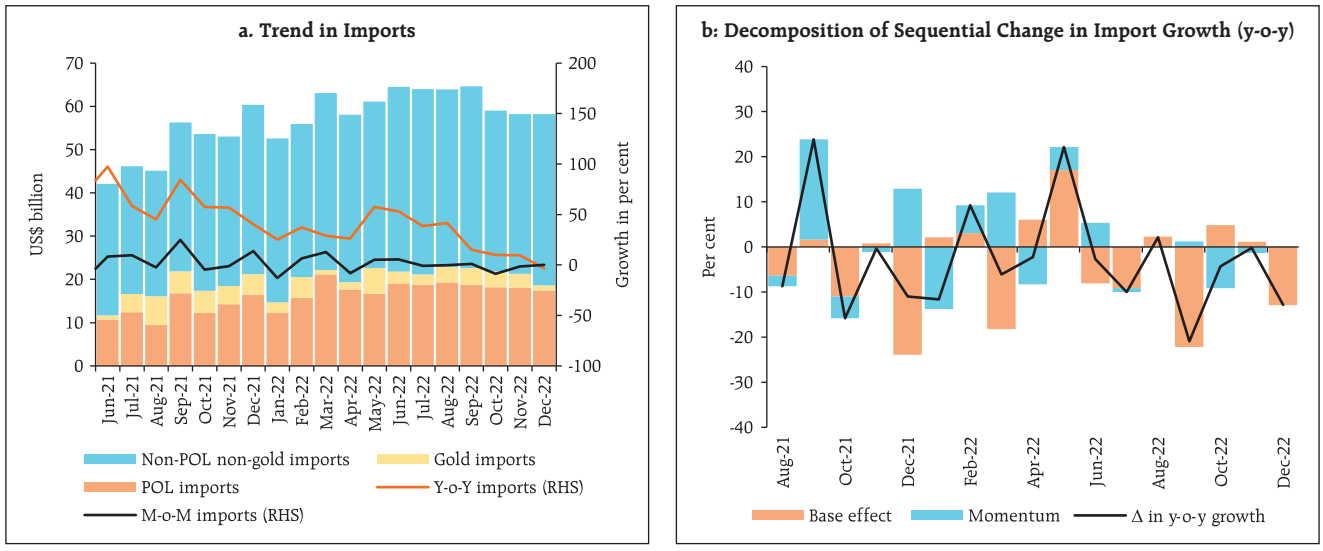
[15] The merchandise export target for 2022-23 is in the range of US$ 450-470 billion (Mint, January 17, 2023).

India's services exports at US$ 27.0 billion recorded robust growth in November 2022 due to software, business, and travel services, leading to net export earnings of US$ 11.7 billion in the month (Chart 19).

After remaining in expansion zone for two years, merchandise imports at US$ 58.2 billion declined by 3.5 per cent on y-o-y basis in December 2022 while remaining unchanged on a sequential basis (Chart 20). Seventeen major commodities accounting for 66.4 per cent of the import basket, experienced positive y-o-y growth in December 2022. Non-petroleum non-gold imports remained below US$ 40 billion for the third consecutive month. Crude oil, transport equipment and iron and steel contributed the most to import growth whereas gold, chemicals, pearls, precious and semi-precious stones weighed it down (Chart 21).

Import growth of petroleum and its products moderated to 5.9 per cent in December 2022 with a sequential decline of 3.2 per cent taking them down to US$ 17.5 billion. With rising international gold prices,

Chart 20: Merchandise Imports of India



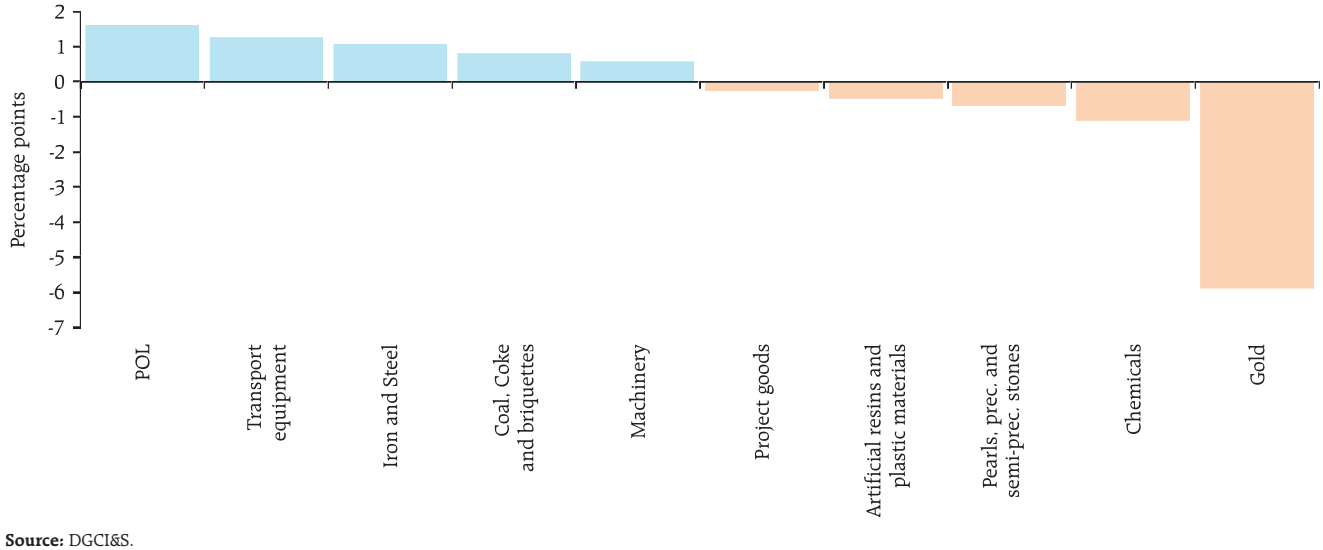
Source: DGCI&S.

India's gold imports at US$ 1.2 billion declined by around 75 per cent (y-o-y) during December 2022.

On policy front, the Government has allowed import of 51,000 tonnes of cotton at zero duty in 2023. The Union Cabinet has recently approved the National Green Hydrogen Mission which is expected to provide impetus to exports of green hydrogen and its derivatives.

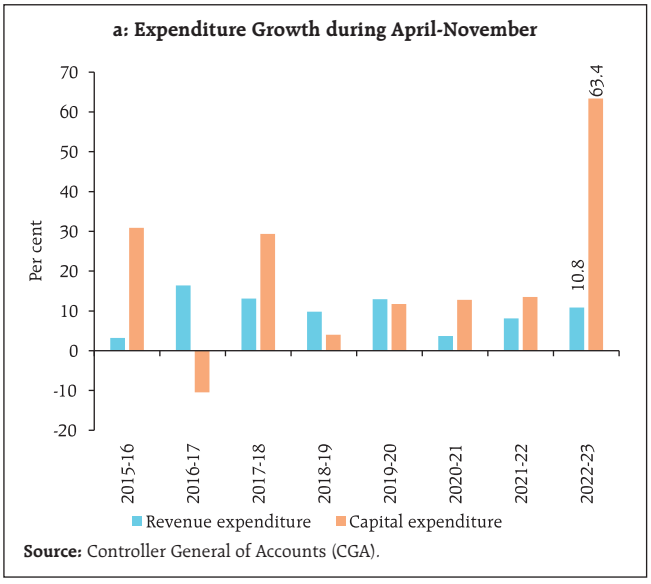
The merchandise trade deficit widened marginally to US$ 23.8 billion in December 2022 from US$ 23.4 billion in November 2022. The deficit was US$ 2.7 billion higher than its level a year ago.

Chart 21: India's Merchandise Imports – Relative Contributions (December 2022 over December 2021)

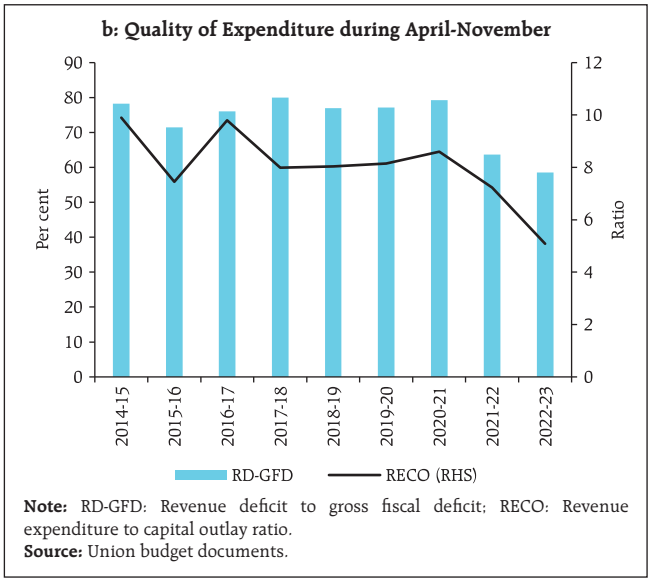


Source: DGCI&S.

Chart 22: Government Expenditure



Source: Controller General of Accounts (CGA).



Note: RD-GFD: Revenue deficit to gross fiscal deficit; RECO: Revenue expenditure to capital outlay ratio.
Source: Union budget documents.

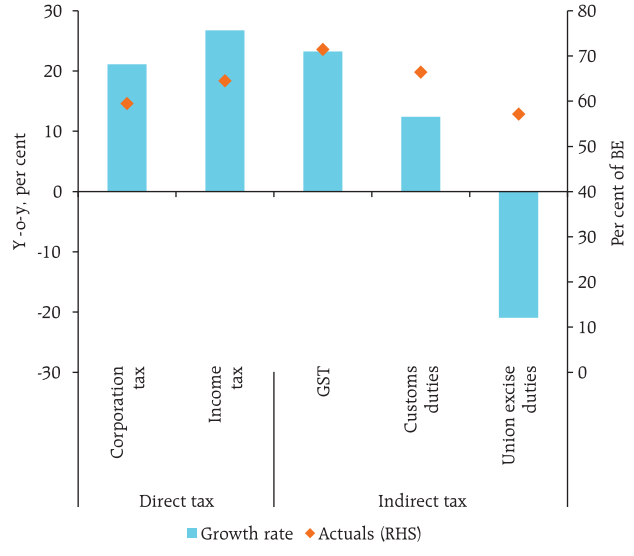
During April – November 2022, the gross fiscal deficit of the central government stood at 58.9 per cent of budget estimates (BE), higher than during the corresponding period last year. The thrust on capital spending continued with a year-on-year (y-o-y) growth in capital outlay of 57.5 per cent, while revenue expenditure recorded a modest growth of 10.8 per cent. This lead to a marked improvement in the quality of spending (Chart 22 a and b).

On the receipts side, gross tax revenue recorded a growth of 15.5 per cent, driven by an increase in collections under all major tax heads except excise duty (which is attributed to the cut in excise duty on petrol and diesel in May 2022). Direct and indirect taxes registered y-o-y growth of 23.4 per cent and 8.6 per cent, respectively (Chart 23).

On the other hand, non-tax revenues contracted by 11.1 per cent during April-November. Non-debt capital receipts recorded an increase of 100.4 per cent *vis-à-vis* the corresponding period last year, led by the successful initial public offer (IPO) of the Life Insurance Corporation (LIC).

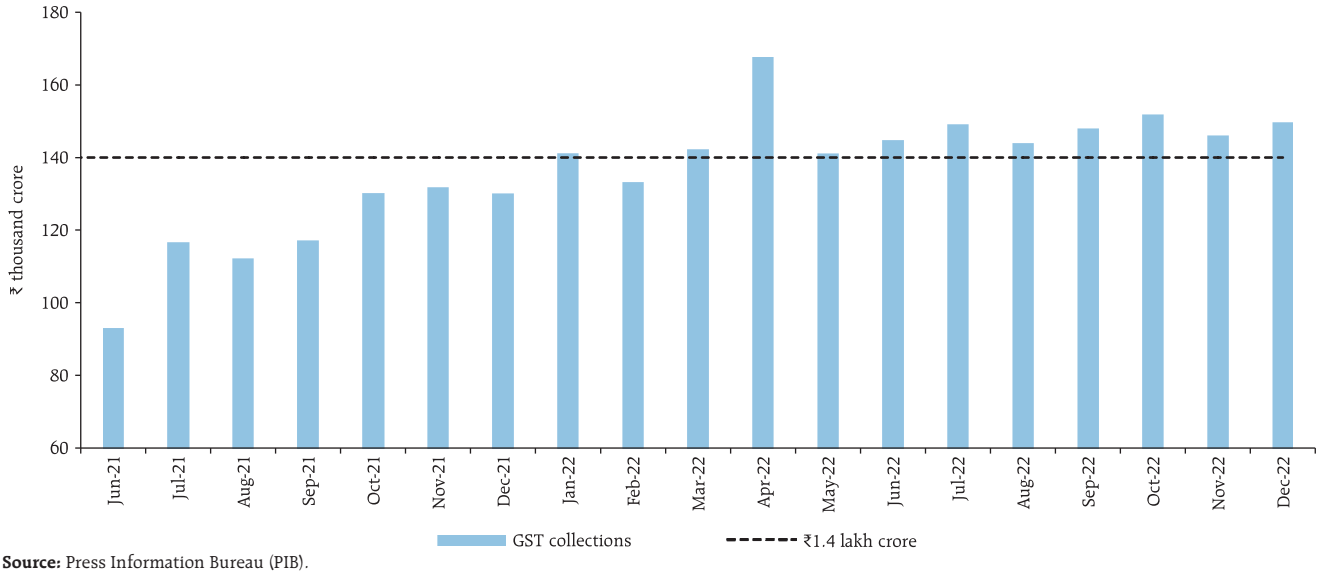
GST collections (Centre *plus* States) in December 2022 stood at ₹1.49 lakh crore, a growth of 15.2

Chart 23: Tax Revenue during April-November



Sources: CGA; and Union budget documents.

Chart 24: Monthly GST Revenue



Source: Press Information Bureau (PIB).

per cent over the corresponding month last year (Chart 24).

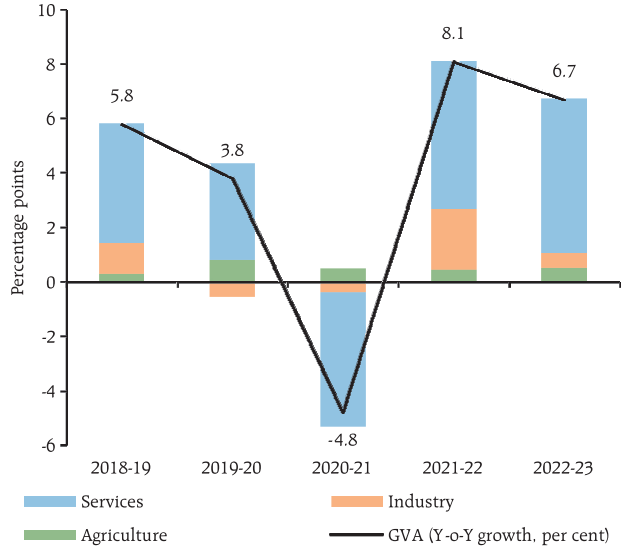
With a view to reducing the economy's carbon intensity, the Union Budget 2022-23 had announced issuance of Sovereign Green Bonds (SGrBs) as a part of the government's overall borrowing. Accordingly, ₹16,000 crore would be issued in Q4:2022-23 in 5 and 10-year maturities and the proceeds would be used in public sector infrastructure projects. These securities shall be eligible for repo, SLR and also available for investment by non-residents under the "Fully Accessible Route".

Aggregate Supply

Aggregate supply, as measured by the gross value added (GVA) at basic prices, increased by 6.7 per cent in 2022-23, as against a growth of 8.1 per cent a year ago (Chart 25). The resilience in agriculture and services sectors supported overall GVA growth, while the industrial sector decelerated sharply.

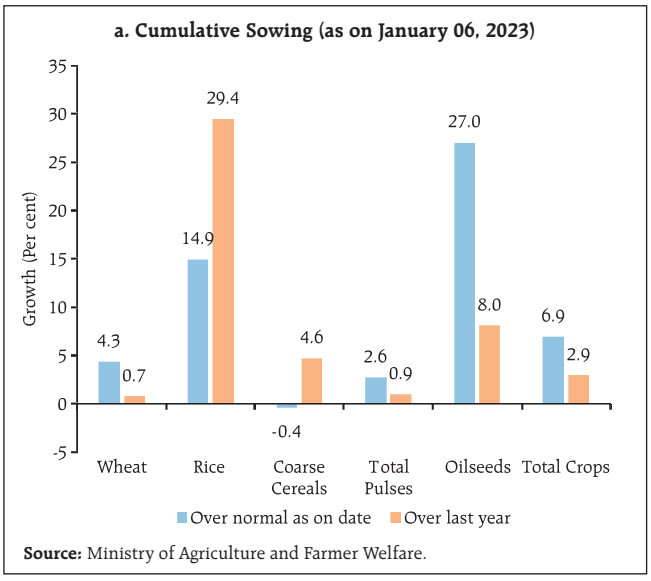
Agriculture remained robust, recording a growth of 3.5 per cent in 2022-23, driven by buoyant *rabi* sowing and allied activities. The industrial sector slowed down as input cost pressures impinged on profitability of manufacturing firms. The growth in the services sector accelerated to 9.1 per cent, led by a strong revival in trade, hotels, transport, communication, and services related to broadcasting and financial, real estate and professional services.

Chart 25: Weighted Contribution to GVA Growth

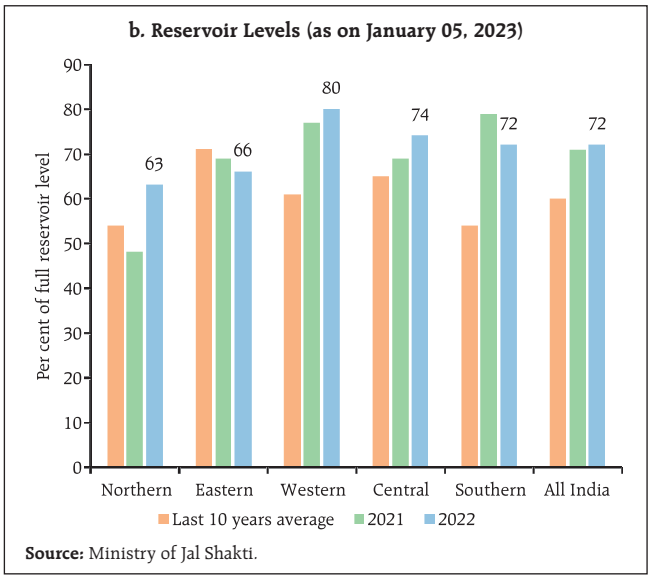


Source: NSO.

Chart 26: Progress of *Rabi* Season



Source: Ministry of Agriculture and Farmer Welfare.



Source: Ministry of Jal Shakti.

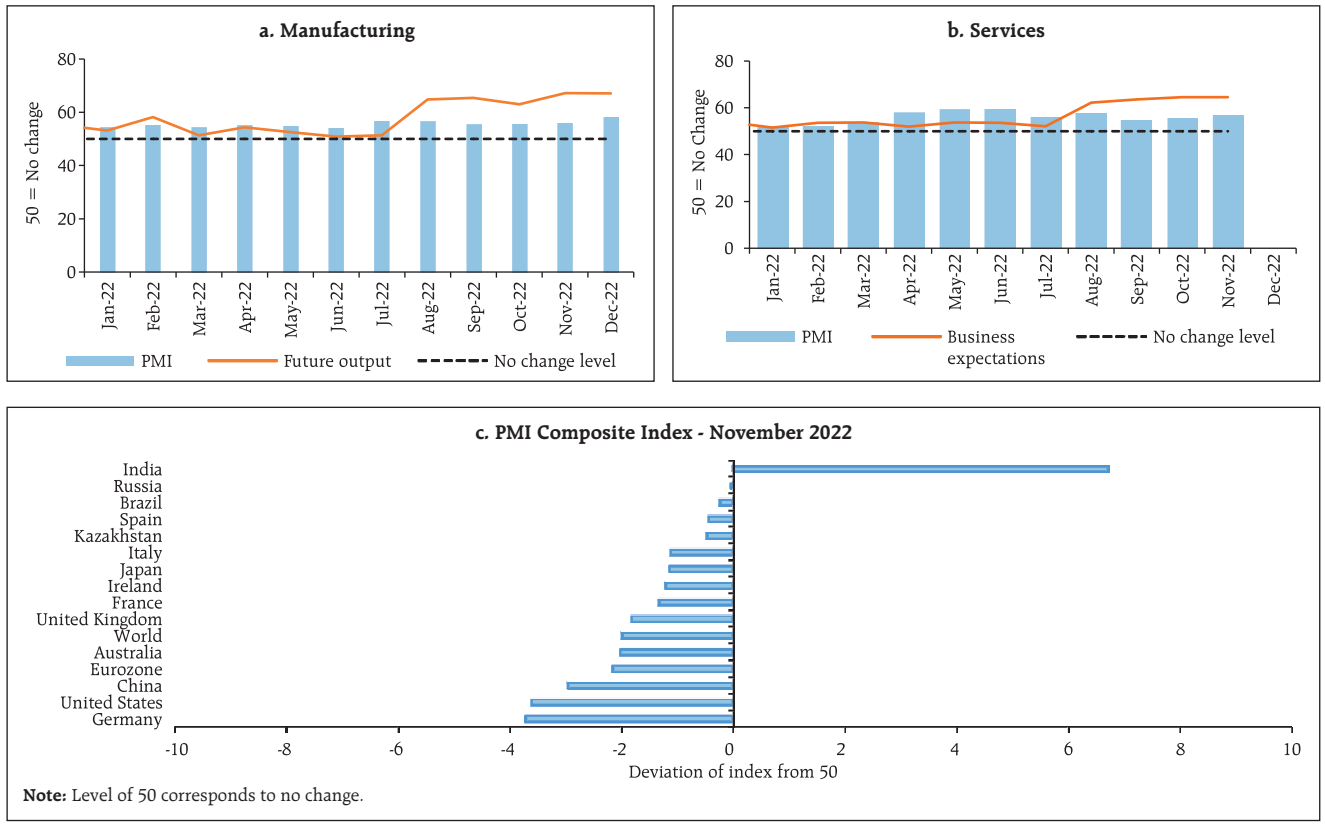
As on January 06, 2023 the cumulative sown area under *rabi* crops at 665.6 lakh hectares was higher by 2.9 per cent than the sown area in the corresponding week of the previous year and 6.9 per cent above normal acreage (5-year average) (Chart 26a). There was an increase in acreage under rice, maize and rapeseed and mustard. The reservoir water storage level was at 72 per cent of full reservoir level (FRL) as on January 05, 2022 which was 1.4 per cent higher than last year's level and 20.0 per cent higher than the 10-year average FRL (Chart 26b).

The Government of India announced a new integrated food security scheme, allowing provision of free foodgrains (5 kg per person per month to priority households and 35 kg per household per month to the Antyodaya Anna Yojana beneficiaries) to about 81.35 crore beneficiaries under the National Food Security Act (NFSA) for one year from January 1, 2023. This new scheme will replace and subsume the earlier scheme wherein the same amount of foodgrains was provided at subsidised prices (₹3/2/1 per kg of rice/wheat/coarse grains, respectively), along with monthly provision of 5 kg of free foodgrains per person.

In the industrial sector, the headline manufacturing purchasing managers' index (PMI) increased to a twenty-two month high of 57.8 in December supported by a strong increase in new orders and output. The business expectation index remained elevated at 67.1 in December, *albeit* marginally down from a seven year high of 67.2 last month (Chart 27a). The services PMI recorded its highest expansion in six months, aided by an increase in new business. However, business expectations moderated from November's 7-year high (Chart 27b). A cross-country comparison shows that India remained an outlier among major economies, with an expansionary composite PMI reading in December (Chart 27c).

In the services sector, transport indicators continued to show a mixed picture, with railway freight traffic earnings growing by 3.0 per cent (y-o-y) in December 2022 as compared to 7.2 per cent a year ago (Chart 28a). Cargo traffic picked up at major

Chart 27: Purchasing Managers' Index (PMI)



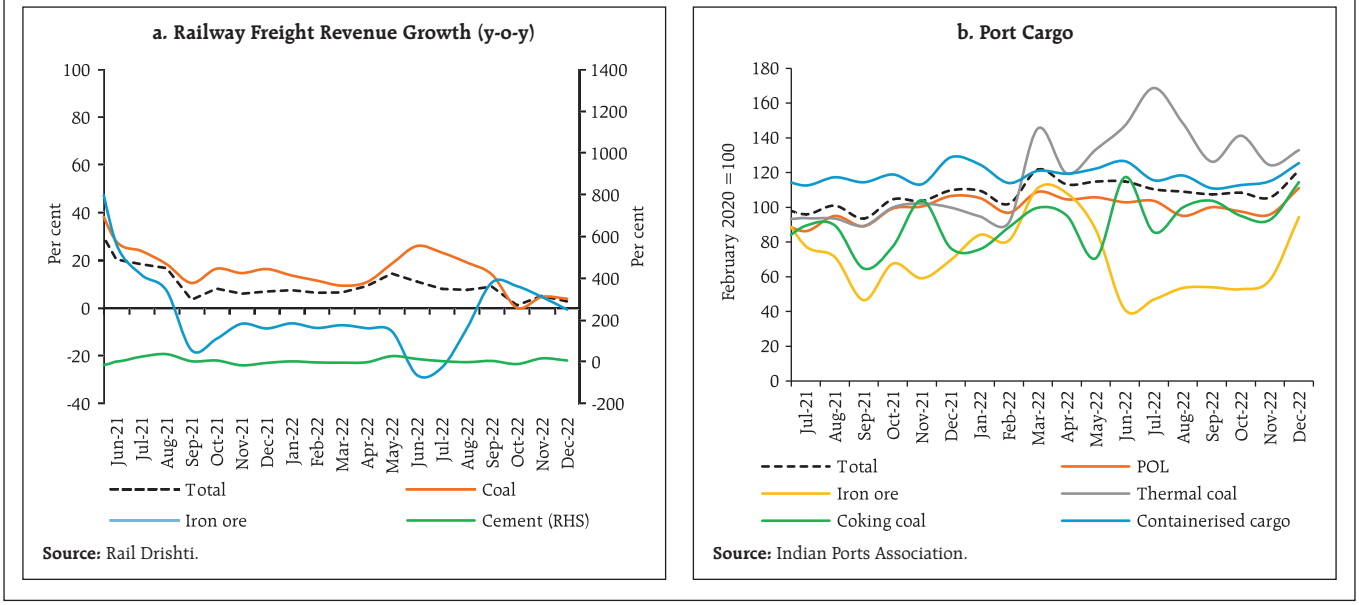
Note: Level of 50 corresponds to no change.

Source: S&P Global.

ports in December due to improvement in carriage of finished fertilizers and coking coal (Chart 28b).

In the construction sector, cement production and steel consumption picked up, with steel

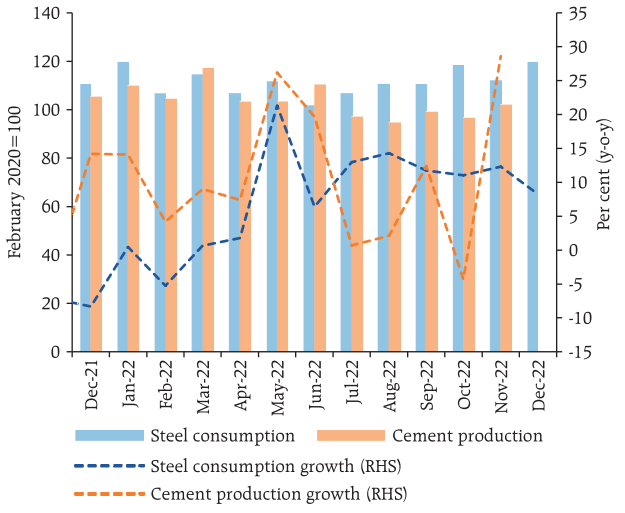
Chart 28: Railway and Cargo Traffic



Source: Rail Drishti.

Source: Indian Ports Association.

Chart 29: Steel Consumption and Cement Production



Sources: Joint Plant Committee; and Office of the Economic Advisor, Ministry of Commerce and Industry.

consumption recording positive y-o-y growth for the tenth consecutive month in December (Chart 29). Cement production recorded the highest growth in 15 months in November, helped by a low base as well as a pick-up in production from a post festival and monsoon-related slack.

High frequency indicators in the service sector indicated that overall recovery remained in traction (Table 2). International and domestic passenger footfalls picked up in December over the previous month. Air cargo recovered in the domestic sector, increasing by 4.4 per cent in December 2022 over the previous month, even as international cargo continued to contract on a m-o-m basis. In January (up to January 11, 2023), international passenger activity increased on a m-o-m basis, while domestic passenger travel and cargo segments recorded contraction.

In terms of key policy initiatives at the state level to support infrastructure, the Government of

Table 2: High Frequency Indicators – Services

Sector	Indicator	High Frequency Indicators- Services Growth (y-o-y, per cent)				Growth over 2019			
		Sep-22	Oct-22	Nov-22	Dec-22	Sep-22/ Sep-19	Oct-22/ Oct-19	Nov-22/ Nov-19	Dec-22/ Dec-19
Urban Demand	Passenger vehicles sales	91.9	28.6	28.1	7.2	42.9	7.1	9.1	5.6
Rural Demand	Two wheeler sales	12.9	2.3	16.5	3.9	4.7	-10.2	-12.4	-0.5
	Three wheeler sales	73.4	70.4	103.2	37.6	-23.7	-19.2	-18.1	-28.1
	Tractor sales	23.0	6.8	6.5	25.6	34.3	15.6	24.8	30.3
Trade, hotels, transport, communication	Commercial vehicles sales	34.4				36.5			
	Railway freight traffic	9.1	1.4	5.2	3.1	30.6	26.8	21.8	20.0
	Port cargo traffic	14.9	3.1	1.8	10.5	13	8.5	5.9	14.9
	Domestic air cargo traffic	6.8	-8.3	3.7		-5.9	-17.5	-8.1	
	International air cargo traffic	-4.9	-18.7	-6.0		-3	-12.6	-10.7	
	Domestic air passenger traffic	49.0	30.4	12.6		-8.2	-5	-7.3	
	International air passenger traffic	164.0	115.0	97.5		-17.8	-16.2	-18.2	
	GST e-way bills (Total)	23.7	4.6	32.0	17.5	60.3	45.4	51.1	51.9
	GST e-way Bbills (Intra state)	28.9	12.0	37.7	23.2	71.5	57.5	61.9	63.9
	GST e-way bills (Inter state)	16.2	-5.9	23.1	8.6	45.3	28.6	35.5	34.6
	Tourist arrivals	363.7	243.2	191.3		-28.6	-30.5	-29.6	
Construction	Steel consumption	11.7	11.0	12.3	8.2	11.8	14.4	23.1	17.8
	Cement production	12.4	-4.3	28.6		20.8	13.1	15.0	
PMI	Services	54.3	55.1	56.4	58.5				

Sources:

Odisha introduced a scheme to reduce post-harvest management losses and provide marketing support for horticulture produce by providing financial assistance to the farmers in the State. Tamil Nadu announced setting up of a green fund with a corpus amount of ₹1000 crore which will be invested in the circular economy, renewable energy, and other projects aimed at mitigating climate change. In West Bengal, infrastructure projects relating to surface roads, metro rails and railways, and sewerage infrastructure projects were initiated, which included three national highway projects worth ₹1206 crore.

Inflation

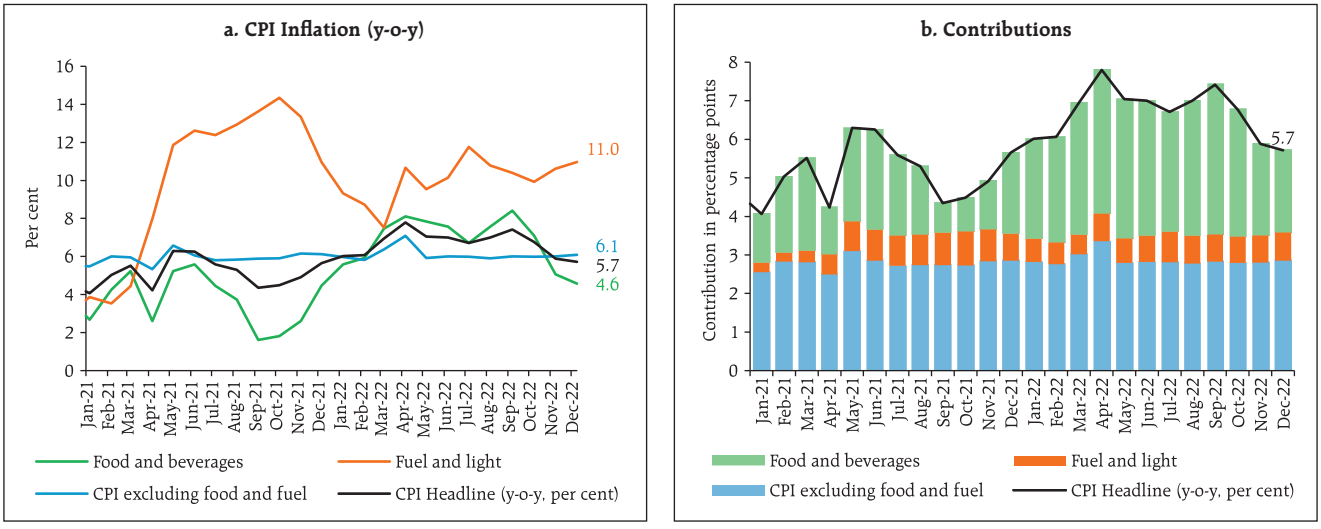
The provisional data released by the National Statistical Office (NSO) on January 12, 2023 showed that inflation, as measured by y-o-y changes in the all-India consumer price index (CPI), moderated to 5.7 per cent in December 2022 from 5.9 per cent in November. The easing was primarily driven by the sharp moderation in food inflation (Chart 30a and 30b). The index declined by 45 bps month-on-month (m-o-m), which was partially offset by an unfavourable base effect (month-on-month change in prices a year ago) of 30 bps, resulting in a fall in headline inflation by around 15 bps between November and December.

The m-o-m decline in prices was of the order of 135 bps within the food and beverages group, which more than offset the positive price momentum of 44 bps in the fuel group and 30 bps in the core (excluding food and fuel) category.

The softening of CPI food inflation to 4.6 per cent in December from 5.1 per cent in November came from a sharp decline in price momentum of 135 bps despite a strong unfavourable base effect of 88 bps. In terms of sub-groups, inflation softened in respect of fruits and prepared meals while deflation in vegetables prices deepened (Chart 31).

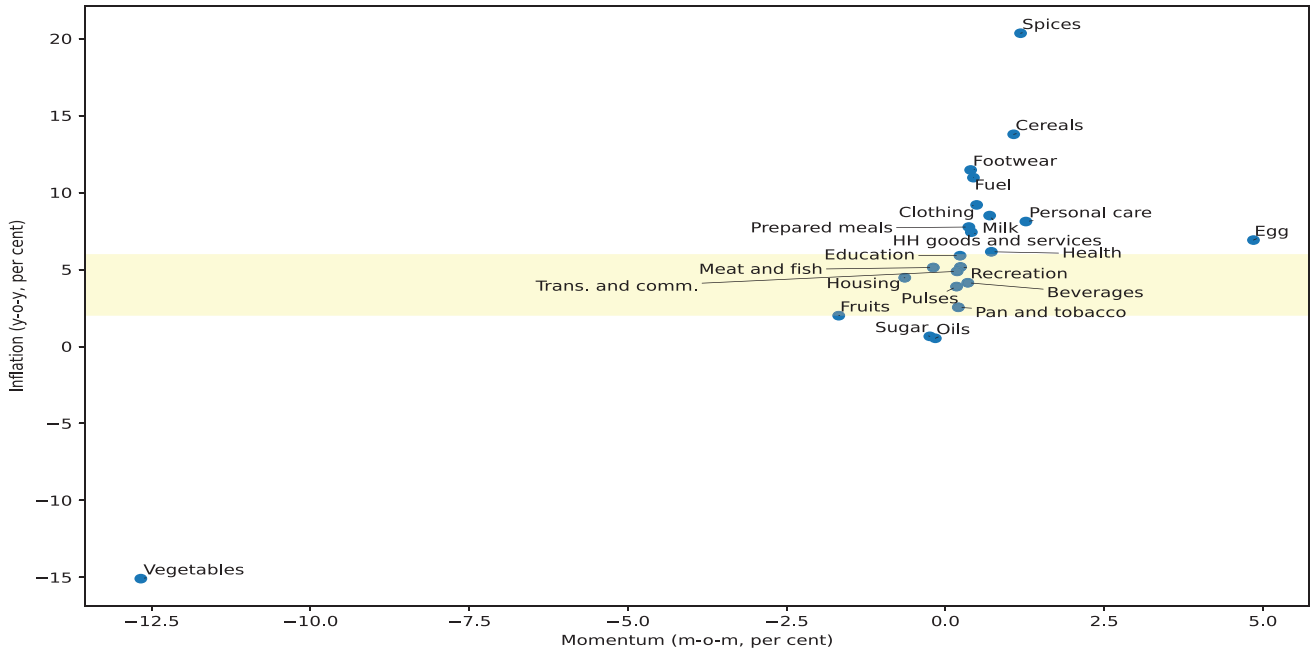
On the other hand, inflation rose in cereals to 13.8 per cent (highest since July 2013), protein-based food (pulses, eggs, meat and fish, and milk) to 6.7 per cent and spices to 20.4 per cent. Edible oils and sugar inflation moved into positive territory from deflation in November (Chart 32).

Chart 30: Trends and Drivers of CPI Inflation



Note: CPI inflation for April-May 2021 was computed based on imputed CPI indices for April-May 2020.
Sources: National Statistical Office (NSO); and RBI staff estimates.

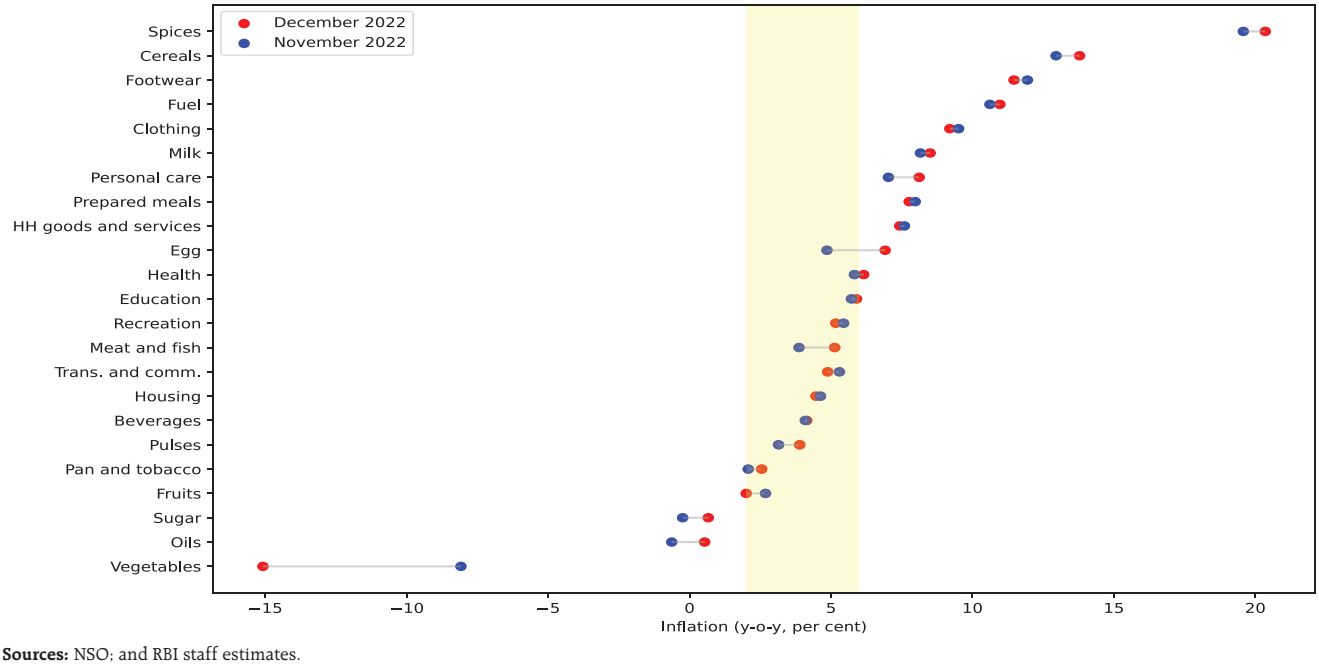
Chart 31: Annual Inflation (y-oy) and Momentum (m-o-m) across Sub-groups



Sources: NSO; and RBI staff estimates.

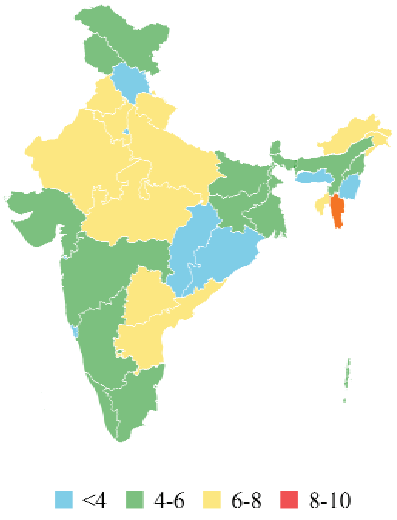
Inflation in the fuel and light group edged up to 11.0 per cent in December from 10.6 per cent in November, mainly driven by kerosene. Firewood and chips inflation also increased, while inflation for electricity and liquified petroleum gas (LPG) remained steady. The fuel group with a weight of 6.8 per cent in the CPI basket contributed 13.0 per cent of headline inflation in December.

Chart 32: Annual Inflation across Sub-groups (December vs November 2022)



Sources: NSO; and RBI staff estimates.

Chart 33: Spatial Distribution of Inflation in December 2022 (CPI - Combined, y-o-y)



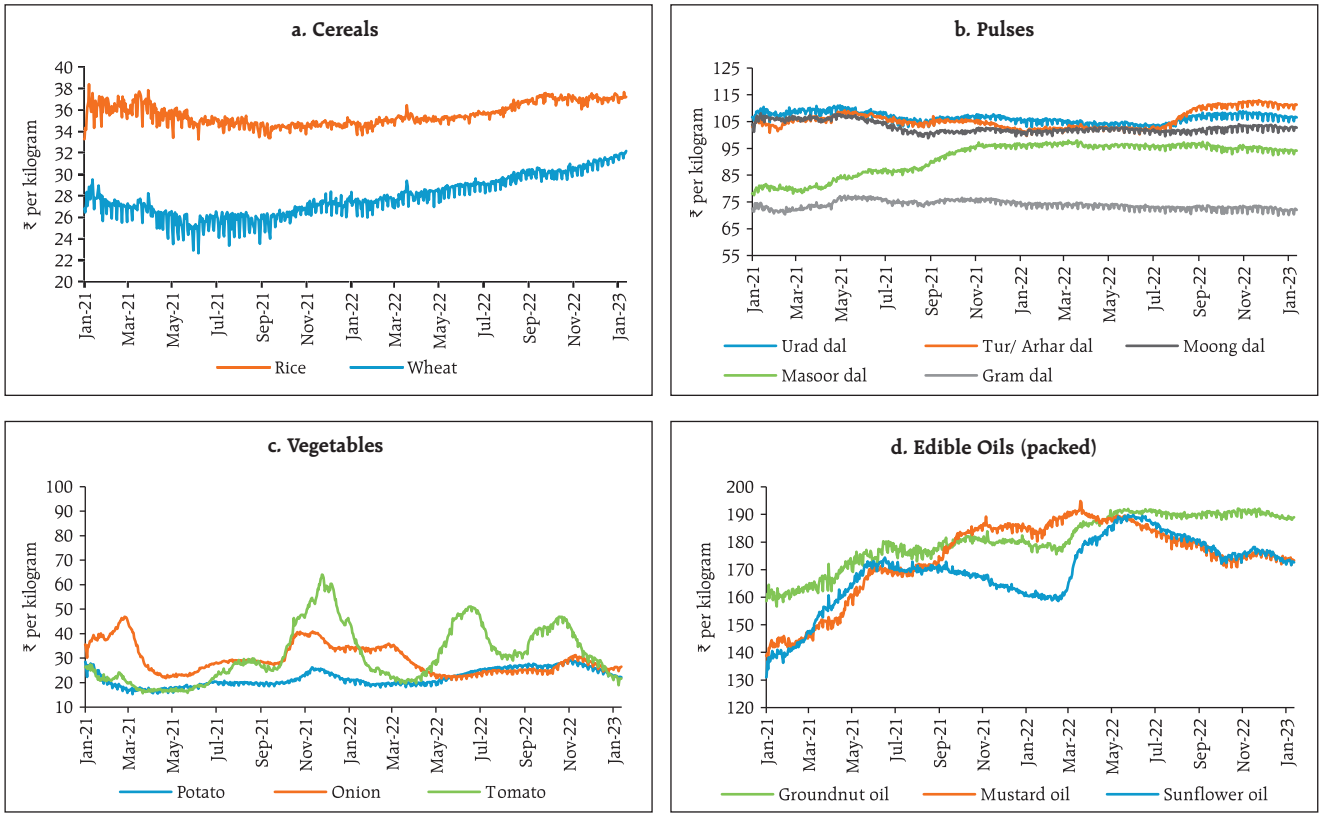
Sources: NSO; and RBI staff estimates.

CPI core inflation remained steady at around 6 per cent since May 2022. Inflation in sub-groups such as pan, tobacco and intoxicants, health, education, and personal care and effects increased during the month while recreation and amusement, clothing and footwear, housing, household goods and services, and transport and communication sub-groups witnessed some moderation.

In terms of regional distribution, rural inflation at 6.0 per cent was higher than urban inflation (5.4 per cent) in December 2022 (Chart 33). Among the states, Mizoram experienced inflation in excess of 8 per cent whereas Chhattisgarh, Daman and Diu, Delhi, Goa, Himachal Pradesh, Manipur, Meghalaya and Odisha recorded inflation below 4 per cent.

High frequency food price data for the month of January so far (January 1-12) from the Department of Consumer Affairs (DCA) point to an increase in wheat and atta, and rice prices. Prices of onions, potatoes, tomatoes, pulses and edible oils registered a broad-based decline (Chart 34).

Chart 34: DCA Essential Commodity Prices



Sources: Department of Consumer Affairs, GoI; and RBI staff estimates.

Table 3: Petroleum Products Prices

Item	Unit	Domestic Prices			Month-over-month (per cent)	
		Jan-22	Dec-22	Jan-23	Dec-22	Jan-23
Petrol	₹/litre	102.87	102.92	102.92	0.0	0.0
Diesel	₹/litre	90.51	92.72	92.72	0.0	0.0
Kerosene (subsidised)	₹/litre	36.56	59.00	53.67	-0.6	-9.0
LPG (non-subsidised)	₹/cylinder	910.13	1063.25	1063.25	0.0	0.0

Note: Other than kerosene, prices represent the average Indian Oil Corporation Limited (IOCL) prices in four major metros (Delhi, Kolkata, Mumbai and Chennai). For kerosene, prices denote the average of the subsidised prices in Kolkata, Mumbai and Chennai.
Sources: IOCL; Petroleum Planning and Analysis Cell (PPAC); and RBI staff estimates.

Retail selling prices of petrol and diesel in the four major metros remained steady in January so far. While LPG prices were kept unchanged, kerosene prices decreased sharply reflecting the pass through of the fall in international prices (Table 3).

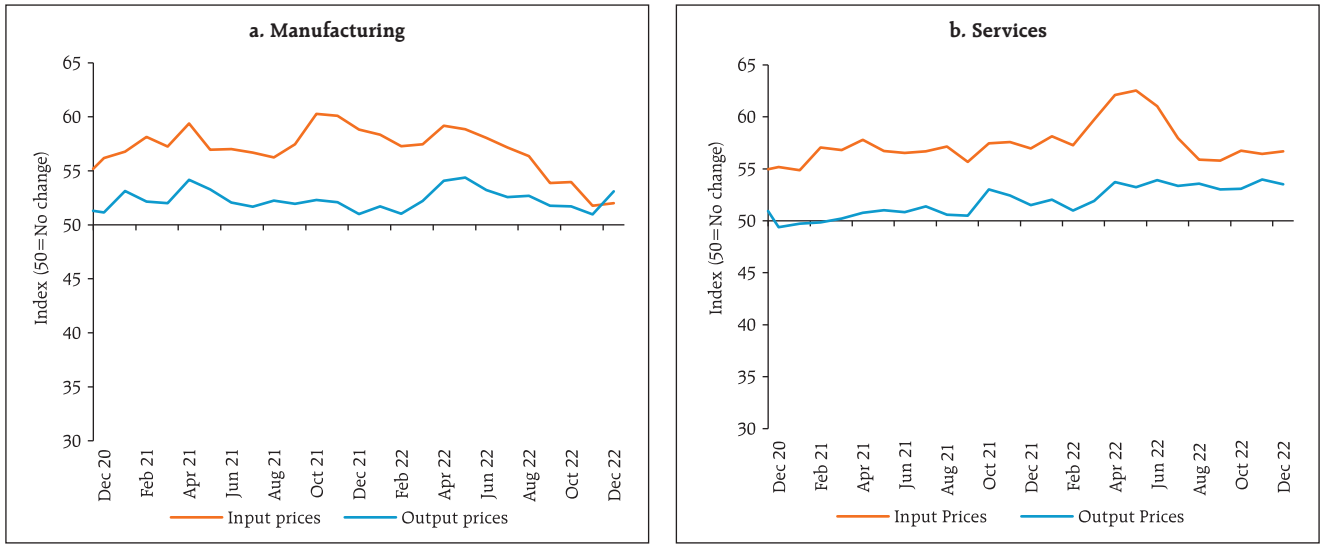
Input costs, as reflected in the PMIs, increased across manufacturing and services in December 2022. Selling prices also edged up across the two sectors, with manufacturing registering a faster pace of expansion (Chart 35).

IV. Financial Conditions

Prevailing surplus liquidity conditions were interrupted by outflows in the banking system *via* payments under goods and services tax (GST) and quarterly advance tax, before increased government spending towards the end of the month helped ease the strain. Reflecting these developments, average daily absorption under the liquidity adjustment facility (LAF) narrowed to ₹1.5 lakh crore during December 12 through January 15, 2023 from ₹1.9 lakh crore during mid-November through December 11, 2022. The overnight standing deposit facility (SDF) absorbed ₹1.3 lakh crore, while variable rate reverse repo (VRRR) auctions accounted for the rest (Chart 36).

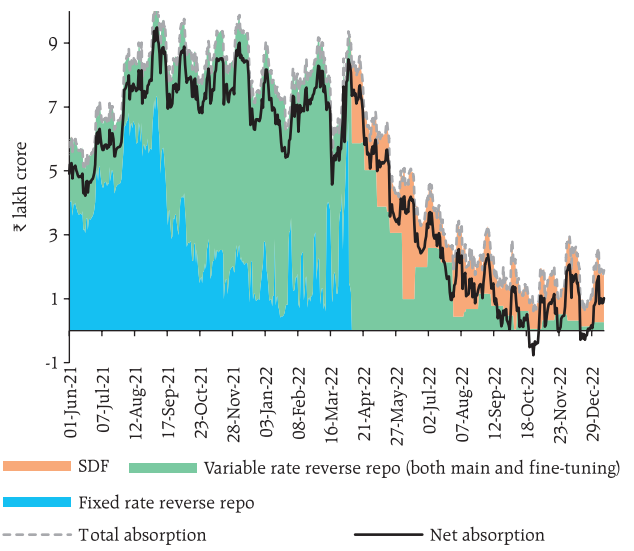
Declining surplus liquidity prompted a few banks to take recourse to the marginal standing facility (MSF), which rose to ₹33,224 crore on December 30, the highest in nearly two months. On a net basis (adjusted for repo and MSF), average absorption

Chart 35: PMI – Input and Output Prices



Source: S&P Global.

Chart 36: Liquidity Conditions



Source: RBI.

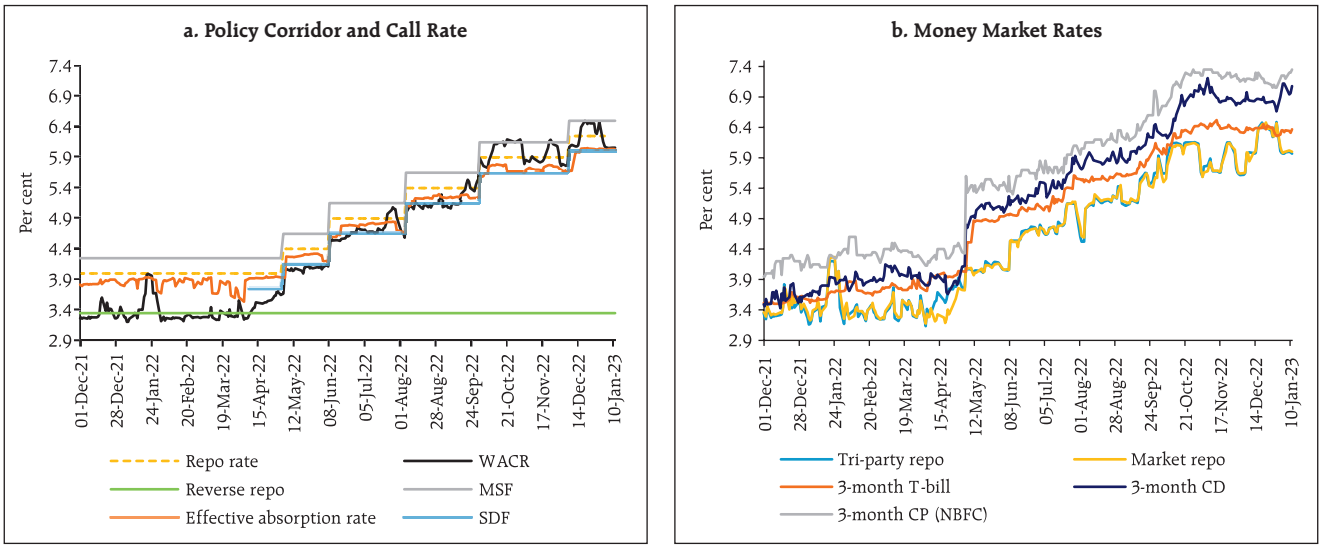
declined to ₹0.6 lakh crore during the period under review from ₹1.0 lakh crore in the preceding period. Reflecting the tightness in liquidity conditions, the fortnightly variable reverse repo rate (VRRR) auction fetched a lower amount of ₹13,453 crore on December 16 and ₹27,084 crore for the fortnight beginning December 30, 2022.

In response to these quarter-end pressures on liquidity, the weighted average call rate (WACR) hovered closer to the upper band of the LAF corridor, but declined thereafter as liquidity conditions eased. During the period under review, the WACR averaged 6.25 per cent, aligning with the prevailing policy repo rate (Chart 37a).

Rates in the collateralised segment mirrored the movement in the WACR, with triparty and market repo rates trading closer to the policy repo rate. Across the term money segment, rates on 3-month treasury bill (T-bill) traded 14 bps below the MSF rate, while 3-month certificates of deposit (CDs) and 3-month commercial paper (CP) rates averaged 41 bps and 71 bps, respectively, above the MSF rate (Chart 37b). The average risk premium in the money market (measured as the spread between 3-month CPs and 91-day treasury bill) at 85 bps was lower than 88 bps during November 15-December 9, reflecting stable funding conditions.

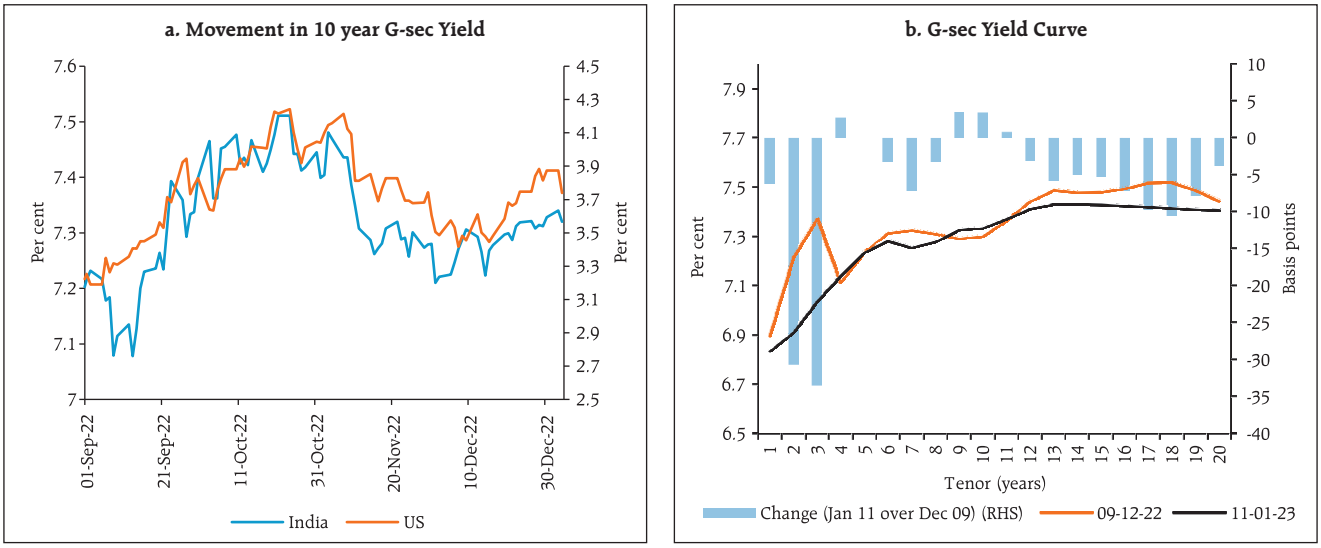
In the primary market, fund mobilisation through CD issuances has been robust at ₹4.9 lakh crore during the year so far (up to December 30), considerably

Chart 37: Policy Corridor and Money Market Rates



Sources: RBI; Bloomberg; and RBI staff estimates.

Chart 38: Developments in the G-sec Market



Sources: Bloomberg; CCIL; and RBI staff estimates.

higher than ₹0.9 lakh crore for the corresponding period last year. This reflects banks' additional demand for funds to bridge the funding gap between buoyant credit offtake and modest deposit growth. Furthermore, banks also raised funds through bond issuances, which surged to ₹0.9 lakh crore in the first nine months of 2022-23, as against ₹0.7 lakh crore during 2021-22. On the other hand, CP issuances have declined to ₹10.5 lakh crore during the year so far (up to December 31) from ₹16.2 lakh crore for the corresponding period a year ago, as the appetite for bank credit improved.

In the fixed income market, the yield on the 10-year G-sec benchmark gradually firmed up in tandem with rising US treasury yields, which surged after Japan unexpectedly raised its cap on 10-year Japanese government bond yields, triggering a sell-off in global bond markets. The yield on the 10-year G-sec benchmark hardened from a low of 7.22 per cent at the close on December 14 to 7.3 per cent on January 13, 2023 (Chart 38a).

Across the term structure, G-sec yields moderated sharply at the short-end of the yield curve, which is indicative of lower rate hike expectations (Chart 38b). While long-term yields are more influenced by global factors during the current policy tightening cycle, domestic policy measures seem to have a larger bearing on short-term rates. Corporate bond yields and spreads remained stable across the rating spectrum (Table 4).

Table 4: Financial Markets - Rates and Spread

Instrument	Interest Rates (per cent)			Spread (bps) (Over Corresponding Risk-free Rate)		
	Nov 15 – Dec 12, 2022	Dec 13, 2022 – Jan 10, 2023	Variation (in bps)	Nov 15 – Dec 12, 2022	Dec 13, 2022 – Jan 10, 2023	Variation (in bps)
1	2	3	(4 = 3-2)	5	6	(7 = 6-5)
Corporate Bonds						
(i) AAA (1-year)	7.82	7.88	6	88	91	3
(ii) AAA (3-year)	7.69	7.77	8	43	57	14
(iii) AAA (5-year)	7.78	7.77	-1	48	40	-8
(iv) AA (3-year)	8.40	8.48	8	115	129	14
(v) BBB-(3-year)	12.06	12.14	8	481	494	13

Note: Yields and spreads are computed as monthly averages.
Sources: FIMMDA; and Bloomberg.

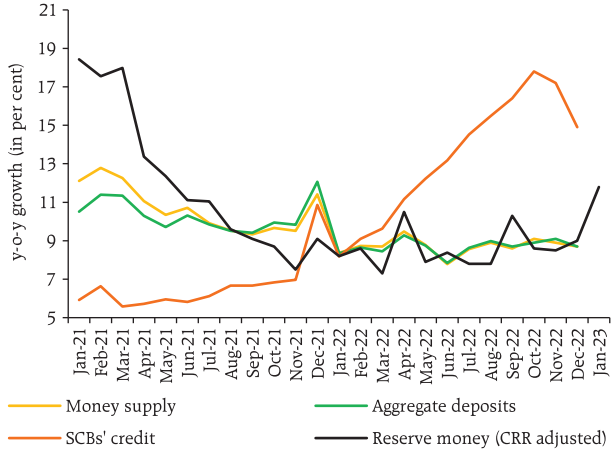
Reserve money (RM) excluding the first-round impact of change in cash reserve ratio (CRR) increased by 9.3 per cent on a y-o-y basis as on January 6, 2023 (7.7 per cent a year ago) (Chart 39). Currency in circulation (CiC) – the largest component of RM – recorded a growth of 7.9 per cent same as a year ago. Money supply (M_3) grew by 8.7 per cent as on December 30, 2022 (9.9 per cent a year ago), primarily driven by its largest component – aggregate deposits with banks – which grew by 8.7 per cent (10.3 per cent a year ago). Scheduled commercial banks' (SCBs') credit, which has registered double digit growth since April 2022, stood at 14.9 per cent on December 30, 2022 (9.3 per cent a year ago).

Non-food credit growth has been broad-based across sectors, led by retail loans and loans to the services sector (Chart 40). Credit to agriculture and allied activities grew sequentially, aided by a higher agriculture lending target and the priority sector push.

Industrial credit outstanding rose to ₹32.9 lakh crore in November 2022 as against the pre-Covid level of ₹28.7 lakh crore in February 2020. Micro, small, and medium enterprises' (MSMEs) share in industrial credit increased to 23.7 per cent from 17.7 per cent during the period. This also benefitted from the policy focus on MSME lending in the wake of the pandemic. Large industries credit offtake posted a turnaround with positive momentum. Among sectors, metal products and construction were the key drivers. Contribution to momentum by the services sector has been strong during the current financial year, boosted by non-banking financial companies (NBFCs).

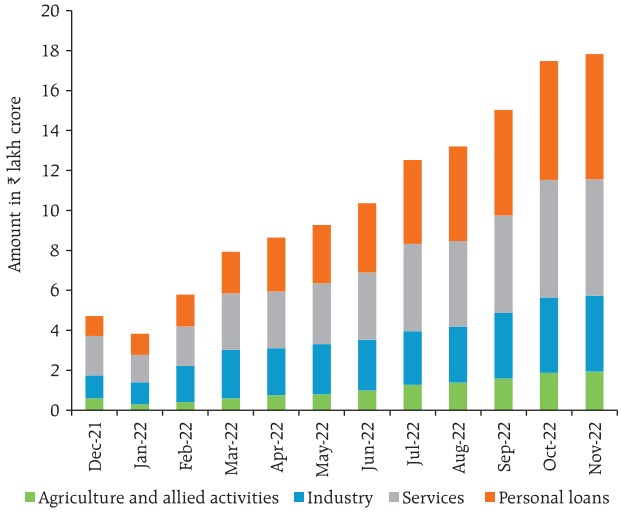
Households continue to adapt to the COVID-19 environment and the pickup in housing loan demand has further strengthened retail credit demand. The growth in other consumer credit segments like vehicles, credit cards and consumer durables is also gathering pace attaining the pre-COVID-19 growth. The relatively better asset quality[16] in the retail segment also appears to be contributing to banks'

Chart 39: Monetary and Credit Aggregates



Note: 1. Data pertain to last reporting Friday of every month for money supply, aggregate deposits, and bank credit; and last Friday of every month for reserve money.
2. Latest data for reserve money pertain to January 06, 2023; whereas for money supply as on December 30, 2022.
Source: RBI.

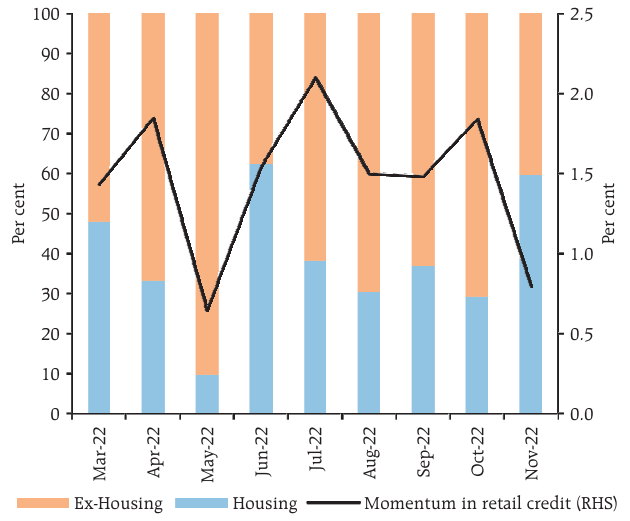
Chart 40: Build-up of non-food credit off-take in successive months



Note: Build-up denotes change in outstanding credit over November 2021.
Source: RBI.

[16] According to the Financial Stability Report, December 2022, the GNPA ratio of SCBs as of September 2022 in the retail loans is lowest at 1.9 percent among sectors, whereas it was 5.1 percent for services, 6.6 percent for industry and 8.6 percent for agriculture.

Chart 41: Contribution to Momentum in Retail Credit



Source: RBI.

focus on this segment. While housing loans are the major contributors to the momentum of retail credit a pick-up in other individual small-ticket loans and vehicle loans is also visible (Chart 41).

Lending and deposit rates of SCBs have continued to move higher since May 2022 in response to the 225 bps increase in the policy repo rate. During May to December 2022, the external benchmark-based lending rate and the 1-year median marginal cost of funds-based lending rate (MCLR) increased by 225 bps and 107 bps, respectively. Overall, the weighted average lending rate (WALR) on fresh and outstanding rupee loans rose by 135 bps and 71 bps, respectively, during May to November 2022. On the deposit side, the median term deposit rate (card rates) on fresh retail deposits increased by 75 bps during May to December 2022 (Table 5).

During the current tightening period, the increase in WALR on fresh loans was higher in the case of public sector banks, while the increase in WADTDR on outstanding deposits and weighted average domestic term deposit rate (WADTDR) on outstanding loans was higher for private banks during May to November 2022 (Table 6).

Table 5: Transmission from Repo Rate to Deposit and Lending Rates of SCBs

(Variation in basis points)

Period	Repo rate	Term Deposit Rates		Lending Rates		
		Median TDR – Fresh Retail Deposits	WADTDR – Outstanding Deposits	1-Year Median MCLR	WALR – Outstanding Rupee Loans	WALR – Fresh Rupee Loans
February 2019 to March 2022 (Easing Phase)	-250	-208	-188	-155	-150	-232
May to November/December 2022* (Tightening period)	225	75	59	107	71	135

Note: 1. *: Data on WALRs and WADTDR are up to November; and data on Median TDR, MCLR and repo rate are up to December.
2. WALR: Weighted Average Lending Rate. WADTDR: Weighted Average Domestic Term Deposit Rate; TDR: Term Deposit Rate; and MCLR: Marginal Cost of Funds based Lending Rate.

Source: RBI.

Table 6: Transmission to Lending and Deposit Rates across Bank Groups

(Variation in basis points)

	February 2019 - March 2022				May to November 2022			
	Repo Rate	WALR – Outstanding Rupee Loans	WALR – Fresh Rupee Loans	WADTDR – Outstanding deposits	Repo Rate	WALR – Outstanding Rupee Loans	WALR – Fresh Rupee Loans	WADTDR – Outstanding Deposits
Public sector banks		-153	-252	-169		59	149	51
Private banks	-250	-141	-188	-211	+190	82	101	59
SCBs#		-150	-232	-188		71	135	59

#: SCBs include public, private, and foreign banks.

Source: RBI.

Interest rates on various small savings instruments (SSIs) – which are fixed on a quarterly basis with a spread of 0-100 bps over and above G-sec yields of comparable maturities – have been revised upwards in the range of 20-110 bps for Q4:2022-23. The increase in rates on SSIs may pose competition to banks for raising deposits, and banks may be prompted to further increase their retail deposit rates.

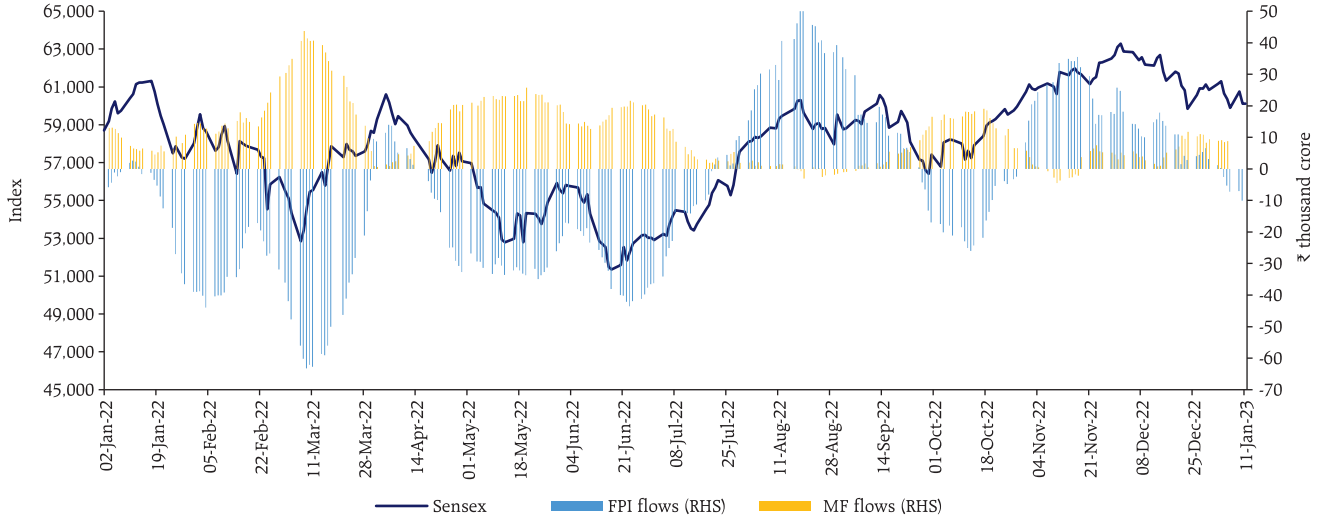
The BSE Sensex and Nifty 50 closed at all-time highs of 63,284 and 18,812, respectively, on December 1, 2022, but declined subsequently in the month tracking weak cues from global markets (Chart 42). Sentiment was muted amidst prevailing uncertainty regarding the global outlook and hawkish commentary by major central banks on terminal rates. Furthermore, the resurgence of COVID-19 cases in some parts of the world also led to intermittent bouts of volatility. The BSE Sensex and Nifty 50 declined by 3.6 per cent and 3.5 per cent, respectively, during December 2022.

Overall, the Indian equity market outperformed most global peers during 2022, on the back of *inter alia* sustained support from domestic institutional investors (DIIs). It has been found that in the recent period the sensitivity of equity returns in India to FPI flows has declined (Annex 1).

In the beginning of January 2023, Indian equities were volatile ahead of the release of the US FOMC minutes. The benchmark indices bounced back, subsequently, taking positive cues from global market expectations of slower policy rate hikes in the US. The gains could not be sustained, however, and the BSE Sensex and Nifty 50 declined by 1.2 per cent each during January 2023 so far to close at 60,093 and 17,895, respectively, on January 16, 2023.

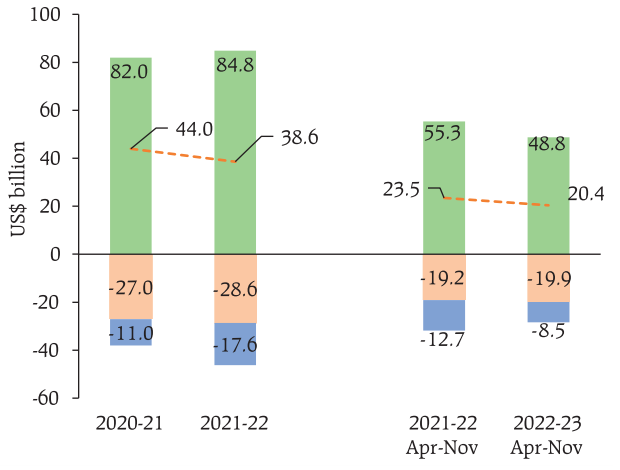
Gross inward foreign direct investment (FDI) moderated to US$ 48.8 billion during April-November 2022 from US$ 55.3 billion a year ago (Chart 43). The majority of FDI equity inflows was received by manufacturing, computer services, financial services, retail and wholesale trade and communication services. Singapore, Mauritius, and the US were the major source countries of FDI during this period. Net FDI decreased to US$ 20.4 billion during this period from US$ 23.5 billion a year ago, mainly due

Chart 42: BSE Sensex and Institutional Flows



Note: FPI and MF flows are represented on 15-days rolling sum basis.
Sources: SEBI; NSDL; and Bloomberg.

Chart 43: Foreign Direct Investment



Source: RBI.

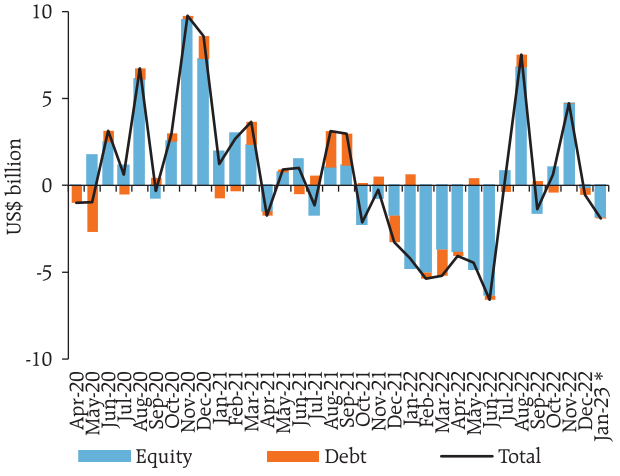
to a moderation in gross FDI flows and an increase in repatriation of FDI.

FPIs turned net sellers in domestic financial markets in December 2022 (Chart 44), with net outflows to the tune of US$ 0.6 billion in that month alone, equally distributed between equity and debt segments. Within equity, outflows were reported in information technology (IT), oil, gas and consumable fuels, and power sector stocks whereas fast-moving consumer goods, consumer services and realty sectors attracted fresh investments. In January 2023 (up to 13th), net sales by FPIs were to the tune of US$ 1.9 billion.

Gross disbursements of external commercial borrowings (ECBs) to India at US$ 13.4 billion during April-November 2022 moderated from US$ 17.0 billion a year ago. On a net basis, ECBs recorded outflows of US$ 2.9 billion as against net disbursement of US$ 6.2 billion in the previous year (Chart 45). The share of ECB used for new projects and import of capital goods increased during 2022-23 so far as compared to the previous year (Chart 46). During November 2022, ECBs were mainly raised for local sourcing of capital goods, import of capital goods and new projects.

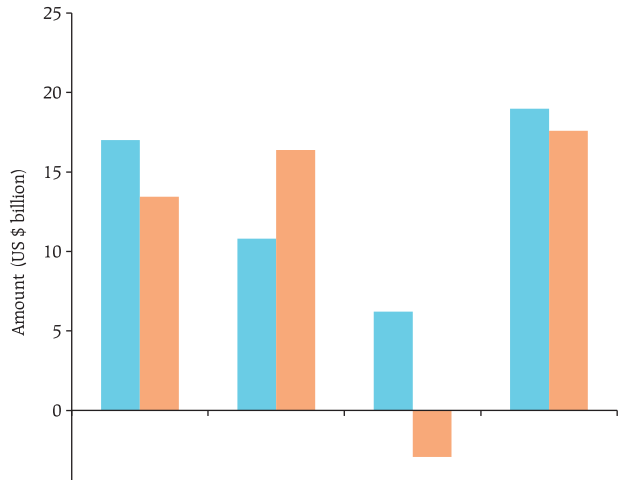
Lower spreads of weighted average interest rates on ECB loans over global benchmarks rendered them attractive, despite increases in the benchmark London interbank offer rate (LIBOR) and the secured overnight financing rate (SOFR) by 329 bps and

Chart 44: Net Foreign Portfolio Investment



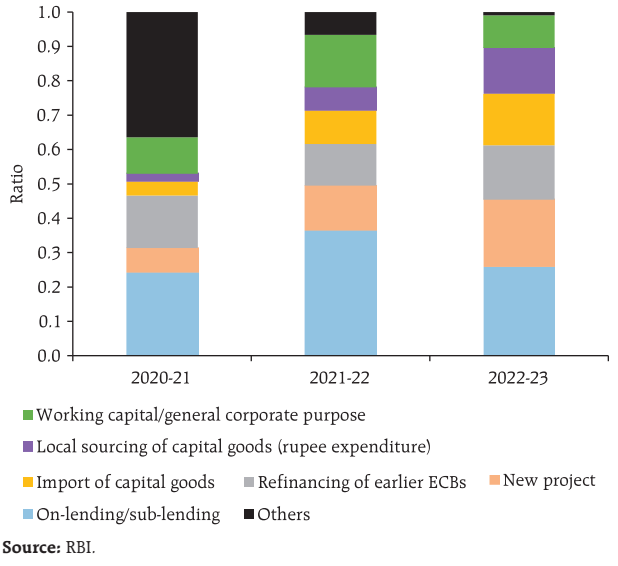
*: Up to January 13, 2023.
Note: Debt includes investments under voluntary retention route (VRR) and hybrid instruments.
Source: National Securities Depository Limited.

Chart 45: ECB - Registrations, Inflow and Outflow



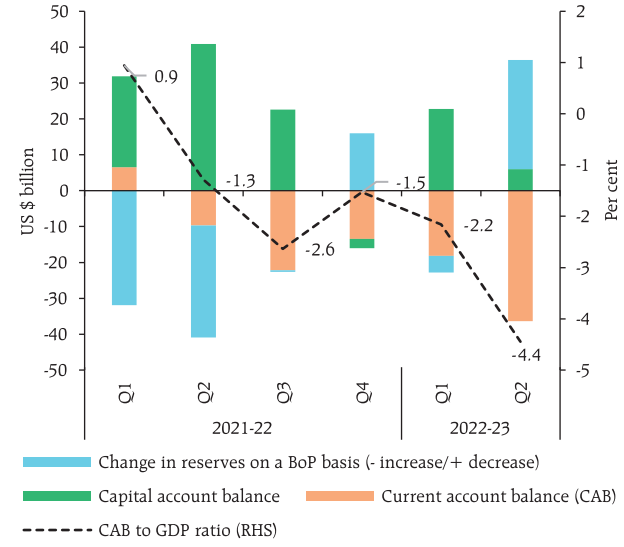
Source: RBI.

Chart 46: End-use of the Registered ECBs (April-November)



Source: RBI.

Chart 48: India's Balance of Payments

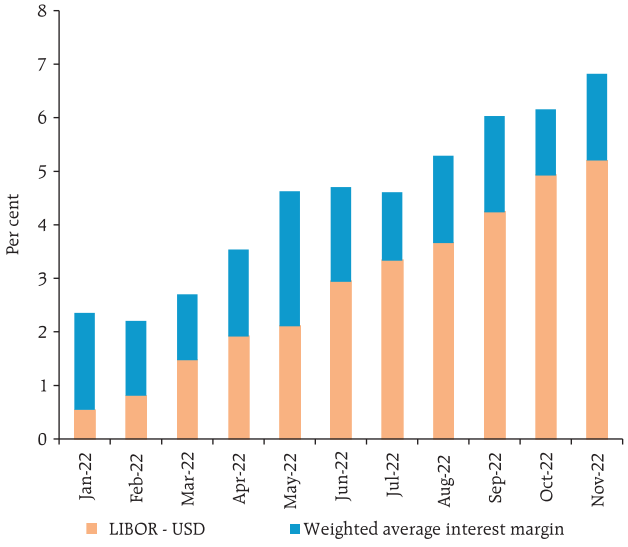


Source: RBI.

354 bps, respectively, during April-November 2022 (Chart 47).

With the merchandise trade deficit reaching an all-time high of US$ 83.5 billion in a quarter, and an increase in net outgo from the income account, the current account deficit (CAD) increased to 4.4 per cent of GDP in Q2:2022-23. It is noteworthy, however, that the CAD for Q1 was revised down from 2.8 per cent to 2.2 per cent on account of downward adjustment in customs data. Similar adjustments may impinge on the CAD for Q2:2022-23 as customs data or imports are revised (Chart 48).

Chart 47: Overall cost of ECBs

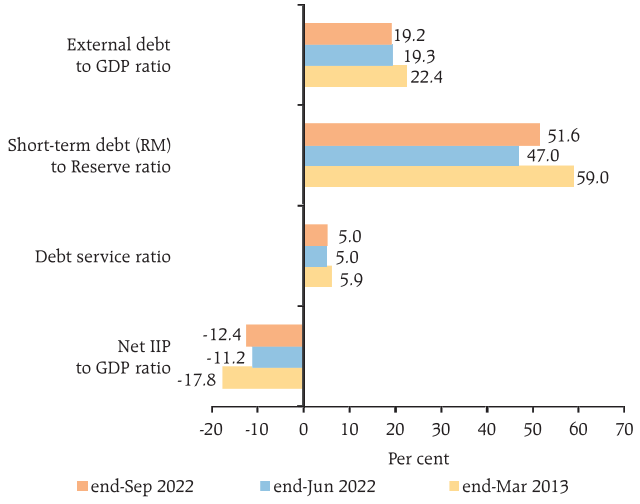


Source: RBI.

India's external debt to GDP ratio declined to 19.2 per cent at end-September 2022 from 19.3 per cent at end-June 2022, mainly reflecting the valuation gains arising due to the appreciation of the US dollar *vis-à-vis* major currencies. While India's net international investment position (*i.e.*, net claims of non-residents on India) increased moderately and the ratio of short-term debt (on residual maturity basis) to foreign exchange reserves increased, most vulnerability indicators remained lower than their levels observed during the taper tantrum (Chart 49).

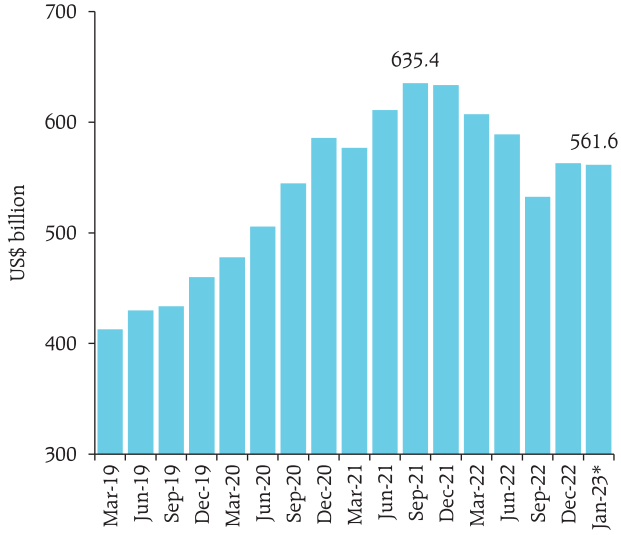
India's foreign exchange reserves increased by US$ 28.9 billion since end-September 2022 and stood at US$ 561.6 billion as on January 6, 2023, covering more than nine months of imports projected for 2022-23 (Chart 50).

Chart 49: External Vulnerability Indicators



Note: Acronyms RM and IIP stand for residual maturity and international investment position, respectively.
Source: RBI.

Chart 50: Foreign Exchange Reserves

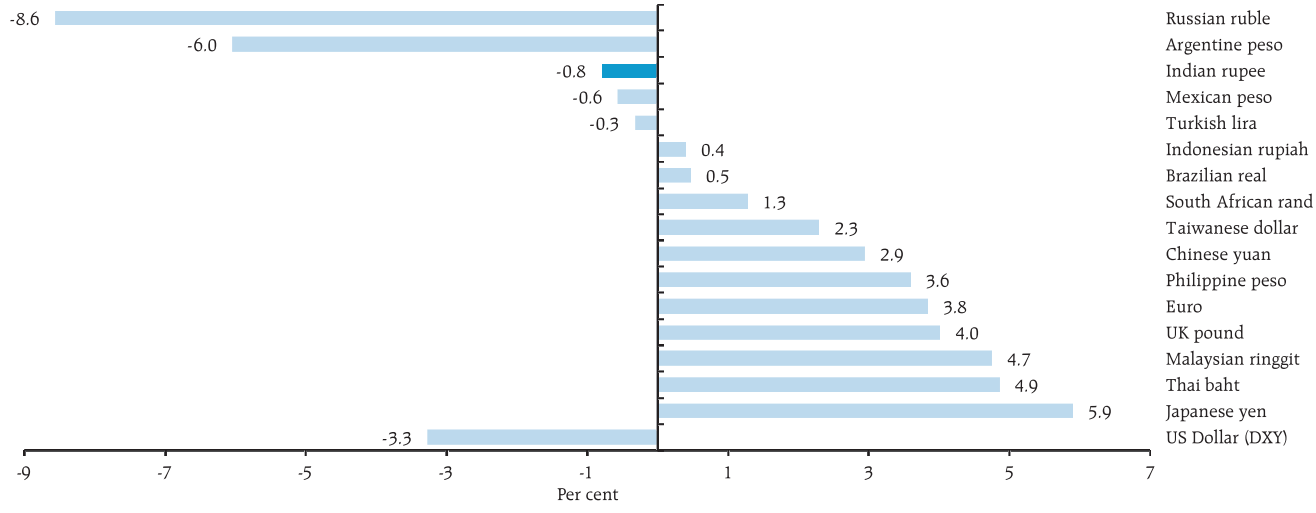


*: Data up to January 6, 2023.
Source: RBI.

Amidst a hawkish stance by US Fed and sell-off by FPIs, the Indian rupee depreciated by 0.8 per cent *vis-à-vis* the US dollar (m-o-m) in December 2022 (Chart 51).

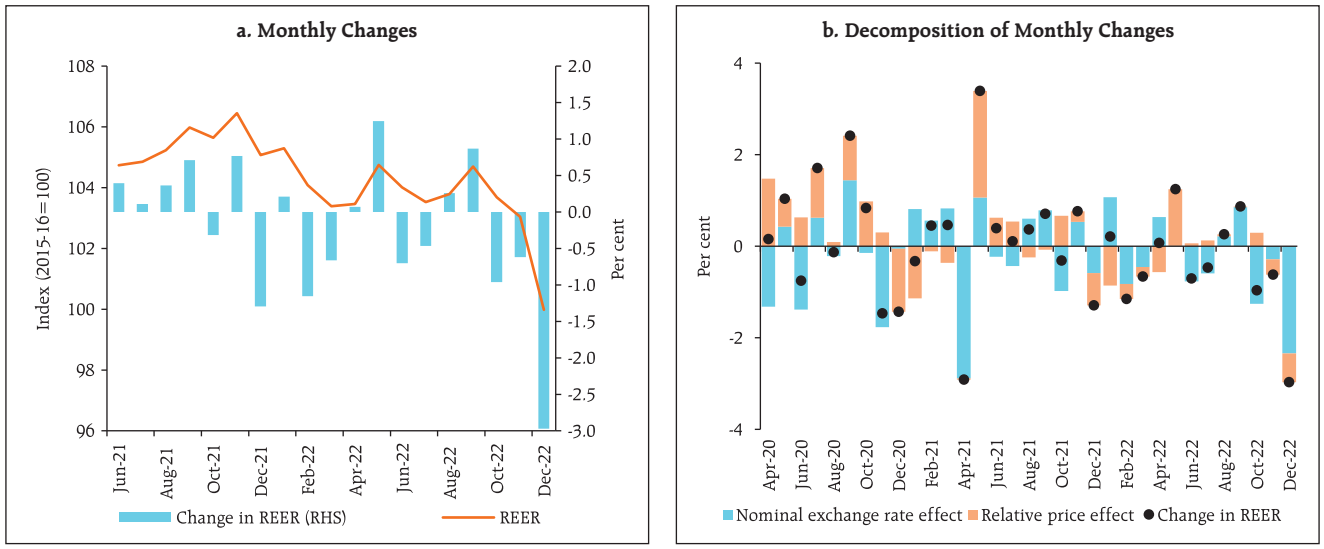
The Indian rupee depreciated by 3.0 per cent in terms of the 40-currency real effective exchange rate (REER) in December 2022 (m-o-m) (Chart 52).

Chart 51: Movements of the Indian Rupee and Other Major Currencies against the US Dollar (December 2022, m-o-m)



Sources: FBIL; Thomson Reuters; and RBI staff estimates.

Chart 52: Monthly Movements in 40-Currency Real Effective Exchange Rate



Source: RBI.

Payment Systems

Digital payments sustained healthy acceleration in 2022, increasing by 63 per cent and 19 per cent (y-o-y) in volume and value terms, respectively.[17] Both large-value and retail segments recorded robust growth (y-o-y) in December (Table 7). Transaction values processed under the Real Time Gross Settlement (RTGS) continued to accelerate, while volumes rose to 2.15 crore, *i.e.*, the highest in the current financial year so far. Payments under the Unified Payments Interface (UPI) mode also expanded strongly, owing to resurgence in travel and proliferation of omnichannel commerce. The total value of card payments (through debit cards, credit cards and prepaid payment instruments) increased by 48 per cent, while cash withdrawals from ATMs (through the National Financial Switch and micro ATMs) declined by 2.3 per cent (y-o-y) (between

Table 7: Growth Rates in Select Payment Systems

(Per cent)

Payment System Indicators	Transaction Volume Growth (y-o-y)				Transaction Value Growth (y-o-y)			
	Nov-21	Nov-22	Dec-21	Dec-22	Nov-21	Nov-22	Dec-21	Dec-22
RTGS	24.9	19.9	17.9	11.5	37.5	11.9	21.7	5.9
NEFT	24.1	29.3	22.3	29.0	4.3	18.0	6.5	9.4
UPI	89.4	74.6	104.4	71.4	96.5	54.9	98.7	55.0
IMPS	21.5	12.5	24.5	10.0	31.9	24.7	35.6	22.7
NACH	15.7	6.7	-2.7	10.5	7.1	35.9	5.1	34.5
NETC	71.5	33.4	74.9	27.2	51.1	46.2	59.7	34.3
BBPS	148.6	59.2	137.0	60.4	175.3	61.7	165.2	63.6

Source: RBI.

[17] Data for December are provisional.

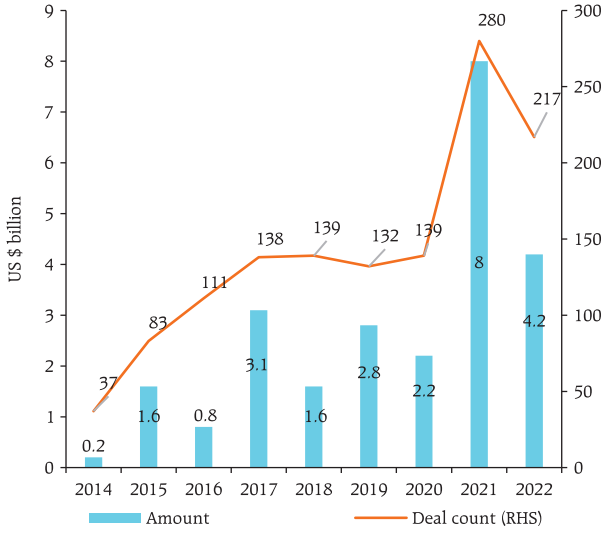
December 31, 2022 to January 2, 2023). For the week ending January 6, CIC grew 7.9 per cent (y-o-y), *i.e.*, recording single-digit growth for 75 weeks since August 2021[18] and averaging 8.6 per cent.

Fundraising by the Fintech sector tapered to US$ 4.2 billion during 2022 (upto Q3), halving from the peak of US$ 8 billion reached in the previous year (Chart 53). This is indicative of shifting investor focus toward basic profitability levels and financially stable business models. Going ahead, latest initiatives such as the launch of the Open Network for Digital Commerce (ONDC)[19] and the roll-out of 5G services are expected to drive the Indian digital economy through the ongoing 'techade'.

On the regulatory front, the Reserve Bank migrated reporting of payment frauds to 'DAKSH' – Advanced Supervisory Monitoring System, with effect from January 1, 2023. In addition to the existing bulk upload facility, DAKSH provides additional functionalities including *inter alia* maker-checker facility, online screen-based reporting, facility to issue alerts/advisories to regulated entities, and generation of dashboards and reports. The move is expected to streamline fraud reporting, augment efficiency, automate the payments fraud management system and make supervisory processes more robust. Under the fourth Regulatory Sandbox (RS) cohort on 'Prevention and Mitigation of Financial Frauds', the Reserve Bank has selected six entities for the test phase commencing from February 2023.

In yet another step towards building a robust digital payment ecosystem, the Union Cabinet has approved a ₹2,600 crore scheme for promoting RuPay debit cards and low-value BHIM-UPI transactions. Under the scheme, banks will be provided financial incentives for promoting Point of Sale (PoS) and e-commerce transactions using RuPay and UPI in the current financial year. As part of India's G20 Presidency, the Ministry of Electronics and Information Technology (MeitY) launched the 'Stay Safe Online' campaign and the 'G20 Digital Innovation Alliance' (G20-DIA) in December 2022. These initiatives aim at unlocking the true potential of digital integration through innovations, enhanced safety measures, and building a future-ready digitally skilled workforce.

Chart 53: Fundraising by Indian Fintechs



Note: Data for 2022 is up to September.
Source: State of Indian Fintech Report Q4:2022, Inc42.

Conclusion

The foregoing discussion on the global outlook and early developments, both globally and domestically, brings into sharp relief: what does 2023 hold for India?

The prospect of India as a bright spot amidst 2023's encircling gloom is burnished by most recent history and current developments. By cross-country standards, the Indian economy exhibited resilience through 2022 in the face of the triad of shocks – war; monetary policy tightening; and recurring waves of the pandemic. An important factor in the overall outcome has been the measured responses

[18] Excluding April 2022 that recorded 10.1 per cent growth (y-o-y).

[19] Open Network for Digital Commerce (ONDC) is an initiative to create an open-source e-commerce technology platform with an aim to democratise digital commerce for small and medium-sized businesses (SMBs) selling their products online.

of monetary and fiscal policies in sharp contrast to the aggressive tightening worldwide. The year 2023-24 may see deceleration in real GDP growth from 7 per cent in 2022-23 (NSO estimates) to 6.5 per cent as projected in the RBI's monetary policy report of September 2022. At current prices and exchange rates, therefore, India will be a US$ 3.7 trillion economy in 2023, maintaining its lead over the UK as the fifth largest economy of the world. According to the IMF's calculations, India will move into fourth place in 2025 and into the third place in 2027 as a US$ 5.4 trillion economy. Even diehard disparagers acknowledge that 'India has a compelling story - a vibrant IT-services industry, a burgeoning domestic tech economy, an increasingly attractive location for global manufacturers and strong economic growth'[20]. India is onshoring too. In the process, it is striving to build a global manufacturing hub and a preferred habitat for companies to shift their production bases.

Turning to early developments in 2023, macroeconomic stability is getting further entrenched. Recent data arrivals indicate that the first milestone of monetary policy is being passed – bringing inflation into the tolerance band. The objective during 2023 is to tether inflation therein so that it aligns with the target by 2024 – the second milestone. Fiscal consolidation is underway at central and sub-national levels, graduated to nurture the pace of the economic recovery. Lead indicators suggest that the current account deficit is on course to narrow through the rest of 2022 and 2023. India's stock markets stood out in 2022 and continue to outperform peers on the strength of macroeconomic fundamentals and retail participation. Furthermore, early bird results declared by 35 non-financial sector companies[21] - mostly information technology (IT) sector companies – show that revenues were robust in Q3:2022-23 (October-December 2022), with the depreciation of the INR providing tailwinds. Softening of commodity prices and other costs have eased expenditure slightly. As a result, both operating and net profits have improved, the latter in spite of a decline in other income on account of treasury losses.

In closing, 2023 may well be the opening ajar of a window in which India's time on the world stage is arriving. In April 2023, India's population will be the largest in the world, projected at 1.4 billion. A sixth of the increase of the world's population of working age (15-64) people between 2023 and 2050 will be Indians. Coupled with a median age of 28, this is India's chance to seize the demographic dividend and herald its emergence as an economic powerhouse of the future.

[20] The Economist, December 20, 2022.

[21] Representing around 10 per cent of the market capitalization of non-financial companies.

Annex 1

Impact of FPI Flows in Indian Equity Markets

The ownership of foreign portfolio investors (FPIs) in Indian equities has been declining from the peak share of 23.3 per cent in March 2015 to 19.0 per cent by end-September 2022 (Chart B1). Contemporaneously, the ownership of domestic institutional investors (DIIs), including domestic mutual funds, insurance companies, and pension funds, *etc.*, increased from 10.4 per cent to 14.8 per cent as DII inflows outpaced FPI inflows (Chart B2).

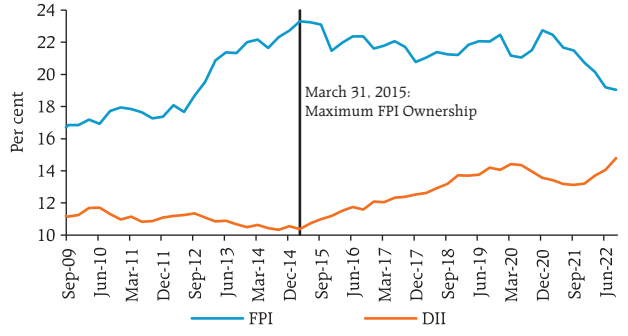
Drawing on the literature which documents a strong positive relationship between unexpected investor flows and market returns (Warther, 1995; Ananthnarayanan *et al.*, 2009; Acharya *et al.*, 2022; and Boyer and Zheng, 2009), weekly normalised FPI flows to India are decomposed into expected and unexpected flows by estimating a five variable VAR as in (1) using data from January 2008 to December 2022:

$$Y_t = C_0 + C_1 Y_{t-i} + \epsilon_t \quad \ldots(1)$$

where Y_t is a vector of endogenous variables; $[F_t\ ER_t\ ERI_t\ EV_t\ IR_t]^T$.

The residuals from the equation corresponding to Ft are extracted as unexpected FPI flows. Furthermore, bivariate vector autoregressive (VARs) models are estimated by using unexpected FPI flows and returns on the Nifty 50 index, Nifty Midcap index and the Nifty Smallcap index respectively. The bivariate VARs are estimated separately for two sub-samples – before and after March 2015. The results indicate that before March 2015, the impact of a

Chart B1: FPI and DII Ownership mix in the NSE-listed companies



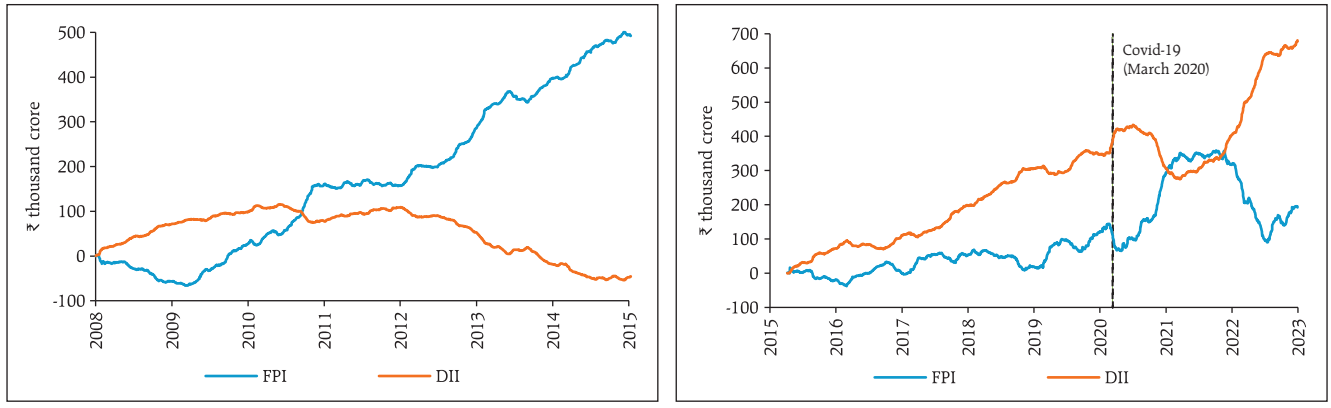
Source: Prime Database.

Variable	Description
F_t	FPI flows normalised by the previous 12-week rolling average of the total market capitalisation
ER_t	Excess returns of NSE 500 index over the MSCI EM index in US dollar terms
ERI_t	Excess short-term risk measured as the difference between the Nifty VIX and the US CBOE VIX
EV_t	Valuation of the Indian market relative to other emerging markets, measured as the difference between the price-earnings ratio of the NSE500 index and the MSCI EM index
IR_t	Interest rate differential between India and foreign markets measured as the difference between the 3-month t-bill rates of India and the US

Chart B2: Net Flows in Indian Equities by FPIs and DIIs

a) Cumulative flows before March 2015

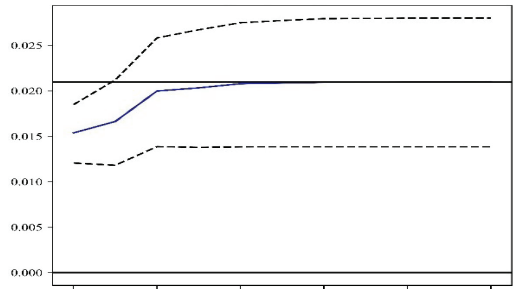
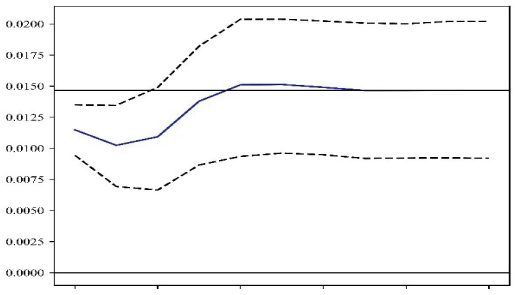
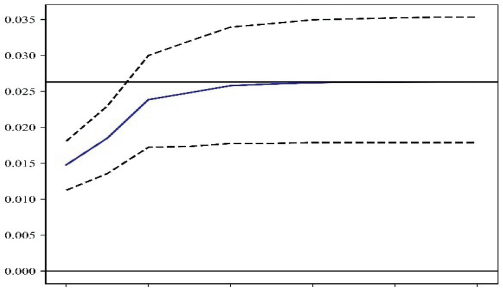
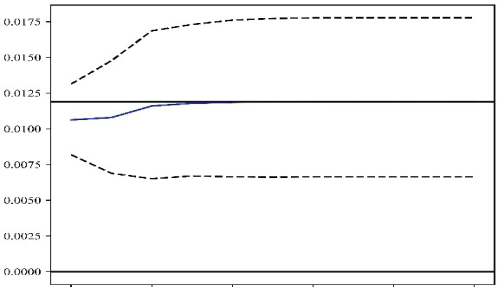
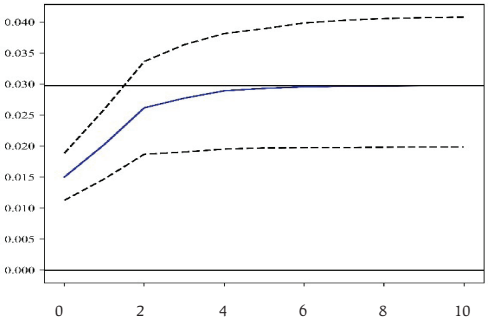
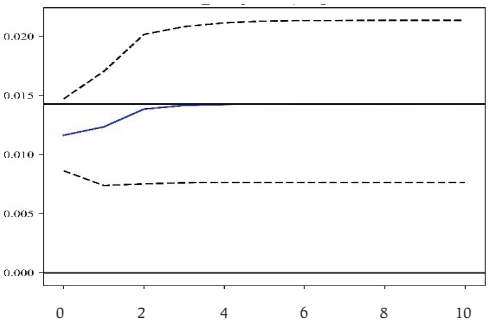
b) Cumulative flows since March 2015



Source: Bloomberg.

(Contd.)

Chart 1: Response of Market Returns to Unexpected FPI Flows

	Before March 2015	After March 2015
Nifty 50		
Nifty Midcap		
Nifty Smallcap		

Note: The above chart shows the cumulative response of equity market returns to a unit innovation in unexpected FPI flows. The y-axis measures the impact in weekly returns terms while x-axis displays the horizon in weeks. Point estimates along with 95% confidence interval bands are shown in solid blue line and dotted black lines, respectively. Standard errors were computed using 1000 Monte Carlo replications.
Source: RBI staff estimates.

unit unexpected increase (decrease) in FPI flows led to an increase (decrease) in market returns (Nifty 50, Nifty Midcap and Nifty Smallcap) in the range of 2.2 to 3.0 per cent over the next 2-3 months. Since March 2015, however, the impact has declined to a range of 1.25 to 1.50 per cent indicating the declining influence of FPIs in affecting market returns. While earlier the impact was more on the Nifty Midcap and Nifty Smallcap, the impact is more symmetrically felt now (Chart 1).

References:

Acharya, V. V., V. R. Anshuman, and K. K. Kumar. (2022). Foreign Fund Flows and Equity Prices during the COVID-19 Pandemic: Evidence from India. *ADBI Working Paper 1333. Tokyo: Asian Development Bank Institute.*

Ananthanarayanan, S., Krishnamurti, C., & Sen, N. (2009). Foreign institutional investors and security returns: Evidence from Indian stock exchanges. In *Proceedings of the 7th INFINITI conference on international finance 2009-credit markets, credit institutions and macroeconomic volatility.* Trinity College, School of Business.

Boyer, B., & Zheng, L. (2009). Investor flows and stock market returns. *Journal of Empirical Finance*, *16*(1), 87-100.

Warther, Vincent A., (1995), "Aggregate Mutual Fund Flows and Security Returns", *Journal of Financial Economics*, 39.

*Productivity Growth in India: An Empirical Assessment**

*by Sreerupa Sengupta^ and Sadhan Kumar Chattopadhyay^*

This article examines India's productivity growth sources by decomposing aggregate productivity growth into within-industry growth effects and resource reallocation effects. The findings suggest that the reallocation of resources from low to high-productive sectors accounted for 63 per cent of aggregate productivity growth and 5 per cent of output growth from 2001 to 2019. A sub-period analysis shows that the aggregate total factor productivity growth increased from 1.33 per cent during 2001-10 to 2.72 per cent during 2011-19 mainly driven by within industry improvement in technological progress. The top-performing sectors that contributed to aggregate productivity are textiles, machinery equipment, and financial and business services.

Introduction

One of the central insights of development economics relates to the role of structural change in improving productivity growth. Structural change is defined as the reallocation of resources from low to high-productive sectors (Macmillan and Rodrick, 2011; Timmer, 2015; Lin, 2011). As resources move from low to high-productive sectors aggregate economy-wide productivity increases. Estimates using microdata on manufacturing firms suggest that if resource misallocation is reduced by the manufacturing firms then the total factor productivity (TFP) could be increased by 40 to 60 per cent in India and about 30 to 50 per cent in China (Hsieh and Klenow, 2009). Many studies have explored the long-run pattern of structural transformation for developed countries (Jorgenson and Timmer, 2011). The study by Jorgenson and Timmer (2011) finds that structural change in developed countries has taken place through the shift of resources from agriculture to industry and services. Though the process of structural transformation for developed economies is well documented in the literature, there are fewer studies for developing economies that look into the role of structural change in driving aggregate productivity growth.

India is characterized by large productivity gaps across sectors. From 2011 to 2019, agriculture TFP grew at 2.8 per cent per annum, whereas within the manufacturing sector, industries like textiles, non-metallic mineral products and transport equipment witnessed more than 4 per cent TFP growth during the same period. Market services, on the other hand, witnessed lower productivity growth than non-market services from 2011 to 2019[1]. The large productivity differentials are indicative of allocative inefficiencies between the sectors. If these allocative inefficiencies are improved, then it could be a potential engine of growth and GDP can be increased by shifting resources from low to high-productive sectors. (McMillan and Rodrick 2011).

Against this backdrop, this article attempts to examine whether aggregate productivity growth in India is driven by resource reallocation effects or within-sector increases in technological progress. Past literature on resource reallocation in India has mostly used three sector model which possibly conceals industry heterogeneity (Bosworth and Collins, 2008) or uses a partial measure of productivity – labour productivity to study the pattern of labour reallocation across sectors (de Veries *et al.*, 2012; Vu, 2017). A related strand of studies has looked into the concept of resource misallocation using micro plant-level data and quantifies the impact of misallocation on productivity (Hsieh and Klenow ,2009; Bartelsman *et al.*, 2013). For instance, Hsieh and Klenow (2009)

^ The authors are from the Department of Economic and Policy Research.

* The views and opinions expressed in this article are the sole of the authors and do not represent the views of the Reserve Bank of India.

[1] Market services in the classification includes transport services, trade, financial, business and communication services, and Non-market services include health, education, public administration, and other services.

use a monopolistic competitive model to show how distortions that lead to variation in the marginal product of labour and capital lower TFP. In this paper, when labour and capital are assumed to be reallocated it finds that TFP gain for India increases by 40 to 60 per cent and that for China increases by 30 to 50 per cent.

There are two types of studies on resource allocation available in the literature – one is at the firm level and the other is at the aggregate level. Our analysis of resource allocation differs from firm-level studies existing in the literature in terms of both methodology and coverage. In terms of coverage, apart from the manufacturing sector, our analysis covers agriculture and services sectors as well. As regards to methodology, instead of using standard monopolistic competitive models with heterogenous firms to quantify the effect of misallocation on productivity, we use the growth accounting decomposition approach pioneered by Jorgenson (2007), where resource reallocation effect is derived based on the type of growth accounting aggregation method used. In this method, aggregate TFP growth is calculated using both the production possibility frontier approach and the direct aggregation approach. In the production possibility frontier approach, TFP growth is calculated through the growth accounting method. Whereas in the direct aggregation approach TFP growth is calculated using domar weights. The difference between domar-weighted TFP growth and aggregate TFP growth from the production possibility approach gives the resource reallocation effect. Earlier, this method was used by Krishna et. al. (2018) and Erumban et. al. (2019) for India. They found that from the 1980s to 2011, workers moved to sectors of higher productivity growth; however, resource movement towards faster productivity growth was not observed. Complementing their analysis, our study covers a more recent period till FY-2019 and we find the impact of resource reallocation on productivity to be generally positive. Our study finds that the contribution of resource reallocation to aggregate TFP growth declined during 2011-2019 as compared to the earlier subperiod of 2001 to 2010. The results show that the post-GFC period productivity increase in India has been driven by within-industry TFP increase.

The rest of the article is structured as follows. Section II provides a literature review of studies on resource reallocation. Stylized facts on structural change and productivity growth in India are presented in section III. Section IV provides methodology and data used for the decomposition of aggregate TFP growth into within-industry productivity growth and reallocation effects. The empirical results are presented in section V. The final section summarizes the findings and provides concluding remarks.

II. Literature Review

Early growth models like the two-sector Lewis (1954) model show that as workers move from agriculture to non-agriculture sectors overall productivity of the economy increases. The model developed by Kuznets (1966) describes that one of the important characteristics of growth is a shift away of workers from agriculture to manufacturing and then from manufacturing to services. This is defined as structural transformation and the divergent pattern of economic growth across Japan, the US and Europe in the post-World War II period is attributed to the pace at which structural transformation took place in these economies (Denison, 1967; Maddison 1987).

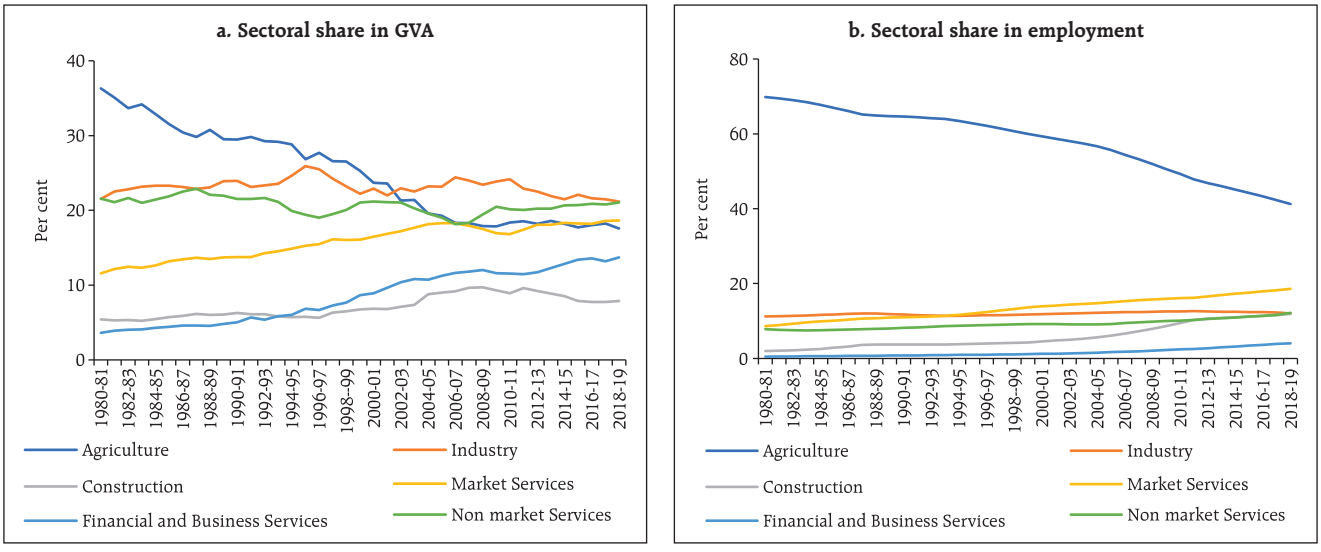
While most studies on structural transformation are for developed countries (Havlik, 2005; Coe, 2007; OECD, 2007a; OECD, 2007b), in recent periods factor reallocation has been recognized as a principal driver of productivity growth in developing countries of East Asia and Pacific and Sub Sahara and Africa (Cusolito and Maloney 2018; de Vries and Timmer 2015). World bank (2021) finds that from 1995 to 2017, factor reallocation contributed to 40 per cent of aggregate productivity gains in emerging market economies.

For India, studies on sectoral reallocation effects are limited. The resource reallocation decomposition of aggregate total factor productivity has been done by Erumban and Das (2016), Krishna *et al.* (2017) and Erumban *et al.* (2019). Erumban and Das (2016) analyse the reallocation effect for the period 1986 to 2011. The paper finds that during the entire period from 2006 to 2011, resource reallocation contributed to 55 per cent of aggregate productivity growth and labour reallocation effects are higher than capital reallocation. Krishna *et al.* (2017) and Erumban *et al.* (2019) find that during the period 1981 to 2011 the overall average reallocation effect on productivity was positive, although there were wide variations across the subperiods. The study shows that the period 1981-93 witnessed a negative reallocation effect. Contrary to the findings of Erumban and Das (2016), these two studies find the capital reallocation effect to be greater than the labour reallocation effect.

III. Stylized Facts

In this section, we discuss the changing structure of the Indian economy in terms of output, employment and productivity growth covering the period from 1980-81to 2018-19. It can be observed from Chart 1 that the share of agriculture in total GVA has declined from 36.3 per cent in the 1980s to 18.6 per cent during 2018-19. The fall in agriculture share is associated with a rapid increase in output in services sectors, especially market services and finance & business services. The share of industry in GVA remains stagnated. In terms of employment, the share of the agriculture sector has also decreased from 69.4 per cent in the 1980s to 41.3 per cent during 2018-19. Till now, the agriculture sector remains the largest employment-generating sector for the Indian economy. The decline in the employment share of the agricultural sector has not been reflected in the equivalent rise of that in the industrial share. The stagnancy of employment in the industry was associated with a rapid increase in construction sector jobs from 2 per cent in the 1980s to 12 per cent in 2018-19. Employment share in the business and financial services increased from 0.5 per cent in 1980 to 4 per cent in 2018-19. In other market services like trade, hotel restaurants, transport and storage employment share increased from 8.6 per cent in 1980 to 18.6 per cent in 2018-19. Services in 2018-19 accounted for more than 50 per cent of value-added and one-third of employment share in India. The stagnancy of manufacturing and leapfrogging of GVA

Chart 1: Sectoral Share in GVA and Employment



Source: Authors' estimate based on KLEMS data.

and employment from agriculture to services shows that India's structural change did not follow the path propounded by Kuznets (1966).

In terms of the productivity gap across sectors, it is observed that agricultural labour productivity in 2017-18 has been 0.67 times lower than the overall labour productivity of the economy. However, labour productivity in mining is observed to be higher due to higher capital intensity in the sector. Other sectors, where sectoral productivity is higher than the national average, include manufacturing, financial and business services and utilities. It is worth mentioning that the labour productivity in the financial and business services sectors is 5.5 times higher than the average labour productivity of the economy, whereas labour productivity in manufacturing is only 58 per cent higher than the average labour productivity. This indicates that there exists a large productivity differential across sectors (Chart 2).

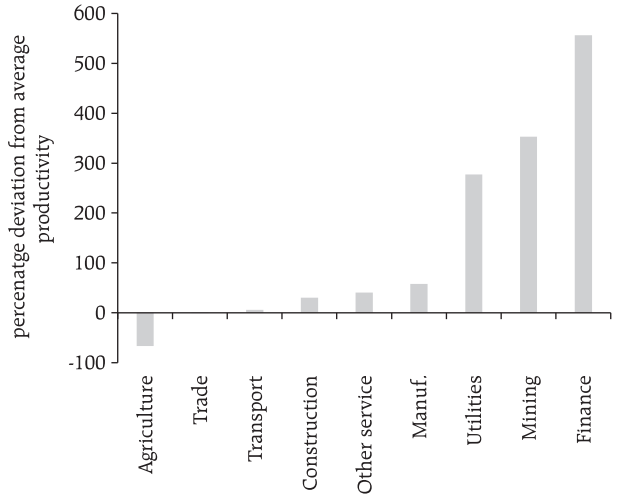
The income distribution across sectors shows that the average labour income share in construction is 40 per cent higher than in the agriculture sector (Table 1). In fact, the construction sector is considered to be a low-skill intensive sector and therefore, the sector provides an easy channel for agriculture workers to relocate. Migration from the agriculture sector to construction takes place due to higher wages in the latter with the same level of skill formation of the labourers. On the other hand, as industry is capital intensive in nature, the labour income share in the industry is much lower than the economy-level wage share. Within industry for manufacturing a declining trend in labour income share has been observed by few scholars (Goldar and Aggarwal 2005, Abraham and Sasikumar 2017, Goldar 2022). The structure of capital income in Table 1 shows that capital income is much higher in the industry as compared to the agriculture, construction, and services sectors. Further, the distribution of capital income in the industry increased in the 2010s compared to the decade of the 2000s. This suggests that the income distribution is favouring capital movement and attracting higher investment in the industrial sector, whereas labour income share in the industry remains stagnant.

Table 1: Relative Labour and Capital Income Share in Sectors

Sectors	2001-10	2011-19	2001 -10	2011 - 19
Total Economy	100	100	100	100
	Relative labour income share		*Relative capital income share*	
Agriculture	132	126.8	77.1	79.4
Industry	76.8	76.4	116.6	118.2
Construction	185	176.4	39.3	41.2
Market Services	101.6	105.9	98.8	95.5
Nonmarket services	156.9	157.2	59.3	55.9

Source: Authors' estimates based on KLEMS data.

Chart 2: Labour Productivity Gaps across Sectors in India (2017-18)



Source: Authors' estimates based on World Bank 2021 report titled 'Global Productivity, Trends, Drivers and Policies'.

As labour productivity gives a partial measure of productivity, we next discuss some trends in TFP across sectors. Table 2 provides the percentage change of employment, capital stock and TFP in 2011-19 over 2001-10. We find there is large heterogeneity among subsectors. For agriculture, we find positive TFP growth in 2010-19 over the previous subperiod. Within the low and medium-technology manufacturing sectors, the total factor productivity growth was

Table 2: Change in Growth of Employment, Capital Stock and TFP; 2011-19 over 2001-2010

(Per cent)

Sectors	Change in Emp Growth	Change in K stock growth	Change in TFP growth
Agriculture, Hunting, Forestry and Fishing	-1.6	-0.3	3.0
Mining and Quarrying	-2.8	-1.2	-0.2
Low and Medium Low-Tech Manufacturing			
Food, Beverages and Tobacco	-2.7	-0.9	-1.1
Textile and Textile Products,	-3.6	-3.9	4.3
Leather and Footwear			
Pulp, Paper products and footware,	-0.1	-2.1	0.0
Printing and Publishing			
Coke, Refined Petroleum	2.4	1.9	-4.6
Rubber and Plastic Products	-1.2	-0.2	3.8
Other Non-Metallic Mineral Products	-5.1	-4.8	5.9
Basic Metals and Fabricated Metal Products	-0.1	-4.7	0.5
Manufacturing, *nec;* recycling	-5.6	-5.7	6.8
High and Medium High-Tech Manufacturing			
Chemicals and Chemical Products	0.6	2.2	-2.7
Machinery, nec.	3.0	-3.2	-3.5
Electrical and Optical Equipment	-0.5	-4.4	-5.6
Transport Equipment	-1.4	-0.3	1.4
Market Services			
Trade	-0.7	7.6	-1.1
Hotels and Restaurants	-2.3	1	2.2
Transport and Storage	-0.7	0.7	-1.3
Post and Telecommunication	-3.5	7.3	-9.5
Financial Services	-1.9	-2.1	-0.3
Business Service	-1.4	-7.3	4.8
Non-Market Services			
Public Administration and Defense; Compulsory Social Security	1.6	0.3	-2.4
Education	-1.0	-0.7	4.0
Health and Social Work	-0.1	-3.2	-0.5
Other services	-0.3	-2.4	2.3

Source: Authors' estimates based on KLEMS data.

observed to be the highest in sectors like textile and textile products, rubber and plastic products, coke & refined petroleum and other non-metallic mineral products. However, these sectors, which witnessed a large increase in productivity growth have registered declining growth of employment and capital during 2011-19 as compared to 2001-10. Thus, the sectors which are having large productivity are also witnessing labour displacement, which could lead to growth and reduce structural change. Similarly, within services, business services recorded a 4.8 per cent increase in productivity growth during 2011-19 as compared to 2001-10. The high productivity growth in business service sectors is again not associated with positive change in employment and capital growth, indicating resources are not moving to highly productive sectors.

III. Empirical Method: Resource reallocation

To empirically examine how much resource reallocation has contributed to productivity increase we use a growth accounting decomposition technique. Our methodology follows Jorgenson *et al.* (2007) decomposition approach and the data we use is taken from India KLEMS 2019 database.

Methodology

In this method, the aggregate production function is given as

$$\Delta lnV = \Delta lnT + vk\Delta lnK + vl\Delta lnL \quad ...(1)$$

where ΔlnV denotes aggregate value-added growth. K and L represents inputs to the production function, *viz.* capital and labour. v represents two period average share of factor input compensation in nominal value added. vk denotes two period average of aggregate capital compensation in aggregate value added and vl denotes two period average of aggregate labour compensation in nominal value added. ΔlnK and ΔlnL denotes aggregate capital input and aggregate labour input growth rates. ΔlnT is the total factor productivity growth rates. The aggregate production function approach is considered restrictive due to some assumptions. Firstly, this approach assumes gross output of each industry is separable in value added. Secondly, output prices are considered identical across industries and thirdly, the heterogenous factor inputs receive same price across all industries. Given the limitations of aggregate production function, Jorgenson (2007) distinguishes between two other types of aggregation approach of production functions, which are production possibility approach and method of direct aggregation.

The production function as per production possibility approach is given as

$$\Delta lnVppf = \Delta lnT + vk\Delta lnK + vl\Delta lnL \quad ...(2)$$

where, aggregate value added is denoted by $\Delta lnVppf$ is translog aggregation of industry value added. K and L represent inputs to the production function, *viz.* capital and labour. The distinction between production function approach and production possibility approach is that the measurement of output changes from simple aggregation to translog aggregation but the measurement of inputs remains the same. Thus, the difference between (1) and (2) gives reallocation of value added.

Next, we define the direct aggregation method as used in Jorgenson (2007).

In direct aggregation, aggregate value added is assumed to be translog index of industry value added. However the production function at an industry level is a gross output-based production function given as

$$\Delta lnYGO = lnT + vk\Delta lnK + vl\Delta lnL + vI\Delta lnI \quad ...(3)$$

Here ΔlnY is the gross output which is sum of value added and intermediate inputs that is

$$\Delta lnYGO = vlnVt + vlnIt \quad ...(4)$$

Here aggregate value added V_t is the sum of weighted contribution from industry level labour, capital and TFP. Next, aggregate value added can be decomposed as

$$\Delta lnV = \frac{\bar{v}_{l,j}}{\bar{v}_{V,j}} \Delta lnK + \frac{\bar{v}_{l,j}}{\bar{v}_{V,j}} \Delta lnL + \frac{1}{\bar{v}_{V,j}} \Delta lnT \quad ...(5)$$

where, $\frac{\bar{v}_{l,j}}{\bar{v}_{V,j}}$ denotes share of capital and labour in nominal output combining this with equation (2) of production possibility frontier we obtain

$$\Delta lnV^{ppf} = \sum_j \bar{w}_j \Delta lnV \quad ...(6)$$

$$\Delta lnVppf = \sum_j \bar{w}_j \Delta lnV_j = \sum_j \bar{w}_j \frac{\bar{v}_{K,j}}{\bar{v}_{V,j}} \Delta \ln K_j + \sum_j \bar{w}_j \frac{\bar{v}_{l,j}}{\bar{v}_{V,j}} \Delta lnL_j + \sum_j \frac{\bar{w}_j}{\bar{v}_{V,j}} TFPG_j^{GO} \quad ...(7)$$

Equation (7) implies aggregate value added growth is the sum of weighted contribution from industry level capital ($\sum_j \bar{w}_j \frac{\bar{v}_{K,j}}{\bar{v}_{V,j}} \Delta \ln K_j$), industry level labour ($\sum_j \bar{w}_j \frac{\bar{v}_{l,j}}{\bar{v}_{V,j}} \Delta lnL_j$) and a weighted TFP ($\sum_j \frac{\bar{w}_j}{\bar{v}_{V,j}} TFPG_j^{GO}$).

Here, $\bar{v}_{K,j}$ and $\bar{v}_{l,j}$ represent share of capital and labour income in Industry j's gross output. $\bar{v}_{V,j}$ denotes industry j's value addred to gross output ratio. Thus for the factor inputs K_j and L_j, weights reflect three components (a) share of industry value added in aggregate value added, (b) share of industry factor income in industry gross output and (c) share of industry value added in industry gross output. The bar over weights represents two period average. This equation helps to identify the origin of aggregate input accumulation effect from industry level. The weights in the last term of equation (7) gives Domer weights for TFP.

As described above, equation (2) gives aggregate value added function, where inputs are simple summation across industries. On the other hand, equation (7) gives aggregate value added function, where inputs are weighted growth rates of industry labour and capital. Subtracting equation (2) from equation (7) and rearranging will give us the factor reallocation effects:

$$TFP^{PPF} = \left(\sum_j \bar{w}_j \frac{\bar{v}_{K,j}}{\bar{v}_{V,j}} \Delta \ln K_j - \bar{v}_K \Delta \ln K\right) + \left(\sum_j \bar{w}_j \frac{\bar{v}_{l,j}}{\bar{v}_{V,j}} \Delta lnL_j - \bar{v}_L \Delta \ln L\right) + \left(\sum_j \bar{w}_j \frac{1}{\bar{v}_{V,j}} TFPG_j^{GO}\right) \quad ...(8)$$

Equation (8) represents how the aggregate productivity growth from production possibility frontier relates to sources of growth at industry level. TFP^{PPF} is the aggregate TFP growth derived from production psooibility approach. The first term of the right hand side of the equation denotes capital reallocation effects and and the second term captures the labour reallocation effects. The third term shows within industry contribution. The within industry

contribution is calculated as weighted average of industry TFP growth. The weights of the TFP are Domar weights (Domar 1961). If aggregate TFP growth from PPF is greater than Domar weighted TFP growth in equation (8), the reallocation terms are positive. A positive reallocation term implies industries which pays higher input price have faster input growth. If reallocation term is positive, this would improve resource allocation and raise the aggregate TFP growth derieved from production possibility approach.

Sources of Data: GVA and Factor Inputs

The data for resource reallocation decomposition is based on India KLEMS dataset. The main advantage of KLEMS framework is factor inputs entering production function are measured more accurately by incorporating a quality index in input measurement. For instance, labour input is cross classified by educational attainment to account for productivity differences between low and high skilled labour services. Similarly, measurement of capital stock takes into account asset heterogeneity. In KLEMS dataset, the variables of output and factor inputs are constructed as follows:

Gross value added and gross output data in KLEMS is constructed from National Accounts Statistics (NAS) published by NSO. For certain services sectors, Gross output estimates are not reported in NAS. In those cases, information is collected from various rounds of input output transaction tables (IOTT) published by NSO. Benchmark IOTT are used for 1993, 1998, 2003 and 2007, while for the intermediate years the ratios are interpolated linearly. The GVA/GO ratios calculated from IOTT tables are then applied to GVA series of NAS to obtain the GVO series of services sectors.

Intermediate inputs which consist of material, energy and services are estimated from IOTT and adjusted with national accounts numbers at current prices. For constructing the series of intermediate inputs at constant prices wholesale price deflators are used which are obtained from the office of the Economic Advisor, Ministry of Commerce and Industry and appropriate weighted deflators are constructed using Balakrishnan & Pushpangadan (1994) method.

The employment data is directly taken from KLEMS database. In this database, labour input data is estimated from employment unemployment survey (EUS) rounds and periodic labour force survey (PLFS) data. Employment and wage data are obtained as per skill level of workers defined by education categories. Data on wage rate for self-employed workers are obtained from India KLEMS by using Mincer equation (KLEMS manual 2021).

Capital input data in KLEMS framework is estimated from NAS by obtaining investment data by asset type. Capital stock is estimated using perpetual inventory method, where depreciation rate for machinery is assumed to be 8 per cent. For construction depreciation is assumed to be 2.5 per cent and for transport equipment 10 per cent, respectively (KLEMS Manual 2021). The rental price of capital is external rate of return.

IV. Results

The results of the decomposition are shown in Table 3. The aggregate TFP estimates are derived from production possibility frontier approach. This aggregate TFP is then decomposed into within industry TFP effect calculated with direct aggregation approach (also known as Domar aggregation method) and reallocation effects. The analysis is done for two

Table 3: Aggregate Total Factor Productivity and Reallocation Effects

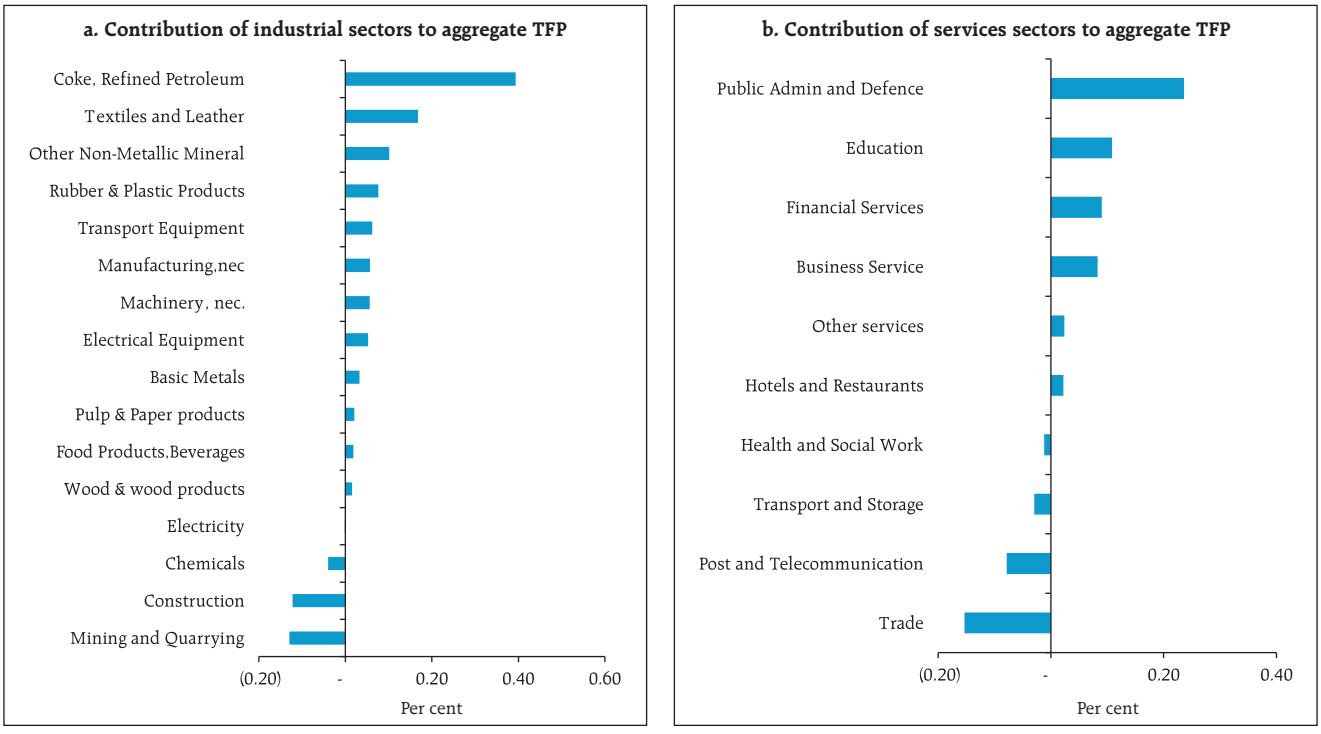
Time Period	2001 to 2010	2011 to 2019
1. Aggregate TFP growth	**1.33**	**2.72**
Contribution from		
2. Within industry TFP growth	0.21	1.58
3. Reallocation effects		
a. Capital	*0.47*	*0.46*
b. Labour	*0.66*	*0.68*

Source: Authors' estimates.

subperiods 2001-10 and 2011-19. The results show that aggregate TFP growth increased to 2.72 per cent in 2011-19 as compared to 1.33 per cent during 2001-10. What stands out is a remarkable difference in the structure of sources of aggregate TFP growth during the two sub periods. During 2000s (i.e.,2001-10) resource reallocation was the driver of aggregate productivity. Labour and capital reallocation together accounted for 82 per cent of aggregate productivity growth. Whereas in the second subperiod, factor reallocation contributed about 42 per cent of aggregate productivity growth. The aggregate productivity increase in the second subperiod originated from within industry productivity growth. When looked into the labour and capital reallocation effects separately, both the terms are found to be positive. A positive labour reallocation term would signify that prices of heterogenous labour differs across industries, and labour is moving towards sectors with high wages. If prices are considered as proxies for productivity, then this suggests movement of labour to high productivity sectors. It is observed from Table 3 that across both sub periods 2001-10 and 2011-19, capital reallocation effects were relatively lower than labour reallocation effects. Movement of workers from low wage agriculture to high wage non-agricultural sectors contributed to large positive labour reallocation effects.

Another important finding from the above table is that aggregate TFP growth during the second subperiod (2011 to 2019) majorly reflects TFP growth in underlying industries. For instance, production possibility frontier based TFP for period 2011-19 was 2.72 per cent out of which 1.58 per cent was contributed from within industry TFP growth. Thus, it is important to study the within sector industry distribution of TFP. It is observed that TFP growth varies substantially across sectors (Chart 3). Within industries, labour intensive textiles and leather industries have high contribution to productivity growth. Other top performing sectors which contributed to productivity growth includes

Chart 3: Drivers of Aggregate TFP

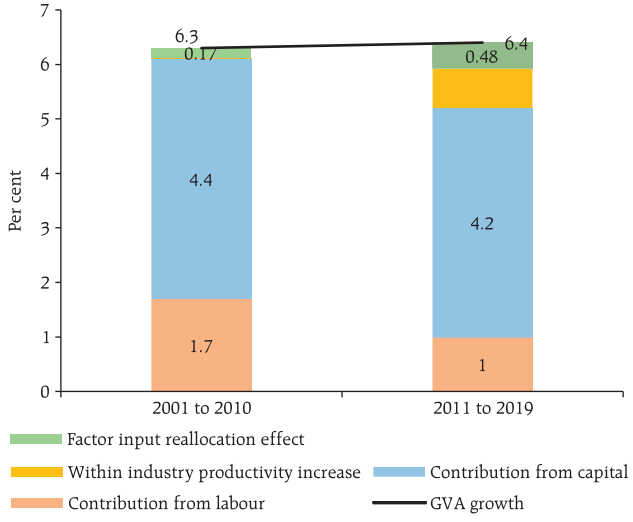


Note: Period under consideration is 2011 - 2019
Source: Author's estimates.

rubber and rubber products; import intensive coke and refined petroleum and parts and component producing sectors like transport and machinery equipment. Within services sectors, business and financial services contributes significantly to aggregate productivity growth. However, market services like trade and transport recorded a negative contribution to productivity growth. Overall, the within sector results suggests an increasing role of industry, financial services and non-market services in improving aggregate TFP and a declining role of market services in explaining TFP growth.

In terms of contribution of factor input reallocation on GVA growth, on an average, reallocation effects contributed to 5 percent of output growth during 2001 to 2019. A subperiod analysis shows that input reallocation contributed for around 8.0 per cent of GVA growth during 2011 to 2019, whereas within industry productivity growth accounted for 11.0 per cent of GVA growth during the same period. It is also observed that output growth in India is driven by factor input accumulation, where capital input explained around 65 per cent of output growth during 2011 to 2019 (Chart 4).

Chart 4: Contribution of Factor Input Reallocation to GVA Growth



Source: Authors estimate based on India KLEMS data.

V. Conclusion

To conclude, we find that there exist large productivity differences across sectors. Agriculture, which employs the largest number of workers (around 41 per cent in 2018-19) is one of the lowest productive sectors – around 0.67 times lower than average productivity of the economy. Second, we find that reallocation of resources from low to high productive sectors accounted for 63 per cent of aggregate productivity growth during 2001-2019. A sub-period analysis shows that the aggregate total factor productivity growth increased from 1.33 per cent during 2001-10 to 2.72 per cent during 2011-19 mainly driven by within industry improvement in technological progress. A GVA growth accounting decomposition shows that resource reallocation effects contributed to 8.0 per cent of GVA growth during 2011 to 2019. During the second sub-period, aggregate productivity growth, however, was higher than the first sub-period and was driven by within sector productivity increase. The top performing sectors in terms of contribution to aggregate productivity in manufacturing included labour intensive industries like textiles, parts and component producing industries like machinery and transport, import intensive coke and refined petroleum. Within the services sector, financial and business services were the major drivers of aggregate productivity growth during 2011 to 2019.

Reducing regulatory burdens can encourage new firms to enter the market and compete in the high productive sectors. Reducing subsidies including energy subsidies can help in redistribution of resource which is stuck in low productive and inefficient energy intensive sectors. Further, high productive sectors are becoming increasingly skill oriented. Higher investment in education, skill-based vocational training would also improve the ability of workers to move to high productivity sectors. Therefore, for encouraging efficient resource reallocation, policies should focus more on reducing market distortions, improve work force quality and managerial skills

by investing in education, remove infrastructure bottlenecks and support research and development activities.

References

Abraham, V. and Sasikumar, S.K. 2017. Declining wage share in India's organized manufacturing sector: Trends, patterns and determinants. *ILO Asia-Pacific Working Paper Series*, ILO, Delhi.

Bartelsman, E., Haltiwanger, J., Scarpetta, S., 2013. Cross-country differences in productivity: the role of allocation and selection. Am. Econ. Rev. 103 (1), 305–334.

Bosworth, B., Collins, S.M., 2008. Accounting for growth: comparing China and India. J. Econ. Perspect. 22 (1), 45–66.

Coe, D. T. 2007. Globalisation and Labour Markets: Policy Issues Arising from the Emergence of China and India. Organisation for Economic Co-operation and Development Social, Employment and Migration Working Paper 63. Paris: Organisation for Economic Co-operation and Development.

de Vries, G.J., Erumban, A.A., Timmer, M.P., Voskoboynikov, I., Wu, H.X., 2012. Deconstructing the BRICs: structural transformation and aggregate productivity growth. J. Comp. Econ. 40 (2), 211–227.

Denison, Edward F., 1967. Why Growth Rates Differ. Brookings, Washington, DC.

Erumban, A. A., Das, D. K., Aggarwal, S., & Das, P. C. 2019. Structural change and economic growth in India. Structural Change and Economic Dynamics, 51, 186-202.

Erumban, A.A., Das, D.K., 2016. Information and communication technology and economic growth in India. Telecommun. Pol. 40 (5), 412–431, http://dx.doi.org/10.1016/j.telpol.2015.08.006.

Goldar, B. (2022). Impact of trade reforms on labour income share in Indian manufacturing. In Rajesh Raj S.N. and Komol Singha (eds), The Routledge Handbook of Post-Reform Indian Economy, Routledge, London and New York.

Goldar, B. and Aggarwal, S. C. 2005. Trade Liberalization and Price-cost Margin in Indian Industries. *The Developing Economies,* September, Vol. 43, No.3, pp. 346-373

Havlik, P. 2005. Structural Change, Productivity and Employment in the New EU Member States. Wiener Institut für Internationale Wirtschaftsvergleiche Research Report 313. Vienna: Vienna Institute for International Economic Studies

Hsieh, C.-T.; Klenow, P.J. 2009. "Misallocation and manufacturing TFP in China and India", in *Quarterly Journal of Economics*, Vol. 124, No. 4, Nov., pp. 1403–1448

Jorgenson, D.W., Ho, M.S., Samuels, J.D., Stiroh, K.J., 2007. Industry origins of the American productivity resurgence. Econ. Syst. Res. 19 (3), 229–252.

Jorgenson, D.W., Timmer, M.P., 2011. Structural change in advanced nations: a new set of stylised facts. Scand. J. Econ. 113 (1), 1–29

Krishna, K.L, Erumban, A.A, Das, D.K, Aggarwal, S, Das, P.C 2017. Industry origin of economic growth and structural change in India, Working paper No 273, Centre for Development Economics.

Kuznets, S., 1966. Modern Economic Growth: Rate, Structure and Spread. Yale University Press, London.

Lewis, W.A., 1954. Economic development with unlimited supplies of labour. Manchester School Econ. Soc. Stud. 22, 139–191.

Lin, J., 2011. New structural economics: a framework for rethinking development. World Bank Res. Observ. 26 (2), 193–221.

Maddison, A., 1987. Growth and slowdown in advanced capitalist economies: techniques of quantitative assessment. J. Econ. Literat. 25 (2), 649–698.

McMillan, M., Rodrik, D., 2011. Globalization, Structural Change, and Productivity Growth (NBER Working Paper 17143). NBER, Cambridge.

Organisation for Economic Co-operation and Development (OECD) 2007a- OECD Employment Outlook. Paris: OECD

Organisation for Economic Co-operation and Development (OECD) 2007b- Making the Most of Globalisation. *OECD Economic Outlook* 81. Paris: OECD

Timmer, M.P., Dietzenbacher, E., Los, B., Stehrer, R., de Vries, G.J., 2015. An illustrated user guide to the World Input–Output Database: the case of global automotive production. Rev. Int. Econ.

Timmer, M.P., Inklaar, R., O'Mahony, M., van Ark, B., 2010. Economic Growth in Europe: A Comparative Industry Perspective. Cambridge University Press.

Vu, K.M., 2017. Structural change and economic growth: empirical evidence and policy insights from Asian economies. Struct. Change Econ. Dyn. 41, 64–77.

*What Drives Startup Fundraising in India?**

*by Rajas Saroy^, Ashish Khobragade^, Rekha Misra^, Sakshi Awasthy^ and Sarat Dhal^*

There has been an upward level shift of fundraising by the Indian startups post-2014. This has been contributed to by the Startup India initiative, along with other enabling policies and the increasing digitalisation of the economy. Aggregate startup funding in the long run is driven by the level of domestic economic activity, excess return offered by the domestic equity market over the global benchmark, and movements of the exchange rate. We find that fundraising may be influenced by global financial spillovers through their impact on domestic financial markets. Firm-level analysis reveals that unconventional factors like educational background of founders, pre-existing relationships with institutional investors and popularity matter for fundraising, besides the company size and sector of operation.

I. Introduction

Over the past decade, startup culture has found its way into various facets of Indian economy in an unprecedented manner. Young companies with young leaders now feature on prime-property billboards, in campus recruitments at premier institutions, and even on jerseys of major sports teams, sharing this space with old established businesses and conglomerates. While innovation, digitalisation and changing tastes and preferences of newer generations are the core reasons behind the rapid emergence of new businesses, adequate capital at the appropriate time has been an important facilitator of the startup ecosystem. Policy reforms over the past decade have acted as vital enablers for Indian startups and recent events have shown that funding and valuation of startups are closely linked to developments in the global economy. In this context, this article provides an analytical narrative on startup fundraising over the past decade, using a proprietary database.

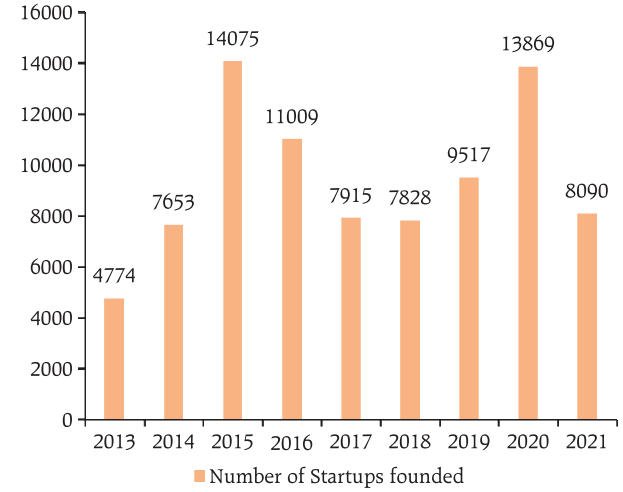
The remainder of the article is presented in five sections comprising (i) a birds-eye view of the startup ecosystem, (ii) the performance of India's startups measured by the time taken to secure funding and the final stages reached, (iii) the startup fundraising process and key themes of the Indian experience in the past decade, (iv) empirical perspectives deriving from micro and macro-level factors that determine the quantum of startup funding, and (v) conclusion and the way forward.

II. India's Startups: A Stocktake

II.1 Definition

There are 87,988 startups recognised by the Department for Promotion of Industry and Internal Trade (DPIIT)[1], making India the third largest startup

Chart 1: Number of Startups founded



Note: These numbers may vary from DPIIT figures due to definitional differences. The data pertain to the respective calendar year henceforth unless otherwise stated.
Source: Tracxn database accessed as on July 19, 2022.

^ The authors are from the Department of Economic and Policy Research (DEPR).

* The views expressed are personal views of the author(s) and do not represent the views of the Reserve Bank of India.

[1] https://www.startupindia.gov.in, retrieved on January 12, 2023.

ecosystem in the world. The DPIIT recognises an entity[2] in India, working towards innovation or that has a scalable business model with a high potential for creation of employment and wealth, as a startup up to a period of ten years from the date of incorporation, if its turnover has not exceeded a hundred crore rupees for any of the financial years (Government of India, 2019).

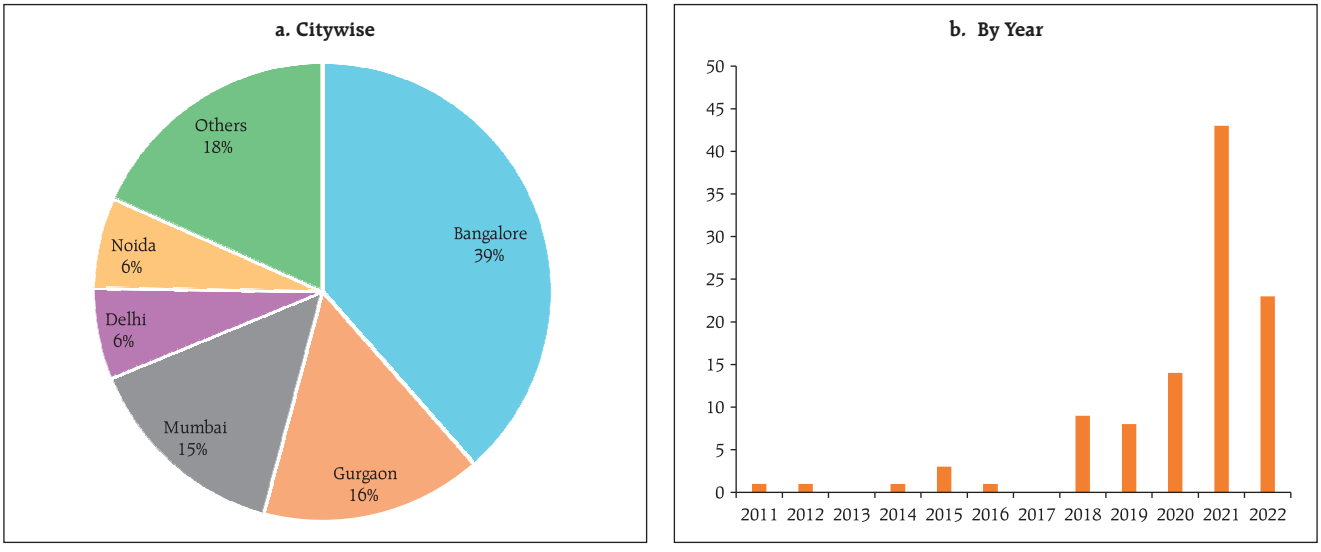
II.2 Diversity in Entrepreneurship

The vibrant activity in the startup ecosystem is a manifestation of the country's young spirit. The average age of startup founders was reported to be 32 (NASSCOM and Zinnov, 2019) with around 14 per cent having at least one female founder (Startup India, 2022). According to the DPIIT, startups have proved to be major employment providers in recent years with more than 7.67 lakh jobs created by 72,993 startups as of 30th June 2022. Startup dynamism is pervasive across sectors including IT services (12 per cent), healthcare and life sciences (9 per cent), education (7 per cent), professional and commercial services (5 per cent) and agriculture (5 per cent) (Press Information Bureau, 2022).

II.3 India's Unicorns

A fast-paced expansion has been the defining feature of India's startup space in the post-pandemic era with 107 unicorns[3] as of September 2022, with an aggregate valuation of US$ 341 billion (National Investment Promotion and Facilitation Agency, 2022). Bangalore, Gurgaon, and Mumbai are the top three cities with the highest number of unicorns in India (Chart 2a). FinTech (driven by the regulatory and governmental push to digital payments along with inception of services like digital brokerages, insurance, and robo-advisory services), Software-as-a-Service (by the virtue of India's historical dominance in providing backend IT support) and e-commerce (due to the lockdown) startups are the most abundant in the unicorn club.

Chart 2: Unicorns Created in India



Source: Tracxn accessed on January 11, 2023.

[2] It must be a private limited company, partnership firm or a limited liability partnership incorporated/registered in India.

[3] A unicorn is a private limited company with a valuation over US $1 billion. Please note the difference between unicorns created and active unicorns as the number for the former can be higher due to fluctuations in valuations.

2021 was a crucial year for the unicorn landscape in India (Chart 2b). The average time taken to become a unicorn dropped to 7.8 years from 9.9 years a year ago. (Orios Venture Partners, 2021). Additionally, many of the new entrants to the unicorn club in 2021 were from non-traditional areas (cloud kitchens, gaming, data management and analytics, and content). Rising membership of the unicorn club post-pandemic was driven by the shift to digitalisation that permeated across regions, sectors, and socioeconomic classes and by the abundant liquidity created across the globe by accommodative monetary policy. This led to investors ploughing their money in these emerging businesses for better returns.

III. Performance of India's Startups

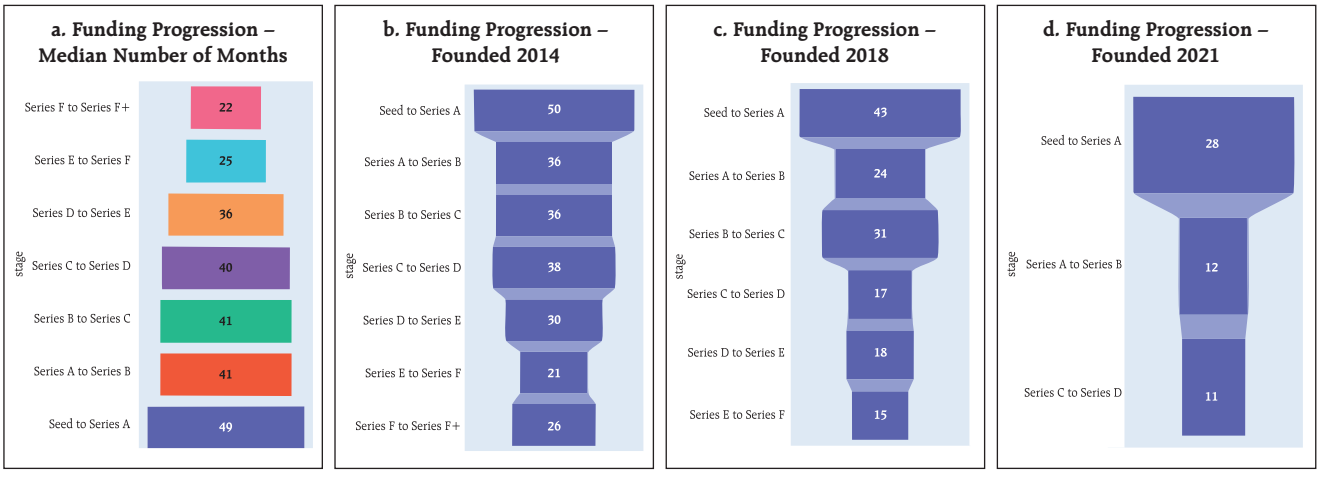
III.1 Funding Progression

Typically, startups go through multiple rounds of fundraising as they progress on developing a viable product. Initially, the founders put in their own capital, as well as that from friends and family, who are collectively called angel investors. Later, they raise money from funds, high net-worth individuals and other businesses in successive pitches or rounds (Seed, Series A, B, C and so on), which broadly follow the growth/scale of the business and serve the needs of the business in that stage. Early rounds may be used to establish a foothold in the market, while later rounds may be used for expansion. Eventually, a situation may arise when a startup no longer needs further external funding support. This generally happens when a startup becomes a listed company or gets acquired/merges with an existing company. An analysis of the median number of months required to rise up funding stages unveils that as a startup moves up these stages, it becomes easier and faster to secure even more funding (Chart 3a). Intriguingly, startups founded recently are able to move up the funding ladder faster, with the median number of months between all stages shrinking drastically between those founded in 2014 and those in 2021 (Charts 3b, c and d).

III.2 Startup Outcomes

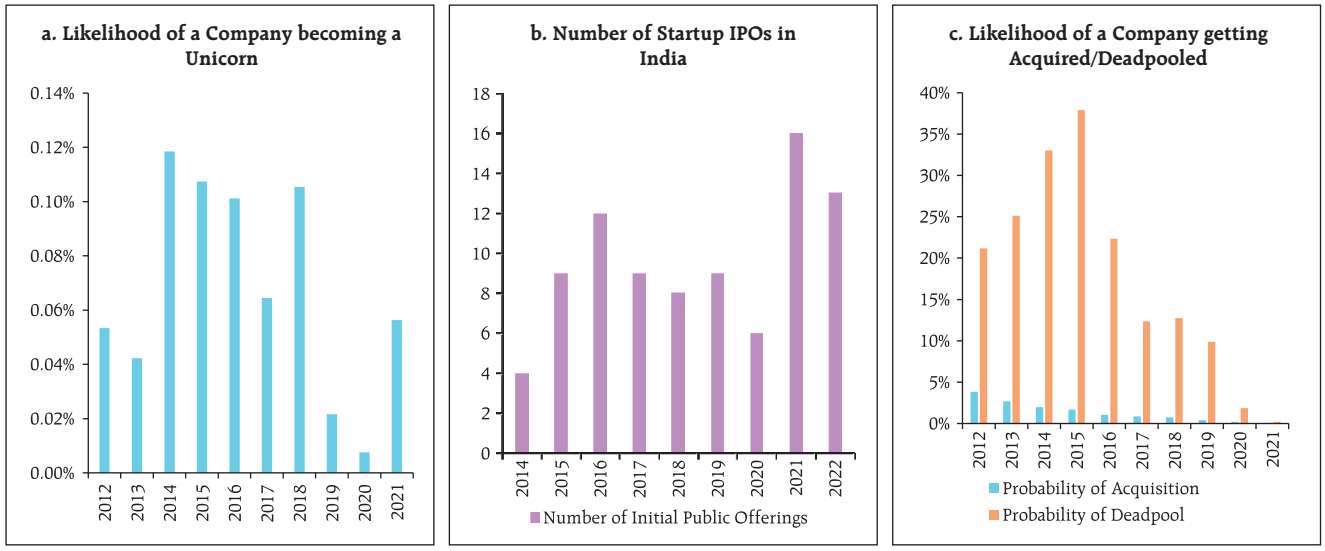
In *Capitalism, Socialism and Democracy,* Joseph Schumpeter proposed innovation as the driving force of capitalism, describing creative disruption as "the process of industrial mutation that incessantly revolutionises the economic structure from within, incessantly destroying the old one, incessantly

Chart 3: Indian Startup Funding Progression



Source: Tracxn database accessed as on June 13, 2022; and RBI staff estimates for a sample of 5,820 funding rounds between April 1, 2017 and June 10, 2022. Data for some funding rounds were reported as 'undisclosed'.

Chart 4: Startup Outcomes in India



Note: Horizontal axes in Chart 4a and 4c refer to the year in which a startup was founded. Horizontal axis in chart 4b refers to the year of public listing of a startup regardless of the year in which it was founded.
Source: Tracxn data on 85,844 startups (founded between 2012 and 2021) accessed on July 19, 2022 and authors' calculations.

creating a new one". While the hype around startups often impresses upon the "creative" part, the data keep us mindful of the "destruction" as well. For startups founded in India between 2012-2021, we find that the likelihood of a startup turning into a unicorn stands between 0.008 per cent and 0.12 per cent, depending on the year in which it was founded (Chart 4a). While the unicorn badge may be the most desirable outcome for a startup, there are other possible outcomes such as going public, getting acquired or shutting down (deadpooled). The average likelihood of getting acquired (across years) stands at 1.3 per cent, with there being a clear pattern of increasing probability of getting acquired as the startup matures/gets older (Chart 4c). For startups founded in 2015 when almost 14,000 sample startups were founded, the probability of getting deadpooled was 38 per cent. There has been a marked decline in the probability of shutting down shop for startups founded post-2015. The Initial Public Offering (IPO) exit route stays less important in the Indian context; a total of 86 startups have gone public since 2014 (Chart 4b).

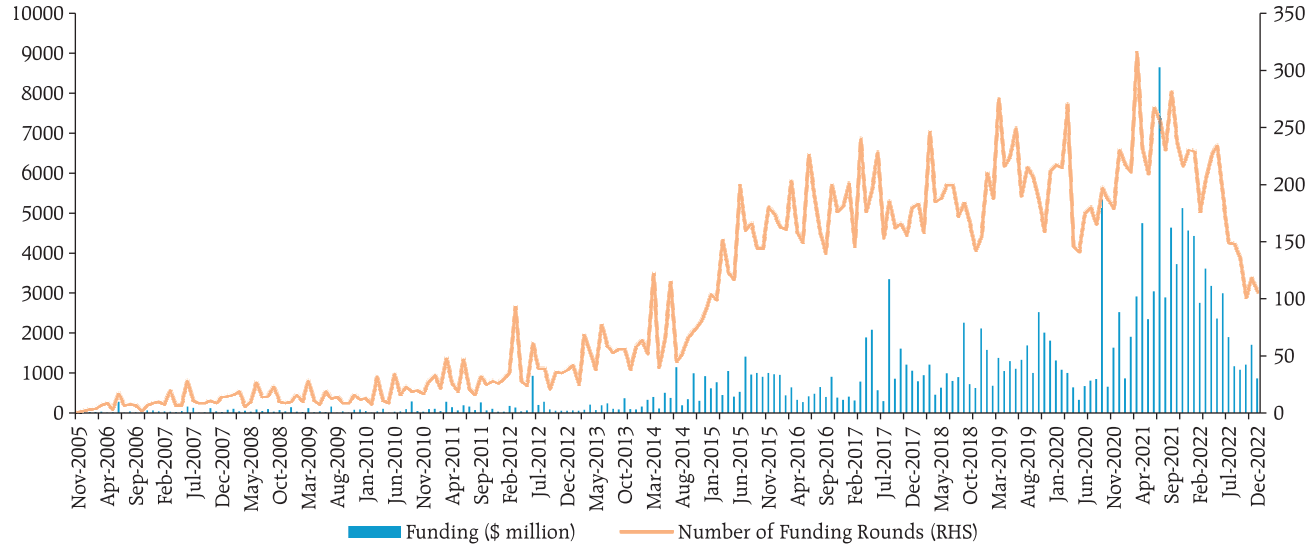
IV. Fundraising by Indian Startups over the Past Decade

For facilitating the discussion on the startup sector as a prominent recipient of private investment, we provide a brief theoretical background on fundraising by startups, and then proceed to the Indian experience over the past decade, with a special focus on the level shift in startup funding witnessed post-2014 (Chart 5). Following the launch of Startup India scheme in 2016, fundraising has witnessed a healthy momentum.

IV.1 Venture Capital Financing: Background

Ideas are the basis of technology-based services, and instead of fixed capital expenditure such as that on machinery and land, startups providing such services require large investment in human capital and intangible assets to implement and scale their underlying ideas. Intangible assets are difficult to objectively value and liquidate, thus banks may be unwilling to lend to such businesses. Further, such businesses often benefit from network effects - larger the customer base, higher is the value provided by the service (*e.g.*, social media and messaging platforms).

Chart 5: Indian Startup Funding (2005-2022)



Source: Tracxn database accessed as on January 11, 2023; Data consists of companies under geographical class "India Tech".

Also, due to the economies of scale, tech-startups may need to scale up rapidly to capture the market, requiring frequent and substantial capital infusions. Additionally, reaching the socially optimal level of provision may require temporary promotional schemes (Rohlfs, 1974) (*inter alia*, offering services at a low or zero introductory price). However, competition from multiple apps at the same time with near zero switching costs (Schmalensee, 2011) may prolong this period of promotions. Ultimately, this leads to startups not realising revenues for a long while, which filters out financiers with a short investment horizon.

Working with these constraints, venture capital (VC) firms have emerged as the most prominent providers of high-risk capital to startups, with other investor types including private equity (PE) firms, corporate venture capital as well as individual investors (angels). VC firms raise a corpus from large institutional investors such as pension funds, insurance funds and university endowments in a staggered fashion. VCs have evolved several strategies to cater to the peculiarities of startup funding (Gompers & Lerner, 2004). First, a long-time horizon of investment allows ample time for investee firms to grow under constant monitoring. Second, funds are disbursed in stages (Angel, Seed, Series A, and so on), allowing periodic oversight and target-achievement-based infusion of additional capital. Third, VCs' years of experience overseeing the growth of many startups allows them to better evaluate businesses and to appropriately guide investees. Fourth, VCs may appoint their own representatives to reduce information asymmetry between founders and themselves *via* direct management. To reduce incentive incompatibility, they may use tools such as employee stock ownership plans (ESOPs) to increase employees' and founders' skin in the game. Finally, VCs often operate in communities or "circles". They typically invest in syndication with other investors which leads to portfolio diversification and a reliable second opinion on investment opportunities. However, founders often cede equity and a degree of managerial control to investors, which may lead to conflict of views with respect to the business path, thus negatively affecting the founders' motivation. The short-term pressure by investors to perform can lead startups to lose sight of their long-term creative vision.

IV.2 Fundraising by Indian Startups: The Post-2014 Policy Push

According to Arrow (1962), perfectly competitive markets may not optimally allocate resources to innovation due to the presence of uncertainty in risky ventures and thus, require the government or some other organisation not driven by the profit motive, to finance research and invention. While this role has been traditionally addressed by the public funding of higher education and research, the focus now is also on the propagation of innovations through startups to encourage both the viability of ideas (as businesses), as well as the generation of new ideas (through monetary incentives). Additionally, policies that work towards reducing uncertainty associated with innovation and improving the returns from innovation may lead to higher private investment in R&D ventures.

The post-2014 period was characterised by a string of business-friendly reforms such as the Make in India (2014) and the Startup India (2016) campaigns. These included measures to enhance ease of doing business and liberalisation of the FDI regime in various sectors. The push to financial inclusion through the JAM Trinity (Jan Dhan, Aadhaar, Mobile) laid the foundation for the enabling architecture of the India-Stack and the subsequent rapid adoption of digital payments. Driven by cheap, fast, and secure movement of value in addition to facilitative regulations, FinTechs blossomed with initial innovations coming from the payment domain.

This policy push was the takeoff point for investment activity by large VC and PE funds in e-commerce, consumer-internet, and mobile apps. Other factors that kindled the startup ecosystem in the recent past include an increase in favorable exit options for startups with an increase in the number of mergers and acquisitions (M&A), emergence of options like acqui-hiring[4] and tech-acquisitions[5], easier fundraising through investor networks, rise in acceptability of the entrepreneurial career (Korreck, 2019), support from a rising number of incubators and accelerators (NASSCOM, 2015), and spill-over effects[6] of an expanding set of successful entrepreneurs who went on to become angel investors (Sharma, 2015). The centre and state governments' efforts in easing interaction with public institutions (by means of online portals, faster clearances and easy certifications), setting up of investor networks, incubators, accelerators, and partnerships with academic institutions and corporates also played a crucial role. In the second half of the decade, successful Indian startups expanded overseas (Bhattacharya, 2018) owing to proven success of their business models domestically and support by foreign investors (NASSCOM, 2018).

IV.3 Fundraising by Indian Startups: The COVID-19 Funding Boom

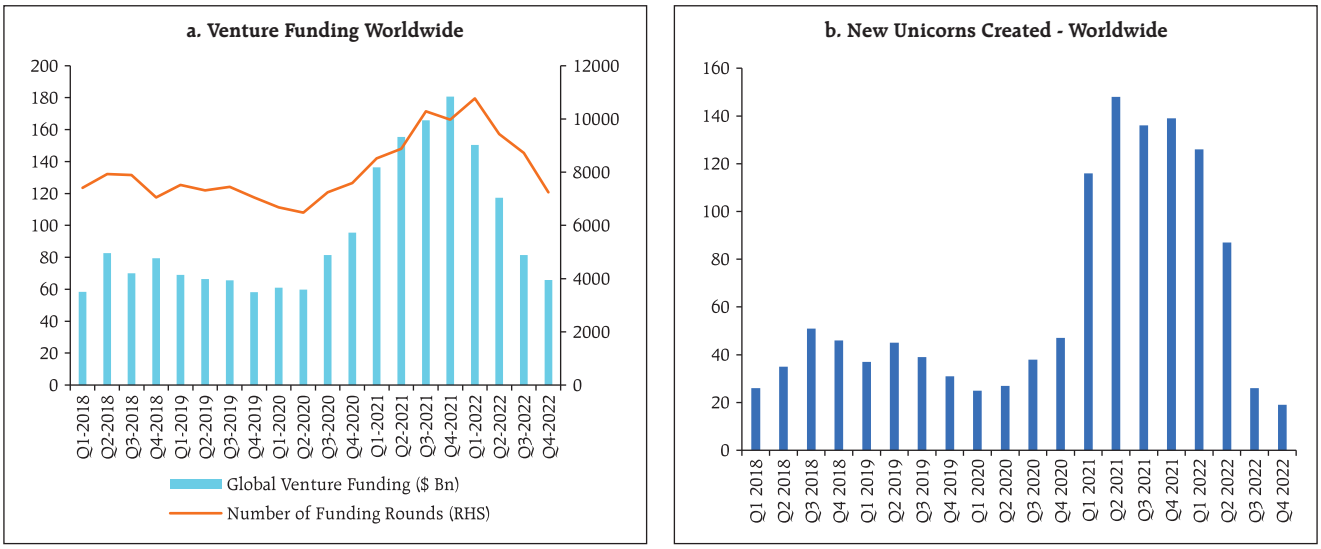
Globally, tech-startups grabbed the opportunity to provide digital solutions to the constraints thrown up by social distancing and impeded movement of goods and people. The monetary policy response to the pandemic had led to a surge in liquidity worldwide, including that in venture capital markets (CB Insights, 2021). As a result, a temporary moderation in startup funding (till mid-2020) was followed by a gold rush, with levels of investment that kept increasing till the start of 2022 in both India and abroad (Chart 5 and

[4] Acqui-hiring refers to the purchase of a company by another with the only purpose of recruiting employees of the former company, with low interest in the product of the company. Such options make investments in startups attractive, as they allow investors to profitably exit in case the startup fails to perform as expected. 76 out of 111 acqui-hiring deals during 2013-21, happened during the period 2015-18.

[5] Tech-acquisition refers to purchase of a company by another for the sole purpose of gaining access to a certain technology owned by the acquiree.

[6] Successful entrepreneur-turned-angel investors mentor new startups while also helping the investee raise funding through their entrepreneurial networks (Miller & Kirsten, 2011).

Chart 6: The post-COVID Global Scenario



Source: CB Insights, State of Venture 2022.

6(a)). Investor interest in startups was amplified by the recovery of confidence in a booming post-pandemic digital economy.

The immediate impact of the first nationwide lockdown and related uncertainty was a fall in revenues across startups, and even shutting down of business. Startups in B2C (business to consumer) segments such as mobility, hospitality and automotive were the hardest hit, and so were early and mid-stage startups (Zinnov India and TiE Delhi-NCR, 2020). Nevertheless, the impact of the pandemic played out asymmetrically in the coming months, creating opportunities in other business models such as e-commerce, food delivery, EdTech, Fintech, Health Tech, and Retail Tech.

IV.4 Fundraising by Indian Startups: The post-COVID Era of Mega-Startups

Indian tech-startups raised US$ 17.4 billion over 2,531 rounds in 2019[7]. This moderated to around US$ 6.9 billion in 2,303 rounds in 2020- the year that COVID-19 struck. However, US$ 45.4 billion worth of funding over 2,900 rounds in 2021 surpassed the combined funding of the past two years. Notwithstanding the sheer size of funding, it is important to note that this was the year of mega-startups. The share of late-stage (Series C and beyond) startups in total funding and in number of rounds increased compared to the past few years (Chart 7), which is indicative of risk-averse behavior, with investors backing established companies that had proven themselves to be strong enough to weather the pandemic and grow when the economy ramps back up. Additionally, this was the year when India added 48 unicorns, eventually crossing the 100 unicorns tally in 2022 (PIB, 2022). This surge in unicorns is in line with global trends (Chart 6(b)). Further, startups became unicorns at higher average valuations, with the global average valuation at birth rising from US $1.18 billion in 2016 to US $1.56 billion in 2021 (CB Insights, 2021). Also, the average investment per round in India jumped to around US $14 million per round, showing that more money was chasing investment opportunities in startups.

[7] Tech-startups includes all the startups categorised under "India Tech" in the Tracxn database.

Conventional wisdom dictates that availability of easy money may lead to funding of low-quality projects (Gupta, 2000). Besides a general fall in investor discipline during such times due to the 'fear of missing out', herding among professional investors driven by reputational risk (Scharfstein, David, & Stein, 1990) may also contribute to the funding of unviable projects. Nonetheless, Nanda & Rhodes-Kropf (2012) find that even though venture capital-backed startups receiving their initial investment in hot markets (such as those witnessed in this phase) are more likely to go bankrupt, such startups also

Chart 7: Company Stage and Funding in India

Source: Tracxn database accessed as on July 7, 2022.

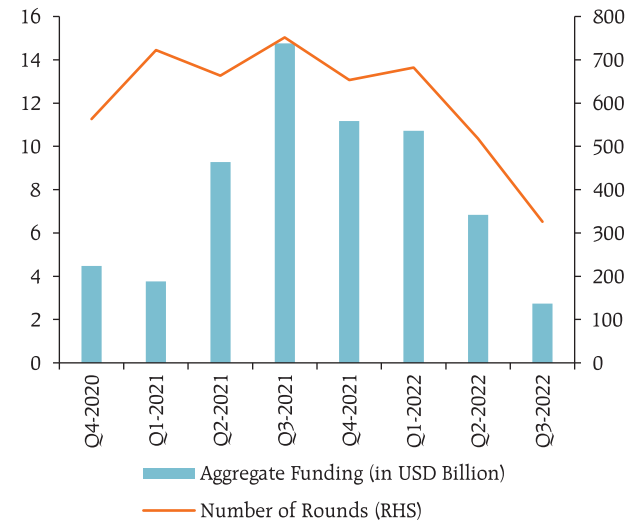
tend to be more innovative (as measured through patenting activity). Therefore, increased capital in hot times may play a crucial role in the Schumpeterian process of creative destruction, by allowing the funding of novel startups and lowering the cost of experimentation. In the Indian scenario, this process may be at work, as evident from the rise in average and median funding amount per round for Early and Mid-stage[8] startups in 2021 from US $6 million to US $11.5 million and from US $2 million to US $4.5 million, respectively[9]. This growth naturally begs the question of sustainability. Pertinent to the COVID-induced funding boom, Gompers and Lerner (2004) note that periods of rapid growth of VC investments generate sufficient difficulties (owing to factors such as inflated valuations and less restrictive partnership agreements) and that periods of retrenchment follow.

Globally, there was a decline (Q-o-Q) in venture funding by 19 per cent to US $143.9 billion in 2022Q1, after six consecutive quarters of growth (CB Insights, 2022). In 2022Q2, this declined further to US $108.5 billion, marking the second largest quarterly percentage drop in a decade. Despite this decline, funding remains above the 2020 level. Unicorn births in this quarter were also at a five-quarter low of 113, down 15 per cent (Q-o-Q) and declined further to 85 in 2022Q2. Total number of unicorns globally stood at 1,070 as on 2022Q1. A similar correction has followed in India, with startup funding declining to US $2.73 billion in 2022Q3 (Chart 8).

V. Drivers of Startup Fundraising

In this section, we quantify the forces behind fundraising by startups, from an economy-wide as well as firm-level perspective.

Chart 8: Funding to Indian Startups - Recent Trends



Source: Tracxn India Tech Monthly Funding Report, September 2022.

V.1 Long Term Behaviour of Startup Funding

We identify the underlying drivers of aggregate funding (Chart 5) into Indian startups over a longer period by estimating Autoregressive Distributed Lag (ARDL) models over quarterly data between 2011Q1 and 2022Q2 (Annex I). While our choice of sample avoids distortions caused by the global financial crisis, all specifications include fixed regressors for quarters where COVID-19 cases peaked, and for the post-2014 period of enhanced investor interest in startups. Conceptually, we model startup investment as a portfolio investment competing with investment in equities and debt instruments, with presence of both foreign and domestic investor types. The US is considered as the developed country benchmark. Since some investors might invest in the domestic debt market while others may also have access to overseas debt markets, the risk-free rate of return is taken as the yield on the Indian 3-month Treasury bill for the former (Models 1(a) and 1(b)), and the corresponding US yield for the latter (Models 2(a) and 2(b)). Models 1(b) and 2(b) incorporate the nominal exchange rate as an explanatory variable to better account for international arbitrage.

[8] Early and Mid-Stage refers to startups in Seed, Series A or Series B stage of funding.

[9] Figures from Tracxn database accessed on August 7, 2022. Figures are computed for a sample of 4,897 funding rounds between April 1, 2017 and July 8, 2022.

From our long-run specifications, we find that the excess return provided by the Indian stock market (proxied by the NIFTY 500) over the US stock market (proxied by the S&P 500) is a strong determinant of funding into Indian startups. Fundraising is also favourably influenced by the level of GDP (current prices), while it is hampered by the yield on the 91-day Indian and US treasury bills (the risk-free rate of return). Therefore, startup funding displays complementarity with equities but competes with debt. Exchange rate depreciation has a negative impact on funding. The goal of startup investment is the appreciation of the investor's equity stake, and currency depreciation lowers the sum obtained on exit for foreign investors. The inclusion of exchange rate in the model amplifies the GDP effect, undermines the effect of comparative equities performance and deems the impact of benchmark bond yields statistically insignificant. Hence, in the open economy case for India, fundamental economic performance remains the main driver of startup investment and is supplemented by well performing equities markets. For robustness, we also include the rate of inflation, the excess return between India and the US on small and mid-cap indices, the federal funds rate, the RBI's repo rate, and the Economic Policy Uncertainty index (Baker, Bloom, & Davis, 2016) to the models. These variables do not seem to significantly impact the amount of startup funding in the long run.

Simply put, our results indicate that startup funding in India is largely determined by GDP (an indicator of market size) and differentials in the rate of return in equity markets. Stock market returns may be perceived by investors generally as the growth potential of firms and of entrepreneurial capacity. Higher the risk-free yield, the less likely are funds to be invested in startup ventures (considered extremely high risk). The results also confirm a marked upward shift in startup funding post-2014, as well as during COVID-19. Our models indicate that while there may not be a direct causal link, US monetary policy may affect Indian startup funding insofar as it influences the Indian and US stock markets. Even so, the Error Correction terms provide evidence of rapid adjustment- 66 to 82 per cent of adjustment to a shock is completed within a quarter. This implies that a deviation from the long run level of startup funding stands fully corrected within two quarters. Hence, startup funding in India is poised to rapidly bounce back after the cessation of policy shocks.

V.2 Firm-level Determinants of Startup Funding

To explore the determinants of funding for startups at the firm level, a cross-sectional analysis was conducted for a sample of 914 startups[10]. There is a marked increase in the average funding amount, employee count, news mentions, social media followers and number of institutional investors as we move up the stage of funding (Annex II, Table 3). As expected, the average number of angel investors falls as a startup climbs up the funding ladder. This not only highlights the important role that angel investors play in identifying the potential in startups at early stages, but also draws attention to the phenomenon of late entry of institutional investors.

Two indicators of firm-level funding received were considered in two distinct linear models, one for the amount raised in the latest funding round (Annex II, Table 4), and the other as the cumulative fundraising till date (Annex II, Table 5). It is observed that more recent funding deals are on average, bigger in size. Stage of funding, a categorical regressor with categories – Early (Seed), Mid (Series A and B), and Late Stage (Series C and above) companies - was included to control for scale. As expected, mature companies

[10] Source: India Investor Landscape 2022 Report by Tracxn. Note that the report covers 6,193 startups, but a sub-sample was chosen for data completeness. Sample companies account for fundraising of US $ 69.7 billion, which is nearly 51 per cent of the total funding raised by the companies in the report as of April 30 2022. The resultant sample is representative and consists of Early (319), Mid (398) and Late-stage (197) companies across sectors.

attract a larger amount of funding in the latest round. Our results also show that that employee count may be a signal of the quality and potential for growth of a startup, as highlighted in the literature (Davilla, Foster, & Gupta, 2003).[11]

Unlike bank financing, startup investors may factor in different kinds of unconventional information into their decision-making process. Both models highlight that the number of news mentions of a startup spike investors' interest. It is possible that news media fills in the information asymmetry faced by the investors concerning characteristics of a startup. Our analysis also hints at herd behaviour among investors (Section IV.4), as the number of institutional investors positively and significantly influences the funding amount. Therefore, being popular and being in the right company matter for startups looking to raise funds. We also gauge the effects of founder-specific characteristics. Indicator variables for elite colleges were used to account for founders' place of formal education (whether at least one of the founders is from top educational institutions in India or has studied abroad). Interestingly, founders' alma mater positively affects the latest funding volumes. This relationship is statistically insignificant for the cumulative funding size, denoting that this factor may have gained prominence only in recent times. Selected sector indicators[12] were incorporated in the model. Gaming startups have bagged a higher cumulative funding compared to the average. Startups founded in the year 2020 and 2021 are seen to have an advantage in terms of fundraising. In particular, the post COVID-19 phase witnessed increased investor interest in the Artificial Intelligence in Industrial Applications (AIIA), FinTech, and EdTech sectors.

[11] However, probable concerns relating to the reverse causality remain.

[12] Sectors were defined based on the tags on the practice areas and feed name given in the India Tech Investor Landscape 2022 Report (Publisher: Tracxn).

VI. The Way Forward

There has been an upward level shift of fundraising by the Indian startups post-2014. This has been contributed to by the Startup India initiative, along with other enabling policies and the increasing digitalisation of the economy. Aggregate startup funding in the long run is driven by the level of domestic economic activity, excess return offered by the domestic equity market over the global benchmark, and movements of the exchange rate. We find that fundraising may be influenced by global financial spillovers through their impact on domestic financial markets. Firm-level analysis reveals that unconventional factors like educational background of founders, pre-existing relationships with institutional investors and popularity matter for fundraising, besides the company size and sector of operation. The steady supply of startup capital in the economy is likely to be determined by the magnitude of fundamental technological innovation in the economy, the presence of liquid and competitive markets for startup investors to sell their holdings (*e.g.,* through IPOs/acquisitions), and the willingness of highly skilled managers and engineers to work in entrepreneurial environments (Gompers and Lerner, 2004).

Like any other type of investment, fundraising by startups is driven by several firm/project and investor-specific factors. The presence of good investment opportunities may be spread out over time, which generates short run fluctuations in the quantum of capital provided to startups. Results from the firm-level analysis evince the need to expand the focus of startup-oriented policies. The policy focus may shift to creating an enabling environment for fast growth of startups and to crowd-in funding from private investors. It may be necessary to factor in principles of equity in such policies to give founders who are not from premier institutions a fair chance at securing funding from the market. Given the asymmetric

impact of COVID-19 based on the sectors of operation, sector-specific policies like those on electric vehicles, drones, *etc.*, may be the right step forward to guide startup growth in line with national priorities.

Economy-wide fundraising by startups is shown to be largely determined by macroeconomic factors. The recent shift towards facilitative policies may have had a demonstrated impact in boosting such investment post-2014 by reducing policy uncertainty and business frictions. However, fundamental factors like economic growth, attractive capital markets and a stable exchange rate ultimately facilitate the availability of startup capital. We expect startup fundraising in India to rapidly rebound from macroeconomic disturbances. While foreign capital and expertise may be important for nurturing of world-class businesses in the country, concerns about macroeconomic and financial stability may arise due to their rapid integration into global supply chains and finance. It will be pertinent to keep track of such foreign financial flows and the resultant changes in firm control. However, it is also seen that some domestic investors set up offshore funds in low tax jurisdictions to benefit from bilateral tax arrangements, and then invest in startups. Further development of the International Financial Services Centre (IFSC) at GIFT city may help in onshoring of such investments and increase transparency. Besides onshoring, other avenues may be explored to finance startups domestically, especially those in critical/strategic sectors like defence, health, biotechnology, *etc.*

References

Arrow, K. (1962). Economic Welfare and the Allocation of Resources for Invention. In N. B. Research, *The Rate and Direction of Inventive Activity: Economic and Social Factors.*

Baker, S., Bloom, N., & Davis, S. (2016). Measuring Economic Policy Uncertainty. *The Quarterly Journal of Economics, 131*(4).

Bhattacharya, A. (2018, Decemeber 20). 2018 was the Year India's Startup Decided to Go Global. Quartz.

CB Insights. (2021, 9 14). *Research Briefs - Unicorns Are Seeing Valuations Take Off.*

CB Insights. (2022). *State of Venture - Global Q3 2022.*

Davilla, A., Foster, G., & Gupta, M. (2003). Venture Capital Financing and the Growth of Startup Firms. *Journal of Business Venturing*, 689-708.

Gompers, P., & Lerner, J. (2004). *The Venture Capital Cycle* (2 ed.). MIT Press.

Government of India. (2019, February 19). NOTIFICATION G.S.R. 127(E). *The Gazette of India.*

Government of India. (2022, July 20). Unstarred Question No. 513, Part C.

Gupta, U. (2000). *Done Deals: Venture Capitalists Tell Their Stories* . Harvard Business School Press.

Korreck, S. (2019). The Indian Startup Ecosystem: Drivers, Challengs and Pillars of Support. *Observer Research Foundation Occassional Paper No. 210.*

Miller, P., & Kirsten, B. (2011). The Startup Factories - The ise of Accelerator Programmes to Support New Technology Ventures. *Nesta Discussion Paper.*

Nanda, R., & Rhodes-Kropf, M. (2012). Investment Cycles and Startup Innovation.

NASSCOM. (2015). *Startup India - Momentous Rise of the Indian Startup Ecosystem.*

NASSCOM. (2018). *Indian Tech Startup Ecosystem: Approaching Escape Velocity.*

NASSCOM and Zinnov. (2019). *Indian Tech Startup Ecosystem - Leading in the 20s.*

National Investment Promotion and Facilitation Agency. (2022). Retrieved on November 9, 2022 from https://www.investindia.gov.in/startup-india-hub

Orios Venture Partners. (2021). *The Indian Tech Unicorn Report 2021.*

Press Information Bureau (2022), Press Release, "India achieves landmark milestone, over 75000 startups recognised so far", Ministry of Commerce and Industry, August 03.

Rohlfs, J. (1974). A Theory of Interdependent Demand for a Communications Service. *The Bell Journal of Economics and Management Science, 5*(1), 16-37.

Scharfstein, David, S., & Stein, J. C. (1990). Herd Behaviour and Investment. *American Economic Review*, 465-479.

Schmalensee, R. (2011). Jeffrey Rohlfs' 1974 Model of Facebook: An Introduction. *MIT Sloan Research Papers.*

Sharma, I. (2015). Indian Angel Network's investments in startups rise 75% in 2014. Business Standard.

Startup India. (2022). *Startup India.* Retrieved from https://www.startupindia.gov.in/content/sih/en/international/go-to-market-guide/indian-startup-ecosystem.html#1497938440131

Startup India. (2022). *States' and UTs' Startup Policies.* Retrieved from https://www.startupindia.gov.in/content/sih/en/state-startup-policies.html

Tracxn. (2022). *India Tech Exit Landscape.* Retrieved October 2022.

Zinnov India and TiE Delhi-NCR. (2020). *COVID-19 and Antifragility of Indian Startup Ecosystem.*

Annex I: Empirical Analysis- ARDL Model Estimation

Table 1: Unit Root Tests of Variables

Variable	ADF Test Statistic	Phillips-Perron Test Statistic
Level Form		
LFUNDINGS	-2.78*	-2.76*
LYNS	-0.98	-1.18
GR500	-5.08***	-2.92*
INTB3M	-1.76	-2.04
INTB3MUS	-3.808***	-2.056
LEXN	-0.16	-0.16
Difference Form		
D(LFUNDINS)	-6.02***	-5.82***
D(LYNS)	-9.64***	-9.85***
D(GR500)	-4.64***	-6.59***
D(INTB3M)	-7.61***	-7.65***
D(INTB3MUS)	-2.024	-4.004***
D(LEXN)	-6.26***	-6.31***

Notes: D: First differences; LFUNDINGS, LYNS: natural log of startup funding and nominal GDP, respectively, seasonally adjusted (X-13-ARIMA); GR500: stock return differential between NIFTY500 (India) and S&P500 (US) Indices; INTB3M, INT3BMUS: Yield on 3-month Treasury Bills for India and US respectively, LEXN: natural log of USD-INR nominal spot exchange rate

***, **, and * denote significance levels at 1%, 5% and 10%, respectively.

Table 2a: ARDL Model: Dynamic Regression Coefficients

Dependent Variable: LFUNDINS; Sample: 2011Q1 2021Q4				
Variable	**Model 1(a)**	**Model 1(b)**	**Model 2(a)**	**Model 2(b)**
Model Type	ARDL(2,0,1,0)	ARDL(2,0,1,1,0)	ARDL(1,0,1,0)	ARDL(1,0,1,0,0)
LFUNDINS (-1)	0.369*** (0.133)	0.407** (0.153)	0.341*** (0.101)	0.298*** (0.105)
LFUNDINS (-2)	-0.191* (0.106)	-0.224* (0.113)		
LYNS	1.440*** (0.362)	2.234*** (0.444)	1.556*** (0.377)	2.428*** (0.467)
GR500	0.003 (0.493)	-0.138 (0.540)	-0.048 (0.589)	-0.314 (0.555)
GR500(-1)	1.330*** (0.381)	1.312*** (0.349)	1.212** (0.450)	1.180*** (0.363)
INTB3M	-0.088** (0.042)	-0.168*** (0.049)		
INTB3M(-1)		0.127** (0.061)		
INTB3MUS			-0.019 (0.064)	-0.087 (0.062)
LEXN		-1.614** (0.669)		-1.912** (0.736)
DUM2014Q ^	0.460* (0.266)	0.499* (0.254)	0.314 (0.262)	0.506* (0.258)
COVIDQTR ^	0.661*** (0.205)	0.814*** (0.251)	0.780*** (0.213)	0.733*** (0.191)
Intercept	-4.026 (4.801)	-9.771** (4.215)	-9.678** (4.421)	-13.960*** (4.055)
Post-estimation Tests				
Adjusted R squared	0.892	0.894	0.885	0.889
Akaike Information Criterion	1.035	1.049	1.074	1.064
Schwartz Criterion	1.400	1.496	1.398	1.429
Durbin-Watson Stat.	1.947	2.049	1.839	1.892
Serial Correlation (LM)	0.046	0.283	0.417	0.780
Breusch-Pagan-Godfrey Heteroskedasticity test	1.046	0.654	1.208	0.953
Residual Normality (Jarque-Bera Statistic)	1.541	1.698	2.727	4.482

Note: ^ Fixed Regressors: DUM2014Q (Indicator of year>2014) and COVIDQTR (Indicator for quarters when COVID-19 caseload peaked in India)
All Models use Newey-West HAC Standard Errors
Lag Selection Criteria: AIC with maximum 2 lags for parsimony

Table 2b: ARDL Model Long Run Form and Bounds Test

Long-run form				
Variable	**Model 1(a)**	**Model 1(b)**	**Model 2(a)**	**Model 2(b)**
LYNS	1.753*** (0.385)	2.734*** (0.498)	2.362*** (0.432)	3.426*** (0.493)
GR500	1.624*** (0.499)	1.438*** (0.503)	1.766*** (0.647)	1.222** (0.562)
INTB3M	-0.107** (0.048)	-0.050 (0.051)		
INTB3MUS			-0.028 (0.097)	-0.122 (0.085)
LEXN		-1.975** (0.818)		-2.670** (1.065)
Bounds Test				
F-statistic	6.684	5.808	6.024	5.347
t-statistic	-4.884	-4.894	-4.564	-4.828

Table 2c: Error Correction Model Regression

Long-run form				
Variable	**Model 1(a)**	**Model 1(b)**	**Model 2(a)**	**Model 2(b)**
Intercept	-4.026*** (0.771)	-9.771*** (1.733)	-9.678*** (1.916)	-13.960*** (2.577)
D(LFUNDINS(-1))	0.191 (0.129)	0.224* (0.129)		
D(GR500)	0.003 (0.596)	-0.138 (0.582)	-0.048 (0.611)	-0.314 (0.597)
D(INTB3M)		-0.168* (0.085)		
DUM2014Q	0.460*** (0.155)	0.498*** (0.159)	0.314** (0.146)	0.506*** (0.161)
COVIDQTR	0.661** (0.269)	0.814*** (0.261)	0.780*** (0.273)	0.733*** (0.267)
CointEq(-1)	-0.821*** (0.152)	-0.817*** (0.143)	-0.659*** (0.129)	-0.709*** (0.130)
Adjusted R-squared	0.540	0.504	0.448	0.478
Akaike Information Criteria	0.899	0.868	0.938	0.883
Schwarz criterion	1.142	1.152	1.140	1.085
Durbin-Watson stat	1.947	2.049	1.839	1.892

Annex II: Firm-Level OLS Estimation

Table 3: Descriptive Statistics

Variable	Mean	Std. Dev.	Minimum	Maximum
Early-Stage Companies				
Total Funding Amount (US $ million)	2.11	2.72	0.01	30.76
Total Employee Count	74.25	208.03	1.00	3323.00
News Mentions	9.69	14.07	1.00	186.00
Social Media Followers	3625.50	22235.41	6.00	336337.00
Number of Institutional Investors	5.25	4.64	1.00	26.00
Number of Angel Investors	16.89	22.07	0.00	117.00
Mid-Stage Companies				
Total Funding Amount (US $ million)	19.27	27.09	0.45	280.58
Total Employee Count	221.84	445.36	1.00	4559.00
News Mentions	33.19	44.38	1.00	454.00
Social Media Followers	16755.42	219413.70	10.00	4301263.00
Number of Institutional Investors	9.12	7.83	1.00	54.00
Number of Angel Investors	16.53	22.83	0.00	167.00
Late-Stage Companies				
Total Funding Amount (US $ million)	311.45	604.77	6.98	4997.33
Total Employee Count	1283.99	3720.15	16.00	42399.00
News Mentions	210.70	502.14	3.00	4749.00
Social Media Followers	15813.57	45598.35	9.00	463342.00
Number of Institutional Investors	17.59	12.98	1.00	79.00
Number of Angel Investors	13.63	18.47	0.00	142.00

Source: Authors' Calculations based on India Investor Landscape Report 2022.

Table 4: Summarised Cross-sectional Regression Outputs – Log of Latest Funding

Independent Variables	Baseline	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Funding Distance	-0.0563*** (0.0196)	-0.0555*** (0.0196)	-0.0561*** (0.0196)	-0.0566*** (0.0196)	-0.0563*** (0.0196)	-0.0562*** (0.0196)	-0.0561*** (0.0196)	-0.0557*** (0.0196)	-0.0571*** (0.0196)
Stage of Funding	1.323*** (0.0826)	1.320*** (0.0827)	1.323*** (0.0826)	1.322*** (0.0826)	1.323*** (0.0826)	1.323*** (0.0826)	1.324*** (0.0827)	1.322*** (0.0826)	1.322*** (0.0826)
Log of Employee Count	0.207*** (0.0292)	0.209*** (0.0293)	0.207*** (0.0292)	0.206*** (0.0292)	0.207*** (0.0292)	0.207*** (0.0292)	0.206*** (0.0292)	0.205*** (0.0292)	0.209*** (0.0293)
Log of News mentions	0.241*** (0.0479)	0.240*** (0.0479)	0.241*** (0.0479)	0.241*** (0.0479)	0.241*** (0.0479)	0.242*** (0.0479)	0.241*** (0.0479)	0.244*** (0.0479)	0.240*** (0.0479)
Number of Institutional Investors	0.0134** (0.00570)	0.0136** (0.00568)	0.0135** (0.00572)	0.0134** (0.00570)	0.0134** (0.00571)	0.0134** (0.00570)	0.0134** (0.00569)	0.0131** (0.00570)	0.0136** (0.00571)
Founded during COVID-19	0.915*** (0.170)	0.928*** (0.171)	0.917*** (0.172)	0.910*** (0.171)	0.914*** (0.170)	0.915*** (0.170)	0.910*** (0.170)	0.919*** (0.170)	0.911*** (0.169)
Elite College Indicator^	0.217*** (0.0827)	0.215*** (0.0827)	0.217*** (0.0827)	0.217*** (0.0826)	0.217*** (0.0827)	0.217*** (0.0827)	0.218*** (0.0828)	0.214** (0.0831)	0.216*** (0.0826)
Ex-founder Indicator@	-0.119 (0.192)	-0.129 (0.192)	-0.120 (0.192)	-0.123 (0.193)	-0.119 (0.193)	-0.118 (0.193)	-0.118 (0.192)	-0.116 (0.192)	-0.117 (0.193)
Elite College * Ex-founder Interaction	0.0175 (0.280)	0.00806 (0.279)	0.0178 (0.280)	0.0188 (0.280)	0.0180 (0.280)	0.0163 (0.280)	0.0151 (0.280)	0.0135 (0.279)	0.0142 (0.281)
Artificial Intelligence Industrial Applications Sector Indicator		0.257** (0.119)							
Gaming Sector Indicator			-0.0760 (0.518)						
FinTech Sector Indicator				0.0387 (0.0967)					
Ecommerce Sector Indicator					0.0282 (0.125)				
Health Care Sector Indicator						0.0225 (0.134)			
EdTech Sector Indicator							0.0762 (0.150)		
B2B Indicator								0.270 (0.225)	
Constant	12.07*** (0.140)	12.05*** (0.140)	12.07*** (0.140)	12.07*** (0.140)	12.07*** (0.140)	12.07*** (0.140)	12.07*** (0.140)	12.07*** (0.140)	12.08*** (0.140)
Observations	1,478	1,478	1,478	1,478	1,478	1,478	1,478	1,478	1,478
R-squared	0.534	0.535	0.534	0.534	0.534	0.534	0.534	0.535	0.536

Note: All specifications use robust standard errors and pass post-estimation tests for model specification (Ramsey RESET) and multicollinearity (VIF<2). Asterix indicate level of significance. ***: p<0.01, **: p<0.05, *: p<0.1; Parentheses indicate robust standard errors.

^ At least one of the founders studied at IITs/IIMs/any foreign university.

@ At least one of the founders has previously been a founder of another startup.

Table 5: Summarised Cross-sectional Regression Outputs – Log of Cumulative Funding *(Contd.)*

Independent Variables	Baseline	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Stage of Funding	1.454***	1.445***	1.450***	1.439***	1.448***	1.452***	1.452***	1.449***	1.453***
	(0.0628)	(0.0626)	(0.0630)	(0.0632)	(0.0631)	(0.0632)	(0.0634)	(0.0633)	(0.0631)
Log of Employee Count	0.182***	0.174***	0.182***	0.189***	0.180***	0.181***	0.184***	0.182***	0.184***
	(0.0244)	(0.0247)	(0.0245)	(0.0242)	(0.0245)	(0.0245)	(0.0246)	(0.0244)	(0.0246)
Log of News mentions	0.358***	0.370***	0.360***	0.349***	0.355***	0.357***	0.357***	0.357***	0.357***
	(0.0369)	(0.0369)	(0.0370)	(0.0364)	(0.0368)	(0.0369)	(0.0370)	(0.0368)	(0.0370)
Log of Social Media followers	0.00628	0.00311	0.00665	0.0123	0.00921	0.00748	0.00638	0.00893	0.00585
	(0.0184)	(0.0184)	(0.0185)	(0.0176)	(0.0185)	(0.0186)	(0.0185)	(0.0186)	(0.0184)
Number of Institutional Investors	0.0321***	0.0311***	0.0319***	0.0301***	0.0315***	0.0317***	0.0322***	0.0317***	0.0322***
	(0.00373)	(0.00361)	(0.00377)	(0.00368)	(0.00376)	(0.00374)	(0.00382)	(0.00373)	(0.00375)
Founded during COVID-19 period	0.566***	0.529***	0.568***	0.470**	0.547***	0.567***	0.560***	0.566***	0.576***
	(0.183)	(0.183)	(0.183)	(0.183)	(0.185)	(0.183)	(0.182)	(0.183)	(0.173)
Elite College Indicator	-0.00508	0.00320	-0.00425	-0.00840	-0.00457	0.000526	-0.00648	-0.0126	-0.00476
	(0.0682)	(0.0666)	(0.0682)	(0.0679)	(0.0675)	(0.0683)	(0.0683)	(0.0684)	(0.0685)
Ex-founder Indicator	-0.102	-0.0946	-0.0990	-0.147	-0.0938	-0.102	-0.104	-0.0879	-0.0887
	(0.137)	(0.129)	(0.137)	(0.137)	(0.137)	(0.138)	(0.139)	(0.138)	(0.137)
Elite* Ex-founder Interaction	0.208	0.163	0.206	0.254	0.194	0.218	0.199	0.203	0.194
	(0.197)	(0.192)	(0.197)	(0.192)	(0.197)	(0.199)	(0.200)	(0.198)	(0.199)
Artificial Intelligence Industry Applications (AIIA) Sector Indicator		-0.761***							
		(0.291)							
AIIA_2020 Interaction Indicator		-0.139							
		(0.485)							
AIIA_2021 Interaction Indicator		0.802**							
		(0.313)							
AIIA_2022		1.060***							
		(0.356)							
Gaming Sector Indicator			0.755**						
			(0.365)						
Gaming_2021 Interaction Indicator			-0.882**						
			(0.381)						
Gaming_2022 Interaction Indicator			-0.00516						
			(0.376)						
FinTech Sector Indicator				-0.483***					
				(0.151)					
Fintech_2020 Interaction Indicator				0.549**					
				(0.218)					
Fintech_2021 Interaction Indicator				0.718***					
				(0.179)					

Table 5: Summarised Cross-sectional Regression Outputs – Log of Cumulative Funding *(Concld.)*

Independent Variables	Baseline	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Fintech_2022 Interaction Indicator				0.788***					
				(0.186)					
Ecommerce Sector Indicator					-0.161				
					(0.174)				
Ecom_2020 Interaction Indicator					-0.663				
					(0.461)				
Ecom_2021 Interaction Indicator					0.288				
					(0.208)				
Ecom_2022 Interaction Indicator					0.315				
					(0.249)				
Health Care Sector Indicator						-0.103			
						(0.184)			
Healthcare_2020 Interaction Indicator						0.0960			
						(0.233)			
Healthcare_2021 Interaction Indicator						0.136			
						(0.221)			
Healthcare_2022 Interaction Indicator						0.556**			
						(0.219)			
EdTech Se							-0.679***		
							(0.198)		
EdTech_2020 Interaction Indicator							0.931**		
							(0.363)		
EdTech_2021 Interaction Indicator							0.806***		
							(0.254)		
EdTech _2022 Interaction Indicator							0.438		
							(0.279)		
B2B_2020 Interaction Indicator								-0.000296	
								(0.000238)	
B2B_2021 Interaction Indicator								0.964*	
								(0.578)	
B2B_2022 Interaction Indicator								0.864	
								(0.528)	
Constant	-1.300***	-1.242***	-1.309***	-1.318***	-1.285***	-1.304***	-1.303***	-1.303***	-1.297***
	(0.127)	(0.128)	(0.128)	(0.124)	(0.127)	(0.130)	(0.127)	(0.127)	(0.127)
Observations	914	914	914	914	914	914	914	914	914
R-squared	0.811	0.816	0.811	0.815	0.813	0.811	0.812	0.812	0.811

*Open Market Operations in India – An Appraisal**

*by Abhilasha#, Bhimappa Arjun Talwar^, Krishna Mohan Kushwaha^ and Indranil Bhattacharyya^*

Open market operation (OMO) is a major liquidity management instrument of central banks in a modern market-based monetary policy framework. In India, OMOs have gained prominence in the toolkit of the Reserve Bank of India (RBI) over the last decade. In this context, this article provides an overview of the conduct of OMOs and its implications for the RBI's balance sheet. An empirical assessment demonstrates the significant impact of key domestic and global factors on 10-year G-sec yields.

Introduction

Open market operation (OMO) is the process by which the central bank purchases (sells) government securities (G-secs) or other financial assets from (to) banks and financial institutions. In a modern market-based financial system, central banks use OMOs as one of the tools for implementing monetary policy. Generally, OMOs are conducted to adjust the supply of primary liquidity (base money) in an economy, thus influencing total money stock. The advantage of OMOs is that they can be flexibly used by the central bank and are easily reversible, thus considerably reducing the lags of monetary policy (Mishkin, 1997). Moreover, OMOs fit seamlessly into all monetary policy frameworks spanning inflation targeting, monetary targeting, currency boards, and exchange rate targeting.

The author is from Department of Economic and Policy Research.

^ The authors are from Monetary Policy Department.

* The authors are grateful to anonymous referees for comments and suggestions, to Muneesh Kapur and Joice John for technical guidance and comments, to GV Nadhanael for valuable suggestions and to Priyanka Sachdeva for data support. The views expressed in this article are those of the authors and do not represent the views of the Reserve Bank of India.

While OMOs figured prominently in the arsenal of central banks in advanced economies (AEs) for nearly a century (Vlieghe, 2020), they have gradually gained importance in emerging market economies (EMEs) with the development of markets and the proliferation of instruments. With several countries undertaking large scale asset purchases – mainly of government bonds – in the aftermath of the global financial crisis (GFC) and the COVID-19 pandemic, OMOs are at the center stage of policy making. The remark by a US Federal Open Market Committee (FOMC) member underscores this recognition – "we are running more open market operations, for greater sums, than at any time in our history" (Williams, 2020).

Central bank purchases of G-secs through OMOs augment systemic liquidity by increasing the reserves of commercial banks thereby enabling the latter to expand their loan and investment portfolios. This can, *inter alia*, increase the price of G-secs with concomitant reduction in their yields; and facilitate reduction in the interest rates of financial instruments that are priced off the risk-free rate, *i.e.*, G-sec yield, thereby stimulating economic activity. The impact is opposite in the case of sale of G-secs by the central bank. Thus, OMOs provide greater flexibility to central banks in conducting monetary policy through the market mechanism – the discretion to determine the timing and volume of monetary operations – rather than resorting to direct controls to regulate systemic liquidity (Axilrod, 1997). More recently, the Bank of England undertook temporary purchase of long-dated government bonds worth £19.3 billion for a limited period on financial stability considerations. In EMEs such as India, OMOs also serve the additional purpose of sterilising the monetary impact of large capital inflows arising out of global policy spillovers (Raj *et al.*, 2018).

In the Indian context, OMOs emerged as a key instrument with the progressive liberalisation of

the economy and reforms in the G-sec market *viz.*, the introduction of auctions and the shift towards market-based pricing of G-secs. In this regard, OMOs – both outright and reversible transactions – were conducted frequently, particularly with the introduction of the liquidity adjustment facility (LAF) in June 2000. Against the backdrop of India's increasing integration with global financial markets, OMOs gained additional prominence in sterilising the liquidity impact of large capital inflows, which surged on account of search for yields and policy spillovers from AE central banks. Moreover, OMOs were also used to calibrate systemic liquidity[1] in sync with the monetary policy stance and were used extensively to inject durable liquidity[2] when systemic liquidity was in deficit. Thus, OMOs gradually supplanted the cash reserve ratio (CRR) as a flexible tool for management of durable liquidity. Furthermore, OMOs can assuage market sentiments and facilitate the orderly evolution of the yield curve, which is deemed as a public good (RBI, 2020). This objective was, for example, met through the (i) introduction in December 2019 of special OMOs – the simultaneous purchase and sale of G-secs – commonly referred as operation twist (OT); and (ii) the announcement of the secondary market government securities acquisition programme (G-SAP) in April 2021.

In India, the spotlight has been on OMOs since the beginning of the last decade and especially after the introduction of flexible inflation targeting (FIT). OMOs emerged as a major tool of liquidity management even prior to the pandemic; for example in 2018-19, the RBI resorted to large scale OMO purchases to inject liquidity. Given the versatility of its use in recent years in a market-based monetary policy framework and especially after the outbreak of COVID-19, this article examines the key drivers, both global and domestic (including the conduct of OMO auctions), that have a bearing on 10-year G-sec yields. Specifically, this article focuses on outright OMOs which have a durable liquidity impact rather than the reversible transactions which are undertaken mainly to address transient liquidity variations. In this backdrop, the remaining part of the article is structured in the following manner. Section II presents a stylised view of OMOs and its variants while Section III provides an overview of the conduct of OMOs in India and its implications for the Reserve Bank of India (RBI)'s balance sheet. An empirical scrutiny of the various drivers of 10-year G-sec yields in India is taken up in Section IV while Section V concludes.

II. Open Market Operation and its Variants

As mentioned earlier, OMOs entail purchase (sale) of securities leading to injection (absorption) of liquidity to (from) the banking system. OMO is an umbrella term for various kinds of central bank operations – repo or reverse repo operations; outright purchase/sale of G-secs issued by the government or the central bank's own bills; and forex operations/ swaps – which impact the supply of reserves in the system. Most central banks classify repurchase operations, which are transient in nature, also as OMOs. In India, however, outright purchase or sale of G-secs resulting in injection/absorption of durable liquidity are classified as OMOs while temporary liquidity movements are managed through repurchase transactions conducted under the LAF.

Central banks generally adjust the supply of money through OMOs to steer short-term interest rates which, in turn, influence longer-term rates and overall economic activity. Following the GFC, central

[1] Systemic liquidity is defined as the daily average liquidity under the LAF, *i.e.*, the net sum of repo, reverse repo, marginal standing facility (MSF) and standing deposit facility (SDF) operations. If the outstanding amount under the repo and the MSF exceeds the outstanding amount under the reverse repo and the SDF, there is net injection of liquidity by the RBI as systemic liquidity is in deficit. Net absorption by the RBI implies systemic liquidity surplus.

[2] Durable or structural liquidity has an enduring impact. Examples of discretionary policy induced durable liquidity injection are purchases of securities – domestic and foreign – by the central bank as also reduction in the prescribed CRR. In terms of autonomous drivers of liquidity, forex operations by the RBI and currency movements also impact durable liquidity.

banks in AEs eased monetary policy by reducing interest rates until short-term rates reached the effective lower bound (ELB) – close to zero – which constrained further rate reductions thereby limiting conventional monetary policy options. To circumvent the ELB problem, unconventional monetary policies (UMPs) were deployed on a large scale, including purchase of long-term bonds to further reduce long-term rates and ease monetary conditions.

Central banks had undertaken large scale OMO purchases after the GFC and especially in response to COVID-19, to both inject liquidity and lower long-term yields, given the ELB constraint. Specifically, OMOs reduce yield through the supply channel – an OMO announcement can immediately moderate the risk premium in anticipation of reduced net supply of government bonds in the market (Arora *et al.*, 2021). While a quantity target of OMO purchases (or other risky assets) is coined as quantitative easing (QE), a price target is known as yield curve control (YCC). Under QE, large scale purchases reduce yields thereby lowering longer-term rates and easing financial conditions. In case of YCC, the target price becomes the market price once the bond markets internalise the central bank's commitment to buying any amount (BIS, 2019); *i.e.*, the central bank continues to purchase bonds till bond prices stabilise at the target price. Therefore, both QE and YCC can potentially lead to unbridled expansion in the central bank's balance sheet

While the US Federal Reserve (Fed) undertook large scale QE after the GFC, the Bank of Japan (BoJ) adopted YCC[3] in 2016 to peg yields on 10-year Japanese government bonds (JGBs) around zero to combat persistent deflation risks[4]. This has been categorised as quantitative and qualitative monetary easing – a policy by which the BoJ signals its strong commitment to price stability while purchasing massive amounts of JGBs, including bonds with longer residual maturities to actively influence expectation formation of private entities (Kuroda, 2016).

OT is a variant of QE used by the Fed in 1961 and more recently in 2012. The "twist" in the operation occurs when the central bank uses sale proceeds of short-term treasury bills to buy long-term treasury notes, which lowers longer-term interest rates thereby reducing the term premium (Bernanke, 2020). OTs, thus, are usually liquidity neutral – purchases in select maturity segments are nullified through sales of other maturities of an identical amount. While OMO purchases lower the level of yields across the term structure, OTs alter the slope of the yield curve through targeted intervention at specific maturities (Patra and Bhattacharyya, 2022). Even as OMOs are integral to the toolkit of central banks globally, there are key differences in modalities (Annex Table 1).

III. Open Market Operations – The Indian Experience

The RBI has been conducting OMOs since its inception in 1935, but those operations were mainly undertaken in pound sterling. The RBI Annual Report of 1948 mentioned OMO purchase of G-secs for the first time; thereafter, a few years later, sharp movements in money supply were attributed to OMO purchases of G-secs. By the 1980s, the efficacy of OMOs, however, as a monetary policy instrument was blunted (Das, 2020), due to (i) an underdeveloped G-secs market; (ii) a system of administered rates; (iii) a captive investor base (banks) for G-secs ensured through periodic hikes in the statutory liquidity ratio (SLR); and (iv) deficit financing induced surplus liquidity conditions which reduced banks' reliance on central bank funding.

Post the initiation of economic reforms, the government borrowing programme was conducted through auctions for the first time in 1992. Moreover,

[3] The Reserve Bank of Australia undertook YCC for a limited period during the pandemic – from March 19, 2020 to November 1, 2021.

[4] On December 20, 2022, the BoJ widened the band around the target to +/- 0.5 percentage point.

the automatic monetisation of fiscal deficit came to an end in 1997 as the RBI terminated the practice of issuing *ad hoc* Treasury bills (T-bills). The SLR was also reduced to the then prevailing floor of 25 per cent of net demand and time liabilities (NDTL) in October 1997 and, thereafter, continued to be reduced gradually. From the second half of the 1990s to 2003-04, the RBI took frequent recourse to OMO sales to modulate the liquidity impact of capital inflows. Consequent to the enactment of the Fiscal Responsibility and Budget Management (FRBM) Act, 2003, RBI's withdrawal from the primary market for G-secs in 2006 also facilitated the emergence of OMOs as a key tool for monetary management[5].

When the GFC flared up in 2008, the RBI, *inter alia*, undertook large scale OMO purchases to offset capital outflows triggered by financial market panic and "flight to safety". The RBI issued an indicative calendar for OMOs in 2009-10 to address the liquidity requirements of the economy. During the last decade, RBI conducted two-way OMOs extensively to inject (absorb) durable liquidity (Table 1).

In April 2016, the liquidity management framework was revised in a move to progressively lower the average ex ante liquidity deficit to a position closer to neutrality[6]. The RBI assured the market of meeting durable liquidity requirements; accordingly, liquidity injections through OMO purchases more than offset the liquidity drainage due to currency leakage and FCNR(B) redemptions during 2016-17. With the introduction of FIT in the same year, OMOs – more purchases than sales – remained a key instrument for liquidity management. After demonetisation, cash management bills (CMBs) were issued under the market stabilisation scheme (MSS) for a limited period to absorb surplus liquidity. Anticipating that the liquidity hangover from demonetisation may persist through 2017-18, the RBI provided liquidity guidance in April 2017 with a view to moderating systemic liquidity towards neutrality, which included *inter alia* the conduct of OMOs to manage durable liquidity. OMO purchases amounted to ₹2.99 lakh crore during 2018-19 – to infuse durable liquidity and manage the enduring liquidity impact of forex interventions.

Table 1: Open Market Operations

(₹ crore)

	Auction			NDS-OM			Total		
	Purchase	Sale	Net Purchase	Purchase	Sale	Net Purchase	Purchase	Sale	Net Purchase
2013-14	54,535	2,532	52,003	44	45	-1	54,579	2,577	52,002
2014-15	0	29,268	-29,268	10	34,160	-34,150	10	63,428	-63,418
2015-16	71,409	8,270	63,139	16,715	27,530	-10,815	88,124	35,800	52,324
2016-17	1,10,014	0	1,10,014	500	20	480	1,10,514	20	1,10,494
2017-18	0	90,000	-90,000	1,235	10	1,225	1,235	90,010	-88,775
2018-19	2,98,502	0	2,98,502	780	50	730	2,99,282	50	2,99,232
2019-20*	1,32,500	28,276	1,04,224	13,190	3,845	9,345	1,45,690	32,121	1,13,569
2020-21*	3,02,132	1,90,545	1,11,587	2,05,588	3,880	2,01,708	5,07,720	1,94,425	3,13,295
2021-22**	2,30,000	40,000	1,90,000	48,061	24,085	23,976	2,78,061	64,085	2,13,976

*: Includes OT.
**: Includes OT and purchases under G-SAP.
Source: RBI.

[5] The Mid-term Review of Annual Policy for 2004-05 mentioned that when RBI withdraws from participating in auction of primary issuances of G-secs, OMOs would become a more active instrument, warranting a review of processes and technological infrastructure consistent with market advancements.

[6] Neutrality is defined as systemic liquidity not being in deficit or surplus consistently, *i.e.*, the LAF oscillates between net injection and net absorption of liquidity.

Besides injecting liquidity through OMOs amounting to ₹1.13 lakh crore during 2019-20, the RBI announced special OMOs – involving the simultaneous purchase of long-term and sale of short-term securities – or "operation twist" in December 2019[7], predating the COVID-19 outbreak in India. These operations aimed at compressing the term premia thereby reducing the slope (steepness) of the yield curve and distributing liquidity more evenly across the term structure[8]. Moderation in the long-term G-sec rates, in turn, got reflected in other financial market instruments that are priced off the G-sec rate, thereby improving monetary transmission. Up to August 2022, the RBI conducted 26 such operations which were generally liquidity neutral, *i.e.*, purchases offset through sales of identical amount[9] (Annex Table 2).

In the wake of the pandemic, the RBI unveiled a slew of conventional and unconventional measures to stimulate market activity, ease funding cost and improve monetary transmission. OMOs figured prominently in this strategy with an unprecedented net purchase of ₹3.13 lakh crore during 2020-21. As a special case, three OMOs in State Development Loans (SDLs) were conducted during the year to improve their liquidity and facilitate efficient pricing.

With a view to improving monetary policy transmission and enabling a stable and orderly evolution of the yield curve, the RBI implemented G-SAP during April-September 2021. Under the G-SAP, an upfront commitment was provided on the size of G-sec purchases. As in regular OMOs, G-SAP was confined to the purchase of G-secs from the secondary market. During Q1, three auctions were conducted under G-SAP 1.0 with purchases – including SDLs – amounting to ₹1.0 lakh crore. Under G-SAP 2.0, six auctions were conducted in Q2 aggregating to ₹1.2 lakh crore, of which the last two auctions were liquidity neutral (Table 2). Overall, net OMO purchases (net of sales) injected liquidity of ₹2.1 lakh crore during 2021-22, including ₹1.9 lakh crore through G-SAP. Under the G-SAP, both on the run (liquid) and off the

Table 2: Purchases under the G-SAP

(Amount in ₹ crore)

	Announcement Date	Auction Date	Settlement Date	Amount Notified	Amount of Bids Received	Amount Accepted	Bid-Cover Ratio
G-SAP 1.0	08-04-2021	15-04-2021	16-04-2021	25,000	1,01,671	25,000	4.1
G-SAP 1.0	05-05-2021	20-05-2021	21-05-2021	35,000	1,21,696	35,000	3.5
G-SAP 1.0	04-06-2021	17-06-2021	18-06-2021	40,000	1,36,829	40,000	3.4
G-SAP 2.0	05-07-2021	08-07-2021	09-07-2021	20,000	80,835	20,000	4.0
G-SAP 2.0	15-07-2021	22-07-2021	23-07-2021	20,000	49,803	20,000	2.5
G-SAP 2.0	06-08-2021	12-08-2021	13-08-2021	25,000	1,02,289	25,000	4.1
G-SAP 2.0	18-08-2021	26-08-2021	27-08-2021	25,000	72,822	25,000	2.9
G-SAP 2.0#	20-09-2021	23-09-2021	24-09-2021	15,000	78,841	15,000	5.3
G-SAP 2.0#	23-09-2021	30-09-2021	01-10-2021	15,000	77,560	15,000	5.2
Total				**2,20,000**	**8,22,346**	**2,20,000**	**3.7**

#: These auctions were liquidity neutral as they were accompanied by a simultaneous sale of G-secs worth an equal amount.
Source: RBI.

[7] The RBI had undertaken such operations earlier. For instance, during the taper tantrum of 2013, a variant of OT was conducted whereby outright purchase of longer-dated G-secs was accompanied by simultaneous sale of short-term CMBs.

[8] The RBI has been trying to address this for some time. ".. not all parts of the rupee yield curve are liquid, even in the domestic G-Sec market. At the very short end, we are trying to bring more liquidity and better pricing through the auctioning of term repos. At the longer end, we have been trying to focus on more illiquid securities in our open market operations so that the term curve evens out" (Rajan, 2016).

[9] The announcement impact of OTs reduced the G-sec term spread cumulatively by 29 bps (Talwar *et al*, 2021).

run (illiquid) securities were purchased across the maturity spectrum. About two-thirds of the purchases were made in the mid-segment of the yield curve, thereby imparting liquidity to these maturities.

III a. *Impact of OMOs on RBI's Balance Sheet*

All OMOs have a bearing on the balance sheet of the central bank, altering either its size or composition. The following discussion illustrates how these operations impact the balance sheet of the RBI and hence base (reserve) money.

Collateralised Operations – LAF Transactions, Fine-tuning Operations, Long Term Repo Operations (LTROs)

The liquidity injection operations of the RBI against the collateral of G-secs leads to an expansion in its balance sheet and reserve money. These operations qualify as loans to banks and the corresponding liability (first step) is the increase in banks' deposits with the RBI[10]. On the other hand, standing deposit facility (SDF) and collateral-based liquidity absorption measures[11] are treated as deposit of funds and only entail a transfer from banks' deposits to accounts earmarked for absorption operations. Therefore, the size of the balance sheet remains unchanged as the adjustment is within liabilities in the balance sheet. By its very design, liquidity injection by the RBI creates reserve money and absorption extinguishes it.

A stylised representation of the RBI balance sheet is presented in Table 3. For simplicity, non-monetary assets and liabilities are assumed to be zero. With this assumption, reserve money is equal to the balance sheet size at time 't'. Accounting from the components side, reserve money is the sum of currency in circulation and banks' deposits while it is the sum of net RBI credit to Government[12], net RBI credit to banks (loans to banks) and RBI's foreign currency assets (FCA) on the sources side.

Table 3: Stylised RBI Balance Sheet (₹) at Time 't'

Liabilities		Assets	
Currency in Circulation	90	Government Securities	50
		of which	
		Short-term Securities	25
		Long-term Securities	25
Banks' Deposits	10	Loans to Banks	0
Deposits – Others	0	FCA	50
Total Liabilities	**100**	**Total Assets**	**100**
Memo: Reserve Money = ₹100			

When the RBI undertakes a collateralised lending operation, the loans to banks will increase by the amount injected through repo, variable rate repo or the long term repo operation, while the money would be credited into the deposit accounts of the participating banks with the RBI. Table 4 shows the impact[13] of an injection worth ₹100. The RBI balance sheet as also reserve money expands by ₹100 to ₹200.

If banks were to deposit half of this liquidity through the SDF or the variable rate reverse repo

Table 4: Stylised RBI Balance Sheet (₹) at Time 't+1' – Liquidity Injection of ₹100

Liabilities		Assets	
Currency in Circulation	90	Government Securities	50
		of which	
		Short-term Securities	25
		Long-term Securities	25
Banks' Deposits	110	Loans to Banks	100
Deposits – Others	0	FCA	50
Total Liabilities	**200**	**Total Assets**	**200**
Memo: Reserve Money = ₹200			

[10] Earlier, these liquidity operations had an impact on the size of the RBI's portfolio of G-secs. In the case of a repo or marginal standing facility transaction, the balance sheet expanded as the collateral was considered an acquisition of G-secs and *vice versa* for absorption operations done through reverse repo.

[11] Variable rate reverse repo operations are collateralised, while the SDF is not.

[12] In this simplified case, it is only the RBI's holdings of G-secs.

[13] The items impacted are shaded in grey for greater clarity and readability.

Table 5: Stylised RBI Balance Sheet (₹) at Time 't+2' – Liquidity Absorption of ₹ 50

Liabilities		Assets	
Currency in Circulation	90	Government Securities	50
		of which	
		Short-term Securities	25
		Long-term Securities	25
Bank Deposits	60	Loans to Banks	100
Deposits – Others (Standing Deposit Facility/Reverse Repo deposits)[14]	50	FCA	50
Total Liabilities	**200**	**Total Assets**	**200**
Memo: Reserve Money = ₹150			

Table 6: Stylised RBI Balance Sheet (₹) at Time 't+3' – OT of ₹20

Liabilities		Assets	
Currency in Circulation	90	Government Securities	50
		of which	
		Short-term Securities	5
		Long-term Securities	45
Bank Deposits	60	Loans to Banks	100
Deposits – Others (Standing Deposit Facility/Reverse Repo deposits)	50	FCA	50
Total Liabilities	**200**	**Total Assets**	**200**
Memo: Reserve Money = ₹150			

(VRRR) with the RBI, the change is depicted in Table 5. In this case, the balance sheet size remains unchanged as there is an adjustment within the liabilities. The reserve money, however, shrinks by ₹50. On the components side, the sum of currency and banks' deposits with the RBI is ₹150. From its sources, reserve money is the sum of net RBI credit to Government, net credit to banks and foreign currency assets, adjusted for the net non-monetary liabilities, which is ₹50, *i.e.*, the deposits earmarked for absorption.

Open Market Operations – Purchase/Sale (Outright/ NDS-OM) and OT

Open market purchase of G-secs by the RBI – outright, anonymous or through G-SAP – enlarge the balance sheet and augment reserve money by increasing the total portfolio of G-secs owned by the central bank. On the contrary, sale leads to reduction in both the balance sheet size and reserve money. OT, on the other hand, only alters the maturity profile of the portfolio of G-secs as the operations entail selling short-term securities while buying longer-term ones (or *vice versa*). To the extent that a sale does not fully offset the quantum of purchase, there will be a net increase in reserve money and expansion of balance sheet. Suppose the RBI announces an OT entailing a purchase of long-term securities worth ₹20 and sale of short-term securities for an equal amount. RBI's balance sheet after the operation is presented in Table 6. The balance sheet size remains unchanged at ₹200, so does reserve money at ₹150.

An OMO purchase of long-term securities worth ₹20 will expand the balance sheet by the same amount, as presented in Table 7. The reserve money will also increase to ₹170. Instead, if the RBI was to conduct an OMO sale of similar amount, the balance sheet would shrink to ₹180 while reserve money would reduce to ₹130.

Table 7: Stylised RBI Balance Sheet (₹) at Time 't+4' – OMO Purchase of ₹20

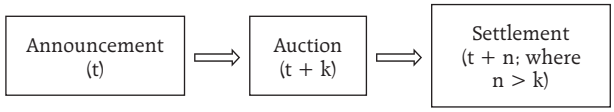
Liabilities		Assets	
Currency in Circulation	90	Government Securities	70
		of which	
		Short-term Securities	5
		Long-term Securities	65
Bank Deposits	80	Loans to Banks	100
Deposits – Others (Standing Deposit Facility/Reverse Repo deposits)	50	FCA	50
Total Liabilities	**220**	**Total Assets**	**220**
Memo: Reserve Money = ₹170			

[14] Prior to the introduction of the SDF on April 8, 2022, there was only a Reverse Repo deposit to which absorption through both fixed rate and variable rate absorptions accrued. With the introduction of the SDF, absorption under the facility accrues to SDF deposit while those under VRRRs continue to be maintained in Reverse Repo deposits as hitherto.

IV. Empirical Analysis – Key Determinants of 10-year G-sec Yields

The conduct of OMOs is a layered process involving announcement of the auction, its actual conduct and final settlement of transactions (Figure 1). In the Indian context, while there has been considerable gap between announcements and auctions in the past, this lag has reduced significantly in the recent period. As per current practice, announcements typically predate the auctions by about 3 working days (*i.e.*, k =3) while settlement is on the next working day after the auction (*i.e.*, n = 4).

Figure 1: OMO Auction Process



OMO auctions conducted by the central bank not only impact the quantum of liquidity in the economy but also government bond yields and other financial market instruments in terms of trading volume and volatility transmission. Based on Japanese tick-by-tick data, an empirical assessment of the immediate effects of notification of OMOs by the BoJ on trading volume and price volatility for the 10-year benchmark JGBs reveals that (i) outright OMOs increase the spikes in trading volume and price volatility in contrast to temporary OMOs (repurchase agreements); and (ii) unexpected changes in purchase amounts and notification times of OMOs increase the spikes (Inoue, 1999). In the context of the US, however, little systematic difference in market impact between OMO purchase and sale operations is found suggesting that the markets are potentially confused about the purpose of OMOs (Harvey and Huang, 2002).

As the announcement effect of OMOs on G-sec yields has been examined earlier (RBI, 2021), the present exercise looks at the various domestic and global factors having an impact on the 10-year G-sec yields, based on daily data for the period January 2012 to March 2021. During this phase, 100 OMO auctions were conducted – 86 purchases and 14 sales. Therefore, the difference in closing yield of the previous trading day and the OMO auction day, controlled for other factors, captures the auction effect.

Results from paired t-tests[15] suggest negative and statistically significant softening in yields/rates, on an average, of (i) 2 basis points (bps) on announcement days: and (ii) 1 bp on auction days (Table 8). Similar tests for OMO sales announcements and auctions, however, suggest that the difference in yields is not statistically significant, hence the empirical exercise is confined to OMO purchases.

The various domestic and global factors that are controlled for assessing the impact on 10-year G-sec yields are (i) changes in the policy repo rate (ΔPR); (ii) the size of the government market borrowing programme proxied by the market borrowing to G-sec market turnover ratio (GBR_T); (iii) the liquidity impact on yields (LIQUID) represented by the net LAF position as a proportion of NDTL of the banking system; (iv) volatility expectations in the Indian market as a proxy for India-specific uncertainty (INDVIX); (v) the 10-year US government bond yield (USYIELD) representing global factors; (v) positive domestic inflation surprises (AINFL_S) – consumer price index (CPI) inflation print

Table 8: Closing and Opening Rates – Paired t-test

Variables	Window	Mean	t-stat.	*p*-value
Announcement impact				
10-year G-sec	Open (+1) - Close (0)	-0.02	-2.22	0.01
Auction impact				
10-year G-sec	Close (0) - Open (0)	-0.01	-1.85	0.03

Note: Open (0)/Close (0): Announcement/Auction day opening/closing. Open (+1): Next day opening.

[15] The paired sample t-test determines whether the mean difference between two sets of observations in a large sample is zero.

being higher than the median estimate of professional forecasters – which have an adverse impact on long term bonds and the term premia; (vi) the lagged impact of changes in yields [GSEC (–1 to –2)] to reflect persistence[16]; (vii) the announced and auction amount as proportions of ₹10,000 crore (on an average, the usual auction size) on announcement dates (ANN) and auction dates (AUCT); and (viii) dummy variables for demonetisation period (DEM), taper tantrum (TT), pandemic (PAND) and quarter-end phenomenon (QDD) when banks reduce their lending exposure in the unsecured call market.

High frequency (daily) data of G-sec yields exhibit volatility clustering[17], therefore, the generalised autoregressive conditional heteroscedasticity (GARCH) (1,1) framework (Bollerslev, 1986) is used with the mean and variance equation having the following specifications based on the variables mentioned above:

$$\Delta Gsec_t = \alpha_0 + \sum_{i=1}^{2} \beta_i * \Delta Gsec_{t-i} + \theta_1 * \Delta PR_t + \theta_2 * \Delta GBR\_T_t + \theta_3 * ANN_{t-1} + \theta_4 * AUCT_t + \theta_5 * \Delta LIQUID_{t-1} + \theta_6 * TT_t + \theta_7 * DEM_t + \theta_8 * QDD_t + \theta_9 * PAND_t + \theta_{10} * \Delta INDVIX_t + \theta_{11} * \Delta USYIELD_{t-1} + \theta_{12} * \Delta INFL\_S_t + \varepsilon_t \quad ...(1)$$

The variance equation is:

$$\sigma_t^2 = \omega_0 + \omega_1 * \varepsilon_{t-1}^2 + \phi * \sigma_{t-1}^2 \quad ...(2)$$

where, σ_t^2 =conditional volatility of $\Delta Gsec_t$;

ε_{t-1}^2=previous period squared residual (ARCH term).

σ_{t-1}^2 = previous period volatility (GARCH term).

The diagnostics of the estimated model suggest that the volatility process is stable, and all coefficients are strongly significant with the expected sign; therefore, the model can be used for interpreting the estimated coefficients (Table 9). Change in the policy repo rate is found to have a direct impact on yields – an increase in the repo rate by 100 bps raises 10-year G-sec yield by 6 bps. As expected, higher market borrowing raises yields while increased liquidity has a sobering impact. While greater uncertainty and positive CPI inflation surprises raise yields, global disturbances like increasing US yields have a much stronger hardening impact suggesting the spillover effects of global factors on domestic financial markets. Controlling for the announcement effect, the impact of auction of about ₹10,000 crore is muted on yields. Finally, while yields hardened during the taper tantrum and during the quarter-ends, they softened significantly during the demonetisation and the pandemic period due to the ensuing liquidity glut. Overall, the findings suggest that 10-year yields are strongly influenced by global factors; in contrast,

Table 9: Key Determinants of 10-year G-sec Yields

Variable	Coefficients
Constant	-0.001
∑ Δ GSEC (–1 to –2)	-0.089***
ΔPR	0.059***
GBR_T	0.011***
ANN(-1)	-0.006***
AUCT	-0.009***
∑ OMO *(Ann + Auc)*	**-0.015*** **
ΔLIQUID(-1)	-0.010***
TT	0.084***
DEM	-0.016***
QDD	0.022***
PAND	-0.011***
ΔINDVIX	0.002***
ΔUSYIELD (-1)	0.110***
ΔINFL_S	0.010***
Variance Equation	
RESID(-1) ^ 2	0.148***
GARCH(-1)	0.598***
Diagnostics	
ARCH–LM test (*p*-value)	0.1657

Note: *, **, *** denote significance at 10, 5 and 1 per cent level, respectively.
Source: RBI staff estimates.

[16] Lag selection based on statistical significance.

[17] Large changes tend to be followed by large changes, of either sign; and small changes tend to be followed by small changes (Mandelbrot, 1963).

domestic factors have a more pronounced effect at the short-end as seen in the recent policy tightening phase. The above exercise is based on OMO auctions and not its variants such as OTs and G-SAP as separate analysis on those have been discussed earlier (RBI, 2021; RBI, 2022).

V. Conclusion

The efficacy of OMOs in a market-based policy framework is well established in the literature as also in cross-country experiences on the operating procedure of monetary policy. It has gained importance in the Reserve Bank's repertoire of liquidity management tools, particularly after the adoption of FIT. By reducing the policy lags, OMOs provide the wherewithal to the central bank in adopting a more nimble-footed approach while proactively managing liquidity conditions in consonance with the prevailing monetary policy stance. Besides altering liquidity conditions, OMOs also help in calibrating market expectations in sync with the monetary policy stance. The empirical exercise carried out in this article suggests that long-term (10 year) G-sec yields are significantly affected by global factors such as US financial market developments – much more than domestic factors like inflation surprises. In the present phase of policy tightening, the relatively synchronous movement of US long-term yields and domestic yields of similar maturities underscores this phenomenon.

References:

Arora, R, S Gungor, J Nesrallah, G O Leblanc and J Witmer (2021): "The Impact of the Bank of Canada's Government Bond Purchase Program," Bank of Canada, *Staff Analytical Note* 2021–23.

Axilrod, S H (1997): "Introducing Open Market Operations, Reforms in Markets, and Policy Instruments" in T J T Balino and L M Zamalloa (eds), Instruments of Monetary Management – Issues and Country Experiences, International Monetary Fund, Washington DC.

Bank for International Settlements (2019): "Unconventional Monetary Policy Tools: A Cross-country Analysis," Bank for International Settlements, *CGFS Papers* No 63, October.

Bernanke, B S (2020): "The New Tools of Monetary Policy," American Economic Association Presidential Address, January 4.

Bollerslev, T. (1986): "Generalized autoregressive conditional heteroskedasticity," *Journal of Econometrics* 31, no. 3: 307–27.

Das, S. (2020): "Seven Ages of India's Monetary Policy", Speech delivered at St. Stephen's College, University of Delhi, January 24

Harvey, C.R., and R.D. Huang (2002): "The Impact of the Federal Reserve's Open Market Operations", *Journal of Financial Markets* 5, pp 223-257.

Inoue, H. :(1999). "The Effects of Open Market Operations on the Price Discovery Process in the Japanese Government Securities Market: An Empirical Study," CGFS Papers chapters, in: Bank for International Settlements (ed.), Market Liquidity: Research Findings and Selected Policy Implications, Volume 11, pages 1-21, Bank for International Settlements.

Kuroda, H. (2016): The Practice and Theory of Unconventional Monetary Policy, in J. E. Stiglitz and M. Guzman (eds.), Contemporary Issues in Macroeconomics, Palgrave Macmillan

Mandelbrot, B. (1963): 'The Variation of Certain Speculative Prices', *Journal of Business*, 36(4), pp 394-419.

Mishkin, F S (1997): The Economics of Money, Banking and Financial Markets, Fifth edition, Addison-Wesley, Massachusetts, Boston.

Patra, M. D., and I. Bhattacharyya (2022): Priming Monetary Policy For the Pandemic, *Economic & Political Weekly*, Money Banking & Finance, Vol LVII No 20, pp 41-48, May 14.

Raj, J., Pattanaik, S., I. Bhattacharyya and Abhilasha (2018), "Forex Market Operations and Liquidity Management", *RBI Bulletin*, August, pp 13-22.

Rajan, R. G., (2016): Strengthening our Debt Markets, Annual Day Address to Foreign Exchange Dealers Association of India, Mumbai, August 26.

Reserve Bank of India (2020): Governor's Statement, October 9.

Reserve Bank of India (2021): Monetary Policy Report, April 7.

Reserve Bank of India (2022): Monetary Policy Report, April 8.

Talwar, B A, K M Kushawaha and I Bhattacharyya (2021): "Unconventional Monetary Policy in Times of COVID-19," *RBI Bulletin*, March, pp 41-56.

Vlieghe, G. (2020): Monetary policy and the Bank of England's balance sheet - Speech in an online webinar, April 23.

Williams, J. C. (2020): A Time for Bold Action, Remarks at Economic Club of New York (delivered via videoconference), April 16.

ANNEX

Table 1: Open Market Operations – Select Country Practices *(Contd.)*

Sr. No.	Name of the Central Bank	Repurchase OMOs	Forex Swaps	Central Bank Bills	Outright OMOs
1	Reserve Bank of Australia	Every Wednesday morning, may do additional rounds on other business days and additional afternoon/evening rounds; these can be repo or outright	Short period swaps of usually not more than 3 months frequently conducted; Long-term swaps of up to 5 years also conducted		Occasionally for government/ semi-government securities of residual maturity >18 months (had conducted QE and YCC in response to the pandemic)
2	Bank of Canada	Overnight and term repos	Yes		Had conducted QE in response to the pandemic
3	European Central Bank	Mostly one-week and 3-month tenor	May be conducted as fine-tuning operations		Asset Purchase Programme launched in October 2014 and ended on July 1, 2022 (PEPP also conducted in response to the pandemic)
4	Bank of Japan	Purchases for one year, sales for 6 months	Loans in foreign currency against pooled collateral for maximum duration of three months	The date of maturity of the bills must be within three months from the day following the sale date	Outright transactions in government securities, commercial paper, corporate bond, ETFs and J-REITs
5	Bank of Korea	Mostly 7-day tenor		Monetary Stabilization Bonds have relatively long maturities	Conducted limitedly in government/ government-guaranteed bonds
6	Monetary Authority of Singapore	Intra-day, 28-day, 84-day	SGD-RMB swap facility of specified tenors for specified purposes	Monetary Authority of Singapore (MAS) bills are issued for tenor of 4/12 weeks; MAS floating rate notes for 6 month/1 year/2 year	
7	Sveriges Riksbank	7-day maturity	Yes	Riksbank certificates of 1-360 days maturity	Swedish government bonds were being purchased since 2015; in response to the pandemic SEK700 billion of government/covered/ municipal/corporate bonds were purchased by December 2021

Table 1: Open Market Operations – Select Country Practices *(Concld.)*

Sr. No.	Name of the Central Bank	Repurchase OMOs	Forex Swaps	Central Bank Bills	Outright OMOs
8	Swiss National Bank (SNB)	Repo transactions of tenor one day to several months; conducted daily	No liquidity providing foreign exchange swap outstanding since end-June 2012	Issuance of SNB Bills for maximum tenor of one year (no outstanding since July 2012)	Purchase of SNB Bills in the secondary market
9	Bank of England	Indexed Long Term Repo provides liquidity for 6 months; Contingent Term Repo Facility activated on need	Yes		Asset purchases of gilts and corporate bonds completed and no-re-investment being done for maturing securities
10	Federal Reserve System	Yes	Yes		Various rounds of QE
11	South African Reserve Bank	Yes	Yes		Conducted during the pandemic
12	Bank of Russia	Yes	Fine-tuning 1-2 day forex swap auctions	Bank of Russia bonds of 3/6/12 month terms	
13	Reserve Bank of India	Yes	Yes		Yes

Source: Central banks' websites (vetted mid-July 2022).

Table 2: Operation Twist (Special OMOs)

(₹ crore)

Date			Purchases		Sales		Net Purchases (+) / Sales (-)
Announcement	Auction	Settlement	Amount notified	Amount accepted	Amount notified	Amount accepted	
19-12-2019	23-12-2019	24-12-2019	10,000	10,000	10,000	6,825	3,175
26-12-2019	30-12-2019	31-12-2019	10,000	10,000	10,000	8,501	1,499
02-01-2020	06-01-2020	07-01-2020	10,000	10,000	10,000	10,000	0
16-01-2020	23-01-2020	24-01-2020	10,000	10,000	10,000	2,950	7,050
23-04-2020	27-04-2020	28-04-2020	10,000	10,000	10,000	10,000	0
29-06-2020	02-07-2020	03-07-2020	10,000	10,000	10,000	10,000	0
25-08-2020	27-08-2020	28-08-2020	10,000	10,000	10,000	10,000	0
31-08-2020	03-09-2020	04-09-2020	10,000	7,132	10,000	10,000	-2,868
07-09-2020	10-09-2020	11-09-2020	10,000	10,000	10,000	9,900	100
14-09-2020	17-09-2020	18-09-2020	10,000	10,000	10,000	10,000	0
24-09-2020	01-10-2020	05-10-2020	10,000	10,000	10,000	10,000	0
05-11-2020	12-11-2020	13-11-2020	10,000	10,000	10,000	10,000	0
12-11-2020	19-11-2020	20-11-2020	10,000	10,000	10,000	10,000	0
19-11-2020	26-11-2020	27-11-2020	10,000	10,000	10,000	10,000	0
11-12-2020	17-12-2020	18-12-2020	10,000	10,000	10,000	10,000	0
24-12-2020	30-12-2020	31-12-2020	10,000	10,000	10,000	10,000	0
31-12-2020	07-01-2021	08-01-2021	10,000	10,000	10,000	10,000	0
07-01-2021	14-01-2021	15-01-2021	10,000	10,000	10,000	10,000	0
15-02-2021	25-02-2021	26-02-2021	10,000	10,000	10,000	10,000	0
24-02-2021	04-03-2021	05-03-2021	15,000	15,000	15,000	15,000	0
04-03-2021	10-03-2021	12-03-2021	20,000	20,000	15,000	10,895	9,105
10-03-2021	18-03-2021	19-03-2021	10,000	10,000	10,000	4,750	5,250
18-03-2021	25-03-2021	26-03-2021	10,000	10,000	10,000	10,000	0
29-04-2021	06-05-2021	07-05-2021	10,000	10,000	10,000	10,000	0
20-09-2021	23-09-2021	24-09-2021	15,000	15,000	15,000	15,000	0
23-09-2021	30-09-2021	01-10-2021	15,000	15,000	15,000	15,000	0
Total			**2,85,000**	**2,82,132**	**2,80,000**	**2,58,821**	**23,311**

Source: RBI.

Supply of Banking Services and Credit Offtake: Evidence from Aspirational District Programme in the Eastern Area

*by Rakhe P. Balachandran^ and Barkha Gupta^*

Despite being closer in economic backwardness, aspirational districts of Eastern Area display divergent levels of credit intermediation. We examine whether this trend is driven by supply of banking services or demand for banking services. By employing a system GMM framework, we find that ex-ante branch expansion plays a significant role in improving credit intermediation. Thus, the perceived low branch viability in the backward regions, due to low levels of economic activity, need not slow down the branch expansion of banks. The evidence suggests that branch expansion harnesses the hitherto untapped credit demand into the formal banking channels.

Introduction

Role of credit intermediation in economic growth is a well-established economic relationship in the literature. Hence, the expansion of financial intermediaries' network assumes importance in furthering economic development of backward regions. Accordingly, the Reserve Bank of India has been pushing the branch network of banks to the hitherto unbanked/underbanked rural centres (URCs) by liberalizing its branch authorization policy. As per the extant policy, 25 per cent of the new banking outlets has to be opened in URCs in a year. Further, banks have to take necessary approvals before closing/shifting/merging a rural banking outlet. On the other hand, the aspirational districts programme (ADP) launched in 2018 by the government of India is an innovative approach to economic development of backward districts in India. These districts are selected based on eleven indicators of economic deprivation and backwardness in health, education, and infrastructure. However, despite being closer in backwardness, credit intermediation by banks, gauged through C-D ratio, is heterogeneous across these districts, thus, hazing the relationship between credit intermediation and economic growth. Even though, there are evidences in the literature that credit intermediation leads to economic growth, the reverse causality from economic growth to credit intermediation is also acknowledged in the literature. This motivates us to examine the leading factor impacting the credit intermediation of aspirational districts.

Factors that drive C-D ratio in the eastern area aspirational districts are examined in a dynamic panel framework by employing a system GMM estimation. The endogeneity between credit intermediation and economic growth is effectively controlled for in a system GMM framework apart from taking care of the dynamic nature of variables. The endogeneity between credit intermediation and economic growth arises due to the tendency of banks to open more branches in regions that are bustling with economic activities, *i.e.*, credit demand attracts higher supply of banking services. On the other hand, higher supply of banking services will enhance the credit intermediation through financing of economic activities, *i.e.*, supply of banking services generates credit demand. The results, in this paper, suggest that the *ex-ante* expansion of branch network, significantly, improves credit intermediation in the backward regions. This substantiates the spirit and essence of the extant branch authorization policy of the Reserve Bank of India, dated May 18, 2017, in pushing the banks to open more branches in Tier 5 and Tier 6 URCs.

Followed by introduction, features of ADP are presented in Section II. Section III presents literature review and, data sources and descriptive statistics are provided in Section IV followed by an identification

^ The authors are from the Department of Economic and Policy Research, Kolkata. Authors are grateful to Shri Gunveer Singh, CGM, Kolkata for his comments.The views expressed in the article are those of the authors and do not represent the views of the Reserve Bank of India.

strategy in Section V. Section VI presents regression results and Section VII concludes.

II. The Aspirational Districts Programme

Under ADP, convergence of central and state schemes, collaboration between stakeholders of development and competition among districts are envisaged to develop backward districts.[1] The districts eligible for participation under ADP was selected through a transparent process. Eleven indicators spreading across four different domains such as deprivation, health and nutrition, education and infrastructure were used. Each indicator was assigned a weight to reflect the relative importance of the dimension captured by that indicator in the selection process. The indicators used, the dimension of the indicator, the data sources and the weights attached to the indicators are provided in Table 1. Further, States reviewed the list of districts to suggest any changes.

Table 1: The Selection Process of Aspirational Districts - Indicators

Indicator	Sector	Source	Weight
Landless households dependent on manual labour	Deprivation	(Socio-Economic Caste Census- Deprivation 7)	25%
Antenatal care	Health & Nutrition	National Family Health Survey (NFHS-4)	7.5%
Institutional delivery		(NFHS - 4)	7.5%
Stunting of children below 5 years		(NFHS - 4)	7.5%
Wasting in children below 5 years		(NFHS - 4)	7.5%
Elementary drop-out rate (Unified District Information System for Education) (U-DISE)	Education	(U-DISE 2015-16)	7.5%
Adverse pupil teacher ratio		(U-DISE 2015-16)	7.5%
Un- electrified households	Infrastructure	(Ministry of ower)	7.5%
Households without individual toilets		(Ministry of Drinking Water and Sanitation)	7.5%
Un- connected Pradhan Mantri Gram Sadak Yojana (PMGSY) village		(Ministry of Rural Development)	7.5%
Rural Household without access to water		(Ministry of Drinking Water and Sanitation)	7.5%
Total			**100%**

Source: Website, ADP.

[1] Initially, 117 districts were selected for the programme, however, West Bengal decided not to participate in the programme even though five districts were selected from West Bengal by the Central Government.

The core strategy of the ADP envisages states as the main drivers of grass root development. The programme identifies the strengths of each district and tries to transform those strengths as a catalyst for the overall development of the district through involvement of various stakeholders and by consolidating the various state and central schemes in the identified areas. The ADP requires the districts to aspire to become the State's best followed by the country's best. This element is introduced in the ADP to inculcate competition on development among the districts.

The ADP has five themes: (1) Health and Nutrition, (2) Education, (3) Agriculture and Water Resources, (4) Financial Inclusion and Skill Development, and (5) Basic Infrastructure. Each of these themes under the programme has been assigned a specific weight which roughly reflects the respective themes' importance in the overall programme framework. The highest weight (30 per cent) has been assigned to two themes, *viz.*, health and nutrition, and education, followed by agriculture and water resources (20 per cent). Next is basic infrastructure with a weight of 10 per cent. The least weight (five per cent) has been assigned to Financial Inclusion and Skill Development (Table 2). Across these five themes, 49 key performance indicators (KPIs) are identified based on 81 data points to closely monitor the progress made since the inception of the programme and has been disseminated through a dashboard.

Table 2: Themes of ADP with Weights

Theme	Weight
Health and Nutrition	30
Education	30
Agriculture and Water Resources	20
Basic Infrastructure	10
Financial Inclusion	5
Skill Development	5
Total	**100**

Source: Website, ADP.

The indicators on financial inclusion track improvement made in opening accounts under Jan Dhan Yojana, participation in Central Government programmes such as Atal Pension Yojana and Pradhan Mantri Jeevan Jyoti Bama Yojana, and disbursement of Mudra loans. Notably, C-D ratio is not a KPI of the financial inclusion theme of ADP. However, some of the KPIs monitored under the financial inclusion theme such as disbursement of mudra loans may result in higher credit flow into these districts (Table 3).

Further, some of the KPIs monitored under other themes of ADP such as "percentage increase in agricultural credit" and credit linkages with the banking system may also impact the C-D ratio of aspirational districts positively (Table 4). Moreover, overall rolling out of the ADP may also boost bank financing of various activities leading to higher credit flow into these districts through its focused attention on various areas.

Table 3: The Financial Inclusion Theme - Indicators

Theme	Indicator
Pradhan Mantri Mudra Yojana:	Total Disbursement of Mudra Loan (in rupees) per 1 Lakh population Increase number of banking service points particularly banking correspondent network. Timely disposal of loan applications Create awareness and encourage adoption and use of Mudra Debit Cards.
Pradhan Mantri Jeevan Jyoti Bima Yojana:	Number of Enrolments per 1 Lakh population Enable direct transfer of amount to the claimant / nominee bank account. Scheme to be bundled with Direct Benefits Transfer (DBT), Mudra Loan, Kisan Credit Card (KCC) & other loans.
Pradhan Mantri Suraksha Bima Yojana: Steps:	Number of Enrolments per 1 Lakh population Enable Direct transfer of amount to the claimant / nominee bank account. Scheme bundled with DBT, Mudra Loan, KCC loan & other loan.
NAPS (National Apprenticeship Promotion Scheme),	Number of Apprentices completing / Total number of trainees registered on the portal
NATS (National Apprenticeship Training Scheme)	Ensuring timely payment of stipend through DBT (Direct Benefit Transfer).

Source: Website, ADP.

Table 4: Indicators that Directly Impact C-D Ratio

Theme	Indicator
Pradhan Mantri Krishi Sinchayee Yojana	Ensure Implementation of District Irrigation Plan. Ensure Identification of potential area and finalise the list of beneficiaries for micro-irrigation. Ensure finalisation of credit linkages with banks.
Percentage increase in agricultural credit	Interest Subvention Scheme for Short-term crop loans. Ensure that NABARDs District Credit Link Plan is put in place. Ensure that meeting of district level bankers committee is regularly conducted. Ensure Integration of PACS (Primary Agricultural Credit Society) with banks. Ensure awareness campaign is conducted through print and electronic media. Conduct quarterly progress review.

Source: Website, ADP.

III. Review of Literature

The relationship between economic growth and credit intermediation is highlighted as early as in 1930s, as financial intermediaries distribute the mobilized savings among needy firms, economic growth gains momentum. Further, many of the economic growth models, such as the Solow model, focus on the capital accumulation as the main driver of economic growth. Financial intermediaries enhance the mobilization of savings from economic agents having surplus to the borrowers and can enhance the saving rate in the economy by propagating the advantages of savings such as safety and interest income. A couple of studies has also confirmed the causal role played by the financial intermediation in inducing economic growth or any source of economic growth such as saving rates and capital accumulation (Jayaratne and Strahan, 1996; Demirguc-Kunt and Maksimovic, 1998; Rajan and Zingales, 1998; Beck *et al.,* 2000; King and Levine, 1993; Levine, 1997; Beck and Levine, 2004). Further, a long run co-integrating relationship between financial

development and economic growth is also confirmed (Bist and Robert, 2018). However, there is evidence that financial development beyond a threshold does not augur well for furthering economic growth. Thus, for each country, there exists an optimum level of financial development that accelerates economic growth (Shen and Lee, 2006; Law and Nirvikar, 2014; Arcand *et al.,* 2012; Cecchetti and Kharroubi, 2012).

The eastern area[2] reports relatively lower financial development as compared to other regions of the country (RBIa, various years; RBIb, various years; Rajesh & Anwesha, 2019). The studies that highlight the challenges of financial development or credit intermediation of the eastern area are either confined to state-level analysis or primary survey-based analysis. These earlier studies bring a few broad issues and challenges to the forefront such as policies to increase income, to develop an industrial base and basic infrastructure, that needs to be taken care of for increasing the credit off-take in this region (Rajesh & Anwesha, 2019). As eastern area, comprising of both eastern and north-eastern regions, is one of the backward regions in India, a second set of studies investigated the role of microfinance in the credit intermediation or development of this region (Krishnankutty, 2011; Patikar and Haridev, 2012; Chanu and Shibu, 2014; Nath and Lijum, 2014; Deb and Santa, 2016; Das and Patnaik, 2015; Pal and Singh, 2019). These studies, in general, noted the scope of microfinance to improve credit off-take in this region.

This study deviates from the existing literature by addressing a different question; Why do aspirational districts, despite being closer in backwardness, report divergent levels of credit intermediation, gauged through C-D ratio? The study addresses this question using data on 56 aspirational districts in the eastern region as these districts are categorised as backward by the Government under its ADP. The policy suggestions of the paper would contribute to an overall improvement of credit intermediation in the eastern area. The growing literature on aspirational districts of India would also benefit from the findings of this study.

IV. Data and Descriptive Statistics

For the econometric model, data are considered for the period between 2010-11 to 2019-20. The ADP was implemented during 2017-18. Hence, for the regression, the data have been confined to roughly ten years including both pre and post ADP. The data period has been limited to 10 years to prevent the problem of proliferation of instruments that happens in a system GMM framework as the number of instruments is quadratic in the number of time periods in this framework. Data are taken up to 2019-20 to avoid aberrations caused by the Covid-19 pandemic on credit intermediation. Data on credit, deposits and branches at the district level are sourced from the Basic Statistical Returns (BSR) of the RBI. These data include only commercial banks. District level credit and deposit data, including both commercial as well as cooperative banks, are available from the State Level Banker's Committee (SLBCs) of various States. However, the state SLBCs could not provide data for the entire study period and thus the entire dataset has been sourced from BSR and pertains to commercial banks. The areas of the districts are sourced from the respective websites of the districts under study. Data on district domestic products are not available consistently for incorporation in the study. Hence, data on yield for major crop under cultivation has been taken from the Crop Production Statistics published by the Ministry of Agriculture & Farmers' Welfare to proxy credit demand at the district level.

C-D ratio across EA aspirational districts is distributed with a mean of 40 per cent and is fairly heterogeneous as is reflected through high standard deviation (Table 5). Moreover, a median of 35 per cent suggest that only a few districts lie towards the right of the mean and may have very high C-D ratios, while

[2] Eastern area, in this study, consists of West Bengal, Sikkim, Bihar, Jharkhand, Odisha, Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, and Tripura.

Table 5: District Profile

Parameters (units)	Mean	Median	Standard Deviation	Minimum	Maximum
C-D Ratio (per cent)	39.6	34.9	17.1	10.7	96.3
Credit per Account (₹/thousands)	129.1	102.8	61.9	65.9	337.7
Deposits per Account (₹/thousands)	28.9	23.1	21.1	11.3	132.5
Area per branch (sq.km)	58.9	32.4	83.8	8.4	525.0
Number of Bank Branches	112.7	100.0	90.2	4.0	472.0
Share of Agriculture Credit Accounts (per cent)	57.1	59.8	14.8	5.1	77.7
Share of main workers in Agriculture (per cent)	65.2	66.5	13.8	17.8	84.5
Yield of the major crop (Tonnes/hectare)	2.6	2.5	0.9	0.9	7.1
Area share of the major crop (ratio)	0.2	0.2	0.1	0.0	0.5

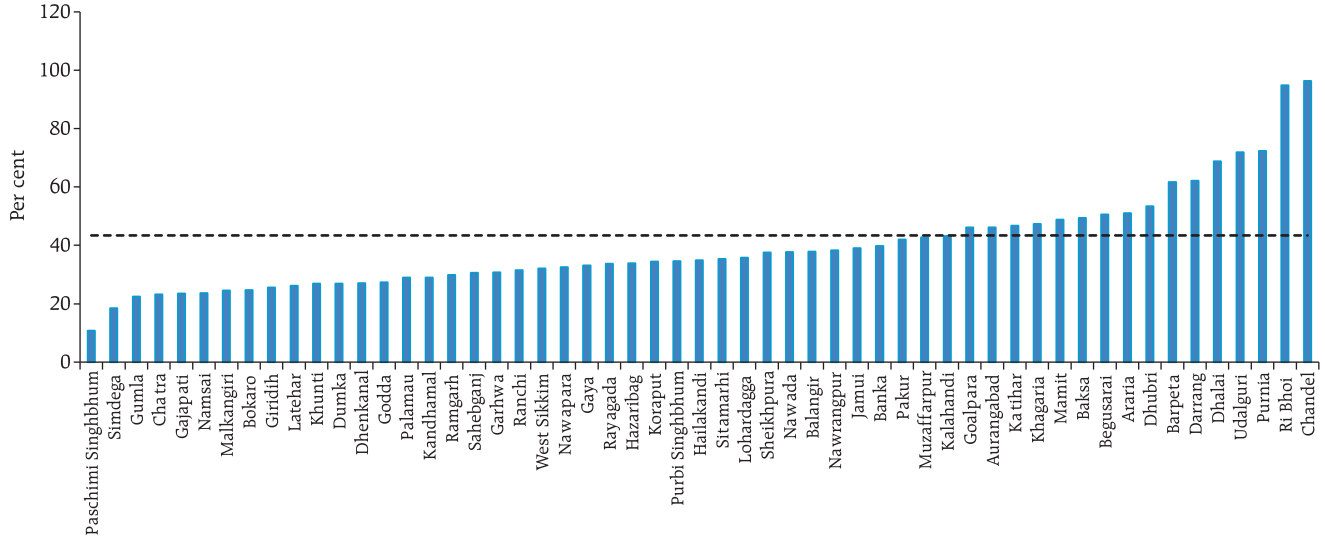
Note: To avoid the aberrations due to covid-19, the descriptive statistic is based on the data for a pre-pandemic year *i.e.*, 2019-20.
Source: RBI staff estimates.

a bunch remain low performers with their C-D ratios being to the left of the mean. A similar trend could be seen for the credit per account as well as deposit per account with former having very high standard deviation. This suggests high heterogeneity among districts in terms of credit offtake. Looking at the area per branch and bank branch statistics, the variation among districts seems even stronger, suggesting high divergence in banking services penetration across the aspirational districts of the EA region.

Agriculture dominates the economic activity of these districts as it is reflected through a mean share of more than 60 per cent of main workers in the agricultural sector. Furthermore, mean share of more than 50 per cent in loan accounts for agriculture suggests a strong dependency of households on this sector for their livelihood. The divergence in intensity of agricultural activity across these districts remain low as is suggested through negligible standard deviation in both yield as well as area share of the major crop of each district, thus suggesting a similar potential for credit demand across the aspirational districts of EA region.

Several aspirational districts (39 as per the March 2020 data) report a lower C-D ratio than the eastern area average C-D ratio of 43.4 per cent[3] (Chart 1). These districts belong to six eastern area

Chart 1: C-D Ratio of EA Aspirational Districts



Source: Quarterly Statistics on Deposits and Credit of Scheduled Commercial Banks, RBI.

[3] End-March 2020 has been selected to avoid aberrations due to COVID-19.

Table 6: State-wise Distribution of Aspirational Districts having lower C-D Ratio than the EA Average C-D Ratio

State	Districts
Jharkhand	(#19) W.Singhbhum, Simdega, Gumla, Chatra, Bokaro, Dumka, Godda, Latehar, Sahibganj, Ramgarh, Khunti, Giridih, Ranchi, Garhwa, Hazaribagh, E.Singhbhum, Lohardaga, Palamau, Pakur
Odisha	(#10) Gajapati, Malkangiri, Koraput, Raygada, Nawapara, Balangir, Dhenkanal, Kandhamal, Kalahandi, Naupada
Bihar	(#7) Sheikhpura, Gaya, Nawada, Jamui, Banka, Sitamarhi, Muzaffarpur
Assam	(#1) Hailakandi
Arunachal Pradesh	(#1) Namsai
Sikkim	(#1) West Sikkim

Note: 1. West Bengal is not officially participating in the aspirational districts programme even though five districts from West Bengal, *viz.*, Dakshin Dinajpur, Maldah, Murshidabad, Birbhum and Nadia were initially identified as eligible for participation under the programme by the central government.

2. Eastern area aspirational districts with a lower C-D ratio than the Eastern area average C-D ratio belongs to the six states reported in this table. Aspirational districts for four NER states *viz.* Manipur. Mizoram, Tripura and Meghalaya have recorded higher C-D ratio than EA average as of Mar 2020. For Kiphire, the only aspirational district in Nagaland, data is available only till 2016-17.

states, *viz.,* Jharkhand, Bihar, Odisha, Assam, Sikkim and Arunachal Pradesh. The state-wise distribution of aspirational districts shows that majority of the districts that report a lower C-D ratio than the eastern area average belongs to Jharkhand followed by Odisha (Table 6).

IV. Identification Strategy

System GMM is a suitable framework to examine this issue as it effectively controls for the endogeneity between the supply of banking services and demand for banking services with the C-D ratio in a dynamic panel framework. The system GMM estimation contains equations in levels as well as in differences to model this relationship. It uses a stacked dataset which contains transformed observations (*viz.,* variables in differences) as well as untransformed observations (variables in levels) for each district in the dataset. In the system GMM, level equations are instrumented using differenced variables and difference equations are instrumented using level variables. In mathematical form, the difference equation will take the form equation (1), where $\Delta Yit-1$ is instrumented using $Yit-2$ as shown in equation (2). The level equation in the system GMM will take the form equation (3), where $Yit-1$ is instrumented using $\Delta Yit-2$ as shown in equation (4).

$$\Delta Yit = \alpha \Delta Yit-1 + \beta \Delta Xit + \Delta \varepsilon it \quad ...(1)$$

$$\Delta Yit = \alpha Yit-2 + \beta \Delta Xit + \Delta \varepsilon it \quad ...(2)$$

$$Yit = \alpha Yit-1 + \beta Xit + ui + \varepsilon it \quad ...(3)$$

$$Yit = \alpha \Delta Yit-2 + \beta Xit + ui + \varepsilon it \quad ...(4)$$

The system GMM treats the entire equations as one relationship as essentially the dependent and independent variables are the same. Hence, parameters α and β are estimated using information contained in both the level as well as in the difference equations. The problem of endogeneity created due to the presence of individual effects ui in equation (4) is addressed through the cancelling effect of autoregressive decay α against the individual effect ui across the whole panel with a necessary condition $\alpha < 1$, depending on the nature of the data generating process. In essence, the system should be stable and converging, for the system GMM estimations to be valid for interpretation (Roodman, 2009a).

In the econometric model, dependent variable is the C-D ratio of the districts. Independent variables are area per bank branch in each district and yield of the major crop of the district under cultivation. While area per bank branch serves as a proxy for supply of banking services, yield of the major crop is taken as a proxy for demand of banking services. With most households being dependent on agricultural sector for their livelihood, the yield of the major crop in a way serves as a good indicator to gauge the extent of the economic activity in these districts and, therefore, the demand for credit.

V. Regression Results

The regression results are provided in Table 7. The ordinary least squares (OLS) and least squares dummy variables (LSDV) estimations are conducted to arrive at the credible range of α in the system GMM estimation. While the OLS biases the coefficient upward because of the positive correlation between the lagged dependent variable and the error term, the LSDV biases the coefficient downward because of the negative correlation between the lagged dependent variable and the error term (Roodman, 2009b). Thus, the range provided by the OLS and LSDV estimates works as a credible range for α which can be utilised to ensure the correct specification of the model. The credible range of α estimated in the present study is 0.322 (LSDV estimate of α) to 0.601 (OLS estimate of α) (Bond, 2002). Since the upper value of this credible range is less than one, it is pointing to the existence of a converging and, thus, stable dynamic system, which is a necessary condition for the system GMM to be valid. While transforming the variables in their difference form, an orthogonal transformation is followed as it reduces the average of all future available observations from a given observation instead of deducting just one observation. This is theoretically sounder, especially when some observations are missing in the data.

The results of System GMM provided in column 4 of the Table 7 provides the estimates after collapsing the instruments, which makes the number of instruments less than the number of groups in the panel data making it valid for interpretation. In this model, the estimated value of α at 0.432 falls within the credible range estimated by the OLS and LSDV estimates. The autocorrelation test as well as over-identification tests performs well indicating the credibility of the model in explaining the variations in the dependent variables.

Overall, the model provides evidence for the prominent role played by the supply of banking services in driving credit to deposit ratio. The coefficient on the supply of banking services is negative and significant which shows that as the area served by one branch increases, the C-D ratio decreases. The demand for banking services captured through the yield of the major crop in the respective districts turn out to be insignificant. Thus, the results indicate that in the backward areas or hitherto unbanked and underbanked areas, opening of new branches harness demand for banking services. *Albeit*, unavailability of timeseries and district-wise data on other possible proxies of credit demand such as district domestic products and vehicle registrations, limits our ability to undertake further robustness checks.

Table 7: Regression Results

Variables	LSDV	OLS	System GMM
1	2	3	4
Dependent Variable: Credit to Deposit Ratio			
L1	0.322 (4.47)	0.601 (7.58)	0.432 (4.91)
L2	0.125 (3.31)	0.337(5.11)	0.184(3.71)
Ln (area per branch)	-20.983 (-5.51)	0.669(1.29)	-25.524 (-2.96)
Yield1	-0.365 (-0.9)	0.994(2.12)	0.206 (0.38)
Year dummies	Results are not reported		
Fixed effects	Not reported	-	-
F	109	94.64	-
Prob	0.000	0.000	-
R-squared	0.8721	0.7661	-
Root MSE	5.1574	6.6098	-
No. of observations	525	525	471
Number of groups	-	-	54
Number of instruments	-	-	45
Arellano-Bond test for AR (1)			-1.48 (0.14)
Arellano-Bond test for AR (2)			-0.05 (0.95)
Sargan test for overid			53.03 (0.01)
Hansen test for overid			38.63 (0.19)
Hansen test excluding group			30.20 (0.14)
Difference (null H=exogenous)			8.43 (0.49)

Note: Figures in parentheses along with coefficients are t-ratios.
Yield1: Yield of the first major crop of the district
L1: Lag one of C-D ratio
L2: Lag two of C-D ratio

VI. Concluding Observations

Credit intermediation by financing economic activities contributes to the economic development of a region. Yet, improving credit intermediation in the backward regions is slow. Government of India

in 2018 selected 117 districts as aspirational based on indicators of social and economic backwardness. There are 56 aspirational districts in the eastern area. The level of credit intermediation, as gauged through C-D ratio, is divergent among these districts. This motivates to examine the reasons for the divergence in credit intermediation in these backward districts.

The issue was analysed in a dynamic panel framework after controlling for the endogeneity between the supply of banking services and the demand for banking services with the C-D ratio. Supply of banking services is proxied using the average area served by a bank branch in a district. The demand for banking services is captured through the yield of the major crop of the districts.

The regression results show that supply of banking services is the main factor that drives C-D ratio significantly in the aspirational districts of the eastern area. The results underline the importance of spreading the bank branch network into the interior areas of the country. The *ex-ante* spreading of bank branch network has the capability of harnessing hitherto unmet demand for credit as well as savings into the formal banking channels, thus, providing a boost to the C-D ratio. The financing of economic activities by the bank capital may, further, increase the demand for credit through positive externalities on economic development. Thus, the perceived low branch viability due to low banking business, in the backward regions, should not slow down the branch expansion process in these districts.

References

Arcand, J.L., Berkes, E., Panizza, U., (2012), 'Too Much Finance?', IMF Working Paper, 12/ 161.

Arellano, M., and O. Bover, (1995), 'Another look at the instrumental variable estimation of error-components models', Journal of Econometrics, 68: 29–51.

Arellano, M., and S. Bond. (1991), 'Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations', Review of Economic Studies, 58: 277–297.

Beck T and Levine R., (2004), 'Stock Markets, Banks and Growth: Panel Evidence', Journal of Banking and Finance, 28(3): 423-442.

Beck T, Levine R., Loayza N (2000), 'Finance and sources of growth', Journal of financial economics, 58(1- 2): 261-300.

Bist, Jagadish Prasad and Robert Read (Reviewing Editor), (2018), "Financial development and economic growth: Evidence from a panel of 16 African and non-African low-income countries", Cogent Economics & Finance, 6:1.

Blundell, R., and S. Bond. (1998), 'Initial conditions and moment restrictions in dynamic panel data models', Journal of Econometrics, 87: 115–143.

Bond, S. (2002), 'Dynamic panel data models: A guide to micro data methods and practice', Working Paper CWP09/02, Cemmap, Institute for Fiscal Studies, Available at http://cemmap.ifs.org.uk/wps/cwp0209.pdf.

Cecchetti, G., Kharroubi, E., (2012), 'Reassessing the Impact of Finance on Growth', BIS Working Papers No. 381, Bank for International Settlements.

Chanu and Shibu, (2014), 'MFIs of North East India: An Efficiency Analysis', International Journal of Banking, Risk and Insurance, 2(2), pp: 46-53.

Das and Patnaik, (2015), 'Micro Finance in Eastern India: The Role Played by Regional Rural Banks', Indian Journal of Finance, 9(11), pp: 45-59, November.

Deb and Santa, (2016), 'Financial Performance of Micro Finance Institutions in North East India. Pranjana: The Journal of Management Awareness', 19(2), p47-57.

Deb, Joyeeta; Kar, Santa, (2016), 'Financial Performance of Micro Finance Institutions in North East India', Pranjana: The Journal of Management Awareness, Vol. 19, Issue 2, p: 47-57.

DemirguKc7-Kunt, A., Maksimovic, V., (1998), 'Law, "finance, and "firm growth', Journal of Finance, 53: 2107-2137.

Government of India, (2021), 'Crop Production Statistics for Selected States, Crops and Range of Year', Available at https://aps.dac.gov.in/APY/Public_Report1.aspx

Government of India, (2021), 'National Family Health Survey – District Fact Sheets'. Available at http://rchiips.org/nfhs/

Jayaratne, J., Strahan, P., (1996), 'The "finance-growth nexus: evidence from bank branch deregulation', Quarterly Journal of Economics, 111: 639-670.

King G.R. and Levine R, (1993), 'Finance and Growth: Schumpeter might be Right', Quarterly Journal of Economics, 108 (3): 717-737.

Krishnankutty, (2011), 'Role of Banks Credit in Economic Growth: A Study with Special Reference to North East India', The Economic Research Guardian, 1(2).

Law, Siong Hook and Nirvikar Singh (2014), 'Does too much Finance Harm Economic Growth?', Journal of Banking and Finance, 41: 36-44.

Levine R. (1997), 'Financial Development and Economic Growth: Views and Agenda', Journal of Economic Literature, 35 (2): 688-726.

Nath and Lijum, (2014), 'Micro Finance in the North Eastern Region of India: Opportunities and Challenges (Special Focus on Arunachal Pradesh)', Asian Journal of Research in Social Sciences and Humanities, 4(12), PP – 104-111.

NITI Aayog, (2018), 'Deep Dive: Insights from Champions of Change. The Aspirational Districts Dashboard', Available at https://www.niti.gov.in/sites/default/files/2018-12/FirstDeltaRanking-May2018-AspirationalRanking.pdf

NITI Aayog. (2018), 'Transformation of Aspirational Districts', Available at https://www.niti.gov.in/sites/default/files/2018-12/AspirationalDistrictsBaselineRankingMarch2018.pdf

Official Websites of aspirational districts.

Pal and Singh, (2019), 'Do Socially Motivated Self-Help Groups Perform Better? Exploring determinants of micro-credit groups' performance in Eastern India', Annals of Public and Cooperative Economics, 92(4).

Patikar and Haridev, (2012), 'Need and Progress of Micro-Finance in North-East India: An Evaluation', IASSI Quarterly, 31(2), Pp: 24-37.

Rajan R. and Zingales L., (1998), 'Financial Dependence and Growth', American Economic Review, 88(3): 559-586.

Rajesh, Raj and Anwesha Das. (2019), 'Drivers of Credit Penetration in Eastern India', RBI Monthly Bulletin, October.

RBIa. (Various years), Basic Statistical Returns.

RBIb. (Various years), Report on Trend and Progress of Banking in India.

Roodman, D. M. (2009a), 'A note on the theme of too many instruments', Oxford Bulletin of Economics and Statistics, 71: 135–158.

Roodman, D. M. (2009b), 'How to do xtabond2: An introduction to difference and system GMM in Stata', Stata Journal, 9(1):86-136.

Shen C.H. and Lee CC, (2006), 'Same Financial Development but Different Economic Growth – Why?', Journal of Money, Credit and Banking, 38(7): 1907-1944.

CURRENT STATISTICS

Contents

Notes: .. = Not available.
– = Nil/Negligible.
P = Preliminary/Provisional. PR = Partially Revised.

No. 1: Select Economic Indicators

Item	2021-22	2021-22		2022-23	
		Q1	Q2	Q1	Q2
	1	2	3	4	5
1 Real Sector (% Change)					
1.1 GVA at Basic Prices	8.1	18.1	8.3	12.7	5.6
1.1.1 Agriculture	3.0	2.2	3.2	4.5	4.6
1.1.2 Industry	9.8	40.4	6.6	6.0	-3.1
1.1.3 Services	8.8	15.5	10.0	17.5	9.0
1.1a Final Consumption Expenditure	7.0	10.2	10.2	21.3	7.7
1.1b Gross Fixed Capital Formation	15.8	62.5	14.6	20.1	10.4
	2021-22	2021		2022	
		Oct.	Nov.	Oct.	Nov.
	1	2	3	4	5
1.2 Index of Industrial Production	11.4	4.2	1.0	-4.0	7.1
2 Money and Banking (% Change)					
2.1 Scheduled Commercial Banks					
2.1.1 Deposits	8.9	10.0	8.9	8.9	9.8
2.1.2 Credit #	9.6	6.9	6.9	17.0	17.3
2.1.2.1 Non-food Credit #	9.7	7.0	7.1	17.4	17.7
2.1.3 Investment in Govt. Securities	6.0	4.4	3.6	8.6	10.7
2.2 Money Stock Measures					
2.2.1 Reserve Money (M0)	13.0	14.1	12.8	11.2	11.0
2.2.2 Broad Money (M3)	8.8	9.7	9.5	9.1	8.9
3 Ratios (%)					
3.1 Cash Reserve Ratio	4.00	4.00	4.00	4.50	4.50
3.2 Statutory Liquidity Ratio	18.00	18.00	18.00	18.00	18.00
3.3 Cash-Deposit Ratio	4.7	4.9	4.8	5.2	5.3
3.4 Credit-Deposit Ratio	72.2	70.0	71.0	74.5	75.0
3.5 Incremental Credit-Deposit Ratio #	77.2	20.8	37.3	120.0	128.6
3.6 Investment-Deposit Ratio	28.7	29.4	29.0	29.3	29.3
3.7 Incremental Investment-Deposit Ratio	19.7	27.0	17.7	41.5	39.8
4 Interest Rates (%)					
4.1 Policy Repo Rate	4.00	4.00	4.00	5.90	5.90
4.2 Fixed Reverse Repo Rate	3.35	3.35	3.35	3.35	3.35
4.3 Standing Deposit Facility (SDF) Rate *	-	-	-	5.65	5.65
4.4 Marginal Standing Facility (MSF) Rate	4.25	4.25	4.25	6.15	6.15
4.5 Bank Rate	4.25	4.25	4.25	6.15	6.15
4.6 Base Rate	7.25/8.80	7.30/8.80	7.30/8.80	8.10/8.80	8.10/8.80
4.7 MCLR (Overnight)	6.45/7.00	6.50/7.00	6.50/7.00	6.95/7.85	7.05/8.05
4.8 Term Deposit Rate >1 Year	5.00/5.60	4.90/5.50	4.90/5.50	5.50/7.00	6.10/7.25
4.9 Savings Deposit Rate	2.70/3.00	2.70/3.00	2.70/3.00	2.70/3.00	2.70/3.00
4.10 Call Money Rate (Weighted Average)	3.34	3.28	3.35	6.16	6.13
4.11 91-Day Treasury Bill (Primary) Yield	3.84	3.56	3.53	6.40	6.40
4.12 182-Day Treasury Bill (Primary) Yield	4.27	3.83	3.83	6.72	6.73
4.13 364-Day Treasury Bill (Primary) Yield	4.58	4.04	4.13	6.92	6.87
4.14 10-Year G-Sec Par Yield (FBIL)	6.86	6.43	6.33	7.45	7.29
5 Reference Rate and Forward Premia					
5.1 INR-US$ Spot Rate (Rs. Per Foreign Currency)	76.18	74.79	74.71	82.41	81.53
5.2 INR-Euro Spot Rate (Rs. Per Foreign Currency)	84.01	87.26	83.85	82.14	84.87
5.3 Forward Premia of US$ 1-month (%)	5.67	4.17	3.69	3.28	2.21
3-month (%)	4.46	4.39	3.80	2.86	2.16
6-month (%)	4.10	4.75	4.71	2.74	2.26
6 Inflation (%)					
6.1 All India Consumer Price Index	5.51	4.5	4.9	6.8	5.9
6.2 Consumer Price Index for Industrial Workers	5.13	4.5	4.8	6.1	5.4
6.3 Wholesale Price Index	12.97	13.8	14.9	8.4	5.8
6.3.1 Primary Articles	10.25	7.4	10.2	11.0	5.5
6.3.2 Fuel and Power	32.50	38.6	44.4	23.2	17.4
6.3.3 Manufactured Products	11.10	12.9	12.3	4.4	3.6
7 Foreign Trade (% Change)					
7.1 Imports	55.43	57.4	56.8	10.0	9.8
7.2 Exports	44.62	43.4	34.6	-11.6	9.6

Note : Financial Benchmark India Pvt. Ltd. (FBIL) has commenced publication of the G-Sec benchmarks with effect from March 31, 2018 as per RBI circular FMRD.DIRD.7/14.03.025/2017-18 dated March 31, 2018. FBIL has started dissemination of reference rates w.e.f. July 10, 2018.

*: As per Press Release No. 2022-2023/41 dated April 08, 2022

#: Bank credit growth and related ratios for all fortnights since December 3, 2021 are adjusted for past reporting errors by select scheduled commercial banks (SCBs).

Reserve Bank of India

No. 2: RBI - Liabilities and Assets *

(₹ Crore)

Item	As on the Last Friday/ Friday						
	2021-22	2021	2022				
		Dec.	Dec. 2	Dec. 9	Dec. 16	Dec. 23	Dec. 30
	1	2	3	4	5	6	7
1 Issue Department							
1.1 Liabilities							
1.1.1 Notes in Circulation	3107637	2959237	3192609	3215191	3212045	3213086	3203051
1.1.2 Notes Held in Banking Department	15	13	13	12	13	12	15
1.1/1.2 Total Liabilities (Total Notes Issued) or Assets	**3107652**	**2959250**	**3192622**	**3215203**	**3212058**	**3213097**	**3203066**
1.2 Assets							
1.2.1 Gold	128208	113486	125791	126353	126801	128011	129184
1.2.2 Foreign Securities	2978927	2845196	3066531	3088583	3085022	3084690	3073515
1.2.3 Rupee Coin	518	567	299	267	235	396	367
1.2.4 Government of India Rupee Securities	–	–	–	–	–	–	–
2 Banking Department							
2.1 Liabilities							
2.1.1 Deposits	1794574	1991453	1407315	1401597	1413239	1405052	1439225
2.1.1.1 Central Government	101	100	100	100	100	101	100
2.1.1.2 Market Stabilisation Scheme							
2.1.1.3 State Governments	42	42	42	42	42	42	42
2.1.1.4 Scheduled Commercial Banks	683437	716432	806898	779475	810927	812493	841612
2.1.1.5 Scheduled State Co-operative Banks	7123	7631	7520	7179	7611	7031	8648
2.1.1.6 Non-Scheduled State Co-operative Banks	4121	3416	4451	4426	4432	4261	4403
2.1.1.7 Other Banks	37589	37349	44119	44044	44044	44392	45114
2.1.1.8 Others	988819	1180276	462914	484855	472281	454437	457383
2.1.1.9 Financial Institution Outside India	73343	46206	81271	81475	73802	82295	81922
2.1.2 Other Liabilities	1359254	1313545	1450644	1495108	1523025	1511823	1506375
2.1/2.2 Total Liabilities or Assets	**3153828**	**3304998**	**2857959**	**2896705**	**2936264**	**2916876**	**2945600**
2.2 Assets							
2.2.1 Notes and Coins	15	13	13	12	13	12	15
2.2.2 Balances Held Abroad	1243853	1412900	1003337	1054981	1084495	1073623	1075884
2.2.3 Loans and Advances							
2.2.3.1 Central Government	–	–	–	–	–	–	–
2.2.3.2 State Governments	670	6677	12340	17351	12052	9669	4450
2.2.3.3 Scheduled Commercial Banks	94299	102489	95307	94325	115423	96421	127472
2.2.3.4 Scheduled State Co-op.Banks	–	–	35	35	35	–	–
2.2.3.5 Industrial Dev. Bank of India	–	–	–	–	–	–	–
2.2.3.6 NABARD	24927	24770	–	–	–	–	–
2.2.3.7 EXIM Bank	–	–	–	–	–	–	–
2.2.3.8 Others	8077	77	17736	8654	12219	17788	17789
2.2.3.9 Financial Institution Outside India	72741	46227	81927	82219	74216	82238	81790
2.2.4 Bills Purchased and Discounted							
2.2.4.1 Internal	–	–	–	–	–	–	–
2.2.4.2 Government Treasury Bills	–	–	–	–	–	–	–
2.2.5 Investments	1491042	1521572	1423401	1414149	1411981	1408921	1409345
2.2.6 Other Assets	218203	190274	223862	224978	225830	228205	228855
2.2.6.1 Gold	201354	179293	207814	208742	209481	211481	212643

* Data are provisional

No. 3: Liquidity Operations by RBI

(₹ Crore)

Date	Liquidity Adjustment Facility						Standing Liquidity Facilities	OMO (Outright)		Net Injection (+)/ Absorption (-) (1+3+5+7+9-2-4-6-8)
	Repo	Reverse Repo	Variable Rate Repo	Variable Rate Reverse Repo	MSF	SDF		Sale	Purchase	
	1	2	3	4	5	6	7	8	9	10
Nov. 1, 2022	-	-	-	-	351	126959	-2765	-	-	-129373
Nov. 2, 2022	-	-	-	-	537	189956	-4212	-	-	-193631
Nov. 3, 2022	-	-	-	-	473	190489	-205	-	-	-190221
Nov. 4, 2022	-	-	-	32483	574	143335	–	-	-	-175244
Nov. 5, 2022	-	-	-	-	3426	14500	1000	-	-	-10074
Nov. 6, 2022	-	-	-	-	366	2586	–	-	-	-2220
Nov. 7, 2022	-	-	-	-	553	67723	2495	-	-	-64675
Nov. 8, 2022	-	-	-	-	7423	13880	–	-	-	-6457
Nov. 9, 2022	-	-	-	-	552	102762	3906	-	-	-98304
Nov. 10, 2022	-	-	-	-	465	122825	-411	-	-	-122771
Nov. 11, 2022	-	-	-	-	366	137723	-4890	-	-	-142247
Nov. 12, 2022	-	-	-	-	150	3766	–	-	-	-3616
Nov. 13, 2022	-	-	-	-	7	1950	–	-	-	-1943
Nov. 14, 2022	-	-	-	-	2495	140412	–	-	-	-137917
Nov. 15, 2022	-	-	-	-	245	151934	–	-	-	-151689
Nov. 16, 2022	-	-	-	-	83	154901	–	-	-	-154818
Nov. 17, 2022	-	-	-	-	109	168921	–	-	-	-168812
Nov. 18, 2022	-	-	-	52065	3250	91107	-4399	-	-	-144321
Nov. 19, 2022	-	-	-	-	2664	17829	–	-	-	-15165
Nov. 20, 2022	-	-	-	-	429	2668	–	-	-	-2239
Nov. 21, 2022	-	-	-	-	15736	53653	5000	-	-	-32917
Nov. 22, 2022	-	-	-	-	15921	46359	492	-	-	-29946
Nov. 23, 2022	-	-	-	-	15177	53213	–	-	-	-38036
Nov. 24, 2022	-	-	-	-	4264	50071	–	-	-	-45807
Nov. 25, 2022	-	-	-	-	2386	74736	–	-	-	-72350
Nov. 26, 2022	-	-	-	-	135	5867	–	-	-	-5732
Nov. 27, 2022	-	-	-	-	46	3623	–	-	-	-3577
Nov. 28, 2022	-	-	-	-	237	81851	–	-	-	-81614
Nov. 29, 2022	-	-	-	-	375	109695	-492	245	-	-110057
Nov. 30, 2022	-	-	-	-	4222	175896	–	215	-	-171889

SDF: Standing Deposit Facility; MSF: Marginal Standing Facility.

No. 4: Sale/ Purchase of U.S. Dollar by the RBI

i) Operations in OTC segment

Item	2021-22	2021	2022	
		Nov.	Oct.	Nov.
	1	2	3	4
1 Net Purchase/ Sale of Foreign Currency (US $ Million) (1.1–1.2)	17312	0	-922	4361
1.1 Purchase (+)	113991	8489	24855	22281
1.2 Sale (–)	96679	8489	25777	17920
2 ₹ equivalent at contract rate (₹ Crore)	134629	1669	-10077	33929
3 Cumulative (over end-March) (US $ Million)	17312	40330	-34339	-29978
(₹ Crore)	134629	306805	-283631	-249702
4 Outstanding Net Forward Sales (–)/ Purchase (+) at the end of month (US $ Million)	65791	49106	241	8493

ii) Operations in currency futures segment

Item	2021-22	2021	2022	
		Nov.	Oct.	Nov.
	1	2	3	4
1 Net Purchase/ Sale of Foreign Currency (US $ Million) (1.1–1.2)	0	0	0	0
1.1 Purchase (+)	2370	0	1875	10
1.2 Sale (–)	2370	0	1875	10
2 Outstanding Net Currency Futures Sales (–)/ Purchase (+) at the end of month (US $ Million)	0	0	-855	0

No. 4 A : Maturity Breakdown (by Residual Maturity) of Outstanding Forwards of RBI (US $ Million)

Item	As on November 30, 2022		
	Long (+)	Short (-)	Net (1-2)
	1	2	3
1. Upto 1 month	3780	6024	-2244
2. More than 1 month and upto 3 months	4196	3098	1098
3. More than 3 months and upto 1 year	5750	1246	4504
4. More than 1 year	5135	0	5135
Total (1+2+3+4)	**18861**	**10368**	**8493**

No. 5: RBI's Standing Facilities

(₹ Crore)

Item	As on the Last Reporting Friday							
	2021-22	2021	2022					
		Dec. 31	Jul. 29	Aug. 26	Sep. 23	Oct. 21	Nov. 18	Dec. 30
	1	2	3	4	5	6	7	8
1 MSF	11	8176	139	4034	9657	51134	3250	33224
2 Export Credit Refinance for Scheduled Banks								
2.1 Limit	-	-	-	-	-	-	-	-
2.2 Outstanding	-	-	-	-	-	-	-	-
3 Liquidity Facility for PDs								
3.1 Limit	4900	4900	4900	4900	4900	4900	4900	4900
3.2 Outstanding	–	0	1655	0	910	1022	1801	2376
4 Others								
4.1 Limit	76000	76000	76000	76000	76000	76000	76000	76000
4.2 Outstanding	32401	24401	40314	40159	31039	20249	10850	15400
5 Total Outstanding (1+2.2+3.2+4.2)	32412	32577	42108	44193	41606	72405	15901	51000

Note :1.Special refinance facility to Others, i.e. to the EXIM Bank, is reopened since May 22, 2020
2.Refinance facility to Others, i.e. to the NABARD/SIDBI/NHB U/S 17(4H) of RBI ACT,1934, since, April 17, 2020.

Money and Banking

No. 6: Money Stock Measures

(₹ Crore)

Item	Outstanding as on March 31/last reporting Fridays of the month/reporting Fridays				
	2021-22	2021	2022		
		Nov. 19	Oct. 21	Nov. 4	Nov. 18
	1	2	3	4	5
1 Currency with the Public (1.1 + 1.2 + 1.3 – 1.4)	3035689	2878246	3088767	3083069	3093618
1.1 Notes in Circulation	3105703	2961030	3189311	3183348	3189066
1.2 Circulation of Rupee Coin	27270	26698	28260	28469	28469
1.3 Circulation of Small Coins	743	743	743	743	743
1.4 Cash on Hand with Banks	98028	110225	129548	129490	124807
2 Deposit Money of the Public	2271436	2005116	2236756	2268569	2262770
2.1 Demand Deposits with Banks	2212992	1957254	2166755	2197740	2192060
2.2 'Other' Deposits with Reserve Bank	58444	47861	70001	70828	70709
3 M_1 (1 + 2)	**5307125**	**4883362**	**5325523**	**5351638**	**5356388**
4 Post Office Saving Bank Deposits	187061	176807	187061	187061	187061
5 M_2 (3 + 4)	**5494186**	**5060169**	**5512584**	**5538699**	**5543449**
6 Time Deposits with Banks	15186605	14762272	15973262	16106806	16043534
7 M_3 (3 + 6)	**20493729**	**19645634**	**21298785**	**21458444**	**21399921**
8 Total Post Office Deposits	1008539	955992	1008539	1008539	1008539
9 M_4 (7 + 8)	**21502268**	**20601626**	**22307324**	**22466983**	**22408460**

No. 7: Sources of Money Stock (M_3)

(₹ Crore)

Sources	Outstanding as on March 31/last reporting Fridays of the month/reporting Fridays				
	2021-22	2021	2022		
		Nov. 19	Oct. 21	Nov. 4	Nov. 18
	1	2	3	4	5
1 Net Bank Credit to Government	**6477629**	**6075285**	**6443899**	**6608773**	**6612762**
1.1 RBI's net credit to Government (1.1.1–1.1.2)	1450596	1193964	1091548	1226986	1226047
1.1.1 Claims on Government	1490991	1555163	1411232	1417818	1423456
1.1.1.1 Central Government	1489324	1546532	1406140	1405358	1417773
1.1.1.2 State Governments	1667	8631	5092	12460	5683
1.1.2 Government deposits with RBI	40394	361199	319684	190832	197409
1.1.2.1 Central Government	40352	361156	319642	190789	197366
1.1.2.2 State Governments	42	42	42	42	42
1.2 Other Banks' Credit to Government	5027033	4881321	5352351	5381787	5386715
2 Bank Credit to Commercial Sector	**12616520**	**11869926**	**13620705**	**13656653**	**13679367**
2.1 RBI's credit to commercial sector	16571	4634	18954	12678	14661
2.2 Other banks' credit to commercial sector	12599950	11865291	13601751	13643975	13664706
2.2.1 Bank credit by commercial banks	11891314	11162193	12883673	12926233	12947813
2.2.2 Bank credit by co-operative banks	690201	684429	700682	700256	699569
2.2.3 Investments by commercial and co-operative banks in other securities	18435	18669	17396	17487	17324
3 Net Foreign Exchange Assets of Banking Sector (3.1 + 3.2)	**4854063**	**4960354**	**4434718**	**4469565**	**4571803**
3.1 RBI's net foreign exchange assets (3.1.1–3.1.2)	4442479	4586034	4179125	4213972	4316211
3.1.1 Gross foreign assets	4442720	4586275	4179365	4214212	4316456
3.1.2 Foreign liabilities	241	241	240	240	246
3.2 Other banks' net foreign exchange assets	411583	374319	255593	255593	255593
4 Government's Currency Liabilities to the Public	**28013**	**27441**	**29003**	**29212**	**29212**
5 Banking Sector's Net Non-monetary Liabilities	**3482496**	**3287371**	**3229540**	**3305758**	**3493223**
5.1 Net non-monetary liabilities of RBI	1308500	1327908	1243594	1266066	1381545
5.2 Net non-monetary liabilities of other banks (residual)	2173996	1959464	1985946	2039692	2111678
M_3 (1+2+3+4–5)	**20493729**	**19645634**	**21298785**	**21458444**	**21399921**

No. 8: Monetary Survey

(₹ Crore)

Item	Outstanding as on March 31/last reporting Fridays of the month/reporting Fridays				
	2021-22	2021	2022		
		Nov. 19	Oct. 21	Nov. 4	Nov. 18
	1	2	3	4	5
Monetary Aggregates					
NM_1 (1.1 + 1.2.1+1.3)	5307125	4883362	5325968	5351638	5356388
NM_2 (NM_1 + 1.2.2.1)	12081049	11461215	12453325	12534866	12512152
NM_3 (NM_2 + 1.2.2.2 + 1.4 = 2.1 + 2.2 + 2.3 – 2.4 – 2.5)	20634885	19761137	21712620	21802115	21732947
1 Components					
1.1 Currency with the Public	3035689	2878246	3088753	3083069	3093618
1.2 Aggregate Deposits of Residents	17266157	16574705	18005784	18160468	18093758
1.2.1 Demand Deposits	2212992	1957254	2167214	2197740	2192060
1.2.2 Time Deposits of Residents	15053166	14617450	15838570	15962728	15901698
1.2.2.1 Short-term Time Deposits	6773925	6577853	7127357	7183228	7155764
1.2.2.1.1 Certificates of Deposit (CDs)	176718	56026	232680	240597	252530
1.2.2.2 Long-term Time Deposits	8279241	8039598	8711214	8779500	8745934
1.3 'Other' Deposits with RBI	58444	47861	70001	70828	70709
1.4 Call/Term Funding from Financial Institutions	274594	260325	548081	487749	474861
2 Sources					
2.1 Domestic Credit	20080599	18949988	21164743	21352798	21384192
2.1.1 Net Bank Credit to the Government	6477629	6075285	6444604	6608773	6612762
2.1.1.1 Net RBI credit to the Government	1450596	1193964	1091548	1226986	1226047
2.1.1.2 Credit to the Government by the Banking System	5027033	4881321	5353056	5381787	5386715
2.1.2 Bank Credit to the Commercial Sector	13602969	12874702	14720139	14744025	14771430
2.1.2.1 RBI Credit to the Commercial Sector	39581	26610	23508	17254	14661
2.1.2.2 Credit to the Commercial Sector by the Banking System	13563389	12848093	14696631	14726771	14756769
2.1.2.2.1 Other Investments (Non-SLR Securities)	952181	973791	1075015	1063305	1069274
2.2 Government's Currency Liabilities to the Public	28013	27441	29003	29212	29212
2.3 Net Foreign Exchange Assets of the Banking Sector	4705191	4825466	4368793	4399551	4471445
2.3.1 Net Foreign Exchange Assets of the RBI	4442479	4586034	4179125	4213972	4316211
2.3.2 Net Foreign Currency Assets of the Banking System	262711	239431	189668	185579	155234
2.4 Capital Account	3021858	2994318	3335444	3331327	3404225
2.5 Other items (net)	1157060	1047439	514476	648119	747678

No. 9: Liquidity Aggregates

(₹ Crore)

Aggregates	2021-22	2021	2022		
		Nov.	Sep.	Oct.	Nov.
	1	2	3	4	5
1 NM_3	**20630753**	**19761137**	**21469976**	**21712620**	**21732947**
2 Postal Deposits	594633	563133	594633	594633	594633
3 L_1 (1 + 2)	**21225386**	**20324270**	**22064609**	**22307253**	**22327580**
4 Liabilities of Financial Institutions	49578	26861	58930	58446	58400
4.1 Term Money Borrowings	1824	3631	1643	1518	1423
4.2 Certificates of Deposit	39170	18175	49270	49270	49270
4.3 Term Deposits	8584	5054	8017	7657	7706
5 L_2 (3 + 4)	**21274964**	**20351131**	**22123540**	**22365698**	**22385979**
6 Public Deposits with Non-Banking Financial Companies	66542	..	66542	..	..
7 L_3 (5 + 6)	**21341506**	..	**22190082**	..	..

Note : 1. Figures in the columns might not add up to the total due to rounding off of numbers.

No. 10: Reserve Bank of India Survey

(₹ Crore)

Item	Outstanding as on March 31/last reporting Fridays of the month/reporting Fridays				
	2021-22	2021	2022		
		Nov. 19	Oct. 21	Nov. 4	Nov. 18
	1	2	3	4	5
1 Components					
1.1 Currency in Circulation	3133716	2988471	3218315	3212560	3218425
1.2 Bankers' Deposits with the RBI	876726	731562	850449	857044	869931
1.2.1 Scheduled Commercial Banks	823632	683604	793425	801546	814570
1.3 'Other' Deposits with the RBI	58444	47861	70001	70828	70709
Reserve Money (1.1 + 1.2 + 1.3 = 2.1 + 2.2 + 2.3 – 2.4 – 2.5)	4068887	3767894	4138765	4140432	4159065
2 Sources					
2.1 RBI's Domestic Credit	906895	482327	1174230	1163314	1195188
2.1.1 Net RBI credit to the Government	1450596	1193964	1091548	1226986	1226047
2.1.1.1 Net RBI credit to the Central Government (2.1.1.1.1 + 2.1.1.1.2 + 2.1.1.1.3 + 2.1.1.1.4 – 2.1.1.1.5)	1448972	1185376	1086498	1214568	1220407
2.1.1.1.1 Loans and Advances to the Central Government	–	–	–	–	–
2.1.1.1.2 Investments in Treasury Bills	–	–	–	–	–
2.1.1.1.3 Investments in dated Government Securities	1488816	1545839	1405888	1404946	1417416
2.1.1.1.3.1 Central Government Securities	1488816	1545839	1405888	1404946	1417416
2.1.1.1.4 Rupee Coins	508	693	252	412	357
2.1.1.1.5 Deposits of the Central Government	40352	361156	319642	190789	197366
2.1.1.2 Net RBI credit to State Governments	1624	8588	5049	12417	5641
2.1.2 RBI's Claims on Banks	-583282	-738247	59174	-80926	-45520
2.1.2.1 Loans and Advances to Scheduled Commercial Banks	-560272	-716272	63728	-76350	-45520
2.1.3 RBI's Credit to Commercial Sector	39581	26610	23508	17254	14661
2.1.3.1 Loans and Advances to Primary Dealers	–	–	1022	2101	1801
2.1.3.2 Loans and Advances to NABARD	23010	21976	4554	4576	–
2.2 Government's Currency Liabilities to the Public	28013	27441	29003	29212	29212
2.3 Net Foreign Exchange Assets of the RBI	4442479	4586034	4179125	4213972	4316211
2.3.1 Gold	322213	300065	307638	305555	326887
2.3.2 Foreign Currency Assets	4120283	4285987	3871505	3908434	3989341
2.4 Capital Account	1254092	1235252	1412059	1416164	1480042
2.5 Other Items (net)	54408	92656	-168465	-150097	-98496

No. 11: Reserve Money - Components and Sources

(₹ Crore)

Item	2021-22	Outstanding as on March 31/ last Fridays of the month/ Fridays					
		2021	2022				
		Nov. 26	Oct. 28	Nov. 4	Nov. 11	Nov. 18	Nov. 25
	1	2	3	4	5	6	7
Reserve Money (1.1 + 1.2 + 1.3 = 2.1 + 2.2 + 2.3 + 2.4 + 2.5 – 2.6)	4068887	3736107	4118874	4140432	4133732	4159065	4146938
1 Components							
1.1 Currency in Circulation	3133716	2983295	3210947	3212560	3222718	3218425	3217848
1.2 Bankers' Deposits with RBI	876726	704368	837571	857044	840333	869931	864553
1.3 'Other' Deposits with RBI	58444	48443	70356	70828	70682	70709	64537
2 Sources							
2.1 Net Reserve Bank Credit to Government	1450596	1177312	1107220	1226986	1225928	1226047	1194560
2.2 Reserve Bank Credit to Banks	-560272	-726053	54210	-76350	-70946	-45520	-30078
2.3 Reserve Bank Credit to Commercial Sector	16571	2135	19629	12678	14745	14661	20218
2.4 Net Foreign Exchange Assets of RBI	4442479	4597067	4221465	4213972	4246521	4316211	4336487
2.5 Government's Currency Liabilities to the Public	28013	27539	29212	29212	29212	29212	29384
2.6 Net Non- Monetary Liabilities of RBI	1308500	1341893	1312863	1266066	1311728	1381545	1403634

No. 12: Commercial Bank Survey

(₹ Crore)

Item	Outstanding as on last reporting Fridays of the month/ reporting Fridays of the month				
	2021-22	2021	2022		
		Nov. 19	Oct. 21	Nov. 4	Nov. 18
	1	2	3	4	5
1 Components					
1.1 Aggregate Deposits of Residents	16331874	15634294	17066693	17222246	17155518
1.1.1 Demand Deposits	2072747	1820862	2025649	2056559	2050865
1.1.2 Time Deposits of Residents	14259128	13813432	15041044	15165687	15104653
1.1.2.1 Short-term Time Deposits	6416607	6216044	6768470	6824559	6797094
1.1.2.1.1 Certificates of Deposits (CDs)	176718	56026	232680	240597	252530
1.1.2.2 Long-term Time Deposits	7842520	7597387	8272574	8341128	8307559
1.2 Call/Term Funding from Financial Institutions	274594	260325	548081	487749	474861
2 Sources					
2.1 Domestic Credit	17575002	16720791	19021613	19082007	19117789
2.1.1 Credit to the Government	4728179	4582873	5050880	5080849	5085790
2.1.2 Credit to the Commercial Sector	12846823	12137918	13970732	14001158	14031999
2.1.2.1 Bank Credit	11891314	11162193	12883404	12926233	12947813
2.1.2.1.1 Non-food Credit	11836304	11079778	12857749	12887854	12895573
2.1.2.2 Net Credit to Primary Dealers	11522	9273	20397	19754	23052
2.1.2.3 Investments in Other Approved Securities	769	1622	879	828	822
2.1.2.4 Other Investments (in non-SLR Securities)	943218	964828	1066053	1054343	1060312
2.2 Net Foreign Currency Assets of Commercial Banks (2.2.1–2.2.2–2.2.3)	262711	239431	189668	185579	155234
2.2.1 Foreign Currency Assets	465464	456594	397181	395383	367987
2.2.2 Non-resident Foreign Currency Repatriable Fixed Deposits	133439	144822	137411	144078	141836
2.2.3 Overseas Foreign Currency Borrowings	69314	72341	70102	65726	70916
2.3 Net Bank Reserves (2.3.1+2.3.2–2.3.3)	1268887	1498308	846870	994733	972531
2.3.1 Balances with the RBI	683437	683604	793425	801546	814570
2.3.2 Cash in Hand	85926	98432	117173	116838	112441
2.3.3 Loans and Advances from the RBI	-499524	-716272	63728	-76350	-45520
2.4 Capital Account	1743595	1734896	1899214	1890993	1900013
2.5 Other items (net) (2.1+2.2+2.3–2.4–1.1–1.2)	756537	829015	544163	661332	715162
2.5.1 Other Demand and Time Liabilities (net of 2.2.3)	571535	536423	641670	647402	638855
2.5.2 Net Inter-Bank Liabilities (other than to PDs)	26533	32065	18150	15940	17359

No. 13: Scheduled Commercial Banks' Investments

(₹ Crore)

Item	As on March 25, 2022	2021	2022		
		Nov. 19	Oct. 21	Nov. 4	Nov. 18
	1	2	3	4	5
1 SLR Securities	4728948	4584495	5051759	5081678	5086612
2 Other Government Securities (Non-SLR)	-	-	172180	172217	172062
3 Commercial Paper	55315	67080	64867	62149	58106
4 Shares issued by					
4.1 PSUs	7642	9778	9833	9737	9512
4.2 Private Corporate Sector	73814	70047	70864	70331	70661
4.3 Others	5152	5111	5006	4890	4910
5 Bonds/Debentures issued by					
5.1 PSUs	117860	116887	99795	99922	99952
5.2 Private Corporate Sector	326188	332529	318587	320148	324422
5.3 Others	148753	148190	92880	93771	94250
6 Instruments issued by					
6.1 Mutual funds	34404	52558	49896	38449	40974
6.2 Financial institutions	174090	162752	182144	182840	185463

Note: Data against column Nos. (1), (2) & (3) are Final and for column Nos. (4) & (5) data are Provisional.
'-' Data are not available.

No. 14: Business in India - All Scheduled Banks and All Scheduled Commercial Banks

(₹ Crore)

Item	As on the Last Reporting Friday (in case of March)/ Last Friday							
	All Scheduled Banks				All Scheduled Commercial Banks			
	2021-22	2021	2022		2021-22	2021	2022	
		Nov.	Oct.	Nov.		Nov.	Oct.	Nov.
	1	2	3	4	5	6	7	8
Number of Reporting Banks	212	211	213	212	136	135	137	137
1 Liabilities to the Banking System	**262674**	**240488**	**297165**	**322039**	**258649**	**235957**	**293726**	**318806**
1.1 Demand and Time Deposits from Banks	194143	180927	193184	200455	190570	176748	190380	197948
1.2 Borrowings from Banks	38369	37571	49654	67257	38317	37564	49559	67114
1.3 Other Demand and Time Liabilities	30162	21989	54327	54327	29762	21645	53787	53744
2 Liabilities to Others	**17832517**	**17096687**	**18930596**	**18946561**	**17380755**	**16654491**	**18489534**	**18508469**
2.1 Aggregate Deposits	16899634	16212125	17700386	17750271	16465313	15784717	17276486	17329401
2.1.1 Demand	2117513	1880478	2144180	2126667	2072747	1840383	2097596	2080955
2.1.2 Time	14782121	14331647	15556206	15623604	14392567	13944334	15178890	15248446
2.2 Borrowings	278985	267747	531081	500784	274594	263467	526165	495442
2.3 Other Demand and Time Liabilities	653898	616815	699129	695506	640848	606307	686882	683626
3 Borrowings from Reserve Bank	**94299**	**93677**	**115906**	**96704**	**94299**	**93677**	**115871**	**96669**
3.1 Against Usance Bills /Promissory Notes	–	–	–	–	–	–	–	–
3.2 Others	94299	93677	115906	96704	94299	93677	115871	96669
4 Cash in Hand and Balances with Reserve Bank	788725	777305	917764	936486	769363	757991	895631	915324
4.1 Cash in Hand	88732	103870	117154	109471	85926	101328	113818	106483
4.2 Balances with Reserve Bank	699993	673435	800610	827015	683437	656663	781814	808841
5 Assets with the Banking System	**315282**	**268815**	**363559**	**376096**	**243637**	**213515**	**301785**	**317123**
5.1 Balances with Other Banks	199434	185698	223969	240993	164240	151303	182243	199953
5.1.1 In Current Account	19733	15520	21248	38053	16691	12961	18279	35353
5.1.2 In Other Accounts	179701	170178	202721	202940	147549	138342	163964	164599
5.2 Money at Call and Short Notice	36905	27208	35719	25749	6982	9590	19512	11935
5.3 Advances to Banks	39340	24033	42548	46031	35802	23599	42123	45530
5.4 Other Assets	39603	31876	61323	63324	36613	29024	57906	59706
6 Investment	**4874070**	**4728243**	**5214515**	**5217534**	**4728948**	**4582167**	**5065922**	**5072542**
6.1 Government Securities	4867102	4720370	5207703	5211007	4728179	4580669	5065093	5071724
6.2 Other Approved Securities	6968	7873	6812	6527	769	1499	829	817
7 Bank Credit	**12259048**	**11548488**	**13247172**	**13386763**	**11891314**	**11199939**	**12864695**	**13002254**
7a Food Credit	90827	121828	77717	100376	55011	86011	31998	54657
7.1 Loans, Cash-credits and Overdrafts	12016486	11337403	13006889	13152747	11651337	10990885	12627183	12771053
7.2 Inland Bills-Purchased	36070	31807	36939	33936	36055	31793	36921	33918
7.3 Inland Bills-Discounted	155796	127812	156910	155857	154212	126685	154838	153738
7.4 Foreign Bills-Purchased	19537	18228	17504	16315	19157	17978	17358	16148
7.5 Foreign Bills-Discounted	31160	33240	28930	27908	30554	32598	28396	27397

Note: Data in column Nos. (4) & (8) are Provisional.

No. 15: Deployment of Gross Bank Credit by Major Sectors

(₹ Crore)

Sector	Outstanding as on				Growth (%)	
	Mar.25, 2022	2021	2022		Financial year so far	Y-o-Y
		Nov.19	Oct.21	Nov.18	2022-23	2022
	1	2	3	4	%	%
I. Bank Credit (II+III)	**11891314**	**11162193**	**12889117**	**12947735**	**8.9**	**17.2**
II. Food Credit	**55011**	**82415**	**25655**	**52240**	**-5.0**	**-36.6**
III. Non-food Credit	**11836304**	**11079778**	**12863462**	**12895495**	**8.9**	**17.6**
1. Agriculture & Allied Activities	**1461719**	**1402221**	**1590138**	**1595185**	**9.1**	**13.8**
2. Industry (Micro and Small, Medium and Large)	**3156067**	**2913713**	**3290584**	**3294514**	**4.4**	**13.1**
2.1 Micro and Small	532792	465058	551961	556127	4.4	19.6
2.2 Medium	213996	173181	221072	224624	5.0	29.7
2.3 Large	2409279	2275474	2517551	2513763	4.3	10.5
3. Services	**3017258**	**2733821**	**3321383**	**3315747**	**9.9**	**21.3**
3.1 Transport Operators	155352	145451	160819	161037	3.7	10.7
3.2 Computer Software	20899	19827	22337	21210	1.5	7.0
3.3 Tourism, Hotels & Restaurants	64378	62223	63753	65092	1.1	4.6
3.4 Shipping	8436	7825	8690	7206	-14.6	-7.9
3.5 Aviation	23979	26773	23955	24445	1.9	-8.7
3.6 Professional Services	116742	111138	124531	124321	6.5	11.9
3.7 Trade	696301	632601	746578	733730	5.4	16.0
3.7.1 Wholesale Trade	351213	320889	372358	353789	0.7	10.3
3.7.2 Retail Trade	345088	311712	374220	379941	10.1	21.9
3.8 Commercial Real Estate	291168	283775	305139	304276	4.5	7.2
3.9 Non-Banking Financial Companies (NBFCs) [1] *of which,*	1022399	916662	1255742	1218791	19.2	33.0
3.9.1 Housing Finance Companies (HFCs)	282048	264887	305430	307661	9.1	16.1
3.9.2 Public Financial Institutions (PFIs)	137084	94720	168466	178024	29.9	87.9
3.10 Other Services [2]	617603	527544	609839	655639	6.2	24.3
4. Personal Loans	**3381699**	**3174145**	**3770285**	**3800330**	**12.4**	**19.7**
4.1 Consumer Durables	27628	23581	34727	35658	29.1	51.2
4.2 Housing	1684424	1587475	1825900	1843862	9.5	16.2
4.3 Advances against Fixed Deposits	78730	70558	98302	96188	22.2	36.3
4.4 Advances to Individuals against share & bonds	6161	5807	6806	6758	9.7	16.4
4.5 Credit Card Outstanding	147789	138688	179178	173424	17.3	25.0
4.6 Education	82723	80631	90410	91069	10.1	12.9
4.7 Vehicle Loans	402689	382221	461375	468088	16.2	22.5
4.8 Loan against gold jewellery	73942	71174	83620	83755	13.3	17.7
4.9 Other Personal Loans	877613	814008	989967	1001529	14.1	23.0
5. Priority Sector (Memo)						
(i) Agriculture & Allied Activities [3]	1484923	1414893	1623409	1631458	9.9	15.3
(ii) Micro & Small Enterprises [4]	1377848	1241000	1430352	1457114	5.8	17.4
(iii) Medium Enterprises [5]	351900	283769	369542	369403	5.0	30.2
(iv) Housing	616814	580962	631708	613395	-0.6	5.6
(v) Education Loans	58118	59354	59415	58887	1.3	-0.8
(vi) Renewable Energy	3538	1961	4191	4177	18.1	113.0
(vii) Social Infrastructure	2483	2787	2402	2394	-3.6	-14.1
(viii) Export Credit	23621	22466	16909	15506	-34.4	-31.0
(ix) Others	37159	38725	43969	50219	35.1	29.7
(x) Weaker Sections including net PSLC- SF/MF	1180928	1097232	1337739	1361042	15.3	24.0

Note 1: Data are provisional. Bank credit, Food credit and Non-food credit data are based on Section-42 return, which covers all scheduled commercial banks (SCBs), while sectoral non-food credit data are based on sector-wise and industry-wise bank credit (SIBC) return, which covers select banks accounting for about 93 per cent of total non-food credit extended by all SCBs .
Note 2: With effect from January 2019, sectoral credit data are based on revised format due to which values and growth rates of some of the existing components published earlier have undergone changes.
Note 3: Credit data are adjusted for past reporting errors by select SCBs from December 2021 onwards.

1 NBFCs include HFCs, PFIs, Microfinance Institutions (MFIs), NBFCs engaged in gold loan and others.

2 "Other Services" include Mutual Fund (MFs), Banking and Finance other than NBFCs and MFs and other services which are not indicated elsewhere under services.

3 "Agriculture and Allied Activities" under the priority sector also include priority sector lending certificates (PSLCs).

4 "Micro and Small Enterprises" under the priority sector include credit to micro and small enterprises in industry and services sectors and also include PSLCs.

5 "Medium Enterprises" under the priority sector include credit to medium enterprises in industry and services sectors.

No. 16: Industry-wise Deployment of Gross Bank Credit

(₹ Crore)

Industry	Outstanding as on				Growth (%)	
	Mar. 25, 2022	2021	2022		Financial year so far	Y-o-Y
		Nov. 19	Oct.21	Nov. 18	2022-23	2022
	1	2	3	4	%	%
2 Industries (2.1 to 2.19)	3156067	2913713	3290584	3294514	4.4	13.1
2.1 Mining & Quarrying (incl. Coal)	49135	49229	51904	52338	6.5	6.3
2.2 Food Processing	173246	148117	157632	159064	–8.2	7.4
2.2.1 Sugar	26307	17388	17878	16868	–35.9	–3.0
2.2.2 Edible Oils & Vanaspati	18246	15964	15581	16710	–8.4	4.7
2.2.3 Tea	5728	5784	6124	5985	4.5	3.5
2.2.4 Others	122965	108981	118049	119501	–2.8	9.7
2.3 Beverage & Tobacco	18176	16123	19403	20057	10.3	24.4
2.4 Textiles	224026	205449	213205	211566	–5.6	3.0
2.4.1 Cotton Textiles	90384	81286	81801	81723	–9.6	0.5
2.4.2 Jute Textiles	3509	2668	3698	3731	6.3	39.8
2.4.3 Man-Made Textiles	38371	37036	39173	38689	0.8	4.5
2.4.4 Other Textiles	91761	84460	88533	87423	–4.7	3.5
2.5 Leather & Leather Products	11573	10684	11556	11311	–2.3	5.9
2.6 Wood & Wood Products	16294	15264	17587	17697	8.6	15.9
2.7 Paper & Paper Products	40565	38991	41959	41565	2.5	6.6
2.8 Petroleum, Coal Products & Nuclear Fuels	107333	89814	157974	148211	38.1	65.0
2.9 Chemicals & Chemical Products	196363	181288	222461	215902	10.0	19.1
2.9.1 Fertiliser	33160	29611	36990	33894	2.2	14.5
2.9.2 Drugs & Pharmaceuticals	61093	55363	66725	65792	7.7	18.8
2.9.3 Petro Chemicals	19622	23460	21986	23121	17.8	–1.4
2.9.4 Others	82486	72853	96761	93095	12.9	27.8
2.10 Rubber, Plastic & their Products	72013	64140	76543	75954	5.5	18.4
2.11 Glass & Glassware	5952	5951	6547	6607	11.0	11.0
2.12 Cement & Cement Products	47910	46424	51558	51177	6.8	10.2
2.13 Basic Metal & Metal Product	288531	270026	310563	311249	7.9	15.3
2.13.1 Iron & Steel	187584	179249	210102	211112	12.5	17.8
2.13.2 Other Metal & Metal Product	100946	90777	100460	100137	–0.8	10.3
2.14 All Engineering	167966	153056	172239	170101	1.3	11.1
2.14.1 Electronics	38179	36880	40596	40027	4.8	8.5
2.14.2 Others	129787	116176	131643	130074	0.2	12.0
2.15 Vehicles, Vehicle Parts & Transport Equipment	89896	85899	94684	93061	3.5	8.3
2.16 Gems & Jewellery	80512	74654	77970	73749	–8.4	–1.2
2.17 Construction	117724	116147	118452	118548	0.7	2.1
2.18 Infrastructure	1195027	1117467	1238260	1234559	3.3	10.5
2.18.1 Power	611410	579586	628330	624479	2.1	7.7
2.18.2 Telecommunications	130318	104851	131426	128906	–1.1	22.9
2.18.3 Roads	270395	249601	279031	283074	4.7	13.4
2.18.4 Airports	6646	7574	8987	9072	36.5	19.8
2.18.5 Ports	8886	9728	8360	8188	–7.9	–15.8
2.18.6 Railways	10512	13818	11844	11290	7.4	–18.3
2.18.7 Other Infrastructure	156860	152309	170283	169550	8.1	11.3
2.19 Other Industries	253823	224989	250088	281798	11.0	25.2

Note : With effect from January 2019, sectoral credit data are based on revised format due to which values and growth rates of some of the existing components published earlier have undergone some changes.

No. 17: State Co-operative Banks Maintaining Accounts with the Reserve Bank of India

(₹ Crore)

Item	Last Reporting Friday (in case of March)/Last Friday/ Reporting Friday								
	2020-21	2021	2022						
		Oct, 29	Aug, 26	Sep, 09	Sep, 23	Sep, 30	Oct, 07	Oct, 21	Oct, 28
	1	2	3	4	5	6	7	8	9
Number of Reporting Banks	32	33	32	32	32	32	33	33	33
1 Aggregate Deposits (2.1.1.2+2.2.1.2)	**125859.6**	**128013.9**	**125494.2**	**124289.9**	**124454.6**	**124590.8**	**126562.6**	**126803.0**	**126637.1**
2 Demand and Time Liabilities									
2.1 Demand Liabilities	**23736.9**	**25243.2**	**24974.3**	**24936.1**	**24309.6**	**24874.3**	**26059.9**	**26251.7**	**25889.7**
2.1.1 Deposits									
2.1.1.1 Inter-Bank	4896.9	5539.9	6345.3	6389.5	5985.6	6051.1	6093.9	6012.5	6211.1
2.1.1.2 Others	13,899.4	14672.8	13086.0	12394.4	12435.5	12836.4	14253.5	14361.5	14276.2
2.1.2 Borrowings from Banks	0.0	80.0	599.7	799.7	719.7	699.7	799.6	749.5	399.7
2.1.3 Other Demand Liabilities	4940.6	4950.5	4943.3	5352.5	5168.8	5287.2	4912.9	5128.3	5002.6
2.2 Time Liabilities	**179957.5**	**171867.5**	**174028.1**	**174199.0**	**173186.1**	**172837.7**	**172577.1**	**171821.7**	**171886.4**
2.2.1 Deposits									
2.2.1.1 Inter-Bank	65333.7	56659.6	57214.2	57155.5	57325.3	56993.6	55836.1	54914.6	55727.0
2.2.1.2 Others	111960.2	113341.1	112408.2	111895.5	112019.0	111754.4	112309.1	112441.5	112360.9
2.2.2 Borrowings from Banks	630.0	927.5	1957.6	2641.6	1354.7	1580.1	2080.1	2120.1	1441.3
2.2.3 Other Time Liabilities	2033.7	939.3	2448.0	2506.4	2487.2	2509.7	2351.8	2345.5	2357.3
3 Borrowing from Reserve Bank	0.0	0.0	0.0	0.0	0.0	35.0	35.0	35.0	35.0
4 Borrowings from a notified bank / Government	63559.8	58096.5	62522.8	63238.5	70581.6	70718.0	70049.4	68792.2	76583.1
4.1 Demand	15691.8	12222.9	12585.2	12792.5	13643.4	13633.4	13623.2	16862.7	15999.9
4.2 Time	47868.0	45873.6	49937.6	50446.0	56938.2	57084.6	56426.3	51929.6	60583.2
5 Cash in Hand and Balances with Reserve Bank	**8151.1**	**9288.5**	**10250.5**	**10265.4**	**10404.2**	**10969.0**	**10137.6**	**10492.0**	**10490.1**
5.1 Cash in Hand	570.3	728.4	692.1	729.0	883.1	821.6	809.9	758.5	814.7
5.2 Balance with Reserve Bank	7580.8	8560.1	9558.4	9536.3	9521.1	10147.4	9327.7	9733.5	9675.4
6 Balances with Other Banks in Current Account	**1148.1**	**1299.6**	**1094.8**	**1175.2**	**1263.9**	**1520.6**	**1396.1**	**1352.8**	**1407.8**
7 Investments in Government Securities	**64455.2**	**71223.2**	**71873.8**	**72378.0**	**72476.3**	**72520.1**	**73255.5**	**73448.2**	**74182.9**
8 Money at Call and Short Notice	**28835.7**	**20265.8**	**18686.5**	**17454.1**	**23185.3**	**18267.2**	**17881.7**	**15981.1**	**21439.7**
9 Bank Credit (10.1+11)	**114631.6**	**107241.8**	**120016.1**	**121183.1**	**121536.0**	**121551.1**	**121730.1**	**120921.6**	**120927.0**
10 Advances									
10.1 Loans, Cash-Credits and Overdrafts	**114612.1**	**107221.4**	**119992.7**	**121159.0**	**121513.0**	**121528.1**	**121709.0**	**120901.6**	**120906.9**
10.2 Due from Banks	89429.1	95223.9	107006.1	108547.6	112332.7	115486.6	115443.1	115130.2	117333.9
11 Bills Purchased and Discounted	19.5	20.4	23.3	24.1	23.1	23.1	21.1	20.1	20.1

Prices and Production

No. 18: Consumer Price Index (Base: 2012=100)

Group/Sub group	2021-22			Rural			Urban			Combined		
	Rural	Urban	Combined	Nov.21	Oct.22	Nov.22(P)	Nov.21	Oct.22	Nov.22(P)	Nov.21	Oct.22	Nov.22(P)
	1	2	3	4	5	6	7	8	9	10	11	12
1 Food and beverages	**162.8**	**168.7**	**165.0**	**167.5**	**177.4**	**176.6**	**173.5**	**183.3**	**181.3**	**169.7**	**179.6**	**178.3**
1.1 Cereals and products	146.4	150.4	147.6	146.9	164.7	166.9	151.0	166.4	168.4	148.2	165.2	167.4
1.2 Meat and fish	200.4	206.5	202.6	199.8	208.8	207.3	204.9	214.9	213.4	201.6	210.9	209.4
1.3 Egg	173.3	176.0	174.4	171.5	170.3	180.2	175.4	171.9	183.2	173.0	170.9	181.4
1.4 Milk and products	158.3	159.0	158.6	159.1	170.9	172.3	159.6	171.0	172.4	159.3	170.9	172.3
1.5 Oils and fats	192.2	172.4	184.9	198.4	191.6	194.0	175.8	177.7	180.0	190.1	186.5	188.9
1.6 Fruits	155.3	163.5	159.2	153.2	162.2	159.1	160.3	165.7	162.4	156.5	163.8	160.6
1.7 Vegetables	156.1	192.8	168.5	183.9	184.8	171.6	229.1	228.6	205.5	199.2	199.7	183.1
1.8 Pulses and products	164.1	164.4	164.2	165.4	169.7	170.3	165.1	169.9	171.0	165.3	169.8	170.5
1.9 Sugar and confectionery	117.4	119.1	118.0	122.1	121.1	121.5	123.1	123.4	123.4	122.4	121.9	122.1
1.10 Spices	171.2	167.5	170.0	170.8	201.6	204.7	167.2	196.4	198.8	169.6	199.9	202.7
1.11 Non-alcoholic beverages	167.8	154.7	162.3	169.1	175.8	176.3	156.1	161.6	162.1	163.7	169.9	170.4
1.12 Prepared meals, snacks, sweets	173.0	175.8	174.3	174.3	185.6	186.8	176.8	191.5	192.3	175.5	188.3	189.4
2 Pan, tobacco and intoxicants	**190.3**	**196.5**	**191.9**	**191.4**	**194.9**	**195.5**	**197.0**	**200.1**	**200.5**	**192.9**	**196.3**	**196.8**
3 Clothing and footwear	**168.2**	**158.4**	**164.3**	**169.8**	**185.9**	**186.9**	**159.7**	**173.6**	**174.8**	**165.8**	**181.0**	**182.1**
3.1 Clothing	168.8	160.9	165.7	170.4	186.1	187.2	162.3	175.5	176.8	167.2	181.9	183.1
3.2 Footwear	164.5	144.7	156.3	166.0	184.4	185.3	145.3	162.6	163.6	157.4	175.3	176.3
4 Housing	**--**	**163.0**	**163.0**	**--**	**--**	**--**	**164.2**	**171.2**	**171.7**	**164.2**	**171.2**	**171.7**
5 Fuel and light	**164.0**	**159.8**	**162.4**	**165.3**	**180.8**	**181.9**	**161.6**	**180.0**	**180.3**	**163.9**	**180.5**	**181.3**
6 Miscellaneous	**164.1**	**156.1**	**160.2**	**165.2**	**173.9**	**174.6**	**157.3**	**166.8**	**167.5**	**161.4**	**170.5**	**171.2**
6.1 Household goods and services	161.8	153.5	157.9	162.9	174.4	175.5	155.2	166.0	167.0	159.3	170.4	171.5
6.2 Health	172.0	163.3	168.6	173.4	181.2	182.3	164.2	174.7	175.8	169.9	178.7	179.8
6.3 Transport and communication	157.9	150.0	153.7	158.9	167.4	167.5	151.2	158.8	159.0	154.8	162.9	163.0
6.4 Recreation and amusement	162.7	154.8	158.2	163.8	170.6	170.8	156.7	166.3	166.8	159.8	168.2	168.5
6.5 Education	168.4	160.1	163.5	169.3	176.5	176.9	160.8	171.2	171.6	164.3	173.4	173.8
6.6 Personal care and effects	161.3	160.8	161.1	162.4	172.0	173.4	161.8	172.3	173.9	162.2	172.1	173.6
General Index (All Groups)	**164.5**	**163.1**	**163.8**	**167.6**	**177.9**	**177.8**	**165.6**	**175.3**	**175.0**	**166.7**	**176.7**	**176.5**

Source: National Statistical Office, Ministry of Statistics and Programme Implementation, Government of India.
P: Provisional.

No. 19: Other Consumer Price Indices

Item	Base Year	Linking Factor	2021-22	2021	2022	
				Nov.	Oct.	Nov.
	1	2	3	4	5	6
1 Consumer Price Index for Industrial Workers	2016	2.88	123.6	125.7	132.5	132.5
2 Consumer Price Index for Agricultural Labourers	1986-87	5.89	1075	1092	1159	1167
3 Consumer Price Index for Rural Labourers	1986-87	–	1084	1101	1170	1178

Source: Labour Bureau, Ministry of Labour and Employment, Government of India.

No. 20: Monthly Average Price of Gold and Silver in Mumbai

Item	2021-22	2021	2022	
		Nov.	Oct.	Nov.
	1	2	3	4
1 Standard Gold (₹ per 10 grams)	47999	48193	50506	51874
2 Silver (₹ per kilogram)	65426	64667	57505	60968

Source: India Bullion & Jewellers Association Ltd., Mumbai for Gold and Silver prices in Mumbai.

No. 21: Wholesale Price Index

(Base: 2011-12 = 100)

Commodities	Weight	2021-22	2021	2022		
			Nov.	Sep.	Oct. (P)	Nov. (P)
	1	2	3	4	5	6
1 ALL COMMODITIES	**100.000**	**139.4**	**143.7**	**151.9**	**152.5**	**152.1**
1.1 PRIMARY ARTICLES	**22.618**	**160.7**	**168.4**	**175.9**	**181.0**	**177.7**
1.1.1 FOOD ARTICLES	**15.256**	**167.3**	**178.3**	**182.2**	**185.9**	**180.2**
1.1.1.1 Food Grains (Cereals+Pulses)	3.462	163.5	164.7	178.4	179.6	181.9
1.1.1.2 Fruits & Vegetables	3.475	187.6	234.4	215.6	231.0	202.0
1.1.1.3 Milk	4.440	156.9	157.5	165.5	166.0	167.0
1.1.1.4 Eggs,Meat & Fish	2.402	164.0	163.0	171.3	167.8	166.7
1.1.1.5 Condiments & Spices	0.529	159.8	161.7	191.2	191.4	193.0
1.1.1.6 Other Food Articles	0.948	168.3	168.6	174.7	180.3	182.8
1.1.2 NON-FOOD ARTICLES	**4.119**	**158.1**	**156.5**	**168.2**	**167.9**	**168.2**
1.1.2.1 Fibres	0.839	158.4	161.1	208.3	194.2	193.6
1.1.2.2 Oil Seeds	1.115	214.4	202.3	196.1	189.0	199.7
1.1.2.3 Other non-food Articles	1.960	119.9	121.0	128.0	131.1	131.3
1.1.2.4 Floriculture	0.204	217.0	228.7	237.2	298.5	247.6
1.1.3 MINERALS	**0.833**	**197.2**	**198.6**	**185.7**	**185.6**	**196.7**
1.1.3.1 Metallic Minerals	0.648	193.3	194.7	168.2	168.2	182.6
1.1.3.2 Other Minerals	0.185	211.0	212.1	247.0	246.7	246.2
1.1.4 CRUDE PETROLEUM & NATURAL GAS	**2.410**	**110.3**	**115.5**	**145.3**	**170.7**	**171.2**
1.2 FUEL & POWER	**13.152**	**124.6**	**136.0**	**158.4**	**155.2**	**159.6**
1.2.1 COAL	**2.138**	**129.0**	**130.4**	**134.3**	**134.3**	**134.3**
1.2.1.1 Coking Coal	0.647	143.0	143.4	143.4	143.4	143.4
1.2.1.2 Non-Coking Coal	1.401	119.8	119.8	119.8	119.8	119.8
1.2.1.3 Lignite	0.090	170.5	200.5	294.3	294.3	294.3
1.2.2 MINERAL OILS	**7.950**	**126.2**	**139.3**	**171.7**	**166.4**	**172.4**
1.2.3 ELECTRICITY	**3.064**	**117.4**	**131.5**	**140.6**	**140.6**	**144.0**
1.3 MANUFACTURED PRODUCTS	**64.231**	**135.0**	**136.6**	**142.2**	**141.9**	**141.5**
1.3.1 MANUFACTURE OF FOOD PRODUCTS	**9.122**	**157.9**	**157.6**	**163.3**	**163.4**	**164.6**
1.3.1.1 Processing and Preserving of meat	0.134	142.8	142.6	141.4	141.4	139.4
1.3.1.2 Processing and Preserving of fish, Crustaceans, Molluscs and products thereof	0.204	144.1	150.3	148.1	140.6	140.1
1.3.1.3 Processing and Preserving of fruit and Vegetables	0.138	122.3	122.0	125.4	126.4	127.4
1.3.1.4 Vegetable and Animal oils and Fats	2.643	187.2	184.2	173.1	174.2	174.8
1.3.1.5 Dairy products	1.165	149.4	148.0	166.6	166.8	168.4
1.3.1.6 Grain mill products	2.010	145.6	146.7	163.0	163.3	165.9
1.3.1.7 Starches and Starch products	0.110	133.3	136.3	160.8	163.4	160.7
1.3.1.8 Bakery products	0.215	146.2	148.1	164.7	162.7	163.5
1.3.1.9 Sugar, Molasses & honey	1.163	122.9	125.5	127.3	127.5	128.1
1.3.1.10 Cocoa, Chocolate and Sugar confectionery	0.175	130.5	130.3	136.1	135.3	136.4
1.3.1.11 Macaroni, Noodles, Couscous and Similar farinaceous products	0.026	136.7	133.4	156.2	162.5	159.8
1.3.1.12 Tea & Coffee products	0.371	171.1	172.0	181.4	176.9	177.0
1.3.1.13 Processed condiments & salt	0.163	157.5	158.0	176.9	178.0	178.4
1.3.1.14 Processed ready to eat food	0.024	137.0	135.5	141.0	140.7	142.0
1.3.1.15 Health supplements	0.225	153.5	154.3	184.2	184.4	182.2
1.3.1.16 Prepared animal feeds	0.356	200.9	197.1	207.3	207.8	212.4
1.3.2 MANUFACTURE OF BEVERAGES	**0.909**	**126.8**	**127.3**	**128.4**	**128.7**	**128.8**
1.3.2.1 Wines & spirits	0.408	123.6	123.9	129.1	129.2	130.0
1.3.2.2 Malt liquors and Malt	0.225	130.5	131.5	134.0	134.5	133.8
1.3.2.3 Soft drinks; Production of mineral waters and Other bottled waters	0.275	128.6	128.7	122.7	123.3	122.9
1.3.3 MANUFACTURE OF TOBACCO PRODUCTS	**0.514**	**160.2**	**159.1**	**164.4**	**163.8**	**165.4**
1.3.3.1 Tobacco products	0.514	160.2	159.1	164.4	163.8	165.4

No. 21: Wholesale Price Index (Contd.)

(Base: 2011-12 = 100)

Commodities	Weight	2021-22	2021	2022		
			Nov.	Sep.	Oct. (P)	Nov. (P)
1.3.4 MANUFACTURE OF TEXTILES	**4.881**	**135.2**	**138.1**	**144.5**	**143.4**	**140.3**
1.3.4.1 Preparation and Spinning of textile fibres	2.582	128.2	132.6	136.3	133.9	128.6
1.3.4.2 Weaving & Finishing of textiles	1.509	146.8	147.9	158.4	159.7	159.5
1.3.4.3 Knitted and Crocheted fabrics	0.193	125.5	126.8	133.8	131.8	130.6
1.3.4.4 Made-up textile articles, Except apparel	0.299	138.7	140.0	155.0	154.2	154.1
1.3.4.5 Cordage, Rope, Twine and Netting	0.098	168.5	170.9	160.9	156.1	151.9
1.3.4.6 Other textiles	0.201	126.2	128.2	132.5	130.7	130.6
1.3.5 MANUFACTURE OF WEARING APPAREL	**0.814**	**143.1**	**144.2**	**149.4**	**149.3**	**149.4**
1.3.5.1 Manufacture of Wearing Apparel (woven), Except fur Apparel	0.593	142.0	142.8	147.8	147.9	147.8
1.3.5.2 Knitted and Crocheted apparel	0.221	145.8	148.0	153.9	153.2	153.5
1.3.6 MANUFACTURE OF LEATHER AND RELATED PRODUCTS	**0.535**	**119.2**	**118.7**	**123.4**	**122.9**	**122.6**
1.3.6.1 Tanning and Dressing of leather; Dressing and Dyeing of fur	0.142	103.4	102.2	107.2	106.9	105.2
1.3.6.2 Luggage, HandbAgs, Saddlery and Harness	0.075	141.5	142.1	140.9	140.3	141.9
1.3.6.3 Footwear	0.318	121.0	120.6	126.4	126.0	125.8
1.3.7 MANUFACTURE OF WOOD AND PRODUCTS OF WOOD AND CORK	**0.772**	**141.0**	**142.1**	**143.4**	**142.9**	**143.3**
1.3.7.1 Saw milling and Planing of wood	0.124	128.8	131.4	138.8	137.7	138.5
1.3.7.2 Veneer sheets; Manufacture of plywood, Laminboard, Particle board and Other panels and Boards	0.493	141.9	143.0	141.3	140.7	141.0
1.3.7.3 Builder's carpentry and Joinery	0.036	193.9	194.4	205.9	205.7	206.6
1.3.7.4 Wooden containers	0.119	134.1	134.2	138.4	138.4	139.2
1.3.8 MANUFACTURE OF PAPER AND PAPER PRODUCTS	**1.113**	**137.5**	**139.6**	**154.2**	**153.6**	**151.2**
1.3.8.1 Pulp, Paper and Paperboard	0.493	141.4	144.4	161.0	159.9	158.3
1.3.8.2 Corrugated paper and Paperboard and Containers of paper and Paperboard	0.314	137.8	138.0	150.8	149.4	148.3
1.3.8.3 Other articles of paper and Paperboard	0.306	131.0	133.4	146.6	147.8	142.7
1.3.9 PRINTING AND REPRODUCTION OF RECORDED MEDIA	**0.676**	**157.8**	**158.4**	**168.2**	**171.1**	**171.8**
1.3.9.1 Printing	0.676	157.8	158.4	168.2	171.1	171.8
1.3.10 MANUFACTURE OF CHEMICALS AND CHEMICAL PRODUCTS	**6.465**	**133.5**	**136.4**	**146.0**	**146.0**	**145.3**
1.3.10.1 Basic chemicals	1.433	143.8	150.0	160.1	160.2	158.3
1.3.10.2 Fertilizers and Nitrogen compounds	1.485	129.6	129.6	145.1	145.0	148.1
1.3.10.3 Plastic and Synthetic rubber in primary form	1.001	140.3	144.3	141.8	142.7	137.5
1.3.10.4 Pesticides and Other agrochemical products	0.454	132.1	131.4	145.5	144.3	144.9
1.3.10.5 Paints, Varnishes and Similar coatings, Printing ink and Mastics	0.491	130.4	134.1	146.2	145.7	146.2
1.3.10.6 Soap and Detergents, Cleaning and Polishing preparations, Perfumes and Toilet preparations	0.612	128.1	129.9	142.3	142.8	142.8
1.3.10.7 Other chemical products	0.692	130.3	134.0	143.0	143.8	142.1
1.3.10.8 Man-made fibres	0.296	106.6	109.2	112.0	109.5	106.8
1.3.11 MANUFACTURE OF PHARMACEUTICALS, MEDICINAL CHEMICAL AND BOTANICAL PRODUCTS	**1.993**	**135.9**	**136.2**	**140.3**	**141.4**	**141.6**
1.3.11.1 Pharmaceuticals, Medicinal chemical and Botanical products	1.993	135.9	136.2	140.3	141.4	141.6
1.3.12 MANUFACTURE OF RUBBER AND PLASTICS PRODUCTS	**2.299**	**124.8**	**127.6**	**129.5**	**129.3**	**128.5**
1.3.12.1 Rubber Tyres and Tubes; Retreading and Rebuilding of Rubber Tyres	0.609	104.3	104.9	112.9	113.4	113.7
1.3.12.2 Other Rubber Products	0.272	101.9	103.9	107.7	106.2	105.9
1.3.12.3 Plastics products	1.418	138.0	141.8	140.7	140.6	139.3
1.3.13 MANUFACTURE OF OTHER NON-METALLIC MINERAL PRODUCTS	**3.202**	**123.7**	**125.3**	**133.3**	**133.6**	**134.2**
1.3.13.1 Glass and Glass products	0.295	139.1	138.1	157.4	158.4	159.9
1.3.13.2 Refractory products	0.223	115.6	116.7	119.9	119.1	119.1
1.3.13.3 Clay Building Materials	0.121	119.3	119.0	134.9	136.5	139.3
1.3.13.4 Other Porcelain and Ceramic Products	0.222	112.9	112.2	117.0	117.5	118.5
1.3.13.5 Cement, Lime and Plaster	1.645	126.4	128.9	136.6	137.0	137.3

No. 21: Wholesale Price Index (Contd.)

(Base: 2011-12 = 100)

Commodities	Weight	2021-22	2021	2022		
			Nov.	Sep.	Oct. (P)	Nov. (P)
1.3.13.6 Articles of Concrete, Cement and Plaster	0.292	129.2	129.2	133.7	134.5	134.8
1.3.13.7 Cutting, Shaping and Finishing of Stone	0.234	122.2	122.6	126.8	125.9	126.1
1.3.13.8 Other Non-Metallic Mineral Products	0.169	90.6	97.2	105.6	105.2	106.6
1.3.14 MANUFACTURE OF BASIC METALS	**9.646**	**140.1**	**143.6**	**146.6**	**145.8**	**143.5**
1.3.14.1 Inputs into steel making	1.411	150.8	163.6	159.4	156.1	152.6
1.3.14.2 Metallic Iron	0.653	147.7	150.4	168.7	164.2	157.2
1.3.14.3 Mild Steel - Semi Finished Steel	1.274	119.1	119.3	126.3	126.1	123.8
1.3.14.4 Mild Steel -Long Products	1.081	137.4	140.4	146.8	147.1	145.0
1.3.14.5 Mild Steel - Flat products	1.144	157.5	163.5	149.6	151.4	146.4
1.3.14.6 Alloy steel other than Stainless Steel- Shapes	0.067	133.7	133.6	147.4	150.5	144.7
1.3.14.7 Stainless Steel - Semi Finished	0.924	141.7	139.5	150.9	146.5	143.2
1.3.14.8 Pipes & tubes	0.205	155.9	160.1	176.6	176.6	174.4
1.3.14.9 Non-ferrous metals incl. precious metals	1.693	139.7	143.1	139.2	140.2	140.7
1.3.14.10 Castings	0.925	118.9	118.7	131.1	130.4	131.7
1.3.14.11 Forgings of steel	0.271	159.0	160.2	171.4	173.4	172.6
1.3.15 MANUFACTURE OF FABRICATED METAL PRODUCTS, EXCEPT MACHINERY AND EQUIPMENT	**3.155**	**130.5**	**132.4**	**139.1**	**137.5**	**138.3**
1.3.15.1 Structural Metal Products	1.031	123.9	124.1	134.1	131.4	133.2
1.3.15.2 Tanks, Reservoirs and Containers of Metal	0.660	156.2	160.7	157.6	157.4	156.5
1.3.15.3 Steam generators, Except Central Heating Hot Water Boilers	0.145	96.1	97.6	99.6	99.0	102.7
1.3.15.4 Forging, Pressing, Stamping and Roll-Forming of Metal; Powder Metallurgy	0.383	117.5	122.7	136.2	134.2	135.9
1.3.15.5 Cutlery, Hand Tools and General Hardware	0.208	108.2	109.7	112.6	113.2	113.3
1.3.15.6 Other Fabricated Metal Products	0.728	136.5	136.9	146.5	144.5	144.4
1.3.16 MANUFACTURE OF COMPUTER, ELECTRONIC AND OPTICAL PRODUCTS	**2.009**	**113.7**	**113.9**	**117.2**	**117.5**	**116.9**
1.3.16.1 Electronic Components	0.402	106.0	106.8	115.9	116.5	115.6
1.3.16.2 Computers and Peripheral Equipment	0.336	134.7	134.9	134.9	134.9	134.9
1.3.16.3 Communication Equipment	0.310	121.7	120.5	129.5	129.6	129.6
1.3.16.4 Consumer Electronics	0.641	102.1	103.1	100.6	101.0	99.5
1.3.16.5 Measuring, Testing, Navigating and Control equipment	0.181	108.4	107.1	113.1	113.1	113.5
1.3.16.6 Watches and Clocks	0.076	145.6	145.6	152.8	152.7	153.1
1.3.16.7 Irradiation, Electromedical and Electrotherapeutic equipment	0.055	106.1	106.1	110.4	110.4	111.6
1.3.16.8 Optical instruments and Photographic equipment	0.008	98.3	98.4	101.6	101.6	101.6
1.3.17 MANUFACTURE OF ELECTRICAL EQUIPMENT	**2.930**	**122.3**	**123.2**	**129.2**	**129.0**	**128.8**
1.3.17.1 Electric motors, Generators, Transformers and Electricity distribution and Control apparatus	1.298	119.7	120.3	128.3	128.1	126.6
1.3.17.2 Batteries and Accumulators	0.236	121.8	123.1	132.2	132.1	133.2
1.3.17.3 Fibre optic cables for data transmission or live transmission of images	0.133	103.1	103.8	118.7	119.9	120.4
1.3.17.4 Other electronic and Electric wires and Cables	0.428	140.7	142.2	141.7	141.1	142.7
1.3.17.5 Wiring devices, Electric lighting & display equipment	0.263	114.5	115.6	117.9	117.2	117.9
1.3.17.6 Domestic appliances	0.366	128.4	129.6	134.7	134.8	134.6
1.3.17.7 Other electrical equipment	0.206	113.2	113.2	116.6	117.4	117.8
1.3.18 MANUFACTURE OF MACHINERY AND EQUIPMENT	**4.789**	**120.0**	**120.8**	**126.4**	**126.3**	**126.6**
1.3.18.1 Engines and Turbines, Except aircraft, Vehicle and Two wheeler engines	0.638	119.2	120.7	127.9	127.6	126.6
1.3.18.2 Fluid power equipment	0.162	122.1	123.8	127.8	127.5	128.3
1.3.18.3 Other pumps, Compressors, Taps and Valves	0.552	115.1	116.1	117.7	117.2	117.1
1.3.18.4 Bearings, Gears, Gearing and Driving elements	0.340	118.1	117.4	124.6	124.0	123.9
1.3.18.5 Ovens, Furnaces and Furnace burners	0.008	74.2	73.1	78.7	79.8	80.9
1.3.18.6 Lifting and Handling equipment	0.285	120.0	121.6	124.8	125.5	126.1

No. 21: Wholesale Price Index (Concld.)

(Base: 2011-12 = 100)

Commodities	Weight	2021-22	2021	2022		
			Nov.	Sep.	Oct. (P)	Nov. (P)
1.3.18.7 Office machinery and Equipment	0.006	130.2	130.2	130.2	130.2	130.2
1.3.18.8 Other general-purpose machinery	0.437	133.4	132.9	142.9	141.8	142.6
1.3.18.9 Agricultural and Forestry machinery	0.833	128.4	129.8	137.1	136.9	138.8
1.3.18.10 Metal-forming machinery and Machine tools	0.224	114.2	116.0	120.9	121.2	121.1
1.3.18.11 Machinery for mining, Quarrying and Construction	0.371	78.2	78.7	85.0	85.0	85.7
1.3.18.12 Machinery for food, Beverage and Tobacco processing	0.228	130.1	131.8	129.9	129.6	127.8
1.3.18.13 Machinery for textile, Apparel and Leather production	0.192	125.3	126.2	130.4	132.6	132.2
1.3.18.14 Other special-purpose machinery	0.468	134.7	134.8	140.4	140.5	141.6
1.3.18.15 Renewable electricity generating equipment	0.046	66.6	66.3	69.0	69.2	70.3
1.3.19 MANUFACTURE OF MOTOR VEHICLES, TRAILERS AND SEMI-TRAILERS	**4.969**	**122.7**	**124.0**	**128.3**	**128.0**	**128.0**
1.3.19.1 Motor vehicles	2.600	122.6	123.6	126.5	125.7	126.4
1.3.19.2 Parts and Accessories for motor vehicles	2.368	122.7	124.4	130.2	130.6	129.8
1.3.20 MANUFACTURE OF OTHER TRANSPORT EQUIPMENT	**1.648**	**131.7**	**132.7**	**137.6**	**137.6**	**137.5**
1.3.20.1 Building of ships and Floating structures	0.117	158.9	158.9	163.6	163.6	163.6
1.3.20.2 Railway locomotives and Rolling stock	0.110	104.4	104.9	110.6	108.3	106.1
1.3.20.3 Motor cycles	1.302	131.0	132.2	137.3	137.4	137.6
1.3.20.4 Bicycles and Invalid carriages	0.117	137.2	137.9	140.7	140.4	140.2
1.3.20.5 Other transport equipment	0.002	135.9	137.7	152.9	149.6	154.3
1.3.21 MANUFACTURE OF FURNITURE	**0.727**	**150.1**	**150.4**	**157.2**	**156.4**	**156.1**
1.3.21.1 Furniture	0.727	150.1	150.4	157.2	156.4	156.1
1.3.22 OTHER MANUFACTURING	**1.064**	**137.9**	**136.6**	**145.4**	**144.9**	**146.9**
1.3.22.1 Jewellery and Related articles	0.996	136.0	134.6	144.0	143.4	145.7
1.3.22.2 Musical instruments	0.001	192.3	192.6	180.3	180.3	193.9
1.3.22.3 Sports goods	0.012	140.4	142.1	151.8	151.7	152.0
1.3.22.4 Games and Toys	0.005	150.9	151.6	159.6	158.3	159.3
1.3.22.5 Medical and Dental instruments and Supplies	0.049	171.8	172.9	169.7	170.5	168.0
2 FOOD INDEX	**24.378**	**163.8**	**170.6**	**175.1**	**177.5**	**174.3**

Source: Office of the Economic Adviser, Ministry of Commerce and Industry, Government of India.

No. 22: Index of Industrial Production (Base:2011-12=100)

Industry	Weight	2020-21	2021-22	April-October		October	
				2021-22	2022-23	2021	2022
	1	2	3	4	5	6	7
General Index	100.00	118.1	131.6	127.5	134.3	135.0	129.6
1 Sectoral Classification							
1.1 Mining	14.37	101.0	113.3	104.9	109.1	109.8	112.5
1.2 Manufacturing	77.63	117.2	131.0	126.9	133.3	136.4	128.7
1.3 Electricity	7.99	157.6	170.1	173.4	189.7	167.3	169.3
2 Use-Based Classification							
2.1 Primary Goods	34.05	118.1	129.5	124.7	134.9	128.5	131.1
2.2 Capital Goods	8.22	75.9	88.7	84.1	95.9	89.8	87.7
2.3 Intermediate Goods	17.22	124.7	143.9	140.0	147.4	147.2	143.1
2.4 Infrastructure/ Construction Goods	12.34	124.7	148.2	143.2	152.5	153.6	155.1
2.5 Consumer Durables	12.84	101.2	113.8	110.8	118.1	129.5	109.7
2.6 Consumer Non-Durables	15.33	142.1	146.7	144.1	138.0	149.7	129.6

Source : Central Statistics Office, Ministry of Statistics and Programme Implementation, Government of India.

Government Accounts and Treasury Bills

No. 23: Union Government Accounts at a Glance

(₹ Crore)

Item	Financial Year	April - November			
	2022-23 (Budget Estimates)	2022-23 (Actuals)	2021-22 (Actuals)	Percentage to Budget Estimates	
				2022-23	2021-22
	1	2	3	4	5
1 Revenue Receipts	**2204422**	**1423152**	**1358290**	**64.6**	**75.9**
1.1 Tax Revenue (Net)	1934771	1224833	1135264	63.3	73.5
1.2 Non-Tax Revenue	269651	198319	223026	73.5	91.8
2 Non-Debt Capital Receipt	**79291**	**41481**	**20703**	**52.3**	**11.0**
2.1 Recovery of Loans	14291	13052	11339	91.3	87.2
2.2 Other Receipts	65000	28429	9364	43.7	5.4
3 Total Receipts (excluding borrowings) (1+2)	**2283713**	**1464633**	**1378993**	**64.1**	**69.8**
4 Revenue Expenditure	3194663	1995674	1800977	62.5	61.5
of which:					
4.1 Interest Payments	940651	545199	461773	58.0	57.0
5 Capital Expenditure	750246	447113	273630	59.6	49.4
6 Total Expenditure (4+5)	**3944909**	**2442787**	**2074607**	**61.9**	**59.6**
7 Revenue Deficit (4-1)	**990241**	**572522**	**442687**	**57.8**	**38.8**
8 Fiscal Deficit (6-3)	**1661196**	**978154**	**695614**	**58.9**	**46.2**
9 Gross Primary Deficit (8-4.1)	**720545**	**432955**	**233841**	**60.1**	**33.5**

Source: Controller General of Accounts (CGA), Ministry of Finance, Government of India and Union Budget 2022-23.

No. 24: Treasury Bills – Ownership Pattern

(₹ Crore)

Item	2021-22	2021	2022					
		Nov. 26	Oct. 21	Oct. 28	Nov. 4	Nov. 11	Nov. 18	Nov. 25
	1	2	3	4	5	6	7	8
1 91-day								
1.1 Banks	5310	11133	11391	12575	13506	12725	12702	16804
1.2 Primary Dealers	16705	31737	25131	26472	24966	26733	23770	23433
1.3 State Governments	31320	86665	30491	30691	34191	33531	42731	45031
1.4 Others	72109	100079	87806	85273	88091	88280	94852	105524
2 182-day								
2.1 Banks	70130	63455	74405	67300	67879	68863	67161	68750
2.2 Primary Dealers	63669	47832	62133	62901	55114	52019	50857	53570
2.3 State Governments	15763	8318	31974	30974	29974	29974	29798	27598
2.4 Others	69259	57109	89619	89679	92065	89234	86085	81725
3 364-day								
3.1 Banks	112386	110185	110332	101183	112815	117266	118414	108145
3.2 Primary Dealers	160461	107891	185973	193611	177417	178060	179639	183977
3.3 State Governments	22836	19553	42013	41753	41539	41539	45693	45396
3.4 Others	118392	97489	134378	134444	136717	134855	129832	136944
4 14-day Intermediate								
4.1 Banks								
4.2 Primary Dealers								
4.3 State Governments	289362	200002	137925	153302	104069	199657	182054	194863
4.4 Others	659	726	1113	2614	1275	210	346	1582
Total Treasury Bills (Excluding 14 day Intermediate T Bills) #	758339	741446	885647	876858	874275	873080	881536	896896

14D intermediate T-Bills are non-marketable unlike 91D, 182D and 364D T-Bills. These bills are 'intermediate' by nature as these are liquidated to replenish shortfall in the daily minimum cash balances of State Governments

Note: Primary Dealers (PDs) include banks undertaking PD business.

No. 25: Auctions of Treasury Bills

(Amount in ₹ Crore)

Date of Auction	Notified Amount	Bids Received			Bids Accepted			Total Issue (6+7)	Cut-off Price	Implicit Yield at Cut-off Price (per cent)
		Number	Total Face Value		Number	Total Face Value				
			Competitive	Non-Competitive		Competitive	Non-Competitive			
	1	2	3	4	5	6	7	8	9	10
91-day Treasury Bills										
2022-23										
Nov. 2	10000	116	27965	7761	61	9939	7761	17700	98.41	6.4702
Nov. 9	10000	123	38222	695	40	9945	695	10640	98.41	6.4764
Nov. 16	10000	134	47191	13132	31	9918	13132	23050	98.42	6.4374
Nov. 23	10000	138	49310	4166	26	9834	4166	14000	98.42	6.4482
Nov. 30	10000	146	45182	1045	29	9955	1045	11000	98.43	6.3977
182-day Treasury Bills										
2022-23										
Nov. 2	6000	107	15500	33	61	5967	33	6000	96.72	6.8011
Nov. 9	6000	105	15530	38	43	5962	38	6000	96.71	6.8195
Nov. 16	6000	129	25595	875	12	5948	875	6823	96.75	6.7398
Nov. 23	6000	170	24222	36	35	5964	36	6000	96.74	6.7531
Nov. 30	6000	146	21712	20	36	5980	20	6000	96.76	6.7254
364-day Treasury Bills										
2022-23										
Nov. 2	6000	140	17635	487	49	5959	487	6446	93.52	6.9535
Nov. 9	6000	167	14610	23	93	5977	23	6000	93.49	6.9800
Nov. 16	6000	251	33161	4225	29	5929	4225	10154	93.58	6.8827
Nov. 23	6000	227	26629	49	65	5954	49	6003	93.58	6.8799
Nov. 30	6000	156	18716	1104	54	5980	1104	7084	93.59	6.8678

Financial Markets

No. 26: Daily Call Money Rates

(Per cent per annum)

As on	Range of Rates	Weighted Average Rates
	Borrowings/ Lendings	Borrowings/ Lendings
	1	2
November 1, 2022	4.00-6.25	6.12
November 2, 2022	4.10-6.00	5.93
November 3, 2022	4.10-5.90	5.79
November 4, 2022	4.10-6.00	5.86
November 5, 2022	5.20-6.15	5.89
November 7, 2022	4.75-5.95	5.83
November 9, 2022	4.10-6.05	5.92
November 10, 2022	4.10-5.95	5.89
November 11, 2022	4.10-5.95	5.87
November 14, 2022	4.10-5.90	5.83
November 15, 2022	4.10-5.90	5.82
November 16, 2022	4.10-5.90	5.83
November 17, 2022	4.75-5.90	5.83
November 18, 2022	4.10-6.05	5.87
November 19, 2022	5.10-5.90	5.61
November 21, 2022	4.20-6.30	6.06
November 22, 2022	4.15-6.30	6.17
November 23, 2022	4.15-6.30	6.19
November 24, 2022	4.15-6.30	6.14
November 25, 2022	4.30-6.20	6.12
November 28, 2022	4.30-6.20	6.09
November 29, 2022	4.30-6.10	5.98
November 30, 2022	4.15-5.90	5.82
December 1, 2022	4.30-5.85	5.76
December 2, 2022	4.30-5.85	5.79
December 3, 2022	5.15-5.55	5.39
December 5, 2022	4.50-5.80	5.76
December 6, 2022	4.15-5.80	5.76
December 7, 2022	4.30-6.15	6.07
December 8, 2022	4.30-6.15	6.09
December 9, 2022	4.30-6.18	6.10
December 12, 2022	4.30-6.15	6.08
December 13, 2022	4.30-6.20	6.08
December 14, 2022	4.40-6.15	6.09
December 15, 2022	4.30-6.40	6.19

Note: Includes Notice Money.

No. 27: Certificates of Deposit

Item	2021	2022			
	Nov. 19	Oct. 7	Oct. 21	Nov. 4	Nov. 18
	1	2	3	4	5
1 Amount Outstanding (₹ Crore)	55596.33	226345.91	240840.76	248613.49	257555.16
1.1 Issued during the fortnight (₹ Crore)	2272.75	11412.20	41536.05	14377.62	25534.76
2 Rate of Interest (per cent)	3.59-4.22	6.20-7.37	6.33-7.40	6.73-7.14	6.64-7.28

No. 28: Commercial Paper

Item	2021	2022			
	Nov. 30	Oct. 15	Oct. 31	Nov. 15	Nov. 30
	1	2	3	4	5
1 Amount Outstanding (₹ Crore)	388363.05	415849.40	373332.25	381455.70	362307.65
1.1 Reported during the fortnight (₹ Crore)	115234.25	33906.35	39745.20	55158.95	66918.15
2 Rate of Interest (per cent)	3.38-12.76	5.92-11.98	6.40-13.72	6.21-13.78	6.50-12.01

No. 29: Average Daily Turnover in Select Financial Markets

(₹ Crore)

Item	2021-22	2021	2022					
		Nov. 26	Oct. 21	Oct. 28	Nov. 4	Nov. 11	Nov. 18	Nov. 25
	1	2	3	4	5	6	7	8
1 Call Money	14515	15488	18469	15386	17327	19813	19666	19325
2 Notice Money	2122	912	285	8931	4174	707	5568	192
3 Term Money	515	358	683	1675	465	626	970	332
4 Triparty Repo	618526	652602	759630	911559	716398	672207	791262	710250
5 Market Repo	383844	402681	478069	638020	477427	467576	555960	489094
6 Repo in Corporate Bond	4373	6203	316	3253	6056	1923	4480	473
7 Forex (US $ million)	67793	73584	89923	97414	88470	86275	96139	73613
8 Govt. of India Dated Securities	51300	51839	64851	49563	45515	58818	80771	56440
9 State Govt. Securities	5570	5137	3283	7884	3302	3769	4171	4989
10 Treasury Bills								
10.1 91-Day	4690	4211	1909	1155	3369	2076	3153	5431
10.2 182-Day	3440	2282	2391	3203	2552	2972	3175	2761
10.3 364-Day	3530	2083	2022	1846	1481	1308	2866	2061
10.4 Cash Management Bills								
11 Total Govt. Securities (8+9+10)	68530	65552	74456	63652	56219	68943	94137	71681
11.1 RBI	–	873	128	4	16	252	444	1994

No. 30: New Capital Issues by Non-Government Public Limited Companies

(Amount in ₹ Crore)

Security & Type of Issue	2021-22		2021-22 (Apr.-Nov.)		2022-23 (Apr.-Nov.) *		Nov. 2021		Nov. 2022 *	
	No. of Issues	Amount	No. of Issues	Amount	No. of Issues	Amount	No. of Issues	Amount	No. of Issues	Amount
	1	2	3	4	5	6	7	8	9	10
1 Equity Shares	**164**	**138894**	**94**	**111824**	**141**	**35274**	**17**	**57360**	**19**	**11729**
1A Premium	154	136893	89	110383	130	33100	16	56994	19	11012
1.1 Public	121	112567	76	89165	104	31838	14	36305	15	10078
1.1.1 Premium	119	111314	75	88258	101	30748	14	36175	15	9863
1.2 Rights	43	26327	18	22659	37	3436	3	21055	4	1651
1.2.1 Premium	35	25580	14	22125	29	2353	2	20820	4	1149
2 Preference Shares	–	–	–	–	–	–	–	–	–	–
2.1 Public	–	–	–	–	–	–	–	–	–	–
2.2 Rights	–	–	–	–	–	–	–	–	–	–
3 Bonds & Debentures	**28**	**11589**	**20**	**9132**	**22**	**6623**	**1**	**50**	**2**	**2000**
3.1 Convertible	–	–	–	–	–	–	–	–	–	–
3.1.1 Public	–	–	–	–	–	–	–	–	–	–
3.1.2 Rights	–	–	–	–	–	–	–	–	–	–
3.2 Non-Convertible	28	11589	20	9132	22	6623	1	50	2	2000
3.2.1 Public	28	11589	20	9132	22	6623	1	50	2	2000
3.2.2 Rights	–	–	–	–	–	–	–	–	–	–
4 Total(1+2+3)	**192**	**150484**	**114**	**120957**	**163**	**41897**	**18**	**57410**	**21**	**13729**
4.1 Public	149	124157	96	98298	126	38461	15	36355	17	12078
4.2 Rights	43	26327	18	22659	37	3436	3	21055	4	1651

Note : 1. Since April 2020, monthly data on equity issues is compiled on the basis of their listing date.
2. Figures in the columns might not add up to the total due to rounding off numbers.

Source : Securities and Exchange Board of India.

* : Data is Provisional

External Sector

No. 31: Foreign Trade

Item	Unit	2021-22	2021	2022				
			Nov.	Jul.	Aug.	Sep.	Oct.	Nov.
		1	2	3	4	5	6	7
1 Exports	₹ Crore	3147021	236862	305486	294599	284262	260168	285099
	US $ Million	422004	31795	38377	37031	35430	31597	34849
1.1 Oil	₹ Crore	503850	40936	65285	67589	58602	51819	66381
	US $ Million	67472	5495	8201	8496	7304	6293	8114
1.2 Non-oil	₹ Crore	2643171	195926	240201	227010	225660	208349	218718
	US $ Million	354533	26300	30175	28535	28126	25303	26735
2 Imports	₹ Crore	4572775	395018	509323	508184	518830	485910	476305
	US $ Million	613052	53025	63984	63878	64666	59013	58220
2.1 Oil	₹ Crore	1207803	106120	149326	153689	150792	149644	147719
	US $ Million	161810	14245	18759	19319	18795	18174	18056
2.2 Non-oil	₹ Crore	3364972	288898	359997	354495	368037	336265	328586
	US $ Million	451242	38780	45225	44560	45872	40839	40164
3 Trade Balance	₹ Crore	-1425753	-158156	-203836	-213585	-234568	-225742	-191205
	US $ Million	-191048	-21230	-25607	-26848	-29236	-27416	-23372
3.1 Oil	₹ Crore	-703953	-65184	-84041	-86100	-92190	-97825	-81338
	US $ Million	-94339	-8750	-10558	-10823	-11491	-11881	-9942
3.2 Non-oil	₹ Crore	-721800	-92972	-119796	-127486	-142377	-127917	-109868
	US $ Million	-96709	-12480	-15049	-16025	-17746	-15535	-13430

Source: DGCI&S and Ministry of Commerce & Industry.

No. 32: Foreign Exchange Reserves

Item	Unit	2021	2022					
		Dec. 31	Nov. 25	Dec. 2	Dec. 9	Dec. 16	Dec. 23	Dec. 30
		1	2	3	4	5	6	7
1 Total Reserves	**₹ Crore**	**4707812**	**4494373**	**4563182**	**4640802**	**4669753**	**4663730**	**4656002**
	US $ Million	**633614**	**550142**	**561162**	**564070**	**563499**	**562808**	**562851**
1.1 Foreign Currency Assets	₹ Crore	4234327	3980973	4041370	4114729	4140448	4130758	4121067
	US $ Million	569889	487289	496984	500125	499624	498490	498188
1.2 Gold	₹ Crore	292779	326282	333606	335094	336282	339492	341827
	US $ Million	39405	39938	41025	40729	40579	40969	41323
	Volume (Metric Tonnes)	754.1	786.28	786.28	786.28	786.28	786.28	787.37
1.3 SDRs	SDRs Million	13657	13662	13662	13662	13662	13662	13662
	₹ Crore	142017	146083	146740	148965	150669	150729	150400
	US $ Million	19114	17881	18045	18106	18181	18190	18182
1.4 Reserve Tranche Position in IMF	₹ Crore	38690	41034	41466	42012	42354	42751	42708
	US $ Million	5207	5033	5108	5110	5114	5159	5159

* Difference, if any, is due to rounding off.

No. 33: Non-Resident Deposits

(US$ Million)

Scheme	Outstanding				Flows	
	2021-22	2021	2022		2021-22	2022-23
		Nov.	Oct.	Nov.	Apr.-Nov.	Apr.-Nov.
	1	2	3	4	5	6
1 NRI Deposits	**139022**	**140745**	**132661**	**134493**	**2603**	**3624**
1.1 FCNR(B)	16918	18673	16104	16719	-1800	-199
1.2 NR(E)RA	100801	101794	94758	95311	2375	1206
1.3 NRO	21303	20279	21798	22463	2028	2617

No. 34: Foreign Investment Inflows

(US$ Million)

Item	2021-22	2021-22	2022-23	2021	2022	
		Apr.-Nov.	Apr.-Nov.	Nov.	Oct.	Nov.
	1	2	3	4	5	6
1.1 Net Foreign Direct Investment (1.1.1–1.1.2)	**38587**	**23459**	**20386**	**2192**	**2795**	**-2428**
1.1.1 Direct Investment to India (1.1.1.1–1. 1.1.2)	**56231**	**36126**	**28855**	**3330**	**3746**	**-172**
1.1.1.1 Gross Inflows/Gross Investments	**84835**	**55306**	**48761**	**6727**	**5131**	**4335**
1.1.1.1.1 Equity	59684	39847	33226	4469	3093	2491
1.1.1.1.1.1 Government (SIA/FIPB)	1698	1549	562	112	3	4
1.1.1.1.1.2 RBI	42932	27602	25661	3894	2493	2089
1.1.1.1.1.3 Acquisition of shares	14143	10111	6112	384	517	319
1.1.1.1.1.4 Equity capital of unincorporated bodies	910	585	891	80	80	80
1.1.1.1.2 Reinvested earnings	19347	12427	12424	1691	1691	1691
1.1.1.1.3 Other capital	5805	3031	3110	567	348	153
1.1.1.2 Repatriation/Disinvestment	**28605**	**19180**	**19906**	**3397**	**1385**	**4507**
1.1.1.2.1 Equity	27189	18700	18375	3312	1258	4210
1.1.1.2.2 Other capital	1416	479	1531	86	127	297
1.1.2 Foreign Direct Investment by India (1.1.2.1+1.1.2.2+1.1.2.3–1.1.2.4)	**17644**	**12667**	**8468**	**1137**	**952**	**2255**
1.1.2.1 Equity capital	10061	6907	5251	822	733	1457
1.1.2.2 Reinvested Earnings	3379	2253	2292	282	282	282
1.1.2.3 Other Capital	7604	5599	3359	226	102	1030
1.1.2.4 Repatriation/Disinvestment	3400	2093	2434	192	165	513
1.2 Net Portfolio Investment (1.2.1+1.2.2+1.2.3–1.2.4)	**-16777**	**2174**	**-2803**	**-152**	**545**	**4750**
1.2.1 GDRs/ADRs	–	–	–	–	–	–
1.2.2 FIIs	-14071	3574	-2424	227	607	4727
1.2.3 Offshore funds and others	–	–	–	–	–	–
1.2.4 Portfolio investment by India	2706	1401	379	379	62	-24
1 Foreign Investment Inflows	**21809**	**25633**	**17584**	**2040**	**3340**	**2323**

No. 35: Outward Remittances under the Liberalised Remittance Scheme (LRS) for Resident Individuals

(US$ Million)

Item	2021-22	2021	2022		
		Nov.	Sep.	Oct.	Nov.
	1	2	3	4	5
1 Outward Remittances under the LRS	**19610.77**	**1547.41**	**2671.40**	**1924.09**	**1992.70**
1.1 Deposit	830.05	50.40	79.30	64.28	60.72
1.2 Purchase of immovable property	112.90	11.01	14.64	15.28	17.17
1.3 Investment in equity/debt	746.57	57.68	76.54	111.41	86.58
1.4 Gift	2336.29	206.21	243.73	208.11	220.90
1.5 Donations	16.55	0.94	0.98	1.68	0.98
1.6 Travel	6909.04	456.31	1402.67	973.50	1030.64
1.7 Maintenance of close relatives	3302.37	267.22	366.47	280.67	305.35
1.8 Medical Treatment	37.79	3.30	4.67	4.02	4.76
1.9 Studies Abroad	5165.33	482.35	424.95	217.87	211.65
1.10 Others	153.88	11.99	57.46	47.27	53.95

No. 36: Indices of Nominal Effective Exchange Rate (NEER) and Real Effective Exchange Rate (REER) of the Indian Rupee

Item	2020-21	2021-22	2021	2022	
			December	November	December
	1	2	3	4	5
40-Currency Basket (Base: 2015-16=100)					
1 Trade-weighted					
1.1 NEER	93.92	93.13	92.95	91.63	89.48
1.2 REER	103.46	104.66	105.07	103.04	99.98
2 Export-weighted					
2.1 NEER	93.59	93.55	93.73	92.62	90.68
2.2 REER	102.96	103.48	104.11	101.06	98.33
6-Currency Basket (Trade-weighted)					
1 Base: 2015-16 = 100					
1.1 NEER	88.45	87.03	86.64	86.33	83.71
1.2 REER	101.84	102.27	102.62	102.81	99.25
2 Base: 2020-21 = 100					
2.1 NEER	100.00	98.39	97.95	97.60	94.64
2.2 REER	100.00	100.42	100.77	100.96	97.45

No. 37: External Commercial Borrowings (ECBs) – Registrations

(Amount in US$ Million)

Item	2021-22	2021	2022	
		Nov	Oct	Nov
	1	2	3	4
1 Automatic Route				
1.1 Number	1086	90	77	92
1.2 Amount	28851	1694	931	5203
2 Approval Route				
2.1 Number	18	3	3	0
2.2 Amount	11035	705	499	0
3 Total (1+2)				
3.1 Number	1104	93	80	92
3.2 Amount	39886	2399	1430	5203
4 Weighted Average Maturity (in years)	8.00	4.37	5.30	4.70
5 Interest Rate (per cent)				
5.1 Weighted Average Margin over 6-month LIBOR or reference rate for Floating Rate Loans	1.71	2.79	1.24	1.62
5.2 Interest rate range for Fixed Rate Loans	0.00-10.50	0.00-10.60	0.00-9.00	0.00-11.80
Borrower Category				
I. Corporate Manufacturing	12244	401	198	2116
II. Corporate-Infrastructure	17023	1110	464	2971
a.) Transport	1597	0	0	0
b.) Energy	8215	1106	14	1192
c.) Water and Sanitation	10	0	0	14
d.) Communication	1,258	1	0	1,515
e.) Social and Commercial Infrastructure	0	0	100	0
f.) Exploration,Mining and Refinery	4691	0	350	250
g.) Other Sub-Sectors	1252	3	0	0
III. Corporate Service-Sector	1570	48	213	13
IV. Other Entities	609	100	100	0
a.) units in SEZ	9	0	0	0
b.) SIDBI			0	0
c.) Exim Bank	600	100	100	0
V. Banks	100	0	0	0
VI. Financial Institution (Other than NBFC)	4	4	0	0
VII. NBFCs	7995	724	450	81
a). NBFC- IFC/AFC	5621	550	399	0
b). NBFC-MFI	93	1	0	31
c). NBFC-Others	2282	173	51	50
VIII. Non-Government Organization (NGO)	0	0	0	0
IX. Micro Finance Institution (MFI)	0	0	0	0
X. Others	341	12	5	22

No. 38: India's Overall Balance of Payments

(US$ Million)

Item	Jul-Sep 2021			Jul-Sep 2022(P)		
	Credit	Debit	Net	Credit	Debit	Net
	1	2	3	4	5	6
Overall Balance of Payments(1+2+3)	**405412**	**374223**	**31189**	**378470**	**408849**	**-30379**
1 CURRENT ACCOUNT (1.1+ 1.2)	**194262**	**203996**	**-9734**	**225210**	**261601**	**-36391**
1.1 MERCHANDISE	**104769**	**149280**	**-44511**	**111973**	**195519**	**-83546**
1.2 INVISIBLES (1.2.1+1.2.2+1.2.3)	**89494**	**54717**	**34777**	**113237**	**66082**	**47155**
1.2.1 Services	61418	35839	25579	79986	45554	34432
1.2.1.1 Travel	2147	3919	-1772	5775	7539	-1764
1.2.1.2 Transportation	7581	8181	-600	9533	11337	-1804
1.2.1.3 Insurance	795	575	220	756	586	170
1.2.1.4 G.n.i.e.	217	198	19	183	219	-36
1.2.1.5 Miscellaneous	50678	22965	27713	63738	25872	37866
1.2.1.5.1 Software Services	29965	3184	26781	36228	3546	32681
1.2.1.5.2 Business Services	13858	12457	1401	19141	13964	5178
1.2.1.5.3 Financial Services	1303	1463	-160	2113	1600	514
1.2.1.5.4 Communication Services	766	275	491	803	399	403
1.2.2 Transfers	21154	2163	18991	27462	2711	24751
1.2.2.1 Official	18	239	-221	52	292	-240
1.2.2.2 Private	21135	1924	19212	27410	2419	24991
1.2.3 Income	6922	16714	-9792	5789	17817	-12028
1.2.3.1 Investment Income	5425	15960	-10535	4159	16962	-12803
1.2.3.2 Compensation of Employees	1497	754	743	1630	854	775
2 CAPITAL ACCOUNT (2.1+2.2+2.3+2.4+2.5)	**209849**	**170227**	**39622**	**153260**	**146342**	**6918**
2.1 Foreign Investment (2.1.1+2.1.2)	**132472**	**119898**	**12575**	**99726**	**86757**	**12969**
2.1.1 Foreign Direct Investment	20541	11844	8697	18048	11611	6437
2.1.1.1 In India	19375	6475	12900	16844	7803	9041
2.1.1.1.1 Equity	13806	6259	7548	10699	7111	3588
2.1.1.1.2 Reinvested Earnings	4668		4668	4667		4667
2.1.1.1.3 Other Capital	900	216	684	1478	692	786
2.1.1.2 Abroad	1167	5369	-4203	1204	3808	-2603
2.1.1.2.1 Equity	1167	2824	-1658	1204	1782	-577
2.1.1.2.2 Reinvested Earnings	0	845	-845	0	865	-865
2.1.1.2.3 Other Capital	0	1700	-1700	0	1161	-1161
2.1.2 Portfolio Investment	111931	108054	3877	81678	75146	6532
2.1.2.1 In India	110448	105904	4544	81375	74473	6901
2.1.2.1.1 FIIs	110448	105904	4544	81375	74473	6901
2.1.2.1.1.1 Equity	95335	94718	618	72212	66210	6003
2.1.2.1.1.2 Debt	15112	11186	3926	9163	8264	899
2.1.2.1.2 ADR/GDRs	0	0	0	0	0	0
2.1.2.2 Abroad	1483	2150	-666	303	673	-370
2.2 Loans (2.2.1+2.2.2+2.2.3)	**25723**	**17888**	**7834**	**27520**	**22027**	**5493**
2.2.1 External Assistance	2418	1290	1129	2020	1523	497
2.2.1.1 By India	13	16	-3	11	22	-11
2.2.1.2 To India	2406	1273	1132	2009	1501	508
2.2.2 Commercial Borrowings	9283	4941	4342	5351	5463	-112
2.2.2.1 By India	282	249	33	359	100	258
2.2.2.2 To India	9001	4692	4309	4993	5363	-370
2.2.3 Short Term to India	14021	11658	2364	20149	15041	5108
2.2.3.1 Buyers' credit & Suppliers' Credit >180 days	9615	11658	-2043	17152	15041	2111
2.2.3.2 Suppliers' Credit up to 180 days	4407	0	4407	2997	0	2997
2.3 Banking Capital (2.3.1+2.3.2)	**20817**	**20457**	**360**	**15567**	**24013**	**-8447**
2.3.1 Commercial Banks	20473	20457	17	15567	24012	-8445
2.3.1.1 Assets	10097	9858	239	134	10646	-10512
2.3.1.2 Liabilities	10376	10598	-222	15433	13366	2067
2.3.1.2.1 Non-Resident Deposits	8574	9357	-783	13993	11504	2490
2.3.2 Others	344	0	344	0	2	-2
2.4 Rupee Debt Service	0	2	-2	0	1	-1
2.5 Other Capital	30837	11983	18855	10447	13543	-3096
3 Errors & Omissions	**1301**	0	**1301**	0	**906**	**-906**
4 Monetary Movements (4.1+ 4.2)	0	**31189**	**-31189**	**30379**	0	**30379**
4.1 I.M.F.	0	0	0	0	0	0
4.2 Foreign Exchange Reserves (Increase - / Decrease +)		31189	-31189	30379	0	30379

Note : P : Preliminary

No. 39: India's Overall Balance of Payments

(₹ Crore)

Item	Jul-Sep 2021			Jul-Sep 2022(P)		
	Credit	Debit	Net	Credit	Debit	Net
	1	2	3	4	5	6
Overall Balance of Payments(1+2+3)	**3003766**	**2772683**	**231083**	**3020039**	**3262450**	**-242411**
1 CURRENT ACCOUNT (1.1+ 1.2)	**1439323**	**1511443**	**-72120**	**1797085**	**2087469**	**-290384**
1.1 MERCHANDISE	**776248**	**1106039**	**-329791**	**893502**	**1560163**	**-666661**
1.2 INVISIBLES (1.2.1+1.2.2+1.2.3)	**663075**	**405404**	**257671**	**903583**	**527306**	**376277**
1.2.1 Services	455057	265535	189522	638258	363505	274753
1.2.1.1 Travel	15905	29037	-13132	46081	60160	-14079
1.2.1.2 Transportation	56168	60613	-4445	76071	90467	-14396
1.2.1.3 Insurance	5894	4263	1631	6035	4676	1360
1.2.1.4 G.n.i.e.	1607	1467	141	1463	1751	-288
1.2.1.5 Miscellaneous	375483	170154	205328	508608	206451	302156
1.2.1.5.1 Software Services	222016	23589	198426	289082	28298	260784
1.2.1.5.2 Business Services	102675	92295	10380	152740	111423	41317
1.2.1.5.3 Financial Services	9652	10836	-1184	16862	12764	4098
1.2.1.5.4 Communication Services	5676	2035	3641	6405	3185	3219
1.2.2 Transfers	156732	16028	140704	219132	21632	197501
1.2.2.1 Official	137	1774	-1638	413	2327	-1914
1.2.2.2 Private	156596	14254	142342	218719	19305	199414
1.2.3 Income	51286	123840	-72554	46193	142170	-95977
1.2.3.1 Investment Income	40194	118251	-78057	33190	135354	-102164
1.2.3.2 Compensation of Employees	11092	5589	5503	13003	6816	6187
2 CAPITAL ACCOUNT (2.1+2.2+2.3+2.4+2.5)	**1554807**	**1261241**	**293567**	**1222954**	**1167748**	**55206**
2.1 Foreign Investment (2.1.1+2.1.2)	**981510**	**888342**	**93168**	**795775**	**692288**	**103487**
2.1.1 Foreign Direct Investment	152195	87755	64439	144014	92649	51365
2.1.1.1 In India	143550	47973	95577	134406	62266	72140
2.1.1.1.1 Equity	102293	46371	55922	85373	56743	28630
2.1.1.1.2 Reinvested Earnings	34589	0	34589	37239	0	37239
2.1.1.1.3 Other Capital	6668	1602	5066	11795	5523	6271
2.1.1.2 Abroad	8645	39782	-31137	9608	30382	-20774
2.1.1.2.1 Equity	8645	20927	-12282	9608	14216	-4608
2.1.1.2.2 Reinvested Earnings	0	6259	-6259	0	6900	-6900
2.1.1.2.3 Other Capital	0	12596	-12596	0	9267	-9267
2.1.2 Portfolio Investment	829315	800587	28729	651761	599639	52122
2.1.2.1 In India	818325	784660	33664	649339	594268	55071
2.1.2.1.1 FIIs	818325	784660	33664	649339	594268	55071
2.1.2.1.1.1 Equity	706356	701779	4577	576224	528326	47898
2.1.2.1.1.2 Debt	111968	82881	29087	73116	65943	7173
2.1.2.1.2 ADR/GDRs	0	0	0	0	0	0
2.1.2.2 Abroad	10991	15927	-4936	2422	5371	-2949
2.2 Loans (2.2.1+2.2.2+2.2.3)	**190583**	**132537**	**58046**	**219602**	**175768**	**43834**
2.2.1 External Assistance	17919	9554	8364	16119	12152	3968
2.2.1.1 By India	95	120	-26	87	177	-89
2.2.1.2 To India	17824	9434	8390	16032	11975	4057
2.2.2 Commercial Borrowings	68777	36608	32169	42702	43593	-891
2.2.2.1 By India	2087	1844	242	2861	799	2062
2.2.2.2 To India	66691	34764	31927	39841	42795	-2953
2.2.3 Short Term to India	103887	86375	17512	160781	120023	40757
2.2.3.1 Buyers' credit & Suppliers' Credit >180 days	71239	86375	-15136	136866	120023	16843
2.2.3.2 Suppliers' Credit up to 180 days	32649	0	32649	23914	0	23914
2.3 Banking Capital (2.3.1+2.3.2)	**154236**	**151566**	**2670**	**124217**	**191617**	**-67400**
2.3.1 Commercial Banks	151690	151566	124	124217	191604	-67387
2.3.1.1 Assets	74810	73041	1769	1070	84951	-83881
2.3.1.2 Liabilities	76881	78525	-1645	123147	106652	16494
2.3.1.2.1 Non-Resident Deposits	63530	69328	-5798	111661	91794	19867
2.3.2 Others	2545	0	2545	0	13	-13
2.4 Rupee Debt Service	0	15	-15	0	10	-10
2.5 Other Capital	228478	88781	139697	83360	108064	-24704
3 Errors & Omissions	**9636**	0	**9636**	0	**7233**	**-7233**
4 Monetary Movements (4.1+ 4.2)	0	**231083**	**-231083**	**242411**	0	**242411**
4.1 I.M.F.	0	0	0	0	0	0
4.2 Foreign Exchange Reserves (Increase - / Decrease +)	0	231083	-231083	242411	0	242411

Note : P: Preliminary

No. 40: Standard Presentation of BoP in India as per BPM6

(US$ Million)

Item	Jul-Sep 2021			Jul-Sep 2022(P)		
	Credit	Debit	Net	Credit	Debit	Net
	1	2	3	4	5	6
1 Current Account (1.A+1.B+1.C)	**194262**	**203974**	**-9712**	**225206**	**261577**	**-36371**
1.A Goods and Services (1.A.a+1.A.b)	**166187**	**185119**	**-18932**	**191959**	**241073**	**-49114**
1.A.a Goods (1.A.a.1 to 1.A.a.3)	**104769**	**149280**	**-44511**	**111973**	**195519**	**-83546**
1.A.a.1 General merchandise on a BOP basis	104254	133258	-29004	111660	185742	-74082
1.A.a.2 Net exports of goods under merchanting	515	0	515	313	0	313
1.A.a.3 Nonmonetary gold		16022	-16022		9777	-9777
1.A.b Services (1.A.b.1 to 1.A.b.13)	**61418**	**35839**	**25579**	**79986**	**45554**	**34432**
1.A.b.1 Manufacturing services on physical inputs owned by others	75	16	59	311	28	283
1.A.b.2 Maintenance and repair services n.i.e.	74	418	-345	50	542	-492
1.A.b.3 Transport	7581	8181	-600	9533	11337	-1804
1.A.b.4 Travel	2147	3919	-1772	5775	7539	-1764
1.A.b.5 Construction	716	715	0	858	833	26
1.A.b.6 Insurance and pension services	795	575	220	756	586	170
1.A.b.7 Financial services	1303	1463	-160	2113	1600	514
1.A.b.8 Charges for the use of intellectual property n.i.e.	202	2189	-1987	324	2224	-1900
1.A.b.9 Telecommunications, computer, and information services	30823	3651	27172	37111	4140	32971
1.A.b.10 Other business services	13858	12457	1401	19141	13964	5178
1.A.b.11 Personal, cultural, and recreational services	713	1243	-530	917	1654	-737
1.A.b.12 Government goods and services n.i.e.	217	198	19	183	219	-36
1.A.b.13 Others n.i.e.	2915	813	2102	2913	889	2024
1.B Primary Income (1.B.1 to 1.B.3)	**6922**	**16714**	**-9792**	**5789**	**17817**	**-12028**
1.B.1 Compensation of employees	1497	754	743	1630	854	775
1.B.2 Investment income	4413	15740	-11328	3321	16856	-13535
1.B.2.1 Direct investment	2046	9816	-7770	1907	9939	-8032
1.B.2.2 Portfolio investment	111	2859	-2748	55	2917	-2862
1.B.2.3 Other investment	62	3064	-3002	146	3954	-3808
1.B.2.4 Reserve assets	2193	1	2193	1213	46	1167
1.B.3 Other primary income	1012	220	792	838	106	732
1.C Secondary Income (1.C.1+1.C.2)	**21153**	**2141**	**19012**	**27458**	**2688**	**24770**
1.C.1 Financial corporations, nonfinancial corporations, households, and NPISHs	21135	1924	19212	27410	2419	24991
1.C.1.1 Personal transfers (Current transfers between resident and/ non-resident households)	20237	1356	18881	26686	1750	24935
1.C.1.2 Other current transfers	899	568	331	724	669	55
1.C.2 General government	18	217	-199	48	268	-220
2 Capital Account (2.1+2.2)	**189**	**202**	**-13**	**136**	**122**	**15**
2.1 Gross acquisitions (DR.)/disposals (CR.) of non-produced nonfinancial assets	62	132	-71	6	36	-30
2.2 Capital transfers	128	70	58	130	85	45
3 Financial Account (3.1 to 3.5)	**209660**	**201236**	**8424**	**183506**	**146243**	**37263**
3.1 Direct Investment (3.1A+3.1B)	**20541**	**11844**	**8697**	**18048**	**11611**	**6437**
3.1.A Direct Investment in India	19375	6475	12900	16844	7803	9041
3.1.A.1 Equity and investment fund shares	18475	6259	12216	15366	7111	8255
3.1.A.1.1 Equity other than reinvestment of earnings	13806	6259	7548	10699	7111	3588
3.1.A.1.2 Reinvestment of earnings	4668		4668	4667		4667
3.1.A.2 Debt instruments	900	216	684	1478	692	786
3.1.A.2.1 Direct investor in direct investment enterprises	900	216	684	1478	692	786
3.1.B Direct Investment by India	1167	5369	-4203	1204	3808	-2603
3.1.B.1 Equity and investment fund shares	1167	3669	-2502	1204	2646	-1442
3.1.B.1.1 Equity other than reinvestment of earnings	1167	2824	-1658	1204	1782	-577
3.1.B.1.2 Reinvestment of earnings		845	-845		865	-865
3.1.B.2 Debt instruments	0	1700	-1700	0	1161	-1161
3.1.B.2.1 Direct investor in direct investment enterprises		1700	-1700		1161	-1161
3.2 Portfolio Investment	**111931**	**108054**	**3877**	**81678**	**75146**	**6532**
3.2.A Portfolio Investment in India	110448	105904	4544	81375	74473	6901
3.2.1 Equity and investment fund shares	95335	94718	618	72212	66210	6003
3.2.2 Debt securities	15112	11186	3926	9163	8264	899
3.2.B Portfolio Investment by India	1483	2150	-666	303	673	-370
3.3 Financial derivatives (other than reserves) and employee stock options	**5367**	**5806**	**-439**	**7454**	**7308**	**145**
3.4 Other investment	**71821**	**44344**	**27478**	**45948**	**52178**	**-6230**
3.4.1 Other equity (ADRs/GDRs)	0	0	0	0	0	0
3.4.2 Currency and deposits	8918	9357	-439	13993	11505	2488
3.4.2.1 Central bank (Rupee Debt Movements; NRG)	344	0	344	0	2	-2
3.4.2.2 Deposit-taking corporations, except the central bank (NRI Deposits)	8574	9357	-783	13993	11504	2490
3.4.2.3 General government			0			0
3.4.2.4 Other sectors			0			0
3.4.3 Loans (External Assistance, ECBs and Banking Capital)	23600	17330	6270	8945	19494	-10549
3.4.3.A Loans to India	23306	17065	6241	8576	19372	-10796
3.4.3.B Loans by India	294	265	29	369	122	247
3.4.4 Insurance, pension, and standardized guarantee schemes	55	13	42	59	1	59
3.4.5 Trade credit and advances	14021	11658	2364	20149	15041	5108
3.4.6 Other accounts receivable/payable - other	7365	5986	1379	2801	6137	-3335
3.4.7 Special drawing rights	17862		17862	0		0
3.5 Reserve assets	0	**31189**	**-31189**	**30379**	0	**30379**
3.5.1 Monetary gold			0			0
3.5.2 Special drawing rights n.a.		17862	-17862		0	0
3.5.3 Reserve position in the IMF n.a.			0			0
3.5.4 Other reserve assets (Foreign Currency Assets)	0	13326	-13326	30379	0	30379
4 Total assets/liabilities	**209660**	**201236**	**8424**	**183506**	**146243**	**37263**
4.1 Equity and investment fund shares	121882	112614	9267	96598	83949	12649
4.2 Debt instruments	62552	51447	11104	53728	56158	-2430
4.3 Other financial assets and liabilities	25227	37175	-11947	33180	6137	27043
5 Net errors and omissions	**1301**		**1301**		**906**	**-906**

Note : P : Preliminary

No. 41: Standard Presentation of BoP in India as per BPM6

(₹ Crore)

Item	Jul-Sep 2021			Jul-Sep 2022(P)		
	Credit	Debit	Net	Credit	Debit	Net
	1	2	3	4	5	6
1 Current Account (1.A+1.B+1.C)	**1439319**	**1511278**	**-71958**	**1797054**	**2087284**	**-290229**
1.A Goods and Services (1.A.a+1.A.b)	**1231305**	**1371574**	**-140270**	**1531760**	**1923668**	**-391908**
1.A.a Goods (1.A.a.1 to 1.A.a.3)	**776248**	**1106039**	**-329791**	**893502**	**1560163**	**-666661**
1.A.a.1 General merchandise on a BOP basis	772435	987331	-214896	891001	1482147	-591146
1.A.a.2 Net exports of goods under merchanting	3812	0	3812	2501	0	2501
1.A.a.3 Nonmonetary gold	0	118708	-118708	0	78016	-78016
1.A.b Services (1.A.b.1 to 1.A.b.13)	**455057**	**265535**	**189522**	**638258**	**363505**	**274753**
1.A.b.1 Manufacturing services on physical inputs owned by others	558	118	440	2480	223	2256
1.A.b.2 Maintenance and repair services n.i.e.	546	3100	-2554	396	4323	-3927
1.A.b.3 Transport	56168	60613	-4445	76071	90467	-14396
1.A.b.4 Travel	15905	29037	-13132	46081	60160	-14079
1.A.b.5 Construction	5302	5299	3	6848	6643	205
1.A.b.6 Insurance and pension services	5894	4263	1631	6035	4676	1360
1.A.b.7 Financial services	9652	10836	-1184	16862	12764	4098
1.A.b.8 Charges for the use of intellectual property n.i.e.	1499	16220	-14721	2589	17749	-15161
1.A.b.9 Telecommunications, computer, and information services	228370	27051	201318	296127	33035	263092
1.A.b.10 Other business services	102675	92295	10380	152740	111423	41317
1.A.b.11 Personal, cultural, and recreational services	5279	9207	-3928	7319	13197	-5878
1.A.b.12 Government goods and services n.i.e.	1607	1467	141	1463	1751	-288
1.A.b.13 Others n.i.e.	21601	6027	15574	23247	7093	16154
1.B Primary Income (1.B.1 to 1.B.3)	**51286**	**123840**	**-72554**	**46193**	**142170**	**-95977**
1.B.1 Compensation of employees	11092	5589	5503	13003	6816	6187
1.B.2 Investment income	32694	116622	-83928	26500	134507	-108007
1.B.2.1 Direct investment	15161	72730	-57569	15219	79312	-64093
1.B.2.2 Portfolio investment	820	21184	-20364	442	23280	-22838
1.B.2.3 Other investment	461	22703	-22242	1162	31551	-30389
1.B.2.4 Reserve assets	16251	5	16246	9677	364	9313
1.B.3 Other primary income	7500	1629	5871	6690	846	5843
1.C Secondary Income (1.C.1+1.C.2)	**156729**	**15863**	**140865**	**219101**	**21446**	**197656**
1.C.1 Financial corporations, nonfinancial corporations, households, and NPISHs	156596	14254	142342	218719	19305	199414
1.C.1.1 Personal transfers (Current transfers between resident and/ non-resident households)	149936	10045	139891	212941	13968	198973
1.C.1.2 Other current transfers	6659	4209	2451	5779	5337	442
1.C.2 General government	133	1609	-1476	382	2141	-1759
2 Capital Account (2.1+2.2)	**1402**	**1497**	**-95**	**1089**	**971**	**118**
2.1 Gross acquisitions (DR.)/disposals (CR.) of non-produced nonfinancial assets	457	981	-524	50	289	-239
2.2 Capital transfers	946	516	430	1039	682	357
3 Financial Account (3.1 to 3.5)	**1553408**	**1490992**	**62417**	**1464307**	**1166962**	**297345**
3.1 Direct Investment (3.1A+3.1B)	**152195**	**87755**	**64439**	**144014**	**92649**	**51365**
3.1.A Direct Investment in India	143550	47973	95577	134406	62266	72140
3.1.A.1 Equity and investment fund shares	136882	46371	90511	122612	56743	65869
3.1.A.1.1 Equity other than reinvestment of earnings	102293	46371	55922	85373	56743	28630
3.1.A.1.2 Reinvestment of earnings	34589	0	34589	37239	0	37239
3.1.A.2 Debt instruments	6668	1602	5066	11795	5523	6271
3.1.A.2.1 Direct investor in direct investment enterprises	6668	1602	5066	11795	5523	6271
3.1.B Direct Investment by India	8645	39782	-31137	9608	30382	-20774
3.1.B.1 Equity and investment fund shares	8645	27186	-18541	9608	21116	-11508
3.1.B.1.1 Equity other than reinvestment of earnings	8645	20927	-12282	9608	14216	-4608
3.1.B.1.2 Reinvestment of earnings	0	6259	-6259	0	6900	-6900
3.1.B.2 Debt instruments	0	12596	-12596	0	9267	-9267
3.1.B.2.1 Direct investor in direct investment enterprises	0	12596	-12596	0	9267	-9267
3.2 Portfolio Investment	**829315**	**800587**	**28729**	**651761**	**599639**	**52122**
3.2.A Portfolio Investment in India	818325	784660	33664	649339	594268	55071
3.2.1 Equity and investment fund shares	706356	701779	4577	576224	528326	47898
3.2.2 Debt securities	111968	82881	29087	73116	65943	7173
3.2.B Portfolio Investment by India	10991	15927	-4936	2422	5371	-2949
3.3 Financial derivatives (other than reserves) and employee stock options	**39762**	**43017**	**-3256**	**59477**	**58316**	**1161**
3.4 Other investment	**532137**	**328550**	**203587**	**366643**	**416358**	**-49714**
3.4.1 Other equity (ADRs/GDRs)	0	0	0	0	0	0
3.4.2 Currency and deposits	66075	69328	-3253	111661	91807	19854
3.4.2.1 Central bank (Rupee Debt Movements; NRG)	2545	0	2545	0	13	-13
3.4.2.2 Deposit-taking corporations, except the central bank (NRI Deposits)	63530	69328	-5798	111661	91794	19867
3.4.2.3 General government	0	0	0	0	0	0
3.4.2.4 Other sectors	0	0	0	0	0	0
3.4.3 Loans (External Assistance, ECBs and Banking Capital)	174857	128400	46456	71377	155555	-84177
3.4.3.A Loans to India	172675	126436	46239	68430	154579	-86150
3.4.3.B Loans by India	2181	1964	217	2948	975	1973
3.4.4 Insurance, pension, and standardized guarantee schemes	405	97	308	471	4	467
3.4.5 Trade credit and advances	103887	86375	17512	160781	120023	40757
3.4.6 Other accounts receivable/payable - other	54566	44349	10217	22353	48968	-26615
3.4.7 Special drawing rights	132346	0	132346	0	0	0
3.5 Reserve assets	**0**	**231083**	**-231083**	**242411**	**0**	**242411**
3.5.1 Monetary gold	0	0	0	0	0	0
3.5.2 Special drawing rights n.a.	0	132346	-132346	0	0	0
3.5.3 Reserve position in the IMF n.a.	0	0	0	0	0	0
3.5.4 Other reserve assets (Foreign Currency Assets)	0	98737	-98737	242411	0	242411
4 Total assets/liabilities	**1553408**	**1490992**	**62417**	**1464307**	**1166962**	**297345**
4.1 Equity and investment fund shares	903041	834377	68664	770814	669876	100938
4.2 Debt instruments	463455	381183	82272	428729	448118	-19389
4.3 Other financial assets and liabilities	186912	275432	-88520	264764	48968	215796
5 Net errors and omissions	**9636**	**0**	**9636**	**0**	**7233**	**-7233**

Note : P: Preliminary

No. 42: India's International Investment Position

(US$ Million)

Item	As on Financial Year /Quarter End							
	2021-22		2021		2022			
			Sep.		Jun.		Sep.	
	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
	1	2	3	4	5	6	7	8
1. Direct investment Abroad/in India	211573	521647	203814	506710	214230	517254	216834	510106
1.1 Equity Capital *	132765	493987	128062	480743	134357	489548	135799	481956
1.2 Other Capital	78807	27660	75752	25967	79873	27706	81034	28150
2. Portfolio investment	10642	270425	8578	291215	10614	246342	10983	245720
2.1 Equity	1110	156381	4590	177034	8153	135476	6312	137013
2.2 Debt	9533	114043	3988	114181	2461	110866	4671	108707
3. Other investment	90974	486588	84498	469430	77434	483115	86995	481281
3.1 Trade credit	18561	118145	11815	104418	21146	123184	24753	128323
3.2 Loan	10474	195245	10816	192116	6543	191557	8084	188488
3.3 Currency and Deposits	42081	140994	42302	142904	30242	137445	33528	135621
3.4 Other Assets/Liabilities	19858	32203	19565	29991	19504	30929	20630	28850
4. Reserves	607309		635363		589155		532664	
5. Total Assets/Liabilities	920498	1278660	932253	1267355	891433	1246712	847475	1237108
6. Net IIP (Assets - Liabilities)	-358162		-335102		-355279		-389633	

Note: * Equity capital includes share of investment funds and reinvested earnings.

Payment and Settlement Systems

No.43: Payment System Indicators

PART I - Payment System Indicators - Payment & Settlement System Statistics

System	Volume (Lakh)				Value (₹ Crore)			
	FY 2021-22	2021	2022		FY 2021-22	2021	2022	
		Nov.	Oct.	Nov.		Nov.	Oct.	Nov.
	1	2	3	4	5	6	7	8
A. Settlement Systems								
Financial Market Infrastructures (FMIs)								
1 CCIL Operated Systems (1.1 to 1.3)	33.01	2.56	3.06	3.67	206873112	17364382	20887702	22488758
1.1 Govt. Securities Clearing (1.1.1 to 1.1.3)	12.22	0.97	1.07	1.26	142072939	12229072	13863316	15457897
1.1.1 Outright	6.22	0.46	0.54	0.66	8793301	617831	672816	759097
1.1.2 Repo	3.08	0.26	0.31	0.36	51015712	4273958	5277168	6039868
1.1.3 Tri-party Repo	2.92	0.25	0.22	0.23	82263926	7337283	7913333	8658933
1.2 Forex Clearing	19.91	1.53	1.90	2.33	59775826	4816873	6514292	6577286
1.3 Rupee Derivatives @	0.88	0.06	0.08	0.08	5024347	318437	510094	453575
B. Payment Systems								
I Financial Market Infrastructures (FMIs)	–	–	–	–	–	–	–	–
1 Credit Transfers - RTGS (1.1 to 1.2)	2078.39	172.14	190.34	206.46	128657516	10981778	11551277	12291749
1.1 Customer Transactions	2063.73	170.95	189.18	205.30	113319292	9589985	10015711	10691727
1.2 Interbank Transactions	14.66	1.19	1.15	1.16	15338225	1391793	1535565	1600022
II Retail								
2 Credit Transfers - Retail (2.1 to 2.6)	577934.74	51880.87	85748.55	84557.58	42728006	3554896	4557107	4527540
2.1 AePS (Fund Transfers) @	9.76	0.62	0.56	0.51	575	35	31	29
2.2 APBS $	12573.33	1119.16	1843.72	1065.62	133345	9750	25462	9460
2.3 IMPS	46625.25	4120.29	4824.59	4634.80	4171037	364672	466082	454679
2.4 NACH Cr $	18757.82	1382.00	1454.99	1373.88	1281685	97513	127118	141901
2.5 NEFT	40407.29	3394.00	4570.48	4388.30	28725463	2314490	2726827	2730878
2.6 UPI @	459561.30	41864.80	73054.21	73094.47	8415900	768436	1211588	1190593
2.6.1 of which USSD @	11.99	1.00	1.26	1.79	177	15	15	19
3 Debit Transfers and Direct Debits (3.1 to 3.3)	12189.49	1039.13	1297.79	1316.60	1034444	87111	106956	110181
3.1 BHIM Aadhaar Pay @	227.73	19.78	19.99	14.52	6113	536	604	475
3.2 NACH Dr $	10754.74	907.32	1139.92	1164.17	1026641	86417	106131	109479
3.3 NETC (linked to bank account) @	1207.02	112.03	137.88	137.91	1689	158	221	227
4 Card Payments (4.1 to 4.2)	61782.93	5418.18	5533.37	4969.35	1701851	156326	196402	170738
4.1 Credit Cards (4.1.1 to 4.1.2)	22398.82	2011.16	2557.88	2351.41	971638	89217	129076	114821
4.1.1 PoS based $	11124.59	1068.93	1448.32	1319.99	380643	37499	53890	46296
4.1.2 Others $	11274.23	942.23	1109.56	1031.42	590994	51718	75186	68525
4.2 Debit Cards (4.2.1 to 4.2.1)	39384.11	3407.02	2975.49	2617.94	730213	67109	67326	55917
4.2.1 PoS based $	22967.10	2112.05	2062.25	1791.75	451550	43751	46420	37559
4.2.2 Others $	16417.00	1294.97	913.24	826.19	278663	23358	20906	18358
5 Prepaid Payment Instruments (5.1 to 5.2)	65782.75	6107.05	6167.35	6075.20	279416	24885	24296	22808
5.1 Wallets	53013.86	4870.19	4877.04	4730.07	220183	21041	18450	17342
5.2 Cards (5.2.1 to 5.2.2)	12768.89	1236.87	1290.31	1345.14	59233	3844	5846	5466
5.2.1 PoS based $	1116.16	74.48	83.89	77.72	19546	1287	1169	1039
5.2.2 Others $	11652.73	1162.38	1206.42	1267.42	39687	2557	4677	4428
6 Paper-based Instruments (6.1 to 6.2)	6999.12	577.00	561.89	586.94	6650333	533223	550935	581120
6.1 CTS (NPCI Managed)	6999.12	577.00	561.89	586.94	6650333	533223	550935	581120
6.2 Others	0.00	–	–	–	–	–	–	–
Total - Retail Payments (2+3+4+5+6)	724689.03	65022.23	99308.95	97505.68	52394049	4356441	5435696	5412387
Total Payments (1+2+3+4+5+6)	726767.42	65194.37	99499.28	97712.14	181051565	15338219	16986973	17704137
Total Digital Payments (1+2+3+4+5)	719768.30	64617.37	98937.39	97125.20	174401233	14804996	16436039	17123017

PART II - Payment Modes and Channels

System	Volume (Lakh)				Value (₹ Crore)			
	FY 2021-22	2021	2022		FY 2021-22	2021	2022	
		Nov.	Oct.	Nov.		Nov.	Oct.	Nov.
	1	2	3	4	5	6	7	8
A. Other Payment Channels								
1 Mobile Payments (mobile app based) (1.1 to 1.2)	506842.31	45548.53	78248.76	79124.19	14961371	1324008	1981459	1992072
1.1 Intra-bank $	40805.69	3732.97	5473.11	5342.59	2726363	239989	351598	354973
1.2 Inter-bank $	466036.62	41815.57	72775.65	73781.60	12235007	1084018	1629861	1637100
2 Internet Payments (Netbanking / Internet Browser Based) @ (2.1 to 2.2)	40726.59	3318.59	3628.03	3496.04	83159996	7010707	7182384	7818605
2.1 Intra-bank @	9583.32	790.69	873.32	870.33	52142582	4464587	4126602	4606598
2.2 Inter-bank @	31143.27	2527.90	2754.70	2625.70	31017413	2546120	3055782	3212007
B. ATMs								
3 Cash Withdrawal at ATMs $ (3.1 to 3.3)	65240.43	5687.57	6122.24	5606.57	3111946	271730	291667	265204
3.1 Using Credit Cards $	62.37	5.45	7.67	7.59	3130	276	375	367
3.2 Using Debit Cards $	64851.61	5653.68	6076.09	5566.62	3097739	270515	290080	263748
3.3 Using Pre-paid Cards $	326.45	28.44	38.48	32.36	11076	939	1212	1089
4 Cash Withdrawal at PoS $ (4.1 to 4.2)	91.17	4.82	2.15	2.30	728	63	22	23
4.1 Using Debit Cards $	79.42	4.14	2.12	2.28	557	39	22	23
4.2 Using Pre-paid Cards $	11.75	0.68	0.03	0.02	171	24	0	0
5 Cash Withrawal at Micro ATMs @	11126.04	925.63	1156.16	944.92	299776	25112	30463	25541
5.1 AePS @	11126.04	925.63	1156.16	944.92	299776	25112	30463	25541

PART III - Payment Infrastructures (Lakh)

System	As on March 2022	2021	2022	
		Nov.	Oct.	Nov.
	1	2	3	4
Payment System Infrastructures				
1 Number of Cards (1.1 to 1.2)	9912.93	10015.90	10235.99	10283.92
1.1 Credit Cards	736.27	675.83	793.68	806.65
1.2 Debit Cards	9176.66	9340.07	9442.32	9477.28
2 Number of PPIs @ (2.1 to 2.2)	15553.69	14832.43	15985.59	16098.30
2.1 Wallets @	12787.93	12318.18	13195.92	13269.81
2.2 Cards @	2765.76	2514.26	2789.67	2828.48
3 Number of ATMs (3.1 to 3.2)	2.52	2.42	2.55	2.55
3.1 Bank owned ATMs $	2.20	2.13	2.20	2.20
3.2 White Label ATMs $	0.31	0.29	0.35	0.36
4 Number of Micro ATMs @	9.16	6.93	12.91	13.34
5 Number of PoS Terminals	60.70	52.92	72.11	73.52
6 Bharat QR @	49.72	45.41	47.19	48.25
7 UPI QR *	1727.34	1373.33	2253.23	2302.87

@: New inclusion w.e.f. November 2019
#: Data reported by Co-operative Banks, LABs and RRBs included with effect from December 2021.
$: Inclusion separately initiated from November 2019 - would have been part of other items hitherto.
*: New inclusion w.e.f. September 2020; Includes only static UPI QR Code

Note : 1. Data is provisional.
2. ECS (Debit and Credit) has been merged with NACH with effect from January 31, 2020.
3. The data from November 2019 onwards for card payments (Debit/Credit cards) and Prepaid Payment Instruments (PPIs) may not be comparable with earlier months/ periods, as more granular data is being published along with revision in data definitions.
4. Only domestic financial transactions are considered. The new format captures e-commerce transactions; transactions using FASTags, digital bill payments and card-to-card transfer through ATMs, etc.. Also, failed transactions, chargebacks, reversals, expired cards/ wallets, are excluded.

Occasional Series

No. 44: Small Savings

(₹ Crore)

Scheme		2020-21	2021		2022	
			Feb.	Dec.	Jan.	Feb.
		1	2	3	4	5
1 Small Savings	**Receipts**	**181237**	**14405**	**18175**	**14893**	**13932**
	Outstanding	**1259585**	**1224772**	**1397878**	**1412766**	**1426737**
1.1 Total Deposits	**Receipts**	**132687**	**10143**	**13855**	**10676**	**9753**
	Outstanding	**867494**	**847119**	**969847**	**980523**	**990274**
1.1.1 Post Office Saving Bank Deposits	Receipts	39748	2252	4475	3018	3568
	Outstanding	205888	194738	226701	229719	233287
1.1.2 MGNREG	Receipts					
	Outstanding					
1.1.3 National Saving Scheme, 1987	Receipts	276	-23	-366	-15	-20
	Outstanding	3419	3037	3200	3185	3165
1.1.4 National Saving Scheme, 1992	Receipts	166	57	2	-1	-777
	Outstanding	175	40	150	149	-628
1.1.5 Monthly Income Scheme	Receipts	12211	1135	1228	1146	933
	Outstanding	221379	220277	232747	233892	234825
1.1.6 Senior Citizen Scheme 2004	Receipts	21009	1950	1929	1615	1490
	Outstanding	97051	94750	114134	115749	117239
1.1.7 Post Office Time Deposits	Receipts	41470	3798	3926	3438	3217
	Outstanding	207557	203597	241034	244474	247690
1.1.7.1 1 year Time Deposits	Outstanding	108205	107099	116043	116819	117578
1.1.7.2 2 year Time Deposits	Outstanding	7473	7418	7931	7967	7996
1.1.7.3 3 year Time Deposits	Outstanding	7227	7267	6983	6964	6944
1.1.7.4 5 year Time Deposits	Outstanding	84652	81813	110077	112724	115172
1.1.8 Post Office Recurring Deposits	Receipts	17807	974	2662	1475	1338
	Outstanding	132029	130683	151885	153359	154697
1.1.9 Post Office Cumulative Time Deposits	Receipts	0	0	-1	0	4
	Outstanding	-25	-24	-25	-25	-22
1.1.10 Other Deposits	Receipts	0	0	0	0	0
	Outstanding	21	21	21	21	21
1.2 Saving Certificates	**Receipts**	**34860**	**3647**	**3978**	**3691**	**3583**
	Outstanding	**286863**	**282483**	**321027**	**324713**	**328337**
1.2.1 National Savings Certificate VIII issue	Receipts	17361	1843	1860	1626	1585
	Outstanding	135348	133016	150513	152139	153724
1.2.2 Indira Vikas Patras	Receipts	-3	0	0	0	0
	Outstanding	159	157	158	158	158
1.2.3 Kisan Vikas Patras	Receipts	-7911	-470	-426	-193	940
	Outstanding	-6776	-6194	-8455	-8648	-7708
1.2.4 Kisan Vikas Patras - 2014	Receipts	25340	2274	2544	2258	1019
	Outstanding	147942	145422	168720	170978	171996
1.2.5 National Saving Certificate VI issue	Receipts	41	0	0	0	23
	Outstanding	-114	-147	-114	-114	-90
1.2.6 National Saving Certificate VII issue	Receipts	32	0	0	0	16
	Outstanding	-74	-103	-74	-74	-58
1.2.7 Other Certificates	Outstanding	10378	10332	10279	10274	10315
1.3 Public Provident Fund	**Receipts**	**13690**	**615**	**342**	**526**	**596**
	Outstanding	**105228**	**95170**	**107004**	**107530**	**108126**

Note : Data on receipts from April 2017 are net receipts, i.e., gross receipt minus gross payment.

Source: Accountant General, Post and Telegraphs.

No. 45 : Ownership Pattern of Central and State Governments Securities

(Per cent)

Central Government Dated Securities					
Category	2021		2022		
	Sep.	Dec.	Mar.	Jun.	Sep.
	1	2	3	4	5
(A) Total (in ₹. Crore)	**8235318**	**8439811**	**8529036**	**8784931**	**9098788**
1 Commercial Banks	37.82	35.40	35.93	36.16	36.44
2 Non-Bank PDs	0.35	0.27	0.29	0.33	0.38
3 Insurance Companies	24.18	25.74	25.89	26.34	25.94
4 Mutual Funds	2.91	3.08	2.91	2.32	2.58
5 Co-operative Banks	1.50	1.82	1.81	1.84	1.80
6 Financial Institutions	1.17	1.69	0.94	1.09	0.98
7 Corporates	0.72	1.37	1.47	1.52	1.58
8 Foreign Portfolio Investors	1.81	1.66	1.56	1.43	1.38
9 Provident Funds	3.77	4.33	4.60	4.77	4.66
10 RBI	16.98	16.92	16.62	16.06	15.28
11. Others	8.79	7.73	7.97	8.18	8.98
11.1 State Governments	1.67	1.69	1.82	1.84	1.83

State Governments Securities					
Category	2021		2022		
	Sep.	Dec.	Mar.	Jun.	Sep.
	1	2	3	4	5
(B) Total (in ₹. Crore)	**4153508**	**4257578**	**4410250**	**4472011**	**4589128**
1 Commercial Banks	35.94	34.41	34.39	34.22	34.37
2 Non-Bank PDs	0.44	0.40	0.38	0.41	0.36
3 Insurance Companies	27.50	28.85	28.42	28.39	27.71
4 Mutual Funds	1.97	1.91	1.82	1.89	2.08
5 Co-operative Banks	3.60	4.07	4.04	4.06	3.89
6 Financial Institutions	1.72	1.73	1.72	1.73	1.71
7 Corporates	1.32	1.70	1.82	1.98	1.85
8 Foreign Portfolio Investors	0.03	0.02	0.02	0.02	0.02
9 Provident Funds	18.27	20.66	20.79	20.52	20.18
10 RBI	0.85	0.83	0.80	0.79	0.79
11. Others	8.38	5.40	5.81	5.99	7.05
11.1 State Governments	0.18	0.19	0.20	0.21	0.21

Treasury Bills					
Category	2021		2022		
	Sep.	Dec.	Mar.	Jun.	Sep.
	1	2	3	4	5
(C) Total (in ₹. Crore)	**763582**	**692869**	**757198**	**1022053**	**920205**
1 Commercial Banks	50.22	47.01	49.04	51.37	50.91
2 Non-Bank PDs	1.33	1.53	4.20	2.49	2.12
3 Insurance Companies	4.12	6.29	6.58	5.34	5.46
4 Mutual Funds	17.72	13.72	14.01	14.86	11.98
5 Co-operative Banks	1.32	1.49	1.79	1.34	1.48
6 Financial Institutions	2.12	2.36	3.53	3.73	4.17
7 Corporates	2.40	3.13	3.47	4.27	3.86
8 Foreign Portfolio Investors	0.15	0.72	0.49	0.40	0.53
9 Provident Funds	0.37	0.85	0.21	1.70	3.21
10 RBI	2.63	0.00	0.00	0.00	0.00
11. Others	17.62	22.89	16.69	14.50	16.27
11.1 State Governments	12.64	18.92	11.54	10.99	12.27

No. 46: Combined Receipts and Disbursements of the Central and State Governments

(₹ Crore)

Item	2016-17	2017-18	2018-19	2019-20	2020-21 RE	2021-22 BE
	1	2	3	4	5	6
1 Total Disbursements	**4265969**	**4515946**	**5040747**	**5410887**	**6523916**	**7160694**
1.1 Developmental	2537905	2635110	2882758	3074492	3906147	4254004
1.1.1 Revenue	1878417	2029044	2224367	2446605	3259401	3242247
1.1.2 Capital	501213	519356	596774	588233	636062	922982
1.1.3 Loans	158275	86710	61617	39654	10684	88775
1.2 Non-Developmental	1672646	1812455	2078276	2253027	2526514	2810847
1.2.1 Revenue	1555239	1741432	1965907	2109629	2334608	2602289
1.2.1.1 Interest Payments	724448	814757	894520	955801	1082302	1244457
1.2.2 Capital	115775	69370	111029	141457	189487	177328
1.2.3 Loans	1632	1654	1340	1941	2419	31230
1.3 Others	55417	68381	79713	83368	91255	95843
2 Total Receipts	**4288432**	**4528422**	**5023352**	**5734166**	**6489736**	**7039032**
2.1 Revenue Receipts	3132201	3376416	3797731	3851563	3834126	4682025
2.1.1 Tax Receipts	2622145	2978134	3278947	3231582	3175594	3829889
2.1.1.1 Taxes on commodities and services	1652377	1853859	2030050	2012578	2100982	2514708
2.1.1.2 Taxes on Income and Property	965622	1121189	1246083	1216203	1071552	1311449
2.1.1.3 Taxes of Union Territories (Without Legislature)	4146	3086	2814	2800	3060	3732
2.1.2 Non-Tax Receipts	510056	398282	518783	619981	658532	852135
2.1.2.1 Interest Receipts	33220	34224	36273	31137	39830	33198
2.2 Non-debt Capital Receipts	69063	142433	140287	110094	54861	201138
2.2.1 Recovery of Loans & Advances	20942	42213	44667	59515	21151	19581
2.2.2 Disinvestment proceeds	48122	100219	95621	50578	33710	181557
3 Gross Fiscal Deficit [1 - (2.1 + 2.2)]	**1064704**	**997097**	**1102729**	**1449230**	**2634928**	**2277532**
3A Sources of Financing: Institution-wise						
3A.1 Domestic Financing	1046708	989167	1097210	1440548	2580406	2276017
3A.1.1 Net Bank Credit to Government	617123	144792	387091	571872	890012	-----
3A.1.1.1 Net RBI Credit to Government	195816	-144847	325987	190241	107494	-----
3A.1.2 Non-Bank Credit to Government	429585	844375	710119	868676	1690394	-----
3A.2 External Financing	17997	7931	5519	8682	54522	1514
3B Sources of Financing: Instrument-wise						
3B.1 Domestic Financing	1046708	989167	1097210	1440548	2580406	2276017
3B.1.1 Market Borrowings (net)	689821	794856	795845	971378	1778062	1620936
3B.1.2 Small Savings (net)	35038	71222	88961	209232	455724	367863
3B.1.3 State Provident Funds (net)	45688	42351	51004	38280	47300	45504
3B.1.4 Reserve Funds	-6436	18423	-18298	10411	-3450	5051
3B.1.5 Deposits and Advances	17792	25138	66289	-14227	29050	28868
3B.1.6 Cash Balances	-22463	-12476	17395	-323279	34179	121663
3B.1.7 Others	287268	49653	96014	548753	239540	86132
3B.2 External Financing	17997	7931	5519	8682	54522	1514
4 Total Disbursements as per cent of GDP	*27.7*	*26.4*	*26.7*	*26.6*	*33.0*	*32.1*
5 Total Receipts as per cent of GDP	*27.9*	*26.5*	*26.6*	*28.2*	*32.9*	*31.6*
6 Revenue Receipts as per cent of GDP	*20.3*	*19.8*	*20.1*	*18.9*	*19.4*	*21.0*
7 Tax Receipts as per cent of GDP	*17.0*	*17.4*	*17.4*	*15.9*	*16.1*	*17.2*
8 Gross Fiscal Deficit as per cent of GDP	*6.9*	*5.8*	*5.8*	*7.1*	*13.3*	*10.2*

…: Not available. RE: Revised Estimates; BE: Budget Estimates

Source : Budget Documents of Central and State Governments.

No. 47: Financial Accommodation Availed by State Governments under various Facilities

(₹ Crore)

Sr. No	State/Union Territory	During November-2022					
		Special Drawing Facility (SDF)		Ways and Means Advances (WMA)		Overdraft (OD)	
		Average amount availed	Number of days availed	Average amount availed	Number of days availed	Average amount availed	Number of days availed
	1	2	3	4	5	6	7
1	Andhra Pradesh	275.64	30	1601.28	29	2019.48	10
2	Arunachal Pradesh	-	-	-	-	-	-
3	Assam	-	-	-	-	-	-
4	Bihar	-	-	-	-	-	-
5	Chhattisgarh	35.65	4	-	-	-	-
6	Goa	45.32	3	-	-	-	-
7	Gujarat	-	-	-	-	-	-
8	Haryana	336.74	22	940.40	9	33.31	4
9	Himachal Pradesh	-	-	582.00	8	601.22	7
10	Jammu & Kashmir UT	-	-	879.53	27	444.68	15
11	Jharkhand	-	-	-	-	-	-
12	Karnataka	-	-	-	-	-	-
13	Kerala	-	-	106.76	3	-	-
14	Madhya Pradesh	-	-	-	-	-	-
15	Maharashtra	-	-	-	-	-	-
16	Manipur	-	-	219.85	29	116.21	21
17	Meghalaya	55.83	5	11.15	2	-	-
18	Mizoram	-	-	78.25	7	-	-
19	Nagaland	-	-	173.34	8	7.33	2
20	Odisha	-	-	-	-	-	-
21	Puducherry	-	-	-	-	-	-
22	Punjab	771.93	8	-	-	-	-
23	Rajasthan	1085.07	17	-	-	-	-
24	Tamil Nadu	-	-	-	-	-	-
25	Telangana	623.10	22	1224.06	19	524.56	5
26	Tripura	-	-	-	-	-	-
27	Uttar Pradesh	-	-	-	-	-	-
28	Uttarakhand	-	-	-	-	-	-
29	West Bengal	-	-	-	-	-	-

Note: 1. SDF is availed by State Governments against the collateral of Consolidated Sinking Fund (CSF), Guarantee Redemption Fund (GRF) & Auction Treasury Bills (ATBs) balances and other investments in government securities.
2. WMA is advance by Reserve Bank of India to State Governments for meeting temporary cash mismatches.
3. OD is advanced to State Governments beyond their WMA limits.
4. Average Availed is the total accommodation (SDF/WMA/OD) availed divided by number of days for which accommodation was extended during the month.
5. - : Nil.

Source: Reserve Bank of India.

No. 48: Investments by State Governments

(₹ Crore)

Sr. No	State/Union Territory	As on end of November 2022			
		Consolidated Sinking Fund (CSF)	Guarantee Redemption Fund (GRF)	Government Securities	Auction Treasury Bills (ATBs)
	1	2	3	4	5
1	Andhra Pradesh	9829	969	0	0
2	Arunachal Pradesh	2163	3	0	0
3	Assam	4228	74	0	0
4	Bihar	7925	-	0	0
5	Chhattisgarh	6065	-	1	4008
6	Goa	808	389	0	0
7	Gujarat	9478	568	0	0
8	Haryana	1434	1446	0	0
9	Himachal Pradesh	-	-	0	0
10	Jammu & Kashmir UT	-	-	0	0
11	Jharkhand	1024	-	0	0
12	Karnataka	12838	0	0	33342
13	Kerala	2535	-	0	0
14	Madhya Pradesh	-	1089	0	0
15	Maharashtra	55178	1194	0	23000
16	Manipur	59	119	0	0
17	Meghalaya	925	64	8	0
18	Mizoram	310	56	0	0
19	Nagaland	1506	39	0	0
20	Odisha	15408	1735	100	43915
21	Puducherry	450	-	0	1023
22	Punjab	6275	0	0	0
23	Rajasthan	-	-	129	8200
24	Tamil Nadu	7922	-	18	3137
25	Telangana	6711	1464	0	0
26	Tripura	821	15	0	1400
27	Uttarakhand	4082	161	0	0
28	Uttar Pradesh	3646	-	116	0
29	West Bengal	10760	788	239	0
	Total	**172382**	**10172**	**610**	**118025**

Notes: 1. CSF and GRF are reserve funds maintained by some State Governments with the Reserve Bank of India.
2. ATBs include Treasury bills of 91 days, 182 days and 364 days invested by State Governments in the primary market.
3. - : Not Applicable (not a member of the scheme).

No. 49: Market Borrowings of State Governments

(₹ Crore)

Sr. No.	State	2020-21		2021-22		2022-23						Total amount raised, so far in 2022-23	
						September		October		November			
		Gross Amount Raised	Net Amount Raised	Gross Amount Raised	Net Amount Raised	Gross Amount Raised	Net Amount Raised	Gross Amount Raised	Net Amount Raised	Gross Amount Raised	Net Amount Raised	Gross	Net
	1	2	3	4	5	6	7	8	9	10	11	12	13
1	Andhra Pradesh	50896	40498	46443	36103	3000	2125	2500	1625	2913	2038	45303	38159
2	Arunachal Pradesh	767	767	563	530	-	-	-	-50	-	-	-	-70
3	Assam	15030	14230	12753	10753	1600	1300	1700	1700	2400	2400	12100	11800
4	Bihar	27285	24685	28489	24334	4000	3922	6000	6000	6000	3750	19000	15922
5	Chhattisgarh	13000	10500	4000	913	-	-	-	-	-	-	-	-
6	Goa	3354	3054	2000	1450	300	100	200	200	150	-	750	250
7	Gujarat	44780	33280	31054	13554	2000	2000	7000	5000	3000	700	24000	12800
8	Haryana	30000	25550	30500	20683	2500	1950	2500	1400	3500	2950	26500	17470
9	Himachal Pradesh	6000	3755	4000	1875	2500	2300	-	-200	2000	2000	7000	5440
10	Jammu & Kashmir UT	9328	6020	8562	5373	500	500	800	660	500	500	4050	3410
11	Jharkhand	9400	8900	5000	3191	-	-	-	-500	1000	1000	1000	-
12	Karnataka	69000	61900	59000	49000	-	-	-	-3500	16000	14000	16000	10500
13	Kerala	28566	23066	27000	18120	1436	436	2500	1500	4000	2364	15436	6800
14	Madhya Pradesh	45573	38773	22000	13900	4000	4000	2000	1500	2000	2000	12000	9500
15	Maharashtra	69000	50022	68750	40790	4000	-185	11000	9000	-	-1000	45000	25315
16	Manipur	1302	1044	1476	1326	100	50	-	-	-	-	750	475
17	Meghalaya	1777	1587	1608	1298	-	-	300	300	413	263	1313	1063
18	Mizoram	944	677	747	447	100	100	100	100	100	100	840	725
19	Nagaland	1721	1366	1727	1222	-	-	-	-	146	-54	1022	572
20	Odisha	3000	500	0	-6473	-	-	-	-1000	-	-500	-	-4500
21	Puducherry	1390	790	1374	841	200	200	-	-100	-	-	400	300
22	Punjab	32995	23467	25814	12428	5105	3693	4650	3650	5300	4800	29655	20801
23	Rajasthan	57359	44273	51149	38243	2500	1000	4500	3230	1000	-500	28000	18418
24	Sikkim	1292	1292	1511	1471	250	215	200	165	277	277	877	807
25	Tamil Nadu	87977	76796	87000	72500	6000	2875	6000	1750	4000	3000	43000	29153
26	Telangana	43784	38782	45716	39256	3500	2875	3000	2375	2500	1875	25500	20394
27	Tripura	1916	1631	300	0	-	-	-	-	-	-90	-	-215
28	Uttar Pradesh	75500	59185	62500	42355	2500	-	9000	6024	-	-	14000	2291
29	Uttarakhand	6200	5208	3200	1800	-	-	500	500	-	-	500	500
30	West Bengal	59680	50180	67390	45199	7500	6000	6000	4000	-	-2500	30000	15500
	Grand Total	798816	651777	701626	492483	53591	35456	70450	45330	57199	39373	403996	263581

- : Nil.

Note: The State of J&K has ceased to exist constitutionally from October 31, 2019 and the liabilities of the State continue to remain as liabilities of the new UT of Jammu and Kashmir.

Source: Reserve Bank of India.

No. 50 (a): Flow of Financial Assets and Liabilities of Households - Instrument-wise

(Amount in ₹ Crore)

Item	2019-20				
	Q1	Q2	Q3	Q4	Annual
Net Financial Assets (I-II)	**238613.6**	**476724.8**	**386450.4**	**530769.8**	**1632558.5**
Per cent of GDP	*4.8*	*9.8*	*7.5*	*10.3*	*8.1*
I. Financial Assets	**398076.7**	**567753.2**	**517351.0**	**924069.3**	**2407250.2**
Per cent of GDP	*8.1*	*11.7*	*10.1*	*18.0*	*12.0*
of which:					
1.Total Deposits (a+b)	12239.0	296625.6	124015.7	451698.3	884578.5
(a) Bank Deposits	-10550.9	278124.4	116211.9	444044.6	827830.0
i. Commercial Banks	-13293.8	269475.4	66666.7	446006.7	768855.0
ii. Co-operative Banks	2742.9	8649.0	49545.2	-1962.1	58975.0
(b) Non-Bank Deposits	22789.9	18501.2	7803.7	7653.7	56748.5
2. Life Insurance Funds	117873.1	108209.1	110373.8	37714.2	374170.2
3. Provident and Pension Funds (including PPF)	104681.1	98426.3	103356.1	193739.0	500202.5
4. Currency	61244.1	-26104.8	86832.6	160690.2	282662.1
5. Investments	43936.8	43018.8	22655.1	-11953.8	97656.9
of which:					
(a) Mutual Funds	23303.5	38382.2	19191.1	-19191.1	61685.7
(b) Equity	18648.2	2172.4	936.2	4981.0	26737.8
6. Small Savings (excluding PPF)	57038.5	46514.1	69053.6	91117.2	263723.4
II. Financial Liabilities	**159463.1**	**91028.5**	**130900.6**	**393299.5**	**774691.7**
Per cent of GDP	*3.2*	*1.9*	*2.6*	*7.7*	*3.9*
Loans (Borrowings) from					
1. Financial Corporations (a+b)	159429.6	90994.9	130867.1	393266.0	774557.6
(a) Banking Sector	140261.4	58074.4	114905.9	196581.1	509822.8
of which:					
Commercial Banks	135754.1	57135.0	87377.4	202214.2	482480.6
(b) Other Financial Institutions	19168.2	32920.5	15961.2	196684.8	264734.8
i. Non-Banking Financial Companies	-519.7	22976.7	29930.7	198264.3	250652.0
ii. Housing Finance Companies	17033.0	8093.1	-15710.4	-3093.1	6322.6
iii. Insurance Companies	2655.0	1850.8	1740.9	1513.6	7760.2
2. Non-Financial Corporations (Private Corporate Business)	33.8	33.8	33.8	33.8	135.1
3. General Government	-0.3	-0.3	-0.3	-0.3	-1.0

No. 50 (a): Flow of Financial Assets and Liabilities of Households - Instrument-wise (Contd.)

(Amount in ₹ Crore)

Item	2020-21				
	Q1	Q2	Q3	Q4	Annual
Net Financial Assets (I-II)	**600422.5**	**573643.2**	**481433.5**	**719844.5**	**2375343.7**
Per cent of GDP	*15.5*	*12.1*	*8.8*	*12.5*	*12.0*
I. Financial Assets	**805869.5**	**612224.3**	**651241.3**	**1092617.4**	**3161952.5**
Per cent of GDP	*20.8*	*13.0*	*12.0*	*19.0*	*16.0*
of which:					
1.Total Deposits (a+b)	297412.4	278631.7	158172.2	525550.7	1259767.1
(a) Bank Deposits	281191.3	264565.3	147096.0	527056.7	1219909.2
i. Commercial Banks	279010.5	262033.7	143558.6	471730.9	1156333.7
ii. Co-operative Banks	2180.8	2531.6	3537.3	55325.8	63575.6
(b) Non-Bank Deposits	16221.1	14066.4	11076.3	-1506.0	39857.9
2. Life Insurance Funds	123291.4	142365.7	156438.6	141120.0	563215.8
3. Provident and Pension Funds (including PPF)	119666.9	110916.6	108512.2	207604.5	546700.1
4. Currency	202432.7	21286.9	91456.0	66800.5	381976.1
5. Investments	6249.8	-12956.4	67659.3	63624.0	124576.7
of which:					
(a) Mutual Funds	-16021.0	-28837.7	57675.4	51267.0	64083.8
(b) Equity	18599.4	8291.5	5307.1	6333.3	38531.2
6. Small Savings (excluding PPF)	55760.7	70924.2	67947.4	86862.2	281494.6
II. Financial Liabilities	**205447.0**	**38581.1**	**169807.8**	**372772.9**	**786608.8**
Per cent of GDP	*5.3*	*0.8*	*3.1*	*6.5*	*4.0*
Loans (Borrowings) from					
1. Financial Corporations (a+b)	205490.3	38624.3	169851.0	372816.9	786782.5
(a) Banking Sector	211058.8	13213.0	139622.0	284732.6	648626.4
of which:					
Commercial Banks	211259.3	13213.8	140514.3	242476.0	607463.5
(b) Other Financial Institutions	-5568.6	25411.3	30229.0	88084.4	138156.1
i. Non-Banking Financial Companies	-15450.4	21627.1	15921.2	61326.1	83424.0
ii. Housing Finance Companies	10516.6	2875.1	13048.5	25336.1	51776.2
iii. Insurance Companies	-634.8	909.2	1259.3	1422.2	2955.9
2. Non-Financial Corporations (Private Corporate Business)	33.8	33.8	33.8	33.0	134.4
3. General Government	-77.0	-77.0	-77.0	-77.0	-308.0

No. 50 (a): Flow of Financial Assets and Liabilities of Households - Instrument-wise (Concld.)

(Amount in ₹ Crore)

Item	2021-22				
	Q1	Q2	Q3	Q4	Annual
Net Financial Assets (I-II)	**519781.2**	**358325.2**	**453302.7**	**636259.8**	**1967668.9**
Per cent of GDP	*10.1*	*6.4*	*7.2*	*9.6*	*8.3*
I. Financial Assets	**382780.7**	**547346.2**	**834009.6**	**796341.7**	**2560478.2**
Per cent of GDP	*7.5*	*9.7*	*13.2*	*12.0*	*10.8*
of which:					
1.Total Deposits (a+b)	-84377.1	202652.1	425821.4	151374.9	695471.4
(a) Bank Deposits	-106507.3	197301.2	422819.5	140297.2	653910.7
i. Commercial Banks	-108037.7	195617.4	418642.9	145510.5	651733.1
ii. Co-operative Banks	1530.4	1683.8	4176.7	-5213.3	2177.6
(b) Non-Bank Deposits	22130.2	5350.9	3001.9	11077.7	41560.7
2. Life Insurance Funds	114617.8	127356.0	103154.9	95681.7	440810.4
3. Provident and Pension Funds (including PPF)	126469.7	108777.0	91543.9	254877.2	581667.9
4. Currency	128660.2	-68631.2	62793.3	146845.0	269667.4
5. Investments	24929.6	82305.4	69760.9	50980.8	227976.7
of which:					
(a) Mutual Funds	14573.0	63151.3	37912.2	44963.7	160600.1
(b) Equity	4502.5	13218.5	27808.2	3084.1	48613.3
6. Small Savings (excluding PPF)	71423.1	93829.6	79877.9	95524.7	340655.3
II. Financial Liabilities	**-137000.5**	**189021.0**	**380706.9**	**160081.8**	**592809.2**
Per cent of GDP	*-2.7*	*3.4*	*6.0*	*2.4*	*2.5*
Loans (Borrowings) from					
1. Financial Corporations (a+b)	-137021.8	188999.7	380685.6	160060.6	592724.1
(a) Banking Sector	-113662.5	134166.1	320160.2	153323.3	493987.0
of which:					
Commercial Banks	-108061.2	135728.8	317452.5	152364.2	497484.4
(b) Other Financial Institutions	-23359.3	54833.7	60525.5	6737.3	98737.1
i. Non-Banking Financial Companies	-31118.4	28880.1	29479.8	-31016.3	-3774.8
ii. Housing Finance Companies	7132.0	24403.8	29494.8	37436.2	98466.8
iii. Insurance Companies	627.1	1549.8	1550.9	317.4	4045.2
2. Non-Financial Corporations (Private Corporate Business)	33.8	33.8	33.8	33.8	135.1
3. General Government	-12.5	-12.5	-12.5	-12.5	-50.0

Notes: 1. Net Financial Savings of households refer to the flow of net financial assets, which represents change in financial assets held by households minus change in their financial liabilities.
2. Revisions in small savings and PPF are mainly on account of quarterly figures being derived from monthly receipts data sourced from Controller General of Accounts, Government of India.
3. Revisions in bank deposits for 2021-22 are attributed to the lower share of households in total deposits as per BSR-2.
4. Data as ratios to GDP have been calculated based on the Provisional Estimates of National Income 2021-22 released on May 31, 2022.
5. Figures in the columns may not add up to the total due to rounding off.

No. 50 (b): Stocks of Financial Assets and Liabilities of Households- Select Indicators

(Amount in ₹ Crore)

Item	Jun-2019	Sep-2019	Dec-2019	Mar-2020
Financial Assets (a+b+c+d)	**16315506.3**	**16632816.5**	**17010694.5**	**17180616.2**
Per cent of GDP	*84.7*	*85.4*	*86.2*	*85.6*
(a) Bank Deposits (i+ii)	8858293.4	9136417.9	9252629.8	9696674.3
i. Commercial Banks	8131543.2	8401018.6	8467685.3	8913692.0
ii. Co-operative Banks	726750.2	735399.2	784944.4	782982.3
(b) Life Insurance Funds	3883609.7	3930727.6	4049902.5	3884771.5
(c) Currency	2010842.9	1984738.1	2071570.7	2232261.0
(d) Mutual Funds	1404631.5	1412654.1	1468727.6	1197092.9
Financial Liabilities (a+b)	**6370092.6**	**6461087.5**	**6591954.6**	**6985220.6**
Per cent of GDP	*33.1*	*33.2*	*33.4*	*34.8*
Loans (Borrowings) from				
(a) Banking Sector	5148115.0	5206189.4	5321095.3	5517676.4
of which:				
i. Commercial Banks	4668496.4	4725631.3	4813008.7	5015222.9
ii. Co-operative Banks	478956.2	479656.9	506946.6	501074.8
(b) Other Financial Institutions	1221977.5	1254898.1	1270859.3	1467544.1
of which:				
i. Non-Banking Financial Companies	451922.3	474899.0	504829.7	703094.0
ii. Housing Finance Companies	673312.1	681405.2	665694.8	662601.7

No. 50 (b): Stocks of Financial Assets and Liabilities of Households- Select Indicators (Contd.)

(Amount in ₹ Crore)

Item	Jun-2020	Sep-2020	Dec-2020	Mar-2021
Financial Assets (a+b+c+d)	**18039169.4**	**18606364.4**	**19333484.1**	**20168953.3**
Per cent of GDP	*94.9*	*98.6*	*100.8*	*101.9*
(a) Bank Deposits (i+ii)	9977865.6	10242430.9	10389526.9	10916583.6
i. Commercial Banks	9192702.5	9454736.2	9598294.8	10070025.7
ii. Co-operative Banks	785163.1	787694.7	791232.1	846557.9
(b) Life Insurance Funds	4102000.7	4274424.9	4551882.0	4718718.2
(c) Currency	2434693.7	2455980.6	2547436.6	2614237.0
(d) Mutual Funds	1343752.0	1443784.4	1648999.0	1730461.0
Financial Liabilities (a+b)	**7190710.8**	**7229335.1**	**7399186.1**	**7772003.0**
Per cent of GDP	*37.8*	*38.3*	*38.6*	*39.3*
Loans (Borrowings) from				
(a) Banking Sector	5728735.3	5741948.3	5881570.2	6166302.8
of which:				
i. Commercial Banks	5226482.2	5239696.0	5380210.4	5622686.4
ii. Co-operative Banks	500870.2	500865.3	499968.8	542221.2
(b) Other Financial Institutions	1461975.5	1487386.9	1517615.9	1605700.3
of which:				
i. Non-Banking Financial Companies	687643.6	709270.7	725191.9	786518.0
ii. Housing Finance Companies	673118.3	675993.4	689041.8	714377.9

No. 50 (b): Stocks of Financial Assets and Liabilities of Households- Select Indicators (Concld.)

(Amount in ₹ Crore)

Item	Jun-2021	Sep-2021	Dec-2021	Mar-2022
Financial Assets (a+b+c+d)	**20508115.7**	**21057343.4**	**21673261.7**	**22104312.7**
Per cent of GDP	*97.4*	*95.9*	*95.0*	*93.4*
(a) Bank Deposits (i+ii)	10810076.3	11007377.6	11430197.1	11570494.3
i. Commercial Banks	9961988.0	10157605.4	10576248.3	10721758.8
ii. Co-operative Banks	848088.3	849772.1	853948.8	848735.5
(b) Life Insurance Funds	4894238.5	5105262.1	5175997.5	5287980.3
(c) Currency	2742897.3	2674266.1	2737059.4	2883904.4
(d) Mutual Funds	1855000.1	2064363.5	2126112.0	2152140.5
Financial Liabilities (a+b)	**7634981.2**	**7823980.9**	**8204666.6**	**8364727.1**
Per cent of GDP	*36.3*	*35.6*	*36.0*	*35.3*
Loans (Borrowings) from				
(a) Banking Sector	6052640.2	6186806.3	6506966.5	6660289.7
of which:				
i. Commercial Banks	5514625.2	5650354.1	5967806.6	6120170.8
ii. Co-operative Banks	536604.9	535027.3	537720.1	538664.3
(b) Other Financial Institutions	1582341.0	1637174.6	1697700.1	1704437.4
of which:				
i. Non-Banking Financial Companies	755399.6	784279.7	813759.5	782743.2
ii. Housing Finance Companies	721510.0	745913.7	775408.5	812844.7

Notes: 1. Data have been compiled for select financial instruments only (loans from Banking Sector, NBFCs and HFCs) for which data are available.
2. Data as ratios to GDP have been calculated based on the Provisional Estimates of National Income 2021-22 released on May 31, 2022.
3. Figures in the columns may not add up to the total due to rounding off.

Explanatory Notes to the Current Statistics

Table No. 1

1.2& 6: Annual data are average of months.
3.5 & 3.7: Relate to ratios of increments over financial year so far.
4.1 to 4.4, 4.8,4.9 &5: Relate to the last friday of the month/financial year.
4.5, 4.6 & 4.7: Relate to five major banks on the last Friday of the month/financial year.
4.10 to 4.12: Relate to the last auction day of the month/financial year.
4.13: Relate to last day of the month/ financial year
7.1&7.2: Relate to Foreign trade in US Dollar.

Table No. 2

2.1.2: Include paid-up capital, reserve fund and Long-Term Operations Funds.
2.2.2: Include cash, fixed deposits and short-term securities/bonds, e.g., issued by IIFC (UK).

Table No. 4

Maturity-wise position of outstanding forward contracts is available at http://nsdp.rbi.org.in under ''Reserves Template''.

Table No. 5

Special refinance facility to Others, i.e. to the EXIM Bank, is closed since March 31, 2013.

Table No. 6

For scheduled banks, March-end data pertain to the last reporting Friday.
2.2: Exclude balances held in IMF Account No.1, RBI employees' provident fund, pension fund, gratuity and superannuation fund.

Table Nos. 7 & 11

3.1 in Table 7 and 2.4 in Table 11: Include foreign currency denominated bonds issued by IIFC (UK).

Table No. 8

NM_2 and NM_3 do not include FCNR (B) deposits.
2.4: Consist of paid-up capital and reserves.
2.5: includes other demand and time liabilities of the banking system.

Table No. 9

Financial institutions comprise EXIM Bank, SIDBI, NABARD and NHB.
L_1 and L_2 are compiled monthly and L_3 quarterly.
Wherever data are not available, the last available data have been repeated.

Table No. 13

Data against column Nos. (1), (2) & (3) are Final and for column Nos. (4) & (5) data are Provisional.

Table No. 14

Data in column Nos. (4) & (8) are Provisional.

Table No. 17

2.1.1: Exclude reserve fund maintained by co-operative societies with State Co-operative Banks

2.1.2: Exclude borrowings from RBI, SBI, IDBI, NABARD, notified banks and State Governments.

4: Include borrowings from IDBI and NABARD.

Table No. 24

Primary Dealers (PDs) include banks undertaking PD business.

Table No. 30

Exclude private placement and offer for sale.

1: Exclude bonus shares.

2: Include cumulative convertible preference shares and equi-preference shares.

Table No. 32

Exclude investment in foreign currency denominated bonds issued by IIFC (UK), SDRs transferred by Government of India to RBI and foreign currency received under SAARC SWAP arrangement. Foreign currency assets in US dollar take into account appreciation/depreciation of non-US currencies (such as Euro, Sterling, Yen and Australian Dollar) held in reserves. Foreign exchange holdings are converted into rupees at rupee-US dollar RBI holding rates.

Table No. 34

1.1.1.1.2 & 1.1.1.1.1.4: Estimates.

1.1.1.2: Estimates for latest months.

'Other capital' pertains to debt transactions between parent and subsidiaries/branches of FDI enterprises.

Data may not tally with the BoP data due to lag in reporting.

Table No. 35

1.10: Include items such as subscription to journals, maintenance of investment abroad, student loan repayments and credit card payments.

Table No. 36

Increase in indices indicates appreciation of rupee and vice versa. For 6-Currency index, base year 2020-21 is a moving one, which gets updated every year. REER figures are based on Consumer Price Index (combined). The details on methodology used for compilation of NEER/REER indices are available in December 2005, April 2014 and January 2021 issues of the RBI Bulletin.

Table No. 37

Based on applications for ECB/Foreign Currency Convertible Bonds (FCCBs) which have been allotted loan registration number during the period.

Table Nos. 38, 39, 40 & 41

Explanatory notes on these tables are available in December issue of RBI Bulletin, 2012.

Table No. 43

Part I-A. Settlement systems

1.1.3: Tri- party Repo under the securities segment has been operationalised from November 05, 2018.

Part I-B. Payments systems

4.1.2: 'Others' includes e-commerce transactions and digital bill payments through ATMs, etc.

4.2.2: 'Others' includes e-commerce transactions, card to card transfers and digital bill payments through ATMs, etc.

5: Available from December 2010.

5.1: includes purchase of goods and services and fund transfer through wallets.

5.2.2: includes usage of PPI Cards for online transactions and other transactions.

6.1: Pertain to three grids – Mumbai, New Delhi and Chennai.

6.2: 'Others' comprises of Non-MICR transactions which pertains to clearing houses managed by 21 banks.

Part II-A. Other payment channels

1: Mobile Payments –
- Include transactions done through mobile apps of banks and UPI apps.
- The data from July 2017 includes only individual payments and corporate payments initiated, processed, and authorised using mobile device. Other corporate payments which are not initiated, processed, and authorised using mobile device are excluded.

2: Internet Payments – includes only e-commerce transactions through 'netbanking' and any financial transaction using internet banking website of the bank.

Part II-B. ATMs

3.3 and 4.2: only relates to transactions using bank issued PPIs.

Part III. Payment systems infrastructure

3: Includes ATMs deployed by Scheduled Commercial Banks (SCBs) and White Label ATM Operators (WLAOs). WLAs are included from April 2014 onwards.

Table No. 45

(-): represents nil or negligible

The revised table format since June 2016, incorporates the ownership pattern of State Governments Securities and Treasury Bills along with the Central Government Securities.

State Government Securities include special bonds issued under Ujwal DISCOM Assurance Yojana (UDAY) scheme.

Bank PDs are clubbed under Commercial Banks. However, they form very small fraction of total outstanding securities.

The category 'Others' comprises State Governments, Pension Funds, PSUs, Trusts, HUF/Individuals *etc.*

Table No. 46

GDP data is based on 2011-12 base. GDP data from 2020-21 pertains to the Provisional Estimates of National Income released by National Statistics Office on May 31, 2021. GDP for 2021-22 is from Union Budget 2021-22.

Data pertains to all States and Union Territories.

Total receipts and total expenditure exclude National Calamity Contingency Fund expenditure.

1 & 2: Data are net of repayments of the Central Government (including repayments to the NSSF) and State Governments.

1.3: Represents compensation and assignments by States to local bodies and Panchayati Raj institutions.

2: Data are net of variation in cash balances of the Central and State Governments and includes borrowing receipts of the Central and State Governments.

3A.1.1: Data as per RBI records.

3B.1.1: Borrowings through dated securities.

3B.1.2: Represent net investment in Central and State Governments' special securities by the National Small Savings Fund (NSSF).

This data may vary from previous publications due to adjustments across components with availability of new data.

3B.1.6: Include Ways and Means Advances by the Centre to the State Governments.

3B.1.7: Include Treasury Bills, loans from financial institutions, insurance and pension funds, remittances, cash balance investment account.

Table No. 47

SDF is availed by State Governments against the collateral of Consolidated Sinking Fund (CSF), Guarantee Redemption Fund (GRF) & Auction Treasury Bills (ATBs) balances and other investments in government securities.

WMA is advance by Reserve Bank of India to State Governments for meeting temporary cash mismatches.

OD is advanced to State Governments beyond their WMA limits.

Average amount Availed is the total accommodation (SDF/WMA/OD) availed divided by number of days for which accommodation was extended during the month.

- : Nil.

Table No. 48

CSF and GRF are reserve funds maintained by some State Governments with the Reserve Bank of India.

ATBs include Treasury bills of 91 days, 182 days and 364 days invested by State Governments in the primary market.

--: Not Applicable (not a member of the scheme).

The concepts and methodologies for Current Statistics are available in Comprehensive Guide for Current Statistics of the RBI Monthly Bulletin **(https://rbi.org.in/Scripts/PublicationsView.aspx?id=17618)**

Time series data of 'Current Statistics' is available at https://dbie.rbi.org.in.

Detailed explanatory notes are available in the relevant press releases issued by RBI and other publications/releases of the Bank such as **Handbook of Statistics on the Indian Economy**.

Recent Publications of the Reserve Bank of India

Name of Publication	Price	
	India	Abroad
1. Reserve Bank of India Bulletin 2023	₹350 per copy ₹250 per copy (concessional rate*) ₹4,000 (one year subscription) ₹3,000 (one year concessional rate*)	US$ 15 per copy US$ 150 (one-year subscription) (inclusive of air mail courier charges)
2. Handbook of Statistics on the Indian States 2021-22	₹550 (Normal) ₹600 (inclusive of postage)	US$ 24 (inclusive of air mail courier charges)
3. Handbook of Statistics on the Indian Economy 2021-22	₹600 (Normal) ₹650 (inclusive of postage) ₹450 (concessional) ₹500 (concessional with postage)	US$ 50 (inclusive of air mail courier charges)
4. State Finances - A Study of Budgets of 2021-22	₹600 per copy (over the counter) ₹650 per copy (inclusive of postal charges)	US$ 24 per copy (inclusive of air mail courier charges)
5. Report on Currency and Finance 2021-22	₹575 per copy (over the counter) ₹625 per copy (inclusive of postal charges)	US$ 22 per copy (inclusive of air mail courier charges)
6. Report of the committee on Fuller Capital account Convertibility (Tarapore Committee Report II)	₹140 per copy (over the counter) ₹170 per copy (inclusive of postal charges)	US$ 25 per copy (inclusive of air mail courier charges)
7. Banking Glossary (2012)	₹80 per copy (over the counter) ₹120 per copy (inclusive of postal charges)	
8. Anuvad Ke Vividh Aayam (Hindi)	₹165 per copy (over the counter) ₹205 per copy (inclusive of postal charges)	
9. Bank Me Rajbhasha Niti Ka Karyanvayan: Dasha Aur Disha (Hindi)	₹150 per copy (over the counter) ₹200 per copy (inclusive of postal charges)	
10. Reserve Bank of India Occasional Papers Vol. 42, No. 1, 2021	₹200 per copy (over the counter) ₹250 per copy (inclusive of postal charges)	US$ 18 per copy (inclusive of air mail courier charges)
11. Reserve Bank of India Occasional Papers Vol. 42, No. 2, 2021	₹200 per copy (over the counter) ₹250 per copy (inclusive of postal charges)	US$ 18 per copy (inclusive of air mail courier charges)
12. Perspectives on Central Banking Governors Speak (1935-2010) Platinum Jubilee	₹1400 per copy (over the counter)	US$ 50 per copy (inclusive of air mail courier charges)
13. Report on Municipal Finances	₹300 per copy (over the counter) ₹350 per copy (inclusive of postal charges)	US$ 16 per copy (inclusive of air mail courier charges)

Notes

1. Many of the above publications are available at the RBI website (www.rbi.org.in).
2. Time Series data are available at the Database on Indian Economy (http://dbie.rbi.org.in).
3. The Reserve Bank of India History 1935-1997 (4 Volumes), Challenges to Central Banking in the Context of Financial Crisis and the Regional Economy of India: Growth and Finance are available at leading book stores in India.

* Concession is available for students, teachers/lecturers, academic/education institutions, public libraries and Booksellers in India provided the proof of eligibility is submitted.

General Instructions

1. All communications should be addressed to:
   Director, Division of Reports and Knowledge Dissemination,
   Department of Economic and Policy Research (DRKD, DEPR),
   Reserve Bank of India, Amar Building, Ground Floor,
   Sir P. M. Road, Fort, P. B. No.1036, Mumbai - 400 001.
   Telephone: 022- 2260 3000 Extn: 4002, Email: spsdepr@rbi.org.in.
2. Publications are available for sale between 10:30 am to 3:00 pm (Monday to Friday).
3. Publications will not be supplied on a cash-on-delivery basis.
4. Publications once sold will not be taken back.
5. Back issues of the publication are generally not available.
6. Wherever concessional price is not indicated, a discount of 25 per cent is available for students, faculty, academic/education institutions, public libraries, and book sellers in India provided the proof of eligibility is submitted.
7. Subscription should be made preferably by NEFT and transaction details including payer's name, subscription number (if any), account number, date and amount should be emailed to **spsdepr@rbi.org.in**, or sent by post.
   a. Details required for NEFT transfer are as follows:

Beneficiary Name	Department of Economic and Policy Research, RBI
Name of the Bank	Reserve Bank of India
Branch and address	Fort, Mumbai
IFSC of Bank Branch	RBIS0MBPA04
Type of Account	Current Account
Account Number	41-8024129-19

   b. In case of subscription through non-digital modes, please send the demand draft/cheque payable at Mumbai in favour of Reserve Bank of India, Mumbai.
8. Complaints regarding 'non-receipt of publication' may be sent within a period of two months.