RESERVE BANK OF INDIA

BULLETIN

JUNE 2023

VOLUME LXXVII NUMBER 6

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

GOVERNOR'S STATEMENT

Governor's Statement

*Governor's Statement**

Shaktikanta Das

As I make this monetary policy statement, we can derive satisfaction from the fact that the Indian economy and the financial sector stand out as strong and resilient in a world of unprecedented headwinds and swift cross currents. Unlike the previous three tumultuous years, the uncertainty on the horizon appears comparatively less and the path ahead somewhat clearer; but we have to be acutely aware that the geopolitical conflict continues unabated and policy normalisation globally is far from complete. Headline inflation across countries is on a downward trajectory, but is still high and above the targets. Labour markets are tight, and demand is rotating back from goods to services. Hence, central banks across the world remain on high alert and watchful of the evolving conditions, even though many of them have tempered their rate hikes or taken a pause. Financial stability concerns persist in advanced economies, although they appear to have been contained due to resolute actions. Retrenchment in trade, technology and capital flows caused by geopolitical fault lines and economic fragmentation further complicate the situation.

In these challenging times, the Reserve Bank of India has continued to focus on preserving price and financial stability, while ensuring adequate flow of financial resources to all productive sectors of the economy. As a result, domestic macroeconomic fundamentals are strengthening – economic activity is exhibiting resilience; inflation has moderated; the current account deficit has narrowed; and foreign exchange reserves are comfortable. Fiscal consolidation is also ongoing. The Indian banking system remains stable and resilient, credit growth is robust and domestic financial markets have evolved in an orderly manner.

* Governor's Statement - June 8, 2023.

Decisions and Deliberations of the Monetary Policy Committee (MPC)

The Monetary Policy Committee (MPC) met on 6th, 7th and 8th June 2023. Based on an assessment of the macroeconomic situation and the outlook, the MPC decided unanimously to keep the policy repo rate unchanged at 6.50 per cent. Consequently, the standing deposit facility (SDF) rate remains at 6.25 per cent and the marginal standing facility (MSF) rate and the Bank Rate at 6.75 per cent. The MPC also decided by a majority of 5 out of 6 members to remain focused on withdrawal of accommodation to ensure that inflation progressively aligns with the target, while supporting growth.

Let me now explain the MPC's rationale for these decisions on the policy rate and the stance. The MPC recognised that the pace of global economic activity is expected to decelerate in 2023, dragged down by elevated inflation, tight financial conditions and geopolitical tensions. The pace of monetary tightening has slowed in recent months, but uncertainty remains on its future trajectory as inflation continues to rule above targets across the world.

In India, consumer price inflation eased during March-April 2023 and moved into the tolerance band, declining from 6.7 per cent in 2022-23. Headline inflation, however, is still above the target as per the latest data and is expected to remain so according to our projections for 2023-24. Therefore, close and continued vigil on the evolving inflation outlook is absolutely necessary, especially as the monsoon outlook and the impact of El Nino remain uncertain. Real GDP growth in 2022-23, on the other hand, turned out to be stronger than anticipated and is holding up well.

The policy repo rate has been increased by 250 basis points since May 2022 and is still working its way through the system. Its fuller effects will be seen in the coming months. Against this backdrop, the MPC

decided to keep the policy repo rate unchanged at 6.50 per cent. The MPC will continue to remain vigilant on the evolving inflation and growth outlook. It will take further monetary actions promptly and appropriately as required to keep inflation expectations firmly anchored and bring down inflation to the target.

With the policy repo rate at 6.50 per cent and full year projected inflation for 2023-24 at just a little above 5 per cent, the real policy rate continues to be positive. The average system liquidity, however, is still in surplus mode and could increase as ₹2,000 banknotes get deposited in the banks. Headline inflation, as noted before, is easing but rules above the target, warranting close monitoring of the evolving price dynamics. Taking all of these factors into account, the MPC decided to remain focused on withdrawal of accommodation to ensure that inflation progressively aligns with the target, while supporting growth.

Assessment of Growth and Inflation

Growth

India's real gross domestic product (GDP) recorded a growth of 7.2 per cent in 2022-23, stronger than the earlier estimate of 7.0 per cent. It has surpassed its pre-pandemic level by 10.1 per cent. Real GDP growth in Q4:2022-23 accelerated to 6.1 per cent (y-o-y) from 4.5 per cent in Q3, aided by fixed investment and higher net exports. On the supply side, real gross value added (GVA) accelerated from 4.7 per cent in Q3 to 6.5 per cent in Q4, driven by rebound in manufacturing activity which moved into expansion territory after two quarters of contraction.

Turning to 2023-24, domestic demand conditions remain supportive of growth on the back of improving household consumption and investment activity. Urban demand remains resilient, with indicators such as passenger vehicle sales, domestic air passenger traffic, and credit cards outstanding posting double-digit expansion on a year-on-year basis in April. Rural demand is also on a revival path – motorcycle and three-wheeler sales increased at a robust pace (y-o-y) in April, while tractor sales remained subdued.

Growth in steel consumption, cement output, and production and imports of capital goods suggest continued buoyancy in investment activity. On the back of double-digit growth of 15.6 per cent in non-food bank credit, the flow of resources to the commercial sector in 2023-24 (up to May 19, 2023) increased to ₹2.7 lakh crore from ₹1.0 lakh crore during the same period last year. Fixed investment by manufacturing companies expanded in 2022-23, reversing the contraction seen in 2021-22. Our surveys also point towards higher investment intentions of manufacturing companies for 2023-24. The contraction in merchandise imports outpaced that of merchandise exports in April, resulting in a narrowing of the trade deficit. Coupled with the sustained and strong growth in services exports, the drag from net exports on growth is easing.

On the supply side, the eight core industries output expanded by 3.5 per cent y-o-y in April 2023 as compared with 3.6 per cent in March 2023. The purchasing managers' index (PMI) for manufacturing exhibited sustained expansion, rising to 58.7 in May, a 31-month high. Available high frequency indicators suggest that services sector activity has remained on an accelerating trajectory. PMI services maintained strong expansion at 61.2 in May on top of 62.0 in April.

Looking ahead, higher *rabi* crop production, expected normal monsoon, continued buoyancy in services and softening inflation should support household consumption. On the other hand, given the healthy twin balance sheets of banks and corporates, supply chain normalisation and declining uncertainty, conditions are favourable for the capex cycle to gain momentum. Robust government capital expenditure is also expected to nurture investment

and manufacturing activity. Consumer and business outlook surveys display continued optimism. The headwinds from weak external demand, volatility in global financial markets, protracted geopolitical tensions and intensity of El Nino impact, however, pose risks to the outlook. Taking all these factors into consideration, real GDP growth for 2023-24 is projected at 6.5 per cent with Q1:2023-24 at 8.0 per cent; Q2 at 6.5 per cent; Q3 at 6.0 per cent; and Q4 at 5.7 per cent, with risks evenly balanced.

Inflation

Headline CPI inflation has come down during March-April 2023 to 4.7 per cent in April, the lowest reading since November 2021. Monetary policy tightening and supply side measures contributed to this process. The easing of inflation was observed across food, fuel and core (CPI excluding food and fuel) categories. Food inflation declined to 4.2 per cent in April, while core inflation moderated to 5.1 per cent. A durable disinflation in the core component would be critical for a sustained alignment of the headline inflation with the target.

Going forward, with the recent *rabi* harvest remaining largely immune to the adverse weather events, the near-term inflation outlook looks more favourable than at the time of the April MPC meeting. The forecast of a normal south-west monsoon by the India Meteorological Department (IMD) augurs well for the *kharif* crops. Uncertainties, however, remain on the spatial and temporal distribution of monsoon and on the interplay between El Nino and the Indian Ocean Dipole (IOD). Geopolitical tensions; uncertainties around the monsoon and international commodity prices, especially sugar, rice and crude oil; and volatility in global financial markets pose upside risks to inflation. Taking into account these factors and assuming a normal monsoon, CPI inflation is projected at 5.1 per cent for 2023-24, with Q1 at 4.6 per cent, Q2 at 5.2 per cent, Q3 at 5.4 per cent and Q4 at 5.2 per cent. The risks are evenly balanced.

As noted in the April statement, the decision to pause was based on the need to assess the cumulative impact of past monetary policy actions while charting out the future course. Subsequent incoming data suggest that while risks to near-term inflation have moderated somewhat, pressure remains during the second half of the year which needs to be watched and addressed at the appropriate time. According to our survey, inflation expectations of households for three months to one year ahead horizon have moderated by 60 to 70 basis points since September 2022. This would indicate that anchoring of expectations is underway and that our monetary policy actions are yielding the desired results. This also provides us the space to keep the policy rate unchanged in this meeting of the MPC. At the same time, given the uncertainties, we need to maintain Arjuna's eye[1] on the evolving inflation scenario. Let me re-emphasise that headline inflation still remains above the target and being within the tolerance band is not enough. Our goal is to achieve the target of 4.0 per cent, going forward. As Mahatma Gandhi had said "*The ideal must not be lowered.*"[2] The continuation of the stance of withdrawal of accommodation should be seen from this perspective.

Liquidity and Financial Market Conditions

Surplus liquidity, as reflected in average daily absorptions under the LAF[3] at ₹1.7 lakh crore during April-May, was lower than ₹2.9 lakh crore during the full year 2022-23. The shrinkage in surplus liquidity during April-May was, among other things, due to the maturing of TLTROs.[4] The seasonal expansion in currency in circulation and build-up of government

[1] "India: A Story of Resilience" Inaugural Address by Governor, RBI at the Annual FIBAC 2022 Conference Organised Jointly by FICCI and IBA, Mumbai on November 2, 2022 (Paragraph 4).

[2] Brewer D. (Edited); Quotes of Mahatma Gandhi, 2020.

[3] Including absorptions under the standing deposit facility (SDF) and the variable rate reverse repo (VRRR) window.

[4] Targeted long-term repo operations (TLTROs) amounting to about ₹61,000 crore.

cash balances during this period also moderated surplus liquidity. Since the third week of May, however, the decline in currency in circulation and pick-up in government spending have expanded the system liquidity. This has got further augmented due to the Reserve Bank's market operations and the deposit of ₹2,000 banknotes in banks.

The prevalence of surplus liquidity amidst higher recourse to the marginal standing facility (MSF) by some banks suggests skewed liquidity distribution within the banking system.[5] To address this situation, the Reserve Bank conducted a 14-day variable rate repo (VRR) auction amounting to ₹50,000 crore as part of its main operation on May 19, 2023, similar to two such auctions conducted earlier in February and March 2023. Reflecting swiftness in its liquidity action, the Reserve Bank conducted a 14-day variable rate reverse repo (VRRR) auction of ₹2.0 lakh crore on June 2; 4-day VRRR of ₹1.0 lakh crore on June 5; 3-day VRRR of ₹75,000 crore on June 6; and 2-day VRRR of ₹75,000 crore on June 7, considering the overall build-up of surplus liquidity. The response has been cautious in these auctions. Going forward, the Reserve Bank will remain nimble in its liquidity management, while ensuring that adequate resources are available for the productive requirements of the economy. The Reserve Bank will also ensure the orderly completion of the government's market borrowing programme.

The moderation in system liquidity along with its skewed distribution was reflected in firming up of money market rates even beyond the repo rate on a few occasions before they came down from May 18 to sub-repo rate levels. Long term rates have, however, remained broadly stable. This has led to sharp compression of term spreads in the recent period. The relative stability of long-term yields augurs well for the economy and suggests effective anchoring of market-based long-term inflation expectations.

External Sector

In recent months, the trade deficit has narrowed on the back of sharper decline in imports vis-à-vis exports. India is making resolute strides to achieve the US$1 trillion merchandise export target by 2030 by focusing on diversification of markets and products; leveraging free trade agreements; strengthening manufacturing capacity and competitiveness by participating in value chains; and through schemes such as Production Linked Incentive (PLI) across sectors. Service exports and remittances have provided valuable support to India's external sector viability. During 2022-23, services exports grew faster (27.9 per cent) than merchandise exports (6.9 per cent). The current account deficit (CAD) is expected to have moderated further in Q4:2022-23 and should remain eminently manageable in 2023-24 also.

On the financing side, foreign portfolio investment (FPI) flows have seen a significant turnaround in 2023-24 led by equity flows. The net FPI inflows stand at US$ 8.4 billion during the current financial year (up to June 6, 2023) as against net outflows in the preceding two years - US$ 14.1 billion in 2021-22 and US$ 5.9 billion in 2022-23. Net FDI flows to India were US$ 28.0 billion in 2022-23 compared to US$ 38.6 billion in the previous year. Preliminary data for April 2023 suggest that FDI flows have improved. Net inflows under non-resident deposits increased to US$ 8.0 billion during 2022-23 from US$ 3.2 billion in the previous year. The Indian rupee has remained stable since January 2023. Overall, India's external sector remains resilient as key indicators, such as CAD to GDP, external debt to GDP and international investment position (IIP) to GDP ratios continue to improve. Foreign exchange reserves stood at a comfortable level of US$ 595.1 billion (as on June 2, 2023). Inclusive of net forward assets, foreign exchange reserves are well above US$ 600 billion.

[5] The daily average MSF borrowing increased to ₹13,654 crore in April-May 2023 from an average of ₹5,716 crore in February-March 2023.

Additional Measures

I shall now announce certain additional measures.

Borrowing in Call and Notice Money Markets by Scheduled Commercial Banks

The extant regulatory guidelines prescribe prudential limits for outstanding borrowing in Call and Notice Money Markets for Scheduled Commercial Banks (SCBs). With a view to providing greater flexibility for managing their liquidity, it has been decided that SCBs (excluding Small Finance Banks) can set their own limits for borrowing in Call and Notice Money Markets within the prescribed prudential limits for inter-bank liabilities.

Widening of the Scope of the Framework for Resolution of Stressed Assets

Compromise settlement is recognised as a resolution mechanism in respect of non-performing assets (NPA) under the Prudential Framework, which is currently applicable to SCBs and select NBFCs. It is proposed to issue comprehensive guidelines on compromise settlements and technical write-offs which will now be applicable to all regulated entities including co-operative banks. Further, it is also proposed to rationalise the extant prudential norms on restructuring of borrower accounts affected by natural calamities.

Default Loss Guarantee Arrangement in Digital Lending

The Reserve Bank had issued the regulatory framework for Digital Lending in August/September 2022. With a view to further promoting responsible innovation and prudent risk management, it has been decided to issue guidelines on Default Loss Guarantee arrangements in Digital Lending. This will further facilitate orderly development of the digital lending ecosystem and enhance credit penetration in the economy.

Priority Sector Lending (PSL) Targets for Primary (Urban) Cooperative Banks (UCBs)

The Reserve Bank has undertaken several initiatives in recent years to strengthen the UCB sector as well as to deepen financial inclusion. Such initiatives include revision of the priority sector lending targets for UCBs in 2020. While revising the PSL targets, a glide path up to March 2024 was provided for a non-disruptive transition to achieve the revised targets. While a number of UCBs have met the required milestones as of March 2023, a need has arisen to ease the implementation challenges faced by other UCBs. It has, therefore, been decided to extend the timelines for achieving the targets by two more years up to March 2026. Further, UCBs which have met the targets as on March 31, 2023 shall be suitably incentivised.

Rationalisation of Licensing Framework for Authorised Persons (APs) under Foreign Exchange Management Act (FEMA), 1999

The licensing framework for Authorised Persons (APs) issued under FEMA was last reviewed in March 2006. Keeping in view the developments, including progressive liberalisation under FEMA, over the last several years and to effectively meet the emerging requirements of the rapidly growing Indian economy, it has been decided to rationalise and simplify the licensing framework for APs. This is expected to improve the efficiency in the delivery of foreign exchange facilities to various segments of users including common persons, tourists and businesses.

Expanding the Scope and Reach of e-RUPI Vouchers

At present, purpose-specific e-RUPI digital vouchers are issued by banks. It is now proposed to expand the scope and reach of e-RUPI vouchers by (i) permitting non-bank prepaid payment instruments (PPI) issuers to issue e-RUPI vouchers; (ii) enabling issuance of e-RUPI vouchers on behalf of individuals;

and (iii) simplifying the process of issuance, redemption, *etc.* These measures will make the benefits of e-RUPI digital voucher accessible to a wider set of users and further deepen the penetration of digital payments in the country.

Streamlining the Bharat Bill Payment System (BBPS) Processes and Membership Criteria

The Bharat Bill Payment System (BBPS) is operational since August 2017. The scope of BBPS was further expanded in December 2022. To further enhance the efficiency of the BBPS system and to encourage greater participation, it is proposed to streamline the process flow of transactions and membership criteria for operating units.

Internationalising Issuance and Acceptance of RuPay Cards

RuPay Debit and Credit cards issued by banks in India are gaining increased acceptance abroad. It has now been decided to permit issuance of RuPay Prepaid Forex cards by banks. This will expand the payment options for Indians travelling abroad. Further, RuPay cards will be enabled for issuance in foreign jurisdictions. These measures will expand the reach and acceptance of RuPay cards globally.

Conclusion

We have made good progress in containing inflation, supporting growth and maintaining financial and external sector stability. Despite three years of global turmoil, India's growth has bounced back and headline CPI inflation is easing. This confluence of factors gives us the confidence that our policies are on the right track. Nevertheless, we need to move towards our primary target of 4 per cent inflation. It is always the last leg of the journey which is the toughest. I wish to emphasise that we will do whatever is necessary to ensure that long-term inflation expectations remain firmly anchored. The best contribution of monetary policy to the economy's ability to realise its potential is by ensuring price stability. The Reserve Bank will remain watchful and proactive in dealing with emerging risks to price and financial stability. Let me end by recalling the inspiring words of Mahatma Gandhi "*... If we are determined, we shall find the way that leads us to our goal.*"[6]

Thank you. Namaskar.

[6] Young India, January 15, 1925.

MONETARY POLICY STATEMENT FOR 2023-24

Resolution of the Monetary Policy Committee (MPC)
June 6-8, 2023

Monetary Policy Statement, 2023-24 Resolution of the Monetary Policy Committee (MPC) *

On the basis of an assessment of the current and evolving macroeconomic situation, the Monetary Policy Committee (MPC) at its meeting today (June 8, 2023) decided to:

- Keep the policy repo rate under the liquidity adjustment facility (LAF) unchanged at 6.50 per cent.

The standing deposit facility (SDF) rate remains unchanged at 6.25 per cent and the marginal standing facility (MSF) rate and the Bank Rate at 6.75 per cent.

- The MPC also decided to remain focused on withdrawal of accommodation to ensure that inflation progressively aligns with the target, while supporting growth.

These decisions are in consonance with the objective of achieving the medium-term target for consumer price index (CPI) inflation of 4 per cent within a band of +/- 2 per cent, while supporting growth.

The main considerations underlying the decision are set out in the statement below.

Assessment

Global Economy

2. In the second quarter of 2023, the global economy is sustaining the momentum gained in the preceding quarter in spite of still elevated though moderating inflation, tighter financial conditions, banking sector stress, and lingering geopolitical conflicts. Sovereign bond yields are trading sideways on expectations of the imminent peaking of the tightening cycle of monetary policy while the US dollar has appreciated. Equity markets have remained range bound since the last MPC meeting. For several emerging market economies (EMEs), weak external demand, elevated debt levels and geoeconomic disintegration amidst tighter external financial conditions pose risks to growth prospects, although capital flows are cautiously returning to them on renewed risk appetite.

Domestic Economy

3. According to the provisional estimates released by the National Statistical Office (NSO) on May 31, 2023, India's real gross domestic product (GDP) growth accelerated from 4.5 per cent (year-on-year, y-o-y) in Q3:2022-23 to 6.1 per cent in Q4, supported by fixed investment and higher net exports. Real GDP growth for 2022-23 was placed at 7.2 per cent, higher than the second advance estimate of 7.0 per cent.

4. Domestic economic activity remains resilient in Q1:2023-24 as reflected in high frequency indicators. Purchasing managers' indices (PMI) for manufacturing and services indicated sustained expansion, with the manufacturing PMI at a 31-month high in May and services PMI at a 13-year high in April-May. In the services sector, domestic air passenger traffic, e-way bills, toll collections and diesel consumption exhibited buoyancy in April-May, while railway freight and port traffic registered modest growth.

5. On the demand side, urban spending remains robust as reflected in indicators such as passenger vehicle sales and domestic air passenger traffic which recorded double digit growth in April. Rural demand is gradually improving though unevenly – motorcycle sales expanded in April, while tractor sales contracted partly owing to unseasonal rains. Investment activity is picking up as reflected in the healthy expansion in steel consumption and cement output in April. Merchandise exports and non-oil non-gold imports remained in contraction mode in April while services exports sustained a robust expansion.

* Released on June 8, 2023.

6. CPI inflation fell sharply to 4.7 per cent in April 2023 from 6.4 per cent in February on the back of large favourable base effects, with softening observed across all the three major groups. Food group inflation eased, with moderation in cereals, eggs, milk, fruits, meat and fish, spices and prepared meals inflation and deepening of deflation in edible oils. In the fuel group, inflation in LPG and firewood and chips prices fell and kerosene prices slipped into deflation. Core inflation (*i.e.*, CPI inflation excluding food and fuel) dipped, driven down by clothing and footwear, household goods and services, health, transport and communication, personal care and effects and recreation and amusement sub-groups.

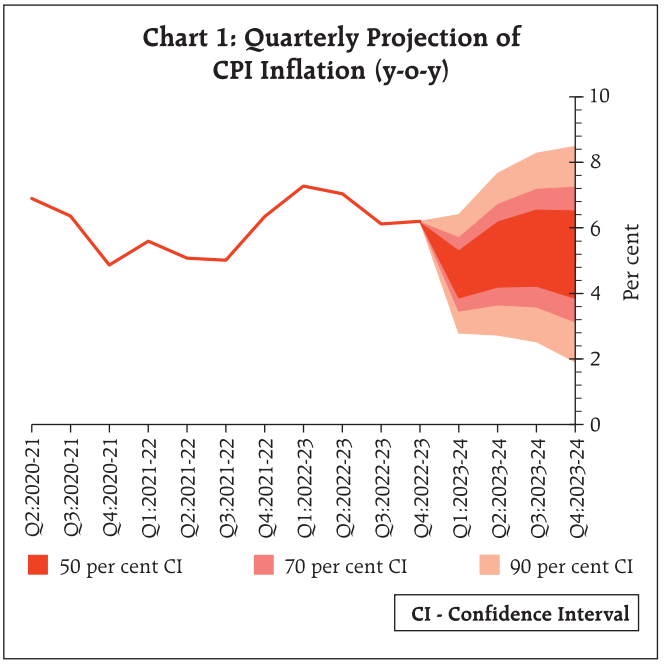
7. The average daily absorption under the LAF increased to ₹1.7 lakh crore during April-May from ₹1.4 lakh crore in February-March. Money supply (M3) expanded by 10.1 per cent y-o-y and non-food bank credit by 15.6 per cent as on May 19, 2023. India's foreign exchange reserves were placed at US$ 595.1 billion as on June 2, 2023.

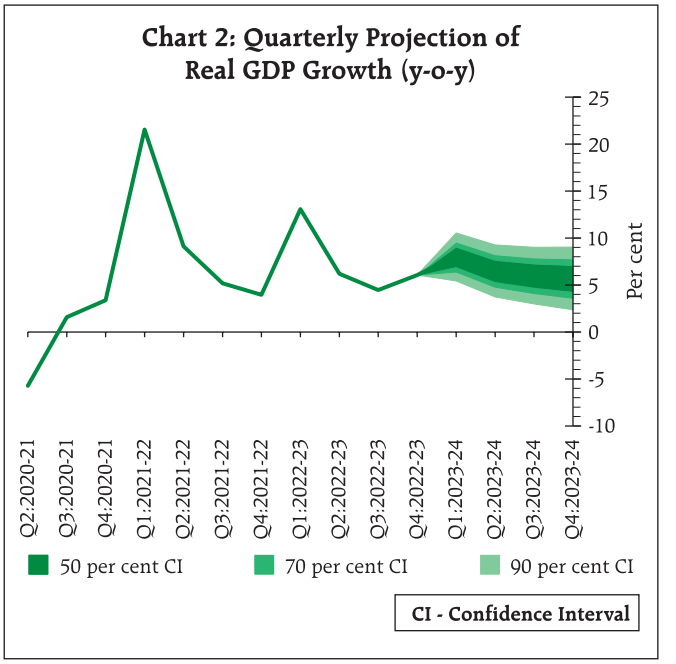
Outlook

8. Going forward, the headline inflation trajectory is likely to be shaped by food price dynamics. Wheat prices could see some correction on robust *mandi* arrivals and procurement. Milk prices, on the other hand, are likely to remain under pressure due to supply shortfalls and high fodder costs. The forecast of a normal south-west monsoon by the India Meteorological Department (IMD) augurs well for *kharif* crops; however, the spatial and temporal distribution of the monsoon would need to be closely monitored to assess the prospects for agricultural production. Crude oil prices have eased but the outlook remains uncertain. According to the early results from the Reserve Bank's surveys, manufacturing, services and infrastructure firms polled expect input costs and output prices to harden. A clearer picture will emerge when the final survey results are available. Taking into account these factors and assuming a normal monsoon, CPI inflation is projected at 5.1 per cent for 2023-24, with Q1 at 4.6 per cent, Q2 at 5.2 per cent, Q3 at 5.4 per cent and Q4 at 5.2 per cent. The risks are evenly balanced (Chart 1).

9. The higher *rabi* crop production in 2022-23, the expected normal monsoon, and the sustained buoyancy in services should support private consumption and overall economic activity in the current year. The government's thrust on capital expenditure, moderation in commodity prices and robust credit growth are expected to nurture investment activity. Weak external demand, geoeconomic fragmentation, and protracted geopolitical tensions, however, pose risks to the outlook. Taking all these factors into consideration, real GDP growth for 2023-24 is projected at 6.5 per cent with Q1 at 8.0 per cent, Q2 at 6.5 per cent, Q3 at 6.0 per cent, and Q4 at 5.7 per cent, with risks evenly balanced (Chart 2).

10. The MPC took note of the moderation in CPI headline inflation in March-April into the tolerance band, in line with projections, reflecting the combined impact of monetary tightening and supply augmenting measures. Headline inflation is projected to decline in 2023-24 from its level in 2022-23 but would still be above the target, warranting continuous vigil. The progress of the south west monsoon is critical in this regard. Domestic economic activity is holding up well. Consumer confidence is improving and businesses remain optimistic about the future. The cumulative rate hike of 250 basis points undertaken by the MPC is transmitting through the economy and its fuller impact should keep inflationary pressures contained in the coming months. Monetary policy would need to be carefully calibrated for alignment of inflation with the target. Against this backdrop, the MPC decided to keep the policy repo rate unchanged at 6.50 per cent. The MPC resolved to continue keeping a close vigil on the evolving inflation and growth outlook. It will take further monetary actions





promptly and appropriately as required to keep inflation expectations firmly anchored and to bring down inflation to the target. The MPC also decided to remain focused on withdrawal of accommodation to ensure that inflation progressively aligns with the target, while supporting growth.

11. All members of the MPC – Dr. Shashanka Bhide, Dr. Ashima Goyal, Prof. Jayanth R. Varma, Dr. Rajiv Ranjan, Dr. Michael Debabrata Patra and Shri Shaktikanta Das – unanimously voted to keep the policy repo rate unchanged at 6.50 per cent.

12. Dr. Shashanka Bhide, Dr. Ashima Goyal, Dr. Rajiv Ranjan, Dr. Michael Debabrata Patra and Shri Shaktikanta Das voted to remain focused on withdrawal of accommodation to ensure that inflation progressively aligns with the target, while supporting growth. Prof. Jayanth R. Varma expressed reservations on this part of the resolution.

13. The minutes of the MPC's meeting will be published on June 22, 2023.

14. The next meeting of the MPC is scheduled during August 8-10, 2023.

STATEMENT ON DEVELOPMENTAL AND REGULATORY POLICIES

Statement on Developmental and Regulatory Policies

Statement on Developmental and Regulatory Policies

This Statement sets out various developmental and regulatory policy measures relating to (i) Financial Markets; (ii) Regulation; and (iii) Payment Systems.

I. Financial Markets

1. Borrowing in Call and Notice Money Markets by Scheduled Commercial Banks

The extant guidelines on the Call, Notice and Term Money Markets prescribe prudential limits for outstanding borrowing in Call and Notice Money Markets for Scheduled Commercial Banks. With a view to providing greater flexibility for managing the money market borrowings, it has been decided that Scheduled Commercial Banks (excluding Small Finance Banks) can set their own limits for borrowing in Call and Notice Money Markets within the prudential limits for inter-bank liabilities prescribed by the Reserve Bank of India. Necessary directions are being issued today.

II. Regulation

2. Widening of the Scope of Prudential Framework for Stressed Assets

The Prudential Framework for Resolution of Stressed Assets dated June 7, 2019 provides a broad principle-based framework. With a view to provide further impetus to the same, as well as to harmonise the instructions across all regulated entities, it is proposed to (i) issue a comprehensive regulatory framework governing compromise settlements and technical write-offs covering all regulated entities; and (ii) rationalise the extant prudential norms for implementation of resolution plans in respect of exposures affected by natural calamities, drawing upon the lessons from the resolution frameworks introduced during the Covid19 pandemic. Detailed guidelines on the above will be issued separately.

3. Default Loss Guarantee Arrangement in Digital Lending

While issuing the Press Release dated August 10, 2022 on Implementation of the Recommendations of the Working group on Digital Lending, it was stated that the recommendation pertaining to First Loss Default Guarantee (FLDG) is under examination with the Reserve Bank. Based on extensive consultations with various stakeholders, and in tune with our objective of maintaining a balance between innovation and prudent risk management, it has been decided to put in place a regulatory framework for permitting Default Loss Guarantee arrangements in Digital Lending. Detailed guidelines on the matter will be issued separately.

4. Priority Sector Lending (PSL) Targets for Primary (Urban) Cooperative Banks (UCBs)

The PSL targets for UCBs were revised in 2020. In order to ensure a non-disruptive transition, a glide path was provided till March 31, 2024 to achieve the revised targets. With a view to ease the implementation challenges faced by the UCBs, it has been decided to extend the phase-in time for achievement of the said targets by two years, *i.e.* upto March 31, 2026. Further, suitable incentives shall be provided to UCBs that have met the prescribed targets as on March 31, 2023. Detailed circular on the matter will be issued separately.

5. Rationalisation of Licensing framework for Authorised Persons (Aps) under Foreign Exchange Management Act (FEMA), 1999

The Licensing framework for Authorised Persons (APs) issued under FEMA, 1999 was last reviewed in March 2006. Keeping in view the progressive liberalisation under FEMA, increasing integration of the Indian economy with the global economy, digitisation of payment systems, evolving institutional structure, *etc.* over the last two decades, it has been decided to rationalise and simplify the licensing framework for APs to effectively meet the emerging requirements of the rapidly growing Indian economy.

The objective is to achieve operational efficiency in the delivery of foreign exchange facilities to common persons, tourists and businesses, while maintaining appropriate safeguards. A draft of the revised authorisation framework would be issued for public feedback.

III. Payments Systems

6. Expanding the Scope and Reach of e-RUPI vouchers

The e-RUPI, a digital voucher launched in August 2021, rides on the Unified Payments Interface (UPI) system of National Payments Corporation of India (NPCI). At present, purpose-specific vouchers are issued by banks on behalf of Central and State Governments and to a limited extent on behalf of corporates. Keeping in view the benefits for users and beneficiaries alike, it is proposed to expand the scope and reach of e-RUPI vouchers by (a) permitting non-bank Prepaid Payment Instrument (PPI) issuers to issue e-RUPI vouchers and (b) enabling issuance of e-RUPI vouchers on behalf of individuals. Other aspects like reloading of vouchers, authentication process, issuance limits, *etc.*, will also be modified to facilitate use of e-RUPI vouchers. Separate instructions will be issued shortly.

7. Streamlining Bharat Bill Payment System processes and membership criteria

Bharat Bill Payment System (BBPS) is an 'anytime anywhere' bill payments platform which is operational since August 2017. Currently, BBPS has onboarded over 20,500 billers and processes over 9.8 crore transactions every month. The scope of BBPS was further expanded in December 2022 to include all categories of payments and collections, both recurring and non-recurring in nature, as well as facilitating in-bound cross-border bill payments. To enhance efficiency of the system and also to encourage greater participation, the process flow of transactions and membership criteria for onboarding operating units in BBPS will be streamlined. Revised guidelines will be issued shortly.

8. Internationalising Issuance and Acceptance of RuPay Cards

RuPay Debit and Credit cards issued by banks in India have gained international acceptance through bilateral arrangements with international partners and co-badging arrangements with international card schemes. In order to expand payment options for Indians travelling abroad, it has been decided to allow issuance of RuPay Prepaid Forex cards by banks in India for use at ATMs, PoS machines and online merchants overseas. Further, RuPay Debit, Credit, and Prepaid Cards will be enabled for issuance in foreign jurisdictions, which can be used internationally, including in India. These measures will expand the reach and acceptance of RuPay cards globally. Necessary instructions will be issued separately.

SPEECHES

Central Banking in Uncertain Times: The Indian Experience
Shaktikanta Das

Governance in Banks: Driving Sustainable Growth and Stability
Shaktikanta Das

Some perspectives on Banking Supervision
M K Jain

Cyber Security for a safer Financial System
M K Jain

Governance in Banks: Driving Sustainable Growth and Stability
M K Jain

Productivity: The Promise of Progress
Michael Debabrata Patra

Governance in Banks: Driving Sustainable Growth and Stability
M. Rajeshwar Rao

*Central Banking in Uncertain Times: The Indian Experience**

Shaktikanta Das

In recent times, especially since the outbreak of the COVID-19 pandemic, central banks – who are at the core of monetary and financial systems – have been called to do "heavy lifting" well beyond their traditional mandate. Central banks have navigated through unchartered waters during the three black swan events – the pandemic, the war in Ukraine and the unprecedented scale and pace of global monetary policy normalisation – all in the span of three years. More recently, central banks had to quickly change gears from providing stimulus to pandemic ravaged economies to battling inflation with all ammunition at their disposal. Even as the battle against inflation was ongoing, the banking turmoil in certain advanced economies (AEs) posed the awkward trade-off between financial stability and price stability. This extraordinary period of global turbulence has indeed been extremely challenging for central banks and central banking.

In my address today, I propose to highlight the Reserve Bank of India's response to the multiple challenges of COVID-19, surge in inflation, growth slowdown and threats to financial stability. I also propose to enumerate the lessons learnt which may become a part of central bank operating procedure for such events in the future.

COVID-19 Response

The COVID-19 pandemic scarred the global economy, causing unimaginable loss of life and livelihood. In India, our response amidst the imposition of nation-wide lockdown and social distancing was prompt and decisive. We were perhaps amongst the first few central banks to have set up a special quarantine facility with about 200 officers, staff and service providers, engaged in critical activities to ensure business continuity in banking and financial market operations and payment systems. Our monetary policy committee (MPC) reacted swiftly by reducing the policy repo rate sizeably by 115 bps in a span of two months (March-May 2020). Unlike advanced economy (AE) central banks which eased rates close to the zero-lower bound, we did not reduce the policy repo rate below our inflation target of 4 per cent. Together with other actions in the liquidity front, this helped us in supporting growth without fuelling inflationary pressures. This also helped in undertaking a faster reversal of stance later, without being market disruptive.

Along with the rate cuts, we infused significant quantum of liquidity through both conventional and unconventional measures to stimulate the economy, restore confidence and revive market activity, while being mindful of the need to ensure that our liquidity augmenting measures do not engender future fragilities. Our liquidity measures were unique in several ways: first, liquidity was provided only through the Reserve Bank's counterparties (banks) for on-lending to stressed entities/sectors; second, asset purchase programme was for a limited period of six months and much smaller in size than advanced economies, and was confined to government securities only; third, collateral standards were not diluted while offering lending facilities; and fourth, loan resolution frameworks for COVID-19 related stressed assets were not open ended but subject to achievement of certain financial and operational parameters. Moreover, most of our liquidity injection measures had pre-announced sunset clauses, which helped in an orderly unwinding of liquidity on their respective terminal dates without de-anchoring market expectations. Overall, liquidity

* Opening Plenary Address by Shri Shaktikanta Das, Governor, Reserve Bank of India. Delivered at the Summer Meetings organised by Central Banking, London, UK on June 13, 2023.

enhancing measures worth US$ 227 billion (8.7 per cent of GDP) were announced, of which funds availed were US$ 157.5 billion (6.0 per cent of GDP).

The liquidity infusion measures were mostly concentrated in 2020 but continued in 2021 in view of fresh waves of the pandemic and the fragile nature of economic recovery. Nevertheless, surplus liquidity was gradually migrated from the short end to the longer horizon during 2021 through variable rate reverse repo (VRRR) auctions of longer tenors, which lifted short-term rates from ultra-low levels, thereby obviating financial stability challenges. This was done by sensitising the market well in advance through effective communication. Further, recognising that the yield curve is a public good, the benefits of which accrue to all, we undertook outright asset purchases and operation twist[1] – which were generally liquidity neutral – to modulate long term G-sec yields. This, in turn, lowered rates on all instruments benchmarked to prices of the G-sec yield curve. The resultant congenial conditions allowed corporates to mobilise large resources and repay high-cost debt from banks. Such deleveraging by corporates reduced their balance sheet vulnerabilities and facilitated credit offtake later in 2022-23. The benign liquidity conditions also enabled the banks to mobilise additional capital and strengthen their balance sheets to withstand future stress, if any.

Inflation Challenges

At the height of the pandemic during 2020 and 2021, the MPC prioritised growth over inflation, given the frail economic conditions and notwithstanding intermittent inflationary pressures from supply shocks. For instance, supply-side pressures had nudged inflation above the upper tolerance band of 6 per cent in October 2020 and there were market concerns over the continuation of the accommodative monetary policy stance. Under these circumstances, we provided both state- and time-based forward guidance on continuing *"with the accommodative stance of monetary policy as long as necessary – at least during the current financial year and into the next year ..."* as output remained well below its pre-pandemic level. In the second half of 2020-21, inflation eased in line with our assessment as supply side pressures abated. The time-based element of the guidance helped to anchor market expectations and moderate undue expectations building up at that time of a possible reversal of the monetary policy stance.

In early 2022, inflation was expected to moderate significantly with a projected average rate of 4.5 per cent for 2022-23, based on an anticipated normalisation of supply chains, the gradual ebbing of COVID-19 infections and a normal monsoon. Such expectations, however, were belied by the outbreak of hostilities in Ukraine since end-February 2022. Initially, the shocks came from food and fuel prices, which were mainly global in origin, but local factors from adverse weather events also played an important role in increasing food inflation. The shocks to inflation got increasingly generalised over the ensuing months. Moreover, strengthening domestic recovery and rising demand enabled pass-through of pent-up input costs to retail goods and services. This imparted stickiness to underlying core inflation and kept headline inflation at elevated levels.

Under these circumstances, the MPC quickly changed gears by prioritising inflation over growth and also changed its stance from being accommodative to withdrawal of accommodation. The MPC acted proactively by holding an off-cycle meeting in May 2022 and raised the policy rate by 40 basis points. This was followed by rate hikes, *albeit* of varying sizes, in each of the five subsequent meetings till February 2023. In all, we have raised the policy repo rate by 250 bps cumulatively between May 2022 and February 2023. Thus, we acted in a timely manner and have

[1] Open market operation involving simultaneous sale of short-term government securities and purchase of long-term government securities.

calibrated the quantum of rate hike with the changing inflation outlook. In recent months, there are signs of some softening in inflation, with headline inflation easing to 4.25 per cent in May 2023 from the peak of 7.8 per cent in April 2022.

The cumulative impact of our monetary policy actions over the last one year is still unfolding and yet to materialise fully. While our inflation projection for the current financial year 2023-24 is lower at 5.1 per cent, it would still be well above the target. As per our current assessment, the disinflation process is likely to be slow and protracted with convergence to the inflation target of 4 per cent being achieved over the medium-term. Based on this realisation and with a view to assess the impact of past actions, we decided on a pause in the April and June 2023 meetings, but clarified unequivocally that this is not a pivot – not a definitive change in policy direction. Recognising that explicit guidance in a rate tightening cycle is inherently fraught with risks, the MPC has also eschewed from providing any future guidance on the timing and level of the terminal rate.

Growth concerns

In India, with the formal adoption of flexible inflation targeting (FIT) in 2016, the Reserve Bank of India is entrusted with the responsibility of conducting monetary policy with the primary objective of *"maintaining price stability while keeping in mind the objective of growth"*. Given our population[2] and large addition to the work force every year because of the "demographic dividend",[3] we cannot be oblivious to growth concerns. Hence, we prioritised growth during the pandemic years even as inflation remained above the target but within the tolerance band.

The Indian economy displayed exemplary resilience post-pandemic and rebounded strongly from a contraction of 5.8 per cent in 2020-21 to a growth of 9.1 per cent in 2021-22 and 7.2 per cent in 2022-23. Proactive and coordinated response of fiscal and monetary policies nurtured a quick recovery, while various structural reforms related to banking, digitalisation, taxation, manufacturing and labour, implemented in the last few years, laid the foundation for strong and sustainable growth over the medium and long term. The government's continued thrust on capital expenditure is creating additional capacity and nurturing the much-awaited revival in the corporate investment cycle.[4] The Indian economy has also made rapid gains in openness and has gradually integrated with the global economy over the years. Consequently, it is getting increasingly exposed to the vagaries of global headwinds. It is, however, pertinent to note that India's growth in the last few years is mainly driven by robust domestic demand, especially private consumption and investment, amidst the global slowdown[5]. Looking ahead, we expect real GDP to grow by 6.5 per cent during 2023-24. In all likelihood, India will remain among the fastest growing large economies in 2023.

Regulatory and Supervisory Initiatives

In the last few years, we have put in place a stronger and more robust regulatory and supervisory framework. This has served us well in withstanding the scourge of the pandemic and the global financial market turmoil after the outbreak of geo-political hostilities. Our approach to regulation and supervision has been essentially premised on three pillars.

First, our focus in recent years has been to strengthen governance and assurance functions within our regulated entities – banks and non-bank financial companies (NBFCs). The emphasis has been

2 Estimated at 1.429 billion in the latest World Population Report 2023.

3 68 per cent of the total population belongs to 14-68 years.

4 Public investment multiplier on private investment and real GDP is found well over unity at 1.2 and 1.7, respectively, over a three-year period (Monetary Policy Report, April 2023).

5 Global factors explain only 17-18 per cent of the variability in India's GDP growth, reflecting dominance of domestic growth drivers (Monetary Policy Report, April 2023).

on building an environment of trust, transparency and accountability in the financial sector. Some of our regulatory measures include implementation of (i) Liquidity coverage ratio (LCR) and net stable funding ratio (NSFR); (ii) governance guidelines for commercial banks; (iii) scale-based regulatory (SBR) framework for non-banking financial companies (NBFCs), among others. The capital and liquidity requirements are uniformly applied to all scheduled commercial banks (SCBs), irrespective of their asset size and exposure.[6] Latest supervisory data indicates that all the banks are meeting the various prudential requirements. Stress tests also indicate that even in severe stress conditions, Indian banks will be able to meet the minimum requirements.

Second, our supervisory systems have been strengthened significantly in recent years by adopting a unified and harmonised supervisory approach for commercial banks, NBFCs and urban cooperative banks (UCBs).[7] We have considerably strengthened supervisory macro and micro data analytics to capture potential and emerging risks. Overall, unification of supervisory architecture; ownership-agnostic and risk-focused supervision; shift from episodic to continuous supervision; enhanced off-site surveillance, leveraging on data analytics and SupTech solutions; strengthened on-site supervision; outlier entities identification and deep-dive into vulnerable areas have been the major planks of our supervisory strategy.

Third, we focus on identifying and addressing the root causes of vulnerabilities in banks and financial entities rather than dealing with the symptoms alone. We deep dive into the business models of banks and other lending entities and closely monitor their asset liability mismatches and funding stability. We have a system of early warning signals that provide lead indications of risk build-up. Stress tests are also carried out on a continuous basis for both individual entities as well as at the systemic level. We do not interfere with the business decision making of regulated entities, but our approach is to sensitise the senior management of regulated entities for remedial action on any mismatch between the adequacy of internal controls and loss absorption capacity and the risks that their business models generate. We also remain engaged with the external auditors to flag issues that are relevant for their role.

Summing up, our approach towards maintaining the stability of the Indian financial system is integral to our conduct of monetary policy as financial instabilities can undermine economic growth and impede monetary policy transmission. We recognise that the likelihood of financial turbulence would be high if there is no price stability. This reinforces our belief in the complementarity of monetary policy and financial stability in the long run.

Effective Communication

At the Reserve Bank, we are mindful of the importance of communication, given our multifarious responsibilities and wider ramifications of our actions. We have followed a consultative approach by periodically interacting with various stakeholders on policy formulation.[8]

Central bank communication was tested to the hilt and on two major counts as the pandemic unfolded: (a) we had only the digital interface to communicate with media and other stakeholders, and (b) the target

[6] In particular, all SCBs are required to maintain capital to risk weighted asset ratio (inclusive of capital conservation buffer) at 11.5 per cent, LCR at 100 per cent and NSFR of 100 per cent.

[7] Das, Shaktikanta (2023), "*G20 for a Better Global Economic Order during India's Presidency*", 17th K P Hormis Commemorative Lecture, March 17, available at <https://www.rbi.org.in/Scripts/BS_SpeechesView.aspx?Id=1356>.

[8] As part of monetary policy, we have actively used communication through a variety of tools – the MPC resolutions and minutes; exhaustive post-policy statements including those on developmental and regulatory measures; press conferences, speeches, and our other publications, such as the biannual Monetary Policy Report (MPR). We have regular interactions with analysts, economists, researchers, banks, academic bodies and research institutions, trade and industry associations, and several others.

audience changed from experts to the general public with attendant challenges[9]. The communication during pandemic times, apart from explaining the measures being taken by RBI, were also a source of confidence and optimism for the common man. The April 2020 statement made by me stated "*Although social distancing separates us, we stand united and resolute. Eventually, we shall cure; and we shall endure*". The August 2020 monetary policy statement made by me said, "*The pandemic poses a challenge of epic proportions, but our collective efforts, intrepid choices, innovations, and true grit will eventually take us to victory*". These and other such messages reinstated the much-needed confidence, provided market guidance and helped anchor expectations, all of which are important elements of a modern monetary policy framework.

The Reserve Bank's pandemic response was prompt and decisive, with more than 100 measures undertaken since March 2020. The MPC meetings were held ahead of the schedule on two occasions (March and May 2020). I also delivered two other standalone statements outside the Monetary Policy Committee (MPC) cycle – one in April 2020 and the other in May 2021, the latter at the peak of the second (Delta) wave of COVID-19. These off-cycle meetings and standalone statements demonstrated the Reserve Bank's readiness to undertake prompt and pre-emptive actions. The unequivocal reassurance communicated to the public and other stakeholders through these statements along with our timely measures eased financial conditions considerably while unfreezing markets and reviving trading activity.

Effective forward guidance reinforced the impact of our conventional and non-conventional monetary policy actions during the pandemic. As noted earlier, our forward guidance on continuing with accommodative monetary policy amidst transient inflationary shocks was highly effective. Our asset purchase programme – G-sec Acquisition Programme (G-SAP) – provided an upfront commitment to a specific amount of open market purchase of government securities. This measure anchored interest rate expectations and facilitated monetary transmission.

Recalibrating the policy path after the pandemic presented its own set of communication challenges. Reversal of certain open-ended policies required careful and nuanced communication to align market expectations with our assessment. Illustratively, the Governor's policy statement of February 2021 addressed the fears of reversal of monetary policy which were building up due to resumption of liquidity absorption through VRRR operations in January 2021. This was done by explicitly explaining the rationale for the reintroduction of VRRR auctions. Similarly, liquidity rebalancing was set in motion in August 2021 through periodic upscaling of the 14-day main VRRR auction, with the explanation that liquidity conditions need to "*evolve in sync with the macroeconomic developments to preserve financial stability*".

The assurance given to the markets, the people and all other stakeholders through statements like "*We will continue to think and act out of the box, planning for the worst and hoping for the best*" (June 2021); "The Reserve Bank remains in "*whatever it takes' mode, with a readiness to deploy all its policy levers - monetary, prudential or regulatory*" (August 2021) demonstrated the central bank's commitment to remain steadfast in safeguarding trust and confidence in the domestic financial system.

In the subsequent tightening phase which commenced in April-May, 2022, the scale and nature of communication has been appropriately fine-tuned and calibrated, so as to ensure successful transmission of policy rate hikes.

[9] Blinder *et al* (2022); Central Bank Communication with the General Public: Promise or false hope? National Bureau of Economic Research; Working Paper 30277, July

We also recognise that communication has to be balanced – too much of it may confuse the market while too little may keep it guessing. Communication needs to be backed by commensurate actions to build credibility. We tread a very fine line and constantly endeavour towards refining our communication strategies.

Conclusion

Let me now conclude by reflecting upon some key lessons that we have drawn from our experience of the past three years. First, being proactive and nimble footed during a crisis gives one the agility to respond speedily to evolving developments that are overwhelming. In this regard, our decisions at the height of the crisis in 2020 and our liquidity rebalancing measures in 2021 served us well. Second, our measures have been prudent, targeted and calibrated to the need of the hour. We have not been tied down by any existing dogma or orthodoxy. While lowering the floor of the interest rate corridor and increasing its width, we did not inject excessive liquidity or dilute our collateral standards. We kept in mind that what is being rolled out needs to be rolled back in time and in a non-disruptive manner. Third, we backed up our monetary policy actions by appropriate regulatory and supervisory measures, including macro-prudential instruments, that reinforced the policy impact and its credibility. Fourth, we provided guidance and confidence to the market and the wider public through effective communication as part of our endeavour to anchor expectations and sentiments appropriately. Thus, communication became an additional pillar of our overall policy response during the pandemic.

In my address today, I have endeavoured to provide a synoptic view of the Indian experience which may be useful for the ensuing discussions in this conference. I once again thank the organisers and Central Banking for this opportunity and wish the Conference all success.

Thank You.

*Governance in Banks: Driving Sustainable Growth and Stability**

Shaktikanta Das

I am very happy to be here in this maiden Conference of the Directors in the Boards of Banks organised by the Reserve Bank of India. At the outset, I would like to acknowledge the key role played by the Banks in the process of economic development of our country. Over the years and especially in the recent period, Banks have been able to maintain financial and operational resilience in the face of extreme stress originating from the COVID-19 pandemic, the continuing war in Europe and the banking sector crisis in certain advanced economies (AEs).

Today our banking sector stands out as strong and stable with capital-to-risk weighted assets ratio (CRAR) at 16.1 per cent, Gross NPA at 4.41 per cent, Net NPA at 1.16 per cent and Provision Coverage Ratio at 73.20 per cent at the end of December 2022. It is in times such as these that complacency may set in. We have to bear in mind that risks often get overlooked or forgotten when things are going well. Therefore, Boards of Directors of Banks and their senior management should maintain constant vigil on external risks and build-up of internal vulnerabilities, if any.

In the last few years, the Reserve Bank has significantly strengthened regulation and supervision of the entire financial sector. We have issued guidelines on governance in banks and also rationalised the regulatory architecture for Banks, NBFCs (including MFIs) and UCBs. Our supervisory approach and methods have become much stronger and deeper. Our priority is protection of depositors' money and ensuring a robust financial sector for the country to progress. As you are aware, banks do their business primarily with depositors' money and it is, therefore, the responsibility of Boards of Directors and Managements of Banks to keep the interest of depositors uppermost in their mind.

I would like to take this opportunity to convey our expectations from the Boards of Directors of banks and explain the multi-dimensional responsibility of individual directors[1]. My colleagues in the Reserve Bank and I also intend to have first-hand feedback from you on how to ensure that the Indian banking system remains resilient and future ready even in the face of risks and uncertainties. The entire effort has to be collaborative between the Bank Boards and the Reserve Bank. Let me now specifically dwell upon our expectations from Bank Boards one by one.

I. Governance and Stability

A robust governance structure is the first and the most important requirement for ensuring stability of a bank as well as sustainable financial performance. According to the Basel Committee on Banking Supervision (BCBS)[2], "*the quality of governance and management is probably the single most important element in the successful operation of a financial institution*". Similarly, a study conducted by the Reserve Bank researchers[3], based on comprehensive econometric analysis, has shown that bank stability is strongly predicated upon the governance structure in the banking system.

* Inaugural Address by Shri Shaktikanta Das, Governor at the Conference of Directors of Banks organised by the Reserve Bank of India for Public Sector Banks on May 22, 2023 in New Delhi and Private Sector Banks on May 29, 2023 in Mumbai).

[1] Certain portions of the address are only for Private Sector Banks, as Public Sector Banks are also governed by provisions of Banking Companies (Acquisition and Transfer of Undertakings) Act, 1970, the Bank Nationalisation Act, 1980, and the State Bank of India Act, 1955 in such areas.

[2] Guidelines for identifying and dealing with weak banks, July 2015, Basel Committee for Banking Supervision

[3] Study on '*Governance, Efficiency and Stability of Indian Banks*' as part of the Development Research Group Studies, Department of Economic Policy and Research, RBI

With this objective in mind, the Reserve Bank has issued guidelines[4] listing out seven critical themes which need to be discussed in the Board meetings. These themes are business strategy, financial reports and their integrity, risk, compliance, customer protection, financial inclusion and human resources. The Reserve Bank has also issued guidelines[5] on appointment of chairperson and conduct of meetings of the board; composition of important committees of the board; age, tenure and remuneration of directors; and appointment of the whole-time directors (WTDs). It is, however, a matter of concern that despite these guidelines on corporate governance, we have come across gaps in governance of certain banks, with the potential to cause some degree of volatility in the banking sector. While these gaps have been mitigated, it is necessary that Boards and the managements do not allow such gaps to creep in. We have been engaging with some of you on these issues at the individual level, but I thought it would be more effective if we engage with all the Directors together. It is the joint responsibility of the Chairman of the Board and the Directors, both whole time as well as non-executive or part time Directors, to ensure robust governance in banks.

II. Ensuring requisite qualification and expertise in the Board

The Banking Regulation Act of 1949 prescribes certain qualifications for appointment as Directors in the Board of Banks. Additionally, the Reserve Bank has issued guidelines on the 'Fit and Proper' criteria for the Directors. The objective is that Board members should have requisite expertise and demonstrate competence and integrity. For this, it is of utmost importance that the Directors keep themselves updated with material changes in the bank's internal environment as well as the external factors that have a bearing on the bank. A balanced combination of skills, diversity and expertise commensurate with the size, complexity and risk profile of a bank is what will drive it towards sustainable resilience. These skills should be enhanced by ongoing orientation programmes for the Directors. Directors must exercise care, prudence and diligence in the discharge of their functions. Duty of loyalty implies an undivided and unselfish loyalty to the Bank and demands that there shall be no conflict between duty and self-interest[6].

III. Objective and Independent Board

Individual Directors should not have any conflict of interest which may hamper their objectivity and independence. It is the responsibility of the Board to ensure that policies are in place to identify potential conflicts of interest and deal with them. In this respect, it is necessary that 'independent' directors are truly independent; that is, independent not only of the management but also of controlling shareholders while discharging their duties. They have to always remember that their loyalty is to the bank and no one else. Directors should keep watch on actual or potential related party transactions. They are expected to ask pertinent questions and obtain the required information from the management before taking decisions. I am not advocating any confrontation, but only stressing the need for the required level of alertness among all directors.

IV. Role of Chairperson, Board Committees and Managing Director/Chief Executive Officer

The role of Chairperson is akin to the captain of a ship. For the chairperson to be able to navigate the Board discussions and functions in the right direction, he/she should possess the requisite experience, competencies and personal qualities. Chairpersons

[4] DBR No.BC.93/29.67.001/2014-15 dated May 14, 2015 and DBR No.BC.95/29.67.001/2014-15 dated May 28, 2015

[5] *Corporate Governance in Banks - Appointment of Directors and Constitution of Committees of the Board*

[6] The Corporate Governance of Banks, Jonathan R. Macey and Maureen O'Hara, FRBNY Economic Policy Review / April 2003

should encourage open and honest discussions which, at times, can be critical of the proposals recommended by the management. Fostering an environment where dissenting views can be freely expressed and discussed is what will ensure objectivity – an absolute necessity for long-term sustainable performance of a bank.

The MD & CEO is expected to function under the overall supervision, direction and guidance of the Board and at the same time, maintain independence in performance of duties. At times, however, we have noticed the dominance of CEOs in Board discussions and decision making. It has been seen in such cases that Boards are not asserting themselves. We would not like this type of situation to develop. At the same time, there should not be a situation where the CEO is inhibited from doing his duties. Directors and CEOs should, therefore, foster an atmosphere of free and fair discussions in Board Meetings.

V. Tone from the Top; Corporate Culture and Value System

The larger purpose of the Board is to provide clear and consistent direction to the banks. The focus areas for any Board should be that of approving and overseeing implementation of the Bank's corporate values, policies and strategic objectives. Setting the correct tone at the top is a primary step in building a conducive corporate and risk culture as well as ethical behaviour among the rank and file. It is the responsibility of the Board to ensure that the processes and systems in the bank facilitate effective decision-making and good governance, which should also percolate down within the Bank. These are not abstract concepts. These are necessities which would help in building public trust and confidence on Banks.

The importance of public trust in the banking system, as exemplified in the recent bank failures in the United States, also needs to be appreciated. This was a classic case wherein public trust in certain banks evaporated suddenly. Further, in this digital age, it took only a few hours to transfer billions of dollars held as deposits in a bank to other institutions, leading to a severe liquidity crisis. The monitoring of information appearing in various media, including social media, has therefore become very important for any bank. In fact, such cases have been observed in India, too, in a few Banks in the past. We had to advise the CEOs to interact with the media immediately to set out the facts correctly. There have been instances when the Reserve Bank had to issue press statements to assuage concerns and prevent potential panic. In this kind of milieu, it is upon the Banks and their Boards to assiduously build sound corporate culture and value system within the organisation.

VI. Quality of Information

Our supervisory assessments have revealed that, sometimes, the information being put up to the Board was laden with gaps and material inaccuracies. Further, the agenda notes which the Boards were reviewing did not capture all the relevant information which made their review either ineffective or partially effective. We have come across instances of agenda papers not being circulated well in advance. There were also instances of only power point presentations being circulated as agenda notes. These power point presentations are like a guided tour, and Directors should clearly look beyond a guided tour.

It is the responsibility of the Senior Management to provide material information to the Board in a timely, accurate and understandable manner so that the Boards can take informed decisions. Care should be taken to avoid voluminous notes and information overwhelming the Directors with superfluous data. On the other hand, the Board also has a responsibility to seek as much relevant information as required for it to satisfactorily reach a decision.

VII. Effective oversight of Senior Management

Senior Managements in banks like any other corporate entity are accountable for implementing the

Board decisions and ensuring that the risks assumed by the bank are within the risk appetite approved by the Board. An effective Board of Directors also evaluates the performance and compensation of the Senior Management.

A compensation structure which does not distinguish between prudent risk taking and excessive risk taking often results in a culture of indifference towards risk taking. Banks need to rethink their internal accountability structures to ensure that prudent risk taking is rewarded and imprudent decisions are discouraged.

Employees cannot be rewarded for increasing short-term profits without adequate recognition of the risks and long-term consequences. In this regard, the Reserve Bank has issued guidelines on Compensation of Whole Time Directors/ Chief Executive Officers/ Material Risk Takers and Control Function staff of private sector banks. The underlying idea is that the compensation structure should promote long-term performance and be in line with the bank's business and risk strategy, objectives, values and incorporate measures to prevent conflicts of interest.

VIII. Business Model and Conduct

Business models of Banks are expected to be robust and prudent. In this context, Boards need to pay specific attention to the asset liability management (ALM) in the Banks, as suboptimal ALM can lead to serious liquidity risks and destabilising effects on the Bank itself. The recent developments in the banking sector in the USA bear ample testimony to this. These developments in the USA have also demonstrated that aggressive growth strategies with disproportionate or excessive focus on the bottom lines and/or market capitalisation often leads to build up of vulnerabilities. Banks should exercise caution and prudence in their growth strategies, pricing of products and portfolio composition. Over-aggressive growth, under-pricing or over-pricing of products both on the credit and deposit sides, concentration or lack of adequate diversification in deposit/credit profile can expose the banks to higher risks and vulnerabilities. From time to time, the Reserve Bank has engaged with certain banks on the need to make suitable adjustments in their business strategies where it was observed that over-aggressive growth in certain business segments (be it in credit/deposits) were creating avoidable vulnerabilities. Problems or risks can come from one corner of the balance sheet which might appear insignificant in the beginning. Let me emphatically state that the Reserve Bank does not interfere in commercial decision making of the banks, but only gives them a nudge to address potential risks and vulnerabilities. It is expected of banks that they put in place robust risk management policies and practices to address the risks associated with their business model/strategy.

Another area of focus for the Board should be the adoption of fair practices and customer protection, including in the context of growing digital lending. Quick and effective redress of customers grievances reflect the efficacy of a bank's overall functioning.

Here, I would like to mention that we have also issued guidelines regarding outsourcing of functions to third-party agencies. The arrangements with these third-party agencies should be very clear, specific and well-defined. In outsourcing of critical functions, including technology services, if an incident occurs, the banks cannot shift the blame to the third parties because the primary responsibility of ensuring operational resilience is on the banks and not on the third parties. Therefore, it is for the banks to have suitable arrangements and agreements in place with the service providers to ensure that they function according to the policies and expectations of the individual banks.

IX. Integrity and Transparency of Financial Statements

One of the critical areas where the role of Directors is very significant is in ensuring the integrity of financial statements published by the bank. We have come across instances where so called smart accounting methods were adopted to artificially boost the financial performance of the bank.

During the course of our supervisory process, certain instances of using innovative ways to conceal the real status of stressed loans have also come to our notice. To mention a few, such methods include bringing two lenders together to evergreen each other's loans by sale and buyback of loans or debt instruments; good borrowers being persuaded to enter into structured deals with a stressed borrower to conceal the stress; use of Internal or Office accounts to adjust borrower's repayment obligations; renewal of loans or disbursement of new / additional loans to the stressed borrower or related entities closer to the repayment date of the earlier loans; and similar other methods. We have also come across a few examples where one method of evergreening, after being pointed out by the regulator, was replaced by another method. Such practices beg the question as to whose interest such smart methods serve. I have mentioned these instances to sensitise all of you to keep a watch on such practices.

The Board of Directors, especially the Audit Committee of the Board (ACB), should bestow close attention on the accounting policies followed by the banks and implement preventive controls to preclude smart or aggressive accounting practices. The Board or the ACB should engage with the Statutory Central Auditors of the bank to ensure that their financial reporting is transparent and prudent.

X. Independence of Assurance Functions; risk management, compliance and internal audit

Under the 'three lines of defence' model, Management and business functions form the first line while risk management and compliance form the second line. Internal Audit forms the third line of defence. The assurance functions – risk management, compliance and internal audit – collectively assist the Board as well as the management to gauge whether the business operations of the bank are being run in conformity with the policies and strategies laid down by the Board. RBI has issued detailed guidelines for ensuring quality and independence of governance and assurance functions. The Board as well as the Risk and Audit committees of the Board should ensure that risk management, compliance and internal audit functions have adequate independence and stature within the organisation to function effectively.

It is important that the Assurance functionaries have a right of direct access to the Board of Directors or its committees. Moreover, the assurance functionaries should have the independence to constructively challenge the business functions for establishing a strong compliance and risk culture. The assurance functions should also be at the same pedestal as the business functions. The Reserve Bank has issued detailed guidelines in this regard for ensuring quality and independence of the assurance functions. Banks may also subject their assurance functions for independent external evaluation, so that there is an added layer of confidence to all the stakeholders.

Conclusion

Let me now conclude. On behalf of the Reserve Bank, I have enumerated a 10-point charter in my address today. The safety and soundness of the banking system relies critically on effective corporate governance which helps to build an environment of trust, long-term stability and business integrity of banks. Governance frameworks can be pictured as a complex mesh of nuts and bolts holding the financial pillars of capital, assets, deposits and investments in place and keeping the structure of the bank upright. Raising financial resources would not be a constraint for banks with robust governance frameworks as they

can command a governance premium. This premium in turn will be driven by quality of leadership at the top.

As a Regulator and Supervisor, the Reserve Bank has taken several measures to ensure sound corporate governance in banks. The Banks themselves have taken steps to face the recent headwinds and exhibited remarkable resilience. The leadership and governance in banks have played a vital role in the nation's journey so far and we believe that together we can drive a growth which is sustainable and a financial system which is resilient, stable and inclusive.

Thank you.

Some perspectives on Banking Supervision *

M K Jain

Mr. Mangal Goswami, Executive Director, SEACEN Centre, Mr. Raihan Zamil, Senior Advisor, Financial Stability Institute, Directors of Supervision of Asia-Pacific Economies, Ladies and gentlemen. A very good morning to all of you.

The Reserve Bank is delighted to host this Conference of Directors of Supervision. SEACEN Research and Training Centre and FSI have curated an excellent line-up of topics that are both timely and pertinent, covering key banking risks in the Asia-Pacific region, lessons learnt from recent bank failures in the US and Europe, and strategies for building resilience in banks. In the dynamic world of finance, it is imperative that we constantly adapt and learn from past experiences to navigate the challenges that lie ahead. This Conference serves as a platform to exchange insights and foster collaboration towards a stronger and more resilient banking sector in the Asia-Pacific.

In the aftermath of the recent bank failures abroad, banking supervisors face the challenging task of finding a delicate balance between ensuring financial stability on the one hand and addressing the moral hazard implications of their actions on the other. By implementing prudent regulations, conducting effective risk-based supervision, promoting transparency, doing timely interventions, and maintaining independence and accountability, supervisors can strive to strike an optimum balance that fosters stability while minimising moral hazard risks, ultimately contributing to a resilient and sustainable banking sector, which can support the real economy.

Indeed, supervisors have come a long way from being mere regulatory compliance enforcers to becoming risk-assessors. New supervisory tools aim to instil a forward-looking and calibrated supervisory approach based on principles of proportionality and risk perception. This approach involves constant focus on emerging risks and the business models at the Supervised Entities (SEs).

Today, I would like to share my perspective on some of the emerging issues, the Indian experience, and a few areas that I believe are important for supervisors to focus upon.

Emerging Issues

In the ever-evolving landscape of banking, several emerging challenges have surfaced, necessitating adequate attention and proactive measures. I would like to discuss three important issues.

Firstly, banking is undergoing a significant technology revolution, driven by the emergence of Fintech companies. This is pushing traditional banks to embrace digital transformation and become agile and innovative. While technology brings numerous benefits such as increased efficiency and improved customer experiences, it also presents varied risks. Banks must, therefore, carefully manage the adoption of new technologies and ensure adequate controls and safeguards to address potential vulnerabilities. Additionally, the reliance on third-party technology providers requires robust due diligence and risk management practices to mitigate the risks associated with outsourcing.

Secondly, closely linked to technology, is the issue of data. The banking industry, by the nature of its business, possesses a wealth of data that can be leveraged for various purposes. This data covers

* Opening remarks by Shri M K Jain, Deputy Governor, Reserve Bank of India - at the 25th SEACEN-FSI Conference of the Directors of Supervision of Asia Pacific Economies on June 14, 2023 in Mumbai.

customer information, financial transactions, credit histories, and more. While there are significant opportunities to derive value from this data, it is crucial to acknowledge and address the inherent risks associated with its handling, including those relating to data breaches and privacy concerns.

Thirdly, in an increasingly inter-connected world, there are geopolitical and macroeconomic risks. Political instability and trade tensions can have far-reaching implications on banks' customers, which in turn can put pressure on the banks themselves. Similarly, macroeconomic developments such as the recent coordinated monetary tightening, can transmit risks to the banking sector.

Thus, more than ever before, there is a need for both banks and banking supervisors to build capacities to handle technological advancements and navigate uncertain waters. This would entail enhancing knowledge and skills and investing in technology with a long-term vision.

Indian Perspective

Now, let me brief you on some of the works done in India.

India, as one of the fastest-growing economies in the world, has witnessed significant transformation in its banking sector in recent period. From being saddled with high non-performing assets, poor capital adequacy level, and significant losses, the Indian banking sector today reflects strength, stability, and resilience, thanks to the joint efforts of the Government, RBI, and the banks themselves.

Over the past few years, the Reserve Bank has significantly enhanced its supervisory systems, transitioning from an entity-based approach to a more thematic and activity-based one. Structural changes have been implemented in the Supervisory architecture to improve agility, bring flexibility, and enhance specialisation. A unified and harmonised supervisory approach has been adopted for commercial banks, non-banking financial companies (NBFCs) and urban cooperative banks (UCBs), with greater emphasis on identifying and addressing the root causes of identified vulnerabilities.

To enhance the effectiveness of supervisory frameworks, the Reserve Bank has employed various analytical tools. These include an Early Warning System, Stress Testing models, Vulnerability Assessments, Cyber Key Risk Indicators, Phishing and Cyber reconnaissance exercises, targeted evaluations of compliance with KYC/AML norms and Micro-Data Analytics, among others. Additionally, the Reserve Bank is in the process of adopting Advanced Analytics, Artificial Intelligence, and Machine Learning into supervisory data, while taking necessary safeguards, to gain even deeper insights into the operations of supervised entities. These initiatives reflect the Reserve Bank's commitment towards harnessing the power of technology and data-driven approaches to strengthen its supervision.

Realising the importance of adequate skill and capacity building in supervisors, the Reserve Bank has set up a dedicated College of Supervisors (CoS). The College has been conducting a large number of general and specialised training programmes. An Integrated Learning Management System has also been rolled out to facilitate continuous learning and updation.

Focus areas for Supervisors

Moving forward, I would like to emphasise nine specific areas where supervisory rigor should be directed more emphatically.

Firstly, governance is of paramount importance and invariably at the root cause of supervisory concerns. Effective corporate governance and sound regulation go hand in hand, reinforcing each other. The recent bank failures in advanced economies have underscored the pressing need to address governance concerns head-on.

Secondly, supervisors must closely examine the business models adopted by banks and meticulously assess whether these models align with the institutions' risk appetite. This evaluation should delve into the level of business growth projections, sustainability of earnings potential, extent of diversification, provisioning cover, and appropriate pricing mechanisms, *etc.*

Thirdly, supervisors need to examine IT issues holistically. It is crucial to determine whether banks have the capacity to develop robust IT systems that align with their business strategies. Future-proofing by banks of their IT infrastructure becomes imperative, necessitating strategic investments in both capital and operational expenditure. As virtual work environments and cyber risks become more prevalent, effective IT governance takes on heightened significance.

Fourthly, supervisors must focus on the efficacy of assurance functions *viz.* risk management, compliance and internal audit. The assurance functions serve as a critical safeguard providing independent and objective assessment of the bank's operations, risk management practices, and compliance with regulatory requirements. By assessing the quality of the assurance functions, supervisors can identify potential vulnerabilities, assess the effectiveness of internal controls, and mitigate risks before they become bigger.

Fifthly, the Compliance culture at the entire organisation level is another critical area that demands supervisory attention. While evaluating an institution's culture may pose challenges, supervisors must ascertain whether the compliance permeates horizontally and vertically within the institution and gets support from the senior management of the entity.

Sixthly, Communication is an indispensable tool for banking supervisors. It facilitates the effective transmission of expectations to Supervised Entities, supports compliance with regulations, promotes collaboration, enhances crisis management capabilities, and fosters public trust. By prioritising clear and transparent communication, supervisors can strengthen their oversight role and contribute to a stable and resilient banking system.

Seventh, as banking supervisors play a crucial role in maintaining financial stability and safeguarding the interests of depositors, intervening in a timely manner and utilising supervisory powers judiciously is of paramount importance. To do so, it would be useful for supervisors to develop a formal escalation matrix for supervisory intervention that provides a structured approach for supervisors to determine the appropriate level of intervention and the corresponding actions to be taken.

Eighth, data analytics empowers supervisors with the ability to extract valuable insights from vast amounts of data. This enables them to make data-driven decisions, identify risks, and take timely actions to safeguard financial stability. By leveraging the power of data analytics, banking supervisors can considerably strengthen their supervisory frameworks.

Lastly, supervisors must strengthen their market intelligence capabilities. Media inputs, including social media, can be extremely useful in identifying emerging issues. Whistle-blower complaints, often viewed as channels for redressal, have also become valuable sources of market intelligence.

Importance of Capacity Building

Before I conclude, I would like to highlight the importance of capacity building. As banks adopt new technologies, it is essential for supervisors to be equipped with the necessary knowledge, skills, and resources to effectively supervise and regulate these advancements.

In today's rapidly evolving banking landscape, supervisors cannot afford to stay behind the curve. It is essential for banking supervisors to stay abreast of industry developments, enhance their supervisory techniques, promote consistent standards and strengthen risk management practices to address emerging challenges.

Capacity building through recruiting adequate number of quality staff and equipping them with the right skills and tools is an ongoing process that empowers supervisors to fulfil their roles in maintaining the stability and soundness of the banking sector.

Conclusion

Let me now conclude.

By staying abreast of technological advancements, monitoring the evolving risk landscape, keeping pace with regulatory developments, building necessary capacities and skills and adopting latest analytical tools, supervisors can more effectively fulfil their role in maintaining financial stability, protecting consumers, and fostering a resilient banking sector. Learning from past experiences and collaborating across jurisdictions can help better navigate the challenges ahead. This can contribute to building a strong banking sector that supports sustainable economic growth in the Asia-Pacific region. The Conference provides this platform and I believe that it shall prove to be very useful for all the participants. My best wishes to all of you.

Thank You!

*Cyber Security for a safer Financial System**

M K Jain

Dr. Sanjay Bahl, Director General of Computer Emergency Response Team – In (CERT-In), distinguished guests from the IMF, the BIS, delegates from other central banks and CERTs, MDs/CEOs of banks from India and their team members, global CISOs and CTOs of foreign banks, my colleagues from RBI, ladies and gentlemen. Good morning to all of you.

I thank all of you for joining us for this important event to deliberate upon the critical area of cyber security that has become increasingly pertinent in our rapidly evolving digital age. As financial transactions migrate to digital platforms, the reliance on information technology infrastructure grows exponentially. While this shift brings undeniable convenience and efficiency, it also exposes us to increasing risks. Cyber criminals, driven by malicious intent and motivated by financial gain, continually exploit vulnerabilities in digital systems, seeking to breach security defences and gain unauthorised access to valuable data.

In an interconnected world, where financial transactions traverse continents in a matter of seconds, the need for international cooperation in combating cyber threats has become paramount. Cyber-attacks targeting banks not only jeopardise the stability of individual institutions but also have the potential to disrupt financial systems, making it imperative for nations to come together and address this pressing challenge. Therefore, this event under India's G 20 Presidency is important to complement efforts of various international bodies for addressing the issues of cyber security in the banking sector.

Importance of Technology

Technology has been a driving force in shaping the financial sector, enabling greater efficiency, accessibility and affordability. However, the current FinTech revolution is unique in many ways being defined by increased computing power and use of new technologies. Further, there is an emergence of new entrants and innovative business models.

Previously, digitalisation of financial services allowed banks and financial institutions to have structured data on their consumers which was used to have an understanding of the customer's risk profile. However, with the emergence of Big Data analytics, even better insights on customer preferences and behaviour can be obtained using alternate semi-structured and unstructured data.

Data is often referred to as the "new oil" due to its immense value and potential for driving economic growth, innovation and the positive impact it can have when used responsibly. However, when used irresponsibly, several negative consequences follow such as privacy violations, identity theft and frauds, manipulation using targeted advertisements, *etc.* In fact, irresponsible data usage not only poses risks to individuals, but undermines trust in the digital ecosystem and may even have financial stability and national security implications.

Understanding Financial Stability Vulnerabilities

Understanding financial stability vulnerabilities emerging from cyber perspective is critical because existing capital and liquidity prescriptions may not mitigate the effect of a cyber event the same way they mitigate financial losses. For instance, capital and liquidity can provide the financial resources to respond to a cyber incident but may not speed up the process of recovering systems or data.

Cyber-attacks can disrupt critical financial operations within banks, rendering them unable

* Keynote address by Shri M K Jain, Deputy Governor, Reserve Bank of India - June 5, 2023 - at 'Cyber Security Exercise for Banking Sector' an international event under India's G 20 Presidency in Mumbai.

to process transactions, access customer accounts, or execute essential functions. This disruption can result in a loss of confidence in the banking system, as customers and businesses may face difficulties in accessing their funds or conducting normal financial activities. Such disruptions can lead to financial instability, especially if they affect multiple banks or are prolonged.

Enhancements in service offerings, such as longer operating hours of payment systems and shorter clearing and settlement windows, leave the financial system with fewer service breaks in which operations can be restored after a cyber incident. Uncertainty about the nature and extent of an incident may also prompt runs on counterparties, competitors, or unaffected segments of the financial entity's operations.

Indeed, the 2021 ransomware attack on Colonial Pipeline, though not a financial entity, highlighted the interconnectedness of critical infrastructure systems and the potential cascading effects on various sectors, including banking. It illustrated how a cyberattack could spark a run, in this case, a run-on gas stations, amplifying the effects well beyond the original shock.

While there is extensive ongoing supervisory attention to entity-level cyber resilience, data gaps remain. At the entity level, there is need for consistent data on cyber incidents. At the system level, relevant data measures of digital interdependencies and the speed with which backup systems can be quickly enabled, are required.

Cyber Security and Digital Financial Inclusion

Cyber risks can have a significant impact on financial inclusion efforts as well. Financial inclusion aims to provide access to financial services for the underserved and marginalised populations, and rapid strides have been made in this area facilitated by digital public infrastructures. However, these populations are more vulnerable to cyber risks due to their lack of awareness about cybersecurity.

Individuals can lose trust if they are brought online in the name of financial inclusion only to be exposed to cyber harms that they cannot recover from. For digital financial inclusion to be successful, it is not enough to bring people into the digital economy. All the stakeholders must also ensure that people are resilient against the risks they will be likely exposed to.

Indian Perspective

I would like to take this opportunity to share the Indian perspective. While encouraging innovation and digitisation of financial products and services, RBI's approach has been to ensure that innovation should be assimilated in the financial system in a non-disruptive manner and the course of digitisation should ensure customer protection at every step.

India is one of the few countries that protects users through the mandate of two-factor authentication for digital payment transactions. Although it is now recognised as an innovative regulation, at the time when 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 Turnaround Times (TATs) for transaction failures, tokenisation, *etc.* are all initiatives intended to protect the customer.

In the Payments space, Real Time Gross Settlement (RTGS) and National Electronic Fund Transfer (NEFT) have been made 24x7. Further, RBI catalysed the setting up of appropriate institutions like the Institute for Development and Research in Banking Technology (IDRBT) in 1996 and the National Payment Corporation of India in 2008, which have been instrumental in pioneering various payment system technologies and solutions.

Through appropriate regulatory frameworks, the RBI has encouraged innovations in Digital

Lending, Open Banking and P2P lending platforms. A Regulatory Sandbox framework was created in 2019 which has run several cohorts to incentivise adoption of innovative financial products and services. The Reserve Bank Innovation Hub (RBIH) has been set up for collaborating with financial sector institutions, the technology industry and academic institutions for exchange of ideas and development of prototypes related to financial innovations. Competitive events like the Hackathons are held to provide a channel for the fintech and start-up sector to showcase innovations.

The supportive regulatory environment, with its focus on safety, speed and scalability has positioned India as a leader in payment system innovation. Illustratively, UPI, India's instant payment system, launched in 2016, has witnessed remarkable growth in India with daily transactions averaging over 300 million in volume and ₹80 billion in value during May 2023. Recently, India and Singapore tied up their UPI and Pay Now systems allowing for real time cross border money transfers between the two countries. Indeed, there is immense potential for use of UPI globally through partnership and collaboration with other countries.

The RBI is also continuously trying to strengthen its supervisory oversight over cyber risks. Simulated phishing, cyber reconnaissance and other cyber exercises complement supervisory processes in getting a systemic view of the prevailing cyber risks. RBI has also encouraged development of innovative tools like the Sectoral Security Operations Centre (S-SOC) which can help address the cyber risk of the banking and financial sector in a major way.

Though cyber risks are said to outpace regulations, the Reserve Bank of India has been proactively taking measures to strengthen IT and Cyber Risk management in its regulated entities. As early as 2011, detailed guidelines for managing IT risks were issued to the banks, followed by a principles-based Cyber Security Framework in 2016. Regulations have also been issued on Digital Payment Security Controls and on Outsourcing of IT Services. RBI has also published draft guidelines on IT Governance which shall be finalised and issued shortly.

Need for collective effort

Considering the global nature of cyber threats, efforts by governments, financial entities, and technological companies are insufficient to protect against them. Cyber threats transcend geographical boundaries, making it necessary for countries and financial institutions to work together to address them.

I would like to outline six strategies that would help improve the global cyber security environment:

i. Firstly, the global financial system's interdependencies need to be better understood by mapping key operational and technological interconnections, including that of critical infrastructure. Better incorporation of cyber risk into financial stability analysis will improve the ability to understand and mitigate system-wide risk.

ii. Secondly, a minimum common framework for cybersecurity needs to be devised that outlines best practices and standards for financial institutions to follow. This can help ensure that all institutions are taking the necessary steps to protect themselves from cyber threats.

iii. Thirdly, to the extent feasible as per domestic laws, countries can share information and intelligence about cyber threats and attacks. This can help to identify emerging threats and vulnerabilities and enable financial institutions take proactive measures to prevent attacks.

iv. Fourthly, countries can work together to develop and implement incident response plans. This can help to ensure that in the event of a cyber-attack, there is a coordinated and effective response that minimises the impact on the financial sector.

v. Fifthly, cyber-attacks should become more expensive and riskier for the perpetrators through effective measures to confiscate proceeds of crime and prosecute criminals. Stepping up international efforts to prevent, disrupt and deter attackers would reduce the threat at its source.

vi. Finally, countries can collaborate on capacity building and training programs to ensure that financial institutions have the necessary skills and resources to manage cyber risks effectively. This can include training on cybersecurity best practices, incident response planning, and the use of advanced technologies to detect and prevent cyber-attacks.

Conclusion

Let me now conclude. With growing interconnections across the world, curbing cyber risk requires an international effort. It is expected that the G20 forum would complement the efforts of various international bodies towards building an approach for helping financial sector through capacity development initiatives aimed at designing and implementing international standards and best practices as a priority.

I request all to participate actively in the upcoming cyber security exercise that will be held today. Together, we can make the financial sector more secure and trustworthy.

Thank you

*Governance in Banks: Driving Sustainable Growth and Stability**

M K Jain

Governor, Deputy Governor Shri M R Rao, colleagues from the RBI and distinguished directors of banks.

Good morning. It is indeed an honour to be here to discuss a topic of utmost importance: Governance in Banks – Driving Sustainable Growth and Stability. You are seasoned professionals with expertise in your domains. Today, I intend to share some insights from my experience both as a practitioner as well as supervisor.

We had three key objectives in mind for holding this conference. These are:

(i) The Governor emphasised the strength, stability, and resilience of the banking system, achieved through collective efforts of the Government, RBI, and the banks. While progress has been made, addressing downside risks is vital for India's journey towards becoming a developed economy. Banks are needed to mobilise savings, promote financial inclusion, facilitate job creation by supporting MSMEs, among others. We would like to highlight the importance of strong governance and leadership which are crucial for long-term health of the sector.

(ii) Secondly, the RBI has taken several initiatives in the recent past for strengthening its supervisory processes. This conference gives an opportunity to provide an overview of these initiatives and share some of the supervisory insights.

(iii) Thirdly, there has been an increasing focus on data analytics as a powerful tool for assessing both idiosyncratic as well as systemic risks in banks. By leveraging large volumes of data and advanced analytics techniques, it is possible to gain deeper insights into risk profiles of banks and identify potential vulnerabilities. The intention is to brief you on these initiatives so that banks can leverage on their own data analytic capabilities to make data-driven risk management decisions, improve risk assessment accuracy, and enhance their ability to anticipate risks.

Challenges

In the past decade, the banking sector has overcome numerous challenges. However, complacency is not an option, as banks now face a dynamic environment arising from technological disruptions, cybersecurity threats, evolving customer expectations, global headwinds, and the need to attract and retain talent. Among these challenges, three areas require particular attention which I shall briefly elaborate.

(a) Firstly, technology risk: The ongoing Fintech revolution in banking is bringing a disruptive paradigm shift in the banking services. Banking services are now being bundled with other financial and non-financial services and giving consumers the convenience of accessing the full spectrum of financial products. Indeed, the pace of technological changes is so rapid that banks will have to transform like technology companies continuously innovating and investing in technological upgradations. The risks of cyber-attacks, data breaches, and operational failures have also increased.

* Speech delivered by Shri M K Jain, Deputy Governor, Reserve Bank of India at the Conference of Directors of Banks organised by the Reserve Bank of India for Public Sector Banks on May 22, 2023 in New Delhi and Private Sector Banks on May 29, 2023 in Mumbai.

(b) Secondly, business risk: As the recent examples of some international bank failures have demonstrated, banks get into trouble due to fundamentally flawed business models. Sometimes banks follow inherently risky strategies with the confidence that their bank has mitigating controls. However, their assumptions may not hold true either due to internal control failure or due to exogenous factors. The Board plays a vital role in independently assessing the business model and its attendant risks. It is important for banks to carefully assess their own unique circumstances and capabilities, conduct thorough analysis, and tailor their strategies accordingly. While it can be valuable to learn from the experiences of other banks, adopting their strategies without considering the specific context and requirements of the organisation may lead to unfavourable outcomes. Therefore, Boards should be cognisant of their business model and its potential downsides, both in near term and in future.

(c) Thirdly, there is operational risk due to various factors such as high attrition, lack of succession planning, skilling of staff, outsourcing, *etc.*

i. Attrition and high employee turnover lead to loss of institutional knowledge, disruption in services and increased recruitment costs. Similarly, lack of succession planning, particularly for critical roles, can pose significant operational risks.

ii. Ensuring that employees have the necessary skills and knowledge is imperative to adapt to new technologies and business practices.

iii. Risks also emanate from outsourcing, including potential loss of control over critical operations, data security breaches, and increased dependency on third-party providers.

iv. Banks also need to be careful about process risks where errors, inefficiencies or breakdowns in operational processes can lead to financial losses, compliance failures or customer dissatisfaction.

Operational risks stemming from ethical issues at the operating level can also have significant repercussions for banks, including reputational damage, legal and regulatory consequences, erosion of customer trust, and adverse financial impacts.

Role of the Board

The evolving nature of risks faced by the banking system necessitates the building up of organisational resilience to adapt to the changing landscape and stay prepared for future risks. Good governance is at the core of organisational resilience and effective Boards are the starting point of good governance. While good corporate governance is essential for all institutions, the governance structure and processes of the banks are expected to be even more robust as banks and financial institutions are different from other business entities in many ways.

i. Firstly, banks are allowed to raise substantial amounts of uncollateralised deposits. Unlike other corporates, shareholders only provide 3 to 4 per cent of the funds in banks and the predominant suppliers of finance are depositors.

ii. Secondly, banks perform the function of liquidity and maturity transformation which makes their business inherently risky.

Such high leverage and maturity mismatch between assets and liabilities cannot be sustained

unless banks gain the trust of the depositors. Hence, the governance structures and practices in the banks should prioritise depositors' interest and maintaining their trust.

Effective governance requires a competent and independent Board effectively overseeing the management by asking the right questions, formulating appropriate strategies keeping in mind the risk appetite as well as establishing proper policies and procedures.

I would urge Boards to actively engage in risk oversight, pursue a robust risk management framework, monitor key risks, challenge management on risk-related matters, and ensure the implementation of appropriate risk mitigation measures to protect the bank's interests and stakeholders.

Another aspect that Boards must lay due emphasis on is compliance. Compliance in letter and spirit is critical for banks to maintain the integrity of the financial system and to promote ethical behaviour. Banks must ensure that their actions are compliant with the intended purpose and principles of a law or regulation, and not just the literal or technical interpretation. Compliance with the spirit of the law is essential for banks to maintain their reputation, build trust with customers, and promote ethical behaviour.

Finally, it is important for banks to keep sustainability in mind. This means taking a long-term view of the business and considering the impact of decisions on the bank's financial health, reputation, and broader societal and environmental factors in future.

Role of Supervision

On its part, the Reserve Bank has initiated a series of steps to enhance the soundness of the financial system by adopting a holistic approach towards addressing the growing complexities and inter-connectedness, and to deal effectively with the potential systemic risks.

In the past five years, there has been a significant strengthening of the Reserve Bank's supervisory systems and shifting from an entity-based approach to a more thematic and activity-based approach. Structural changes have been implemented to enhance agility, flexibility, and specialisation. A unified and harmonised supervisory approach has been adopted for commercial banks, NBFCs, and urban cooperative banks (UCBs), with a greater focus on identifying the root causes of vulnerabilities.

The Reserve Bank has deployed a wide array of tools to enhance the effectiveness of Supervisory frameworks. These include an Early Warning System, Stress Testing models, Vulnerability Assessments, Cyber Key Risk Indicators, conduct of Phishing and Cyber Reconnaissance exercises, targeted evaluation of compliance with KYC/AML norms, Micro-Data Analytics to analyse granular data, among others. We are also in the process of adopting the use of Advanced Analytics, Artificial Intelligence and Machine Learning on Supervisory Data for even better insights into operations of supervised entities.

Supervisors often detect serious issues such as non-compliance, divergences from IRACP norms, and gaps in internal controls and IT systems during their limited time at the bank. However, it is reported that these concerns frequently surprise Directors when presented in Risk Assessment and Off-site analytical reports. Boards should reflect on why critical deficiencies go unnoticed despite having access to relevant data and assessments, and work on building internal capabilities to identify and address such issues at an early stage.

Sometimes supervision is viewed as intrusive. Let me clarify that supervision is neither designed to be intrusive or punitive nor are supervisors the risk managers of supervised entities. It should be appreciated that supervision is only the fifth line of defence in banking, as it serves as an additional layer of oversight beyond the traditional three lines of

defence model (business operations, risk management and compliance, and internal audit) and the fourth line of defence (external audit). Supervision is forced to step in only when these lines fail.

Preparing for the Future

Before, I conclude, let me dwell upon the road ahead. The future of banking is expected to be shaped by advancements in technology leading to greater business and process automation, changing customer expectations, and evolving regulatory landscapes.

To prepare for the future, Indian banks will need to focus on digital transformation, enhance customer experience, adopt innovative technologies such as AI and blockchain, invest in cybersecurity measures, look for opportunities to derive synergistic benefits through collaboration with other players as well as upskilling their workforce to meet the demands of the digital era. Additionally, they will need to prioritise risk management, regulatory compliance, and sustainability to ensure long-term resilience and competitiveness in the evolving banking landscape.

Conclusion

In conclusion, I would like to reiterate that the role of the Board of Directors in ensuring sustainable growth and stability of the banking sector cannot be overstated. As custodians of the interests of various stakeholders, including depositors, shareholders, regulators, and the wider society, Boards must adopt a proactive and strategic approach. Effective risk management, governance, and compliance practices are essential in safeguarding the bank's reputation, financial stability, and long-term viability. Moreover, the Board must ensure that the bank's business model, strategy, and operations are sustainable and create long-term value for all stakeholders. Finally, the Board must remain vigilant, adaptive, and continuously assess the bank's performance, risks, and opportunities, and take timely and informed decisions. I urge all Board members to embrace these principles to drive the bank towards sustainable growth and stability, while safeguarding the interests of depositors and maintaining the stability and integrity of the banking system all the time.

Thank you.

*Productivity: The Promise of Progress**

Michael Debabrata Patra

I. Introduction

Good evening!

I welcome you all to the sixth Asia KLEMS Conference, to India and to the Reserve Bank of India, henceforth RBI. We are honoured to host this conference in physical mode after the arduous isolation imposed by the pandemic. The hill town of Lonavala, an ancient resting place for travellers and traders, is nestled in India's soon-to-be monsoon-drenched western ghats – a chain of mountains running 30 to 50 km inland parallel to India's west coast across six provinces. We do hope that its verdant ambience will dispel all pandemic blues and provide a salubrious backdrop for this Conference which has "Productivity, Growth, and Resilience in the Asian Economies" as its theme. The Conference itself is a tribute to the fortitude and perseverance displayed by Asian economies through the pandemic and the war in Ukraine.

Before I turn to the subject of my address today, I thought a journey down memory lane might be appropriate for the occasion. The Asia KLEMS has a short but eventful history, replete with promoting the building of databases and conducting international productivity comparisons among Asian economies. The first Asia KLEMS conference was held in Tokyo in 2011. The abiding interest in that Conference was in productivity growth, going by the papers presented, a theme to which we return today. The next four Conferences were hosted in Seoul, Taipei, Tokyo and Beijing in which attention diversified to setting up the KLEMS database and accounting framework, structural change and sources of productivity growth, methodological issues and productivity gaps, growth and productivity, and the role of factors such as information and communication technology or ICT, intangibles, trade and labour markets. At the time of the fifth Asia KLEMS meeting in 2019, India was selected as the venue for the next conference. Unfortunately, COVID-19-related restrictions on international travel prevented the conference from being convened in 2021 but finally, the sixth Asia KLEMS conference is being held today.

India KLEMS, which is a part of Asia KLEMS and of the larger world KLEMS initiative, aims to measure and analyse productivity growth in India by using the KLEMS framework. It started in 2009 with financial support from the RBI. From 2015, the India KLEMS Project was nurtured at the Centre for Development Economics (CDE), Delhi School of Economics, by Prof. K.L. Krishna and his team, who have been making valuable contributions to the greater KLEMS initiative right from its inception. From 2022, the RBI is the home of India KLEMS and its database, which consists of inputs (KLEMS), output (gross value added; gross value of output) and total factor productivity (TFP) estimates from 1980-81 to 2019-20 (April-March). The next update of the database with the incorporation of data for 2020-21 is scheduled for August 2023.

Talking KLEMS to hardcore KLEMS practitioners is a formidable challenge and I shall not venture where angels fear to tread. In the rest of my address, I will, therefore, try to provide a user's perspectives on how we read KLEMS data for policy purposes.

II. Some Stylised Trends

It is widely believed that a structural slowdown has been spreading across the global economy after growth peaked in 2010. About half of this slowdown

* Inaugural address delivered by Michael Debabrata Patra, Deputy Governor, Reserve Bank of India at the Sixth Asia KLEMS Conference on June 11, 2023 at Lonavala. Valuable comments received from Sitikantha Pattanaik, Rajib Das, Sadhan Kumar Chattopadhyay, Siddhartha Nath, Sreerupa Sengupta, Shruti Joshi and editorial help from Vineet Kumar Srivastava are gratefully acknowledged.

can be attributed to demographic factors: ageing population; slowing working-age cohort increases; and declining labour force participation. Alongside, growth rates of investment and total factor productivity are declining. The engine of trade, which powered the global economy in the 1980s and 1990s, has also weakened considerably. Gains from better education and health have been diminishing as improvements in education and health care systems go abegging for lack of investments. More recently, powerful forces have accentuated the global slowdown – financial crises recurring with disturbing intensity; the once-in-a-century pandemic; and the war in Ukraine; all of which have left lasting scars. Accordingly, the 2020s (2022-30) may turn out to be another 'lost decade', preceded by the ten lost years from 2010. It has been argued that the global potential growth rate – the maximum growth rate that an economy can sustain in the long term at full employment and full capacity without igniting inflation (its speed limit, if you will) – has fallen by close to a full percentage point in 2011-21 relative to 2000-10[1].

The global slowdown has pulled down advanced economies (AEs) and emerging markets and developing economies (EMDEs) alike, but it has imposed a major setback on the latter, pushing back their chances of catch-up or convergence. Consequently, their capacity to lift their populations out of poverty, reduce inequality and achieve the aspirational goals of development is endangered as well as their ability to harness the benefits of newer technologies stemming from green transition and the digital revolution. What is worrisome is that for EMDEs, all the drivers of growth – factor re-allocations; human capital formation; the share of working age population; investment growth – are losing strength at the same time. This could stall the process of development that has been underway since the middle of the preceding century. Meanwhile, policy uncertainty at the global level has surged and forces of deglobalisation and trade and finance disintegration have gained ground, vitiating the environment in which EMDEs sought to harness developmental opportunities and manage their challenges. The World Bank estimates that for EMDEs, potential growth as defined earlier fell to 5.0 per cent a year during 2011-21 from 6.0 per cent a year during 2000-10 and will slow further to an average of 4.0 per cent a year during 2022-30. In particular, investment growth is likely to be insufficient to reach pre-pandemic trends. In the view of the United Nations Conference on Trade and Development (UNCTAD), greenfield foreign direct investment in industry remains fragile, especially in developing countries. There is significant risk that the momentum for recovery in international investment will stall prematurely, hampering efforts to boost finance for sustainable development[2].

Turning to Asia, the real GDP growth surge in east Asia (which includes the Pacific region) following the 1997-98 Asian financial crisis lost steam during the period between 2011-21 in a largely cyclical downturn. With the onset of the COVID-19 pandemic, there was a sharp fall in fixed capital investment and labour supply, which still remain below pre-pandemic levels. The weakening of human and physical capital will likely weigh on medium to long-term growth prospects of the region in an environment of reconfiguration of supply chains, elevated debt levels, tighter financing conditions and uncertainty related to trade and technology transfer. Over the period 2022-30, the region's potential output growth is projected by the World Bank to slow to 4.6 per cent a year from 6.2 per cent a year in 2011-21. Falling TFP growth is estimated to account for about three-fifths of the slowdown, with the remaining two-fifths attributable

[1] Kose, M. A. and Ohnsorge, F., (eds), (2023), *Falling Long-Term Growth Prospects: Trends, Expectations, and Policies*, World Bank, Washington, DC. I draw heavily on this comprehensive work to tease out stylised trends.

[2] UNCTAD, (2022) World Investment Report.

equally to slowing labour supply growth and capital accumulation.

Economic activity in south Asia rebounded strongly from the recession caused by the pandemic, when its large informal sector was hard hit by job and income losses. Output in the region is on track to grow by about 6.0 per cent a year between 2022 and 2030, faster than the 2010s' annual average of 5.5 per cent and only moderately slower than growth in the 2000s. This will make it the fastest growing EMDE region in the remainder of this decade as demographic trends expand the working age population, the investment rate remains elevated, and productivity growth continues to benefit from the shift of resources away from agriculture and informal activity. Although population growth is expected to moderate, labour force growth will be supported by stabilisation of the participation rate after two decades of decline. South Asia's potential growth is projected to slow only marginally to 6.1 per cent a year on average in the 2020s from 6.2 per cent a year in the 2010s. The forecast of potential output growth through 2030 is underpinned mainly by a projected recovery in TFP growth.

In central Asia[3], the pandemic and the war in Ukraine have taken a grievous toll, reversing recent progress in raising living standards and leaving deep economic wounds among vulnerable populations. The region's output is estimated to have shrunk by 0.3 per cent in 2022 and is expected to flatten in 2023, weakened by erosion of labour productivity, muted investment and scarred human capital. Potential output growth is projected to slow from an annual average pace of 3.6 per cent per year over 2011-21 to 3 per cent per year over 2022-30.

In west Asia[4], GDP growth has been uneven over the past two decades, slowing in the 2010s under the effects of political turmoil and military conflict. The World Bank estimates that potential growth halved between the 2000s and 2010s, with the slowdown driven by broad-based decelerations in capital stock, in total factor productivity and in working-age populations. The pandemic has further damaged these drivers, with output contracting by 3.6 per cent in 2020. A rebound in 2021 was insufficient to reverse the decline in output. Potential output growth is projected to remain lacklustre, growing by about 2.5 per cent a year during 2022-30. A reduction in the contribution of labour to potential growth is expected to be partly offset by an anaemic improvement in TFP growth and stronger investment. Human capital accumulation is projected to slow owing to weaker growth in the working-age population.

To sum up these trends, global growth was slowing down ahead of the pandemic relative to its performance up to the global financial crisis (GFC). This loss of speed was led by AEs but EMDEs were pulled in by 2010-11. Only east and south Asia proved resilient and maintained historical growth trends. Even in these regions, the share of labour in output and its contribution by way of quality has fallen while capital accumulation has moderated. It is said that east and south Asia will become the world's centre of gravity and capital accumulation will continue to contribute more than half of GDP growth.[5] The rest will have to come from productivity, a subject to which I will turn shortly.

Potential growth is weakening broadly across Asia with all drivers – TFP growth, labour force growth, and capital accumulation – slackening. East Asia is expected to be the EMDE region with the sharpest decline in both aggregate and per capita potential growth during 2022-30, mainly reflecting slower capital accumulation and TFP growth. The second largest

[3] which overlaps with emerging Europe in the World Bank's analysis referred to earlier.

[4] which overlaps with North Africa in the World Bank's analysis.

[5] Panagariya, A. (2023). Asia is where the economic centre of gravity is shifting to; India has to be part of it. *The Indian Express.* May 22.

decline in potential growth in 2022-30 is projected for central Asia from the continued weakness in labour force growth. Potential growth is projected to rise in west Asia in 2022-30 as strengthening TFP growth offsets demographic headwinds to potential growth.

The secular slowdown over the last decade and expectations of another slow decade ahead warrants a renewed exploration of the linkages between physical capital investment, improvements in human capital, and exploitation of technological advancement. In an environment in which populations across the world are either ageing or declining, and investment rates are trapped in a long-term deceleration, including foreign direct investment, it is perhaps an opportune moment to focus on productivity growth as the means of arresting the downturn and charting a new trajectory of pushing outwards the growth possibility frontier. It has been observed that productivity is not everything but in the long run, it is almost everything[6]. This is the theme of my address today.

III. The Paradox of Productivity

Globally, productivity growth has undergone a prolonged slowdown since 2010, after a brief recovery in the years immediately following the GFC. This deceleration in TFP is more pronounced in EMDEs than in their AE peers. India has also suffered a decline in TFP growth, although moderate relative to the global experience – the average TFP growth rate in India slowed from 1.3 per cent during the period 2000 to 2007 to 1.2 per cent during 2011 to 2019, as against the EMDE average of 0.2 per cent and the global average of 0.1 per cent[7]. TFP growth accounted for about 20 per cent of India's aggregate GDP growth during this period, coinciding with the contribution of both capital and labour declining. GDP growth in India has remained relatively resilient, averaging close to 7.0 per cent during 2000 to 2022 with some ebbing of capital formation and employment growth in sync with the deceleration in TFP growth. For the period 2022-30 the World Bank projects India's potential growth to reflect the outlook for south Asia.

Underlying the generalised productivity slowdown are several confounding puzzles, at least from the policy practitioner's point of view. I will focus on a few important ones in the interest of time. First, the slackening of productivity is synchronised across jurisdictions, apparently impervious to differentials in levels of development, inherent heterogeneity in country characteristics and differences in policy responses.[8] As the economist Alistair Dieppe points out, "in a factor modelling framework, TFP growth is shown to be the one of the most important correlates of common developments in GDP growth". Second, this co-movement of TFP across geographies suggests that it could be driven by common factors. In this context, it has been pointed out that cyclical factors, including changing factor utilisation, accounted for a third of the slowdown in the productivity in the post GFC period[9]. This suggests that fluctuations in productivity are actually demand-driven, calling into question the received wisdom on the long run neutrality of demand with respect to productivity[10]. It also does not fit well with the observed long run slowdown in productivity which suggests that structural factors may be at work whereas cyclical drivers are more short-run and reversible by definition. Third, the fall in productivity growth is co-existing with a slew of new technological

6 Krugman, P.,(1997), Defining and Measuring Productivity in *The Age of Diminishing Expectations*, The MIT Press, July.

7 Groningen Growth and Development Centre, Total Economy Database, *University of Groningen, The Netherlands*, April 2022 release.

8 Francis, N., Owyang, M. T. and Soques, D. (2022), Business Cycles across Space and Time, *Journal of Money, Credit and Banking*, 54(4), 921-952.

Kose, M.A., Otrok, C. and Whiteman, C.H. (2003), International Business Cycles: World, Region and Country-specific Factors, *American Economic Review, 93*(4), pp.1216-1239.

9 Dieppe, A., (ed) (2021) *Global productivity: Trends, Drivers and Policies*; The World Bank.

10 Herwartz, H., (2019), Long-run Neutrality of Demand Shocks: Revisiting Blanchard and Quah (1989) with Independent Structural Shocks, *Journal of Applied Econometrics, 34*(5), 811-819.

developments such as cloud computing, big data analytics, robotics, fintech and the digital revolution to name a few. Once again, the Solow paradox of the 1970s and 1980s – "you can see the computer age everywhere but in the productivity statistics"[11] – seems to have come alive.

Some proximate hypotheses compete for explanatory power in unravelling the productivity puzzle. First, there is the 'mismeasurement' view which would seek further refinements in the manner in which factor inputs and their quality are measured so as to yield 'uncontaminated' estimates of TFP[12]. As Dale Jorgensen, a founding father of the KLEMS framework used to emphasise, the lesson of decades of experience is that these parameters are highly sensitive to methods of measurement. There are also the output effects of adding newer inputs like digitalisation to be considered. As the OECD has argued, digital technologies are transforming our economies and seem to offer a vast potential to enhance the productivity of firms[13]. Second, it is argued that new technological developments are still in the 'installation' stage and hence they are producing only localised gains in productivity[14] – "a GPT[15] does not deliver productivity gains on arrival"[16]. Raising productivity will need a sufficiently large stock of the new capital, and complementary business process changes involving human capital and organisational changes in investment decisions have to be in place to integrate it into production in order to harness its benefits[17]. For instance, it has been found that investments in IT yields substantial benefits but over a gestation period, peaking after about seven years[18]. Moreover, access to cutting edge technologies remains uneven among countries and between firms – nearly half of SMEs and about a third of large firms in emerging and developing Asia report difficulty in obtaining financing as the major impediment to technology adoption[19]. Commensurately, aggregate R&D expenditure has slowed down in Asia and the world at large[20]. Other explanations of the productivity slowdown have also been offered in terms of the leapfrogging of many EMDEs over the relatively productive and labour-absorbing manufacturing sector to the relatively less productive services sector; trade and technology fragmentation; disruptions in global value chains; and the possibility of dissipation of profits – innovative firms displace lagging firms from the market but without adding commensurately to output[21].

IV. Conclusion

Given that multiple factors could be at work, a multi-pronged approach woven into a comprehensive policy intervention is needed to reignite and sustain

[11] Solow, R., (1987) We'd better watch out, *New York Times Book Review*, July 12, page 36.

[12] Brynjolfsson, E., (1993), The Productivity Paradox of Information Technology, *Communications of the Association for Completing Machinery, 36*(12), 66-77.

Brynjolfsson, E., Rock, D., and Syverson, C., (2018), Artificial Intelligence and the Modern Productivity Paradox: A Clash of Expectations and Statistics, *The Economics of Artificial Intelligence: An Agenda*, University of Chicago Press, pp. 23-57.

[13] OECD (2019), Digitalisation and Productivity: A Story of Complementarities, OECD Economic Outlook

[14] Van Ark, B., (2016), The Productivity Paradox of the New Digital Economy, *International Productivity Monitor*, (31), 3.

[15] General Purpose Technology or GPT is a term coined to describe a new method of producing and inventing that is important enough to have a protracted aggregate impact (for instance, electricity and information technology).

[16] Jovanovic, B. and Rousseau, P. L., (2005), General Purpose Technologies, *Handbook of Economic Growth*, Vol. 1, pp. 1181-1224. Elsevier.

[17] Brynjolfsson, E., Rock, D. and Syverson, C. (2018), Artificial Intelligence and the Modern Productivity Paradox: A Clash of Expectations and Statistics. In *The Economics of Artificial Intelligence: An Agenda*, pp. 23-57. University of Chicago Press.

[18] Brynjolfsson, E., and Hitt, L. M. (2003), Computing Productivity: Firm-level Evidence, *Review of Economics and Statistics, 85*(4), 793-808.

[19] Dabla-Norris, E., Kinda, T., Chahande, K., Chai, H., Chen, Y., Stefani, A., Kido, Y., Qi, F. and Sollaci A. (2023), Accelerating Innovation and Digitalisation in Asia to Boost Productivity. *Departmental Papers*, 2023/01, International Monetary Fund. January.

[20] World Intellectual Property Organisation (WIPO) (2022), Global Innovation Index 2022: What is the Future of Innovation-driven Growth? Geneva.

[21] Dieppe, A., (ed) (2021), *Global Productivity: Trends, Drivers and Policies*; The World Bank.

productivity growth. The policy response has to be powered by technological capital deepening, accompanied by long term investment in research and development to nurture a competitive innovation ecosystem, skill development through sustained educational attainments and training, and building up the physical infrastructure. EMDEs need to leverage the potential of the services sector to drive productivity growth. Investing in ICT infrastructure, securing reduction in trade costs like those associated with shipping, logistics and regulation and supportive business-enabling reforms could help to engage the private sector in partnering in this endeavour. In addition, raising labour force participation rates, especially among women and older workers, could also boost productivity, but this will require investments in workability, retraining and acquisition of new skills in step with changing technology. The OECD has cited digitalisation as a key avenue for future productivity growth by harnessing the power to rapidly diffuse and replicate ideas, informational goods and business processes at near zero marginal cost. Easing and expanding access to finance for small and medium enterprises can generate productivity bursts, especially in EMDEs.

Central banks are stakeholders in this effort in view of their mandates of macroeconomic and financial stability. A deeper understanding of productivity trends is needed by them in order to judge the position of the economy on the business cycle so as to fashion appropriate policy responses that ensure sustained non-inflationary economic growth. In turn, this will promote financial market confidence and the overall flow of finance in the economy.

Against this backdrop, the theme of this Conference is indeed timely and relevant. Your deliberations will surely provide deeper insights into the structural drivers of productivity and factor accumulation that create the conditions for sustainable development. New challenges, including climate change, digitalisation and the reshaping of global value chains, have to be addressed and new opportunities have to be seized. The Conference brings together the best minds, experiences and learnings on a subject of topical importance. I am sure that your discussions will enrich our understanding of productivity and growth in Asia and lead to better policy outcomes. I thank you all for your participation and wish you success in crossing another milestone in the journey of Asia KLEMS.

Thank you.

*Governance in Banks: Driving Sustainable Growth and Stability**

M. Rajeshwar Rao

Governor Shri Das, Deputy Governor Shri Jain, EDs, Chairmen, MDs, distinguished members of the Board, my colleagues from RBI, ladies, and gentlemen,

I am glad to be amongst you today on this occasion to engage with you on a topic that the Reserve Bank considers of the utmost importance. Governance in banks is a focus area of RBI's regulatory and supervisory efforts. To ensure there is alignment between the regulator and stakeholders' perspectives, encourage free and frank exchange of views and to communicate our expectations, engagement with bank Boards is extremely important. This conference today is another milestone in our efforts to engage with Boards of Directors to discuss important aspects of bank governance.

To ensure that financial resources are optimally allocated, a sound, efficient and robust financial intermediation structure is essential. In the financial intermediation space, financial resources are predominantly supported by depositors and other debt providers; consequently, banks have a much higher degree of leverage. For this reason, the order of fiduciary responsibility as well as accountability cast on banks is much higher.

While legal and regulatory architectures provide a broad framework to maintain depositors' trust, the trust needs to be grounded in good governance and ethical conduct of the institutions and their functionaries. The banks tend to be well regulated and are intensively supervised but any erosion of public trust in financial institutions cannot be countered with regulatory prescriptions or supervisory rigours alone. Therefore, to mitigate the 'risk of failure' emanating from governance issues, the standards expected of banks are always higher than those from other entities.

Challenges for Bank Boards

Whenever we discuss the sound corporate governance in banks, we need to be mindful of two key challenges. First, the banks are placed at a higher pedestal *vis-à-vis* other financial or non-financial entities due to their unique role. Second, the most important stakeholder for the bank, *i.e.*, depositors tend to be diversified, diffused, and passive. These challenges make the classic principal-agent problem and information asymmetry issues more complex for banks. This is a challenge the Board of Directors have to address in order to ensure that the incentives of the management are aligned with the interest of depositors and other stakeholders.

Steps taken by the RBI in Improving Governance in Banks

Our predecessors were prescient and gave adequate focus on the governance issues while designing the foundational principles of modern banking in India. Much before the governance became a discussion topic in international banking and regulatory circles, the Banking Regulation Act of 1949 statutorily mandated that majority of members of Board are persons with professional experience or are experts in specific fields.[1] It also gave powers to the RBI for appointment of Whole Time Directors and Part Time Chairman as well as removal or reconstitution of the Board. Also, long before the debate on executive

* Remarks delivered by Shri M. Rajeshwar Rao, Deputy Governor, Reserve Bank of India at the Conference of Directors of Banks organised by the Reserve Bank of India for Public Sector Banks on May 22, 2023 in New Delhi and Private Sector Banks on May 29, 2023 in Mumbai. Inputs provided by Tariqa Singh, Pradeep Kumar and Tripta Roy are gratefully acknowledged.

[1] Sec 10-A and 10-B of the B.R. Act, 1949.

compensation became mainstream post global financial crisis, the responsibility to ensure that bank CEOs do not receive compensation which is excessive, was entrusted to RBI by the Banking Regulation Act of 1949.

Apart from the statutory prescriptions, the issue of governance in banks has long attracted regulatory interest and has seen several milestones with evolution of banking in India. In the instructions and circulars issued by RBI, management and control have been key areas of focus over the years. Issues around governance have also been reviewed by eminent groups and committees from time to time.

In the year 2001, RBI constituted the 'Advisory Group on Corporate Governance' (chaired by R.H. Patil). This group compared frameworks for corporate governance practices in India with international best practices and put forth recommendations that encompass all aspects of corporate governance. The recommendations included directors' responsibilities, shareholders' accountability, criteria for selection of independent directors, the Board structure and composition, the constitution of committees, role of stakeholders and relevant disclosures.

Subsequently, RBI established the 'Consultative Group of Directors of Banks and Financial Institutions'; chaired by Shri A.S. Ganguly (commonly known as the Ganguly Committee) for reviewing the role of boards as supervisors. The committee in 2002 submitted a report making specific suggestions. Basis these suggestions, the Reserve Bank issued detailed guidelines on responsibilities of directors, including independent and non-executive directors, committees of the board, composition of the board and fit and proper criteria for directors in private sector banks.

Again in 2014, Reserve Bank constituted a committee to review governance of boards of banks under the chairmanship of Dr. P. J. Nayak. The committee had made several noteworthy recommendations. Considering the context of today's event, I would just quote one of the recommendations made by the committee *viz.*, "*There is a need to upgrade the quality of board deliberation in banks to provide greater strategic focus. There are seven themes which appear critical to their medium-term strengths comprising Business Strategy, Financial Reports and their Integrity, Risk, Compliance, Customer Protection, Financial Inclusion and Human Resources.*" In response to the recommendation, in May 2015, the Reserve Bank had issued instructions to banks to do away with the Calendar of Reviews, replacing it with the seven critical themes prescribed by the Nayak Committee and had left it to the banks' Boards to determine other list of items to be deliberated and periodicity thereof.

Compensation is also a key area of focus for the Boards. The banks' risk-taking incentives are shaped, among other factors, by the compensation of their top executives. If compensation packages influence top executive' appetite for risk, a sound understanding of the determinants of compensation and how these might affect banks' risk-taking incentives becomes highly important for Boards. Basis this and taking into account the FSB Principles and Implementation Standards, compensation guidelines were issued by the RBI in January 2012. These instructions were revised in November 2019 based on experience gained and evolving international best practices while incorporating the Supplementary Guidance issued by FSB in March 2018 on the use of compensation tools to address misconduct risk.

Recent Events

The recent events in the US banking system, as alluded by Governor in his address, have highlighted as to why the governance structure is the backbone for an institution.

In my view, this episode provides some crucial takeaways for the Board to address governance

challenges. Let me list five such points which I think capture the essential elements of Board's engagement with management and fulcrum of its responsibilities:

i. Boards should ensure that management is transparent about the banks' financial performance / statements and risk management practices so that trust with stakeholders is built and investors are able to assess the various risks associated with banks.

ii. Boards should set clear expectations for management in terms of risk management and corporate governance and should require management to report on risk management on a regular basis. This reporting should include information on the bank's risk appetite, risk exposures, and risk mitigation strategies.

iii. Boards should appraise the performance of management objectively and ensure that they are held accountable for their actions. If management is not meeting expectations, Boards should take suitable action, including replacing the management, to improve the bank's governance and risk management.

iv. Boards, through the Nomination and Remuneration Committees, must ensure that management remuneration is not only tied to short-term profits but takes into account long-term materialisation of risks and that appropriate *ex-ante* and *ex-post* checks for assessment are built into the compensation systems.

v. Boards must ensure a suitable policy framework for its own assessment for effectiveness, in accordance with their strategies and risk profiles. The effectiveness must be tracked at all levels - individual director, committee, and overall Board.

A well-qualified, engaged, and vigilant Board can prevent management failures.

Importance of Assurance Functions

The importance of assurance functions has already been stressed by both Governor and DG Shri Jain. The Reserve Bank has also issued guidelines on supervisory expectations and for providing sufficient authority, resources and independence to these functions, among others. The Board is expected to take an active role in identifying/ approving the head of control and assurance functions. Clear lines of communication between the Board/Board committees and heads of control and assurance functions are also mandated to ensure that information exchange happens regularly, and areas of concern and probable remediation can be identified well within time.

Recognising its criticality, Supervision has also focused on business models and governance during the supervisory reviews. DG also referred supervision as the fifth line of defence. The classic three lines of defence are clearly under the remit of the Board with audit being an independent check and Supervision being the final line of defence/ oversight. Here the governance framework set out by the Board should ensure that the three lines of defence do the job as expected – much like in the game of football, where the forwards, the midfielder and the defenders should collectively keep the ball in play and ensure that the supervisor as a goalkeeper is not engaged.

Coming to the link between regulation and governance, let me say that the regulators usually decide the regulatory perimeter and guide the regulated entities so that there are no accidents and surprises. While it is for the regulators to issue instructions that enjoin upon banks to adopt the best practices insofar as governance is concerned, it is for the Board to set the strategic direction, engage with management, and conduct review of key policies and frameworks. The

Boards should manage alignment of performance with pay as well as enforce accountability to ensure adherence to the best practices while achieving the objectives set for the bank by the Board.

Governance and Conduct

Prudential regulation and conduct regulation denote what is commonly known as twin peaks model for the regulations. In RBI, we are looking at these two aspects through the prism of governance with equal emphasis on conduct of business through prudence. It's no doubt essential for the management to deliver good performance but more importantly this should be achieved by adhering to acceptable customer and market conduct and best corporate governance practices.

We often see that the matters of conduct do not get the priority or attention of the Board which they should be getting. Customer service, customer conduct, ethical employee behaviour, data privacy, cyber security are critical and important issues which assume even greater relevance in times of innovation, change and business disruptions. Good or rather best practices in these areas are the key soft pillars which build the edifice of a successful financial institution, more so in these challenging times. Therefore, there is a need to reflect on the role and expectations from the governance architecture *viz.*, the Board and its Committees, the Independent Directors and the assurance functions in banks and other financial institutions on these issues.

In fact, the Board should drive a culture where the expectation would be to go beyond baseline compliance to regulatory and legal requirements and aim for higher, best-in-industry standards. To this end, the Board must ensure a suitable policy framework for its own assessment regarding effectiveness and composition, in accordance with their strategies and risk profiles, both at the aggregated and dis-aggregated levels.

Concluding remarks

As we strive to become a developed country by 2047, financial institutions will need extraordinary amounts of financial resources to support growth to realise our visions for a brighter tomorrow. Raising these resources would not be a constraint for financial intermediaries with robust governance frameworks as they can command a governance premium. It is important in this context to gain and retain the trust of other stakeholders such as depositors and various providers of financial resources. This is best ensured by strong governance, control, and assurance functions in financial institutions.

Also, while we collectively aspire for an efficient financial intermediation with positive spill over to the real sectors, these aspirations are set in an increasingly competitive, diverse, and interconnected world. As the saying goes, the time to fix the roof is while the sun is shining. The banking sector in India at this juncture is sound, resilient, and financially healthy. So, the time is perhaps right to improve the plumbing by addressing the gaps in governance frameworks, assurance functions and strategise for better times ahead.

Thank you.

ARTICLES

*State of the Economy**

Global economic activity has sustained its growth momentum in the second quarter of 2023, albeit with two diverging roads. While economies like India are rebounding, some others are slowing or contracting. India's real GDP growth in Q4:2022-23 at 6.1 per cent was the highest among major economies of the world, and CPI inflation came down to a 25-month low of 4.3 per cent in May 2023. Kharif sowing has begun on the back of a record rabi harvest, and the manufacturing sector has posted a pick-up in net profits. Credit growth is rebasing to more durable sources of funding, and the Indian rupee is turning out to be the most stable currency among emerging market peers.

Introduction

The global economy is exhibiting surprising tensility, cresting the tidal waves unleashed by banking collapses, resolute monetary tightening and the prolonging geopolitical conflict. Estimates available in early June 2023 indicate that global economic activity gathered pace in the first quarter of 2023 after slowing in the preceding quarter – the Organization of Economic Cooperation and Development (OECD) calculates that global GDP growth accelerated to an annualised rate of over 3 per cent in January-March 2023 from just 2 per cent in the fourth quarter of 2022. High frequency indicators suggest that this momentum of global growth has been sustained in the second quarter of 2023 – the world composite purchasing managers' indices (PMIs) rose to an 18-month high in May, powered by the vibrancy of the services sector. The pick-up in speed is fragile, with mixed outcomes across jurisdictions, including recessionary developments in a few of them; yet, the odds of an upturn are so high that it evokes hope – the future may be brighter than we think it is today. Some of it is due to the decline in commodity prices and abating supply chain pressures.

Global food prices have fallen to their lowest levels in two years, with declines in prices of grains, vegetable oil and dairy offsetting higher sugar and meat prices. This is reviving hopes that sticky inflation will start to ease, although the pass-through to consumers is taking time with transportation, labour and energy costs remaining relatively high. Agricultural prices could fall even further in the rest of 2023 – by 7.2 per cent projected by the World Bank for 2023 and further by 2 per cent in 2024. While inflation remains generally elevated relative to targets, it has started to relent, emboldening some central banks to sight the light at the end of the tunnel and breathe easier on monetary policy stances.

Major economies have borne well the headwinds assailing the global economy, and some like India have rebounded strongly. The optimism generated by these developments has started to infuence the forecasts. In June, both the OECD and the World Bank have modestly upgraded their outlooks for 2023, indicative of a directional shift in their view of the world.

World trade is suffering, however, under the brunt of fissures opened up by rising protectionism in industrial and trade policies, reordering of global value chains and the fragmentation in finance and technology flows that is also impacting foreign direct investment. According to the OECD, global trade volumes recovered hesitantly in the first quarter of 2023 on the back of booming demand for traded services. On the other hand, the World Bank pointed to

* This article has been prepared by G. V. Nadhanael, Subhadhra Sankaran, Shahbaaz Khan, Kunal Priyadarshi, Rohan Bansal, Ramesh Kumar Gupta, Shobhit Goel, Pankaj Kumar, Harendra Behera, Rigzen Yangdol, Vijaya Agarwal, Anoop K Suresh, Debapriya Saha, Rishabh Kumar, Amit Kumar, Shelja Bhatia, Ramesh Golait, Himani Shekhar, Priyanka Sachdeva, Ashish S Khobragade, Dilpreet Sharma, Jitendra Sokal, Avnish Kumar, Pratibha Kedia, Kamal Gupta, Lal Bahadur Singh, Srilikhitha Patel, 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.

the slowing of global merchandise trade growth in the first half of 2023 in tandem with weakening industrial production. The gradual rotation of demand back to its pre-pandemic composition of goods and services from the pandemic-induced expansion in demand for tradeable goods and away from less trade-intensive services could also be slowing world trade. Transport prices and shipping volumes are weak and survey measures point to muted manufacturing export orders, although service export orders continue to improve. Accordingly, trade volumes are expected by the OECD to slow to a third of the growth recorded in the preceding year. The World Bank also affirmed that global trade volume growth (including goods and non-factor services) would slump from 6.0 per cent in 2022 to barely 1.7 per cent in 2023.

From a medium-term perspective, the secular shrinking of openness that took hold from 2012 and intensified from 2018, may be signaling the ending of the glorious era of globalisation that had powered the global economy since the 1980s. The growth prospects of emerging market economies (EMEs) are particularly at risk as the trade engine sputters after decades of energising their integration into the global economy and lifting them to higher trajectories of growth and productivity than when they were relatively closed.

The global financial landscape, which is recouping from the reverberations of banking failures in March, was calmed by the resolution of the debt ceiling impasse in the US. Financial markets responded positively, with a slight dip in the US dollar providing a small upside to emerging market currencies, stocks edging higher and bond yields dropping. In the ensuing days, fears of further tightening of financial conditions have overwhelmed this initial enthusiasm as hawkish monetary policy guidance foretells of further interest rate increases even after a pause, and investors brace for a wall of treasury issuances of close to US$ 1 trillion and a deluge of corporate bond offerings which were held back ahead of the fractious debt ceiling negotiations.

In other noteworthy financial developments, the world's most important crude oil price benchmark – Brent – will for the first time starting June 8, include in its calculations crude oil prices from the US – West Texas Intermediate Midland crude - marking the maiden inclusion of a non-North Sea variety into the global pricing standard. Analysts believe that the addition of cheaper US crude will lower average prices globally, which is a positive for net oil importers like India. It could also impact financial flows by changing the funneling of investments into derivatives traded on US exchanges and this could impact prices of futures globally. In terms of geopolitics, this move is a recognition of the shale revolution which has made the US the world's biggest exporter of crude. This could provide an effective counterpoise to the oligopolistic power exerted by OPEC plus from time to time.

From July 1, market participants have been asked by the UK's Financial Conduct Authority to stop using the London Inter-Bank Offer Rate (LIBOR) as a benchmark, bringing to end five decades of its widespread use in pricing a range of financial instruments. The main challenge that market agents face is identifying and adopting suitable alternative reference rates (ARRs). Transitioning from LIBOR also requires making significant adjustments to internal systems, processes and models. The choice of ARR also poses challenges of market liquidity and product availability, which can lead to market inefficiencies and pricing difficulties as well as availability of certain financial products – illustratively, substantial proportion of the junk loan market is shackled to the LIBOR. Regulators, banks and financial institutions need to educate users about the imminent change and provide guidance on how to navigate the transition. LIBOR transition will also involve steering through complex legal and regulatory processes.

Underlying the tenacious growth momentum in the global economy are two diverging roads among major economies, with some of them like India rebounding and others slowing or contracting. The provisional estimates of national income for 2022-23 released by the National Statistical Office (NSO) on May 31, 2023 have muted the Cassandras and borne out the cautious optimism expressed in this article in its February and March editions. Already, the NSO's release has triggered a flurry of upward revisions, recalibration of balance of risks and widening of forecast ranges relating to India's growth rate for 2023-24, outside our borders and within. When meaningful factual international comparison is feasible, it may show that India's January-March 2023 quarter real GDP growth was the highest among major economies of the world. Its quarter-on-quarter momentum at 8.4 per cent is the highest in any quarter of 2022-23; this is true even on a seasonally adjusted basis.

If this is a precursor of the year ahead, the bright spots on the aggregate supply side are likely to be manufacturing and construction, alongside the sustained buoyancy in services that became evident through 2022-23. Manufacturing posted a pick-up in net profits in January-March for the first time, after three consecutive quarters of slowdown in profitability. This uptick is attributable primarily to easing of input costs, which augurs well for the manufacturing sector if it can expand revenues more vigorously in the tailwinds of the momentum of growth in the economy. In the construction sector, there seems to be a sustained ebullience, fuelled by public spending on capital expenditure (capex), including by public sector undertakings, and surging launches and sale of residential housing units. Services, which constitute more than 60 per cent of the gross value added in the economy, are likely to sustain their post-pandemic resurgence. Travel platforms, airlines and hotel chains are reporting strong summer demand in spite of high air fares on both domestic and international routes, and hotel tariffs are already on par with pre-pandemic levels.

In the e-commerce space, the open network for digital commerce (ONDC) may well turn out to be a gamechanger by creating a standardised digital commerce infrastructure for the entire ecosystem. By easing access for consumers and small businesses, it could substantially boost gross value added by the trade sector, accelerate overall economic growth and reap productivity gains. In other parts of the economy, both manufacturing and construction are employment-intensive, with backward and forward linkages with the other sectors of the economy propagating the positive externalities associated with their strong performance so far. Consumer confidence is rising and businesses expressed optimism on production, order books, employment, capacity utilisation and the overall business situation in the second and third quarters of 2023-24 in the RBI's latest consumer confidence and industrial outlook surveys.

Turning to agriculture, the southwest monsoon finally made landfall in Kerala on on June 8, 2023. As per the latest assessment (June 21), it continues to advance into the southern and eastern regions of the country after a hiatus on account of the impact of cyclone *Biparjoy*. *Kharif* sowing has begun on the back of a record *rabi* harvest and higher year-on-year *mandi* arrivals. Wheat procurement is 39.5 per cent higher than the full season procurement last year. Revision in minimum support prices for 14 major *kharif* crops were announced on June 7, 2023 translating to an effective increase of 7.5 per cent in procurement prices. While this may translate to an increase of 10-12 basis points in consumer price inflation, some of which is already factored into the RBI's quarterly inflation projection for 2023-24, the timely announcement may lead to a positive supply response that offsets some of the retail price increase that occurs on the seasonal hardening of food prices ahead of the monsoon.

Financial developments have kept pace with the vigour of macroeconomic activity. Loan loss provisioning for banks continued to fall for the fifth consecutive quarter in January-March in an environment of sustained collection efficiency and improving asset quality. The banking, financial services and insurance (BFSI) sectors as a whole reported another quarter of high double digit growth in revenue. Combined net profit of the BFSI sector rose more than 60 per cent, the best showing in four quarters. Expectedly, the BSE Bankex – index of banking companies – among the top 500 listed companies has outperformed the broader equity market indices.

Responding to the strength of India's macroeconomic and financial fundamentals, foreign portfolio investors have increased their holdings of Indian equity and debt in May 2023 to the highest level since August 2022, the highest among emerging market comparators. In the first half of June 2023 (upto June 19), close to US$ 1.3 billion of portfolio investment has flowed into Indian markets. Financial services, automobiles and fast moving consumer goods (FMCG) attracted the bulk of these investments. Indian stocks have started to outshine their emerging market peers, with the Morgan Stanley Capital International (MSCI) India index trading at an 8-month high premium to the MSCI emerging market index.

Bond yields have traded in a tightly range-bound manner, indicating stable inflation expectations that affirm the downtrend in households' inflation expectations since September 2022, as revealed in the RBI's survey. The Indian rupee is turning out to be the most stable currency, at least among emerging market peers. Its implied volatility[1], which is the metric that captures the market's view of the likelihood of fluctuations in its value, is at its lowest since 2008. In the credit market, the wedge between growth rates of bank credit and deposits has started to narrow, suggesting that credit growth is rebasing to more durable sources of funding.

Analysts have drawn attention to the transformation that India has undergone in less than a decade. India's corporate tax rates are internationally comparable. Rapid formalisation of the economy is reflected in the surging ratio of digital transactions to GDP (76 per cent in 2022-23), the increase in housing launches spurred by the formalisation of contracts between builders and buyers under the real estate regulation and development act (RERA) and the expansion in direct benefit transfers. Macroeconomic stability has instilled investor interest, making India a preferred habitat for greenfield investment among emerging economies.[2]

The Annual Report of the Reserve Bank released on May 30, 2023 assessed that India's growth momentum is likely to be sustained in 2023-24 with real GDP growth projected at 6.5 per cent on the back of sound macroeconomic policies, softer commodity prices, a robust financial sector, a healthy corporate sector, and new growth opportunities stemming from global realignment of supply chains. It also emphasised that it is important to sustain structural reforms to improve India's medium-term growth potential. The report noted that the cumulative increase in the policy repo rate by 250 bps last year is steering the disinflationary process, along with supply side measures addressing transient demand-supply mismatch due to food and energy shocks, expectations of a stable exchange rate and a normal monsoon. Accordingly, headline inflation is likely to edge down to 5.1 per cent in 2023-24 from 6.7 per cent recorded last year. The Report noted that the Union Budget 2023-24 has prioritised capital expenditure to accelerate growth while maintaining fiscal prudence to strengthen macroeconomic

[1] A forward-looking measure, it is the expected size of a future price change.

[2] 'How India Has Transformed in Less than a Decade', Morgan Stanley Research (2023).

stability. The forward-looking evaluation of India's prospects set out in the Report indicates that while foreign portfolio investment (FPI) flows may remain volatile, the favourable domestic growth outlook, lower inflation, and business friendly policy reforms could help sustain buoyancy in FDI inflows while inward remittances are likely to remain robust. In the financial sector, Indian banks and non-banking financial intermediaries remain sound and resilient in the wake of recent financial sector turmoil in the US and Europe; yet, the need for stress testing for these new shocks as well as reviewing and strengthening capital and liquidity buffers was highlighted.

The size of the Reserve Bank's balance sheet increased by 2.5 per cent for the year ended March 31, 2023 with income rising by 47.1 per cent and expenditure by 14.0 per cent, recording an overall surplus of ₹87,416.22 crore (₹30,307.45 crore in the previous year). The surplus amount was transferred to the central government, after making provision of ₹1,30,875.75 crore towards the contingency fund to maintain the contingency risk buffer at 6.0 per cent of the balance sheet size.

Set against this backdrop, the remainder of the article is structured into four sections. Section II sketches the rapidly evolving developments in the global economy. The evolution of the domestic economy is laid out in Section III. Section IV evaluates the domestic financial conditions, while the last Section sets out concluding remarks.

II. Global Setting

In the second quarter of 2023, the global economy has sustained the growth momentum achieved in the previous quarter, with easing supply chain pressures and receding dislocations in the commodity and energy markets. Our model-based nowcast for global GDP also points towards a marginal pick-up in global growth momentum during Q2:2023 (Chart 1). Economic performance, however, has remained uneven across geographies, with the Euro zone entering a technical recession in Q1:2023[3] weighed by stubborn inflation and high interest rates while in other parts of the global economy growth has remained resilient. In its latest economic outlook, OECD and the World Bank have both revised the global growth forecast for 2023 upwards while cautioning that the recovery may be slow-paced (Table 1).

Among the high frequency indicators, the global composite PMI increased to 54.4 in May 2023. The

Table 1: GDP Growth Projections for 2023 – Select AEs and EMEs

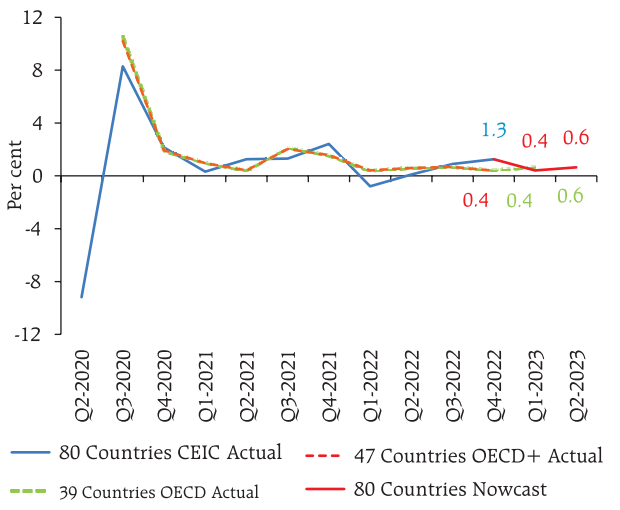
(Per cent)

Country/Region	OECD		World Bank	
	Nov 2022	Jun 2023	Jan 2023	Jun 2023
World*	2.2	2.7	2.2	2.7
Advanced Economies				
US	0.5	1.6	0.5	1.1
UK	-0.4	0.3		
Euro area	0.5	0.9	0.0	0.4
Japan	1.8	1.3	1.0	0.8
Emerging Market Economies				
Brazil	1.2	1.7	0.8	1.2
Russia	-5.6	-1.5	-3.3	-0.2
India#	5.7	6.0	6.6	6.3
China	4.6	5.4	4.3	5.6
South Africa	1.1	0.3	1.4	0.3

*: PPP weighted. #: India's data is on a fiscal year basis.
Sources: OECD; and World Bank.

[3] Generally, a country is in a technical recession when it experiences two successive quarters of contraction in GDP (negative growth).

Chart 1: Global GDP Growth Nowcast [adjusted series, (q-o-q)]



Sources: CEIC; OECD; and RBI staff estimates.

global services PMI inched up to 55.5 in May from 55.4 in April, with expansion in output and new orders gathering pace. The global manufacturing PMI, however, remained unchanged at 49.6 in May, even though input costs decreased for the first time in three years (Chart 2a).

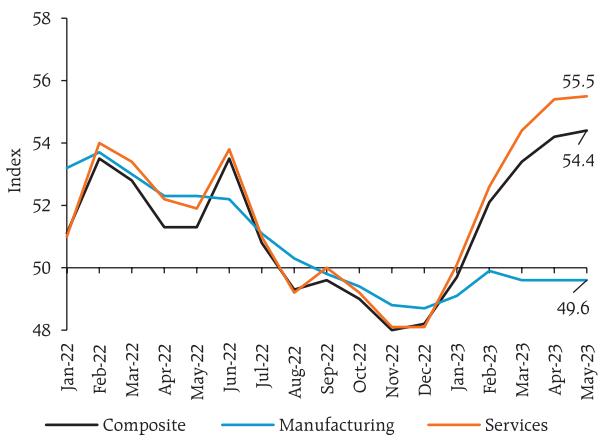
Global supply chain pressures eased further in May, as reflected in the global supply chain pressure index (GSCPI)[4] declining for the fifth month in a row to its lowest level (since the series began in 1997) [Chart 2b].

Easing cost pressures were also reflected in the Freightos Baltic Index (FBX) – Global Container Index[5] - which has been declining post the pandemic (Chart 3a). During the second half of May, the Baltic Dry Index[6] declined sharply, reflecting a broad-based easing in its constituent indices – panamax; capesize; and supramax. However, it reversed its downward trajectory in June, buoyed by a pick-up in demand for capesize vessels (Chart 3b).

Global commodity prices fell sharply in May 2023, as demand concerns over fear of recession in the select AEs resurfaced (Chart 4a). This was also reflected in the Food and Agriculture Organization

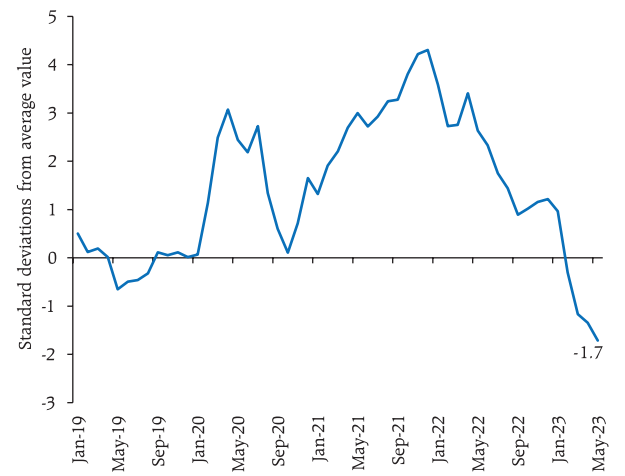
Chart 2: Global Business Conditions

a: Global PMI



Note: Level of 50 corresponds to no change in activity and a reading above 50 denotes expansion and *vice versa*.
Source: S&P Global.

b: Global Supply Chain Pressure Index (GSCPI)



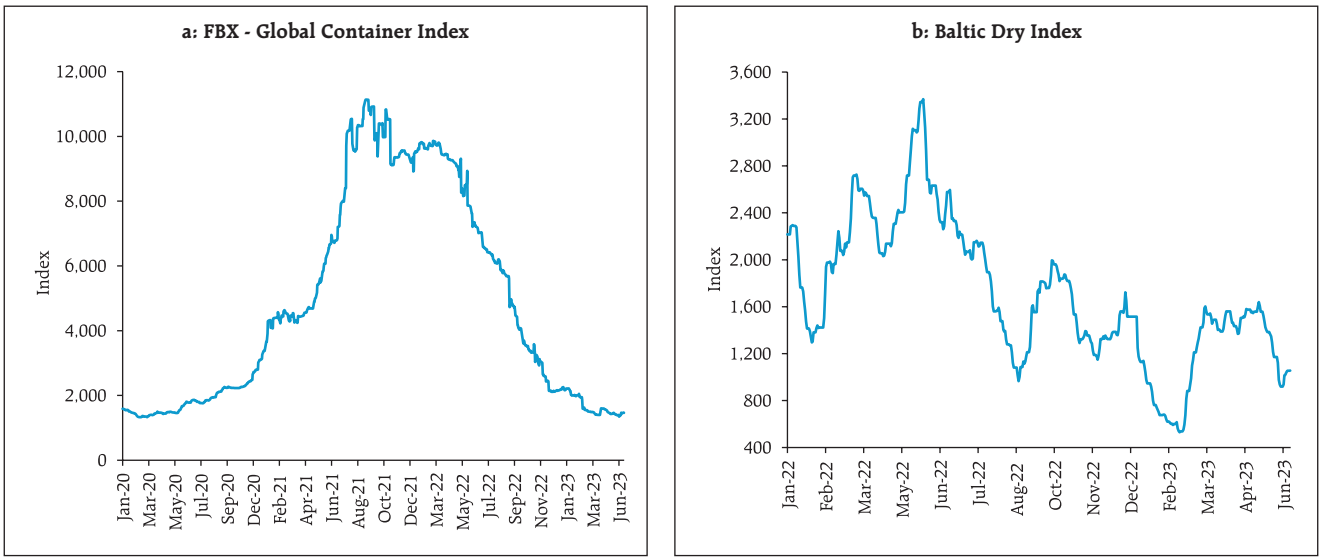
Source: Federal Reserve Bank of New York.

4 The GSCPI tracks the state of global supply chains using data from the transportation and manufacturing sectors.

5 The daily FBX Container Index reflects the spot rates for 40-foot containers on 12 tradelanes.

6 The Baltic Dry Index is a measure of shipping charges for dry bulk commodities.

Chart 3: Global Freight Conditions

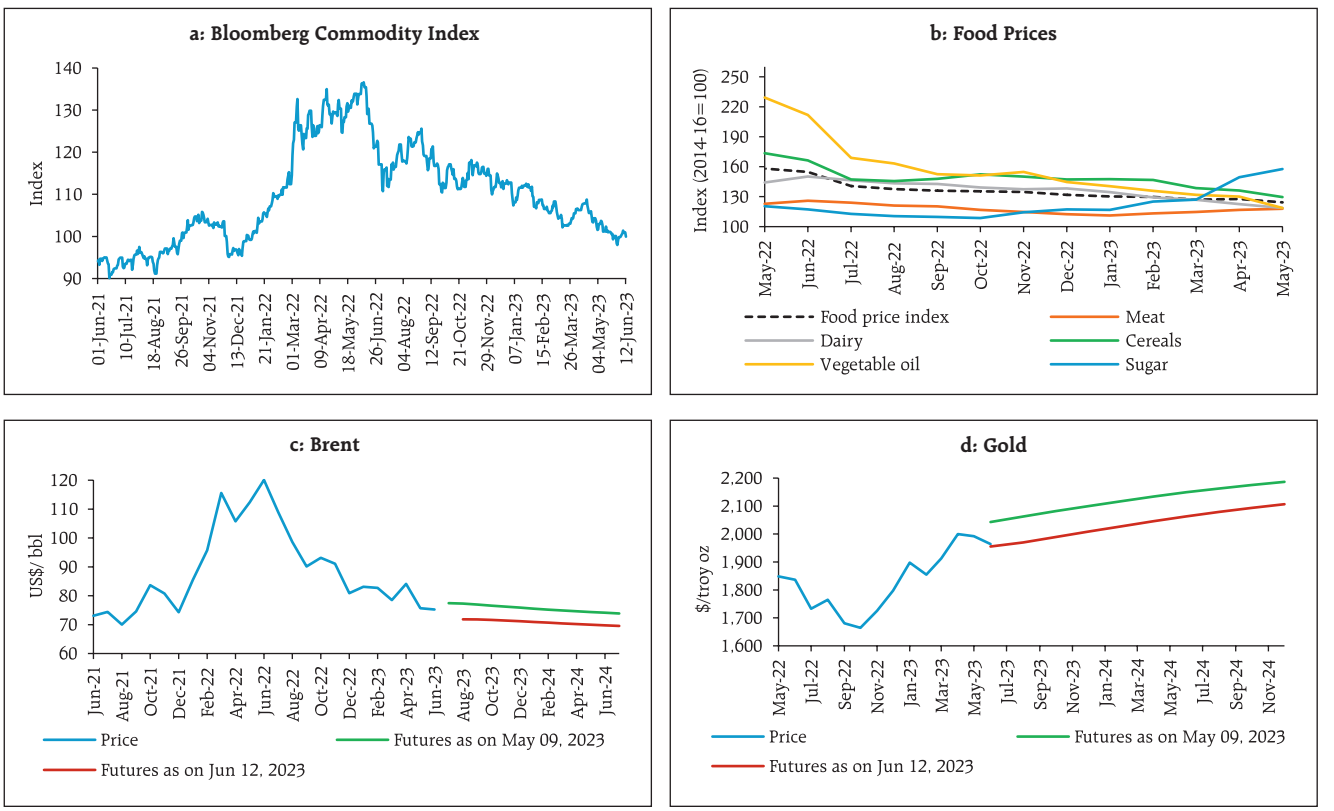


Sources: CEIC; and Bloomberg.

(FAO) food price index which declined by 21.4 per cent (y-o-y) [Chart 4b].

Crude oil prices moderated in May to an average of US$ 75.7 per barrel from US$ 84.1 per

Chart 4: Commodity and Food Prices



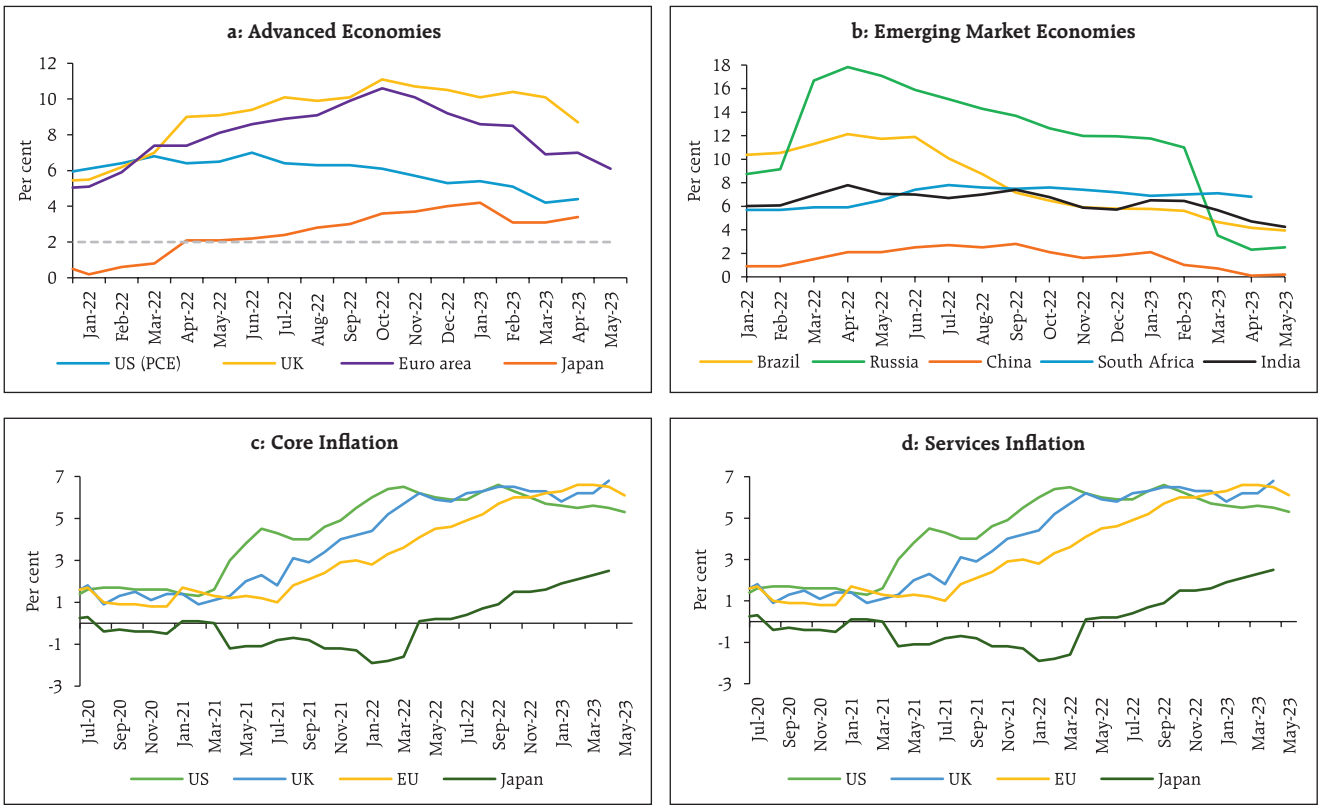
Sources: Bloomberg; World Bank Pink Sheet; and FAO.

barrel in April, driven by slowing demand concerns (Chart 4c). Following Saudi Arabia's decision to slash its production by 1 million barrels per day (mbpd), crude oil spot prices edged up by around 0.5 per cent on June 5 and remained volatile thereafter. Crude oil prices fell by 1.5 per cent on June 14 after the Fed inidicated the possibility of further interest rate hikes reacting to a stronger-than-expected economy and a slower decline in inflation. Data release showing unexpected large build-up of crude oil stockpiles also contributed to the decline in prices. Though futures are signalling lower crude oil spot prices, augmenting these forward-looking variables with real sector variables can enrich the forecasts of crude oil spot prices (Box).

Gold prices, that were propelled higher by the banking crisis in the US and Europe, declined marginally in May as risks to the banking system abated. They have stayed rangebound in June so far (June 14, 2023) [Chart 4d]. Lower inflation expectations and profit booking by investors also contributed to the easing of gold prices.

Inflation eased further across most economies. In May, consumer inflation cooled off in the US for the 11th consecutive month to 4 per cent (y-o-y). Inflation based on the US personal consumption expenditure (PCE) index, however, edged up to 4.4 per cent in April from 4.2 per cent in March (Chart 5a). In the UK, inflation remained unchanged at 8.7 per cent in May while Japan's CPI (all items less fresh food) inflation edged up to 3.5 per cent in April after remaining steady at 3.3 per cent since February 2023. Inflation in the Euro area moderated to 6.1 per cent in May 2023 (from 7.0 per cent in April), its lowest level since February 2022. Among the EMEs, while inflation

Chart 5: Inflation in Major Economies



Sources: Bloomberg; and OECD.

firmed up in May in Russia (2.5 per cent) and China (0.2 per cent), it fell in Brazil to 3.9 per cent (Chart 5b).

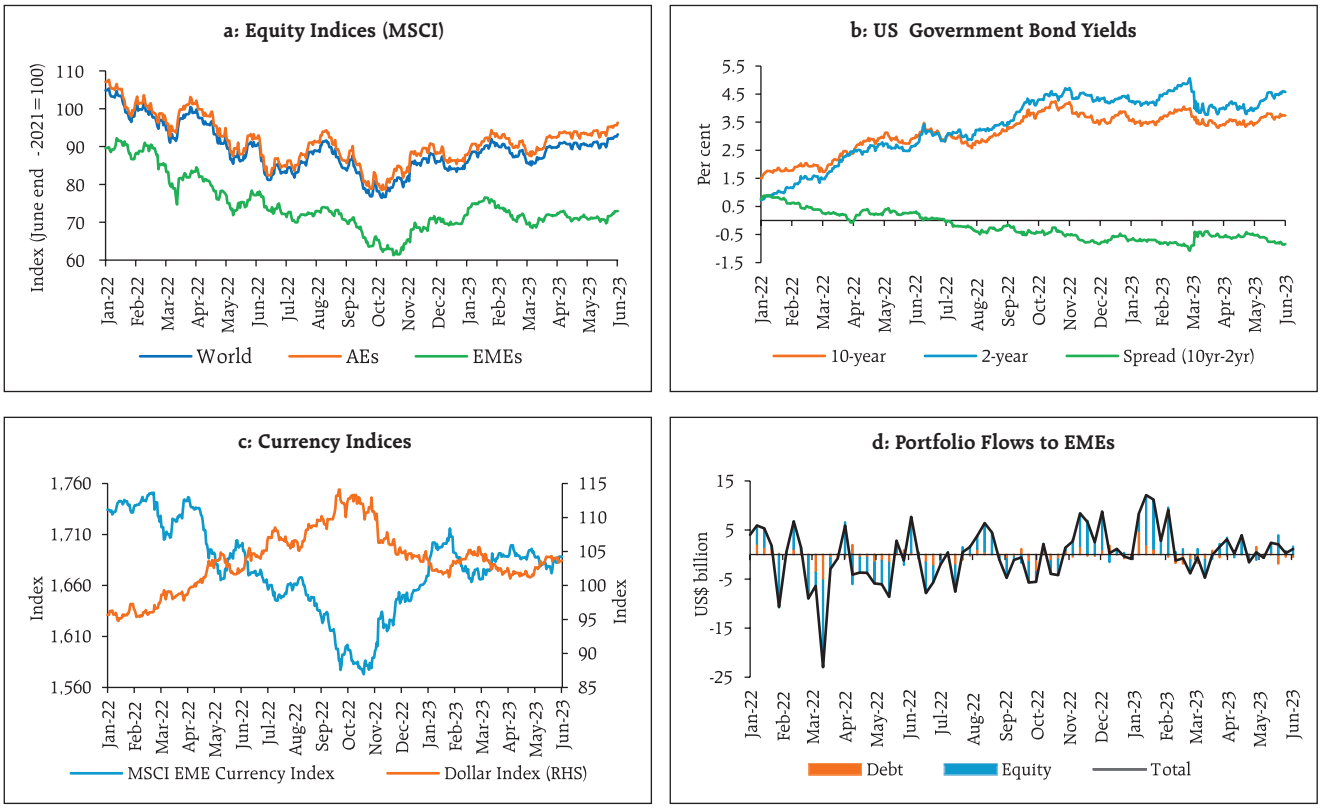
Core inflation, however, remained stubbornly high, driven by services inflation and the prospect of sustained strong wage growth (Chart 5c and 5d).

Global equity indices extended their gains into June so far (June 12, 2023) reacting to a surge in jobless claims and signs of easing inflation bolstering expectations of a more generalised pause in the rate hike cycle (Chart 6a). Volatility in bond markets spiked, with the 10-year G-sec yields in AEs hardening since late May despite softer economic data. In the US, yield curve inversion continued to persist, with the spread hovering around 80 bps in early June 2023 (Chart 6b).

In the currency markets, the US dollar moved in tandem with expectations of the Fed's monetary policy action – it appreciated in May but later shed those gains in June so far (June 14, 2023). The Morgan Stanley Capital International (MSCI) currency index for EMEs remained volatile and corrected by 0.9 per cent in May, but rebounded thereafter (Chart 6c and 6d).

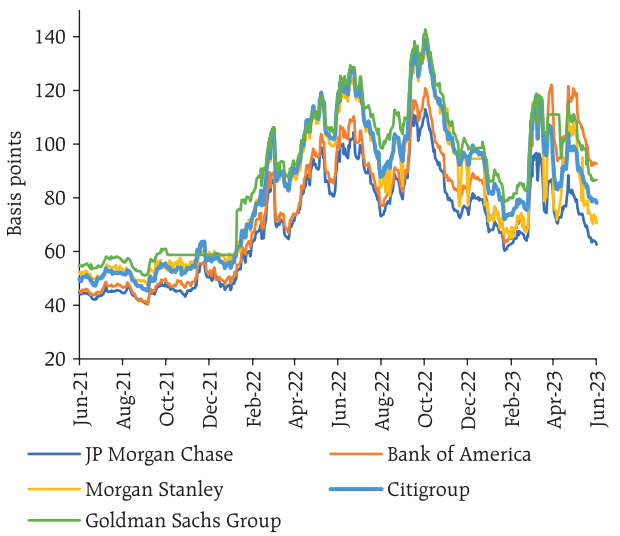
With the abatement of bank failure risks, the credit default swap (CDS) spreads for global systemically important banks (G-SIBs) have reverted to levels preceding these episodes (Chart 7).

Chart 6: Global Financial Markets



Sources: Bloomberg; and IIF.

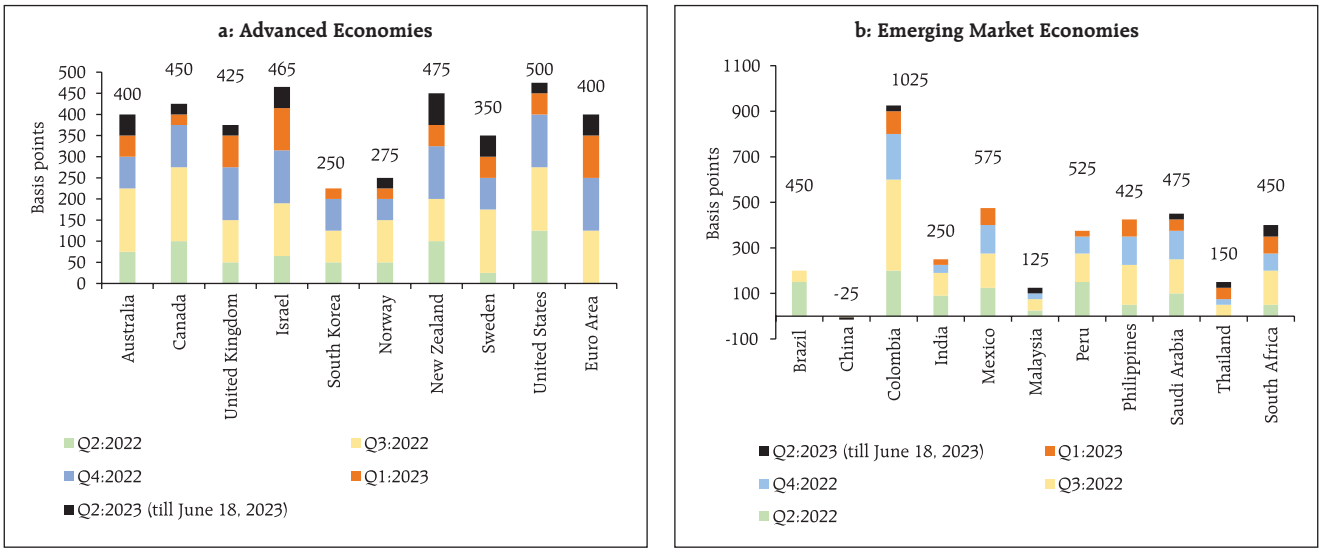
Chart 7: CDS Spread for G-SIBs



Source: Bloomberg.

With headline inflation softening, major central banks have shifted gears to a pause or relatively less aggressive rate hikes, while hinting at further rate hikes if warranted by incoming data (Chart 8a and 8b). In the US, the Federal Open Market Committee (FOMC) kept the policy rate unchanged in its latest meeting on June 14, allowing room for assessing additional information and its implications for monetary policy. In June, policy rates were raised by 25bps by the Euro Area, Australia and Canada. In the UK, policy rates were raised by 50bps to a fifteen year high as inflation continued to remain elevated. Most EMEs held their policy rate unchanged during May-June 2023 while China reduced its key rates by 10 bps for the first time since August 2022.

Chart 8: Monetary Policy Actions



Source: Bloomberg.

Box: Forecasting Crude Oil Price for India

Futures prices are used to forecast spot crude oil prices as they are expected to factor in all available information at any given point in time. Their forecast performance, however, tends to be unstable, especially during periods when macroeconomic factors that drive oil price dynamics exhibit significant volatility.

Drawing on work which adjusted the future prices for capacity utilisation rate in the US, which is considered as a forward-looking indicator of overall macroeconomic conditions and also shows high complementarity with energy consumption in the economy (Pagano and Pisani, 2009), crude oil prices for

(Contd.)

India can be forecasted with some modifications. First, capacity utilisation of other major oil consumers (China) is incorporated as an additional explanatory variable. Secondly, the quarterly average of Brent 3-month ahead futures prices, which is the more relevant price for India, is used to forecast the price of the Indian crude basket.[7]

The forecast error (fe_t) is computed using the quarterly average of Brent 3-month ahead futures prices in the previous quarter[8] (f_{t-1}) and the actual observed prices of the Indian crude basket in the current quarter (p_t).

$$fe_t = f_{t-1} - p_t \quad \ldots (1)$$

This forecast error is taken as the dependent variable with CA_{US} (average quarterly capacity utilisation for the US) and CA_{CN} (quarterly capacity utilisation for China) as independent variables for the following estimation:

$$fe_t = a + b \times (CA_{US_{t-1}}) + c \times (CA_{CN_{t-1}}) + \epsilon_t \quad \ldots (2)$$

The estimated coefficients are then used to obtain the future spot price forecast adjusted for real sector variables ($\widehat{f_t}$).

$$\widehat{f_t} = f_t - \hat{a} - \hat{b} \times \left(CA_{US_{t-1}}\right) - \hat{c} \times (CA_{CN_{t-1}}) \quad \ldots (3)$$

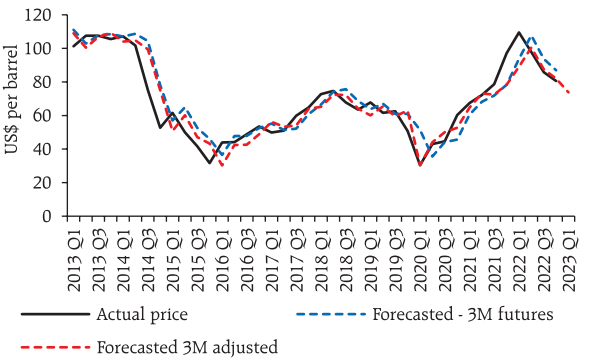
Table B1: Adjusting Futures Prices for Capacity Utilisation

	Coefficient	P-value
Intercept	87.50	0.206
CA_US	1.26*	0.046
CA_CN	-2.42**	0.004

*: Significant at 5% level, **: Significant at 1% level.
Note: The period considered is from Q1:2013, which is the first quarter for which capacity utilisation for China is available to Q1:2023, the latest available data.

The future spot price forecast adjusted for real sector variables ($\widehat{f_t}$) is able to efficiently predict the fall in crude prices during periods of sudden drop in industrial activity, like in Q1:2020 due to the outbreak of COVID-19 as well as the pick-up in crude prices due to revival in industrial demand from Q3:2020 onwards (Chart B1).

Chart B1: Adjusted and Unadjusted 3M-Futures Price Forecast



Sources: Petroleum Planning and Analysis Cell (PPAC); Bloomberg; and RBI staff estimates.

Given that adjusting for macroeconomic outcomes leads to improvement in forecast performance, an approach of pooling forward looking information from a variety of sources is called for while assessing the oil prices trajectory rather than relying solely on futures prices.

References

Pagano, P., & Pisani, M. (2009). "Risk-Adjusted Forecasts of Oil Prices," *European Central Bank Working Paper No.999.*

III. Domestic Developments

The Indian economy has sustained its growth momentum in 2023-24 so far, with favourable tailwinds from the index of supply chain pressure for India (ISPI) remaining below its historical average and overall economic activity, as captured by our economic activity index (EAI), remaining resilient (Chart 9a and 9b). Incorporating these, the GDP growth for Q1:2023-24 is nowcast at 7.9 per cent (Chart 9c).

Aggregate Demand

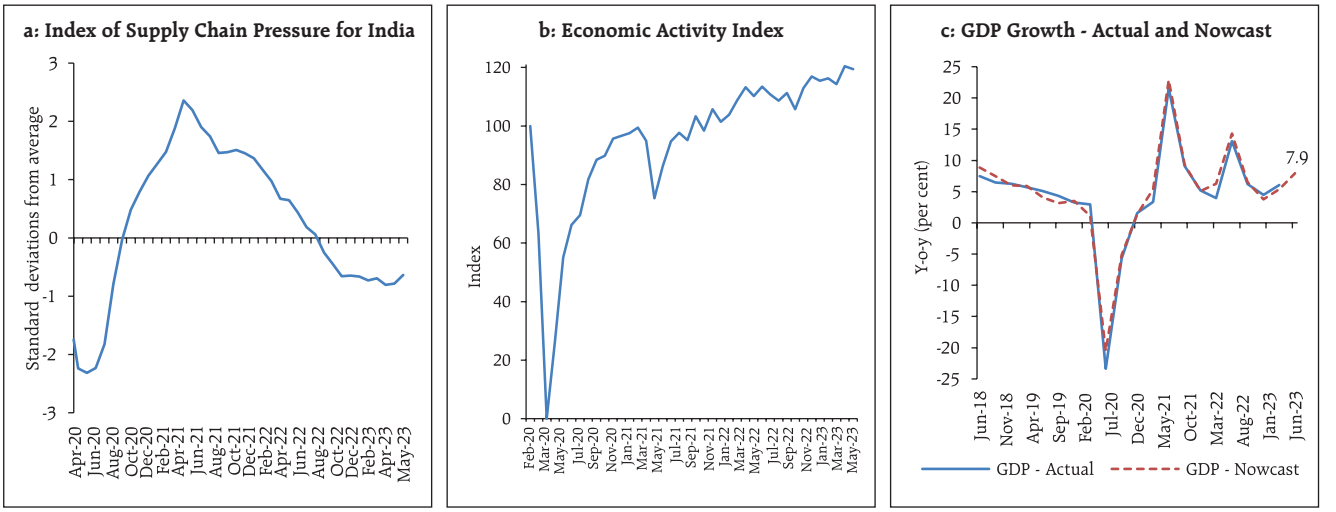
As per the NSO's provisional estimates (PE) released on May 31, 2023, real gross domestic product (GDP) of the Indian economy grew by 7.2 per cent in 2022-23 [up from 7.0 per cent in the second advance estimates (SAE)]. The Government's thrust on infrastructure helped boost growth in gross fixed capital formation (GFCF) to 11.4 per cent in 2022-23 (PE), expanding the GFCF/GDP ratio to 34.0 per cent from 32.7 per cent in the previous year.

During Q4:2022-23, GDP growth had accelerated to 6.1 per cent (y-o-y) from 4.5 per cent in Q3:2022-23

[7] Price of Indian Basket of Crude is provided by the Petroleum Planning and Analysis Cell (PPAC) and is computed from an average of Oman and Dubai for sour grades and Brent for sweet grade.

[8] Unadjusted future prices based forecast.

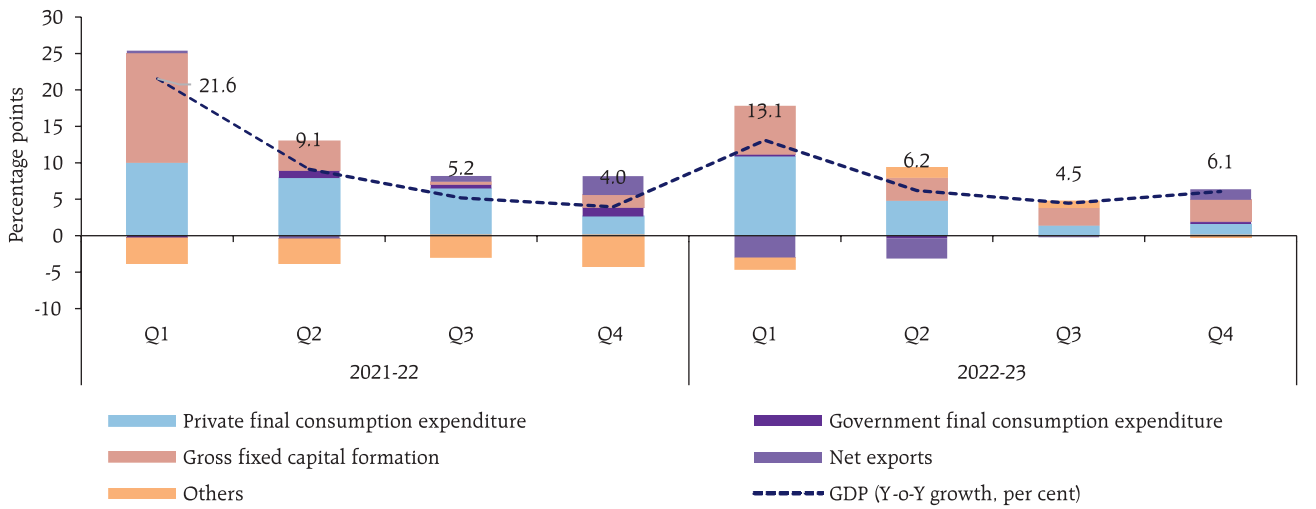
Chart 9: Economic Activity and GDP Growth Nowcast



Note: The economic activity index (EAI) is constructed by extracting the common trend underlying twenty-seven high frequency indicators of economic activity using a Dynamic Factor Model. EAI is scaled to 100 in February 2020 and 0 in April 2020, the worst affected month due to mobility restrictions.
Sources: National Statistical Office (NSO); and RBI staff estimates.

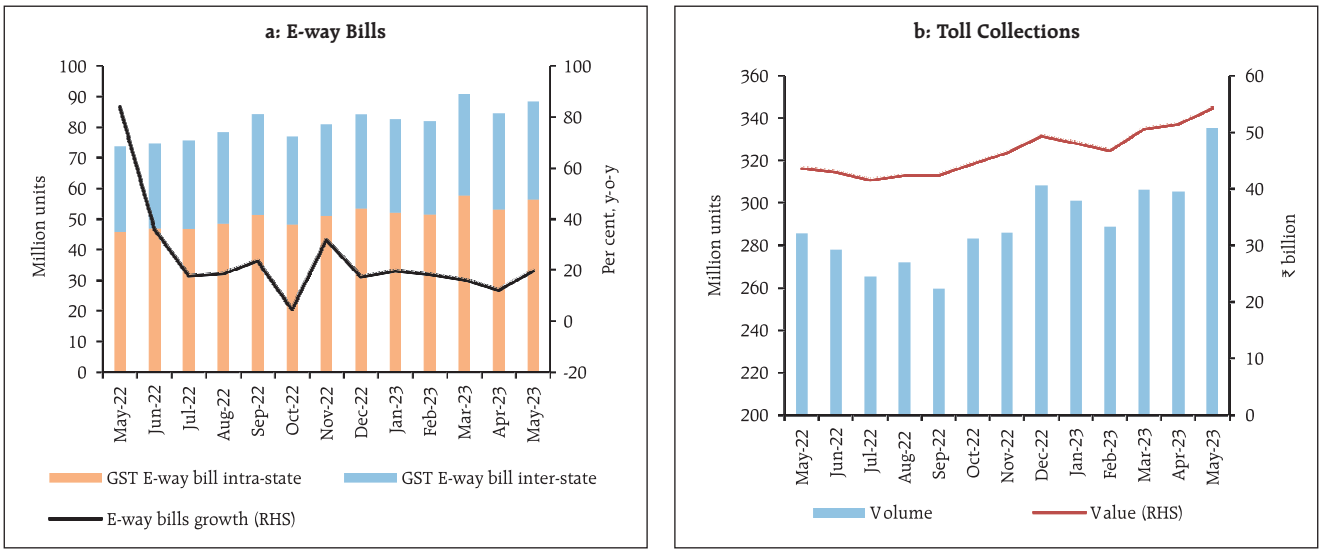
(Chart 10). The seasonally adjusted annualised rate (SAAR) of real GDP also accelerated to 5.5 per cent in Q4 from 5.2 per cent in the preceding quarter. Among the components of real GDP, private final consumption expenditure (PFCE) remained subdued, registering a growth of 2.8 per cent but showed an improvement over the preceding quarter's growth of 2.2 per cent. Government final consumption expenditure (GFCE) growth improved to 2.3 per cent in Q4, following contraction in Q2 and Q3. With construction activity gaining traction, GFCF growth stood robust at 8.9 per cent in Q4. This

Chart 10: Weighted Contribution to GDP Growth



Note: Others include changes in stocks, valuables and statistical discrepancies.
Source: NSO.

Chart 11: E-way Bills and Toll Collections



Sources: GSTN; RBI; CEIC; and RBI staff estimates.

was mirrored in its proximate indicators, *viz.*, steel consumption, production of cement and import of capital goods. The drag from the external sector narrowed to 0.1 per cent of GDP in Q4 as exports remained robust whereas imports moderated sharply following double digit growth in the first three quarters of 2022-23.

Among lead indicators of demand conditions, E-way bill volumes indicated heightened transportation activity in May, led by movement of goods within States (Chart 11a). Toll collections crossed 300 million in volume terms and amounted to ₹54 billion in May, with the FASTag system reaching a penetration rate of 97 per cent[9] (Chart 11b).

Automobile sales recorded a robust expansion of 17.9 per cent y-o-y in May 2023, with their highest ever sales of passenger cars (Chart 12a). Electric vehicle sales crossed the 1 lakh mark for the eighth consecutive month in May, driven by the rationalisation in Faster Adoption and Manufacturing of Electric Vehicles (FAME) subsidies, set to be effective from June 1. Sales of two wheelers accelerated in May. Tractor sales also improved after recording a dip a month ago (Chart 12b). Vehicle registrations picked up in May, led by non-transport vehicles. Retail sales of passenger vehicles improved on account of better availability, strong pending orders and robust demand (Chart 12c). The daily average consumption of petroleum products increased 4.5 per cent m-o-m in May, led by demand for transportation fuels (Chart 12d).

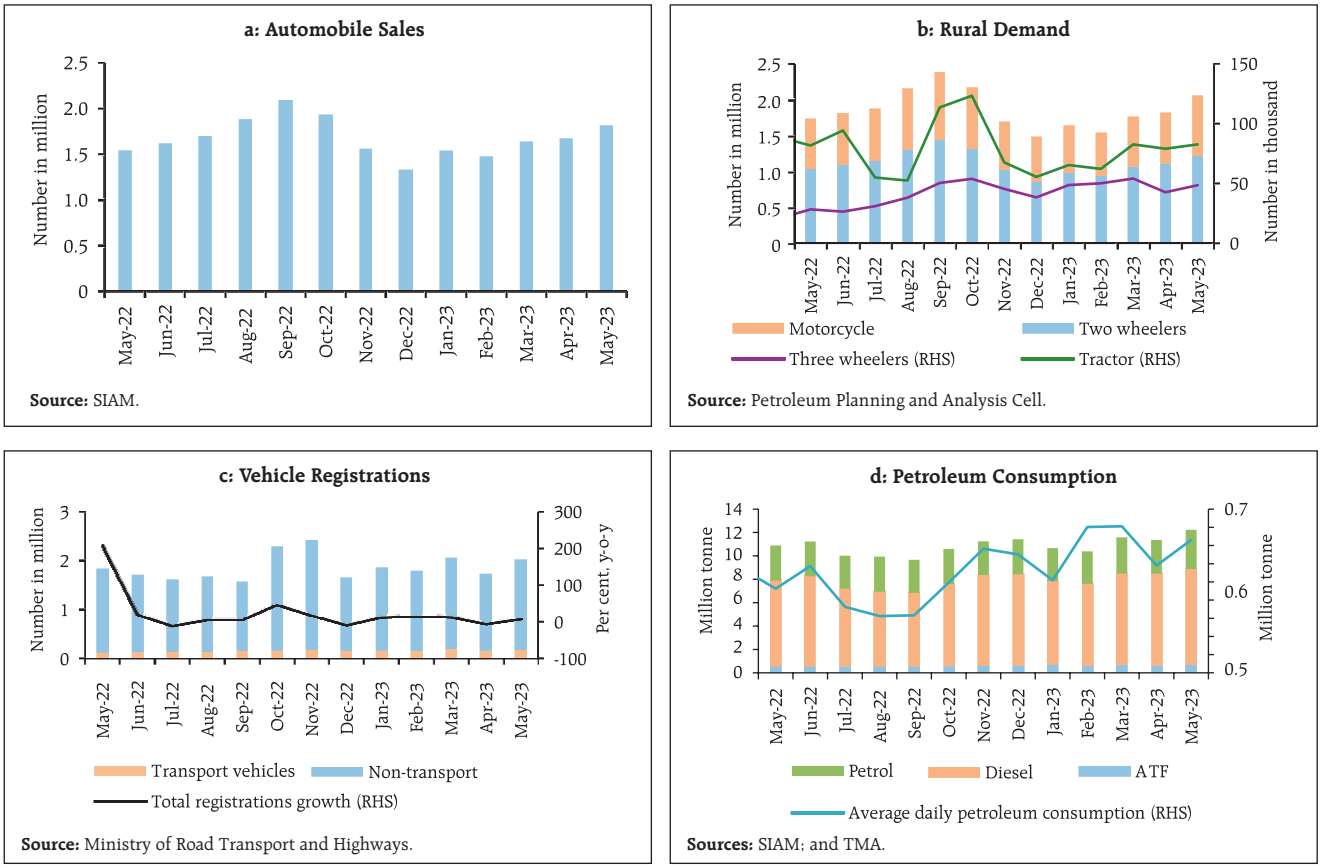
In the hospitality sector, the hotel occupancy rate exhibited a sequential pick-up in April, despite steep hotel rates (Chart 13a). The average room rate (ARR) in April grew by 21 per cent (y-o-y) leading to growth (y-o-y) of 18 per cent in revenue per available room (RevPAR) [Chart 13b].

The all-India unemployment rate[10] was at 7.7 per cent in May 2023, with a higher rate of unemployment observed in urban areas (Chart 14a). The labour force

[9] Press Information Bureau (PIB), May 2, 2023.

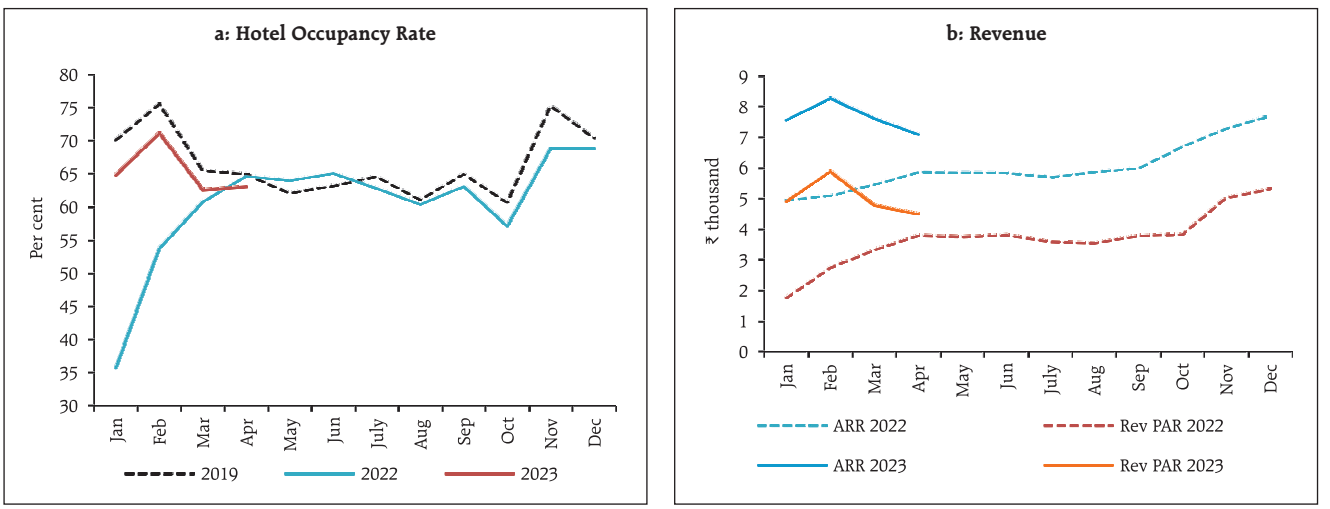
[10] Source: Centre for Monitoring Indian Economy (CMIE).

Chart 12: Automobile Sector Indicators



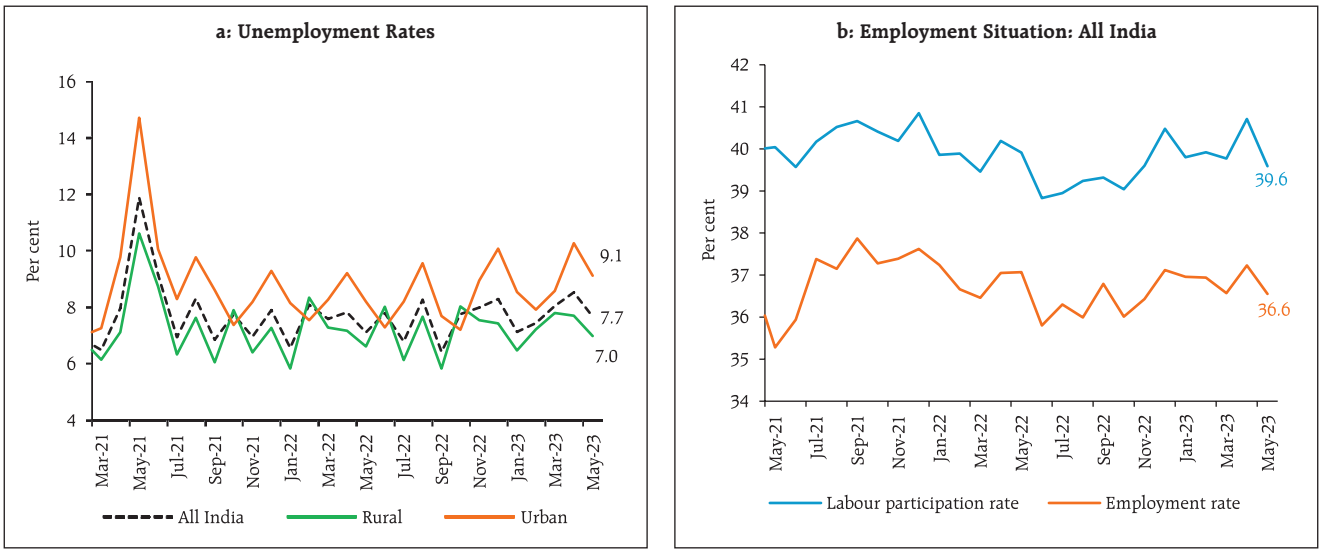
participation rate (LFPR) and the employment rate (ER), however, moderated to 39.6 and 36.6 per cent in May from 40.7 and 37.2 per cent, respectively, in the previous month (Chart 14b). The employment outlook

Chart 13: Hotel Sector Indicators



Note: Average room rate (ARR) is the ratio of room revenue to the number of rooms sold/occupied; and Revenue per available room (RevPAR) is the ratio of room revenue to the number of rooms available in a given period.
Source: HVS Anarock.

Chart 14: Labour Market Conditions



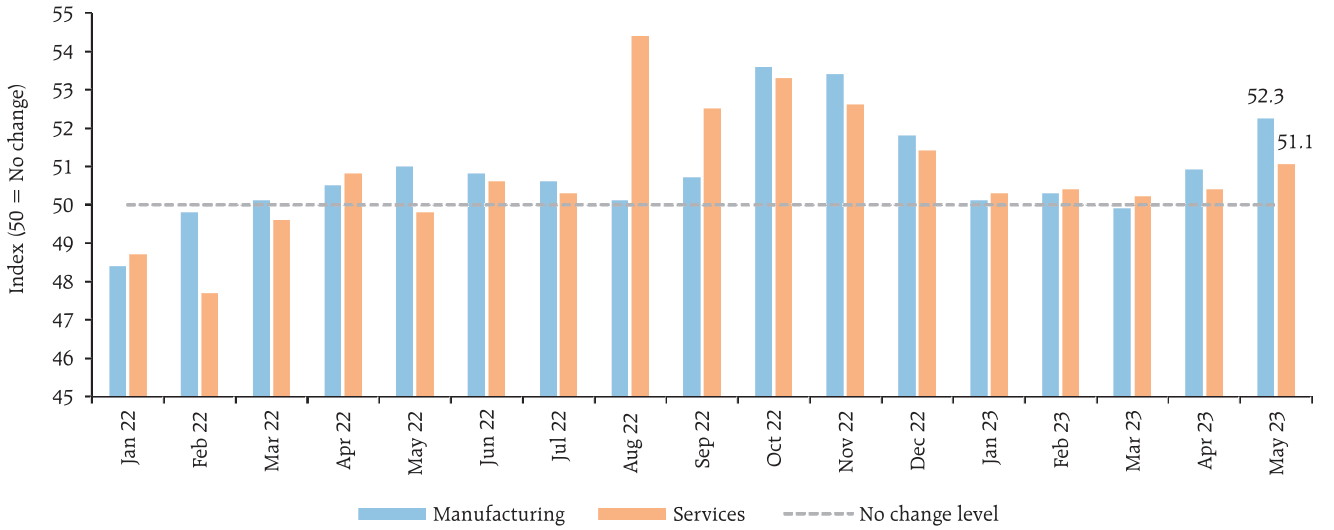
Source: CMIE.

in the organised sector, as polled by the PMI for manufacturing and services, recorded an expansion in May (Chart 15).

The demand for work under the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) remained elevated both sequentially as well as on a y-o-y basis due to lower agricultural activity in summer (Chart 16).

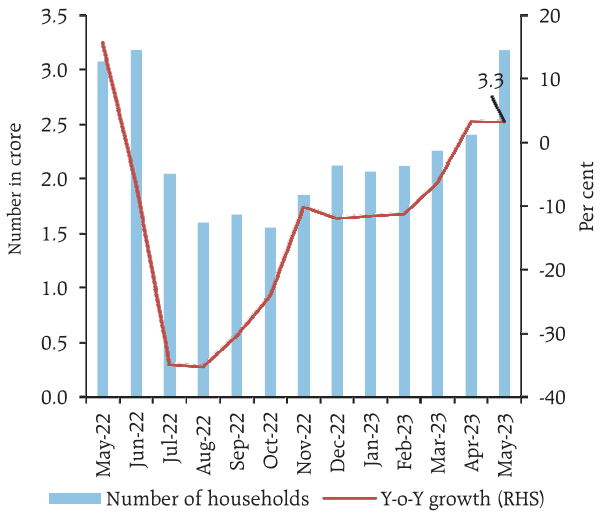
India's merchandise exports declined by 10.3 per cent (y-o-y) to US$ 35.0 billion in May 2023, registering a contraction for the fourth successive month (Chart 17a). The contraction was broad-based, with nearly three-fourth of the export basket (17 out of 30 major commodities) registering a decline on a y-o-y basis. Sequentially, total exports registered a marginal growth of 0.7 per cent (m-o-m), led by non-

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.

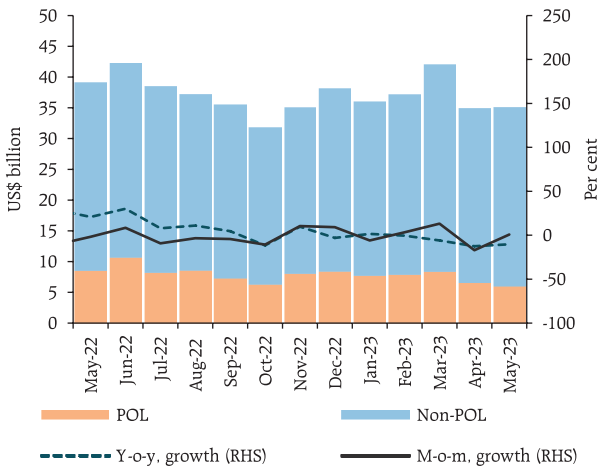
oil exports (2.8 per cent) which was mostly offset by the contraction in petroleum exports [(-) 8.5 per cent] (Chart 17b).

Amidst the overall decline, electronic goods, which account for 6.9 per cent of total merchandise exports, continued to contribute positively to export growth in May (Chart 18). Mobile phones have provided the growth impetus in recent months with their exports more than doubling in 2022-23 to US$ 11.1 billion. This rapid growth has also benefitted from the Production Linked Incentive (PLI) scheme for large scale manufacturing and IT hardware.[11] With imports of mobile phones falling from US$ 2.6 billion in 2017-18 to US$ 1.4 billion in 2023, India has transformed into a net exporter of mobile phones with a trade surplus of US$ 9.7 billion in 2022-23 in that category (Chart 19).

Merchandise imports declined by 6.6 per cent (y-o-y) in May 2023 for the fifth consecutive month to US$ 57.1 billion (Chart 20). While gold, petroleum, oil, and lubricants (POL), coal, pearls, precious and semi-precious stones and chemicals dragged down import growth, electronic goods, machinery, non-ferrous

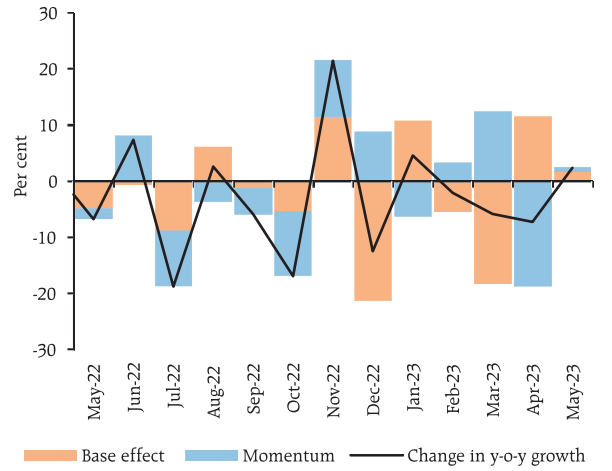
Chart 17: Merchandise Exports

a: Trend in Exports



Sources: DGCI&S; and PIB.

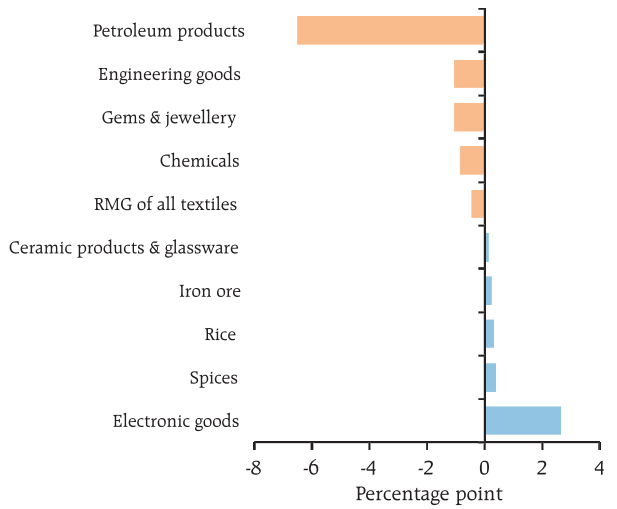
b: Decomposition of Sequential Change in Export Growth (y-o-y)



Source: RBI staff estimates.

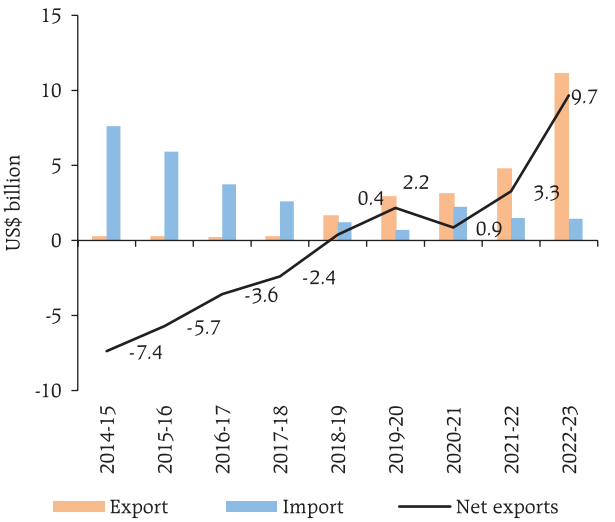
[11] Other policy measures aimed at supporting the electronics manufacturing ecosystem in India include Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors (SPECS), Modified Electronics Manufacturing Clusters (EMC 2.0) under the National Policy on Electronics, 2019.

Chart 18: Relative Contribution to Export Growth – May 2023 over May 2022



Sources: DGCI&S; PIB; and RBI staff estimates.

Chart 19: Mobile Phone Exports from India



Note: Based on HS Codes- 851712 11,19,90 and 85171300
Source: DGCI&S.

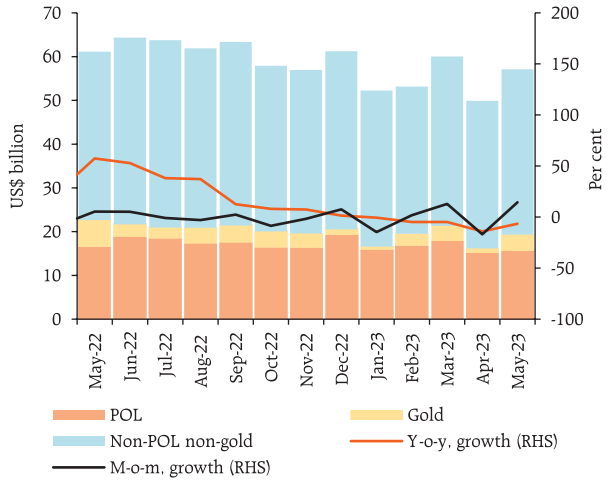
metals, fertilisers, and iron and steel contributed positively (Chart 21).

India's merchandise trade deficit widened to US$ 22.1 billion in May 2023. As POL imports witnessed marginal sequential growth against a decline in exports, the deficit on account of oil trade widened by US$ 1 billion. The share of oil in the total trade deficit, however, fell to a six-month low of 43.8 per cent in May 2023 due to a relatively sharper expansion in non-oil imports as compared with non-oil exports (Chart 22).

The key deficit indicators *viz.*, gross fiscal deficit (GFD), revenue deficit (RD) and primary deficit (PD) of the Central Government showed an improvement

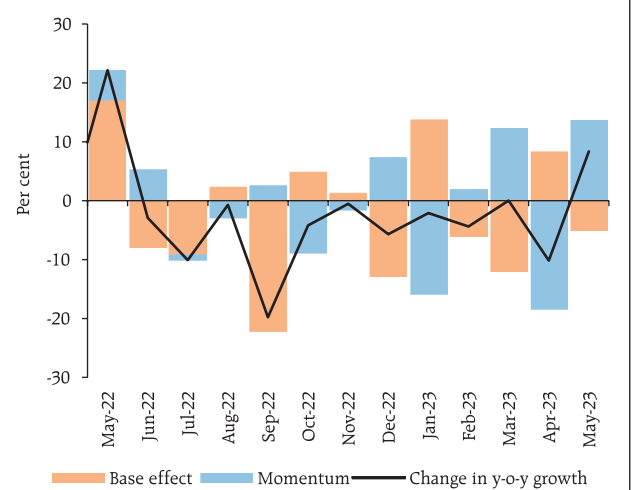
Chart 20: Merchandise Imports

a: Trend in Exports



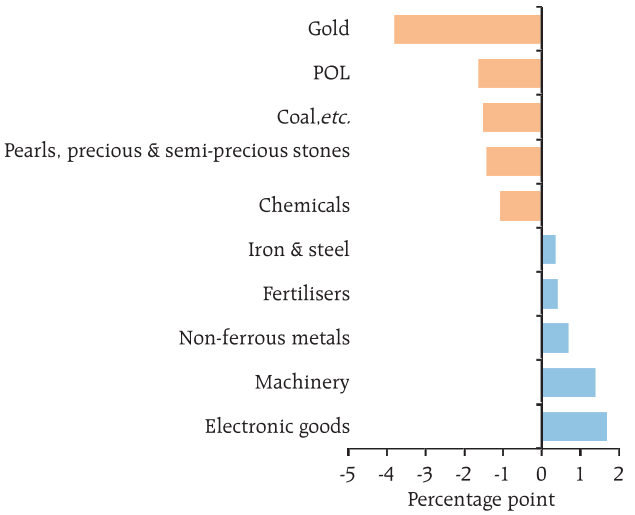
Sources: DGCI&S; and PIB.

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



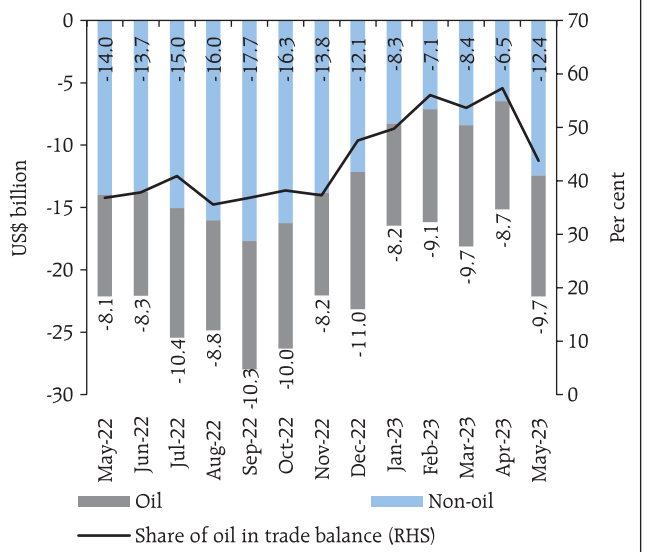
Source: RBI staff estimates.

Chart 21: Relative Contribution to Import Growth – May 2023 over May 2022



Sources: DGCI&S, PIB and RBI staff estimates.

Chart 22: Merchandise Trade Balance



Sources: DGCI&S; PIB; and RBI staff estimates.

in 2022-23 as per the provisional accounts (PA) *vis-a-vis* the revised estimates (RE). This improvement in the financial position of the Central Government was brought about by higher receipts (both tax and non-tax revenues), which were partially offset by lower disinvestment receipts (Table 2). Accordingly, the GFD was placed at 6.36 per cent of GDP for 2022-23 (PA) as against 6.43 per cent of GDP in the RE. While the total expenditure (PA) was broadly in line with the RE, total capital expenditure and revenue expenditure were at 101.1 per cent and 99.8 per cent of the RE, respectively.

Table 2: Key Fiscal Indicators (as a per cent of GDP)

Indicator	2021-22	2022-23			2023-24
	Actuals	BE	RE	PA	BE
1. Fiscal Deficit	6.75	6.44	6.43	6.36	5.92
2. Revenue Deficit	4.39	3.84	4.07	3.92	2.88
3. Primary Deficit	3.32	2.79	2.98	2.95	2.34
4. Gross Tax Revenue	11.54	10.69	11.14	11.21	11.14
5. Non-Tax Revenue	1.56	1.05	0.96	1.05	1.00
5. Revenue Expenditure	13.64	12.38	12.67	12.67	11.61
6. Capital Expenditure	2.53	2.91	2.67	2.70	3.32
(i) Capital Outlay	*2.28*	*2.37*	*2.27*	*2.28*	*2.77*

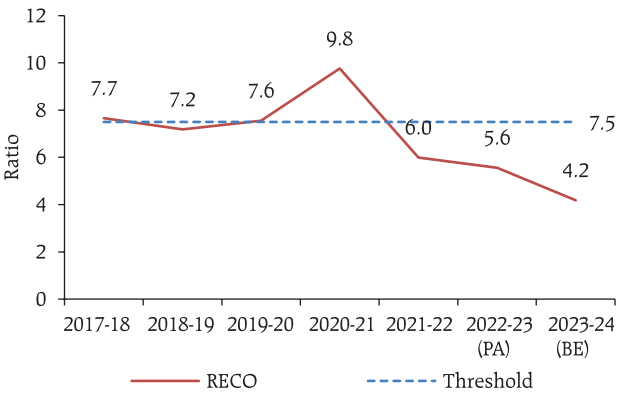
Notes: 1. GDP used for 2022-23 budget estimates (BE) and revised estimates (RE) is as per the Union Budget 2022-23 and 2023-24, respectively.
2. For 2022-23 (PA), the GDP used is the provisional estimates (PE), released by the Ministry of Statistics and Programme Implementation (MoSPI) on May 31, 2023.

Sources: Union Budget Documents; and Controller General of Accounts (CGA).

Capital outlay (*viz.*, capital expenditure *minus* loans and advances) has been steadily improving in the post pandemic phase, underscoring the Government's emphasis on medium to long-term growth. Consequently, the ratio of revenue expenditure to capital outlay (RECO), which serves as an indicator of the quality of Government expenditure, has been recording a consistent improvement (Chart 23).

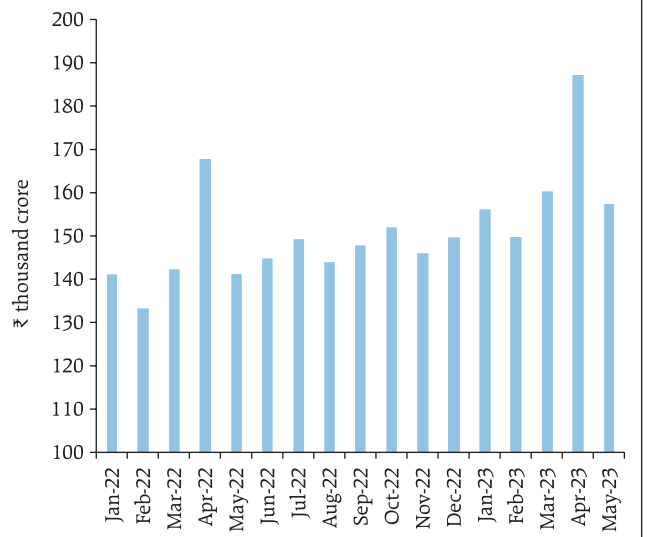
During April 2023, the major deficit indicators such as GFD, RD and PD increased on a y-o-y basis. On the receipts side, gross tax revenue collection turned out to be lower, with direct taxes and indirect taxes contracting (y-o-y) by 10.1 per cent and 0.5 per cent, respectively. Non-debt capital receipts and non-tax revenue also contracted (y-o-y) by 81.6 per cent and 8.2 per cent, respectively. Conversely, total expenditure growth during April 2023 was higher on account of an increase in revenue expenditure (15.2 per cent, y-o-y)

Chart 23: Revenue Expenditure - Capital Outlay (RECO) of Central Government



Note: 1. Empirical evidence suggests that in case of central government there is a threshold for RECO of 7.5 beyond which its positive and statistically significant association with per capita GDP wears out.
2. For details please refer Sood *et al.* (2022). 'Union Budget 2022-23: Some Pleasant Fiscal Arithmetic' RBI Bulletin, March.
Source: Union Budget Documents; CGA; and RBI staff estimates.

Chart 24: Monthly GST Revenue



Sources: PIB.

whereas capital expenditure contracted by 0.6 per cent (y-o-y). GST collections (Centre *plus* States) stood at ₹1.57 lakh crore in May 2023, recording a growth rate of 11.5 per cent y-o-y (Chart 24).

The consolidated GFD of States and UTs declined from its peak of 4.1 per cent of GDP in 2020-21 to 2.8 per cent in 2021-22[12] and remained at the same level in 2022-23[13], well below the BE of 3.4 per cent. The consolidation is primarily driven by a sharp decline in revenue expenditure even as revenue receipts fell marginally. Within revenue receipts, the States' own tax revenue increased in 2022-23, led by States' GST. Capital expenditure remained at the same level as in 2021-22 (Table 3). The States' GFD-GSDP ratio has been budgeted at 3.2 per cent in 2023-24[14], well within the indicative target of 3.5 per cent set by the Centre. Capital expenditure is budgeted to increase to 3.2 per cent of GSDP in 2023-24 (BE) along with improvement in the RECO ratio (Chart 25).

Aggregate Supply

As per the NSO's provisional estimates, real gross value added (GVA) at basic prices – a measure of aggregate supply – recorded 7.0 per cent growth in 2022-23 as compared with 8.8 per cent a year ago. GVA growth (PE) was revised upward by 40 basis points (bps) from 6.6 per cent in the SAE. Overall, growth

Table 3: Key Fiscal Indicators (as a per cent of GDP/GSDP)

Indicator	2021-22 Actuals	2022-23			2023-24 BE
		BE	RE	PA	
Gross Fiscal Deficit	2.8	3.4	3.1	2.8	3.2
Revenue Deficit	0.4	0.3	0.5	0.3	0.2
Primary Deficit	1.0	1.6	1.4	1.2	1.4
Tax Revenue	10.0	10.1	9.3	9.8	10.6
Non-Tax Revenue	1.1	1.3	1.0	1.0	1.2
Revenue Expenditure	14.2	15.3	13.7	13.5	14.6
Capital Expenditure	2.5	3.2	2.7	2.5	3.2
i) Capital Outlay	2.3	2.9	2.4	2.2	2.9

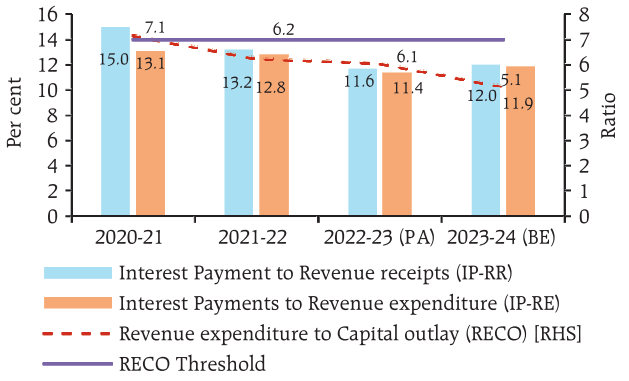
Note: Data for 2021-22, 2022-23 (BE) and 2022-23(PA) pertain to 31 States/UTs and for 2022- 23 (RE) and 2023-24 (BE) pertain to 29 States/UTs. Data for 2023-24(BE) is taken as a per cent of GSDP.
Source: Budget documents of the states; Comptroller and Auditor General of India and RBI.

[12] Data for 2021-22 is based on accounts data available for 28 States supplemented with budget estimates for the remaining 3 States/UTs.

[13] The data for 2022-23 has been compiled by combining latest available accounts data for 25 States from the Comptroller and Auditor General (CAG) of India and Budget Estimates (BE) for remaining six States and UTs for 2022-23 (based on the states and UTs' budget 2022-23).

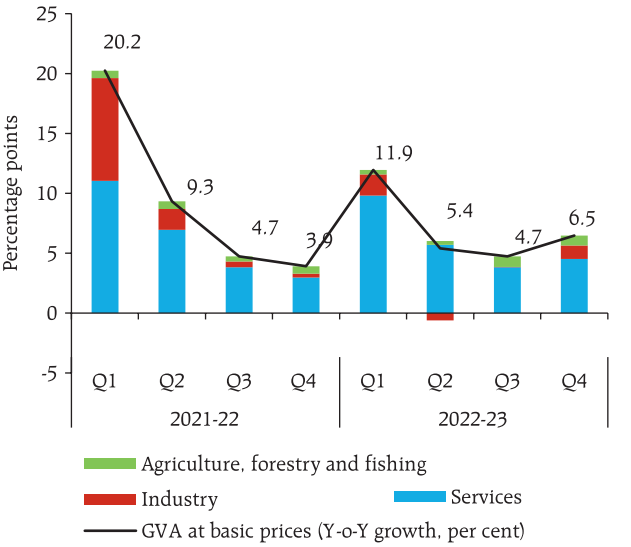
[14] Data for 2023-24 (BE) pertain to 29 States and is taken as a per cent of combined GSDP.

Chart 25: Trends in Key Fiscal Performance Indicators



Note: 1. Data for 2020-21, 2021-22 and 2022-23(PA) pertain to 31 States/UTs and for 2023-24 (BE) pertains to 29 States/UTs. Data for 2023-24(BE) is taken as a per cent of combined GSDP.
2. For details please see Rath, D. P., Seth, B., & Behera, S. R. (2021). States' Fiscal Management during COVID-19. Odisha Economic Journal, 53(2).
Sources: Budget documents of the States; Comptroller and Auditor General of India; and RBI.

Chart 26: Weighted Contribution to GVA Growth



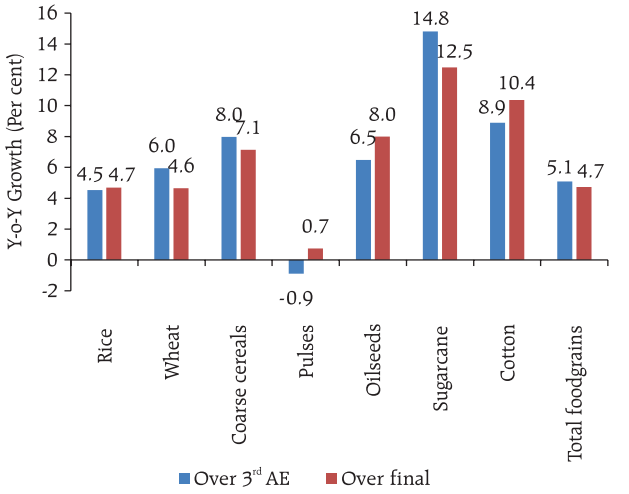
Source: NSO.

was driven by resilient agriculture and allied activities and the services sector, while industrial sector activity remained tepid. All the three sectors have undergone upward revisions in the PE *vis-à-vis* the SAE.

On a similar note, real GVA at basic prices clocked a growth of 6.5 per cent in Q4:2022-23, accelerating from 4.7 per cent in Q3:2022-23 (Chart 26). Agriculture and allied activities recorded a growth of 5.5 per cent in Q4 due to bumper production of wheat, rice and maize.[15] Manufacturing rebounded in Q4 as easing input costs facilitated an improvement in profit margins of listed manufacturing companies. A broad-based resurgence was recorded within the services sector. Trade, hotels, transport, communication and services related to broadcasting grew on a y-o-y basis. Financial, real estate and professional services picked up momentum while profit margins of IT companies remained subdued.

Despite episodes of unseasonal rains, agriculture and allied activities clocked GVA growth of 4.0 per cent in 2022-23, supported mainly by resilient *rabi* crop production. The third AE of agriculture production for 2022-23[16] has projected a record foodgrains production (for the seventh consecutive year) of 330.5 million tonnes, 4.7 per cent higher than the final estimates for 2021-22 (Chart 27). All major categories of foodgrains (rice, wheat and pulses), except coarse cereals, recorded the highest ever production in 2022-23.

Chart 27: Third Advance Estimates of Agricultural Crop Production for 2022-23



Note: Total foodgrains comprise of rice, wheat, coarse cereals and pulses.
Source: Ministry of Agriculture and Farmers' Welfare.

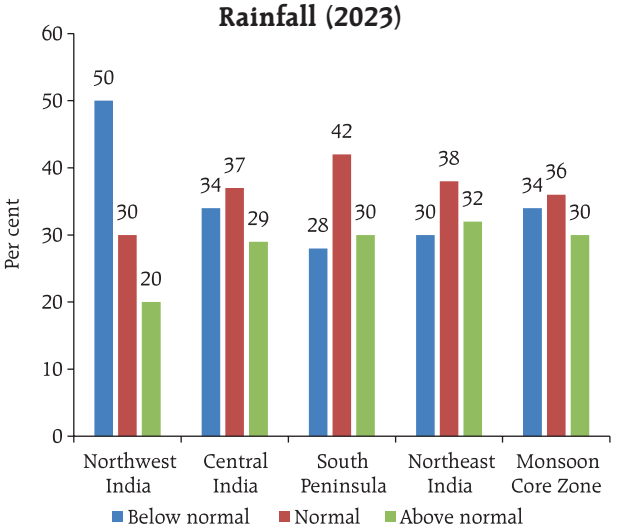
[15] as per the third AE of crop production in 2022-23.

[16] Released on May 25, 2023.

The India Meteorological Department's (IMD) updated long-range forecast (LRF) released on May 26, 2023 for the South West Monsoon (SWM) rainfall remains unchanged at 96 per cent of the long period average (LPA) from the previous LRF but with higher precision (model error of +/- 4 per cent). Spatially, the forecast probability of normal and above rainfall is higher than that of below normal rainfall for the whole country barring the north-western region (Chart 28). Adequate irrigation coverage (mainly tubewells) in the key north-western agricultural states could offset the impact of monsoon deficits (if any) on agricultural production (Chart 29).

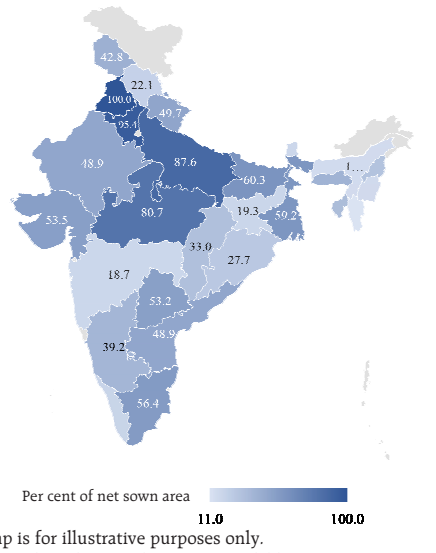
Mandi prices of paddy declined during April-May on account of record production and higher *mandi* arrivals but they have edged up in recent weeks due to firm export demand and anticipation of adverse impact of *El Nino* (Chart 30). Retail prices remained firm, partly on account of higher exports throughout 2022-23 (Chart 31). The cumulative procurement of rice in the ongoing *kharif* marketing season 2022-23 so far (*i.e.*, October 1, 2022 to June 17, 2023) at 55.4 million tonnes was 3.0 per cent lower than the previous year's level. However, as on June 1, 2023, the stocks of rice (including unmilled paddy) remained sufficient at 3.1 times the Q1 buffer norms. The Government has announced sale of rice under its open market sales scheme (OMSS) to moderate prices, the quantity, however, is yet to be decided.[17]

Chart 28: Forecast Probabilities for SWM Rainfall (2023)



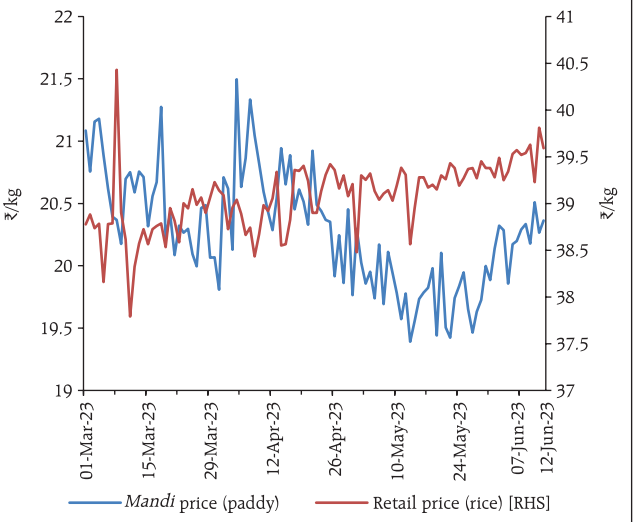
Note: Monsoon Core Zone consists of most of the rainfed agriculture regions in the country.
Source: India Meteorological Department (IMD).

Chart 29: Irrigation Coverage



Note: 1. Map is for illustrative purposes only.
2. Grey colour denotes data is not available.
Source: Ministry of Agriculture and Farmers' Welfare.

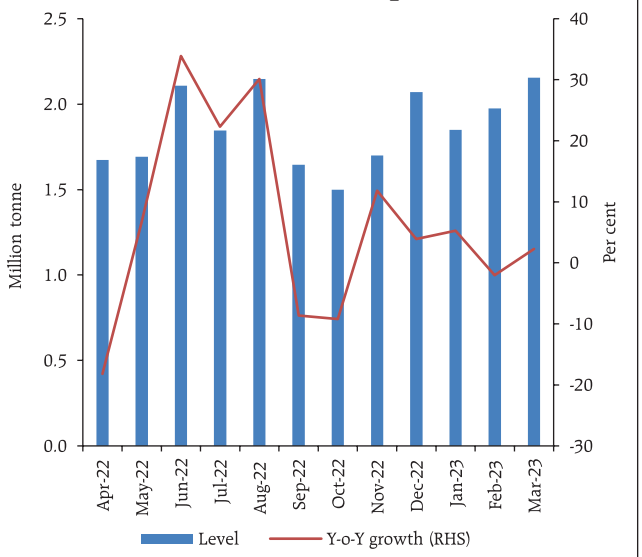
Chart 30: *Mandi* (Paddy) and Retail (Rice) Prices



Sources: Agmarknet; and Department of Consumer Affairs.

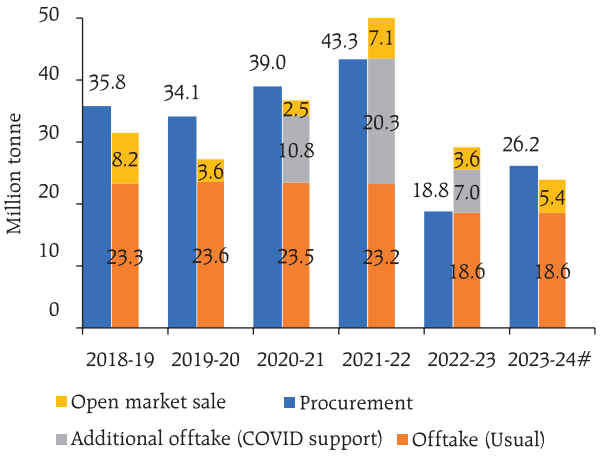
[17] Announced on June 12, 2023 (https://www.pib.gov.in/Pressreleaseshare.aspx?PRID=1931805)

Chart 31: Rice Export



Source: DGCI&S.

Chart 32: Public Procurement and Offtake of Wheat



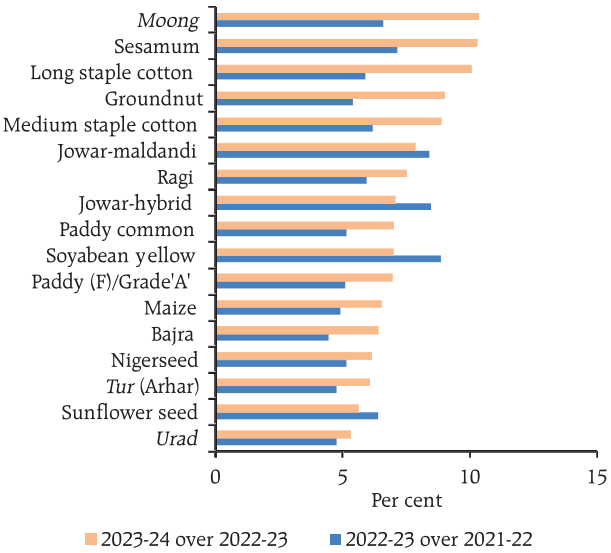
#: While the offtake has been assumed to be same as previous year, the open market sale is assumed to be average of 2018-19 to 20221-22.
Source: Department of Food and Public Distribution System.

The cumulative Government purchase of wheat has reached 26.2 million tonnes as on June 17, 2023 (39.5 per cent above the total procurement during previous year), aided by the Government's relaxation of norms for procurement of grains damaged due to unseasonal rains. With stocks remaining at 31.4 million tonnes (4.2 times the Q1 buffer norms, as on June 1, 2023), the supply appears to be sufficient for both normal offtake and interventions in the open market (Chart 32). Consequently, the Central Government has announced that it will offload 1.5 million tonnes under the first phase of its domestic OMSS of 2023. Further, the Government has also imposed stock limits on wheat for various market participants (retailers, wholesalers and processors).

Minimum Support Prices (MSP) were announced for 14 major *kharif* crops for the marketing season 2023-24 (Oct-Sep) on June 7, 2023. MSPs have been revised upwards in the range of 5.3 - 10.4 per cent (Chart 33). For most of the crops, the rate of increase has been higher than the increase during the previous year, in line with the increase in cost of production.

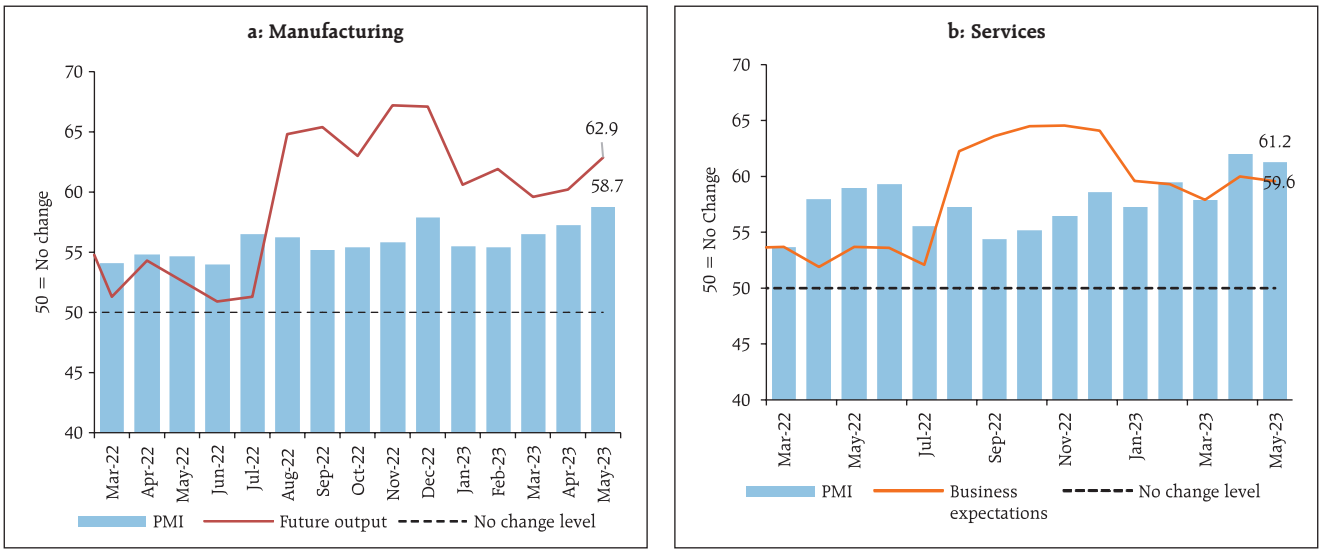
The headline PMI for the manufacturing sector accelerated to 58.7 in May 2023, the highest since October 2020, led by output, new orders, and stocks. Business expectations in the manufacturing sector also expanded to a five month-high of 62.9 (Chart 34a). The PMI services remained robust at 61.2 in May 2023, the second highest in 13 years, led by

Chart 33: Change in MSP for *Kharif* Crops



Sources: PIB; and RBI staff estimates.

Chart 34: Purchasing Managers' Index (PMI)



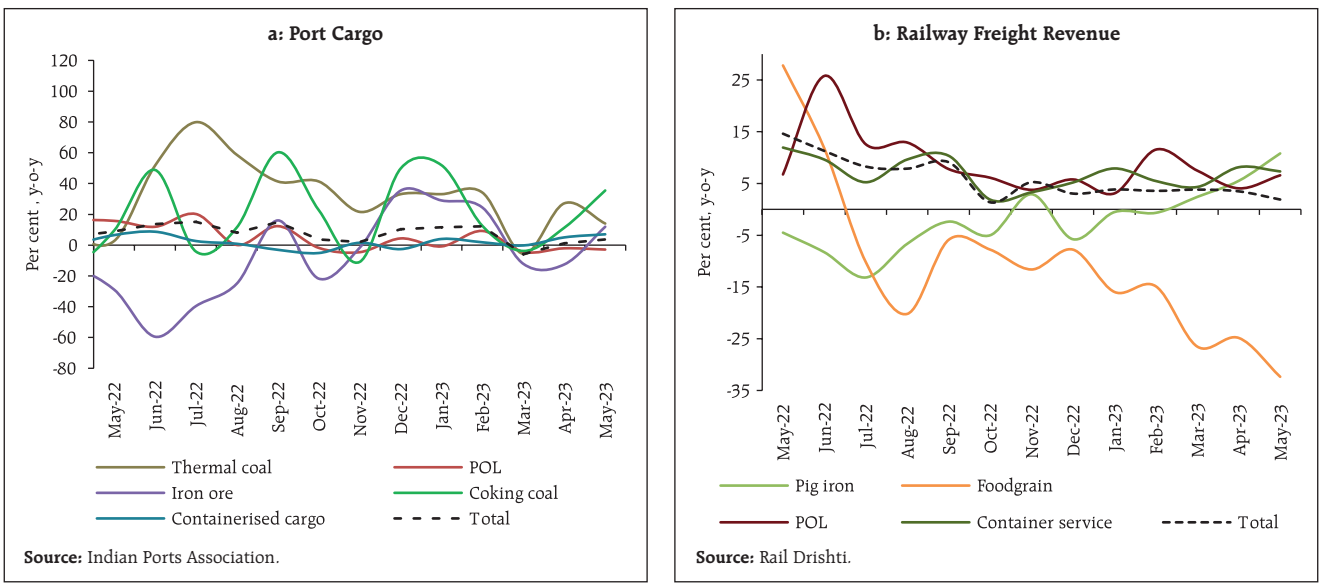
Sources: S&P Global.

a pick-up in new business growth and favourable market conditions (Chart 34b).

In the services sector, transport indicators recorded a marginal uptick in May. Growth in cargo traffic at major ports increased by 3.7 per cent, led by a rise in containerised cargo and coking coal (Chart 35a). Growth in railway freight, however, decelerated to a seven-month low in May, driven by a fall in freight of coal to thermal power houses (Chart 35b).

Coincident indicators for the construction sector suggested robust activity in the sector. While steel consumption grew by 7.8 per cent in May (y-o-y), cement production recorded a double digit growth in April 2023 (Chart 36).

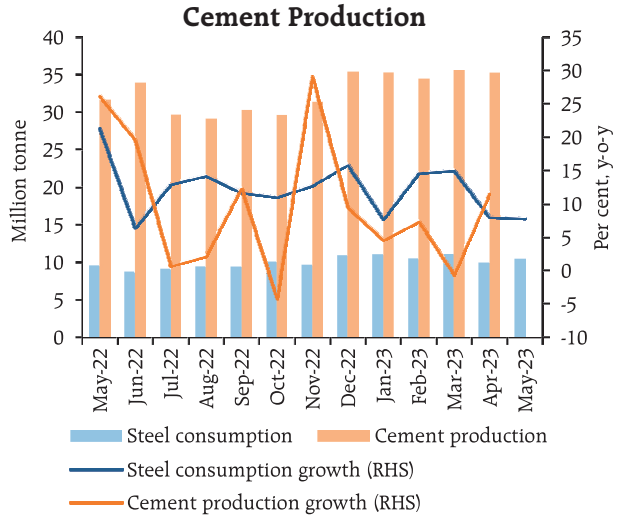
Chart 35: Railway and Port Cargo Traffic



Source: Indian Ports Association.

Source: Rail Drishti.

Chart 36: Steel Consumption and Cement Production



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

High-frequency services sector indicators for May 2023 also point to economic activity sustaining pace. Automobile sales recorded robust growth with acceleration in both two and three wheelers' sales. (Table 4).

In terms of regional policy initiatives, Odisha has launched. "Mo Ghara" scheme to provide financial support to low-income rural households to construct pucca houses. To ensure a safe working environment for inter-state migrant workers, Tamil Nadu has formed an inter-state coordination cell to build confidence and sort out issues related to migrant labourers. The North East Frontier Railway (NFR) authority has operationalised 107 One Station One Product (OSOP) outlets under its jurisdiction to promote the Government of India's vision of "Vocal for Local" to encourage local/ indigenous products and provide additional income opportunities for the marginalised sections of society.

Table 4: High Frequency Indicators – Services

Growth (y-o-y, per cent)

Sector	Indicator	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23
Urban Demand	Passenger Vehicles Sales	28.1	7.2	17.2	11.0	4.5	12.9	14.9
Rural Demand	Two Wheeler Sales	17.7	3.9	5.0	7.6	7.7	15.1	17.4
	Three Wheeler Sales	103.2	37.6	103.0	86.1	69.2	104.2	70.4
	Tractor Sales	6.5	25.6	24.4	20.0	13.7	-11.1	1.2
Trade, hotels, transport, communication	Commercial Vehicles Sales	11.5		7.1				
	Railway Freight Traffic	5.2	3.1	3.8	3.6	3.8	3.5	1.9
	Port Cargo Traffic	1.8	10.3	12.2	12.0		1.3	3.7
	Domestic Air Cargo Traffic	0.1	0.5	-7.5	0.0	-4.4	-1.7	
	International Air Cargo Traffic	1.5	-10.7	-4.3	-8.1	0.8	-3.0	
	Domestic Air Passenger Traffic	14.7	19.5	95.3	50.2	22.9	23.2	
	International Air Passenger Traffic	101.7	91.6	115.1	98.0	62.4	43.9	
	GST E-way Bills (Total)	32.0	17.5	19.7	18.4	16.3	12.2	19.7
	GST E-way Bills (Intra State)	37.7	23.2	24.1	22.2	20.7	16.2	23.0
	GST E-way Bills (Inter State)	23.1	8.6	12.8	12.4	9.3	5.9	14.3
	Tourist Arrivals	191.3	204.2	330.8	259.4	132.5		
Construction	Steel Consumption	12.8	15.9	7.7	14.6	15.0	8.0	7.8
	Cement Production	29.1	9.5	4.6	7.4	-0.6	11.6	
PMI#	Services	56.4	58.5	57.2	59.4	57.8	62.0	61.2

Note: #: Data in levels.
Sources: CMIE; CEIC data; IHS Markit; SIAM; Airports Authority of India; and Joint Plant Committee.

Inflation

Headline inflation, as measured by y-o-y changes in all-India consumer price index (CPI)[18], moderated to 4.3 per cent in May 2023 from 4.7 per cent in April. The fall in headline inflation was driven by food and fuel sub-components while core (excluding food and fuel) inflation remained steady (Chart 37).

The momentum (m-o-m change in prices in current year) of around 50 bps was more than offset by a favourable base effect (m-o-m change in prices a year ago) of around 90 bps, resulting in a 40 bps fall in headline inflation between April and May. The m-o-m increase in prices was of the order of around 60 bps in food, 55 bps in fuel, and around 40 bps in core groups.

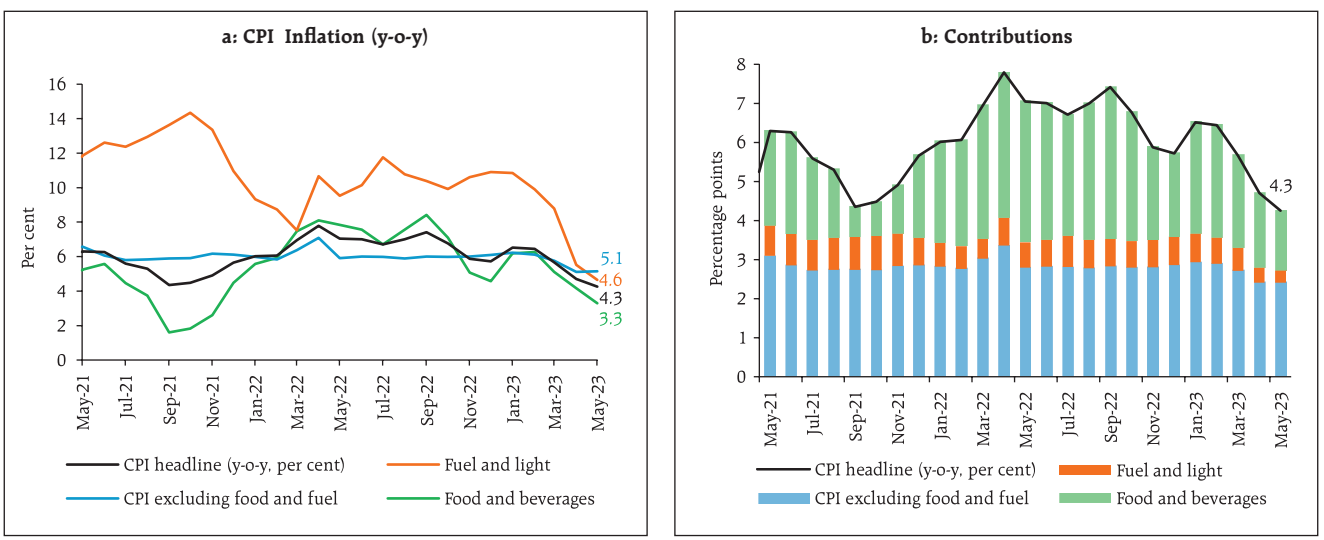
CPI food inflation (y-o-y) moderated sharply to 3.3 per cent in May from 4.2 per cent in April on account of a large favourable base effect of around 145 bps, which more than offset a positive price momentum of around 55 bps. In terms of sub-groups, inflation moderated in cereals, fruits, non-alcoholic beverages and prepared meals. Edible oils, meat and fish and vegetables remained in deflation while inflation in milk, eggs, sugar, spices and pulses edged up in May.

Inflation in the fuel and light group declined to 4.6 per cent in May from 5.5 per cent in April as a large favourable base effect of 140 bps more than offset the positive momentum (55 bps). Within the group, inflation in LPG, firewood and chips prices continued to witness further moderation. Electricity price inflation, on the other hand, edged up in May.

Core inflation remained unchanged at 5.1 per cent in May as the momentum of 40 bps was completely offset by the base effect. Within this category, sub-groups such as housing, clothing and footwear, household goods and services, health, transport and communication and education witnessed further deceleration in inflation. Inflation in pan, tobacco and intoxicants, and personal care and effects, however, registered in uptick in May (Chart 38 and 39).

In terms of regional distribution, rural inflation at 4.17 per cent was marginally lower than urban inflation (4.27 per cent) in May 2023. Majority of the

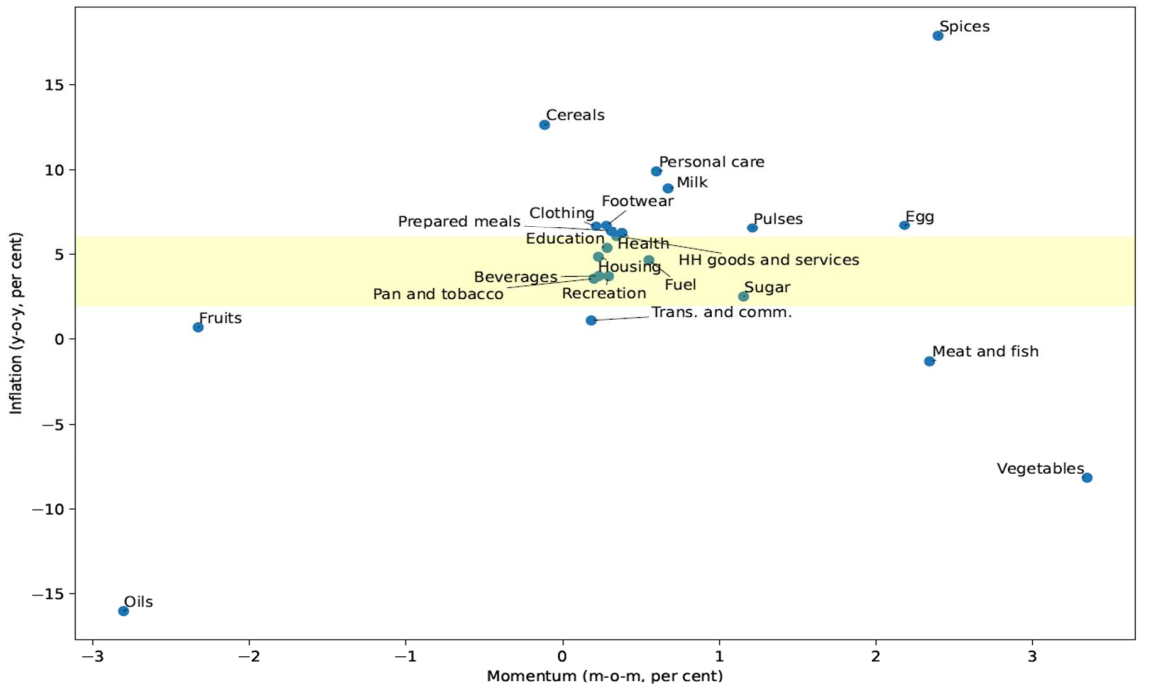
Chart 37: Trends and Drivers of CPI Inflation



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

[18] As per the provisional data released by the National Statistical Office (NSO) on June 12, 2023.

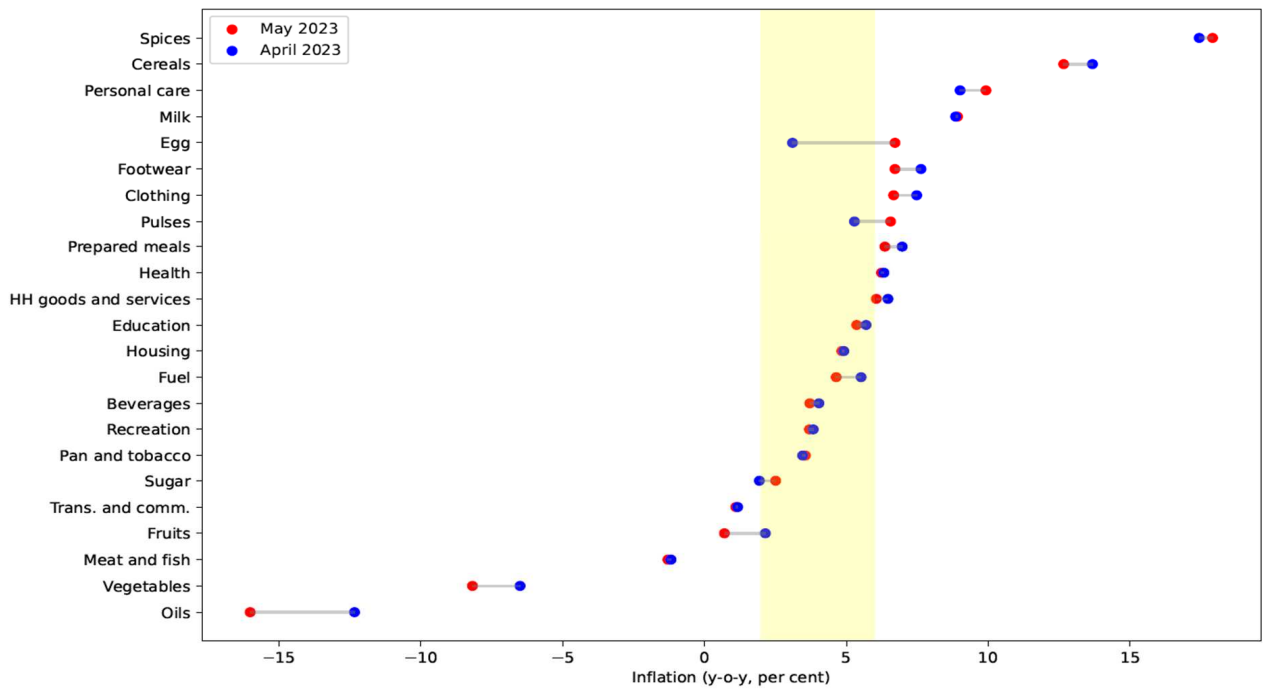
Chart 38: Annual Inflation (y-o-y) and Momentum (m-o-m) across Sub-groups



Sources: NSO; and RBI staff estimates.

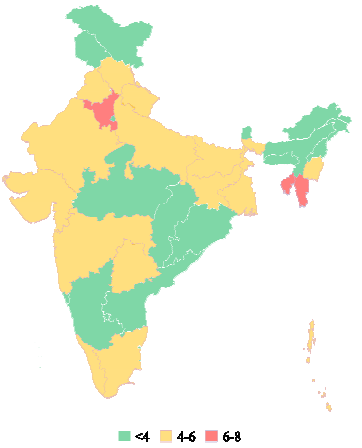
States registered inflation in the range of 4-6 per cent with only a few States, *viz.*, Haryana, Mizoram and Tripura experiencing inflation between 6 to 8 per cent (Chart 40).

Chart 39: Annual Inflation across Sub-groups (May 2023 *versus* April 2023)



Sources: NSO; and RBI staff estimates.

Chart 40: Spatial Distribution of Inflation May 2023 (CPI – Combined, y-o-y)



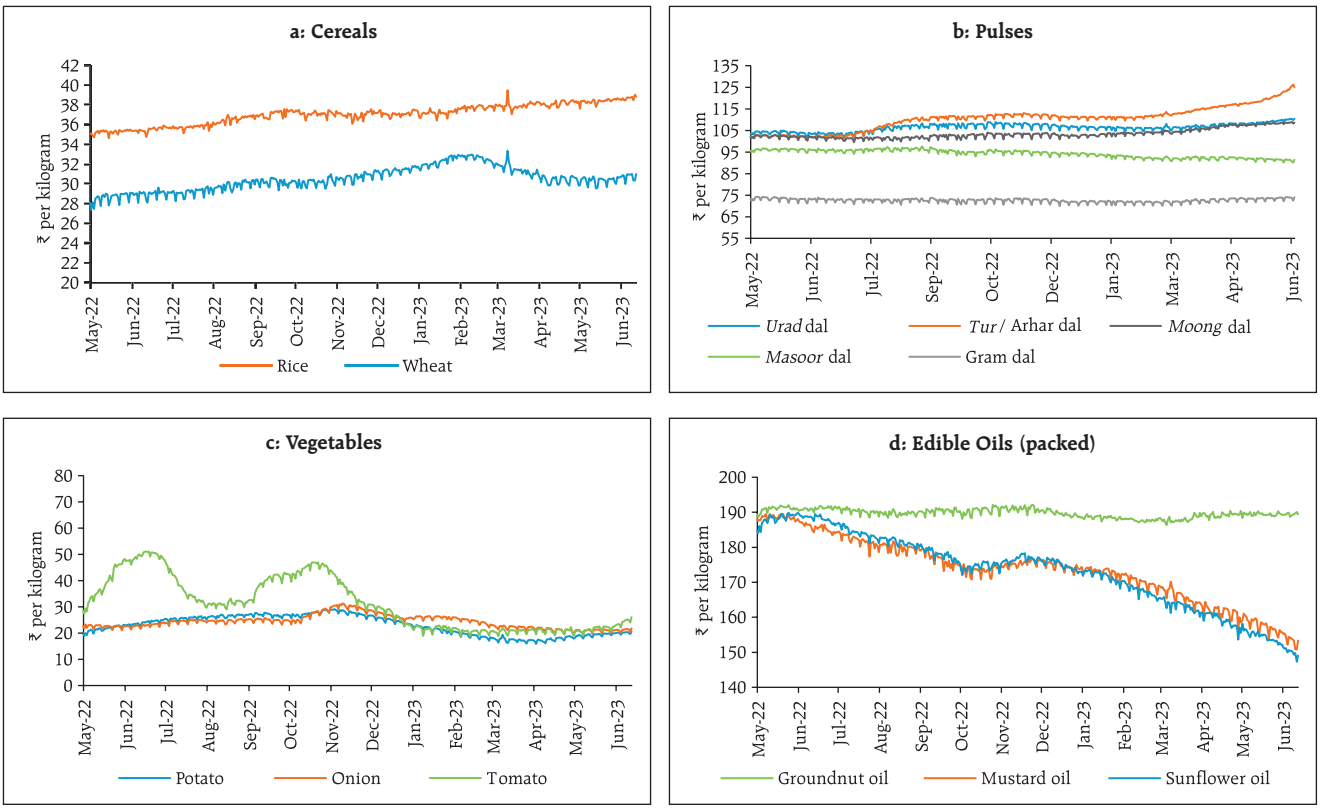
Note: 1. According to MOSPI, prices have not been received from Manipur for May due to administrative reasons. Hence, prices of April 2023 have been used for the analysis of Manipur.
2. Map is for illustrative purposes only.
Sources: NSO; and RBI staff estimates.

High frequency food prices data for June (June 1-12) point to an increase in prices of cereals, most of the pulses and key vegetables (potatoes, onions and tomatoes). Edible oil prices, however, witness a moderation (Chart 41).

Retail selling prices of petrol and diesel in the four major metros remained steady in June so far. While kerosene prices experienced a continued decline, LPG prices were kept unchanged in June (Table 5).

Input costs prices measured by the wholesale price index (WPI) for industrial inputs and farm inputs, recorded deflation in May 2023, reflecting favourable base effects as well as a fall in prices (Chart 42). The decline in industrial inputs prices primarily reflected moderation in prices of non-food articles, high speed diesel (HSD) and electricity while farm inputs moderated on the back of the fall in prices of fodder, pesticides, HSD and electricity.

Chart 41: DCA Essential Commodity Prices



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

Table 5: Petroleum Products Prices

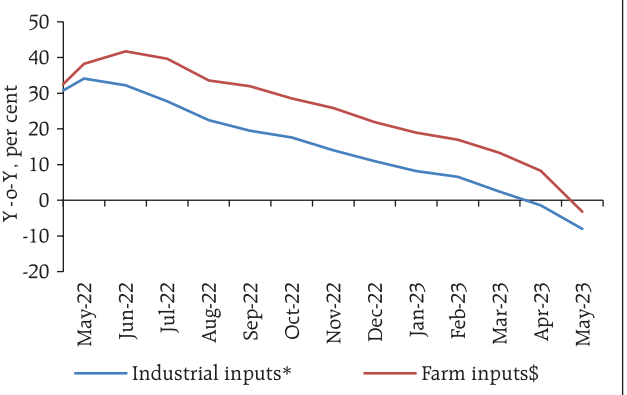
Item	Unit	Domestic Prices			Month-over-month (per cent)	
		May-22	Apr-23	May-23^	Apr-23	May-23^
Petrol	₹/litre	104.18	102.92	102.92	0.0	0.0
Diesel	₹/litre	93.48	92.72	92.72	0.0	0.0
Kerosene (subsidised)	₹/litre	61.99	47.55	44.12	-3.3	-7.2
LPG (non-subsidised)	₹/cylinder	1013.25	1113.25	1113.25	0.0	0.0

^ : For the period June 1-12, 2023.

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.

Chart 42: Input Costs



Note: * Comprising primary non-food articles, minerals, coal, aviation turbine fuel, high speed diesel, naphtha, bitumen, furnace oil, lube oil, petroleum, coke, electricity, cotton yarn and paper & pulp from WPI.

$ Comprising high speed diesel, fodder, electricity, fertilisers, pesticides and agricultural & forestry machinery from WPI.

Sources: Office of the Economic Adviser, Department for Promotion of Industry and Internal Trade and, RBI staff estimates.

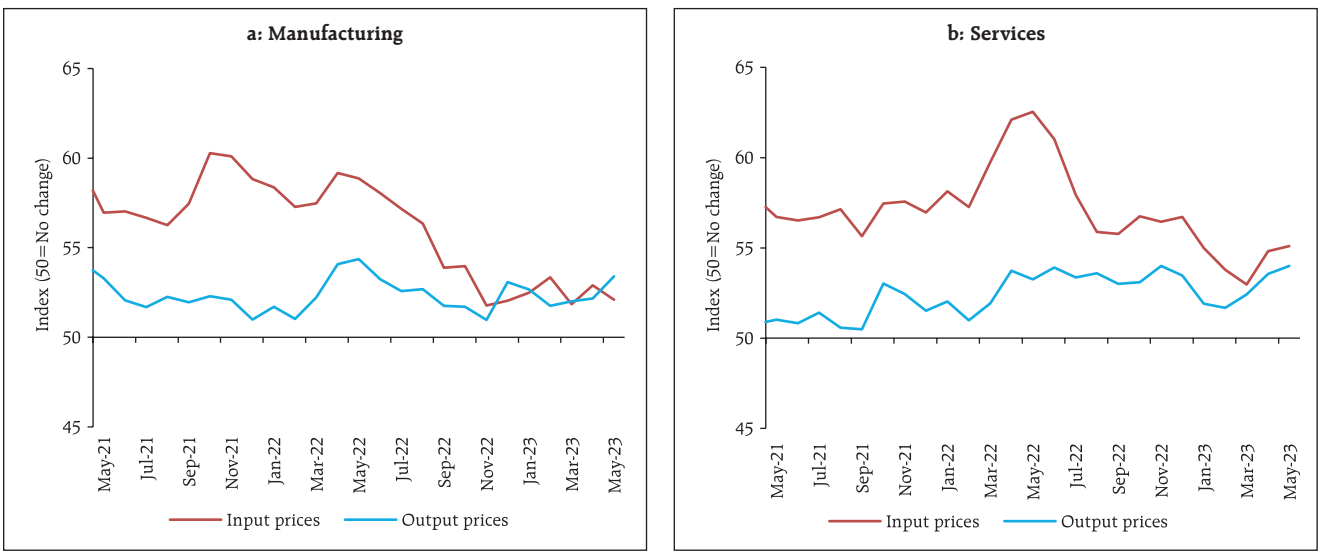
The PMIs for May 2023 indicated a moderation in input costs across the manufacturing sector while they increased for the services sector. Selling prices, however, edged up further for both manufacturing and services (Chart 43).

In the housing sector, the all India house price index (HPI) increased by 4.6 per cent y-o-y in Q4:2022-23 recording its highest increase over the last seventeen quarters (Chart 44). On a sequential (q-o-q) basis, HPI increased by 0.6 per cent during Q4.

IV. Financial Conditions

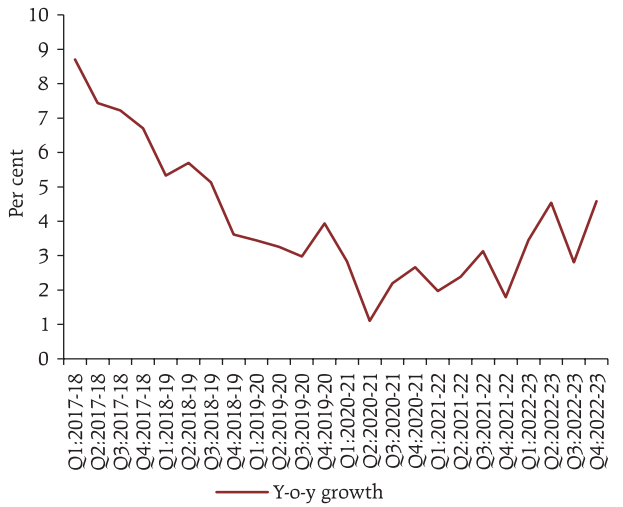
Surplus liquidity, as reflected in average daily absorptions under the LAF at ₹1.8 lakh crore during May 16 to June 15, 2023 was higher than ₹1.3 lakh crore during April 16 to May 15. After remaining tight

Chart 43: PMI: Input and Output Prices



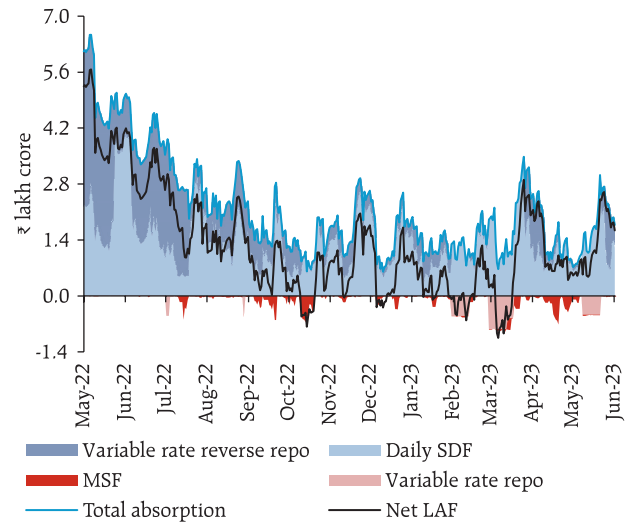
Source: PMI Markit.

Chart 44: House Price Index



Note: Data for Q4: 2022-23 is provisional.
Sources: House prices data from registration authorities of State governments; and RBI staff estimates.

Chart 45: Liquidity Operations



Source: RBI.

for a few days during the second fortnight of May 2023, liquidity conditions improved subsequently in the wake of (i) the return of currency to the banking system — from both the withdrawal of ₹2,000 banknotes from circulation, and an accelerated pace of Government spending before the onset of the monsoon season; and (ii) the Reserve Bank's market operations.

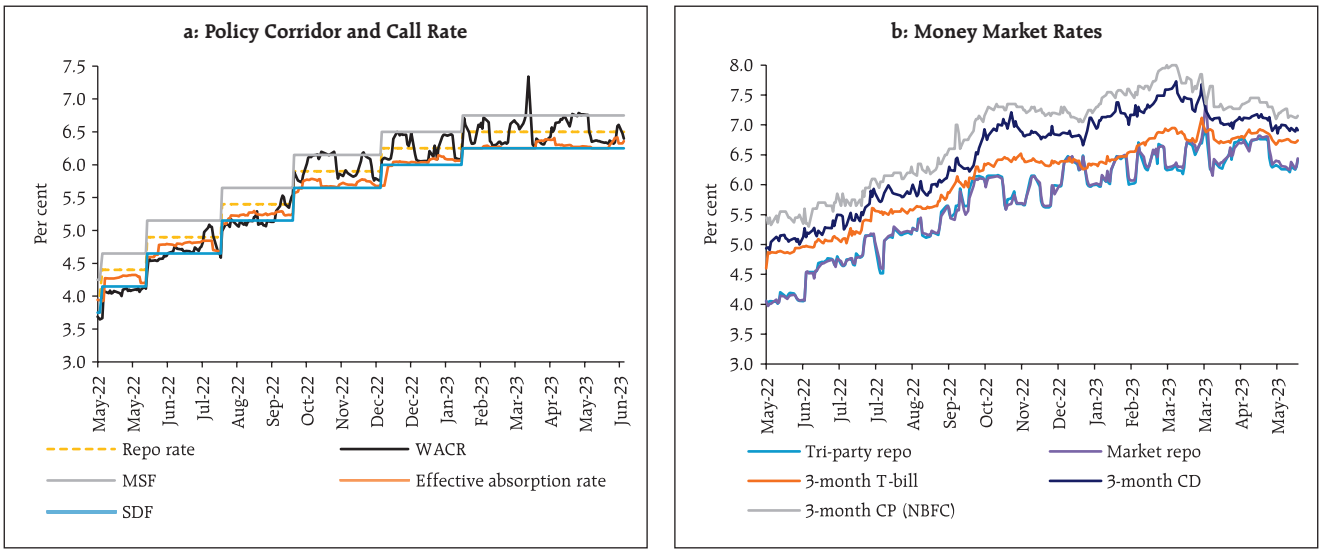
The Reserve Bank remained prompt and agile in conducting two-way liquidity management operations in response to the evolving liquidity scenario during May 16-June 15, 2023. To assuage the liquidity tightness in the middle of May, the Reserve Bank conducted a 14-day variable rate repo (VRR) auction (main operation) to inject liquidity amounting to ₹50,000 crore on May 19, 2023. Subsequently, however, with an improvement in liquidity conditions, a 14-day variable rate reverse repo (VRRR) auction (main operation) of ₹2.0 lakh crore was conducted on June 2 to absorb liquidity, followed by five fine tuning operations – (i) a 4-day VRRR of ₹1.0 lakh crore on June 5; (ii) a 3-day VRRR of ₹0.75 lakh crore on June 6; (iii) a 2-day VRRR of ₹0.75 lakh crore on June 7, 2023; (iv) a 4-day VRRR of ₹1.0 lakh crore on June 9 and (v) a 2-day VRRR of ₹0.50 lakh crore on June 13.

The placement of funds under the standing deposit facility (SDF) increased to ₹1.4 lakh crore during May 16 to June 15, 2023 from ₹0.95 lakh crore during the previous period (April 16 to May 15, 2023). Recourse to the marginal standing facility (MSF) declined, averaging ₹0.02 lakh crore during this period from ₹0.22 lakh crore during the previous period. Consequently, net absorption under the LAF stood higher at ₹1.45 lakh crore during May 16 to June 15, 2023 as compared with ₹0.92 lakh crore during April 16 to May 15, 2023 (Chart 45).

Reflecting the augmented surplus liquidity, the weighted average call rate (WACR) gradually softened to below repo rate levels. In sync, other overnight money market rates also eased. On an average basis, the WACR, the triparty repo and market repo rates traded 7 basis points (bps), 14 bps and 10 bps, respectively, below the policy repo rate during May 16 to June 15, 2023 (Chart 46a).

Across the term money segment, yields softened on 3-month certificates of deposit (CDs) issued by

Chart 46: Policy Corridor and Money Market Rates



Sources: RBI; Bloomberg; and RBI staff estimates.

banks and commercial papers (CPs) issued by non-banking financial companies (NBFCs), although both remained above the upper band of the corridor, while the yield on 3-month treasury bills (T-bills) was broadly aligned with the MSF rate (Chart 46b). In the primary market, fund mobilisation through issuances of CDs at ₹0.95 lakh crore during 2023-24 (up to June 2) was higher than ₹0.79 lakh crore in the corresponding period of the previous year. On the other hand, CP issuances at ₹2.3 lakh crore (up to May 31) remained flat as compared with the corresponding period a year ago.

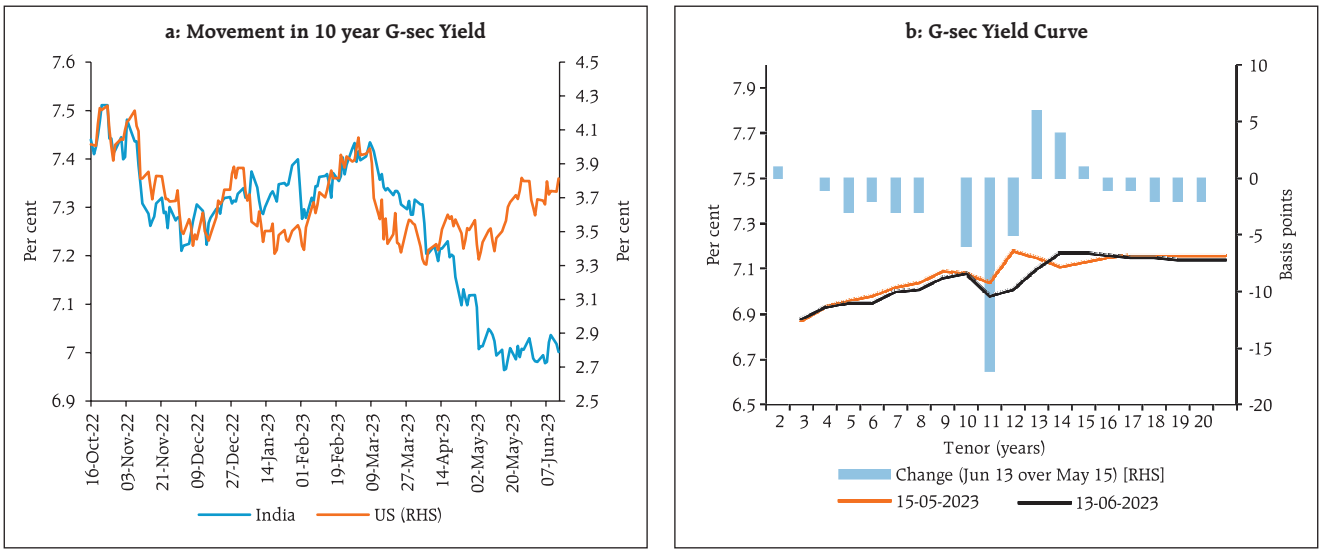
Yields on Government securities (G-secs) hardened marginally across the curve on June 8 and the 10 year benchmark (7.26 per cent GS 2033) yield closed at 7.02 per cent on that day, increasing by 4 bps 6.98 per cent from previous day as the Monetary Policy Committee (MPC)'s focus on aligning inflation with the target of 4 per cent was perceived by the market participants to be hawkish. Subsequently, yields eased somewhat, following the decline in CPI inflation to a 25-month low of 4.3 per cent.

Overall, bond yields largely traded in a narrow range, with the yield on the 10-year benchmark Government security (G-sec) closing at 7.0 per cent on June 13, 2023 unchanged from its level on May 15 (Chart 47a). Across the curve, yields generally eased, particularly at the mid-segment of the curve (Chart 47b). Despite the large Government borrowing programme, the relative stability of long-term yields augurs well for the economy and suggests effective anchoring of market inflation expectations. It also suggests that financial conditions, despite the unchanged stance of withdrawal of accommodation, remain congenial and supportive of growth.

Corporate bond yields, too, softened during May 16, 2023 to June 15, 2023. Average risk premia in the bond market (5-year AAA *minus* 5 year G-sec) were largely unchanged during the same period (Table 6). Funds mobilised through corporate bond issuances amounted to ₹0.53 lakh crore during April 2023, significantly higher than ₹0.16 lakh crore for the same period in the preceding year.

Reserve money (RM), excluding the first-round impact of change in the cash reserve ratio (CRR), grew by 6.8 per cent on a y-o-y basis as on June 9, 2023 (8.3

Chart 47: Developments in the G-sec Market



Sources: Bloomberg; CCIL; and RBI staff estimates.

per cent a year ago) [Chart 48]. Currency in circulation, the largest component of RM, decelerated to 5.3 per cent from 8.3 per cent a year ago, reflecting both the exchange of ₹2,000 bank notes beginning May 19, 2023 and ongoing adoption of digital modes of payment.

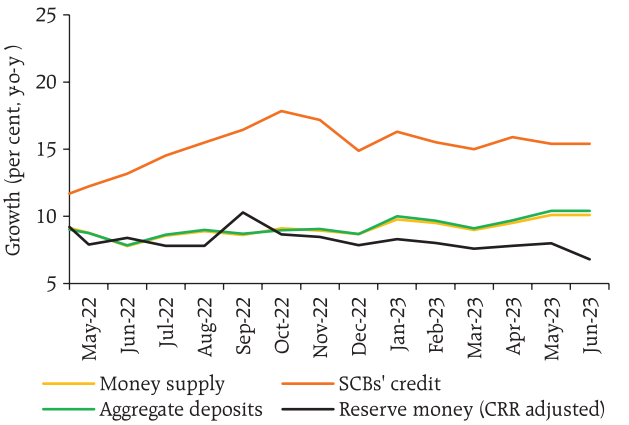
As on June 2, 2023 money supply (M_3) growth was higher at 10.5 per cent (y-o-y) than 8.6 per cent in the corresponding period of last year, primarily driven by its largest component - aggregate deposits with banks, which increased by 11.2 per cent (8.8 per cent a year ago). Scheduled commercial banks' (SCBs') credit moderated to 15.4 per cent (y-o-y) from the peak

Table 6: Financial Markets - Rates and Spread

Instrument	Interest Rates (per cent)			Spread (basis points) (Over Corresponding Risk-free Rate)		
	Apr 17, 2023 – May 15, 2023	May 16, 2023 – Jun 15, 2023	Variation (in bps)	Apr 17, 2023 – May 15, 2023	May 16, 2023 – Jun 15, 2023	Variation (in bps)
1	2	3	(4 = 3-2)	5	6	(7 = 6-5)
Corporate Bonds						
(i) AAA (1-year)	7.71	7.65	-6	60	64	4
(ii) AAA (3-year)	7.81	7.73	-8	73	72	-1
(iii) AAA (5-year)	7.73	7.66	-7	61	60	-1
(iv) AA (3-year)	8.51	8.36	-15	143	133	-10
(v) BBB-(3-year)	12.16	12.07	-9	508	505	-3

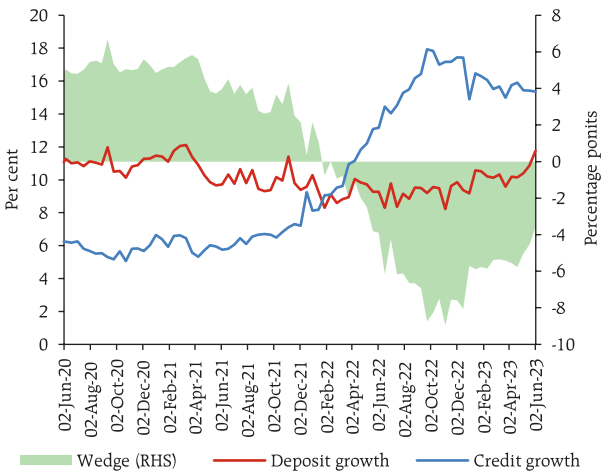
Note: Yields and spreads are computed as monthly averages.
Sources: FIMMDA; and Bloomberg.

Chart 48: 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 June 9, 2023 and money supply pertain to June 2, 2023.
Source: RBI.

Chart 49: SCBs' Aggregate Deposits and Credit Growth - Wedge



Note: Latest data pertain to June 02, 2023.
Source: RBI.

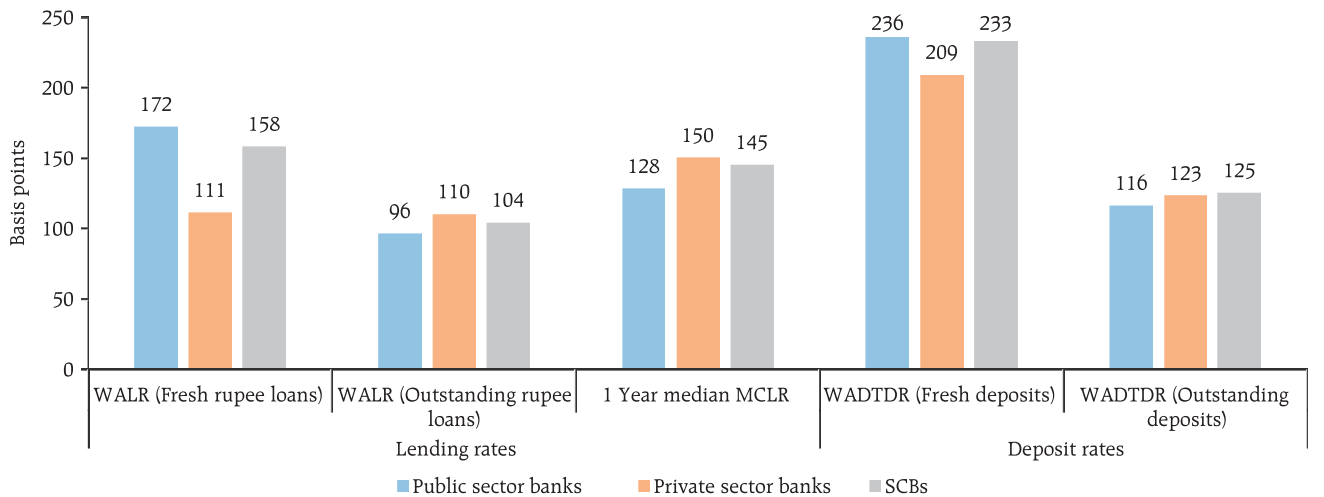
of 17.8 per cent recorded in October 2022 due to an unfavourable base effect and moderation in credit growth to industry. Furthermore, the wedge between the growth rates of SCBs' credit and deposit narrowed, with the growth in deposit mobilisation recording a 27-month high of 11.8 per cent amidst continuing efforts by SCBs to bridge the funding gap (Chart 49).

In response to the Reserve Bank's repo rate hike of 250 bps since May 2022, banks have revised their benchmarks for pricing of loans —the external benchmark-based lending rate (EBLR) and the marginal cost of funds-based lending rate (MCLR) — upwards. Accordingly, during May 2022 to April 2023, banks have cumulatively increased their EBLRs and their 1-year median MCLR by 250 bps and 145 bps, respectively. As a result, the weighted average lending rate (WALR) on fresh and outstanding rupee loans increased by 158 bps and 104 bps, respectively.

On the deposit side, the weighted average domestic term deposit rate (WADTDR) on fresh and outstanding deposits increased by 233 bps and 125 bps, respectively (Chart 50). On a m-o-m basis, the WALR on fresh rupee loans and WADTDR on fresh deposits declined by 23 bps and 12 bps, respectively, in April 2023. The increase in the WALRs on fresh rupee loans and WADTDRs on fresh deposits was higher in the case of public sector banks (PSBs) relative to private banks (PVBs).

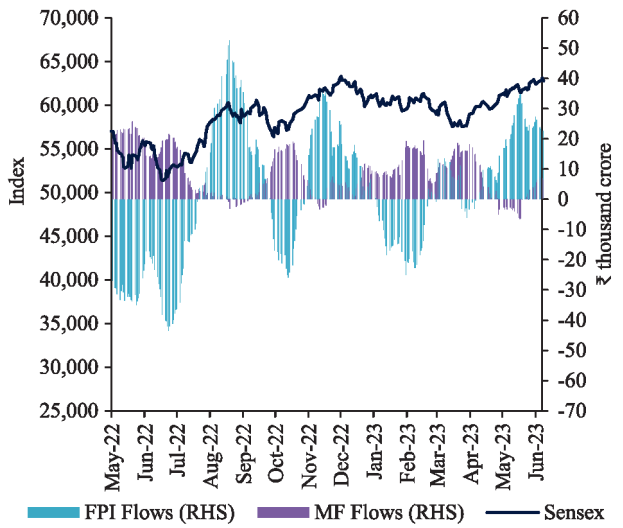
During May-June 2023 so far, the BSE Sensex increased by 3.7 per cent to close at 63,385 on June

Chart 50: Transmission to Lending and Deposit Rates (May 2022 to April 2023)



Note: SCBs include public sector, private sector and foreign banks.
Source: RBI staff estimates.

Chart 51: BSE Sensex and Institutional Flows



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

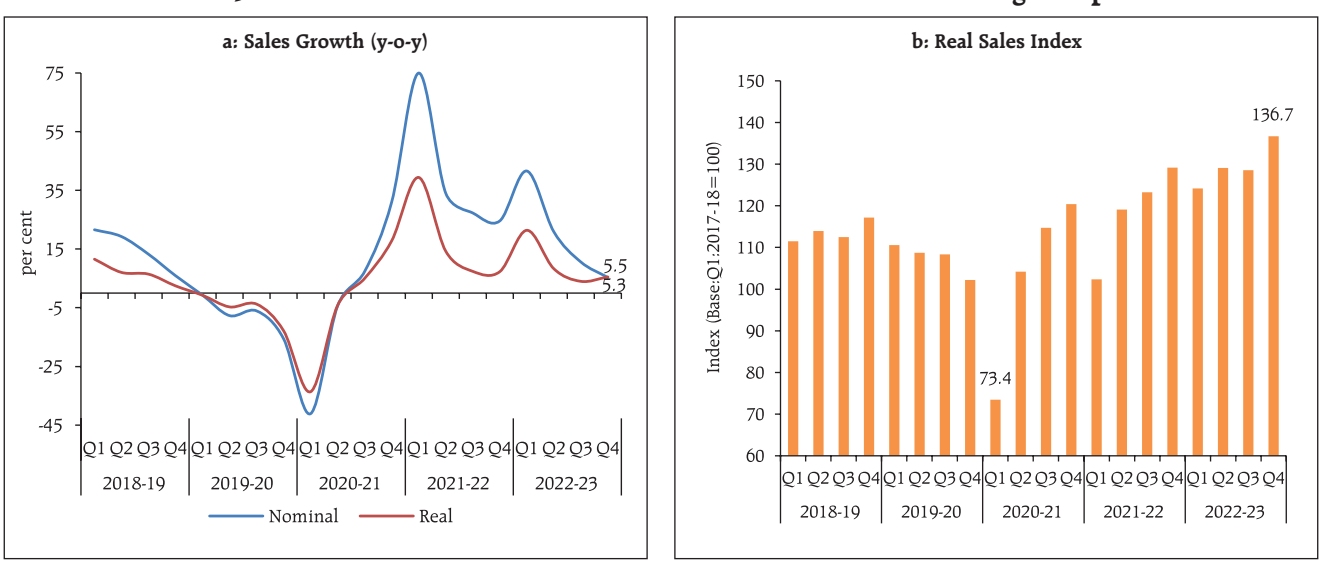
16, at an all-time closing high. (Chart 51). The equity market remained under pressure in the second half of May amidst negative global cues on account of lingering concerns over the US debt ceiling negotiations and lower Chinese industrial production data. The market, however, recovered towards the end of the month amidst substantial net foreign portfolio investors (FPI) inflows – the highest monthly inflow since August 2022.

In the beginning of June 2023, Indian markets registered further gains supported by positive global cues, upbeat domestic manufacturing PMI and elevated GST collections in May 2023 as well as strong GDP growth performance in Q4:2022-23 and the low inflation reading for May.

Amidst gradually normalising price and volume dynamics, nominal sales growth of listed private non-financial manufacturing companies[19] moderated to 5.3 per cent (y-o-y) in Q4:2022-23 from 10.6 per cent in the previous quarter. In real terms, sales, however, increased by 5.5 per cent (y-o-y) in Q4:2022-23 from 4.0 per cent in the previous quarter, with real sales index reaching an all-time high (Chart 52).

The net profit margin of manufacturing companies improved to 10.1 per cent from 7.2 per cent over this period, aided by softening in input costs and rise in other income (Chart 53a). The Information

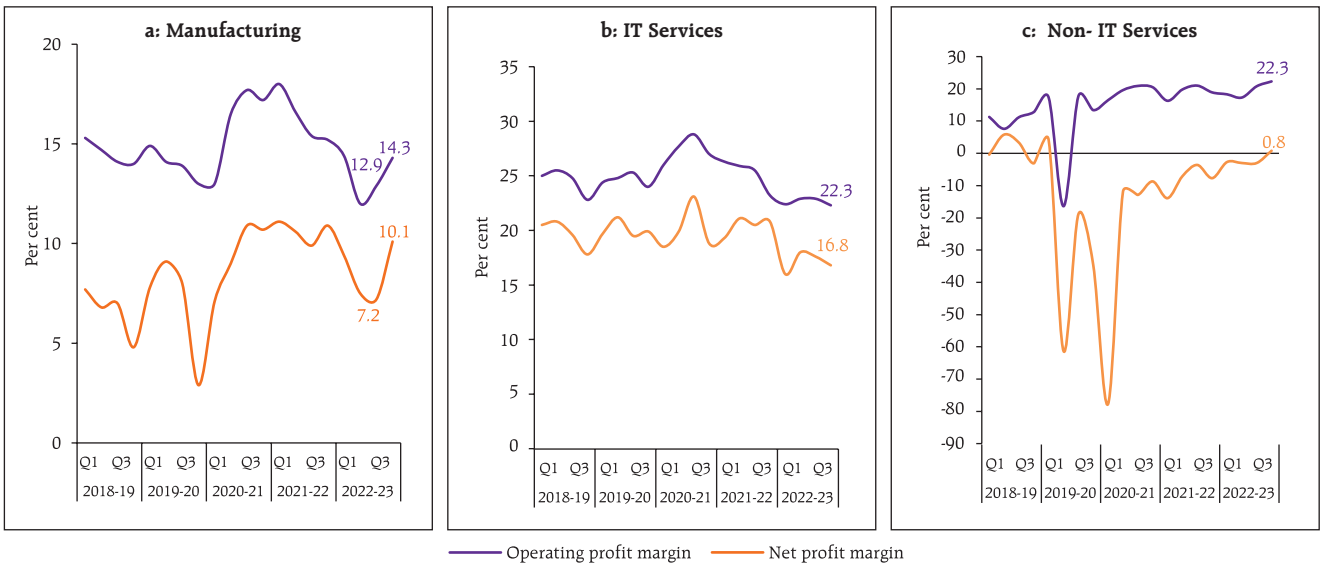
Chart 52: Performance of Listed Private Non-Financial Manufacturing Companies



Sources: Capitaline; and RBI staff calculations.

[19] Based on the quarterly results of 1,709 companies.

Chart 53: Profit Margin of Listed Private Non-Financial Companies



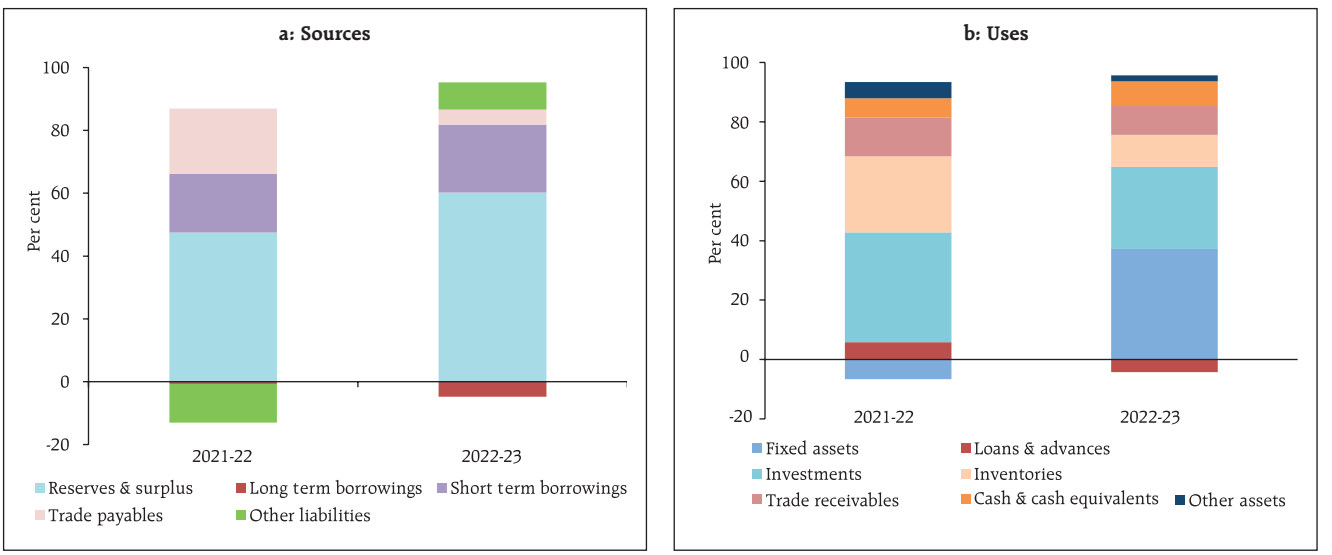
Sources: Capitaline; and RBI staff estimates.

technology (IT) sector's profitability moderated amidst the global slowdown (Charts 53b). Profitability in non-IT services, which was most adversely affected during the pandemic, recovered and net profit margin turned positive in Q4:2022-23 for the first time since the onset of the pandemic (Chart 53c).

Improved profitability helped the private manufacturing sector to make more capital investments during 2022-23. Over 40 per cent of funds were used for fixed asset formation as reported by 1,550 listed manufacturing companies. These companies relied on internal funds/short-term borrowings for funding requirements (Chart 54).

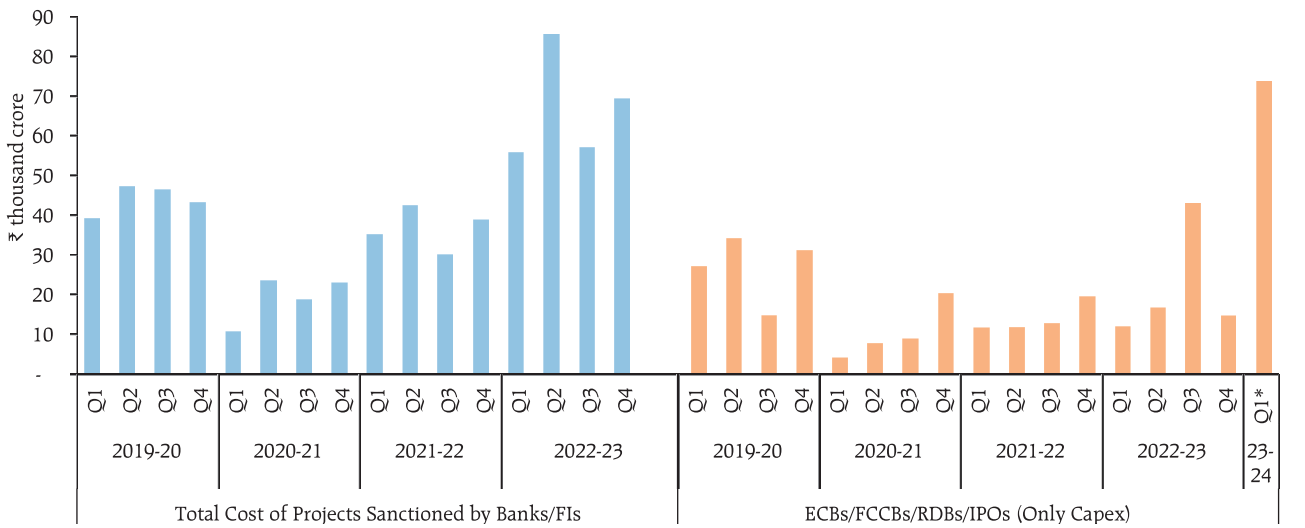
The cost of the projects being supported by banks and financial institutions went up substantially during 2022-23, indicating congenial signs for a pick-up in

Chart 54: Manufacturing Sector: Sources and Uses of Funds



Sources: Capitaline; and RBI staff estimates.

Chart 55: Private Corporate Investment Intentions

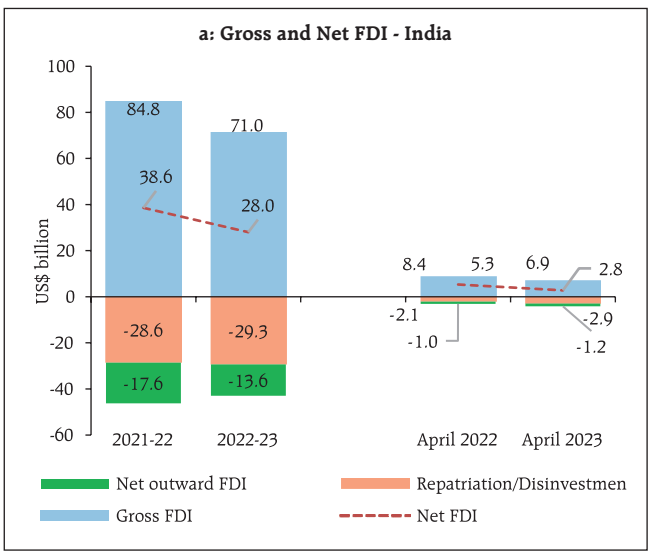


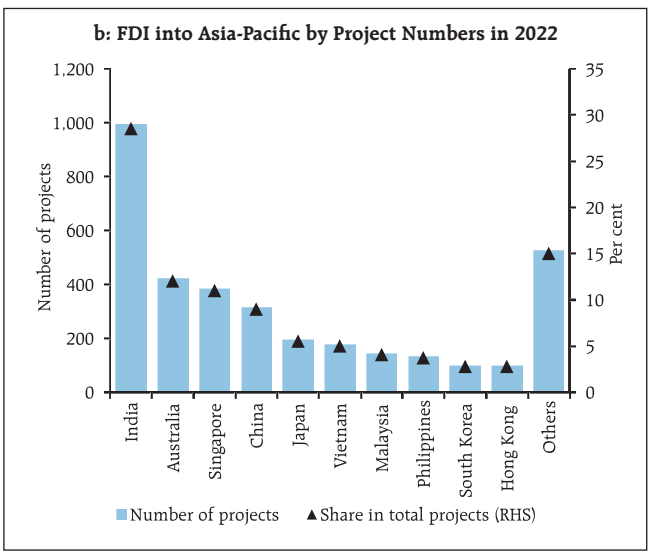
Note: * ECB Data is up to May 22, 2023, Private placement of Debt is up to May 22, 2023 while IPO and FDI equity inflow are up to April-2023
Sources: RBI; SEBI; Banks/FIs; and RBI staff estimates.

the private capex cycle. Funds raised through external commercial borrowings (ECBs) nearly doubled in 2022-23 and have shown a healthy growth during 2023-24 so far (up to May 2023) [Chart 55].

Gross inward foreign direct investment (FDI) flows, *albeit* strong, moderated to US$ 6.9 billion in April 2023, from US$ 8.4 billion in April 2022 (Chart 56a). Net FDI declined to US$ 2.8 billion in April 2023 from US$ 5.3 billion a year ago. Manufacturing, business services and financial services attracted majority of FDI inflows in April 2023, while Singapore, the Netherlands and Mauritius were major source countries for FDI during the month. According to the FDI Report 2023 released by the fDi Intelligence[20],

Chart 56: Foreign Direct Investment Flows into India

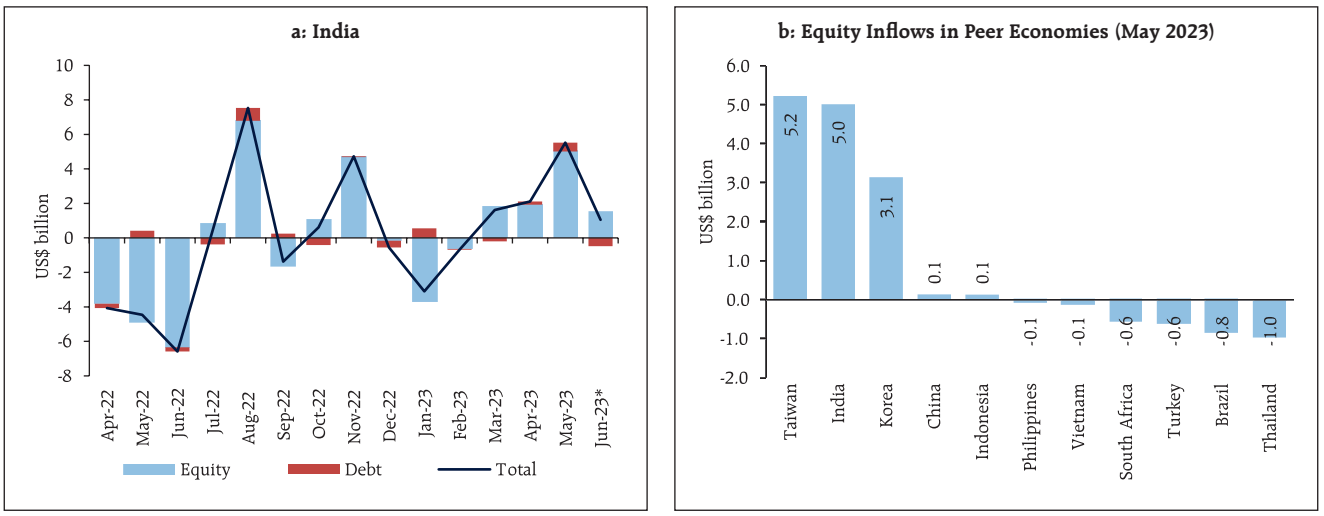




Sources: RBI; and fDi Intelligence.

[20] A specialist division from the Financial Times, that provides a comprehensive offering of services related to foreign direct investment.

Chart 57: Net Portfolio Investments



Note: 1. *: Data for June 2023 is up to June 15, 2023.
2. Debt includes investments under the voluntary retention route and hybrid instruments.
Source: National Securities Depository Limited (NSDL); and Institute of International Finance.

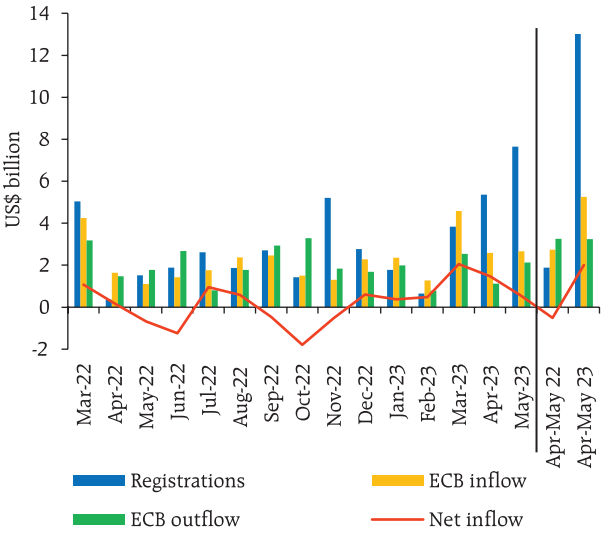
India was the most attractive destination country in the Asia-Pacific region by a significant margin with a total of 994 India-bound projects recorded in 2022 (Chart 56b).

FPI flows at US$ 5.5 billion remained positive for the third consecutive month in May 2023 and at their highest level in the previous nine months (Chart 57a). The equity segment accounted for most of the inflows (US$ 5.0 billion). Relative to comparable emerging market peers, Indian equities attracted the second highest FPI inflows during May 2023 (Chart 57b). Financial services, automobiles and fast-moving consumer goods (FMCGs) attracted the bulk of these investments during May. In June 2023 so far (up to June 16), FPIs invested US$ 1.2 billion in Indian markets, taking net inflows in 2023-24 to US$ 8.8 billion, as against net outflows of US$ 5.9 billion during 2022-23.

India received 48.7 per cent of total emerging markets FPI equity flows in 2023-24 (up to June 14)[21] as against India's weight in MSCI Emerging Market Index of 14.3 per cent (as on May 31, 2023).

With net accretion to all accounts- Non-Resident Ordinary (NRO); Foreign Currency Non-Resident [FCNR(B)] accounts, and Non-Resident (External) Rupee Accounts [NR(E)A] the overall net accretions to non-resident deposits increased to US$ 9.0 billion in 2022-23 from US$ 3.2 billion a year ago.

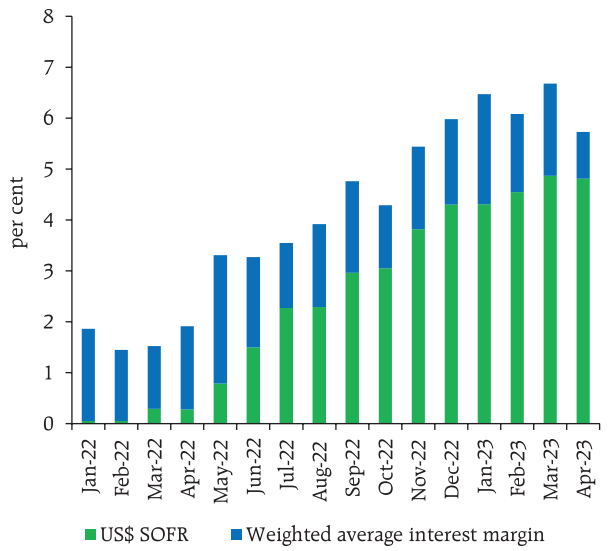
Chart 58: ECB - Registrations, Inflow and Outflow



Source: RBI.

[21] according to the Institute of International Finance.

Chart 59: Overall Cost of ECBs



Source: RBI.

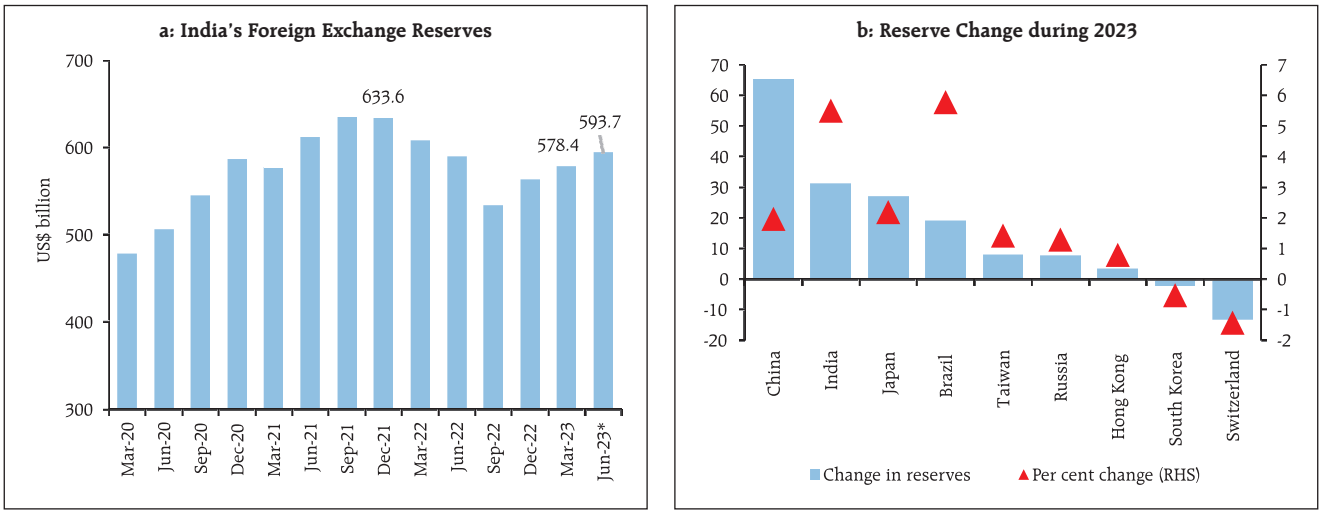
ECB registrations surged to US$ 13.0 billion during April-May 2023 (US$ 1.9 billion in April-May 2022), largely driven by manufacturing and infrastructure borrowers. Also, ECB net flows have turned significantly positive in 2023-24 so far, as against net outflows in the same period last year, and a small positive in 2022-23.

Despite stable global reference rates, the overall cost of ECB loans fell in April 2023 due to the substantial decline in the weighted average interest margin, which reflects the creditworthiness of new borrowers (Chart 59).

The foreign exchange reserves increased by US$ 69.2 billion since October 21, 2022 and stood at US$ 593.7 billion on June 9, 2023 sufficient to cover 10 months of imports projected for 2022-23 or 97 per cent of total external debt outstanding at end-December 2022 (Chart 60a). During the calendar year 2023, India's foreign exchange reserves increased by US$ 31.0 billion, which is the second highest among major foreign exchange reserves holding countries (Chart 60b).

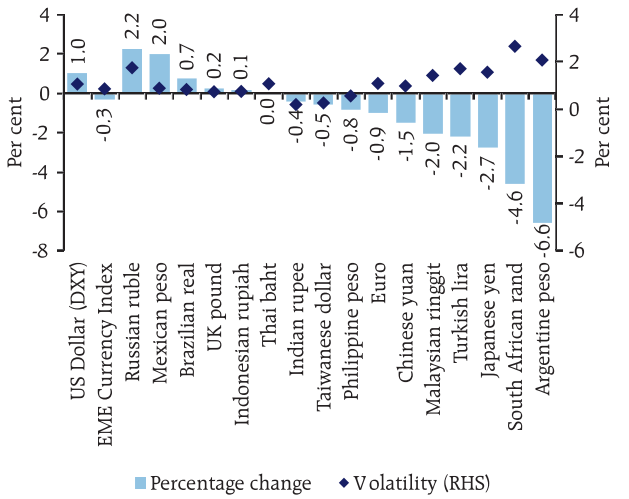
The INR depreciated by 0.4 per cent (m-o-m) *vis-à-vis* the US dollar in May 2023, in line with most EME currencies (Chart 61).

Chart 60: Foreign Exchange Reserves



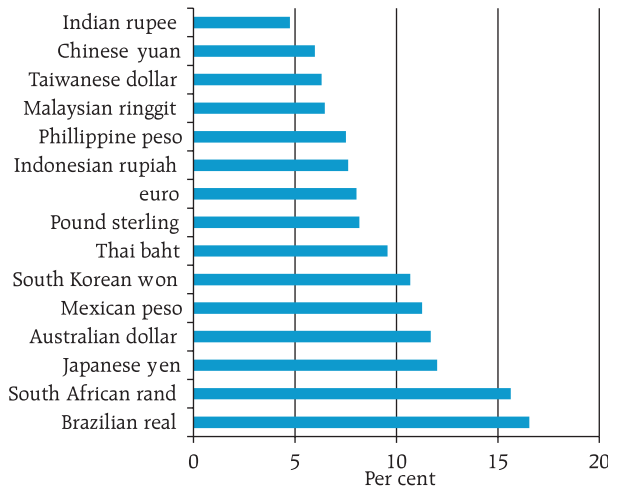
Note: 1. *: Data for June 2023 is up to June 9, 2023.
2. Data for India is for June 9, 2023, and for Hong Kong and Switzerland is for April 2023, and May 2023 for remaining countries.
Source: RBI; and respective central bank websites.

Chart 61: Movements of Indian Rupee and Major Currencies against the US Dollar



Note: Data represent m-o-m change (May 2023 over April 2023).
Sources: FBIL; Thomson Reuters; and RBI staff estimates.

Chart 62: Average 1-month Implied Volatility in 2023



Note: Data is up to June 12, 2023.
Source: Bloomberg.

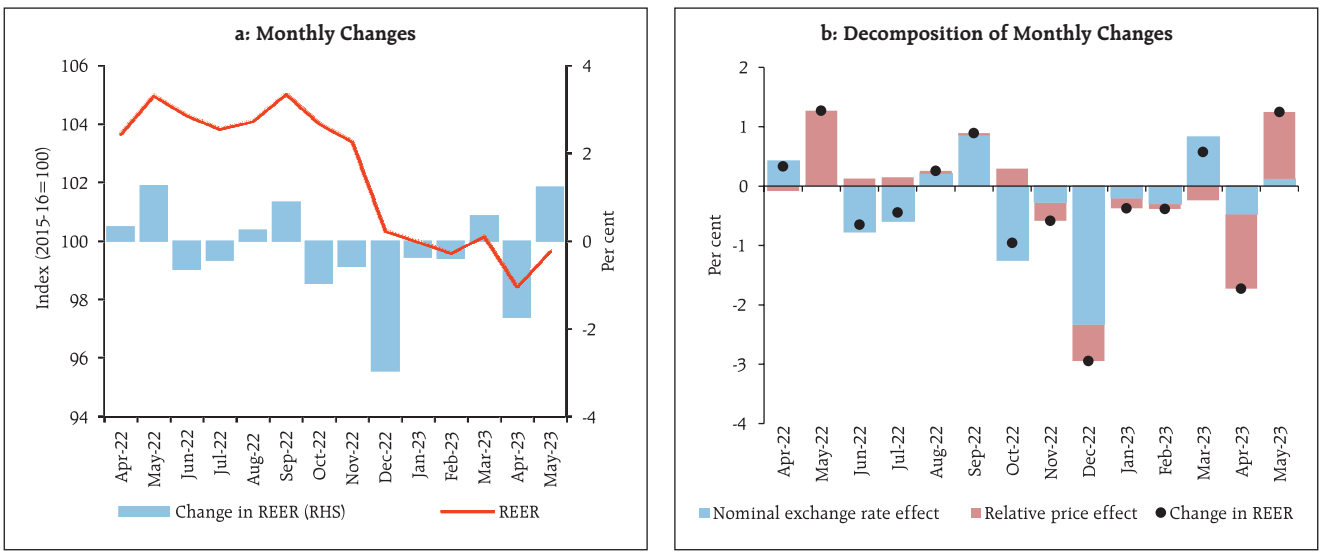
The INR has emerged as one of the least volatile among major currencies, with the least one-month implied volatility in 2023 so far (Chart 62).

The INR appreciated by 1.2 per cent (m-o-m) in terms of the 40-currency real effective exchange rate (REER) in May 2023 (Chart 63).

Payment System

India's progression towards a less-cash economy continued with steady growth across various payment modes in May 2023 (Table 7), supported by online transactions by over 35 crore users.[22] The Unified Payments Interface (UPI) – the mainstay of retail

Chart 63: Movements in the 40-Currency Real Effective Exchange Rate



Source: RBI.

[22] Inc42. 2023. State of the Indian Ecommerce Q2:2023.

Table 7: Growth in Select Payment Systems

(y-o-y in per cent)

Payment System Indicators	Transaction Volume				Transaction Value			
	Apr-22	Apr-23	May-22	May-23	Apr-22	Apr-23	May-22	May-23
RTGS	28.9	3.2	58.7	12.6	26.1	7.0	33.7	15.2
NEFT	30.6	29.1	48.6	28.4	22.1	10.5	40.0	18.8
UPI	111.4	58.7	135.1	58.3	99.2	43.9	112.7	43.2
IMPS	46.0	5.1	73.2	3.5	48.4	17.2	69.9	16.6
NACH	19.0	-3.7	24.9	-14.3	14.3	18.4	14.9	19.5
NETC	61.5	14.9	145.0	17.4	51.9	22.1	105.6	24.3
BBPS	110.9	33.5	109.3	28.4	117.7	51.2	120.5	44.8

Source: RBI.

payments – achieved a milestone of 9.4 billion transactions, with a 143 per cent growth (y-o-y) in successful transactions under the UPI Autopay feature and a 23 per cent rise (y-o-y) in new mandate registrations. Furthermore, person-to-merchant (P2M) payments have gained prominence, comprising 57 per cent of the total transaction volume through the UPI.[23] With the linking of Rupay credit cards to UPI, the share of P2M transactions in value terms is also anticipated to rise, owing to a higher average ticket size of credit card purchases than UPI.[24] The UPI is expected to account for 90 per cent share of retail digital transactions volume in the next five years, up from 75.6 per cent in 2022-23.[25]

While the issuance of new credit cards is projected to exhibit a compound annual growth rate (CAGR) of 21 per cent in the next five years[26], other retail digital payment methods such as the Bharat Bill Payment System (BBPS), the National Electronic Toll Collection (NETC), the National Electronic Funds Transfer (NEFT), and the Immediate Payment Service (IMPS) have demonstrated consistent growth in both transaction volume and value.

The robust growth in payments was reinforced by a rapid scaling up of the payment acceptance infrastructure. The proliferation of UPI quick response (QR) codes (44 per cent y-o-y growth) and point-of-sale (PoS) devices (27 per cent y-o-y growth) continued to provide consumers and merchants with cost-effective and expeditious payment options.[27] Additionally, the number of toll plazas processing more than 90 per cent of transactions in under 2 minutes (through NETC FASTags) increased by 70 per cent, thereby saving on fuel wastage and reducing carbon emissions.

In its Statement on Developmental and Regulatory Policies of June 8, 2023, the Reserve Bank decided to allow the issuance of Rupay prepaid forex cards by banks in India, thereby facilitating their use at ATMs, PoS machines, and online merchants overseas by Indians travelling abroad. It also proposed to expand the scope and reach of e-RUPI vouchers (purpose-specific digital vouchers) and announced streamlining of Bharat Bill Payment System (BBPS) processes and membership criteria. Owing to the policy-supported ecosystem, the momentum in digital transactions is predicted to stay up, with 85 per cent of the businesses being digitally enabled and 50 per cent of the transactions by households being made through digital modes by 2026.[28] Going ahead, digital transactions are expected to get a significant

[23] The share of P2M transactions in the total volume of UPI transactions jumped from 42.8 per cent in May 2022 to 57.0 per cent in May 2023, mainly driven by a rise in transactions valued below ₹500.

[24] Average ticket size of transactions through credit cards (₹4,968) is three times more than UPI (₹1,582) in May 2023.

[25] PwC. May 2023. *The Indian Payments Handbook – 2022-27.*

[26] *Ibid.*

[27] Based on the latest available data, *i.e.*, pertaining to April 2023.

[28] Redseer and Plural. 2023. The Future of Online Payments.

boost with the adoption of the Open Network Digital Commerce (ONDC), which recorded an impressive forty times expansion in the number of merchants onboarded on the platform (from 800 to 35,000)[29], who are servicing more than 25,000 orders per day in around 236 cities.[30]

Conclusion

Amidst the play of these developments, the RBI's monetary policy committee (MPC) met during June 6-8, 2023 in its scheduled second bi-monthly meeting for the year 2023-24. Noting that the target variables – real GDP growth and CPI inflation – have broadly formed in line with projections made at the April meeting, the MPC assessed that while the impulses of growth were getting stronger, headline inflation could rule above the target through 2023-24 although it would decline from its level in 2022-23 when it breached the upper tolerance band and averaged 6.7 per cent. The MPC expressed the view that inflation's trajectory warrants "continuous vigil". While the cumulative rate hike of 250 basis points undertaken so far is transmitting through the economy and should keep inflationary pressures contained, the MPC judged that monetary policy would need to be carefully calibrated with the goal being alignment of inflation with the target. Accordingly, the committee decided to keep the policy repo rate unchanged at 6.50 per cent and committed "to take further monetary actions promptly and appropriately as required".

In this context, the words of Governor Shri Shaktikanta Das are stark and illuminating as regards the future course of monetary policy. In our view, this is the best forward guidance that can be given in these volatile and uncertain times:

"Let me re-emphasise that headline inflation still remains above the target and being within the tolerance band is not enough. Our goal is to achieve the target of 4.0 per cent, going forward… We have made good progress in containing inflation, supporting growth and maintaining financial and external sector stability. Despite three years of global turmoil, India's growth has bounced back and headline CPI inflation is easing. This confluence of factors gives us the confidence that our policies are on the right track. Nevertheless, we need to move towards our primary target of 4 per cent inflation. It is always the last leg of the journey which is the toughest. I wish to emphasise that we will do whatever is necessary to ensure that long-term inflation expectations remain firmly anchored."

The reinforced commitment to aligning inflation with the target has been interpreted as a hawkish pause,[31] while all the boxes have been adjudged to be ticked.[32] Others have opined that the fight against inflation is far from over, justifying the RBI's watchful response while being mindful of the impact of high interest rates on consumption.[33] Indeed, by keeping the policy rate unchanged, monetary policy has been effectively tightened in the near-term in terms of the real policy rate while maintaining a positive real rate four quarters ahead over which monetary policy is expected to work, given its lags. Market-based indicators of inflation expectations and polls of households' views are already reflecting a re-anchoring thereof.

Recent national accounts data and corporate results when read in conjunction clearly show that inflation is slowing down personal consumption

[29] During January-May 2023.

[30] ONDC growth: 40x jump in merchants this year so far; orders peak to 25,000 per day, *Financial Express*, May 11, 2023.

[31] Monetary policy: RBI maintains status quo, turns hawkish on inflation. *Business Standard*, June 8, 2023

[32] All boxes ticked. *Business Standard*, June 8, 2023.

[33] MPC's tightrope walk: Prolonged high rates could have unequal impact. *Business Line*, June 8, 2023

expenditure. This, in turn, is moderating corporate sales and holding back private investment in capacity creation. Bringing down inflation and stabilising inflation expectations will revive consumer spending, boost corporate revenues and profitability, which is the best incentive for private capex. As Governor Shri Shaktikanta Das emphasised, "The best contribution of monetary policy to the economy's ability to realise its potential is by ensuring price stability". Flexible inflation targeting is in the final analysis the analogue of a growth preservation and promotion monetary policy framework. It is by no means the single minded pursuit of a single target as the critics would have us believe. It is axiomatic that the path to high but sustainable inclusive growth has to be paved by price stability. Once this is realised, the trade-offs and dilemmas confronting the conduct of monetary policy fade away.

Weather Events and their Impact on Growth and Inflation in India

*by Saurabh Ghosh^ and Kaustubh^*

This study aims to investigate the impact of weather events like El Niño, La Niña, and the Indian Ocean Dipole (IOD) on rainfall and, consequently, on India's growth and inflation dynamics. It finds that contrary to popular belief, El Niño alone does not necessarily lead to scanty rainfall or high food inflation. IOD often interacts with El Niño or La Niña to determine the actual rainfall pattern and the consequent food inflation. Our empirical findings indicate that the relationship between rainfall and inflation is non-linear and depends on several cofactors.

1. Introduction

India's growth and inflation outlook are significantly influenced by the temporal and spatial patterns and distribution of rainfall during the southwest monsoon season, which generally spans from June to September. With the changing rainfall pattern in recent years, along with the increased intensity and frequency of extreme weather events, there have been several studies analysing the impact of rainfall on growth, inflation, and other macroeconomic indicators in India. For instance, Dilip and Kundu (2020) find that deviations in rainfall can affect food inflation; Ghosh *et al.* (2021) observe that cyclones can lead to lower output growth, high inflation, and dampened tourist arrivals in the affected regions; and Beyer *et al.* (2022) suggest that natural disasters like floods can have far-reaching effects on the income and consumption patterns of households, leading to economic disruptions and challenges for individuals and communities.

Taken together, these research findings emphasise the significant role of rainfall and extreme weather events in shaping India's economic landscape. However, studies focusing on understanding the relationship between weather phenomena like rainfall and growth-inflation dynamics have been rather limited. Considering their complex interplay and their overall importance in influencing economic outcomes, we attempt to analyse the influence of El Niño-Southern Oscillation (ENSO) and IOD on Indian agricultural production and inflation.

Following an adage that notes "a picture is worth a thousand words", we consider charts of weather events and relevant macroeconomic variables along with regressions to decipher the impact of weather events on growth-inflation dynamics. The rest of the study is organised as follows: Section 2 deals with extant literature, rainfall forecasts, and actual rainfall. Section 3 reports exploratory data analysis to investigate the relationship between weather events like ENSO and IOD oscillations and rainfall, and the relationship between rainfall and weather events with agricultural growth and inflation. Section 4 deals with regressions to establish the relationship between India's agriculture, rainfall, and inflation. Section 5 concludes with some policy-relevant observations.

2. Relationship between *El Niño* and Rainfall

In this section, we analyse the rainfall forecast by different agencies and compute their deviations from the actual with an aim to shed light on what could be the plausible reasons for such deviations.

2.1 Forecasts and Actual Rainfall

Indian Meteorological Department (IMD) issues various monthly and seasonal forecasts of rainfall for the southwest monsoon season through regular press releases. Private agencies *e.g.*, Skymet started monsoon predictions in the year 2012, and generally it releases

^ The authors are from the Department of Economic and Policy Research. The views are personal and do not represent the views of the Reserve Bank of India. The authors are thankful to Mr. Love Shandilya for his valuable suggestions.

monsoon forecasts around a week before IMD. Rainfall forecasts are expressed as a percentage of Long Period Averages (LPA), which acts as a benchmark. The LPA for a decade is the average seasonal rainfall for the past 50 years. Therefore, the LPA is not constant, rather it is changing for each decade.

Table 1 indicates that the IMD projections are range-bound. Except for the years 2006 (93 per cent of LPA) and 2016 (106 per cent of LPA), IMD has predicted rainfall in the range of 96-101 per cent of LPA. The table also highlights the errors in monsoon forecast from the actual rainfall, which could be because of the interplay of ESNO oscillations with positive or negative IODs. In the following sections, we would take a deep dive into these interplays of weather events.

2.2 Weather Phenomena: *El Niño*, La Niña and IOD

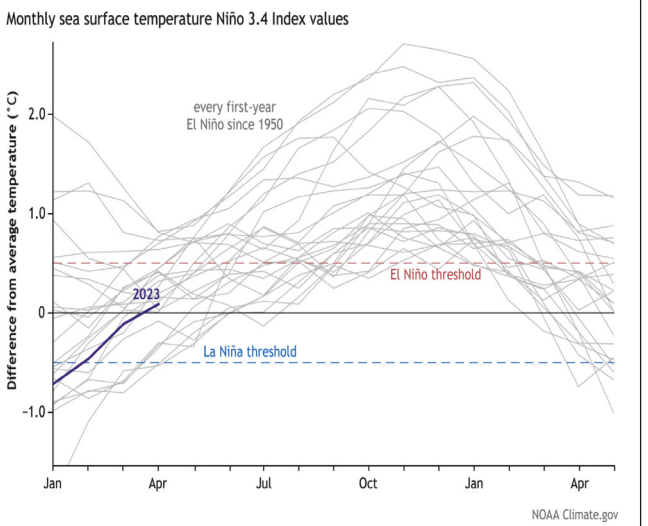
El Niño and *La Niña* are weather phenomena caused by the interaction between the surface of the ocean and the atmosphere in the tropical Pacific. *El Niño* is the phenomenon wherein the water in the eastern Pacific heat up abnormally leading to a reduction and uneven distribution of rainfall in the Indian subcontinent. *La Niña* is the reverse weather phenomenon wherein sea water in the western Pacific get hot and humid, leading to normal or above-normal rainfall in India. *El Niño* or *La Niña* typically starts around end-December, persists for 9 to 12 months, and recurs every 2 to 7 years. It may be mentioned that during 34 per cent of the *El Niño* years, rainfall was normal or above normal. Chart 1 shows the monthly movement in sea surface temperature (compared to the average temperature) of the eastern Pacific for every *El Niño* year since 1950, with a purple line tracing the monthly temperature for the year 2023 which has an upward trajectory on April 2023.

Table 1: Forecast, Actual and Prediction Errors

Years	Forecast (IMD)	Forecast (Skymet)	Actual	Error (IMD)	Error (Skymet)
2012	99	95	92	-7	-3
2013	98	103	105	7	2
2014	95	94	87	-8	-7
2015	93	106	85	-8	-21
2016	106	105	97	-9	-8
2017	96	95	95	-1	0
2018	97	100	91	-6	-9
2019	96	93	110	14	17
2020	100		109	9	
2021	98	103	99	1	5

Unit: Percentage of LPA
Source: https://www.skymetweather.com/content/weather-news-and-analysis/monsoon-forecast-reading-too-much-between-the-lines/

Chart 1: Monthly Movement of Sea Surface Temperature in El Niño Years



Source: climate.gov

Indian Ocean Dipole (IOD), on the other hand, is defined as the difference between the sea surface temperature (SST) of the western and the eastern Indian Ocean. If the temperature in the west is greater than that of the east, it leads to more rainfall in India (Positive IOD) and vice-versa. IOD can either aggravate or weaken the impact of *El Niño* on Indian monsoons. Positive IOD may bring good rains to India despite an adverse *El Niño* condition (Chart 2). It typically recurs after every 3-5 years. Chart 2 (and Annex-Chart A) summarises the interaction of *El Niño/La Niña* and IOD, and indicates the expected outcomes of these weather phenomena on actual rainfall in India. In a way, this is our *Null* hypothesis.

Chart 2: Interaction between ENSO and IOD Oscillations

	Positive IOD	*Negative IOD*
El Nino	Moderate Rains *1997*	Deficient Rains *2015* (Actual rainfall : 85% of LPA)
La Nina	Surplus Rains *2007* (Actual rainfall : 105% of LPA)	Moderate rains *2010* (Actual rainfall : 103% of LPA)

Sources: IMD and authors' calculation.

2.3 Literature Survey

There are a few available studies that have analysed the role of weather events on growth and inflation dynamics. For instance, Challinor *et al.* (2014) explored the impact of ENSO on global agriculture yields. They found that the impact of *El Niño* was crop specific. For example, it increased the yield of soybean but had a mixed impact on rice, wheat, and maize yields. However, the impact of *La Niña* was generally broad-based.

Regarding the relationship between rainfall and agriculture GDP, Gulati *et al.* (2013) noted that 95 per cent of variations in the agriculture GDP growth of India, between 1996 and 2013, can be explained by just 3 factors – public and private investment in agriculture, rainfall, and agriculture price incentives.

Bajaj *et al.* (2019) deep-dived into the relationship between the forecasted rainfall by the IMD and Skymet and found that the forecasts had failed to predict the deficient rainfall of 2002, and 2004 and severe drought conditions of 2009. The authors noted the need to keep a close watch on the weather updates throughout the year for more effective monetary policy formulation rather than relying only on pre-monsoon forecasts. In terms of the relationship between the ENSO and IOD oscillations and rainfall, Ashok *et al.* (2001) found evidence that ENSOs have a low correlation with Indian southwest monsoon rainfall and IOD have a high correlation. They emphasised that for tracking rainfall patterns, it is important to track IOD oscillations along with ENSO oscillations in India.

Thus, the available literature indicates that the relationship between weather events (such as ENSO and IOD oscillation), actual rainfall, and growth-inflation dynamics is quite complex and requires a detailed analysis. We attempt to explore the nature of these intricate relationships through data visualisations and regression analysis.

3. Data

3.1 Data Sources

For this study, climate-related data, such as ENSO, IOD and rainfall averages, have been collated from IMD. The data for annual agricultural GVA growth, *rabi* and *kharif* food grain production growth, inflation, and food inflation are taken from CEIC. Table 2 lists rainfall, agricultural growth, food inflation, and general inflation during various combinations of ENSO and IOD.

Table 2: Rainfall, Agricultural Growth, and Inflation under ENSO and IOD Events

	Average Monsoon Rainfall (% of LPA)	Average CPI Inflation	Average CPI Food Inflation	Average Agricultural GVA Growth
El Niño - IOD Negative	88.0	5.9	6.6	-0.2
El Niño- IOD Neutral	81.7	6.7	6.6	-2.4
El Niño- IOD Positive	94.0	5.9	5.2	-1.0
La Niña - IOD Negative	101.7	9.4	9.7	7.3
La Niña - IOD Neutral	99.6	6.4	6.2	3.0
La Niña - IOD Positive	99.0	5.5	4.3	3.5
Neutral ENSO - IOD Negative	102.0	9.4	9.4	9.9
Neutral ENSO - IOD Neutral	98.0	5.1	4.7	5.5
Neutral ENSO - IOD Positive	100.7	7.2	8.8	3.5

Time Period: 1995-2021

Sources: CEIC, IMD and authors' calculation.

However, to get a better insight into the relationship between the above-mentioned variables, we have done an extensive exploratory data analysis using creative charts to visualise the complex relationship between them.

3.2 Exploratory Data Analysis (EDA)

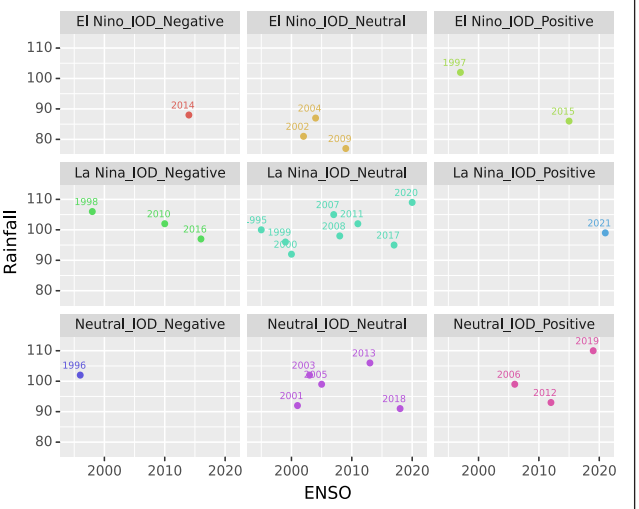
For this analysis, a year, say 2000, includes the monsoon starting from June 2000, while it represents the agricultural GVA growth for the financial year 2000-01. Similarly, inflation during 2000 indicates the average inflation numbers from April 2000 – March 2001. This convention has been followed uniformly to synchronise agricultural growth and inflation with the appropriate monsoon seasons.

3.2.1 Weather Events and Rainfall

As discussed in the previous sections, the relationship between these ENSO and rainfall in India is complex, and other factors such as IOD, the Madden-Julian Oscillation, and local atmospheric circulation patterns may also play a role in determining rainfall patterns over the region. Chart 3 reports the impact of IOD and ENSO on rainfall as percentages of annual rainfall compared to its LPA.

It indicates (a) *El Niño* years have below LPA rainfall if it is combined with Neutral IOD or Negative IOD. (b) Unlike *El Niño*, the impact of *La Niña* on total rainfall at the national level is highly volatile, in general, they have hovered around the LPA, and in some years have significantly below LPA (c) In the absence of both *El Niño* and *La Niña*, there is also evidence of varied rainfall patterns in India. Irrespective of ENSOs, it is the positive IOD years that have recorded the highest rainfall, on average, as compared with neutral or negative IOD years. Deficient rainfall and severe drought conditions mostly happened only in the *El Niño* years. But we need to carefully observe the IOD pattern, which could counter the effects of *El Niño*.

Chart 3: Relationship between ENSO and IOD and Rainfall



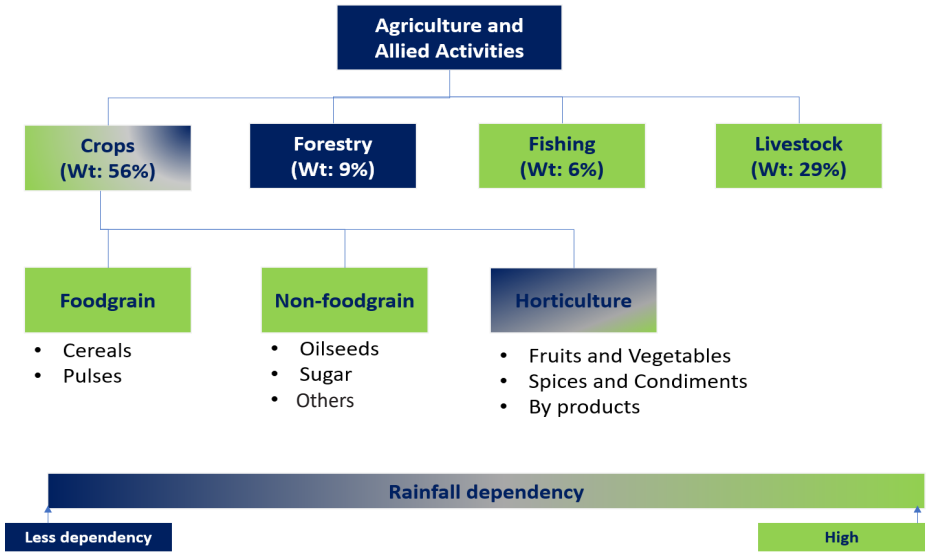
Note: Rainfall is measured in per cent of LPA
Sources: IMD; and authors' calculation

3.2.2 Weather Events and Agricultural Production

Next, we explore the relationship between food production and weather events due to ENSO and IOD oscillations. The agriculture and allied sector of GVA mainly comprises crops, fishing, livestock and forestry, of which the first three are crucially dependent on rainfall. Further within the agriculture sector, foodgrains and non-foodgrains production are highly reliant on monsoon performance (Chart 4). Given the heterogeneity within the agriculture and allied sector, it is of policy interest to evaluate how weather vagaries caused by ENSO and IOD oscillations impact the entire sector and the wider economy.

Our findings indicate that agricultural GVA growth exhibits lower volatility compared to food grain production growth. This difference can be attributed to sectors such as horticulture, animal husbandry, fisheries, *etc.*, in agricultural GVA, which perhaps provide a buffer against the variability of rainfall. Specifically, *kharif* food grain production displays higher volatility within the food grain sector than *rabi*

Chart 4: Rainfall Dependence of Agriculture



Sources: CEIC; and authors' calculation

food grain production. This suggests that *kharif* food grain production is more susceptible to fluctuations in rainfall compared to *rabi* food grain production (Table 3).

As evident from the left panel (Chart 5), in the *Kharif* production, *El Niño* leads to muted or negative *kharif* growth. *La Niña* in *kharif* season with positive and neutral IOD leads to a normal or higher production growth (on average). Even with negative IOD during *La Niña*, some years (2010, 2014) witnessed decent *kharif* production growth, mainly because of normal and near-normal monsoon rains. Neutral ENSO in the *kharif* season generally witnessed positive *kharif* production growth except for 2012, which could be due to below-normal monsoon rainfall that year.

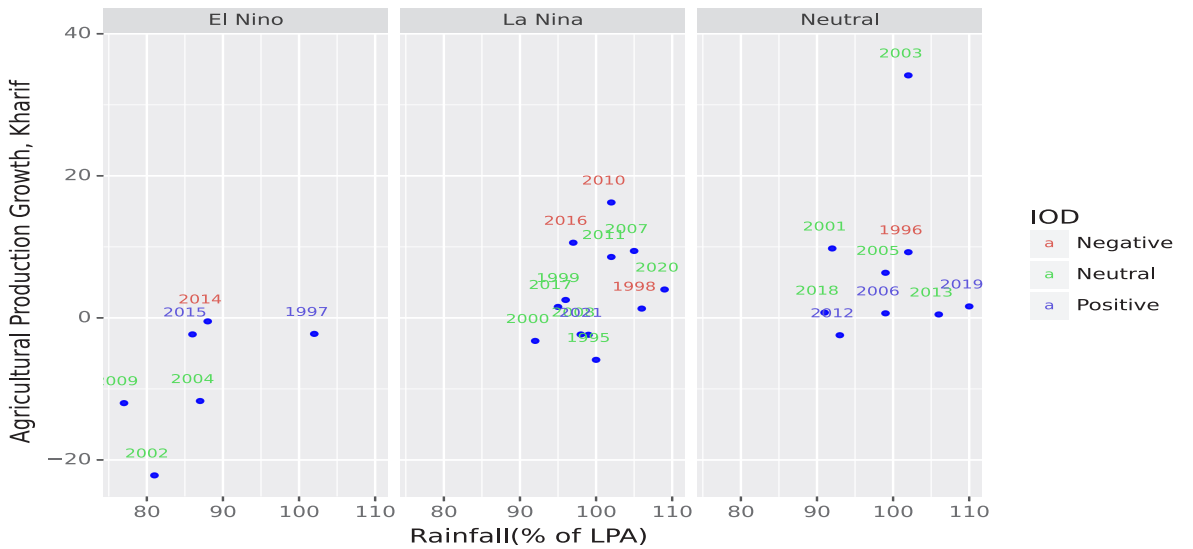
In terms of *rabi* season food production growth (Chart 6), in line with the expectations, the *El Niño* years have lower (mostly negative) *rabi* production growth. *La Niña* years, on the other hand, reported good *rabi* production growth, except for 1995 (possibly due to base effect as the previous two years had good production growth) and 2000 (due to below normal monsoon in 2000 despite a *La Niña* year). In years of neutral ENSO, the volatility of *rabi* production is generally high, although, on average, it remains higher compared to *La Niña* and *El Niño* years (Chart 6). For instance, during neutral ENSO, *rabi* production growth varies from 12 per cent in 1996 (attributable to a base effect, as 1995 had negative *rabi* production growth) to a negative 1 per cent in 2018 (due to below-normal monsoon rains experienced that year).

Table 3: Relative Variance of Annual Growth Rates of Agriculture

	Variance	Coefficient of Variance	Relative Variance#
Agricultural GVA	14.4	1.1	0.1
Kharif Food Grain Production	96.4	5.3	0.6
Rabi Food Grain Production	40.0	2.3	0.3
Crops GVA	23.8	1.8	0.2
Livestock GVA	18.5	0.8	0.1
Forestry GVA	8.2	0.2	0.1
Fisheries GVA	14.4	0.7	0.1
Rainfall	157.7	9.9	1.0

#Relative to rainfall growth
Sources: CEIC; and authors' calculation.

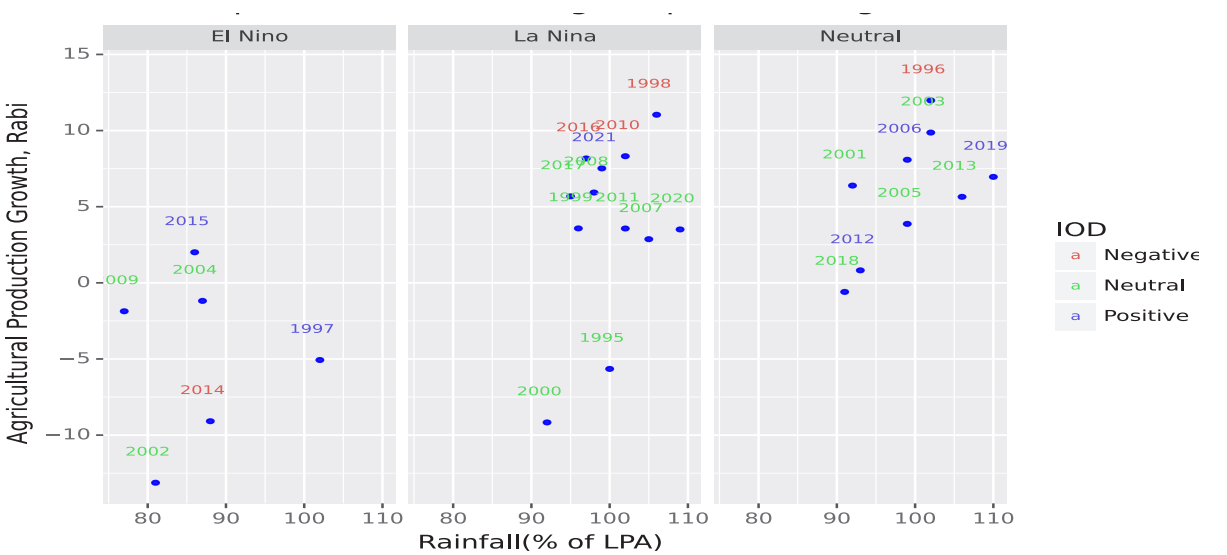
Chart 5: Relationship between *Kharif* Food Grain Production Growth and Rainfall



Sources: IMD; CEIC; and authors' calculation.

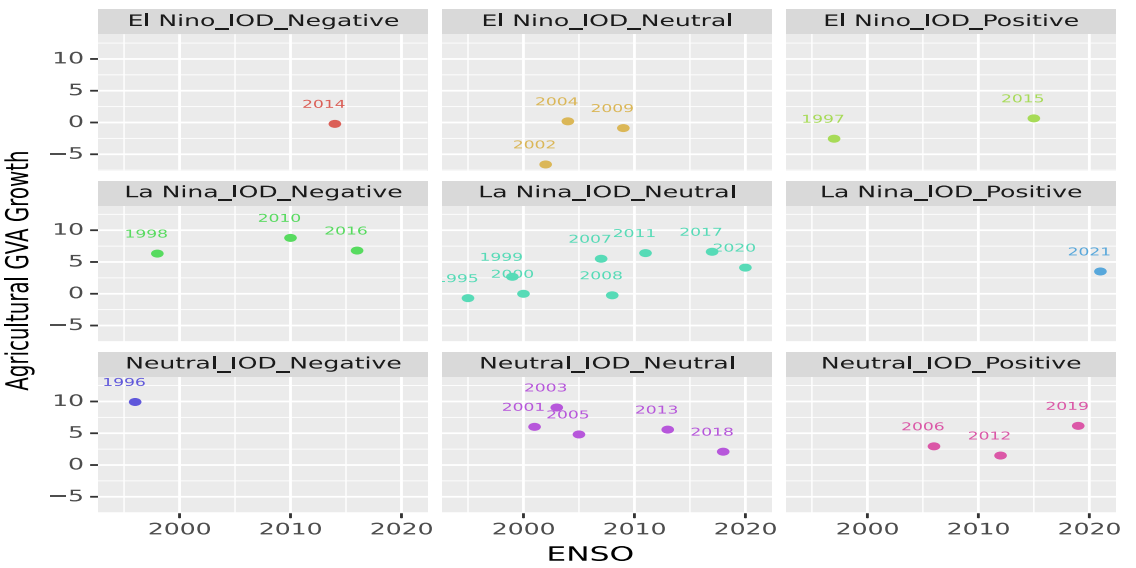
In terms of the growth of agricultural GVA, ENSO seem to have a profound impact, as during *El Niño* years agricultural GVA was observed to hover around zero growth, even with some years witnessing significant negative agricultural production growth rates. *La Niña* and neutral years are having wide variations, from high positive to negative growth rates. However, it is *La Niña* combined with *neutral* IOD that has, on average, recorded good agricultural GVA growth. Further, *El Niño* with negative IOD is giving negative or close to zero growth in the agricultural GVA (Chart 7). If, however, negative IOD is combined with *La Niña* or *Neutral* ENSO, then its effects have been largely neutralised. This could explain the large increase in agricultural GVA in 1996, 1998, 2010, and 2016 (Chart 7).

Chart 6: Relationship between *Rabi* Food Grain Production Growth and Rainfall



Sources: IMD; CEIC; and authors' calculation.

Chart 7: ENSO, IOD and Agricultural GVA Growth



Sources: CEIC; IMD; and authors' calculation.

Thus, we can infer that in general *El Niño* years recorded lower or negative agricultural GVA growth. *La Niña* years are generally marked with positive agricultural GVA growth, except for 1995 (that was an exceptional year due to a drop in rice production in Punjab and Haryana because off excessive off-season rainfall[1]). However, in terms of ENSOs *neutral* periods are clear winners in terms of agricultural GVA growth, and this is irrespective of IOD status (Chart 7).

It may be noted that weather events like ENSO and IOD affect agriculture not only through rainfall but through other channels also such as temperature, global commodity price fluctuation, and frequency of extreme weather events (like floods, drought, *etc.*). Thus, weather events' interaction with agriculture and economics needs to control for several other factors in a multivariate framework.

3.2.3 Weather Events and Manufacturing Output

The impact of weather events on the industrial sector in India can be assessed in terms of sectoral interlinkages between agriculture and industry. In the Indian context, weather conditions could adversely affect agriculture growth, which in turn impacts industrial production by affecting the supply of wage goods, agrarian inputs, and demand for industrial goods. The slow growth of agricultural income could impact consumer demand, which in turn affects the industrial output (Ahluwalia, 1991). As the agricultural sector contributes significantly to rural income, the private consumption demand is considerably affected by the levels of farm incomes. This is more applicable in the case of consumer goods, which carry a significant weight (of about 28 per cent) in the index of industrial production. Thus, adverse growth in the GVA originating from the agricultural sector as a result of adverse weather conditions could restrain demand for industrial goods and the expansion of output.

The supply side effects of adverse weather conditions on the industrial output is transmitted through a reduced supply of raw materials used in the industries. The impact is twofold: one, the supply is reduced; second, the prices of such inputs for the industry tend to rise, thus raising the overall cost of production. The agro-based industries which constitute around 7-10 per cent of the value added of

[1] Economic Survey 1995-96, Chapter 8

the industrial sector, could be more severely affected by an adverse shock on agriculture since such industries entirely depend on the latter for requirements of their raw material.

Data broadly support the above transmission channels as manufacturing GVA growth was in general on the lower side in the *El Niño* years and negative IOD years (Chart 8). The exceptions were 1997 and 2019, when despite positive IOD manufacturing GVA growth fell significantly, which could be due to other factors, *e.g.*, Asian Financial Crisis in 1997 and NBFC problems in 2019.

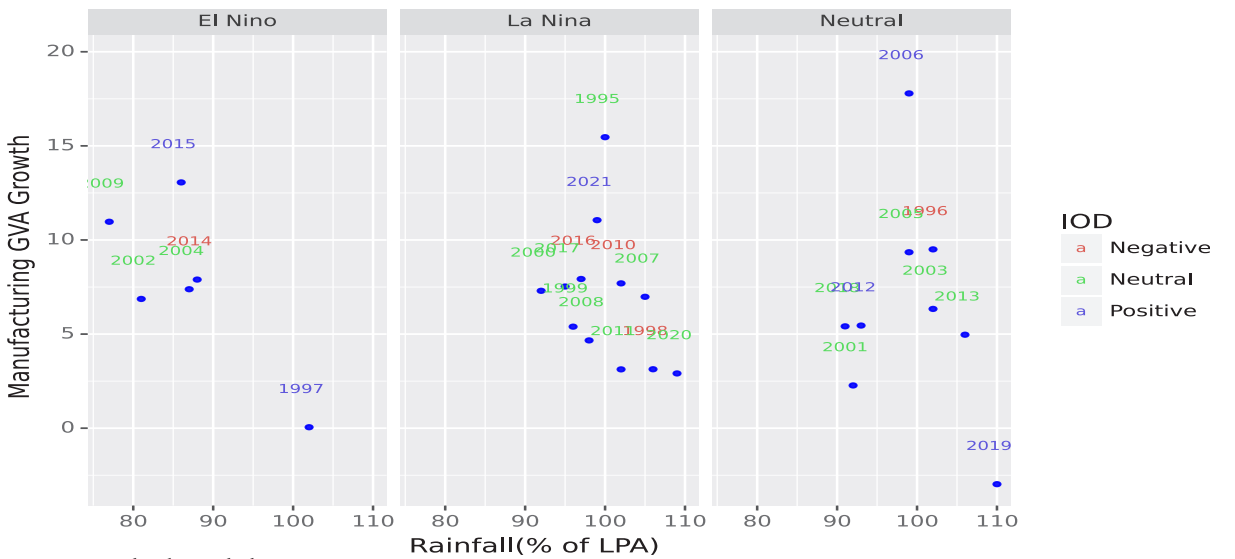
3.2.4 Services Sector Activity and Its Linkages

The conjectural projection for the impact on real activity in the services sector is difficult to make because of the weaker, not-so-quantifiable nature of impact and the lack of information on informal sector activities. It is, nevertheless, necessary to make some informed judgement about the real activity in the services sector, given that the share of the services sector in aggregate output has increased from less than one-third in 1950-51 to around 60 per cent in recent years. Unlike industry, services are perhaps not entirely affected by agriculture. Data on rainfall and the services sector bring up the limited role of weather events in this sector (Chart 9).

3.2.2 Weather Events and Food Inflation

Like any other commodities, food prices are functions of supply and demand. A scanty monsoon is often considered as one of the most important supply shocks, leading to price pressures. Persistent food inflation is often worrisome for a monetary policy authority because of its second-round impacts. Food inflation also plays an important role in the inflation expectation of households[2], which is a key factor in the New Keynesian Phillips (supply) curve. For an emerging market economy like India, food inflation impacts headline inflation quickly mainly because of the high share of food items in households' expenditure, thereby leading to a large share of food items in CPI inflation, and wage indexation to CPI inflation (Anand 2014)[3].

Chart 8: Rainfall and Manufacturing Sector Growth

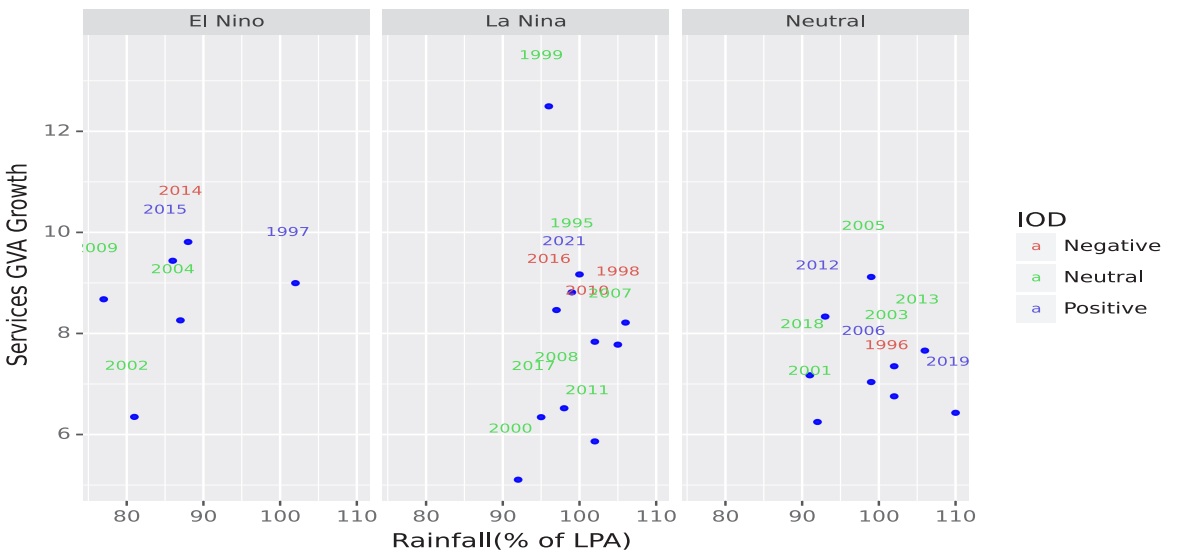


Sources: CEIC; IMD; and authors' calculation.

[2] https://www.bis.org/review/r121112c.pdf

[3] https://www.imf.org/external/pubs/ft/wp/2016/wp1602.pdf

Chart 9: Rainfall and Services Sector



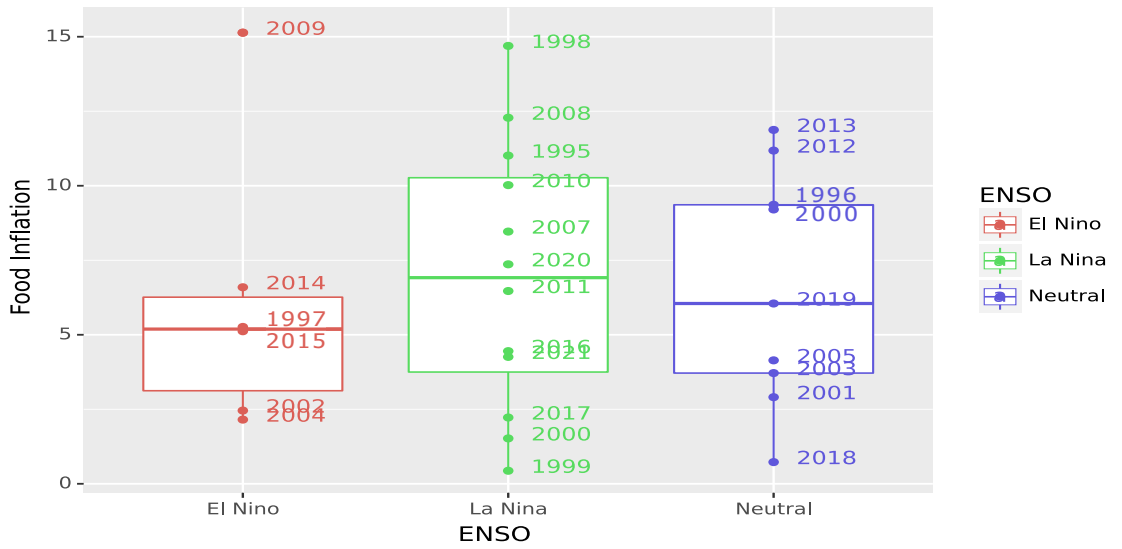
Sources: CEIC; IMD; and authors' calculation.

However, there hasn't been a one-to-one correspondence between monsoon and food inflation in India. Food inflation was high in 2009, which was mainly due to deficient rainfall. Notwithstanding better rainfall, high food inflation persisted in 2010 and partly in 2011, spilling over to headline inflation. Similarly, there is a dichotomy between ENSO weather events and their impact on food inflation. Recently, while some commentaries have raised concerns about *El Niño* posing a potential risk to inflation dynamics in FY 24, many others have argued that even in the presence of *El Niño*, its impact on Indian economic growth and inflation would be limited (Nadhanael *et al.*,2023). In view of its policy importance and relevance, the following sections critically evaluate the impact of ENSO and IODs on food inflation.

Contrary to expectations, median food inflation (bold horizontal lines in the boxplot) was low during the *El Niño* periods. Moreover, during *El Niño*, *La Niña*, and Neutral years the medians were close, indicating similar food inflation outcomes. However, some *El Niño* years were marked by extreme observations in terms of inflation, indicated by far-away dots (*e.g.*, 2009), which was a drought year (Chart 8). Food inflation volatility was indeed higher during the *La Niña* period, as indicated by the height of the boxplot and the long whiskers. Notwithstanding a few extreme observations (*e.g.* 2012, 2013), in terms of median inflation and variability, neutral ENSO years ranged between *El Niño* years and *La Niña* years (Chart 10).

The negative IOD years, on the other hand, clearly witnessed higher average food inflation than neutral or positive IOD. Notwithstanding low median food inflation, the neutral IOD periods were marked by extremely volatile food inflation, as evident from the length of the boxplot (Chart 11). They also indicated the presence of some extreme observations, *e.g.*, 2009, 2008, and 2013, due to extreme weather events (severe drought of 2009 and above-normal rainfall in 2013). Food inflation during the positive IOD period was higher than the median of Neutral IOD periods. Despite positive IOD, inflation was high in the year 2012.

Chart 10: ENSO and CPI Food Inflation



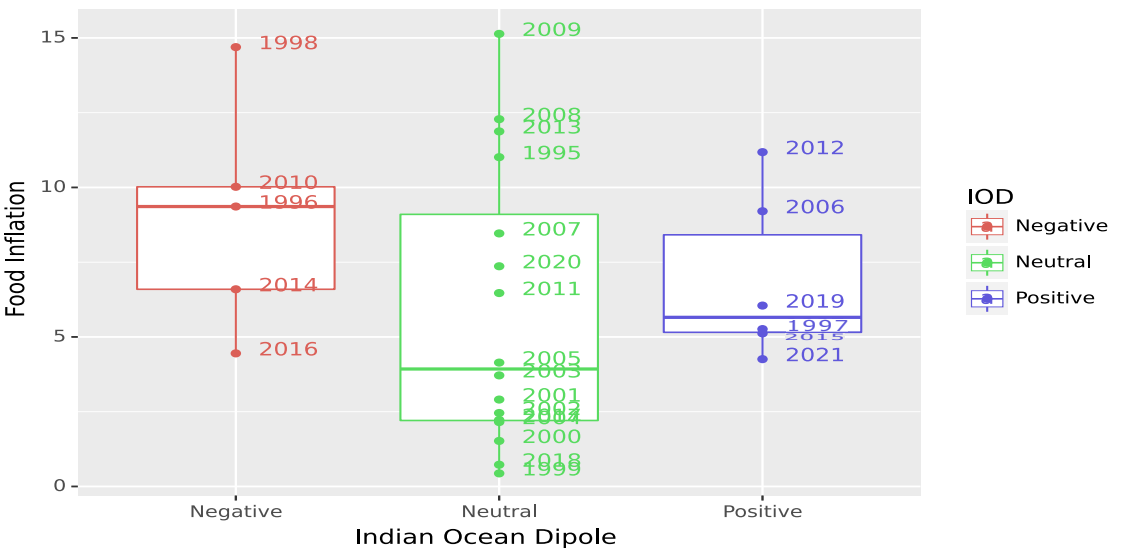
Sources: CEIC; IMD; and authors' calculation.

Thus, data indicate that *El Niño* may not always result in very high food inflation. But due attention is needed on IOD, as negative IOD often coincides with very high food inflation (Chart 9).

3.2.5 Weather Events and Headline Inflation

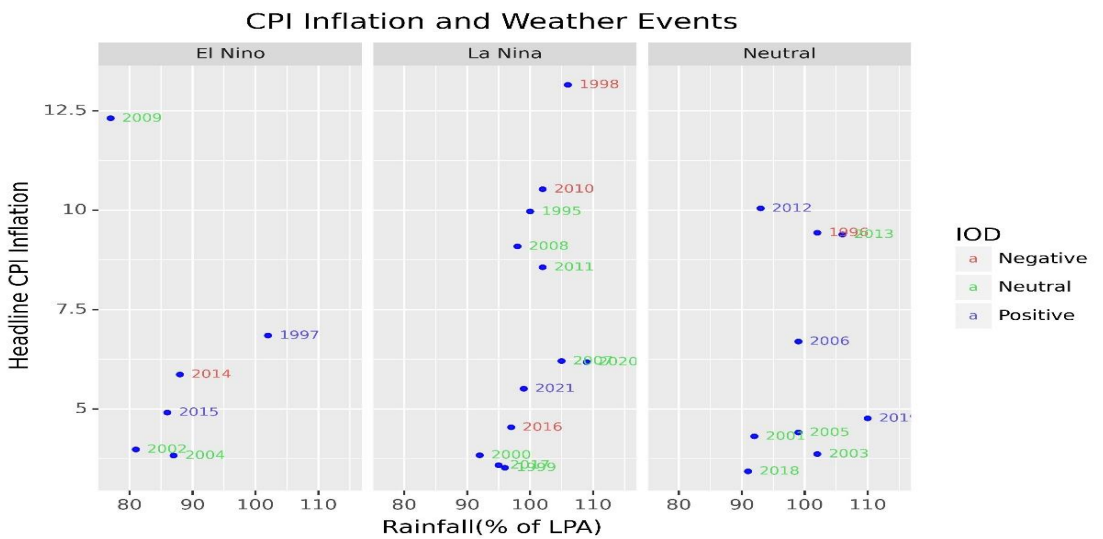
As food inflation constitutes a large component of the CPI basket, an association of headline inflation and weather events like ENSO and IOD oscillation often mirrors that of food inflation. The *El Niño* years have on average lower inflation and less variability compared to the *La Niña* years, except for the severe drought year of 2009 (Chart 12). The *La Niña* years have very high variability in terms of inflation. The median inflation in neutral ENSO years is low but

Chart 11: IOD and CPI Food Inflation



Sources: CEIC; IMD; and authors' calculation.

Chart 12: ENSO and IOD and CPI Headline Inflation



Sources: CEIC; IMD; and authors' calculation.

there are some cases of high inflation periods (2012) during the neutral ENSO years.

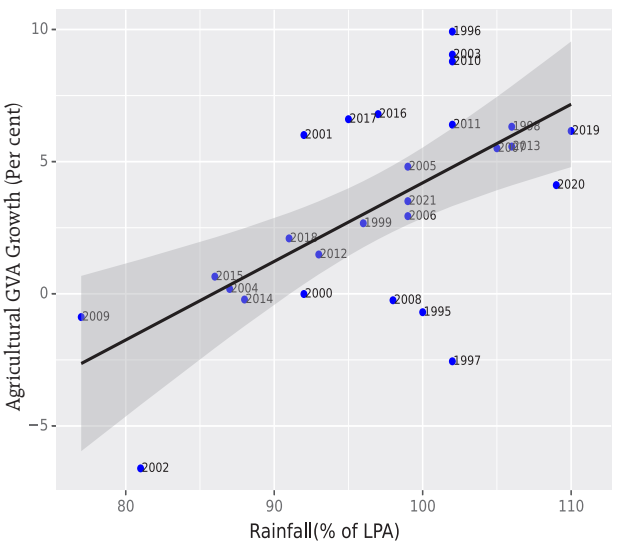
On the other hand, the negative IOD years have on average higher inflation than neutral or positive IOD. While the median inflation for Neutral IOD is rather low, mainly because of the bunching of a few low inflation years (*e.g.* 2000, 2017 and 1999), the Neutral IOD boxplot is marked with extreme observations Positive IOD years have moderate inflation with low variability.

3.2.6. Monsoon and Growth-Inflation Dynamics

The scatter plot of Indian agricultural GVA points to its dependence on monsoon rainfall, which is indicated by the positive slope of the regression line over the years with agricultural GVA growth on the Y-axis and monsoon rainfall (per cent of LPA) on the X-axis (Chart 13).

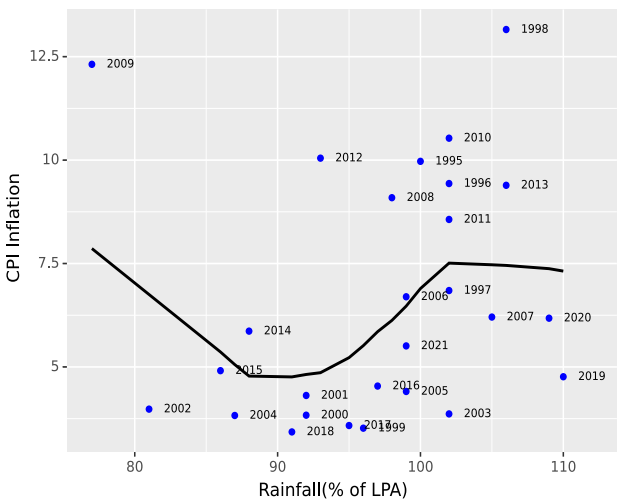
Besides the supply of agricultural output, rural income, and consumption are the major determinants of aggregate demand. In this vein, the smooth plot (*i.e.*, without imposing any restrictions on curve fitting) of food inflation and monsoon rainfall indicates a rather non-linear relation, which could be because of several shift parameters influencing demand and supply curves (Chart 14).

Chart 13: Rainfall and Agricultural GVA Growth



Sources: CEIC; IMD; and authors' calculation.

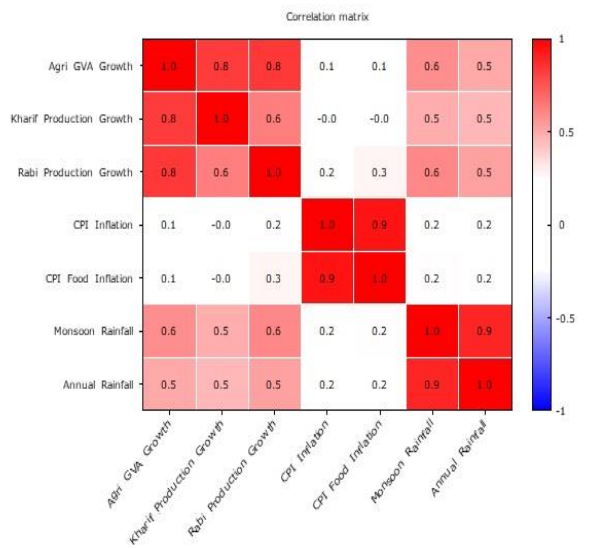
Chart 14: Monsoon Rainfall and CPI Inflation



Sources: CEIC; IMD; and authors' calculation.

Finally, we report the correlation heatmap of the relevant variables included in the above analysis (Chart 15). It indicates a significant correlation between annual rainfall throughout the year and seasonal (monsoon) rainfall. This could be because, in India, approximately 75 per cent of the annual rainfall occurs during the monsoon season. Additionally, we observe a strong correlation between headline CPI inflation and CPI food inflation. As indicated earlier, this could be attributed to the high weight of the food component in the consumer price index (CPI). The correlation matrix also indicates a strong association of agricultural growth variables with rainfall. However, the contemporaneous correlation between food and headline inflation and rainfall was found to be statistically weak, which could be due to the effects of other control variables and functional specifications. In the next section, we attempt a formal evaluation of the same in a multivariate regression framework where we introduce appropriate non-linearities.

Chart 15: Correlation Matrix



Sources: CEIC; IMD; and authors' calculation.

4. Empirical Findings

4.1 Rainfall and agricultural growth

The impact of rainfall on agricultural growth was examined through a simple autoregressive model augmented by monsoon rainfall (per cent of LPA). Models 1, 2, and 3 consider different dependent variables, *i.e.*, annual agricultural GVA growth, annual *rabi* food grain production growth, and annual *kharif* food grain production growth, respectively. Each model includes lagged values of the dependent variable, to account for the base effect, persistence, and monsoon rainfall (per cent of LPA) as independent variables.

In all the models, the coefficients of monsoon rainfall are positive and statistically significant, indicating that higher monsoon rainfall, on average, leads to higher agricultural growth. Further analyses of the coefficients of annual rainfall growth indicate that both *kharif* food grain production growth and *rabi* food grain production growth are dependent on rainfall. The negative coefficients of the lagged dependent variables in these models could indicate the base effects.

Table 4: Regression results explaining Agricultural Growth

Dependent Variable			
	Agricultural GVA Growth	*Rabi* Food Grain Production Growth	*Kharif* Food Grain Production Growth
	Model 1	Model 2	Model 3
Constant	-19.3***	-37.3***	-38.72**
Lag Dependent Variable	-0.48***	-0.43***	-0.55***
Rainfall Growth (Annual)	0.24***	0.43***	0.42**
R- square	0.57	0.57	0.52
Adjusted R -square	0.54	0.54	0.48

Time Period of the Model 1, Model 2 and Model 3 – 1993-2020
Note - * denotes level[4] coefficient statistically significant at 15 percent significance, ** denotes significant at 5 percent significance level, and *** denotes significant at 1 percent significance level.

4.2 Rainfall and Inflation

As food constitutes a major portion of the CPI consumption basket, it is the most likely channel through which rainfall and consequent agricultural growth would impact the overall CPI inflation. Therefore, to analyse the effect of rainfall and agriculture growth on inflation, we regressed each of the annual CPI food inflation and CPI headline inflation, on the amount of contemporaneous monsoon rainfall. Additionally, it is important to note that we included both monsoon rainfall and the square of monsoon rainfall as explanatory variables in all models to account for the non-linear relationship between rainfall and inflation, (as observed in Chart 14). Further, we controlled for agriculture growth rates and international commodity price inflation (Bloomberg data), as India is a major non-food commodity importer. The results of the regressions are summarised in Table 6.

Among the estimates, model 1 uses annual CPI food inflation and headline CPI inflation each as a dependent variable, it includes the lagged dependent variable, growth in *kharif* food grain production, lag of *rabi* food grain production[5], current year monsoon rainfall as the percentage of the long-term average (LPA) and its square as explanatory variables. In model 2, we have regressed each of the annual CPI food inflation and headline CPI inflation with their lags (AR1), annual agriculture GVA growth, lag of agriculture GVA growth, monsoon rainfall, as a percentage of the long-term average (LPA), and its square term. Model 3, controls for international commodity price inflation, in addition to the set of independent variables used in Model 2.

Among the control variables, both *rabi* and *kharif* food grain production growth coefficients are statistically significant and negative, suggesting that an increase in agricultural supply leads to lower food inflation. The magnitudes of both coefficients are similar, indicating that the productions of both seasons play an almost equal role in food inflation. Similarly, in Model 2, the coefficients of current year agricultural GVA growth and its lag are negative, indicating that higher agriculture supply leads to lower food inflation. The magnitude of both coefficients is nearly equal, indicating that both the current-year agricultural GVA growth and previous-year agriculture growth have almost equal role in reducing food inflation. However, the lagged annual food and headline inflation coefficients are positive and statistically significant in all three models, indicating persistence in inflation, possibly due to adaptive inflation expectations (Dua and Goel, 2021). Finally, coefficients of international commodity prices inflation are positive in sign, indicating that after accounting for rainfall and agriculture growth they have a positive impact on both food and headline inflation.

[4] Conventionally, statistical significances are reported at 1, 5, 10 per cent levels. However, given the importance of variables from the charts, data variability, and their p-values often being just above 10 per cent, we included 15 per cent in the above table.

[5] The inclusion of the lagged *rabi* food grain production in the Model 1 is necessary because, as we consider April as the start of the year, the output of the *rabi* season's agricultural produce is likely to impact the food supply of the following year. This explains why, in Models 2 and 3, we also included the lag of agricultural GVA growth as an additional explanatory variable, along with the current year's agriculture growth.

In these models, the coefficients of rainfall reveal the non-linear relationship between rainfall and inflation. The coefficient for rainfall is negative, while the coefficient for the square of rainfall is positive. This indicates a parabolic relationship where an increase in rainfall up to a certain threshold leads to lower headline and food inflation, but beyond that threshold, further increases in rainfall may result in higher inflation. This relationship can be attributed to the positive impact of rainfall on aggregate supply up to a moderate level, while excess rainfall beyond the threshold often leads to crop damages coupled with supply chain disruptions. In Model 3, the negative rainfall coefficients were statistically significant, indicating the importance of rainfall on inflation. Although the coefficients of rainfall and its square are not statistically significant in other models, their p-values are relatively low. This lack of statistical significance could be attributed to the endogeneity problem associated with food production and inflation, rather than the insignificance of the relationship between rainfall and its square with inflation. We would address the endogeneity issue in a 2SLS setup using rainfall as an instrumental variable.

4.3 Rainfall, Agricultural Output, and Inflation: Instrumental Variable

To address the issue of possible endogeneity between agriculture growth and inflation in the previous regression models, we have employed the Two-stage Least Squares (2SLS) method to refine the results in section 4.2. This method allows us to mitigate the endogeneity problem by introducing instrumental variables, specifically the growth in rainfall.

Rainfall serves as an exogenous variable, as economic factors such as agricultural growth and inflation do not have a direct impact on it. However, rainfall does impact both inflation and agriculture growth. Therefore, it is a suitable instrument to address the endogeneity issue and determine the impact of agriculture growth on inflation. We utilise the predicted values of agricultural GVA growth, *rabi* food grain production growth, and *kharif* food grain production growth derived from the regressions (stage 1), where these variables were regressed on annual rainfall growth and their own lag respectively.

In Model 1, we use the predicted values of *kharif* food grain production growth and *rabi* food grain production growth as control variables. Similarly, in Models 2 and 3, we use the predicted value of agricultural GVA growth as a control variable[6]. The results of regressions are summarised in Table 5.

In the 2SLS regressions, the coefficients of monsoon rainfall and its square are statistically significant and exhibit patterns consistent with the regressions in Section 4.2, thereby confirming the presence of a non-linear relationship between monsoon rainfall and inflation, even after controlling for agriculture growth. This suggests that monsoon rainfall influences food and headline inflation through channels beyond its impact on agriculture growth.

The coefficients of *kharif* food grain production growth and lag of *rabi* food grain production growth continue to exhibit negative values, and their magnitudes remain nearly equal for both food and headline inflation, though their statistical significances remain weak. This finding suggests that the production levels of both seasons are significant determinants of food and headline inflation, even after accounting for endogeneity between agriculture growth and inflation. The low level of significance of agricultural growth variables may be attributed to

[6] For brevity, we assumed that the GVA agricultural growth will proxy demand side factors. Moreover, the persistence term (AR(1)) is expected to capture a combination of demand and supply side shocks (Dua and Goel, 2021).

Table 5: 2-SLS Regression (with Rainfall as instrumental variable) results explaining variations in headline and food Inflation

Dependent Variable	Model 1		Model 2		Model 3	
	CPI Food Inflation	Headline CPI Inflation	CPI Food Inflation	Headline CPI Inflation	CPI Food Inflation	Headline CPI Inflation
Explanatory Variables						
Constant	193.55**	121.47**	186.76**	117.89**	205.5*	132.3*
Lag of Dependent Variable	00.39**	0.52***	0.40**	0.52**	0.50**	0.60***
Monsoon Rainfall (% LPA)	-4.23**	-2.63**	-4.02**	-2.51**	-4.42**	-2.81**
Square of Monsoon Rainfall (% LPA)	0.0235**	0.0145**	0.0223**	0.0139**	0.024**	0.015**
Control Variables						
Predicted *Kharif* Season Food Grain Production Growth	-0.33	-0.22				
Lag of Predicted *Rabi* Season Food Grain Production Growth	-0.55	-0.32				
Predicted Agricultural GVA Growth			-0.67	-0.46	-0.50	-0.36
Lag of Predicted Agricultural GVA Growth			-0.67	0.40	-0.60	-0.34
Lag of International Commodity Prices Growth					0.09	0.06
Adjusted R-square	0.35	0.40	0.35	0.40	0.37	0.42

Note: * denotes coefficient statistically significant at a 15 per cent significance level (footnote 4), similarly, ** denotes significant at 5 percent significance level, and *** denotes significance at a 1 per cent significance level. Time Period of the Model 1, Model 2 and Model 3 – 1994-2020

the filtering of variations in these variables during the first stage of the 2SLS regression, to address the endogeneity issue. Moreover, the impact of international commodity prices on food inflation was positive, indicating the influence of international commodity prices on domestic inflation.

Table 6: Regression results explaining variations in headline and food Inflation

Dependent Variable	Model 1		Model 2		Model 3	
	CPI Food Inflation	Headline CPI Inflation	CPI Food Inflation	Headline CPI Inflation	CPI Food Inflation	Headline CPI Inflation
Explanatory Variables						
Constant	91.44	60.74	91.71	65.84	117.5*	84.26*
Lag of Dependent Variable	0.62***	0.70***	0.51***	0.62***	0.61***	0.71***
Monsoon Rainfall(% LPA)	-2.08	-1.35	-2.05	-1.43	-2.50*	-1.82*
Square of Monsoon Rainfall (% LPA)	0.012	0.008*	0.012*	0.008*	0.015*	0.01*
Control Variables						
Kharif Season Food Grain Production Growth	-0.21**	-0.13**				
Lag of *Rabi* Season Food Grain Production Growth	-0.30**	-0.18**				
Agricultural GVA Growth			-0.51*	-0.28*	-0.48*	-0.25*
Lag of Agricultural GVA Growth			-0.51**	0.29*	-0.53**	-0.27*
Lag of International Commodity Prices Growth					0.10*	0.06*
Adjusted R -square	0.43	0.48	0.42	0.45	0.45	0.48

Note: * denotes coefficient statistically significant at 15 percent significance level, similarly, ** denotes significant at 5 percent significance level, and *** denotes significant at 1 percent significance level.
Time Period of the Model 1, Model 2 and Model 3 – 1990-2021

5. Conclusion

Monetary policy hinges on inflation expectations, which in turn depend on food inflation. In India, the agricultural sector is considerably dependent on monsoon rainfall. It is generally believed that weather events (*e.g., El Niño*, *La Niña*, and the Indian Ocean Dipole) have significant impacts on rainfall and thereby influence growth-inflation dynamics. Considering their importance, we explore the impact of these weather events on India's growth and inflation.

Our finding suggests that contrary to popular belief, *El Niño*, by itself, may not lead to a deterioration in macroeconomic stability. There were years when, despite *El Niño*, rainfall was close to normal and inflation remained benign. The analysis indicates that it is indeed the IOD that often interacts with *El Niño* or *La Niña* to determine the actual rainfall. This is evident as average inflation was higher during the negative IOD years as compared with the neutral or positive IOD years. *La Niña* years also experienced a wide range of agricultural growth and inflation, depending on the corresponding IOD oscillation status and other exogenous factors.

Further, our analysis indicates that while higher rainfall leads to higher agriculture growth (in both the *rabi* and *kharif* seasons), the relationship of inflation with rainfall is non-linear. This could be because rainfall impacts the food inflation dynamics through agricultural growth. At the same time, other exogenous factors, such as international commodity prices also influence these growth-inflation dynamics.

In conclusion, our data analysis highlights that a single adverse weather event (*e.g., El Niño)* may not be a threat to macroeconomic stability, but we need to be vigilant on other factors, such as IOD oscillations, local supply chain disruptions caused by acute climate events, and global commodity prices.

References

Ahluwalia, D. (1991), "Drought Proofing in the Indian Foodgrain Economy", *Indian Journal of Agricultural Economics*, 46(902-2018-2823), 111-120.

Anand, R., Ding, D., and Tulin, M. V. (2014), "Food Inflation in India: The Role for Monetary Policy", *International Monetary Fund.*

Ashok, K., Guan, Z., and Yamagata, T. (2001), "Impact of Indian Ocean dipole on the relationship between the Indian Monsoon Rainfall and ENSO". *Geophysical Research Letters* - GEOPHYS RES LETT. 28. 10.1029/2001GL013294.

Bajaj, P., Suganthi, D., Kumar, R. and Mukherjee, A. (2019), "Will the Weather Gods Smile or Frown? Evaluating Monsoon Forecasts", *RBI Bulletin, June*

Dilip A., and Kundu, S. (2020), "Climate Change: Macroeconomic Impact and Policy Options for Mitigating Risks", *RBI Bulletin, April.*

Dua P. and Goel D. (2021), "Inflation Persistence in India", *Journal of Quantitative Economics* 19, 525–553

Iizumi, T., Luo, JJ., Challinor, A., *et al.* (2014), "Impacts of El Niño Southern Oscillation on the Global Yields of Major Crops", *Nat Commun* 5, 3712 https://doi.org/10.1038/ncomms4712

Gulati, A., Saini, S. and Jain, S., (2013), "Monsoon 2013: Estimating the Impact on Agriculture", *Working Papers, eSocialSciences.*

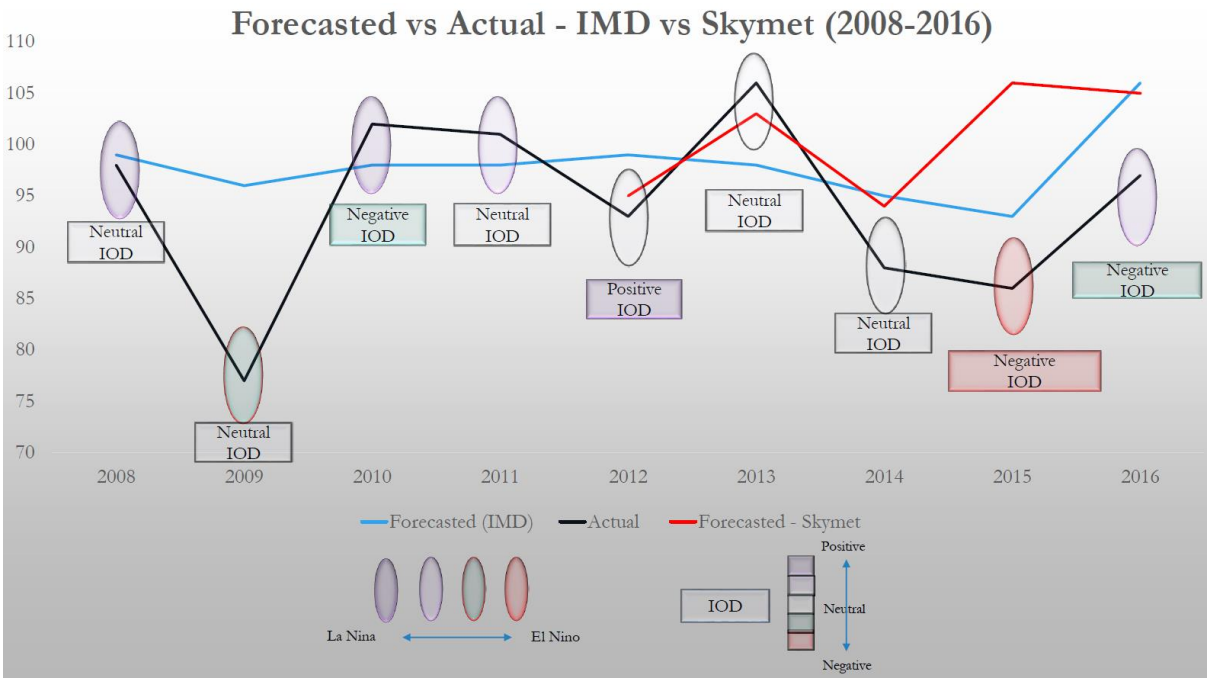
Ghosh, S., Kundu, S., and Dilip, A. (2021), "Green Swans and their Economic Impact on Indian Coastal States", *Reserve Bank of India Occasional Papers*, 42(1).

Malik, A., Li, M., Lenzen, M., Fry, J., Liyanapathirana, N., Beyer, K., Boylan, S., Lee, A., Raubenheimer, D., Geschke, A., and Prokopenko, M. (2022), "Impacts of Climate Change and Extreme Weather on Food Supply Chains Cascade across Sectors and Regions in Australia", *Nature food*, 3(8), 631–643. https://doi.org/10.1038/s43016-022-00570-3

Nadhanael, G. V., *et al.* (2023), "State of the Economy". *RBI Bulletin, April*

Appendix

Chart A: Rainfall and Weather Events



Sources: IMD, and authors' calculations.

OPEC Oil Supply Announcements: An Assessment of Impact on the Indian Economy

*by Bhanu Pratap, Ramesh Kumar Gupta, Jessica M. Anthony, Deba Prasad Rath and Thangzason Sonna^*

Recent research has shown that supply-related announcements by the Organisation of Petroleum Exporting Countries (OPEC) can affect oil prices and the macroeconomy even before such supply changes materialise. This study analyses the impact of such announcements on the Indian economy. Findings suggest that domestic crude oil basket, sectoral stock prices and bond yields are immediately impacted by OPEC's announcement of its supply decisions. Further, such oil supply-related news shocks cause a sustained increase in consumer prices while reducing economic output, albeit for a short duration. These results have important implications for India – a net importer of crude oil – to deliver price stability.

Introduction

Dealing with uncertainty is an inherent part of central banking. Conducting monetary policy in today's interconnected, globalised world requires constant vigilance – keeping eyes and ears to the ground – against potential shocks that may derail the economy from its targeted path. Shocks to the economy can arise from varied sources – one such source is the global crude oil market. The Russia-Ukraine war, which erupted in February 2022 even as the Covid-induced supply constraints had just started to ease, has again called our attention towards crude oil. Russia is amongst the leading suppliers in the global oil market with a share of about 14 per cent in total global oil supply as of 2021. Besides, it is also the world's second largest producer of natural gas and holds the largest gas reserves globally.

Thus, the implications of the war were visible on crude oil prices – brent crude oil hitting a price of US $125 per barrel in March 2022, highest since 2012 and almost six-folds above the bottom observed during April 2020. This gave way to an energy-induced cost-push inflation across the globe. As per the latest April 2023 issue of the World Economic Outlook (WEO) released by the International Monetary Fund (IMF), global inflation rose from 4.7 per cent in 2021 to 8.7 per cent in 2022. Although it is expected to decline to 7.0 per cent in 2023, it will still remain above the level seen in 2021. Central banks promptly reacted to this inflationary surge by hiking their policy rates and scaling back their accommodative policies to tame inflation.

Although oil price dynamics and its macroeconomic impact have been well-studied in the literature, large and persistent shocks – first the Covid-19 pandemic and then the Russia-Ukraine War – have sparked renewed interest in analysing the effect of oil price changes on the macroeconomy. Within the global economic system, oil prices are determined endogenously as they react to global economic developments in addition to crude oil supply and demand (Arezki and Blanchard, 2015). Since crude oil is a highly traded commodity, oil prices are inherently forward-looking, such that not only current supply but expectations about the future also matter (Arezki and Matsumoto, 2015). Further, from a medium-term policy perspective, oil price shocks are particularly important as they tend to have a stagflationary impact on the economy (Filardo and Lombardi, 2014; Filardo *et al.*, 2018).

An established strand of the extant literature on macroeconomic impact of oil price shocks suggests

^ The authors are from Department of Economic and Policy Research, Reserve Bank of India. Authors would like to thank the anonymous referee and the editorial team for their helpful comments and suggestions on the article. The views expressed in the article are those of the authors and do not represent the views of the Reserve Bank of India.

that global oil supply, global demand for oil and expectations about future oil market conditions are fundamental drivers of oil price movements (Killian, 2009). From an empirical standpoint, the impact of these drivers has been disentangled using a variety of approaches nested within a structural vector autoregression (SVAR) framework, including zero restrictions, sign restrictions and narrative information methods (Kilian, 2009; Kilian and Murphy, 2012 and 2014; Lippi and Nobili, 2012; Baumeister and Peersman, 2013; Baumeister and Hamilton, 2019; Caldara *et al.*, 2019; Zhou, 2020).

In the context of global oil supply, conventional supply shocks are interpreted as sudden disruptions in the current supply of crude oil that gets reflected in an instantaneous fall in oil supply, an increase in oil price and a reduction in inventories (Hamilton, 2003; Kilian, 2008). In contrast, oil prices can also change if there are unanticipated changes in the expectations about oil supply in the future. Notwithstanding its declining share in global oil production, OPEC remains an important supplier of crude oil, in addition to having a major chunk of world's proven oil reserves, such that OPEC's communication of its decisions related to oil supply can lead to a revision in market expectations. Thus, if a surprise OPEC announcement leads oil market participants to expect a production shortfall in future, they will build up inventories today to cover up for lesser oil production tomorrow. Such surprises can be interpreted as *oil supply news shocks (Kanzig, 2021)*[1].

Until recently, only few studies have explored the effects of oil supply news shocks embedded within OPEC announcements on the macroeconomy. Moreover, no such analysis exists for emerging market economies (EMEs), including India. Therefore, this paper attempts to examine the impact of global oil supply-related announcements on domestic financial markets as well as the macroeconomy. Our analysis based on high-frequency data around OPEC announcement days shows that domestic crude oil basket, currency, equity prices of oil and gas sector firms as well as sovereign bond yields are more volatile around such announcements. This shows that financial markets react to the information embedded in OPEC communications about crude oil supply. Further, using an external instrument variable within a structural vector autoregression (SVAR-IV) framework, we provide empirical evidence on the causal impact of oil supply news shocks on the Indian macroeconomy. Our results suggest that oil supply news shocks lead to a rapid and persistent increase in domestic consumer prices. At the same time, economic output falls but reverts to mean within a short duration. For a rapidly growing emerging economy, these findings are crucial as India is not only the third largest consumer of crude oil (behind US and China) but also largely dependent on crude oil import with up to 85 per cent of domestic requirements being fulfilled by oil imports. These results also have important implications for macroeconomic performance, particularly price stability. Given the persistent cost-push effect of such shocks, monetary policy must stay vigilant towards OPEC communications to efficiently address the resultant price stability concerns.

The rest of the article is structured as follows. In Section II, we make a brief review of literature, followed by highlighting the stylised facts about the global as well as domestic crude oil markets in Section III. In Section IV, we discuss our data and econometric methodology followed by a brief discussion of the main results. We conclude the paper in Section V.

II. Literature Review

There exist very few studies directly related to the announcement effects of OPEC decisions.

[1] The reaction of oil inventories is the differentiating feature between oil supply news shocks and traditional oil supply shocks. An oil supply news shock will tend to have a positive impact on spot price of oil, an increase in oil inventories and a negative but lagged impact on oil production.

While some of these studies (Lin and Tamvakis, 2010; Loutia *et al.*, 2016) have found a significant impact of such announcements on oil prices, other studies (Demirer and Kutan, 2010; Guidi *et al.*, 2006; Schmidbauer and Rösch, 2012) found that it is only announcements about production cuts that matter. Similarly, oil prices and financial markets typically tend to be more volatile around OPEC meetings and exhibit significantly abnormal returns following OPEC meetings announcing reduction in its production quota (Hyndman, 2008; Youssef, 2022).

On the contrary, there exists a well-established literature on the impact of oil price shocks on economic activity. These studies have relied on using SVAR models to analyse the impact of oil price shocks, especially in the context of the US economy. Kilian (2009) is considered an influential contribution to this literature as it proposed a structural identification of oil price shocks distinguishing between the relative role of demand and supply in driving the price of oil. Such a distinction is crucial for policymakers as structural oil price shocks could be of different types and can have different implications.

For instance, supply shocks shift the production and prices of oil in different paths, whereas an oil demand shock shifts the oil production and oil prices in the same direction. There is also an aggregate demand shock which is driven by global economic activity, and an oil-specific demand shock. The oil-specific demand shock is not driven by economic activity but rather encapsulates the precautionary effect on changes in demand that are particular to the crude market. Caldara *et al.* (2016) studied these different oil shocks identified in an SVAR model of the oil market concluding that oil supply and demand shocks account for 50 and 35 per cent of total oil price changes, respectively. Moreover, they find that a drop in oil prices driven by positive supply shocks boosts economic activity in advanced economies, while dampening activity in emerging markets.

Studies such as those by Baumeister and Peersman (2013), Bodenstein, Guerrier, and Killian (2012), Kanzig (2021), Kilian and Murphy (2014), use structural VAR techniques to investigate the impact of supply and demand shocks to crude oil on macroeconomic aggregates in the US and price elasticities. Peersman and Van Robays (2009) studied the macroeconomic impact of various types of oil shocks and the diffusion of such shocks in the Euro area. Comparing the US and individual member countries of the Euro area, they find that the primary source of the oil price shift is critical in determining the ramifications on the economy.

Taking a cross-country perspective, Peersman and Van Robays (2012) extended their previous analysis to study the macroeconomic impact of different types of oil shocks across a set of industrialised countries. More recently, Herwartz and Plodt (2016) have analyzed the dynamics in the global crude oil market; they investigated the collective contributions from various oil shocks on the drastic descent in oil prices at the end of 2008 and 2014, as well as the effects of different oil shocks on macroeconomic aggregates in the US, the Euro area, and China and concluded that oil price shocks have discrete macroeconomic consequences and that the overall macroeconomic effects of oil price shocks in the US are more similar to the Euro area than to that of China. Güntner and Linsbauer (2018) investigated how consumer sentiment in the US responds to shocks in crude oil prices. Oil supply shocks are found to play a very limited role, while the impact of aggregate demand shocks is positive for the first few months and negative later. Overall, the literature suggests that oil price dynamics can have a statistically and economically significant impact on an economy. By analysing the case of India, this study adds to the overall literature with its focus on the impact of oil price dynamics in the context of emerging market economies. Moreover, the paper also uses newly developed methods in empirical

macroeconomics, namely an external instruments-based approach, for better identification and analysis of oil shocks.

III. Stylised Facts

III.1. Global Experience

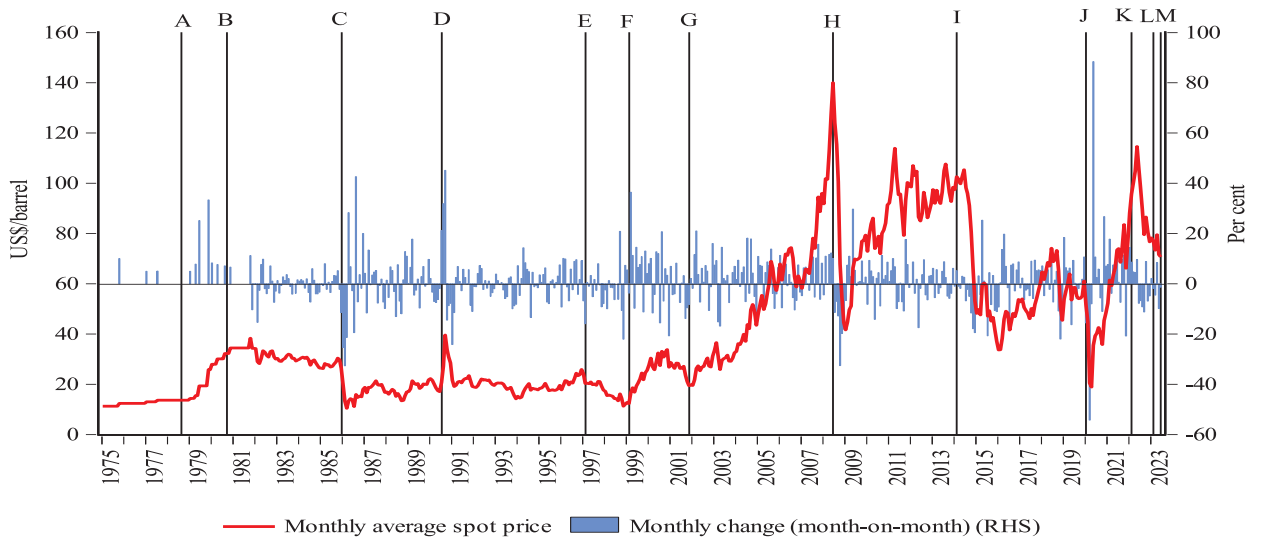
The modern world is powered by energy derived from crude oil. Since the 1970s, when OPEC oil embargo was first imposed, movements in crude oil prices along with its production and inventory built up have become important, strategically and geopolitically. Oil prices affect the macroeconomy through different channels and *vice-versa*. For oil importing countries, such as India, increases in global oil prices directly impact domestic prices by increasing the price of imported goods and indirectly through increasing transportation costs. It also burdens the current account deficit (CAD) and pressurises the exchange rate. On the other hand, for exporting countries such as Russia, Saudi Arabia and others, oil price increases add to their export revenue thereby lifting their economic output.

Chart 1 shows the historical evolution of crude oil prices from 1975 onwards. The plot also highlights major geopolitical and economic events that have affected the world oil market over the last few decades. As can be observed, oil prices often react to production-related announcements by OPEC, geopolitical situations such as the Iran-Iraq war or the Gulf war, and fluctuations in the global, especially the US, economy.

The impact of such events is also immediately felt in the futures market based on crude oil. Chart 2 shows the oil market futures price curve around major economic shocks and OPEC meetings since 2020. The examples presented here underline the fact that surprises related to OPEC meetings as well as economic and geopolitical events can influence expectations in the crude oil market.

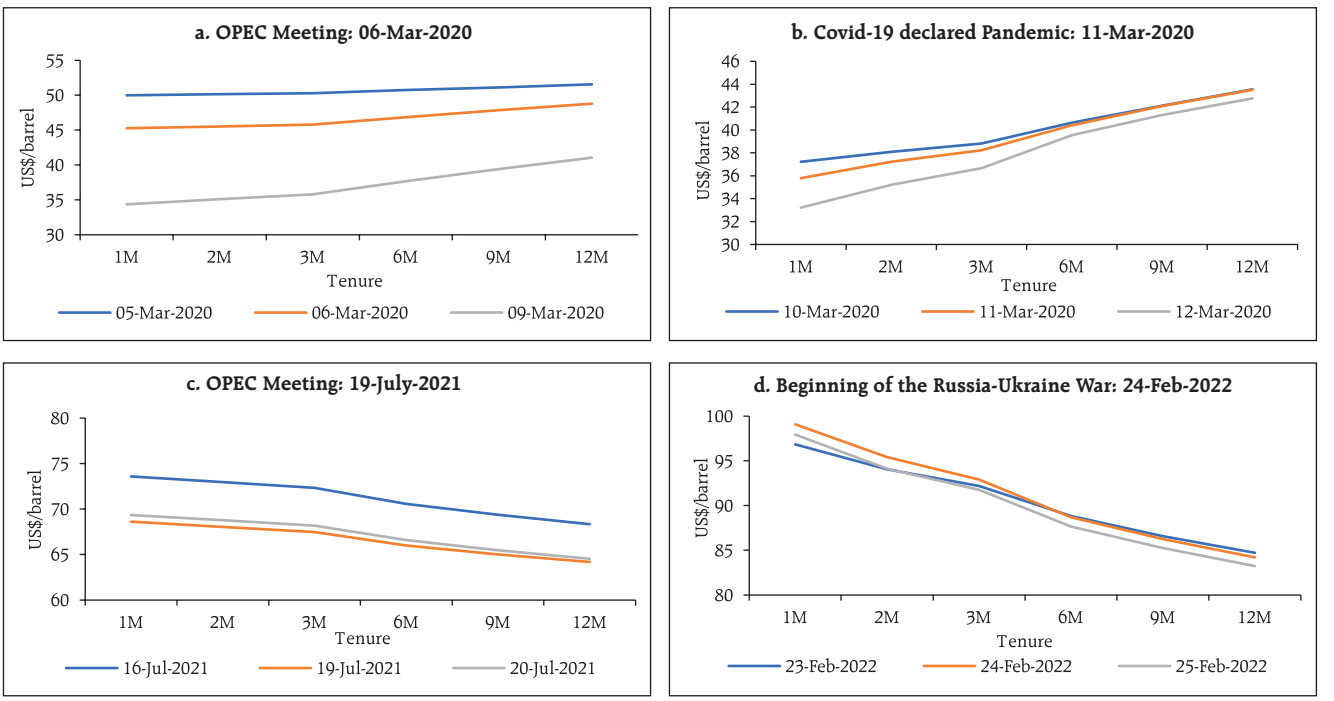
For instance, on March 6, 2020, OPEC countries failed to strike a deal with their allies led by Russia on oil production cuts. At that time, markets expected an imminent price war within oil exporting countries.

Chart 1: Monthly Crude Oil Prices and Major Events



Note: The above chart shows the monthly average spot price for Brent crude in solid red line while monthly change in Brent crude spot is shown using solid blue bars. Vertical black lines mark major events as follows – A: Iranian Revolution; B: Iran-Iraq War; C: OPEC collapse; D: Iraq invades Kuwait; E: Asian financial crisis; F: OPEC cuts production target; G: US 9/11 terrorist attack; H: Global financial crisis 2008; I: Oil price crash of 2014; J: Covid-19 pandemic reduces global demand; K: Russia-Ukraine War; L: Bank failures in US and Europe; M: Saudi Arabia production cut announcement.
Sources: OPEC; Bloomberg; and Kanzig (2021).

Chart 2: Oil Futures and OPEC Announcements



Note: The above charts show oil market futures prices for various tenures around major events and OPEC meetings since 2020. The vertical and horizontal axis show the oil futures price in US dollar per barrel and contract length (from 1-month to 12-month), respectively. Oil futures price curve on the day of the event (t) is shown by solid orange line while blue and grey line show the futures curve one-day before (t-1) and one-day after (t+1) the event. The main events shown above include OPEC announcement of March 06, 2020 and July 19, 2021 along with March 11, 2020 when WHO declared Covid-19 to be a global pandemic and February 24, 2022 with the beginning of Russian invasion of Ukraine.
Source: Bloomberg.

Consequently, oil futures went down across all tenors on the next trading day *i.e.*, March 9, 2020 (Chart 2, panel a). Similarly, when the World Health Organisation (WHO) declared Covid-19 as a global pandemic (March 11, 2020), market participants expected lower demand for crude only in the near future but negligible impact over the medium term. Reflecting this sentiment, on the very next day, futures price went down sharply for short-term contracts but only marginally in the case of longer term contracts (Chart 2, panel b).

The meeting held on July 18, 2021 was also a consequential one. In this meeting, OPEC and non-OPEC allies reached an agreement to boost oil supply by September 2022 as prices had climbed to the highest levels in more than two years. This positive news surprise led to an immediate decline in crude futures across all tenors (Chart 2, panel c)[2]. Finally, the beginning of the Russia-Ukraine war on February 24, 2022 led market participants to expect that supply chain constraints will worsen and energy prices will go up in the near future as Russia is a major oil and gas supplier to the European market (Chart 2, panel d). As markets expected the invasion to be over within a short span, futures of longer tenor went down compared to shorter tenor.

While OPEC announcements can lead to changes in spot and futures market for oil, it is important to note that OPEC's share in world oil production has

[2] In this case, longer-dated oil price futures contracts traded below the spot price of crude oil. The same pattern was observed at the beginning of the Russia-Ukraine war. Such a scenario when the spot price *i.e.*, the current price of an underlying asset is higher than the prices trading in the futures market is known as "backwardation". Backwardation in the oil market tends to encourage producers to limit their supply to keep the market in balance while incentivising oil traders to buy longer-dated oil futures contracts.

been declining in recent years. In fact, OPEC's share in global oil production has dropped from 42.3 per cent in 2012 to 36.2 per cent in 2020 as per data from the US Energy Information Administration (EIA). The decline may have been caused by a number of factors, including the rise of shale oil production in the US, growth of non-OPEC oil producers, such as Russia and Brazil, as well as changes in the country-specific energy policies along with the rise in renewable energy and electronic vehicles (EVs). However, this may change going forward driven by economic growth and population in non-OECD countries, especially in Asia, which are primarily dependent on OPEC and its allies for their energy supply. Consequently, OPEC's share in total global oil production is estimated to gradually rise from 36.8 per cent in 2021 to 42.2 per cent by 2050 ((EIA, 2021).

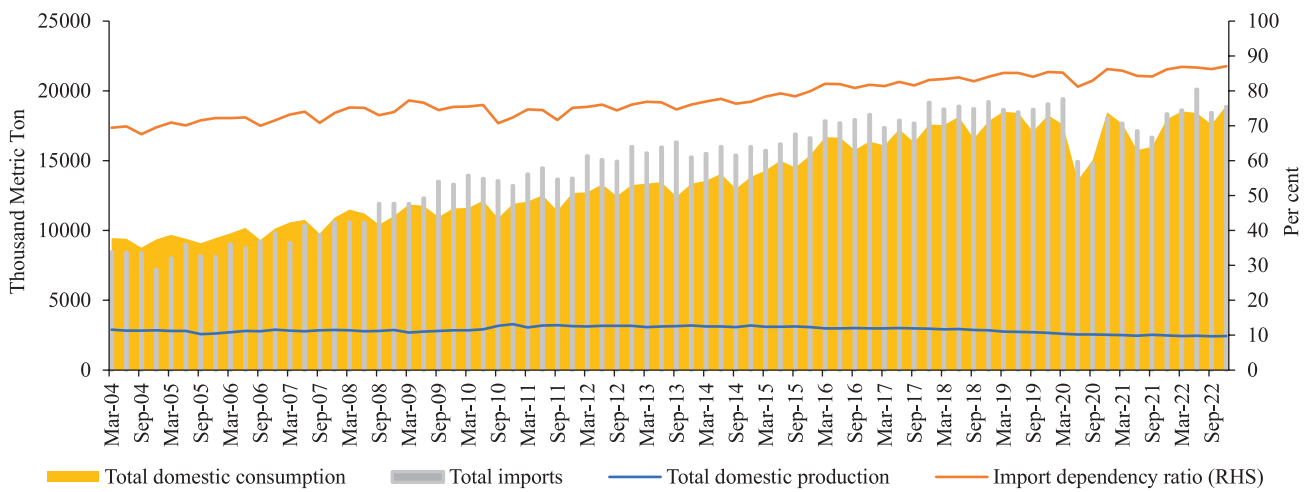
III.2. Indian Experience

Global consumption of petroleum and other liquids has increased three-folds from 34320 Mb/d in 1973 to 97165 Mb/d in 2021 (EIA). Within the same time span, India's crude oil consumption has increased seven times accounting for about 5 per cent of world's total crude oil consumption. This has been made possible by its track record as one of the fastest growing developing economies along with the world's highest population. Comparatively in 1990, its consumption share was only one and half per cent while its production level was marginal at one per cent of global oil production. This gap has widened and reached around 4 per cent, which highlights India's import dependence on global crude oil market (Chart 3).

At present, India is the fourth-largest global energy consumer behind China, the United States and the European Union. India is slated to overtake the European Union as the world's third-largest energy consumer by 2030 according to the India Energy Outlook 2021, published by the International Energy Agency (IEA, 2021).

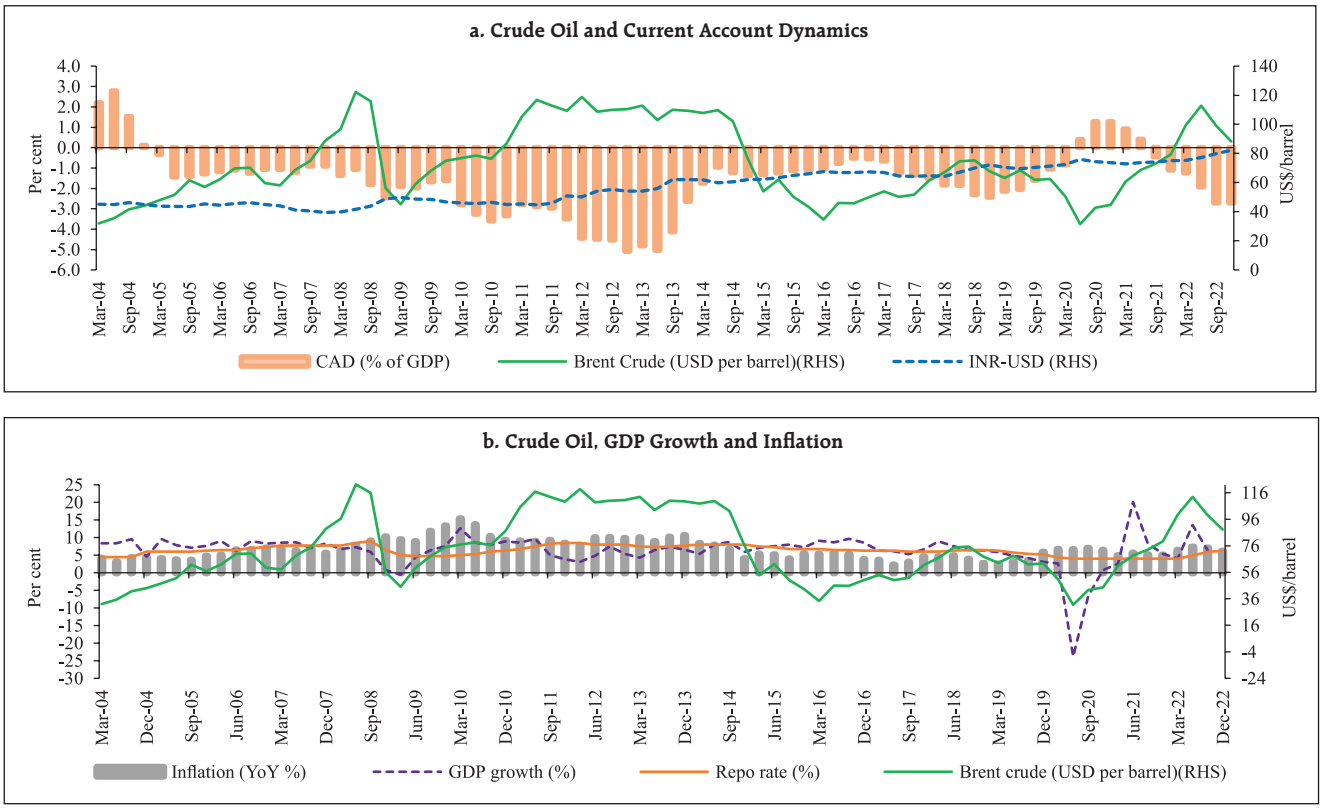
India's continued industrialisation becomes a major driving force for the global energy economy. Over the last three decades, India has accounted for about 10 per cent of global growth in industrial value-added (in PPP terms). By 2040, India is set to account for almost 20 per cent of global growth in industrial value-added. It is also expected to lead the growth in

Chart 3: India's Crude Oil Import Dependence – Domestic Consumption, Production and Import of Crude Oil



Note: Import dependency has been calculated as one *minus* the ratio of total domestic production of crude oil and total domestic consumption of oil.
Sources: CEIC; and Bloomberg.

Chart 4: Crude Oil Price and India's Macroeconomy



Sources: CEIC; and Bloomberg.

final industrial energy consumption, especially in the steelmaking industry. The economy will account for nearly one-third of global industrial energy demand growth by 2040. India's oil demand is expected to rise by 74 per cent to 8.7 Mb/d by 2040 under the existing scenario. The natural gas requirement is projected to more than triple to 201 billion cubic meters (IEA, 2021). India's energy outlook suggests that price of crude oil and other energy sources will have significant bearing on major financial and macroeconomic variables (Chart 4).

IV. Empirical Methodology and Data

There exist a vast literature on the macroeconomic impact of oil price shocks that suggests global oil supply, global demand for oil and expectations about future oil market conditions are fundamental drivers of oil price (Killian, 2009). From an empirical standpoint, the impact of these drivers has been disentangled using a variety of approaches, including zero restrictions, sign restrictions and narrative information methods (Kilian, 2009; Kilian and Murphy, 2012 and 2014; Lippi and Nobili 2012; Baumeister and Peersman, 2013; Baumeister and Hamilton, 2019; Caldara *et al.*, 2019; Zhou, 2020).

In the context of global oil supply, traditional supply shocks can be interpreted as sudden disruptions to current supply of crude oil reflected in an instantaneous fall in oil supply, increase in oil price and reduction in inventories (Hamilton, 2003; Kilian, 2008). In contrast, oil supply news shocks can be interpreted as surprise changes to the expectations about oil supply in the future. If a surprise OPEC announcement leads oil market participants to expect a production shortfall in the future, they will build up inventories today to cover up for lesser

oil production tomorrow. Thus, the reaction of oil inventories is the differentiating feature between oil supply news shocks and traditional oil supply shocks. As a first attempt to understand the impact of OPEC announcements on domestic financial markets, we consider the daily change in various financial indicators around such meetings. In total, we study 81 OPEC meetings between 2000-2022, out of which fresh supply increases were announced 13 times while new supply cuts were announced 16 times. The remaining 52 meetings concluded with the announcement of *status-quo*. We analyse both the mean and standard deviation (S.D.) of daily changes on OPEC meeting days as opposed to all other non-announcement days. Table 1 below shows the mean and standard deviation of daily change in the spot price of brent crude, India crude basket, 10-year and 1-year sovereign bond yields, *Nifty 50* and *NSE Energy* equity price index and nominal US dollar to Indian Rupee exchange rate.

Although the differences in mean daily change on meeting and non-meeting days is not statistically different than zero, most domestic financial indicators exhibit significantly higher volatility on OPEC announcement days. Inter alia, this means that financial markets react to the information revealed in OPEC communications on its production decisions.

To formally analyse the dynamic impact of oil supply news shocks on the domestic macroeconomy, we rely on a structural vector autoregression (SVAR) model identified using an instrument variable approach briefly described below. Consider the following SVAR model:

$$A \cdot y_t = \alpha_1 y_{t-1} + \cdots \ldots \ldots + \alpha_p y_{t-p} + \varepsilon_t \quad \ldots (1)$$

where y_t is $n \times 1$ vector of endogenous variables while α_i and A are $n \times n$ parameter matrices. Components of ε_t, interpreted as structural shocks, are assumed to be uncorrelated with each other. Pre-multiplying (1) by A^{-1}, we obtain a reduced form VAR as follows:

$$y_t = \delta_1 y_{t-1} + \cdots \ldots \ldots + \delta_p y_{t-p} + \omega_t \quad \ldots (2)$$

where $\omega_t = B \cdot \varepsilon_t$, $A^{-1} = B$ and $E[u_t u_t'] = BB' = \sum$. However, identification of structural shocks requires placing restrictions to estimate the matrix $B = A^{-1}$. Assuming that the structural shock cannot be directly observed but can be approximated through an instrument Z_t, the literature has proposed the use of the external instruments approach for structural identification of the VAR model (Mertens and Ravn, 2013; Stock and Watson, 2018. Under this approach, the key is to find an instrument that is correlated with the shock of interest but uncorrelated with other structural shocks.

Kanzig (2021) proposes using oil futures – market-based proxy for oil price expectations – in a high-frequency identification setup around OPEC announcements to identify oil supply news shocks. This is done in a two-step process. In the first step, a high-frequency identification framework is applied to measure the change in price of oil futures around OPEC meetings. For this purpose, a daily window is used to compute the change in price (in logs) of oil futures of 6-month maturity before and after the announcement of OPEC decisions[3]. The shock series at quarterly frequency is constructed by aggregating

Table 1: Financial Market Movement on OPEC Announcement Days

Daily Change (t+1 and t-1 days)	Announcement Days		Non-announcement Days	
	Mean	S.D.	Mean	S.D.
Brent Crude	-0.001	0.062***	0.000	0.033
India Basket Crude	0.002	0.045***	0.000	0.032
India 10y G-Sec	-0.015	0.095**	-0.001	0.082
India 1y G-Sec	0.006	0.114	-0.001	0.110
INR/USD	0.000	0.004***	0.000	0.006
Nifty 50	0.001	0.026***	0.001	0.022
NSE Energy Index	0.002	0.031***	0.001	0.023

Note: ***, ** indicates statistical significance at 1% and 5% level, respectively.
Sources: Bloomberg; and Authors' calculations.

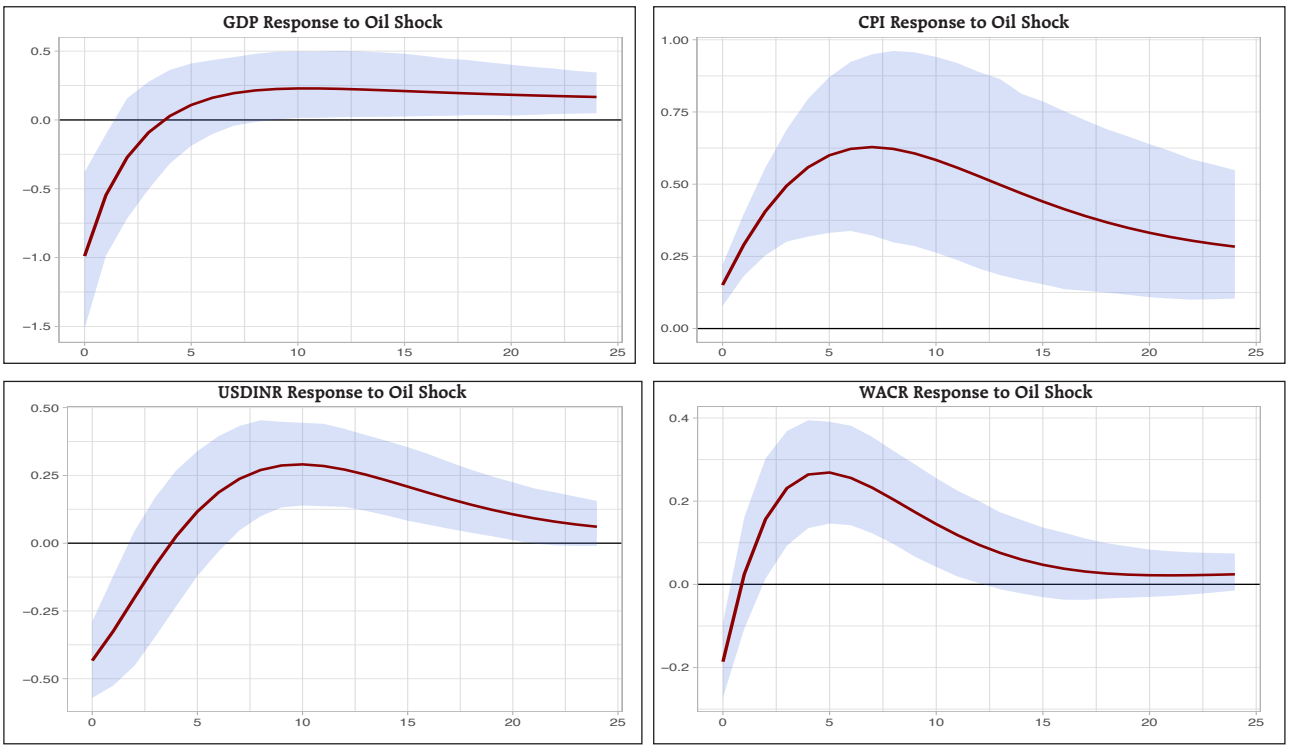
[3] As shown by Kanzig (2021), since oil futures are highly correlated, the results do not change if oil futures of other maturities from one-month to one-year ahead are used.

the daily changes for all meetings in a given quarter. If there was no meeting in a quarter, the surprise equals zero. Kanzig (2021) suggests using this oil supply news surprise series as an external instrument rather than as a direct shock measure. Therefore, in the second step, an SVAR model with external instruments is used to identify the impact of oil supply news shocks on the macroeconomy. The SVAR model consists of variables describing the global oil market, namely global crude oil production, inventories, global industrial production and crude oil price as well as other macroeconomic variables of interest.

We follow the same approach in this study. In particular, we consider the impact of oil supply news shocks on domestic economic activity measured in terms of real gross domestic product (GDP), domestic prices measured using the headline consumer price index (CPI), nominal exchange rate proxied by the bilateral rate between US Dollar and Indian Rupee (USD-INR rate). As is standard practice, the weighted-average call money rate (WACR) is taken as the monetary policy indicator. For global oil market indicators, nominal crude oil price (WTI crude oil spot price in US$ per barrel), total world crude oil production, total world crude inventory and global index of industrial production (GIIP) are included in the model.

The data are obtained from OPEC, Bloomberg, and the Reserve Bank of India (RBI). All variables are seasonally adjusted using the X-13 ARIMA procedure and converted into natural logarithms before estimation. The data sample used for model estimation consists of quarterly data from 2004 to 2021. Optimal number of lags were selected through the Bayesian Information Criteria (BIC). The impulse responses of the domestic macroeconomic variables

Chart 5: Impulse Responses to Oil Supply News Shocks



Note: The above chart shows the impulse responses of domestic GDP, domestic prices, exchange rate and the weighted-average call rate to a one standard deviation oil supply news shock. The point estimate and 90% bootstrapped error bands are shown by dark red line and shaded blue region, respectively. The y-axis shows the impact in percentage terms while the x-axis shows the horizon in quarters.
Source: Authors' calculations.

to oil supply news shocks are shown in Chart 5. The estimated model satisfies the F-test condition (F-stat > 10) for the first-stage regression results of oil price residual from the VAR model on the instrument variable (Olea *et al.*, 2016). The impulse responses underline the dynamic causal impact of oil supply news shocks on the Indian economy.

While domestic currency appreciates against the dollar on the impact of the shock, surprise changes in expectations about future oil supply are expected to lead to an increase in oil inventories raising the domestic demand for US dollars to purchase available crude oil in the market. This leads to a depreciation of the domestic currency over time as seen in the medium-term response of exchange rate to oil supply news shocks. At the same time, there is a persistent increase in domestic consumer prices in response to an oil supply news shock. The sustained increase in prices is expected to lead to a lower aggregate demand as households and firms are left with less disposable incomes to spend on non-energy goods. Moreover, surprise changes in oil prices can also influence the price and wage-setting in the economy by altering the inflation expectations of firms and households. Thus, domestic economic activity falls on impact of such a shock. However, the impact is felt only for a short duration as it reverts to mean quickly. Lastly, while the immediate reaction of monetary policy is seen to be accommodative on impact perhaps to cushion the short-term fall in economic activity, monetary policy is gradually tightened to counter the increase in prices. Thus, the impulse response analysis underlines the cost-push effect of oil supply surprises – causing an increase in consumer prices and a fall in economic output – on the Indian economy.

V. Conclusion

Amidst tense geopolitical situations where weaponisation of energy has become the norm, maintaining domestic energy security and macroeconomic stability is a key challenge for emerging market economies. Given the importance of crude oil for India, we show that oil supply news shocks can have serious consequences for the domestic economy. Not only do financial markets react to supply-related announcements by the OPEC, domestic output falls and consumer prices increase as a result of oil supply news shocks. These findings are important from the point of view of an inflation targeting central bank to deal with the deleterious impact of such shocks on the domestic economy.

References

Arezki, R., & Blanchard, O. (2015). The 2014 oil price slump: Seven key questions. *VoxEU, January 13*.

Arezki, R., & Matsumoto, A. (2015). Metals and oil: A tale of two commodities. *Washington, DC: Brookings Institution*.

Baumeister, C., & Hamilton, J. D. (2019). Structural interpretation of vector autoregressions with incomplete identification: Revisiting the role of oil supply and demand shocks. *American Economic Review*, *109*(5), 1873-1910.

Baumeister, C., & Peersman, G. (2013). Time-varying effects of oil supply shocks on the US economy. *American Economic Journal: Macroeconomics*, *5*(4), 1-28.

Bodenstein, M., Guerrieri, L., & Kilian, L. (2012). Monetary policy responses to oil price fluctuations. *IMF Economic Review*, *60*(4), 470-504.

Caldara, D., Cavallo, M., & Iacoviello, M. (2019). Oil price elasticities and oil price fluctuations. *Journal of Monetary Economics*, *103*, 1-20.

Demirer, R., & Kutan, A. M. (2010). The behavior of crude oil spot and futures prices around OPEC and SPR announcements: An event study perspective. *Energy Economics*, *32*(6), 1467-1476.

EIA. (2021). International Energy Outlook 2021. U.S. Energy Information Administration (EIA), Washington D.C., USA. Available at: https://www.eia.gov/outlooks/ieo/

Filardo, A. J., & Lombardi, M. J. (2014). Has Asian emerging market monetary policy been too procyclical when responding to swings in commodity prices? *BIS Paper*, (77j).

Filardo, A. J., Lombardi, M. J., Montoro, C., & Ferrari, M. (2018). Monetary policy spillovers, global commodity prices and cooperation.

Guidi, M. G., Russell, A., & Tarbert, H. (2006). The effect of OPEC policy decisions on oil and stock prices. *OPEC review*, *30*(1), 1-18.

Güntner, J. H., & Linsbauer, K. (2018). The effects of oil supply and demand shocks on US consumer sentiment. *Journal of Money, Credit and Banking*, *50*(7), 1617-1644.

Herwartz, H., & Plödt, M. (2016). The macroeconomic effects of oil price shocks: Evidence from a statistical identification approach. *Journal of International Money and Finance*, *61*, 30-44.

Hyndman, K. (2008). Disagreement in bargaining: An empirical analysis of OPEC. *International Journal of Industrial Organisation*, *26*(3), 811-828.

IEA. (2021). India Energy Outlook 2021. International Energy Agency (IEA), Paris, France. Available at: https://www.iea.org/reports/india-energy-outlook-2021.

Känzig, D. R. (2021). The macroeconomic effects of oil supply news: Evidence from OPEC announcements. *American Economic Review*, *111*(4), 1092-1125.

Kilian, L. (2008). Exogenous oil supply shocks: how big are they and how much do they matter for the US economy? *The Review of Economics and Statistics*, *90*(2), 216-240.

Kilian, L. (2009). Not all oil price shocks are alike: Disentangling demand and supply shocks in the crude oil market. *American Economic Review*, *99*(3), 1053-69.

Kilian, L., & Murphy, D. P. (2012). Why agnostic sign restrictions are not enough: understanding the dynamics of oil market VAR models. *Journal of the European Economic Association*, *10*(5), 1166-1188.

Kilian, L., & Murphy, D. P. (2014). The role of inventories and speculative trading in the global market for crude oil. *Journal of Applied econometrics*, *29*(3), 454-478.

Lin, S. X., & Tamvakis, M. (2010). OPEC announcements and their effects on crude oil prices. *Energy Policy*, *38*(2), 1010-1016.

Lippi, F., & Nobili, A. (2012). Oil and the macroeconomy: a quantitative structural analysis. *Journal of the European Economic Association*, *10*(5), 1059-1083.

Loutia, A., Mellios, C., & Andriosopoulos, K. (2016). Do OPEC announcements influence oil prices?. *Energy Policy*, *90*, 262-272.

Mertens, K., & Ravn, M. O. (2013). The dynamic effects of personal and corporate income tax changes in the United States. *American economic review*, *103*(4), 1212-47.

Olea, J. L. M., Stock, J. H., & Watson, M. W. (2021). Inference in structural vector autoregressions identified with an external instrument. *Journal of Econometrics*, *225*(1), 74-87.

Peersman, G., & Van Robays, I. (2009). Oil and the Euro area economy. *Economic Policy*, *24*(60), 603-651

Peersman, G., & Van Robays, I. (2012). Cross-country differences in the effects of oil shocks. *Energy Economics*, *34*(5), 1532-1547.

Schmidbauer, H., & Rösch, A. (2012). OPEC news announcements: Effects on oil price expectation and volatility. *Energy Economics*, *34*(5), 1656-1663.

Stock, J. H., & Watson, M. W. (2012). *Disentangling the Channels of the 2007-2009 Recession* (No. w18094). National Bureau of Economic Research.

Stock, J. H., & Watson, M. W. (2018). Identification and estimation of dynamic causal effects in macroeconomics using external instruments. *The Economic Journal*, *128*(610), 917-948.

Youssef, M. (2022). Do oil prices and financial indicators drive the herding behavior in commodity markets?. *Journal of Behavioral Finance*, *23*(1), 58-72.

Zhang, X., Zhou, J., & Du, X. (2022). Impact of oil price uncertainty shocks on China's macro-economy. *Resources Policy*, *79*, 103080.

Zhou, X. (2020). Refining the workhorse oil market model. *Journal of Applied Econometrics*, *35*(1), 130-140.

Financial Literacy in India: Insights from a Field Survey

*by Ramesh Jangili#, Srinivasa Sai Charan Marisetty^ and Yashoda Bai Mood^*

We assess the financial literacy (FL) levels in India through a primary survey, as prescribed by the Organisation for Economic Co-operation and Development (OECD). We obtained responses through a structured questionnaire and summarised FL broadly on three components — knowledge, behaviour and attitude. Our results show that some with relatively better financial knowledge levels, are lagging in financial behaviour or attitude and vice-versa. The findings reinforce many stylised facts; however, heterogeneity observed between the FL components within socio-economic groups necessitates policy intervention. While the RBI's initiatives aim at improving financial knowledge for various groups, initiatives to improve the other two aspects may be supported by a targeted approach.

Introduction

Financial inclusion (FI) has been defined in many possible ways. According to the World Bank, "Financial inclusion means that individuals and businesses have access to useful and affordable financial products and services that meet their needs and are delivered responsibly and sustainably." Though several definitions exist for FI[1], access, usage, quality and cost of financial services are collectively used to define FI. Broadly, all definitions allude that FI is having access to the formal financial system for availing basic financial services at a reasonable cost.

Low-income households may have to borrow from friends, family, or usurious moneylenders, to meet any unexpected expenditures. They have little awareness and limited access to financial services that could protect their financial resources in exigent circumstances. The provision of uncomplicated, small, affordable products can help bring low-income families into the formal financial sector (Joshi, 2013). Bringing low-income groups within the perimeter of the formal banking sector protects their financial wealth and other resources during exigent circumstances. FI helps to mitigate the exploitation of vulnerable sections by usurious money lenders by facilitating easy access to formal credit (Bhaskar, 2013). Steps towards achieving FI are also echoed in the Gandhian philosophy: "Sarvodaya through Antyodaya – Welfare of all through the upliftment of the weakest" (Das, 2021).

Traditionally, FI was considered to be important only for achieving a country's developmental goals and for eradicating poverty. But FI is also equally important for achieving monetary policy goals as financially included people can smoothen their consumption by drawing down their savings in difficult times and saving in good times. Thereby, people become both more interest-sensitive and responsive to monetary policy decisions. This would result in effective dampening of inflation and output volatility (Patra, 2021).

Financial Literacy (FL) is an important adjunct in effectively promoting FI, tacitly protecting consumers and eventually ensuring financial stability. FI and FL[2] need to go hand in hand, to enable a common person to understand the needs and benefits of the

The author is from the Department of Statistics and Information Management (DSIM) of Hyderabad Regional Office.

^ The authors were at the Financial Inclusion and Development Department (FIDD) of Hyderabad Regional Office, when the study was undertaken.

The authors are grateful for the guidance received from Smt. K Nikhila, Regional Director, Hyderabad Regional Office. The views expressed in this article are those of the authors and do not represent the views of the Reserve Bank of India.

[1] In the Indian context, the Committee on Financial Inclusion (Chairman: Dr C. Rangarajan) defines financial inclusion as the process of ensuring access to financial services, and timely and adequate credit where needed by vulnerable groups such as weaker sections and low-income groups at an affordable cost. The Committee on Financial Sector Reforms (Chairman: Dr Raghuram G. Rajan) indicates that financial inclusion refers to universal access to a wide range of financial services (banking products, insurance, equity products, *etc.*) at a reasonable cost.

[2] FI and FL were alluded by Chakrabarty (2013) as twin pillars where FI acts on the supply side and FL acts from the demand side.

products and services offered by the formal financial institutions. In contrast, financial illiteracy can add to consumers' inability in classifying and understanding the fine print from a large volume of information, which in turn leads to an information asymmetry between the financial intermediary and the consumer. FL, however, can bridge this gap and help consumers narrow the information divide. Therefore, FL is also an essential prerequisite for ensuring consumer protection.

From a systemic perspective, greater FL can aid in better allocation of resources and thereby raise the long-term growth potential of the economy. As alluded by the former RBI Governor, Dr D. Subbarao, the ultimate goal of FL is to empower people to act in their self-interest and these actions accrue benefits to the economy at large. Only when consumers are fully aware of the available financial products, they can evaluate the merits and demerits of each product, then negotiate and avail the product of their choice, resulting in their empowerment in a very meaningful way. They will know enough to demand accountability and seek redressal of grievances. This, in turn, will enhance the integrity and quality of financial markets (Subbarao, 2010).

Given the importance of FI, the RBI has constructed a composite Financial Inclusion Index[3] (FI-Index) to capture the extent of FI across the country (Sharma *et.al.,* 2021). Further, the ambitious agenda set by the National Strategy for Financial Inclusion (NSFI), 2019-24 and the National Strategy for Financial Education (NSFE), 2020-25 to achieve a financially literate and empowered India, makes one ponder over the present literacy levels across the country (RBI, 2020 and RBI, 2021).

It is a common practice to conduct periodic surveys to assess the level of FL (OECD, 2020) and in the Indian context, National Centre for Financial Education (NCFE) carried out a Financial Literacy and Inclusion Survey in 2018-19 (NCFE, 2019). But it has been more than three years since the survey was carried out. The RBI has also undertaken several initiatives during the period to promote FL across the country (Annex I). However, no pertinent information is available on the current levels of FL. Therefore, a survey is conducted to assess the current levels of FL[4] and the findings are presented in this study.

The rest of the study is organised into five sections. We discuss the survey methodology and data collection process in next section. The descriptive profile of respondents is briefly presented in section 3. Prevalence of component-wise[5] FL is presented in section 4 along with overall FL. FL scores and their relationship with respondents' characteristics are discussed in section 5. Summary and policy suggestions are presented in the last section.

2. Survey Methodology and Data Collection

Primary data was collected through a structured questionnaire for this study (Annex II). We prepared the questionnaire broadly in line with OECD/INFE Toolkit for measuring FL, which was drawn from OECD working paper (Kempson, 2009). Further,

[3] Reserve Bank of India has constructed a composite Financial Inclusion Index (FI-Index) to capture the extent of FI across the country. The index captures information on various aspects of FI in a single value ranging between 0 and 100, where 0 represents complete financial exclusion and 100 indicates full FI. The FI-Index comprises three broad parameters (weights indicated in brackets) viz., Access (35 per cent), Usage (45 per cent), and Quality (20 per cent) with each of these consisting of various dimensions, which are computed based on a number of indicators. The value of FI Index for March 2022 stands at 56.4 *vis-à-vis* 53.9 in March 2021, with growth witnessed across all the sub-indices.

[4] FL surveys provide information to policymakers on which groups of people need maximum support (Atkinson & Messy, 2012). There do exist region specific studies, Singh *et.al.* (2023) for Mizoram and Awasthy *et.al.* (2023) for rural West Bengal in the recent past, to identify the determinants of FL. A detailed literature review can also be found in Awasthy *et.al.* (2023).

[5] FL is assessed based on three components, namely, knowledge, behaviour and attitude. Scores were allocated for each correct answer in these three components, and finally the aggregate of these three components to arrive at FL score, in line with OECD/ International Network on Financial Education (INFE) toolkit. More can be found at https://www.oecd.org/financial/education/oecd-infe-2020-international-survey-of-adult-financial-literacy.pdf

similar type of questionnaire was used as part of the OECD FL[6] exercise. Our questionnaire comprises of 28 questions, divided into two blocks *viz.*, FL and identification.

The RBI, Hyderabad office sets up a stall in the annual *Numaish*[7] exhibition to spread financial awareness among the visitors. Historically, we observed that people from various age groups, gender, occupation, qualification, domicile, states, *etc.* visit the exhibition, thereby providing a heterogeneous sample. Hence, we made an attempt to conduct a field-level survey to assess the level of FL.

The survey approach involved two stages. In the first stage, we collected responses amongst *Numaish* visitors. We requested them to share the questionnaire on their social media platforms, and the second stage involved, thus received responses. Thus, a two-stage sampling methodology was adopted to obtain the sample. The first stage respondents are Numaish visitors, and the second stage is a snow-ball sampling originating from the first stage respondents. Though the questionnaire was drafted in English, we did ask the respondents in either English, Hindi or Telugu, to expand and diversify the sample. Cumulatively over a period of 45 days, 584 responses were received. About 40 per cent of the responses were received through the survey questionnaire at the stall (first stage), and the remainder were received through online mode (second stage).

3. Descriptive Profile of the Survey Respondents

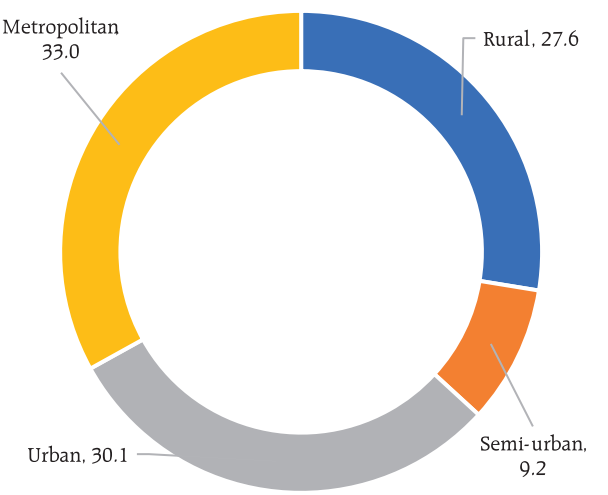
3.1 Population Groups/Revenue Centres

We found an adequate representation of respondents across population groups/revenue centres, despite targeting *Numaish* visitors for the survey. Respondents were primarily from metropolitan areas, followed by urban and rural regions (Chart 1). Lack of awareness of classification in terms of semi-urban and rural areas might have led to the lowest share of 9 per cent from the semi-urban population. It can be attributed to the ubiquitous awareness in terms of well-known village, town and city concept, avoiding semi-urban areas. Overall, the sample is representative of various population groups/revenue centres.

3.2 Gender

Owing to the voluntary nature of the survey response, the gender distribution is highly skewed, with a higher male representation (Chart 2). Male responses are much higher at 84 per cent for rural and semi-urban population groups, whereas

Chart 1: Distribution of Respondents by Population Groups

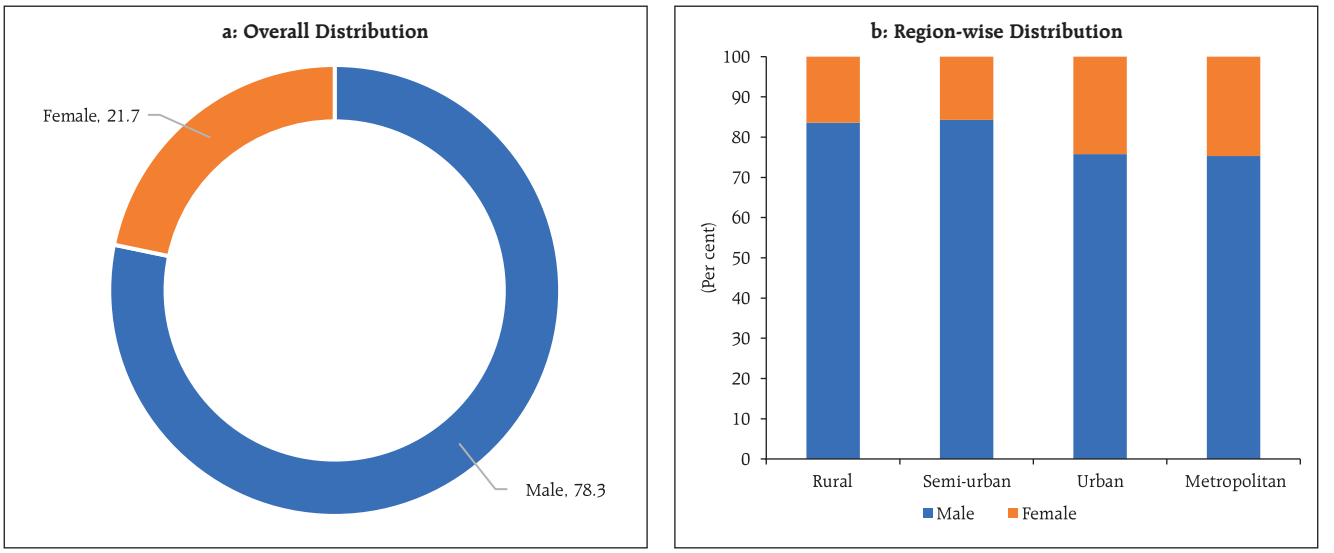


Source: Author's calculations based on surveyed data.

[6] FL competencies were assessed in around 40 countries in 2015-16 using this type of questionnaire, more can be found in the OECD/INFE International Survey of Adult Financial Literacy Competencies.

[7] *Numaish* or *Numaish Masnuat-e-Mulki* (also known as Exhibition) is an annual consumer exhibition held in Hyderabad, Telangana, India. It has remained the only event of its kind to be organised at a stretch for 45 days at its 23-acre permanent venue. In view of the bustling crowds visiting the stalls at Numaish from all parts of the country, the RBI has been setting up a stall at the All-India Industrial Exhibition since 2007 and has been actively disseminating FL to visitors through several interactive modes. During the 82nd All India Industrial Exhibition held between Feb 26 - Apr 14, 2022, around 4000 individuals visited the RBI stall.

Chart 2: Distribution of Respondents by Gender



Source: Author's calculations based on surveyed data.

they account for about 75 per cent for urban and metropolitan groups.

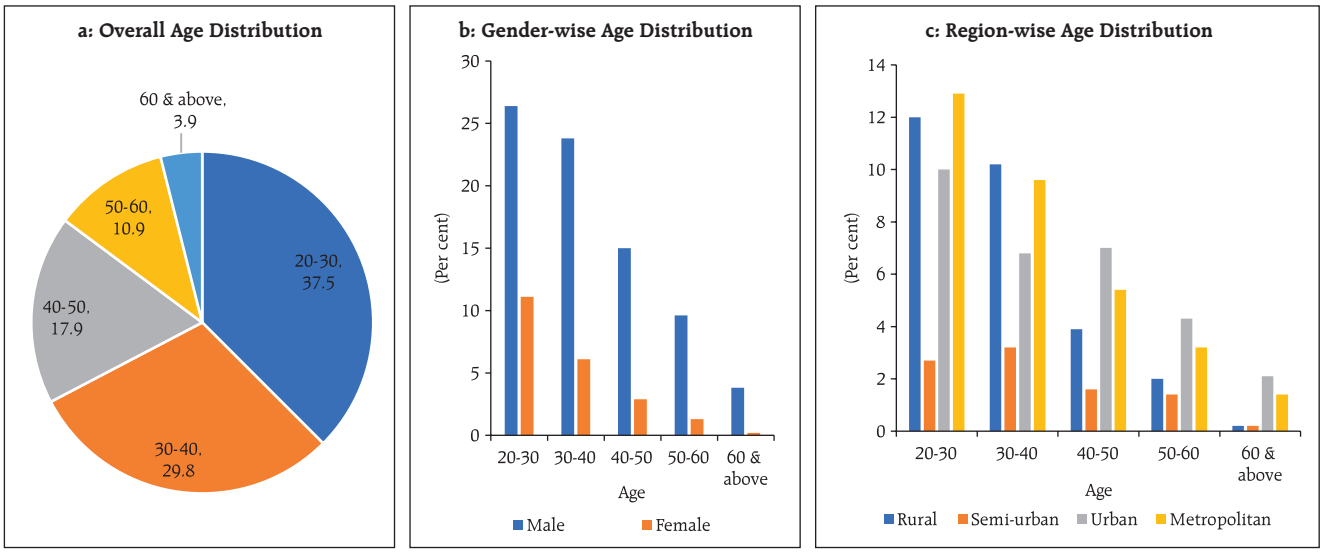
3.3 Age

The sample has representation from all the age groups, with maximum number of respondents falling within the age group of 20-29 years, followed by 30-39 years (Chart 3). Further, the sample is representative of various socio-economic groups within each age group.

3.4 Distribution of Respondents by Occupation and Education Level

We found that majority of the respondents are salaried employees, followed by others and self-employed/business (Table 1). Majority of respondents

Chart 3: Age Distribution of Respondents



Source: Author's calculations based on surveyed data.

Table 1: Distribution of Respondents – Occupation *vis-à-vis* Education Level

(Per cent)

S. No.	Occupation	Education Level			
		12th Std and below	Graduate	Postgraduate and above	Total
1.	Salaried Employee	1.6	33.2	31.8	66.6
2.	Self-Employed / Business	2.7	5.0	3.4	11.1
3.	Daily Worker/ Labourer	1.6	0.7	0.7	3.0
4.	Homemaker	0.5	0.9	0.7	2.1
5.	Retired Persons	0.2	2.0	2.0	4.1
6.	Others	2.0	7.5	3.6	13.0
7.	**Total**	**8.6**	**49.3**	**42.1**	**100.0**

possess either graduation or post-graduation and above educational qualifications. However, it is worth mentioning that various open universities offer graduation courses to those students, who could not complete their formal schooling, subject to the candidate clearing Bachelor's Preparatory Programme.[8] These admissions would have resulted in the enrolment of a majority of the school dropouts into graduation courses, thereby completing the same in a couple of years.

We also observed that almost all salaried employees have their education level as graduation and above. The respondents with education level 12th std and below are majorly self-employed or are engaged in other activities. Few responses were received from respondents, who have at least completed graduation but working as a daily labourer or homemaker.

3.5 Distribution of Respondents by Income Level

Respondents are spread across various income groups (Table 2). The majority of the respondents from rural areas have monthly earnings of less than ₹20,000, and the majority of respondents from the metropolitan region have monthly remuneration in

Table 2: Distribution of Respondents – Income Group *vis-à-vis* Population Group

(Per cent)

S. No.	Income Group Classification	Population Group Classification				
		Rural	Semi-urban	Urban	Metropolitan	Total
1.	Less than ₹20,000	20.9	3.0	9.8	2.7	36.4
2.	₹20000-₹50000	4.3	2.3	6.6	9.6	22.9
3.	₹50000-₹1 lakh	2.5	1.3	8.2	11.3	23.2
4.	₹1 lakh and above	0.5	2.5	5.5	8.9	17.5
5.	**Total**	**28.2**	**9.1**	**30.2**	**32.5**	**100.0**

the range of ₹50,000-₹1lakh, validating the general income perception.

As a result, the data is representative of various population groups, occupational groups, income levels, both males and females, and also has representation from diverse age groups, making the sample suitable for further analysis and drawing inferences.

4. Prevalence of Financial Literacy

4.1 Prevalence of Financial Knowledge

Questions (Q10-Q14 of Annex II) assess an understanding of the risk-return relationship, inflation, diversification and awareness of grievance redressal mechanism. We presume that those who indicated 'TRUE' to Q11-Q14 and 'Yes' to Q10 understand the risk-return relationship, inflation, diversification and Ombudsman mechanism, respectively. We have assigned a score of one to each correct answer, and therefore the respondent with all correct answers scores a maximum of five under financial knowledge.

Most of the respondents are comfortable with risk-return relations and inflation but relatively less comfortable with diversification (Table 3). Further, 71 per cent of the respondents are aware of the Reserve Bank's Ombudsman Scheme. Understanding of risk-return is found to be high amongst retired persons and among the respondents in the 50-59 years age group. On the other hand, respondents in the daily worker/labourer occupation group have a lower understanding of the risk-return relationship. While

[8] http://www.ignou.ac.in/ignou/aboutignou/school/soss/programmes/detail/697/2

Table 3: Financial Knowledge – Proportion of Respondents with Correct Answer

(Per cent)

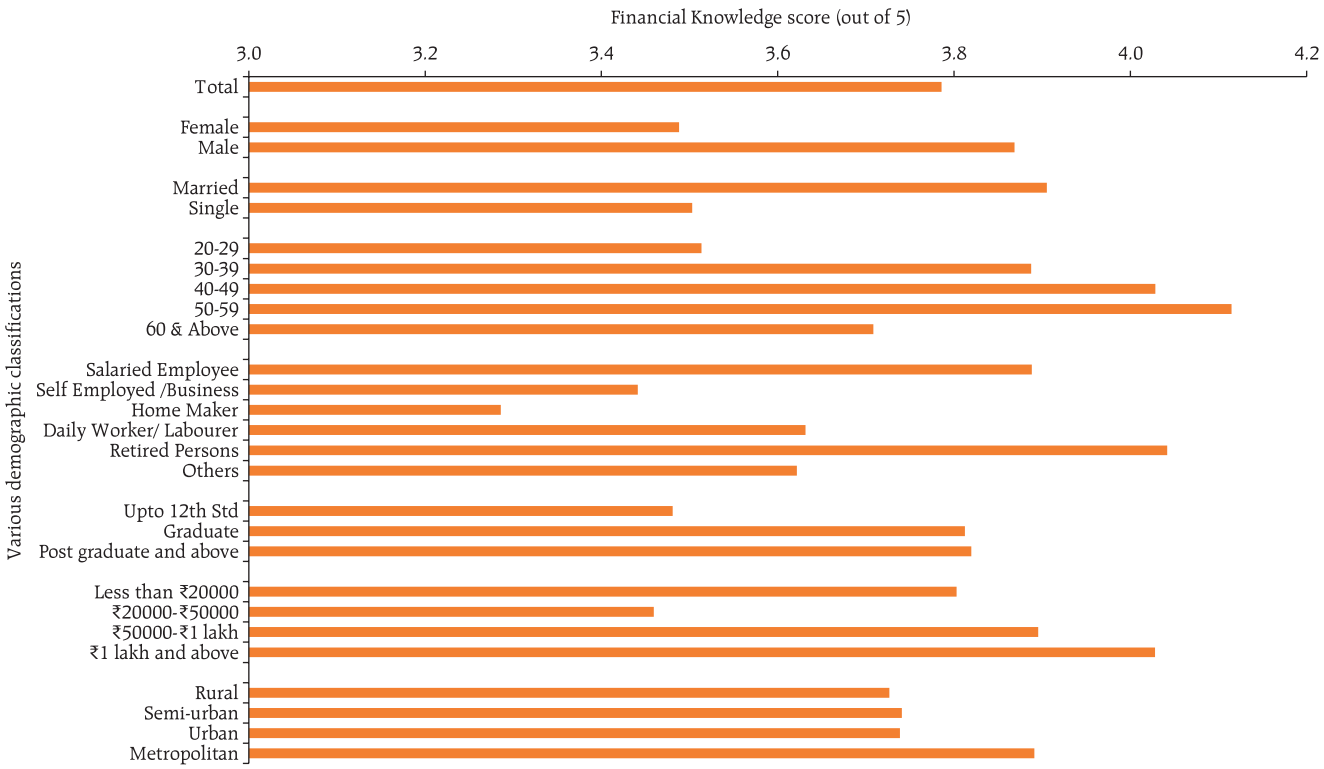
Demographic Classification	Risk-Return1	Risk-Return2	Inflation	Diversification	Ombudsman
Gender					
Female	70.9	76.4	81.1	61.4	59.1
Male	83.4	82.9	83.4	62.8	74.4
Marital Status					
Married	83.5	83.0	86.1	64.5	73.5
Single	74.0	78.0	75.1	57.8	65.3
Age					
20-29	75.9	79.0	77.2	56.7	62.5
30-39	82.8	79.9	84.6	65.1	76.3
40-49	80.2	86.8	87.7	73.6	74.5
50-59	90.2	86.9	90.2	65.6	78.7
60 & above	87.5	79.2	83.3	41.7	79.2
Occupation					
Salaried Employee	82.6	83.1	84.9	65.5	72.7
Self-Employed /Business	72.1	79.4	76.5	54.4	61.8
Homemaker	78.6	85.7	64.3	64.3	35.7
Daily Worker/ Labourer	73.7	63.2	73.7	73.7	78.9
Retired Persons	91.7	87.5	87.5	54.2	83.3
Others	77.0	77.0	82.4	54.1	71.6
Educational Qualification					
Up to 12th Std	78.8	75.0	73.1	57.7	63.5
Graduate	83.0	84.4	80.2	62.5	71.2
Postgraduate and above	78.3	79.5	88.1	63.5	72.5
Average Monthly Income Group					
Less than ₹20000	77.9	79.3	79.8	58.7	84.6
₹20000-₹50000	71.1	81.5	74.8	59.3	59.3
₹50000-₹1 lakh	88.1	82.1	86.6	65.7	67.2
₹1 lakh and above	88.8	85.0	94.4	70.1	64.5
Place of Residence					
Rural	76.4	74.5	78.3	59.0	84.5
Semi-urban	79.6	79.6	79.6	66.7	68.5
Urban	79.5	81.3	82.4	60.8	69.9
Metropolitan	85.5	88.1	88.1	65.8	61.7
Overall	***80.7***	***81.5***	***82.9***	***62.5***	***71.1***

respondents with an average monthly income of ₹1 lakh and above have a higher cognisance of inflation, homemakers have a lower understanding of inflation. Awareness about the diversification aspect is generally lower in the sample. Respondents in the age group of 60 & above have a much lower appreciation of diversification. Regarding the ombudsman scheme, 83.3 per cent of retired persons are aware of the scheme, whereas only 35.7 per cent of homemakers are aware of the same.

On assigning the financial knowledge score in the sample to Q10-Q15, we found that the overall score for financial knowledge is 3.8[9] (out of 5). We found that respondents in the age group of 40-59 years, those who retired and those with an average monthly

[9] Financial knowledge score was 4.6 (out of 7) for OECD-12 countries in 2020. A survey conducted in 2019 by OECD-INFE indicated a minimum threshold score of 6 (out of 9). However, NSFE 2020-2025 has not mentioned any minimum threshold score.

Chart 4: Financial Knowledge



Source: Author's calculations based on surveyed data.

income of ₹1 lakh and above scored four or more in the prevalence of financial knowledge (Chart 4). On the other hand, homemakers scored the lowest. Respondents whose occupation is self-employed and whose average monthly income is in the range of ₹20000-₹50000 also have lower financial knowledge scores.

Females have lower knowledge scores when compared to males. Similarly, unmarried respondents have lower scores when compared to married. Young respondents (less than 30 years of age) have a lower score, and the score improves with age, with the exception of those aged above 60 years. Respondents with lower educational backgrounds have a lower score. Respondents residing in the metropolitan area have higher financial knowledge scores when compared to others.

4.2 Prevalence of Financial Behaviour

We assess the financial behaviour of the respondents based on their responses to money management (Q1); household budget (Q2); managing living cost (Q7); saving behaviour (Q8); evaluation of available options while selecting financial product/ service (Q5) questions in Annex II; together with their response on a five-point Likert scale (1-strong disagreement to 5-strong agreement) to monitoring financial affairs (Q6f), setting long term financial goals and working to achieve them (Q6f), bill payment behaviour (Q6d) and affordability trait (Q6a).

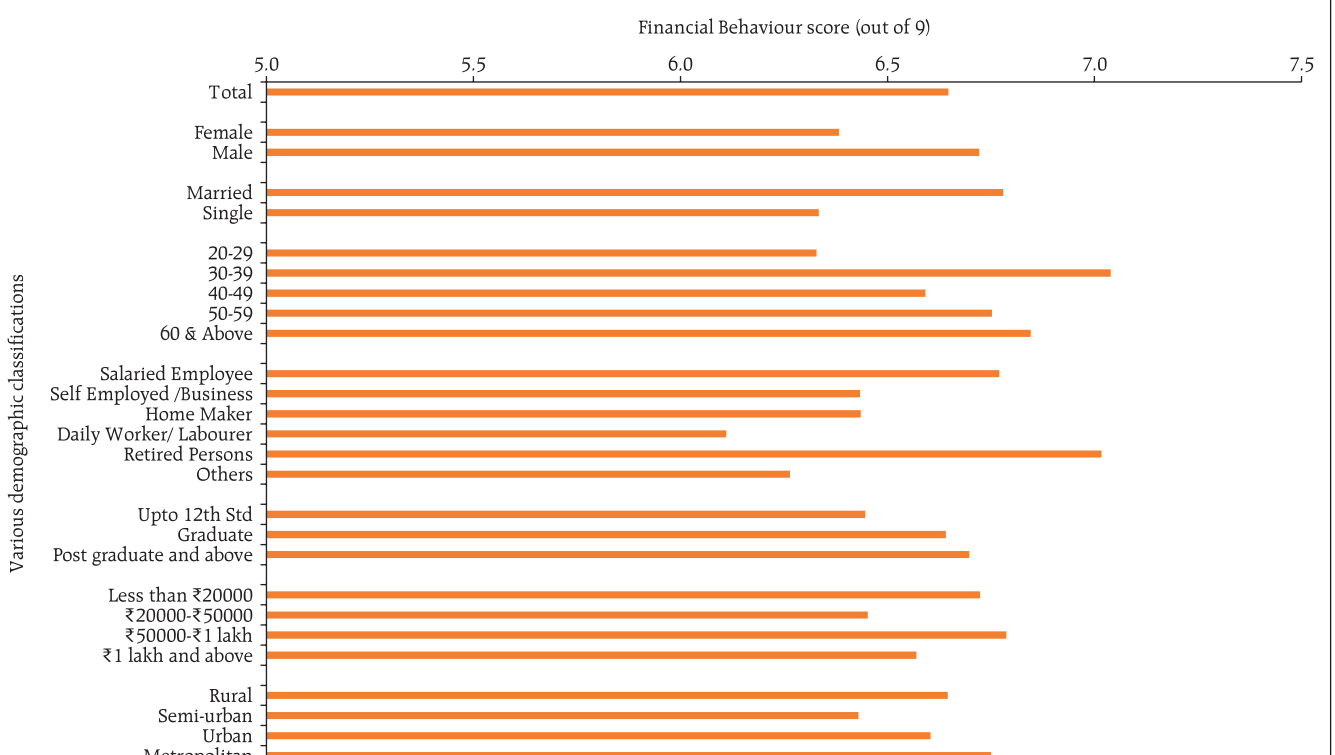
The respondents responsible/involved in day-to-day decisions either solely or jointly are considered to possess prudent financial behaviour. Similarly, those who have a household budget and meet their living costs through their income, those who are

saving with formal financial institutions and those who exercise due diligence while choosing financial products/services possesses positive traits and are exhibiting financially prudent behaviour. Further, the respondents who indicate strong disagreement on the five-point Likert scale (Q6), indicate extravagant financial behaviour, a negative trait.

We have assigned a score of one each to the respondents when they are personally or jointly responsible for money and finance management, when they maintain a household budget and when they can meet their living costs. Further, a score of one is given to the respondents with active saving behaviour, 0.5 for passive saving behaviour, and zero for not saving. Similarly, a score of one is awarded for due diligence, 0.5 for partial due diligence while selecting financial products or services, and zero for not exercising due diligence at all. The responses on a five-point Likert scale were converted into numerical scores based on the proximity to the desired response. For instance, strong agreement to bill payment behaviour is awarded a score of one and strong disagreement is awarded a zero. While the responses such as agree, neutral and disagree were awarded a score of 0.75, 0.50 and 0.25, respectively. Therefore, the respondents can obtain a maximum score of nine under financial behaviour.

The average score for financial behaviour is 6.65 out of a maximum attainable score of 9 (Chart 5), higher than the average behaviour score of 5.3 (out of 9) for OECD member countries and also higher than the minimum threshold score[10] of 6 (out of 9) mentioned by OECD-INFE. The average score obtained at the aggregate level is 74 per cent of the maximum possible score. About 69 per cent of the

Chart 5: Financial Behaviour



Source: Author's calculations based on surveyed data.

[10] The NSFE 2020-2025 discussed financial behaviour and reiterated the OECD-INFE minimum threshold score of 6 (out of 9).

respondents achieved the minimum target score of 6, thus recognising and acting on the remaining 31 per cent of the respondents should be involved in the action plan going forward.

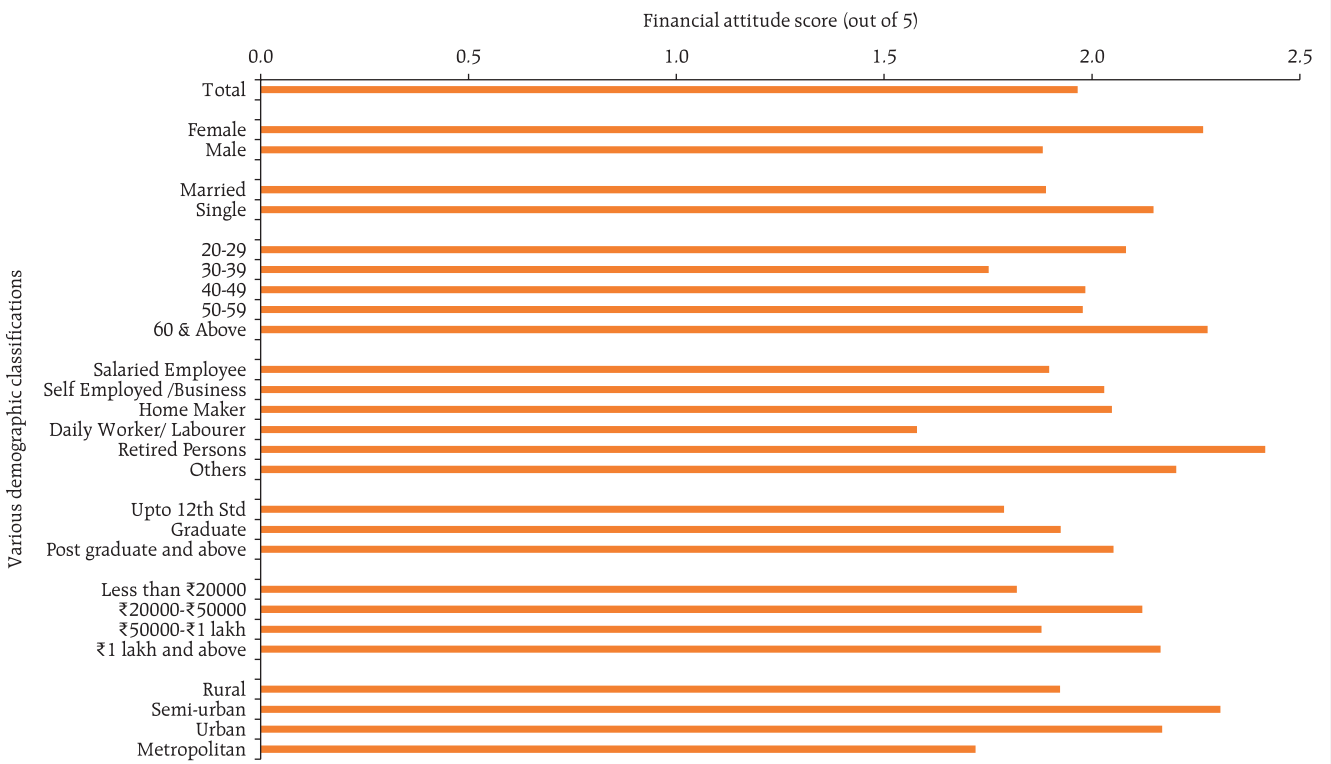
4.3 Prevalence of Financial Attitude

Financial attitude is evaluated based on respondents' attitude towards spending, saving and investing money. Specifically, we analyse the respondent's opinion on a Five-point Likert scale on the statements (Q6b, Q6c and Q6e of Annex II). The strong agreement indicates a negative financial attitude towards spending, saving and planning money.

We have assigned a financial attitude score for all the respondents in the sample based on their opinion on a Five-point Likert scale. A higher score is assigned to the respondents who exhibit more positive attitude towards spending, saving and planning money. Each of the statements described above focuses on short-term preferences and is likely to hinder financial resilience and well-being. The aim is to capture the level of financial attitude amongst the respondents, by considering it to be proportion to the level of disagreement with each statement. Higher levels of disagreement indicates that the respondent possesses better financial attitude.

We found that the overall financial attitude score was 1.97 out of a maximum of 5 (Chart 6). Specifically, we found the financial attitude of daily workers/ labourers to be meagre, at just 1.58 (out of 5). Financial attitude is higher amongst the respondents from semi-urban and urban areas, and also in the age group of 60 & above. The minimum threshold score mentioned by OECD-INFE is 3 (out of 5) for OECD-12 countries. Surprisingly, only 25 per cent of the respondents in our sample scored three or more, an issue of concern and concerted efforts are needed in this direction.

Chart 6: Financial Attitude



Source: Author's calculations based on surveyed data.

5. Financial Literacy Scores

The FL score consists of the following three components (discussed in the previous section) and ranges between 0 to 19.

a) Financial knowledge score (takes the range of 0 to 5)

b) Financial behaviour score (takes the range of 0 to 9)

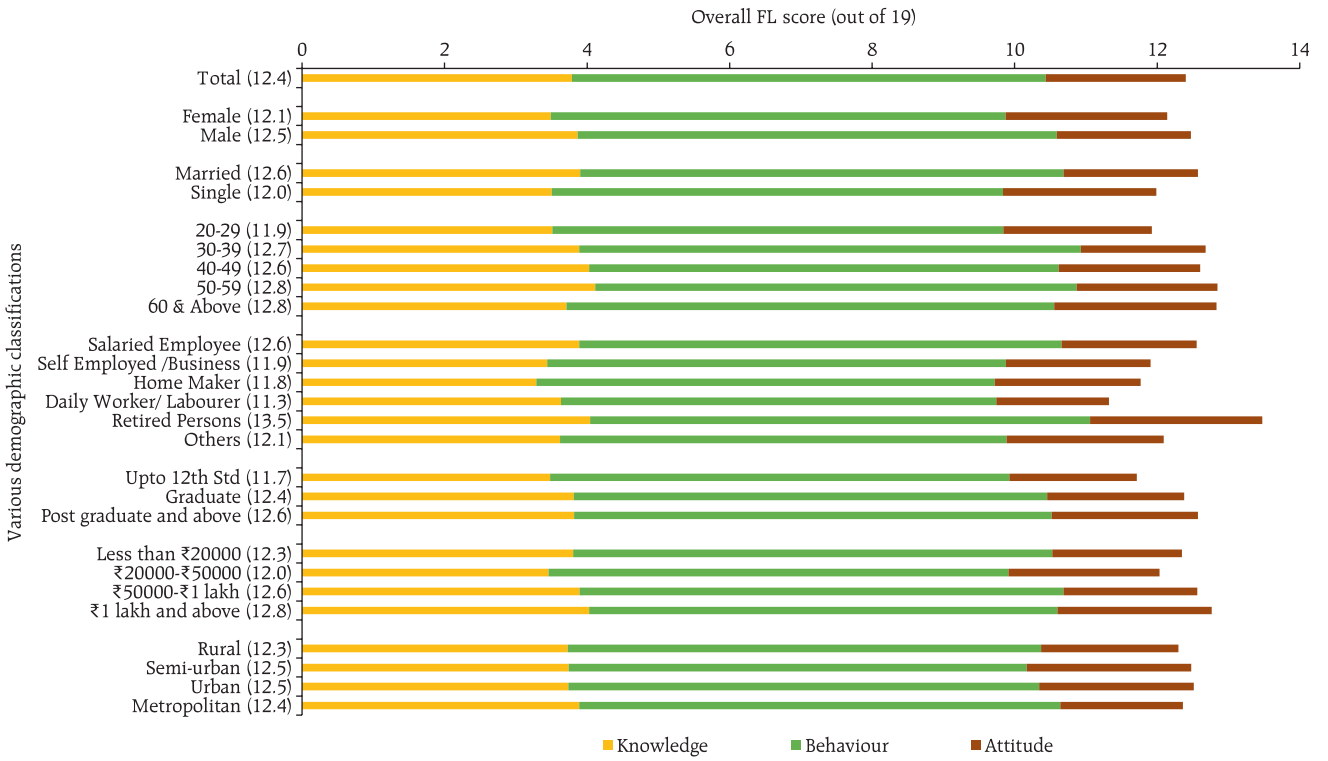
c) Financial attitude score (takes the range of 0 to 5)

We reiterate that the methodology followed to arrive at the FL score is broadly in line with the approach described in the OECD-INFE Toolkit for measuring FL.

We assigned scores based on the appropriate response to a set of questions ascertaining individual attributes, and the overall score[11] is a simple aggregation of individual scores. Overall FL score is 12.4 out of a maximum attainable score of 19, demonstrating significant room for improvement (Chart 7). We observe heterogeneity within the FL components (knowledge, behaviour and attitude) among the respondents' groups. Despite relatively high levels of financial knowledge in certain groups, the overall score is low because of their lower scores in financial behaviour/attitude.

We observed higher FL scores for retired persons (13.5) followed by respondents who are above 50 years of age (12.8) and whose monthly income is more than ₹1 lakh (12.8). On the other hand, it is the lowest among respondents whose occupation is daily worker/ labourer (11.3). The highest FL score of 69.6 per cent represents a decent level of financial knowledge, financially prudent behaviour and lower attitudes

Chart 7: Financial Literacy Scores



Source: Author's calculations based on surveyed data.

[11] FL scale design can be found in Ouachani *et. al.* (2021).

Table 4: Financial Literacy Scores – Normalised to 100

(Per cent)

Financial Literacy (19=100), Knowledge (5=100), Behaviour (9=100) and Attitude (5=100)				
	Financial Literacy	**Knowledge**	**Behaviour**	**Attitude**
Gender				
Female	61.4	69.8	70.9	45.4
Male	63.0	77.4	74.7	37.6
Marital Status				
Married	63.6	78.1	75.3	37.8
Single	60.3	70.1	70.4	43.0
Age				
20-29	59.8	70.3	70.3	41.6
30-39	64.0	77.8	78.2	35.0
40-49	64.2	80.6	73.2	39.7
50-59	64.9	82.3	75.0	39.6
60 & above	66.4	74.2	76.1	45.6
Occupation				
Salaried Employee	63.4	77.8	75.2	37.9
Self-Employed/ Business	60.3	68.8	71.5	40.6
Homemaker	58.2	65.7	71.5	41.0
Daily Worker/ Labourer	56.5	72.6	67.9	31.6
Retired Persons	69.6	80.8	78.0	48.3
Others	61.0	72.4	69.6	44.1
Educational Qualification				
Up to 12th Std	58.7	69.6	71.6	35.8
Graduate	62.4	76.3	73.8	38.5
Post-graduate and above	63.7	76.4	74.4	41.0
Average Monthly Household Income				
Less than ₹20000	61.4	76.1	74.7	36.4
₹20000-₹50000	61.0	69.2	71.7	42.4
₹50000-₹1 lakh	63.9	77.9	75.4	37.6
₹1 lakh and above	65.4	80.6	73.0	43.3
Place of Residence				
Rural	61.4	74.5	73.8	38.5
Semi-urban	62.9	74.8	71.4	46.2
Urban	63.3	74.8	73.4	43.4
Metropolitan	62.8	77.8	75.0	34.4
Overall	***62.6***	***75.7***	***73.9***	***39.3***

towards spending, saving and planning money (Table 4). FL scores increased with the increased level of education and average monthly household income. Surprisingly, FL scores did not vary significantly based on respondents' place of residence.

The average scores hide salient disparities. We found that heterogeneity exists between the components of FL within the socio-economic groups of the respondents. Some with relatively high levels of financial knowledge, such as males and respondents from metropolitan areas, score average in the overall FL due to their lower financial attitude scores. Some with relatively high levels of financial behaviour, such as respondents in the age group of 30-39 years, scored average FL due to their lower financial attitude score. Similarly, some with relatively better financial attitudes, such as female respondents and respondents from semi-urban areas, score average in the overall FL due to their lower financial knowledge and behaviour scores.

Specifically, we observed that female respondents' lower financial knowledge offset their better financial attitudes. On the other hand, married respondents' better score in financial knowledge/ behaviour balanced their lower financial attitude. Therefore, FL camps must target to enhance knowledge of female respondents and of those residing in semi-urban areas; and target attitude development for remaining respondents' groups so as to benefit the entire population in deprived areas. Thus, ensuring that everyone is fully cognisant of their financial decisions, aimed at self-development, besides helping in nation-building process.

6. Summary and Policy Suggestions

We carried out a survey to assess the level of FL at Numaish All India Industrial Exhibition during April-May 2022. The data was collected through a structured questionnaire prepared broadly in line with OECD/INFE Toolkit for measuring FL. A two-stage sampling methodology was adopted. The first-stage respondents were the Numaish visitors, and the second stage is snowball sampling originating from the first-stage respondents.

Our analysis reinforces most of the stylised facts, *viz.*, higher financial knowledge among males and those with stable incomes. We also found that financial knowledge increases with income, age, education and proximity to metropolitan areas. We observed that financial behaviour is in sync with financial knowledge. On the financial attitude front, which was observed to be lower, females exhibited better financial attitudes as compared to males. FL, overall, was observed to be relatively lower amongst the younger population, those with lower educational qualifications and without a stable income source.

We observed that respondents with an income up to ₹20,000 per month have higher knowledge as compared to respondents earning between ₹20,000 to ₹50,000. We found daily workers and labourers scoring low on financial behaviour aspect, despite having higher financial knowledge. While the common perception is that financial attitude improves with age, income, and proximity to a metropolitan area, the survey reveals that those in the age group of 30-39 score low on financial attitudes compared to the other age groups. Further, the respondents earning between ₹50,000 to ₹1 lakh per month score low in terms of financial attitude.

We also found that heterogeneity exists between the components of FL (knowledge, behaviour and attitude) within the socio-economic groups of the respondents. Some with relatively high levels of financial knowledge such as males and respondents from metropolitan areas, have average scores in terms of overall FL owing to lower financial attitude scores. Similarly, those with relatively high levels of financial behaviour such as respondents in the age group of 30-39 years, had an average overall FL score due to their lower financial attitude score. Similarly, some with relatively high levels of financial attitude such as female respondents and respondents from semi-urban areas, are lagging in financial knowledge and Financial behaviour scores. It is therefore important to broaden the canvas of FL to include financial knowledge, behaviour and attitude, with special emphasis on those target groups, which were found to be lagging as compared to the rest.

References:

Atkinson, A., & Messy, F. A. (2012). Measuring financial literacy: Results of the OECD/International Network on Financial Education (INFE) pilot study, *OECD Working Papers on Finance, Insurance and Private Pensions*, No. 15.

Awasthy, S., Balachandran, R., Gupta, B., Saroy, R., Khobragade, A., Singh, G., Misra, R. and Dhal, S.C. (2023). Basic and Digital Financial Literacy in the Last Mile: A Snapshot from Rural West Bengal. *RBI Bulletin*, May.

Bhaskar, P. V. (2013). Financial inclusion in India–an assessment. *Speech delivered by Executive Director, RBI at the MFIN and Access-Assist Summit*, on December 10.

Chakrabarty, K. C. (2013). Financial Inclusion in India: Journey so far and way forward. *Keynote address delivered by Deputy Governor, RBI at Finance Inclusion Conclave Organised by CNBC TV 18*, on September 06.

Das, S. (2021). Financial Inclusion – Past, Present and Future. *Inaugaral address delivered by the Governor, RBI at the Economic Times Financial Inclusion Summit*, on July 15.

Joshi, D. P. (2013). Financial inclusion: Journey so far and Road ahead. *Speech delivered by Executive Director, RBI at the Mint Conclave on Financial Inclusion*, on November 28.

Kempson, E. (2009). Framework for the development of financial literacy baseline surveys: A first international comparative analysis. *OECD Working Papers on Finance, Insurance and Private Pensions*, No. 1.

NCFE (2019). Financial Literacy and Inclusion in India – Final Report, *National Centre for Financial Education*, Navi Mumbai.

Organisation for Economic Co-operation and Development. (2020). OECD/INFE 2020 international survey of adult financial literacy.

Ouachani, S., Belhassine, O., & Kammoun, A. (2021). Measuring financial literacy: A literature review. *Managerial Finance*, 47(2), 266-281.

Patra, M. D. (2021). Financial Inclusion Empowers Monetary Policy. *Keynote address delivered by Deputy Governor, RBI in the project on Financial Inclusion, a joint initiative by the IIMA, IRMA and CIIE*, on December 24.

RBI (2020). National Strategy for Financial Inclusion (NSFI): 2019-2024, *Reserve Bank of India*, Jan 10.

RBI (2021). National Strategy for Financial Education: 2020-2025, *Reserve Bank of India*, March 17.

Sharma, A. K., Sengupta, S. and Roy, I. (2021). Financial Inclusion Index for India, *RBI Bulletin*, September.

Singh, B., Rajesh, R., Golait, R. and Samuel, K. L. (2023). Determinants of Financial Literacy and Financial Inclusion in North-Eastern Region of India: A Case Study of Mizoram. *DRG Study* No. 48, Reserve Bank of India.

Subbarao, D. (2010). Financial Education: Worthy and Worthwhile. C*omments by the Governor, RBI at the RBI-OECD International Workshop on Financial Literacy*, on March 22.

Annex I: Initiatives of RBI towards FL

Recognising the importance of FL and its role in achieving the envisaged objectives of FI, RBI has adopted an integrated approach towards FI and FL. In this direction, RBI undertook the following initiatives in coordination with the banking system:

1. National Strategy for Financial Inclusion (NSFI) 2019-2024 laid down action plans to be implemented, to make financial services available, accessible and affordable to all citizens in a safe and transparent manner to support inclusive growth through a multi-stakeholder approach.
2. National Strategy for Financial Education (NSFE) 2020-2025 provided a road map for a coordinated approach towards FI, FL and consumer protection.
3. Banks in India were mandated to set up Financial Literacy Centres (FLCs) to extend FL services by adopting a tailored approach, and 1380 FLCs across India are functional as on date.
4. The Centre for Financial Literacy (CFL) Project is being set up across the country at the block level by March 2024 to enhance the effectiveness by community-led participatory approach for greater FL. As on date, 1107 CFLs are operational and cater to 3321 blocks across the country.
5. One of the strategic goals of the NSFE 2020-2025 is to integrate FL content into the school curriculum so as to instil financial concepts at a younger age. So far, 15 state educational boards have included FL content in their curriculum, in addition to central boards.
6. Financial Education material (which include comic books, films, messages, games and access link to RBIO Scheme, *etc.*) is made available on the RBI website in English, Hindi and 11 vernacular languages.
7. Distributing pamphlets, leaflets and comic books to spread financial awareness, in addition to skits, stalls in local fairs/exhibitions, and participating in information/literacy programmes.
8. Setting up a monetary museum, virtually, to create awareness about money and banking among the public and spread knowledge about the history of money.
9. Use of mobile FL vans by banks in select States.

These initiatives are expected to strengthen financial education at the grass-roots level so as to realise the vision of creating a financially aware and empowered India. Besides, RBI started publishing FI-Index to measure the extent of FI in India.

Annex II: Survey Questionnaire – Financial Literacy

Block 1: Financial Literacy

1) Who is responsible for day-to-day decisions about money, in your household?
   a) You
   b) You and your partner
   c) You and another family member
   d) Your partner
   e) Another family member (or family members)
   f) Don't know

2) Does your household have a budget? (A household budget is used to decide what share of your household income will be used for spending, saving or paying bills.)
   a) Yes b) No c) Don't know

3) Have you heard of any of these types of financial products? (Yes/No)

4) Do you currently hold/use any of these types of products (personally or jointly)? (Yes/No)

	(Q3)	(Q4)
A savings account	Yes/No	Yes/No
A debit card	Yes/No	Yes/No
A credit card	Yes/No	Yes/No
Internet banking	Yes/No	Yes/No
Mobile banking	Yes/No	Yes/No
National Electronic Funds Transfer (NEFT)	Yes/No	Yes/No
Immediate Payment Service (IMPS)	Yes/No	Yes/No
BHIM UPI/GPay/PhonePe/*etc*	Yes/No	Yes/No
A microfinance loan	Yes/No	Yes/No
An unsecured bank loan (ex. personal loan)	Yes/No	Yes/No
A bank loan secured on property	Yes/No	Yes/No
Insurance (health or term or any)	Yes/No	Yes/No
A pension fund	Yes/No	Yes/No
Mutual funds	Yes/No	Yes/No

5) How did you choose your last financial product/service?
   a) Considered several financial products from various banks/companies
   b) Considered various financial products offered by a particular bank/company
   c) Selected the product prescribed by a particular bank/company
   d) Not considered any alternative financial products at all
   e) Couldn't find similar alternative financial products in the market, despite making efforts

6) How much you agree or disagree that each of the statements applies to you.

   Please use a scale of 1 (completely disagree) to 5 (completely agree)
   a) Before you buy something you carefully consider whether you can afford it (1/2/3/4/5)
   b) You tend to live for today and let tomorrow take care of itself (1/2/3/4/5)
   c) You find it more satisfying to spend money than to save it for the long term (1/2/3/4/5)
   d) You pay your bills on time (1/2/3/4/5)
   e) You are prepared to risk some of your own money when saving or making an investment (1/2/3/4/5)
   f) You keep a close personal watch on your financial affairs (1/2/3/4/5)
   g) You set long term financial goals and strive to achieve them (1/2/3/4/5)

7) Sometimes people find that their income does not quite cover their living costs. Has this happened to you in the last 12 months?
   a) Yes b) No c) Don't want to answer

8) In the past 12 months have you been saving money in any of the following ways?
   a) Saving cash at home or in your wallet
   b) Depositing money in your bank
   c) Giving money to family to save on your behalf

(Contd..)

Annex 1: Survey Questionnaire – Financial Literacy *(Concld.)*

d) Saving in an informal saving club

e) Investing in market linked products (mutual funds, shares, bonds, *etc.*)

f) Has not been actively saving

9) Do you access digital financial services?

a) Yes b) No

(Digital financial services are financial services accessed and delivered through digital channels, including via mobile devices)

9a) If No, reasons for not accessing

a) Not aware of these services/lack of sufficient knowledge

b) Not comfortable in using technology

c) Lack of trust in digital financial services

d) Adequate grievance redressal mechanism is not in place

e) Others

10) Are you aware of Reserve Bank's Ombudsman Scheme?

a) Yes b) No

(A Scheme for resolving customer grievances in relation to services provided by entities regulated by Reserve Bank of India, typically Banks/NBFCs. Customer can lodge compliant against any RBI regulated entity by visiting https://cms.rbi.org.in/cms/indexpage.html#)

11) An investment with a high return is likely to be high risk

a) True b) False c) don't know

12) If someone offers you the chance to make a lot of money, there is also a chance that you will lose a lot of money.

a) True b) False c) don't know

13) High inflation means that the cost of living is increasing rapidly

a) True b) False c) don't know

14) It is usually possible to reduce the risk of investing in the stock market by buying a wide range of stocks and shares.

a) True b) False c) don't know

Block 2: Identification

1) Name:

2) Gender:

a) Male b) Female c) Other

3) Marital status:

a) Married b) single

4) Age (years):

a) 20-29 b) 30-39 c) 40-49

d) 50-59 e) 60 & above

5) Occupation

a) Salaried Employee

b) Self Employed/Business

c) Homemaker

d) Daily Worker/Labourer

e) Retired Persons

f) Others

6) Educational Qualification

a) Illiterate b) Below 5th Std.

c) Below 10th Std. d) Below 12th Std.

e) 12th Std. f) Graduate

g) Post-Graduate and above

7) Average monthly Household Income

a) Less than ₹20,000

b) ₹20,000-₹50,000

c) ₹50,000-₹1 lakh

d) ₹1 lakh and above

8) Place of residence

a) Metropolitan b) Urban

c) Semi-urban d) Rural

Retail Credit Trends - A Snapshot

*by Sujeesh Kumar^ and Manjusha Senapati^*

Retail bank credit played a significant role in the recovery of the aggregate bank credit growth in recent years, particularly after the COVID pandemic. This shift towards retail loans by banks is estimated to be cyclical in nature. Empirical analysis suggests that the retail credit expansion is sensitive to asset quality, as well as interest rates. Robust credit risk assessment may help sustain strong and risk-free growth in retail and overall bank credit portfolio.

Introduction

Accelerated bank credit growth to the industrial sector largely drove the overall bank credit growth till 2013-14. Later, the credit growth started slowing down, being impacted by the increased non-performing assets (NPAs) of the banks. On the other hand, the contribution of retail loans to overall credit growth started increasing and currently is the highest among all the sectors.[1] During the COVID period, the average contribution of retail loans to overall credit growth was much higher than industrial/services sector credit, and even in the post-COVID period, the release of higher pent-up household spending could sustain this contribution.

The retail credit outstanding at the end of March 2023 was ₹40.85 lakh crore, more than double of that in March 2018. The share of retail loans by the scheduled commercial banks (SCBs) in aggregate credit had increased from 24.8 percent in March 2018 to 30.7 percent in March 2022 and further to 32.1 percent in March 2023 – the highest among the sectors.

The month-on-month (m-o-m) cumulative growth momentum build-up for the financial years 2019-20 to 2022-23 covering pre-COVID period and post-COVID recovery period revealed that there was sustained growth of retail loans in 2022-23. SCBs gained the pre-COVID momentum in 2022-23 gradually with the ebbing of the pandemic period (Table 1 and Chart 1).

Some recent empirical studies show that in the second half of the last decade, the expansion of credit to the non-industrial sectors, mainly lending to housing and credit cards segments, was driving the overall non-food credit growth (Kumar *et al.*, 2021; Sengupta and Vardhan, 2022). The latest statistics on retail lending portfolios of the banks signalled increased focus by the banks on the retail credit sector. Though the retail segment played a significant role in the bank credit recovery process, concentration of bank portfolio in retail loan segment may have larger macroeconomic and financial sector implications. Studies for advanced economies show that a shift towards asset-backed credit, which produces high credit levels for real estate and the financial sector, causes financial sector instability (Bezemer *et al.*, 2023). Moreover, this shift

Table 1: Retail Credit Portfolios of SCBs

Period	Pre-COVID period		COVID and post-COVID period			
	Mar-18	Mar-19	Mar-20	Mar-21	Mar-22	Mar-23
Credit Outstanding (in ₹ lakh crore)	19.08	23.03	27.26	30.09	33.86	40.85
Growth (y-o-y, per cent)	17.8	20.7	18.4	10.3	12.6	20.6
Share in Total Credit (per cent)	24.8	26.8	28.6	30.0	30.7	32.1

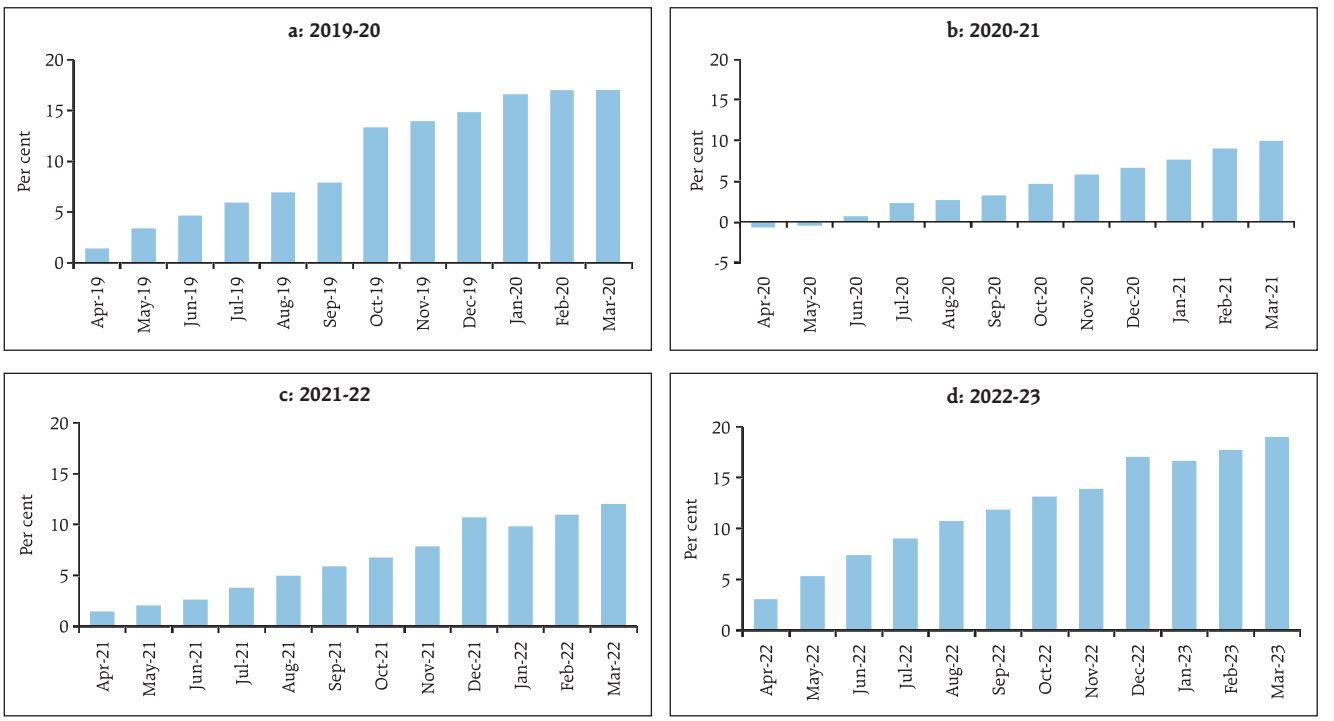
Notes: 1. Data are based on sector-wise and industry-wise bank credit (SIBC) return, which cover select banks accounting for about 93 per cent of total non-food credit extended by all SCBs.
2. Retail credit refers to all loans given to the individual customers/ households for various purposes.

Source: RBI.

^ The authors are from the Monetary Policy Department, Reserve Bank of India. The views expressed in the article are those of the authors and do not represent the views of the Reserve Bank of India. The authors express sincere gratitude to Shri Muneesh Kapur and Dr. Praggya Das for their valuable comments. The authors acknowledge Shri. Pawan Kumar and Shri. Sagar Sunil Badhe for the assistance in preparing this article. This article is based on data of select banks, accounting for around 93 per cent of total non-food credit extended by all SCBs.

[1] As per Sector-wise and Industry-wise Bank Credit Return (SIBC) compiled monthly and published on the RBI website, the non-food credit data is segregated into the sectors such as agriculture and allied activities, industries, services and personal loans. Retail credit mentioned in the article refers to the personal loan category.

Chart 1: Build-up of Retail Credit Growth Momentum



Notes: 1. Data are based on sector-wise and industry-wise bank credit (SIBC) return, which cover select banks accounting for about 93 per cent of total non-food credit extended by all SCBs.
2. Retail credit refers to all loans given to the individual customers/ households for various purposes. Retail credit data is seasonally adjusted.
3. Cumulative growth momentum is the sum of m-o-m percentage changes over the year.

Source: RBI.

needs to produce credit for the real sector investment. Higher retail loans result in purchasing discretionary items and deferred payments (through credit card spending).

The resulting credit concentration in the retail segment can be a source of systemic risk (RBI, 2022). In the long term, such concentration or co-movement of portfolio strategies can still result in the emergence of systemic risks. Another retail loan portfolio concentration risk can arise from loan stacking, wherein borrowers can avail of loans from many lenders, which over time can adversely affect the borrower's capacity to repay.

Against this background, the article analyses the trends of retail lending and the role it played in the recovery of credit growth during the COVID pandemic period. It is examined whether 'retail shift' – the phenomenon reflecting the relative increase in disbursements to retail credit in bank loan portfolio – observed recently in banks' loan portfolio is permanent or cyclical in nature. The factors determining the retail credit growth are analysed in a panel regression framework using quarterly data for the period Q1:2007-08 to Q3:2021-22.

The article has six sections. After introduction, section II presents a brief literature review of retail credit studies. Section III depicts the domestic trends in retail credit growth and its components. Section IV analyses the retail credit dynamics from the perspective of the surveys conducted by the RBI and the cyclicality of retail credit *viz-a-viz* overall bank credit. Section V presents an empirical analysis of determinants of retail credit and its sub-components using quarterly data and section VI concludes.

II. Review of Literature

The literature on Indian retail credit analysis has focussed on the reasons for the widespread use of retail lending by Indian banks. Some of the factors cited for the increased share of retail loans in the overall loan portfolio of the banks were an increase in economic prosperity and a consequent increase in purchasing power which boosted retail credit (Gopinath, 2005). It was argued that the growing middle-class population and rising income levels, combined with the demographic change of smaller household sizes, had boosted demand for retail credit in India. A high proportion of the younger cohort population was an asset for the country's economic development (Bag, 2012). Technological innovations relating to the increasing use of credit/debit cards, ATMs, direct debits, and phone banking also contributed to the growth of retail banking.

On the supply side of credit, there were some regulatory changes wherein all consumer lenders were required to share their customer data with accredited credit bureaus, which vastly improved coverage of credit bureaus and made it easier for newer players to enter the consumer-lending business and expanding the customer segments they were serving (Sengupta and Vardhan, 2021).

Few studies have concentrated on retail customer behaviour and banks' risk management practices. There felt a need for constant innovation in devising retail loan products and their delivery to maintain the retail market presence, which acted as a growth trigger (Rao, 2014). A long-run equilibrium causal relationship existed between real consumption expenditure and economic growth, from real private consumption expenditure to economic growth (Mishra, 2011). A similar study for the Sri Lankan economy confirmed that consumption expenditure positively impacted economic growth during the study period from 1975 to 2014 (Aslam, 2017).

However, another view was that consumption-led credit growth can help improve economic growth while, at the same time, it would result in increased risks. In a prolonged slow-down period or low growth period, both bank and consumer behaviour could lead to increased variability of economic performance and banks would have pressure on their capital. Banks may cut credit growth to retain their ratings resulting in lower credit available for consumption, thereby hurting growth (Roy, 2006). Macroeconomic impact of increasing household debt levels was examined and found that a 1 percentage point increase in the household debt-to-GDP ratio tends to lower growth in the long run by 0.1 percentage point (Lombardi *et al.*, 2017). The negative long-run effects on consumption tend to intensify as the household debt-to-GDP ratio exceeds 60 per cent.

Studies which examined the impact of COVID on bank behaviour maintained that the share of household credit has become more concentrated in credit cards and other personal loans in the post COVID period (Gupta, 2022). The risk arising from this concertation was that the consumer credit-financed splurge would slow down eventually which might have serious repercussions for the debt-servicing capability of already indebted households leading to their future consumption below disposable income. Banks and financial intermediaries must be vigilant and substantially upgrade their risk capabilities with respect to governance, assurance functions and risk culture (Das, 2020).

Given this background, there is a need to further investigate trends of retail bank loans and contributions of its components to enhance our understanding in this area, particularly in the post-COVID period. The article complements the extant literature in two ways. First, it uses quarterly data to empirically analyse the determinants of retail credit growth, and second, it delves down deeper empirically into major sub-components of retail

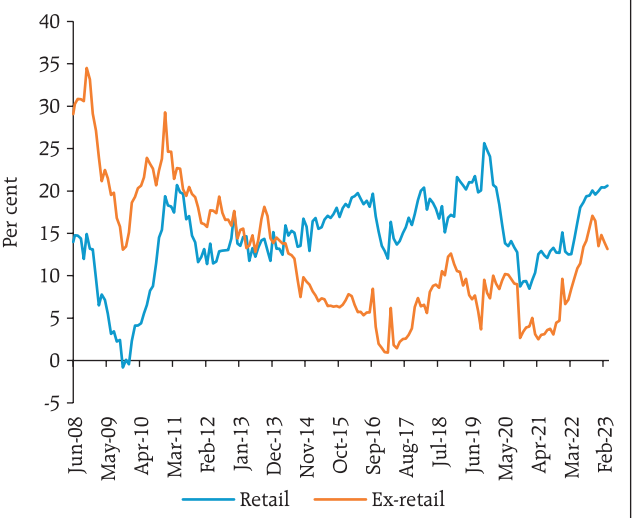
credit to understand the dynamics better. It will help to inform the impact of higher retail loans in banks' overall loan portfolio and how the response evolves when bank-wise as well as macroeconomic variables are considered. Addressing the matter will better facilitate the analytical assessment of the policy debate around these issues.

III. Retail Bank Credit Trends in India

The rise of retail loans did not occur in the post-COVID period suddenly. The share of industries was substituted by the retail segment during the last decade itself. Gradually, a 'retail-shift' was observed in terms of credit growth dynamics (Chart 2).

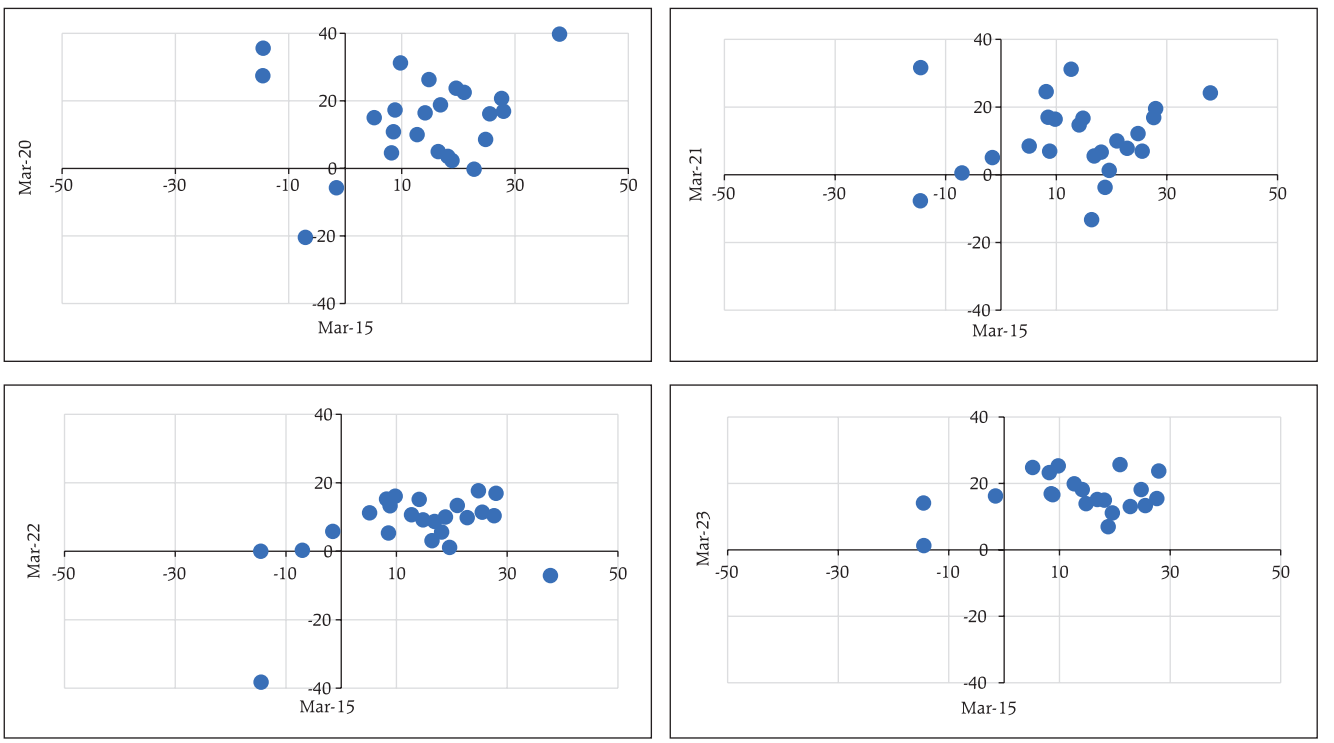
However, retail segment played a major role in the recovery of the overall credit growth in the post-COVID period. Bank-wise, there was reduced dispersion of retail credit growth in the post-COVID period, which implies that the credit growth was robust across the banks (Chart 3). The higher credit

Chart 2: Trends in Retail Credit Growth



Note: Retail credit refers all loans givens to the individual customers/ households for various purposes while ex-retail credit is total non-food credit excluding retail credit.
Source: RBI.

Chart 3: Bank-wise Distribution of Retail Credit Growth (in per cent)



Notes: 1. Data are based on select 33 banks accounting for about 90 per cent of total non-food credit extended by all SCBs.
2. A normal period (March 2015) was taken in the x - axis while in the y-axis pre-COVID period and post-COVID periods are taken. Dots represent individual bank's retail credit growth.
Source: RBI.

growth in the segment might be result of 'herding behaviour' displayed by banks in diverting loans from industry to retail segment (RBI, 2022). The better asset quality[2] in the retail segment also appears to be contributing to banks' increased focus on retail credit. However, this is not a risk-free segment and not a panacea for asset quality concerns in non-retail loans (Vishwanathan, 2018).

The growth contribution of the key sectors within the retail segment[3] has changed after the onset of the COVID pandemic. Housing segment (having highest share in retail loans) was contributing around 10.6 percentage points to the annual retail credit growth of 20.7 per cent in March 2019 (pre-COVID period). It came down to 7.4 percentage points in March 2023 (in retail credit growth of 20.6 per cent). Vehicle loans, having the second highest share in the retail loans, which were contributing 5 percentage points in the pre-COVID period, are now accounting for 3 percentage points (Chart 4). Loans against gold jewellery had a small share (2.2 per cent) in the retail loans segment but gained importance during the pandemic. The RBI had increased the loan to value ratio (LTV) for gold loans in August 2020 from 75 per cent to 90 per cent. However, with the ebbing of the pandemic, the demand for gold loans from banks slowed down.

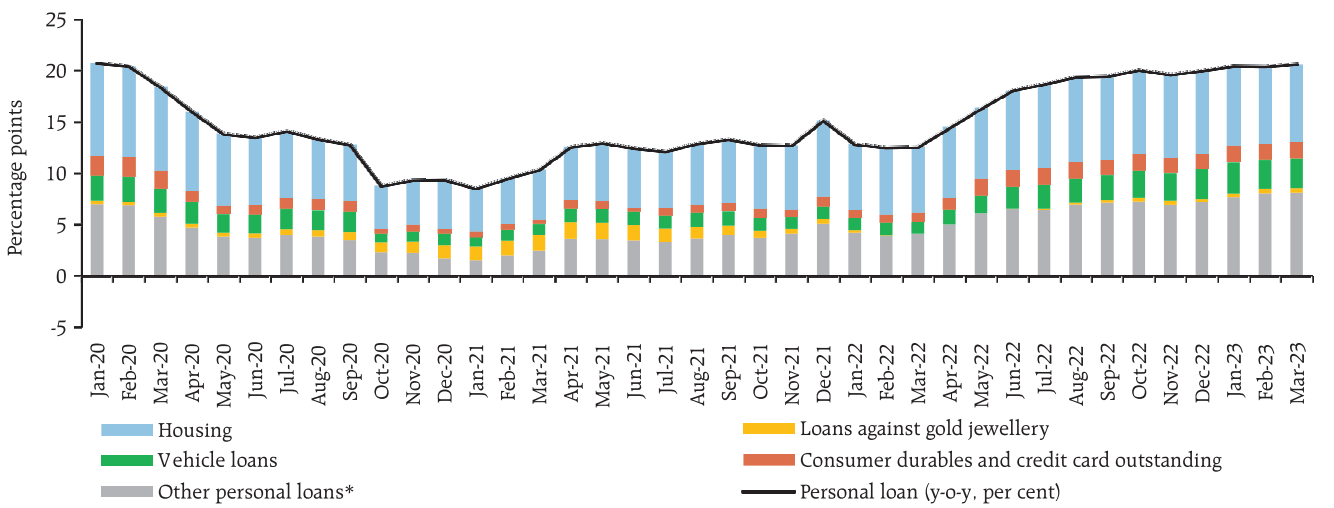
The next question is whether the increase in retail loans is structural or cyclical, and if such trend will continue in the coming years, which is discussed in the following section.

IV. Is High Growth in Retail Loans to Continue?

IV.1 Directional Movements from RBI Surveys

As the sentiments of households represents the aggregate outcome of both their expectations and assessment of the current situation of the economy—increased sentiment of households generally increases consumer loan growth (Zuzana *et al.*, 2022). The RBI survey on consumer confidence[4] measures

Chart 4: Credit Growth to Retail Sector - Contribution of Different Sub-sectors



Note: *Other personal loans include loans for education, domestic consumption, medical expenses, travel, marriage and other social ceremonies, loans for repayment of debt, *etc.*
Source: RBI.

[2] According to the Financial Stability Report, December 2022, the gross NPA (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.

[3] As per the SIBC return (RBI), the retail/personal loans are further divided into (1) housing loans, (2) vehicle loans, (3) credit card loans, (4) loans for consumer durables, (5) advances against fixed deposits, (6) advances against shares and bonds, (7) loans against gold jewellery, (8) education loans, and (9) other personal loans.

current perceptions and one year ahead expectations on general economic situations. The statistically significant correlation (0.62) between consumer sentiments on current economic situations and retail credit growth reflects this nexus (Chart 5).

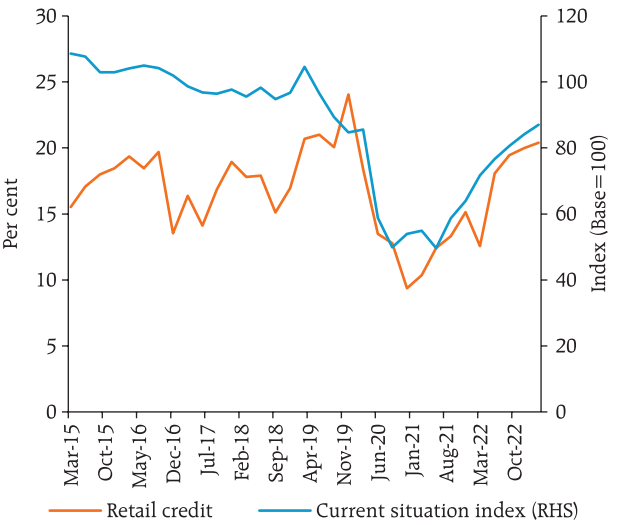
According to the bank lending survey[5] conducted by the RBI, banks' assessment of retail credit demand in Q4:2022-23 and the expectations for future demand (in Q3:2023-24) for credit moderated (Chart 6a and 6b). The actual retail credit growth moved in tandem with the credit assessment and retail credit expectations (Chart 6c and 6d). As the directional movements of sentiments of the consumers have the deterministic role on retail credit, tracking these measures would give insights into upcoming retail credit dynamics. Expectations for the retail loan demand in Q1:2023-24 show moderation and the retail loans growth may also moderate going forward.

IV.2 Retail Credit Growth – Whether Cyclical in Nature?

To policymakers, cycles are of foremost significance since the positive and negative deviations from the trend growth path provide the trigger for policy actions (Banerjee, 2012). The estimated retail credit cycle[6] and non-food credit cycle using monthly data from April 2007 to March 2023 exhibit co-movement where expansionary and contractionary phases of retail credit cycle moved in tandem with the non-food credit cycle (Chart 7). The retail credit growth during expansionary phase averaged to 15.7 per cent whereas in the contractionary phase it averaged to 14 per cent, with contractionary phase being longer than the expansionary phase.

The faster revival of the retail credit growth contributed to the overall credit growth recovery.

Chart 5: Consumers' Sentiment on General Economic Conditions and Retail Loans Growth



Source: RBI.

The estimated cycles also reveal that the higher retail credit growth registered recently may be cyclical—the 'retail-shift' may not be structural. With the expected revival of capex cycle, the retail credit growth may slow down.

Given the assessment on the retail credit dynamics so far, it would be interesting to empirically analyse the impact of the bank-specific characteristics on sectoral credit growth and provide insights into the main drivers of retail credit growth considering these bank-specific and macroeconomic variables.

V. Empirical Analysis

V.1 Data and Methodology

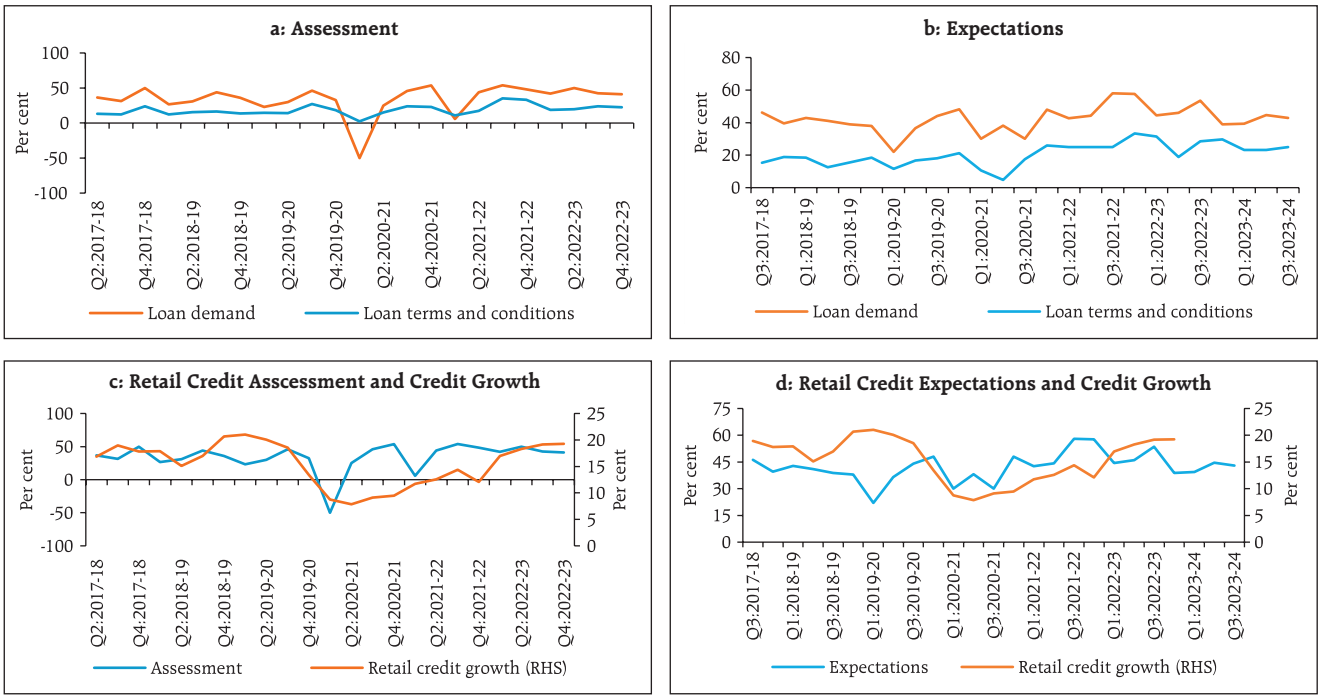
To empirically analyse the role of the various factors affecting bank credit, particularly retail credit and its major components, quarterly data on key banking health variables (*viz*, asset quality and profitability) and macroeconomic variables (overall economic activity) are considered for the period

[4] https://www.rbi.org.in/scripts/BimonthlyPublications.aspx?head=Consumer%20Confidence%20Survey%20-%20Bi-monthly

[5] https://m.rbi.org.in/scripts/QuarterlyPublications.aspx?head=Bank%20Lending%20Survey

[6] The cyclical component is extracted using Christiano – Fitzgerald (CF) Filter following growth cycle approach.

Chart 6: SCBs' Sentiments on Retail Loan



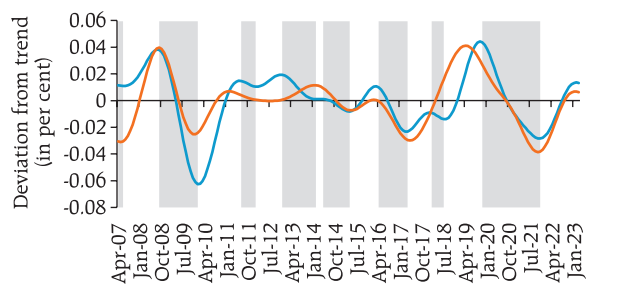
Notes: 1. Bank lending survey assesses banks sentiment for the current quarter and expectations for the ensuing quarter, based on qualitative responses on a set of indicators reflecting the perceptions of banks on loan demand and loan terms and conditions and their outlook in near term. Net Response (NR) is given in the y-axis. Any value of NR greater than zero indicates expansion/optimism and any value less than zero indicates contraction/pessimism. Increase in loan demand is considered optimism, while for loan terms and conditions, a positive value of net response indicates easy terms and conditions.

2. Retail credit growth is based on select 33 banks accounting for about 90 per cent of total non-food credit extended by all SCBs.

Source: RBI

Q1:2007-08 to Q3:2021-22 for a balanced panel of 27 SCBs, comprising all 12 public sector banks (PSBs), 11 major private sector banks (PVBs) and 4 major foreign banks (FBs), based on their share in credit in the respective groups. The ratio of interest income from advances to total advances is taken as a proxy for lending rate.

Chart 7: Credit and Retail Credit Cycles Co-movement



Note: Seasonally adjusted log transformed non-food credit data and retail credit data (personal loans) for the period April 2007 to March 2023 have been used for the estimation of cycles.

Sources: RBI; and authors' calculations.

To control for outliers, bank-wise data was winsorised (5 per cent from each side). Bank credit and other macroeconomic data are sourced from the Database on Indian Economy (DBIE), RBI. Basic descriptive statistics of bank-wise indicators for the pooled data, and the macroeconomic variables used in the analysis are given in Table 2. On average, retail loan growth exceeded overall loan growth marginally during the sample period, and within retail, housing and vehicle loans outpaced retail loans growth. On the other hand, NPA ratios in the retail segment were lower than the overall NPA ratio.

V.2 Empirical Results

The empirical analysis is undertaken for both retail credit and overall bank credit to assess the relative role of the various factors. In view of the panel nature of the data and involvement of the lagged dependent variables, the system generalised method of moments (GMM) approach of Arellano and Bover (1995) and Blundell and Bond (1998), is used to estimate equations 1-2. The GMM model, which is generally used for panel data, provides consistent results in the presence of different sources of endogeneity, namely "unobserved heterogeneity, simultaneity and dynamic endogeneity" (Wintoki *et al.*, 2012).

Two lags of credit growth are included to account for persistence. A positive relationship between bank credit growth and lagged GDP growth is expected. According to Aysan *et al.* (2010), high economic growth signifies high consumption and investment which can translate to higher demand for credit by both firms and households. A negative relationship between bank credit growth and interest rates are expected where increased interest rates reduce demand for credit. A bank's higher NPA ratio is expected to have a negative impact on bank credit growth as banks become more cautious not to lend to risky borrowers to keep NPA ratios low. Profitable banks tend to grant more credit as they can mitigate the monetary transmission channel through bank lending (Bustemante *et al.*, 2019).

$$\Delta \mathrm{BC}_{i,t} = \alpha_0 + \beta_1 \Delta \mathrm{BC}_{i,t-1} + \beta_2 \Delta \mathrm{BC}_{i,t-2} + \beta_3 Int\_rate_{i,t} + \beta_4 Nominal\_GDP_{i,t-1} + \beta_5 RoA_{i,t-1} + \beta_6 NPL_{i,t-1} + u_i + \varepsilon_{i,t} \quad \ldots (1)$$

$$\Delta \mathrm{SC}_{i,t} = \alpha_0 + \beta_1 \Delta \mathrm{SC}_{i,t-1} + \beta_2 \Delta \mathrm{SC}_{i,t-2} + \beta_3 Int\_rate_{i,t} + \beta_4 Nominal\_GDP_{i,t-1} + \beta_5 RoA_{i,t-1} + \beta_6 Sector\_NPL_{i,t-1} + u_i + \varepsilon_{i,t} \quad \ldots (2)$$

Table 2: Descriptive Statistics

Variable		In per cent			
		Mean	SD	Min	Max
Total Loan Growth	Overall	11.7	8.0	-6.1	28.0
	Between		3.1	7.2	20.1
	Within		7.4	-8.9	29.8
Retail Loan Growth	Overall	12.2	11.9	-18.6	38.7
	Between		4.4	1.3	21.3
	Within		11.1	-18.5	40.5
Housing Loan Growth	Overall	12.6	11.8	-19.2	44.1
	Between		4.9	-1.2	22.8
	Within		10.8	-24.7	52.8
Vehicle Loan Growth	Overall	13.4	15.8	-36.6	49.0
	Between		9.6	-20.0	19.8
	Within		14.6	-41.2	52.3
NPA Ratio (all loans)	Overall	4.2	2.8	1.2	12.8
	Between		1.3	1.5	6.3
	Within		2.5	0	11.4
Retail NPA Ratio	Overall	2.8	1.1	1.1	5.6
	Between		0.7	1.8	4.3
	Within		0.9	0.5	5.8
Housing NPA Ratio	Overall	2.4	1.1	0.8	4.9
	Between		0.7	1.1	4.0
	Within		0.9	0.1	5.4
Vehicle NPA Ratio	Overall	2.7	1.3	0.8	6.5
	Between		0.8	1.4	3.8
	Within		1.1	0.0	6.5
Return on Assets	Overall	1.0	0.6	-0.1	2.2
	Between		0.4	0.4	1.7
	Within		0.4	-0.3	2.6
Interest Rate	Overall	3.5	0.3	2.9	4.1
	Between		0.2	3.2	4.0
	Within		0.3	2.7	4.3
Nominal GDP Growth	Overall	12.7	4.1	4.6	21.7

Notes: 1. SD: Standard deviation; Min: Minimum; Max: Maximum.
2. Summary statistics reported are with 5% Winsorisation.
Sources: RBI; and authors' estimates.

where, 'i' refers to the i^{th} bank and 't' refers to the time (quarter). BC is the Bank credit, and SC is the credit in the specific sector, *i.e.*, retail, housing and vehicle loans.

$\Delta \mathrm{BC}_{i,t} = BC_{i,t} - \mathrm{BC}_{i,t-4}$,

$\Delta \mathrm{SC}_{i,t} = SC_{i,t} - \mathrm{SC}_{i,t-4}$

Int_rate is the lending rate, RoA is the return on assets, Nominal_GDP is the growth rate of nominal GDP, $NPLi,t-1$ is the lagged value of overall NPA ratio,

$Sector\_NPL_{i,t-1}$ is the lagged value of NPA ratio in the specific credit sectors, *i.e.*, retail, housing and vehicle loans.

The analysis suggests that bank credit growth as well as sectoral bank credit growth is negatively related to lending rate and asset quality, and the impact is statistically significant. Stressed asset quality encourages banks to increase their investments in government securities thereby curtailing loan funds (Singh *et al.*, 2022). On the other hand, higher profitability of the banks as well as higher economic activity boosts retail credit (Table 3).

VI. Conclusion

Retail bank credit has emerged as a major contributor to the overall bank credit growth, especially after the onset of the COVID pandemic. The SCBs' expectations of retail credit demand moderated and loan terms and conditions expected to be tightened in Q3:2023-24. Moreover, based on the estimated retail credit cycle, it seems that the ongoing 'retail-shift' is not permanent, but rather cyclical in nature and the credit growth may not continue to be high.

Empirical analysis using quarterly data for the period Q1:2007-08 to Q3:2021-22 suggests that the retail credit segment and its major constituents (housing and vehicle) are sensitive to interest rates as well as the asset quality of the banks' loan portfolio. Housing loans are more sensitive to both interest rates and asset quality than vehicle loans for the same period. So far, the relatively better asset quality in the sector may have fueled retail credit growth. Given the global headwinds and increasing uncertainties about monetary policy actions across geographies, it is necessary to assess trends in retail credit at a granular level on a continuous basis to evaluate the impact of financial sector developments on the overall economy.

Table 3: Determinants of Bank Credit

Explanatory Variables	Dependent Variables (Growth Rates)			
	Bank Loans	Retail Loans	Housing Loans	Vehicle Loans
	(1)	(2)	(3)	(4)
Dependent Variable (-1)	0.82***	0.72***	0.71***	0.49**
Dependent Variable (-2)	-0.07	0.02	0.04	-0.15
Interest Rate	-3.73***	-2.80**	-3.56**	-1.81**
Nominal GDP Growth Rate (-1)	0.15**	0.28**	0.11*	0.21*
RoA (-1)	0.07	0.02*	0.05*	0.02
NPA Ratio (-1)	-0.96***			
Retail NPA Ratio (-1)		-0.77**		
Housing NPA Ratio (-1)			-2.40*	
Vehicle NPA Ratio (-1)				-2.23**
Constant	0.07**	0.08**	0.08**	0.22**
No of observations	1343	1343	1316	1263
AR (1) Test	0.01	0.01	0.01	0.00
AR (2) Test	0.45	0.07	0.34	0.09
Sargan Test	0.69	0.77	0.89	0.05

Notes: 1. *, **, and *** denote significance at 10, 5 and 1% level.
2. Figures in parentheses indicate lagged values.
3. Dummy variables for major crisis periods (in March 2018 and September 2020) were not found to be significant.

References

Arellano, M. and Bover, O. (1995), "Another look at the instrumental variable estimation of error-components models", *Journal of Econometrics*, 68(1): 29–51.

Aslam, L. M. (2017), "Does consumption expenditure induce the economic growth? An empirical evidence from Sri Lanka", *World Scientific News* 81(2). 221-234.

Aysan. A., Dalgic .C.A. and Demicri. M. (2010), "Macroeconomic, Sector Specific and Bank Specific Determinants of Net Interest Rate Margin: What Matters More For An Emerging Market Economy?", *EcoMod* 259600015.

Bag, D. (2012), "Growth of Retail Credit and Its composition in Indian banking: A Macro Evaluation", *International Journal of Computing and Corporate Research*, 2(3).

Bannerjee, K. (2012), "Credit and Growth Cycles in India: An Empirical Assessment of the Lead and Lag Behaviour", *RBI Working Paper.*

Bezemer,D., Collins,J. Lerven,F. and Zhang ,L.(2023), "Credit policy and the 'debt shift' in advanced economies", *Socio-Economic Review*, Vol. 21, No. 1, 437–478.

Blundell, R., and Bond, S. (1998), "Initial conditions and moment restrictions in dynamic panel data models", *Journal of Econometrics*, 87(1): 115–143.

Bustamante, J., Walter, C. Rafael N. (2019), "Determinants of Credit Growth and the Bank Lending Channel in Peru: a Loan Level Analysis", *BIS Working Papers* No 803.

Das, S. (2020), "Indian Economy at a Crossroad: A view from Financial Stability Angle", *RBI Bulletin*, July.

Gopinath, S. (2005). "Retail Banking - Opportunities and Challenges", *RBI Bulletin*, June.

Gupta, I. (2022), "India's Household Leverage and the COVID-19 Crisis Ramifications for the Post-pandemic Recovery Phase", *Economic and Political Weekly*, Volume 57, Issue 18.

Kumar, P., Senapati, M., and Prakash, A. (2021), "Changes in Sectoral Bank Credit Allocation: Developments Since 2007-08", *RBI Bulletin*, September.

Lombardi M. J., Mohanty M and I. Shim, (2017), "The Real Effects of Household Debt in the Short and Long Run", *BIS Working Papers* No. 607.

Mishra, P.K. (2011), "Dynamics of the relationship between real consumption expenditure and economic growth in India", *Indian Journal of Economics and Business*, 10(4).

Rao, R.S. (2014), "The Role of Retail Banking in Indian Economy", *International Journal of Engineering Research and General Science*, 2(2).

Reserve Bank of India (2022), Report on Trend and Progress of Banking in India, 2021-22.

Roy, M. (2006), "A Review of Bank Lending to Priority and Retail Sectors", *Economic and Political Weekly* 41(11) 1035-1040.

Sengupta, R. and Vardhan, H. (2021), "Consumerisation of banking in India: Cyclical or structural?", *Ideas for India*, July 23, 2021

Sengupta, R., and Vardhan. H. (2022), "India's credit landscape in a post-pandemic world" Indira Gandhi Institute of Development Research, *Working Papers 2022-019*, Indira Gandhi Institute of Development Research, Mumbai, India.

Singh, S., Wahi, G. and Kapur M. (2022), "Banks' Credit and Investment Dynamics: Assessing Portfolio Rebalancing and Crowding-out", *RBI Working papers*, No. 09.

Vishwanathan,N.S. (2018), "It is not Business as Usual for Lenders and Borrowers", *RBI Bulletin*, May.

Wintoki, M. B., Linck, J. S. and Netter, J. M. (2012). "Endogeneity and the dynamics of internal corporate governance". *Journal of Financial Economics*, (105)3, 581–606.

Zuzana, R., Dominika, E. and Hodula, M (2020). "The Power of Sentiment: Irrational Beliefs of Households and Consumer Loan Dynamics", *Working Paper Series*, no.10/2020, Czech National Bank.

CURRENT STATISTICS

Select Economic Indicators

Reserve Bank of India

Money and Banking

Prices and Production

Government Accounts and Treasury Bills

Financial Markets

External Sector

Payment and Settlement Systems

Occasional Series

Contents

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

No. 1: Select Economic Indicators

Item	2022-23	2021-22		2022-23	
		Q3	Q4	Q3	Q4
	1	2	3	4	5
1 Real Sector (% Change)					
1.1 GVA at Basic Prices	7.0	4.7	3.9	4.7	6.5
1.1.1 Agriculture	4.0	2.3	4.1	4.7	5.5
1.1.2 Industry	2.4	2.2	1.3	0.1	4.7
1.1.3 Services	9.5	6.5	4.9	6.4	7.4
1.1a Final Consumption Expenditure	6.4	10.2	5.8	1.8	2.7
1.1b Gross Fixed Capital Formation	11.4	1.2	4.9	8.0	8.9
	2022-23	**2022**		**2023**	
		Mar.	**Apr.**	**Mar.**	**Apr.**
	1	2	3	4	5
1.2 Index of Industrial Production	5.2	2.2	6.7	1.7	4.2
2 Money and Banking (% Change)					
2.1 Scheduled Commercial Banks					
2.1.1 Deposits	9.6	8.9	10.0	9.6	10.1
2.1.2 Credit #	15.0	9.6	11.0	15.0	15.7
2.1.2.1 Non-food Credit #	15.4	9.7	11.4	15.4	15.9
2.1.3 Investment in Govt. Securities	14.5	6.0	6.6	14.5	13.1
2.2 Money Stock Measures					
2.2.1 Reserve Money (M0)	7.8	13.0	13.2	7.8	10.2
2.2.2 Broad Money (M3)	9.0	8.8	9.5	9.0	9.5
3 Ratios (%)					
3.1 Cash Reserve Ratio	4.50	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	5.0	4.7	5.0	5.0	5.3
3.4 Credit-Deposit Ratio	75.8	72.2	71.5	75.8	75.1
3.5 Incremental Credit-Deposit Ratio #	113.0	77.2	34.7	113.0	46.5
3.6 Investment-Deposit Ratio	30.0	28.7	28.8	30.0	29.5
3.7 Incremental Investment-Deposit Ratio	43.5	19.7	31.0	43.5	10.0
4 Interest Rates (%)					
4.1 Policy Repo Rate	6.50	4.00	4.00	6.50	6.50
4.2 Fixed Reverse Repo Rate	3.35	3.35	3.35	3.35	3.35
4.3 Standing Deposit Facility (SDF) Rate *	6.25	-	3.75	6.25	6.25
4.4 Marginal Standing Facility (MSF) Rate	6.75	4.25	4.25	6.75	6.75
4.5 Bank Rate	6.75	4.25	4.25	6.75	6.75
4.6 Base Rate	8.65/10.10	7.25/8.80	7.25/8.80	8.65/10.10	8.75/10.10
4.7 MCLR (Overnight)	7.50/8.50	6.45/7.00	6.50/7.00	7.50/8.50	7.90/8.50
4.8 Term Deposit Rate >1 Year	6.00/7.25	5.00/5.60	5.00/5.60	6.00/7.25	6.00/7.25
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)	6.78	3.34	3.63	6.78	6.70
4.11 91-Day Treasury Bill (Primary) Yield	-	3.84	3.98	-	6.82
4.12 182-Day Treasury Bill (Primary) Yield	7.28	4.27	4.40	7.28	6.97
4.13 364-Day Treasury Bill (Primary) Yield	7.31	4.58	4.81	7.31	7.00
4.14 10-Year G-Sec Par Yield (FBIL)	7.31	6.86	7.15	7.31	7.12
5 Reference Rate and Forward Premia					
5.1 INR-US$ Spot Rate (Rs. Per Foreign Currency)	82.22	76.18	76.42	82.22	81.78
5.2 INR-Euro Spot Rate (Rs. Per Foreign Currency)	89.61	84.01	80.58	89.61	90.08
5.3 Forward Premia of US$ 1-month (%)	2.41	5.67	4.08	2.41	1.73
3-month (%)	2.19	4.46	3.77	2.19	1.82
6-month (%)	2.31	4.10	3.69	2.31	1.98
6 Inflation (%)					
6.1 All India Consumer Price Index	6.7	7.0	7.8	5.7	4.7
6.2 Consumer Price Index for Industrial Workers	6.1	5.4	6.3	5.8	5.1
6.3 Wholesale Price Index	9.6	14.6	15.4	1.4	-0.9
6.3.1 Primary Articles	10.3	15.9	15.2	2.5	1.6
6.3.2 Fuel and Power	29.4	31.8	38.8	8.7	0.9
6.3.3 Manufactured Products	5.7	11.3	11.4	-0.7	-2.4
7 Foreign Trade (% Change)					
7.1 Imports	16.5	29.0	26.1	-4.9	-14.1
7.2 Exports	6.9	26.4	29.1	-6.0	-12.5

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 from December 3, 2021 to November 18, 2022 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						
	2022-23	2022	2023				
		May	Apr. 28	May 5	May 12	May 19	May 26
	1	2	3	4	5	6	7
1 Issue Department							
1.1 Liabilities							
1.1.1 Notes in Circulation	3348235	3191136	3424801	3445450	3458129	3447998	3411505
1.1.2 Notes Held in Banking Department	9	14	15	15	12	10	13
1.1/1.2 Total Liabilities (Total Notes Issued) or Assets	**3348245**	**3191150**	**3424816**	**3445465**	**3458140**	**3448008**	**3411518**
1.2 Assets							
1.2.1 Gold	140766	122749	141580	143575	144316	141168	140154
1.2.2 Foreign Securities	3207202	3068097	3282897	3301583	3313554	3306604	3270961
1.2.3 Rupee Coin	277	304	339	307	270	235	403
1.2.4 Government of India Rupee Securities	–	–	–	–	–	–	–
2 Banking Department							
2.1 Liabilities							
2.1.1 Deposits	1354217	1681711	1219180	1193541	1169962	1319049	1345292
2.1.1.1 Central Government	5001	100	100	100	101	101	101
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	868940	761736	890423	837756	848714	852417	852191
2.1.1.5 Scheduled State Co-operative Banks	8100	8095	7730	7875	7336	7377	7875
2.1.1.6 Non-Scheduled State Co-operative Banks	5177	4559	4687	4958	4655	4716	4446
2.1.1.7 Other Banks	48260	42927	48248	47849	47574	48945	46810
2.1.1.8 Others	316490	808897	200029	230322	207490	338963	366958
2.1.1.9 Financial Institutions Outside India	102207	55353	67920	64637	54049	66487	66869
2.1.2 Other Liabilities	1642294	1282215	1600038	1638468	1657324	1552969	1510520
2.1/2.2 Total Liabilities or Assets	**2996512**	**2963926**	**2819218**	**2832009**	**2827286**	**2872018**	**2855811**
2.2 Assets							
2.2.1 Notes and Coins	9	14	15	15	12	10	13
2.2.2 Balances Held Abroad	1008993	1125024	995491	1028863	1065143	1059607	1057486
2.2.3 Loans and Advances							
2.2.3.1 Central Government	48677	–	4666	–	–	–	–
2.2.3.2 State Governments	792	10723	4538	15455	12451	12194	13742
2.2.3.3 Scheduled Commercial Banks	112731	94368	73004	41931	28353	69761	67278
2.2.3.4 Scheduled State Co-op.Banks	–	–	–	–	–	–	–
2.2.3.5 Industrial Dev. Bank of India	–	–	–	–	–	–	–
2.2.3.6 NABARD	–	23084	–	–	–	–	–
2.2.3.7 EXIM Bank	–	–	–	–	–	–	–
2.2.3.8 Others	24485	13211	19937	20143	4115	3800	2361
2.2.3.9 Financial Institutions Outside India	102128	55138	67357	64284	53818	66096	66150
2.2.4 Bills Purchased and Discounted							
2.2.4.1 Internal	–	–	–	–	–	–	–
2.2.4.2 Government Treasury Bills	–	–	–	–	–	–	–
2.2.5 Investments	1408486	1441442	1418112	1421860	1422563	1424363	1413426
2.2.6 Other Assets	290209	200923	236098	239458	240831	236187	235356
2.2.6.1 Gold	230734	194717	232068	235339	236554	231832	230602

* 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
Apr. 1, 2023	-	-	-	-	143	10721	-	-	-	-10578
Apr. 2, 2023	-	-	-	-	417	38017	-	-	-	-37600
Apr. 3, 2023	-	-	-	-	593	288182	-4056	-	-	-291645
Apr. 4, 2023	-	-	-	-	1293	38536	-	-	-	-37243
Apr. 5, 2023	-	-	-	-	565	348213	-1443	-	-	-349091
Apr. 6, 2023	-	-	-	124200	646	145662	-1218	-	-	-270434
Apr. 7, 2023	-	-	-	-	10038	42578	-	-	-	-32540
Apr. 8, 2023	-	-	-	-	598	5379	-	-	-	-4781
Apr. 9, 2023	-	-	-	-	180	3704	-	-	-	-3524
Apr. 10, 2023	-	-	-	-	1500	117861	-885	-	-	-117246
Apr. 11, 2023	-	-	-	-	1578	124577	-272	-	-	-123271
Apr. 12, 2023	-	-	-	-	770	131447	-	-	-	-130677
Apr. 13, 2023	-	-	-	-	2609	84765	-	-	-	-82156
Apr. 14, 2023	-	-	-	-	1738	8966	-	-	-	-7228
Apr. 15, 2023	-	-	-	-	1206	39014	-	-	-	-37808
Apr. 16, 2023	-	-	-	-	7	5390	-	-	-	-5383
Apr. 17, 2023	-	-	-	-	3654	97890	-	-	-	-94236
Apr. 18, 2023	-	-	-	-	980	102964	657	-	-	-101327
Apr. 19, 2023	-	-	-	-	866	88710	2001	-	-	-85843
Apr. 20, 2023	-	-	-	-	10178	60185	-	-	-	-50007
Apr. 21, 2023	-	-	-	20480	16945	81556	458	-	-	-84633
Apr. 22, 2023	-	-	-	-	145	4314	-	-	-	-4169
Apr. 23, 2023	-	-	-	-	40	4083	-	-	-	-4043
Apr. 24, 2023	-	-	-	-	11517	68679	-	-	-	-57162
Apr. 25, 2023	-	-	-	-	18900	89627	-1049	-	-	-71776
Apr. 26, 2023	-	-	-	-	18940	72441	204	-	-	-53297
Apr. 27, 2023	-	-	-	-	45777	99723	1100	-	-	-52846
Apr. 28, 2023	-	-	-	-	53399	106846	-	-	-	-53447
Apr. 29, 2023	-	-	-	-	5739	23896	-	-	-	-18157
Apr. 30, 2023	-	-	-	-	2614	2900	-	-	-	-286

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

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

i) Operations in onshore / offshore OTC segment

Item	2022-23	2022	2023	
		Apr.	Mar.	Apr.
	1	2	3	4
1 Net Purchase/ Sale of Foreign Currency (US $ Million) (1.1–1.2)	-25516	1965	750	7704
1.1 Purchase (+)	187054	11965	6906	8404
1.2 Sale (–)	212570	10000	6156	700
2 ₹ equivalent at contract rate (₹ Crore)	-217259	14061	5883	63333
3 Cumulative (over end-March) (US $ Million)	-25516	1965	-25516	7704
(₹ Crore)	-217259	14061	-217259	63333
4 Outstanding Net Forward Sales (–)/ Purchase (+) at the end of month (US $ Million)	23600	63826	23600	19932

ii) Operations in currency futures segment

Item	2022-23	2022	2023	
		Apr.	Mar.	Apr.
	1	2	3	4
1 Net Purchase/ Sale of Foreign Currency (US $ Million) (1.1–1.2)	0	0	0	0
1.1 Purchase (+)	10930	0	0	0
1.2 Sale (–)	10930	0	0	0
2 Outstanding Net Currency Futures Sales (–)/ Purchase (+) at the end of month (US $ Million)	0	0	0	0

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

Item	As on April 30, 2023		
	Long (+)	Short (-)	Net (1-2)
	1	2	3
1. Upto 1 month	464	0	464
2. More than 1 month and upto 3 months	4924	365	4559
3. More than 3 months and upto 1 year	15790	881	14909
4. More than 1 year	0	0	0
Total (1+2+3+4)	**21178**	**1246**	**19932**

No. 5: RBI's Standing Facilities

(₹ Crore)

Item	As on the Last Reporting Friday							
	2022-23	2022		2023				
		May 20	Dec. 30	Jan. 27	Feb. 24	Mar. 24	Apr. 21	May 19
	1	2	3	4	5	6	7	8
1 MSF	28388	1009	33224	27370	15233	28388	16945	3326
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	2442	0	2376	1675	2107	2442	3719	3800
4 Others	-							
4.1 Limit	76000	76000	76000	76000	76000	76000	76000	76000
4.2 Outstanding	15900	35521	15400	7500	8350	15900	15900	0
5 Total Outstanding (1+2.2+3.2+4.2)	46730	36530	51000	36545	25690	46730	36564	7126

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				
	2022-23	2022	2023		
		Apr. 22	Mar. 24	Apr. 7	Apr. 21
	1	2	3	4	5
1 Currency with the Public (1.1 + 1.2 + 1.3 – 1.4)	3278334	3093159	3278334	3300465	3346545
1.1 Notes in Circulation	3350365	3181381	3350365	3386539	3425056
1.2 Circulation of Rupee Coin	29264	27270	29264	29542	29542
1.3 Circulation of Small Coins	743	743	743	743	743
1.4 Cash on Hand with Banks	102085	116236	102085	116375	108858
2 Deposit Money of the Public	2385928	2193027	2385928	2432281	2349412
2.1 Demand Deposits with Banks	2320598	2135459	2320598	2360868	2281104
2.2 'Other' Deposits with Reserve Bank	65330	57568	65330	71413	68309
3 M_1 (1 + 2)	**5664261**	**5286186**	**5664261**	**5732746**	**5695957**
4 Post Office Saving Bank Deposits	200257	190357	200257	200257	200257
5 M_2 (3 + 4)	**5864518**	**5476543**	**5864518**	**5933003**	**5896214**
6 Time Deposits with Banks	16668966	15425862	16668966	17044584	16987296
7 M_3 (3 + 6)	**22333227**	**20712048**	**22333227**	**22777330**	**22683254**
8 Total Post Office Deposits	1113230	1022570	1113230	1113230	1113230
9 M_4 (7 + 8)	**23446457**	**21734618**	**23446457**	**23890560**	**23796484**

No. 7: Sources of Money Stock (M_3)

(₹ Crore)

Sources	Outstanding as on March 31/last reporting Fridays of the month/reporting Fridays				
	2022-23	2022	2023		
		Apr. 22	Mar. 24	Apr. 7	Apr. 21
	1	2	3	4	5
1 Net Bank Credit to Government	**6916058**	**6411591**	**6916058**	**7369873**	**7165547**
1.1 RBI's net credit to Government (1.1.1–1.1.2)	1201651	1343761	1201651	1546810	1420099
1.1.1 Claims on Government	1413446	1466235	1413446	1546953	1420242
1.1.1.1 Central Government	1405821	1463536	1405821	1535447	1417096
1.1.1.2 State Governments	7625	2698	7625	11506	3146
1.1.2 Government deposits with RBI	211795	122473	211795	143	143
1.1.2.1 Central Government	211752	122431	211752	101	101
1.1.2.2 State Governments	43	43	43	43	43
1.2 Other Banks' Credit to Government	5714407	5067829	5714407	5823064	5745447
2 Bank Credit to Commercial Sector	**14423483**	**12682961**	**14423483**	**14600286**	**14611529**
2.1 RBI's credit to commercial sector	20396	10647	20396	20390	21792
2.2 Other banks' credit to commercial sector	14403087	12672314	14403087	14579896	14589737
2.2.1 Bank credit by commercial banks	13675235	11956336	13675235	13850504	13859394
2.2.2 Bank credit by co-operative banks	710187	698969	710187	711375	713417
2.2.3 Investments by commercial and co-operative banks in other securities	17665	17009	17665	18016	16925
3 Net Foreign Exchange Assets of Banking Sector (3.1 + 3.2)	**4862273**	**4848289**	**4862273**	**4877921**	**4884655**
3.1 RBI's net foreign exchange assets (3.1.1–3.1.2)	4606680	4436706	4606680	4622329	4629063
3.1.1 Gross foreign assets	4606942	4436947	4606942	4622589	4629323
3.1.2 Foreign liabilities	262	241	262	260	260
3.2 Other banks' net foreign exchange assets	255593	411583	255593	255593	255593
4 Government's Currency Liabilities to the Public	**30007**	**28013**	**30007**	**30285**	**30285**
5 Banking Sector's Net Non-monetary Liabilities	**3898594**	**3258807**	**3898594**	**4101036**	**4008762**
5.1 Net non-monetary liabilities of RBI	1612360	1265658	1612360	1629808	1614462
5.2 Net non-monetary liabilities of other banks (residual)	2286234	1993148	2286234	2471228	2394301
M_3 (1+2+3+4–5)	**22333227**	**20712048**	**22333227**	**22777330**	**22683254**

No. 8: Monetary Survey

(₹ Crore)

Item	Outstanding as on March 31/last reporting Fridays of the month/reporting Fridays				
	2022-23	2022	2023		
		Apr. 22	Mar. 24	Apr. 7	Apr. 21
	1	2	3	4	5
Monetary Aggregates					
NM_1 (1.1 + 1.2.1+1.3)	5664261	5286186	5664261	5732746	5695957
NM_2 (NM_1 + 1.2.2.1)	13092880	12168217	13092880	13327679	13265253
NM_3 (NM_2 + 1.2.2.2 + 1.4 = 2.1 + 2.2 + 2.3 – 2.4 – 2.5)	22617633	20859403	22617633	23111460	22975130
1 Components					
1.1 Currency with the Public	3278334	3093159	3278334	3300465	3346545
1.2 Aggregate Deposits of Residents	18828640	17428862	18828640	19238496	19101760
1.2.1 Demand Deposits	2320598	2135459	2320598	2360868	2281104
1.2.2 Time Deposits of Residents	16508042	15293404	16508042	16877628	16820656
1.2.2.1 Short-term Time Deposits	7428619	6882032	7428619	7594933	7569295
1.2.2.1.1 Certificates of Deposit (CDs)	304088	201743	304088	304099	302212
1.2.2.2 Long-term Time Deposits	9079423	8411372	9079423	9282695	9251361
1.3 'Other' Deposits with RBI	65330	57568	65330	71413	68309
1.4 Call/Term Funding from Financial Institutions	445329	279813	445329	501085	458516
2 Sources					
2.1 Domestic Credit	22455037	20093117	22455037	23065320	22864668
2.1.1 Net Bank Credit to the Government	6916058	6411591	6916058	7369873	7165547
2.1.1.1 Net RBI credit to the Government	1201651	1343761	1201651	1546810	1420099
2.1.1.2 Credit to the Government by the Banking System	5714407	5067829	5714407	5823064	5745447
2.1.2 Bank Credit to the Commercial Sector	15538979	13681526	15538979	15695446	15699122
2.1.2.1 RBI Credit to the Commercial Sector	20396	33657	20396	20390	21792
2.1.2.2 Credit to the Commercial Sector by the Banking System	15518583	13647869	15518583	15675056	15677330
2.1.2.2.1 Other Investments (Non-SLR Securities)	1096267	959665	1096267	1079061	1070157
2.2 Government's Currency Liabilities to the Public	30007	28013	30007	30285	30285
2.3 Net Foreign Exchange Assets of the Banking Sector	4721610	4695792	4721610	4766497	4739836
2.3.1 Net Foreign Exchange Assets of the RBI	4606680	4436706	4606680	4622329	4629063
2.3.2 Net Foreign Currency Assets of the Banking System	114930	259086	114930	144169	110773
2.4 Capital Account	3507224	3069617	3507224	3513691	3556592
2.5 Other items (net)	1081797	887903	1081797	1236952	1103067

No. 9: Liquidity Aggregates

(₹ Crore)

Aggregates	2022-23	2022	2023		
		Apr.	Feb.	Mar.	Apr.
	1	2	3	4	5
1 NM_3	**22617633**	**20859403**	**22399470**	**22617633**	**22975130**
2 Postal Deposits	651847	602901	651847	651847	651847
3 L_1 (1 + 2)	**23269480**	**21462304**	**23051317**	**23269480**	**23626977**
4 Liabilities of Financial Institutions	54724	41050	49679	54724	69591
4.1 Term Money Borrowings	1692	1758	1229	1692	1811
4.2 Certificates of Deposit	46407	39170	41920	46407	57985
4.3 Term Deposits	6625	122	6530	6625	9795
5 L_2 (3 + 4)	**23324204**	**21503353**	**23100996**	**23324204**	**23696568**
6 Public Deposits with Non-Banking Financial Companies	78061	..	..	78061	..
7 L_3 (5 + 6)	**23402265**	..	..	**23402265**	..

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				
	2022-23	2022	2023		
		Apr. 22	Mar. 24	Apr. 7	Apr. 21
	1	2	3	4	5
1 Components					
1.1 Currency in Circulation	3380418	3209394	3380418	3416841	3455403
1.2 Bankers' Deposits with the RBI	867793	735349	867793	864970	897580
1.2.1 Scheduled Commercial Banks	809907	684949	809907	804493	838212
1.3 'Other' Deposits with the RBI	65330	57568	65330	71413	68309
Reserve Money (1.1 + 1.2 + 1.3 = 2.1 + 2.2 + 2.3 – 2.4 – 2.5)	4313542	4002311	4313542	4353224	4421292
2 Sources					
2.1 RBI's Domestic Credit	1289215	803251	1289215	1330417	1376406
2.1.1 Net RBI credit to the Government	1201651	1343761	1201651	1546810	1420099
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)	1194069	1341106	1194069	1535346	1416995
2.1.1.1.1 Loans and Advances to the Central Government	–	–	–	122394	3145
2.1.1.1.2 Investments in Treasury Bills	–	–	–	–	–
2.1.1.1.3 Investments in dated Government Securities	1405521	1463104	1405521	1412799	1413577
2.1.1.1.3.1 Central Government Securities	1405521	1463104	1405521	1412799	1413577
2.1.1.1.4 Rupee Coins	300	432	300	254	374
2.1.1.1.5 Deposits of the Central Government	211752	122431	211752	101	101
2.1.1.2 Net RBI credit to State Governments	7582	2656	7582	11464	3104
2.1.2 RBI's Claims on Banks	67168	-574168	67168	-236783	-65486
2.1.2.1 Loans and Advances to Scheduled Commercial Banks	67168	-551158	67168	-236783	-65486
2.1.3 RBI's Credit to Commercial Sector	20396	33657	20396	20390	21792
2.1.3.1 Loans and Advances to Primary Dealers	–	–	2442	1759	3719
2.1.3.2 Loans and Advances to NABARD	0	23010	–	–	–
2.2 Government's Currency Liabilities to the Public	30007	28013	30007	30285	30285
2.3 Net Foreign Exchange Assets of the RBI	4606680	4436706	4606680	4622329	4629063
2.3.1 Gold	375117	327120	375117	382447	378926
2.3.2 Foreign Currency Assets	4231580	4109603	4231580	4239900	4250154
2.4 Capital Account	1566088	1244927	1566088	1562683	1562091
2.5 Other Items (net)	46272	20731	46272	67125	52371

No. 11: Reserve Money - Components and Sources

(₹ Crore)

Item	2022-23	Outstanding as on March 31/ last Fridays of the month/ Fridays					
		2022	2023				
		Apr. 29	Mar. 31	Apr. 7	Apr. 14	Apr. 21	Apr. 28
	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)	4386759	4059241	4386759	4353224	4410995	4421292	4474080
1 Components							
1.1 Currency in Circulation	3378521	3210481	3378521	3416841	3438258	3455403	3455282
1.2 Bankers' Deposits with RBI	930477	790444	930477	864970	901763	897580	951088
1.3 'Other' Deposits with RBI	77761	58316	77761	71413	70974	68309	67710
2 Sources							
2.1 Net Reserve Bank Credit to Government	1451126	1338817	1451126	1546810	1536284	1420099	1425449
2.2 Reserve Bank Credit to Banks	-120992	-495401	-120992	-236783	-186524	-65486	-54322
2.3 Reserve Bank Credit to Commercial Sector	26549	8562	26549	20390	19888	21792	22000
2.4 Net Foreign Exchange Assets of RBI	4587355	4415731	4587355	4622329	4633384	4629063	4651213
2.5 Government's Currency Liabilities to the Public	30285	28160	30285	30285	30285	30285	30482
2.6 Net Non- Monetary Liabilities of RBI	1587565	1236627	1587565	1629808	1622322	1614462	1600742

No. 12: Commercial Bank Survey

(₹ Crore)

Item	Outstanding as on last reporting Fridays of the month/ reporting Fridays of the month				
	2022-23	2022	2023		
		Apr. 22	Mar. 24	Apr. 7	Apr. 21
	1	2	3	4	5
1 Components					
1.1 Aggregate Deposits of Residents	17882990	16491018	17882990	18280983	18145164
1.1.1 Demand Deposits	2180431	1994772	2180431	2219052	2138355
1.1.2 Time Deposits of Residents	15702560	14496245	15702560	16061930	16006809
1.1.2.1 Short-term Time Deposits	7066152	6523310	7066152	7227869	7203064
1.1.2.1.1 Certificates of Deposits (CDs)	304088	201743	304088	304099	302212
1.1.2.2 Long-term Time Deposits	8636408	7972935	8636408	8834062	8803745
1.2 Call/Term Funding from Financial Institutions	445329	279813	445329	501085	458516
2 Sources					
2.1 Domestic Credit	20197180	17694948	20197180	20460761	20383774
2.1.1 Credit to the Government	5414322	4770855	5414322	5523022	5444679
2.1.2 Credit to the Commercial Sector	14782858	12924093	14782858	14937739	14939095
2.1.2.1 Bank Credit	13675235	11956336	13675235	13850504	13859394
2.1.2.1.1 Non-food Credit	13655330	11913784	13655330	13829541	13838102
2.1.2.2 Net Credit to Primary Dealers	19491	16153	19491	16362	17699
2.1.2.3 Investments in Other Approved Securities	826	902	826	774	807
2.1.2.4 Other Investments (in non-SLR Securities)	1087305	950702	1087305	1070099	1061195
2.2 Net Foreign Currency Assets of Commercial Banks (2.2.1–2.2.2–2.2.3)	114930	259086	114930	144169	110773
2.2.1 Foreign Currency Assets	353850	465464	353850	387908	358172
2.2.2 Non-resident Foreign Currency Repatriable Fixed Deposits	160923	132459	160923	166956	166640
2.2.3 Overseas Foreign Currency Borrowings	77997	73919	77997	76783	80759
2.3 Net Bank Reserves (2.3.1+2.3.2–2.3.3)	833002	1339631	833002	1145454	1000933
2.3.1 Balances with the RBI	809907	684949	809907	804493	838212
2.3.2 Cash in Hand	90263	103525	90263	104178	97235
2.3.3 Loans and Advances from the RBI	67168	-551158	67168	-236783	-65486
2.4 Capital Account	1916966	1800519	1916966	1926837	1970331
2.5 Other items (net) (2.1+2.2+2.3–2.4–1.1–1.2)	899827	722316	899827	1041479	921469
2.5.1 Other Demand and Time Liabilities (net of 2.2.3)	711654	536216	711654	708123	660124
2.5.2 Net Inter-Bank Liabilities (other than to PDs)	44733	33787	44733	18808	29540

No. 13: Scheduled Commercial Banks' Investments

(₹ Crore)

Item	As on March 24, 2023	2022	2023		
		Apr. 22	Mar. 24	Apr. 7	Apr. 21
	1	2	3	4	5
1 SLR Securities	5415148	4771756	5415148	5523796	5445486
2 Other Government Securities (Non-SLR)	182265	-	182265	181856	178907
3 Commercial Paper	65058	52497	65058	60267	61928
4 Shares issued by					
4.1 PSUs	9736	8061	9736	9711	9739
4.2 Private Corporate Sector	71099	73668	71099	71192	71623
4.3 Others	4500	5074	4500	4392	4379
5 Bonds/Debentures issued by					
5.1 PSUs	92304	116629	92304	88185	86727
5.2 Private Corporate Sector	325035	322067	325035	321189	306067
5.3 Others	99384	145822	99384	101892	100601
6 Instruments issued by					
6.1 Mutual funds	48810	53485	48810	44484	58650
6.2 Financial institutions	189180	173399	189180	186932	182573

Note: '-' 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			
	2022-23	2022	2023		2022-23	2022	2023	
		Apr.	Mar.	Apr.		Apr.	Mar.	Apr.
	1	2	3	4	5	6	7	8
Number of Reporting Banks	212	212	212	211	137	136	137	136
1 Liabilities to the Banking System	**355252**	**286550**	**355252**	**346011**	**351843**	**282432**	**351843**	**342636**
1.1 Demand and Time Deposits from Banks	228517	209856	228517	246558	226119	206185	226119	244088
1.2 Borrowings from Banks	67566	43698	67566	39620	67199	43690	67199	39367
1.3 Other Demand and Time Liabilities	59170	32995	59170	59832	58524	32556	58524	59181
2 Liabilities to Others	**19730504**	**18185067**	**19730504**	**20213161**	**19278894**	**17731845**	**19278894**	**19748765**
2.1 Aggregate Deposits	18477677	17216856	18477677	18929095	18043914	16781575	18043914	18482933
2.1.1 Demand	2225416	2159279	2225416	2306163	2180431	2114435	2180431	2257014
2.1.2 Time	16252261	15057577	16252261	16622932	15863483	14667140	15863483	16225918
2.2 Borrowings	449945	291197	449945	470367	445329	286130	445329	465363
2.3 Other Demand and Time Liabilities	802881	677013	802881	813700	789651	664139	789651	800470
3 Borrowings from Reserve Bank	**165085**	**94306**	**165085**	**73004**	**165085**	**94306**	**165085**	**73004**
3.1 Against Usance Bills /Promissory Notes	–	–	–	–	–	–	–	–
3.2 Others	165085	94306	165085	73004	165085	94306	165085	73004
4 Cash in Hand and Balances with Reserve Bank	920953	861402	920953	1002067	900170	841178	900170	980437
4.1 Cash in Hand	92788	103551	92788	92222	90263	100944	90263	90014
4.2 Balances with Reserve Bank	828165	757851	828165	909846	809907	740234	809907	890423
5 Assets with the Banking System	**397974**	**339178**	**397974**	**405125**	**326601**	**273145**	**326601**	**338073**
5.1 Balances with Other Banks	232378	220989	232378	240873	193422	186466	193422	199558
5.1.1 In Current Account	18939	21655	18939	16761	15528	18732	15528	13123
5.1.2 In Other Accounts	213440	199334	213440	224112	177894	167734	177894	186435
5.2 Money at Call and Short Notice	49763	36999	49763	47265	24864	11255	24864	28233
5.3 Advances to Banks	45330	35852	45330	42830	41184	33397	41184	39612
5.4 Other Assets	70503	45339	70503	74157	67130	42027	67130	70670
6 Investment	**5560664**	**4969726**	**5560664**	**5605397**	**5415148**	**4827062**	**5415148**	**5458940**
6.1 Government Securities	5553702	4963370	5553702	5599381	5414322	4826084	5414322	5458213
6.2 Other Approved Securities	6963	6356	6963	6016	826	979	826	727
7 Bank Credit	**14078261**	**12372846**	**14078261**	**14286484**	**13675235**	**12000930**	**13675235**	**13879284**
7a Food Credit	65622	98423	65622	79502	19906	52702	19906	27669
7.1 Loans, Cash-credits and Overdrafts	13824693	12131606	13824693	14024081	13424906	11762233	13424906	13619986
7.2 Inland Bills-Purchased	39446	34860	39446	42626	39435	34845	39435	42614
7.3 Inland Bills-Discounted	165428	154044	165428	170157	162910	152374	162910	167732
7.4 Foreign Bills-Purchased	19758	21010	19758	19345	19545	20715	19545	19136
7.5 Foreign Bills-Discounted	28936	31327	28936	30274	28439	30763	28439	29817

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

(₹ Crore)

Sector	Outstanding as on				Growth (%)	
	Mar.24, 2023	2022	2023		Financial year so far	Y-o-Y
		Apr.22	Mar.24	Apr.21	2023-24	2023
	1	2	3	4	%	%
I. Bank Credit (II+III)	**13675228**	**11956336**	**13675228**	**13857671**	**1.3**	**15.9**
II. Food Credit	**19906**	**42552**	**19906**	**21292**	**7.0**	**-50.0**
III. Non-food Credit	**13655322**	**11913784**	**13655322**	**13836379**	**1.3**	**16.1**
1. Agriculture & Allied Activities	**1687191**	**1478032**	**1687191**	**1725511**	**2.3**	**16.7**
2. Industry (Micro and Small, Medium and Large)	**3336722**	**3148879**	**3336722**	**3369940**	**1.0**	**7.0**
2.1 Micro and Small	598390	544724	598390	597629	-0.1	9.7
2.2 Medium	256023	218492	256023	260141	1.6	19.1
2.3 Large	2482310	2385663	2482310	2512171	1.2	5.3
3. Services	**3608574**	**3012615**	**3608574**	**3664109**	**1.5**	**21.6**
3.1 Transport Operators	176239	152094	176239	180377	2.3	18.6
3.2 Computer Software	21559	20244	21559	21568	0.0	6.5
3.3 Tourism, Hotels & Restaurants	66466	64964	66466	66959	0.7	3.1
3.4 Shipping	6677	7917	6677	6342	-5.0	-19.9
3.5 Aviation	28330	23067	28330	29983	5.8	30.0
3.6 Professional Services	134661	117820	134661	135928	0.9	15.4
3.7 Trade	819921	706206	819921	834959	1.8	18.2
3.7.1 Wholesale Trade [1]	396631	367136	396631	413551	4.3	12.6
3.7.2 Retail Trade	423291	339070	423291	421409	-0.4	24.3
3.8 Commercial Real Estate	314604	295127	314604	321861	2.3	9.1
3.9 Non-Banking Financial Companies (NBFCs) [2]	1331097	1041701	1331097	1345436	1.1	29.2
of which,						
3.9.1 Housing Finance Companies (HFCs)	314678	290838	314678	313353	-0.4	7.7
3.9.2 Public Financial Institutions (PFIs)	175614	132178	175614	177673	1.2	34.4
3.10 Other Services [3]	709020	583476	709020	720697	1.6	23.5
4. Personal Loans	**4085168**	**3449006**	**4085168**	**4119592**	**0.8**	**19.4**
4.1 Consumer Durables	37323	28907	37323	37816	1.3	30.8
4.2 Housing	1936428	1705233	1936428	1949920	0.7	14.3
4.3 Advances against Fixed Deposits	121897	84108	121897	112597	-7.6	33.9
4.4 Advances to Individuals against share & bonds	6778	6025	6778	6803	0.4	12.9
4.5 Credit Card Outstanding	194282	154437	194282	200258	3.1	29.7
4.6 Education	96847	82572	96847	97395	0.6	18.0
4.7 Vehicle Loans	502780	413375	502780	508937	1.2	23.1
4.8 Loan against gold jewellery	88428	74473	88428	89665	1.4	20.4
4.9 Other Personal Loans	1100404	899876	1100404	1116201	1.4	24.0
5. Priority Sector (Memo)						
(i) Agriculture & Allied Activities [4]	1708951	1527712	1708951	1682168	-1.6	10.1
(ii) Micro & Small Enterprises [5]	1570231	1404658	1570231	1580835	0.7	12.5
(iii) Medium Enterprises [6]	399260	359522	399260	403313	1.0	12.2
(iv) Housing	621376	614256	621376	623781	0.4	1.6
(v) Education Loans	59507	57751	59507	59290	-0.4	2.7
(vi) Renewable Energy	4656	3607	4656	4614	-0.9	27.9
(vii) Social Infrastructure	2464	2541	2464	2494	1.2	-1.9
(viii) Export Credit	15322	21759	15322	13675	-10.7	-37.2
(ix) Others	59659	43293	59659	51805	-13.2	19.7
(x) Weaker Sections including net PSLC- SF/MF	1384249	1208342	1384249	1355514	-2.1	12.2

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 Wholesale trade includes food procurement credit outside the food credit consortium.

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

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

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

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

6 "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. 24, 2023	2022	2023		Financial year so far	Y-o-Y
		Apr. 22	Mar.24	Apr. 21	2023-24	2023
	1	2	3	4	%	%
2 Industries (2.1 to 2.19)	3336722	3148879	3336722	3369940	1.0	7.0
2.1 Mining & Quarrying (incl. Coal)	58812	47577	58812	60642	3.1	27.5
2.2 Food Processing	182878	174817	182878	179568	–1.8	2.7
2.2.1 Sugar	22867	26377	22867	23713	3.7	–10.1
2.2.2 Edible Oils & Vanaspati	19737	17510	19737	19012	–3.7	8.6
2.2.3 Tea	5162	5948	5162	5195	0.6	–12.7
2.2.4 Others	135112	124983	135112	131647	–2.6	5.3
2.3 Beverage & Tobacco	23362	18057	23362	24169	3.5	33.8
2.4 Textiles	227843	222753	227843	232402	2.0	4.3
2.4.1 Cotton Textiles	91095	88829	91095	92873	2.0	4.6
2.4.2 Jute Textiles	3867	3519	3867	3982	3.0	13.2
2.4.3 Man-Made Textiles	40354	38288	40354	40301	–0.1	5.3
2.4.4 Other Textiles	92527	92117	92527	95246	2.9	3.4
2.5 Leather & Leather Products	11675	11460	11675	11782	0.9	2.8
2.6 Wood & Wood Products	19963	16435	19963	19984	0.1	21.6
2.7 Paper & Paper Products	43010	40735	43010	42682	–0.8	4.8
2.8 Petroleum, Coal Products & Nuclear Fuels	149363	103748	149363	144708	–3.1	39.5
2.9 Chemicals & Chemical Products	216481	204569	216481	214476	–0.9	4.8
2.9.1 Fertiliser	33805	34740	33805	35297	4.4	1.6
2.9.2 Drugs & Pharmaceuticals	67130	63348	67130	66706	–0.6	5.3
2.9.3 Petro Chemicals	20661	21212	20661	21058	1.9	–0.7
2.9.4 Others	94885	85269	94885	91416	–3.7	7.2
2.10 Rubber, Plastic & their Products	79037	71893	79037	78784	–0.3	9.6
2.11 Glass & Glassware	8100	5806	8100	7774	–4.0	33.9
2.12 Cement & Cement Products	56592	46956	56592	56752	0.3	20.9
2.13 Basic Metal & Metal Product	343507	287518	343507	342726	–0.2	19.2
2.13.1 Iron & Steel	228860	185152	228860	226500	–1.0	22.3
2.13.2 Other Metal & Metal Product	114646	102366	114646	116225	1.4	13.5
2.14 All Engineering	175260	167044	175260	177025	1.0	6.0
2.14.1 Electronics	41781	38775	41781	43499	4.1	12.2
2.14.2 Others	133479	128269	133479	133526	0.0	4.1
2.15 Vehicles, Vehicle Parts & Transport Equipment	96603	90291	96603	99103	2.6	9.8
2.16 Gems & Jewellery	77718	77913	77718	77943	0.3	0.0
2.17 Construction	122880	112720	122880	121069	–1.5	7.4
2.18 Infrastructure	1186248	1197649	1186248	1218509	2.7	1.7
2.18.1 Power	604691	614385	604691	612675	1.3	–0.3
2.18.2 Telecommunications	111334	130129	111334	128757	15.6	–1.1
2.18.3 Roads	284793	271260	284793	292378	2.7	7.8
2.18.4 Airports	9492	8423	9492	7831	–17.5	–7.0
2.18.5 Ports	8175	9112	8175	7619	–6.8	–16.4
2.18.6 Railways	11169	11484	11169	11359	1.7	–1.1
2.18.7 Other Infrastructure	156593	152857	156593	157890	0.8	3.3
2.19 Other Industries	257391	250937	257391	259843	1.0	3.5

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								
	2021-22	2022	2023						
		Mar, 25	Jan, 13	Jan, 27	Feb, 10	Feb, 24	Mar, 10	Mar, 24	Mar, 31
	1	2	3	4	5	6	7	8	9
Number of Reporting Banks	32	33	33	33	33	33	33	33	33
1 Aggregate Deposits (2.1.1.2+2.2.1.2)	**126746.8**	**129858.2**	**132887.9**	**133539.0**	**134672.6**	**135950.9**	**132345.1**	**136275.2**	**144701.9**
2 Demand and Time Liabilities									
2.1 Demand Liabilities	**23533.1**	**26116.3**	**27185.8**	**26514.9**	**26882.2**	**28527.7**	**26330.1**	**27393.9**	**30241.2**
2.1.1 Deposits									
2.1.1.1 Inter-Bank	4281.2	5902.5	6029.5	5760.8	5776.8	5720.7	5459.7	5882.5	6893.3
2.1.1.2 Others	14,413.7	14459.2	15866.7	15381.7	15061.6	17432.4	14856.1	15407.1	18195.4
2.1.2 Borrowings from Banks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.1.3 Other Demand Liabilities	4838.2	5754.5	5289.6	5372.4	6043.8	5374.5	6014.3	6104.3	5152.4
2.2 Time Liabilities	**181808.1**	**189731.8**	**175067.2**	**176298.1**	**177254.6**	**175896.3**	**173546.0**	**180973.3**	**194129.9**
2.2.1 Deposits									
2.2.1.1 Inter-Bank	66572.3	71236.3	55338.6	55159.9	55278.0	54797.7	53880.1	58092.5	65875.0
2.2.1.2 Others	112333.1	115399.0	117021.2	118157.3	119611.0	118518.4	117488.9	120868.1	126506.5
2.2.2 Borrowings from Banks	899.9	853.7	1764.1	2032.1	1374.0	1604.0	1185.6	1079.8	845.8
2.2.3 Other Time Liabilities	2002.7	2242.7	943.3	948.7	991.5	976.1	991.4	932.8	902.6
3 Borrowing from Reserve Bank	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 Borrowings from a notified bank / Government	58868.2	66978.0	131532.1	78164.1	78883.6	77988.7	76620.2	81020.8	84382.5
4.1 Demand	12625.5	15765.8	17952.8	17966.9	16829.0	16530.5	16418.4	17932.3	20545.9
4.2 Time	46242.7	51212.3	113579.2	60197.2	62054.5	61458.3	60201.7	63088.6	63836.7
5 Cash in Hand and Balances with Reserve Bank	**8371.5**	**9725.6**	**11647.2**	**11360.2**	**10954.8**	**10769.8**	**10928.5**	**11111.3**	**12386.8**
5.1 Cash in Hand	602.2	1014.8	1224.4	732.3	862.4	797.2	913.2	913.6	1540.1
5.2 Balance with Reserve Bank	7769.3	8710.8	10422.8	10627.9	10092.4	9972.6	10015.3	10197.7	10846.7
6 Balances with Other Banks in Current Account	**894.4**	**1651.7**	**1641.3**	**1850.1**	**1788.9**	**2038.1**	**1929.6**	**1637.1**	**3500.7**
7 Investments in Government Securities	**66350.1**	**75927.5**	**72808.5**	**72775.3**	**72507.4**	**72892.1**	**74623.0**	**71681.6**	**80906.4**
8 Money at Call and Short Notice	**25325.3**	**32935.8**	**20920.3**	**21666.8**	**21894.1**	**21601.9**	**22730.9**	**27431.3**	**34771.6**
9 Bank Credit (10.1+11)	**117228.4**	**111549.1**	**122782.6**	**123897.1**	**123643.3**	**123225.6**	**122954.0**	**123758.3**	**124978.1**
10 Advances									
10.1 Loans, Cash-Credits and Overdrafts	**117209.2**	**111529.1**	**122742.4**	**123866.2**	**123616.7**	**123202.0**	**122923.9**	**123721.3**	**124928.2**
10.2 Due from Banks	87632.4	112645.5	124378.1	125739.6	128547.9	128522.2	123021.0	127305.7	131095.9
11 Bills Purchased and Discounted	19.2	20.0	40.3	30.9	26.6	23.6	30.2	37.0	49.9

Prices and Production

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

Group/Sub group	2022-23			Rural			Urban			Combined		
	Rural	Urban	Combined	May.22	Apr.23	May.23(P)	May.22	Apr.23	May.23(P)	May.22	Apr.23	May.23(P)
	1	2	3	4	5	6	7	8	9	10	11	12
1 Food and beverages	**173.9**	**179.7**	**176.0**	**170.8**	**175.5**	**176.6**	**177.5**	**182.1**	**183.1**	**173.3**	**177.9**	**179.0**
1.1 Cereals and products	163.3	165.3	164.0	152.9	173.3	173.1	156.7	174.8	174.8	154.1	173.8	173.6
1.2 Meat and fish	208.7	215.2	211.0	214.7	206.9	211.4	221.2	213.7	219.4	217.0	209.3	214.2
1.3 Egg	174.7	177.1	175.6	161.4	167.9	171.1	164.1	172.4	176.7	162.4	169.6	173.3
1.4 Milk and products	170.1	170.7	170.3	164.6	178.2	179.6	165.4	178.8	179.5	164.9	178.4	179.6
1.5 Oils and fats	197.0	181.1	191.2	209.9	178.5	173.3	189.5	168.7	164.4	202.4	174.9	170.0
1.6 Fruits	164.1	169.6	166.7	168.0	173.7	169.0	174.5	179.2	175.9	171.0	176.3	172.2
1.7 Vegetables	160.8	198.7	173.6	160.4	142.8	148.2	203.2	179.9	184.8	174.9	155.4	160.6
1.8 Pulses and products	168.1	168.2	168.2	165.0	172.8	174.8	164.1	174.7	176.9	164.7	173.4	175.5
1.9 Sugar and confectionery	119.9	122.2	120.7	118.9	120.4	121.9	121.2	123.1	124.2	119.7	121.3	122.7
1.10 Spices	199.4	193.5	197.5	186.6	215.5	221.0	181.4	207.8	211.9	184.9	212.9	218.0
1.11 Non-alcoholic beverages	175.4	161.3	169.6	173.2	178.2	178.6	158.5	165.5	165.9	167.1	172.9	173.3
1.12 Prepared meals, snacks, sweets	185.1	190.4	187.6	180.4	190.5	191.0	184.9	197.0	197.7	182.5	193.5	194.1
2 Pan, tobacco and intoxicants	**195.0**	**199.9**	**196.3**	**192.9**	**199.5**	**199.9**	**197.5**	**203.5**	**204.0**	**194.1**	**200.6**	**201.0**
3 Clothing and footwear	**184.5**	**172.9**	**179.9**	**179.0**	**190.2**	**190.8**	**167.8**	**178.9**	**179.3**	**174.6**	**185.7**	**186.2**
3.1 Clothing	184.8	175.0	180.9	179.3	190.7	191.2	170.0	181.0	181.3	175.6	186.9	187.3
3.2 Footwear	182.7	161.4	173.9	177.2	187.3	187.9	155.9	167.7	168.1	168.4	179.2	179.7
4 Housing	**--**	**170.0**	**170.0**	**--**	**--**	**--**	**167.5**	**175.2**	**175.6**	**167.5**	**175.2**	**175.6**
5 Fuel and light	**179.7**	**178.4**	**179.2**	**175.3**	**181.5**	**182.7**	**173.5**	**182.1**	**182.6**	**174.6**	**181.7**	**182.7**
6 Miscellaneous	**173.8**	**166.5**	**170.3**	**170.9**	**178.9**	**179.5**	**163.8**	**170.9**	**171.5**	**167.5**	**175.0**	**175.6**
6.1 Household goods and services	173.7	165.1	169.6	168.9	179.1	179.8	161.1	169.6	170.1	165.2	174.6	175.2
6.2 Health	181.3	174.6	178.7	177.7	187.2	187.8	170.1	181.5	182.2	174.8	185.0	185.7
6.3 Transport and communication	167.3	158.8	162.8	167.1	169.4	169.7	159.4	160.1	160.4	163.0	164.5	164.8
6.4 Recreation and amusement	170.0	165.8	167.6	167.6	173.2	173.7	163.2	168.8	169.2	165.1	170.7	171.2
6.5 Education	175.6	169.7	172.2	171.8	179.4	180.1	165.2	174.2	174.7	167.9	176.4	176.9
6.6 Personal care and effects	173.2	173.4	173.3	168.5	183.8	184.8	168.2	184.4	185.6	168.4	184.0	185.1
General Index (All Groups)	**175.8**	**173.5**	**174.7**	**172.5**	**178.8**	**179.7**	**170.8**	**177.4**	**178.1**	**171.7**	**178.1**	**179.0**

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	2022-23	2022	2023	
				Apr.	Mar.	Apr.
	1	2	3	4	5	6
1 Consumer Price Index for Industrial Workers	2016	2.88	131.1	127.7	133.3	134.2
2 Consumer Price Index for Agricultural Labourers	1986-87	5.89	1148	1108	1175	1180
3 Consumer Price Index for Rural Labourers	1986-87	–	1160	1119	1186	1192

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

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

Item	2022-23	2022	2023	
		Apr.	Mar.	Apr.
	1	2	3	4
1 Standard Gold (₹ per 10 grams)	52731	52023	57514	60145
2 Silver (₹ per kilogram)	61991	66922	66520	74386

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	2022-23	2022	2023		
			May	Mar.	Apr. (P)	May (P)
	1	2	3	4	5	6
1 ALL COMMODITIES	**100.000**	**152.5**	**155.0**	**151.0**	**150.9**	**149.6**
1.1 PRIMARY ARTICLES	**22.618**	**176.8**	**178.5**	**175.2**	**177.3**	**175.3**
1.1.1 FOOD ARTICLES	**15.256**	**179.5**	**178.4**	**178.8**	**181.5**	**181.1**
1.1.1.1 Food Grains (Cereals+Pulses)	3.462	178.6	171.7	183.0	183.6	183.1
1.1.1.2 Fruits & Vegetables	3.475	200.6	208.4	180.7	192.0	185.8
1.1.1.3 Milk	4.440	167.8	163.9	175.3	174.9	175.1
1.1.1.4 Eggs,Meat & Fish	2.402	170.6	173.6	171.9	170.9	177.2
1.1.1.5 Condiments & Spices	0.529	187.2	177.9	192.9	197.7	203.5
1.1.1.6 Other Food Articles	0.948	178.1	173.5	183.3	184.3	181.2
1.1.2 NON-FOOD ARTICLES	**4.119**	**172.1**	**179.9**	**167.1**	**165.8**	**162.7**
1.1.2.1 Fibres	0.839	203.0	234.6	179.9	180.7	175.7
1.1.2.2 Oil Seeds	1.115	205.2	223.7	192.5	191.9	188.7
1.1.2.3 Other non-food Articles	1.960	131.2	127.7	135.2	135.5	133.5
1.1.2.4 Floriculture	0.204	257.4	217.1	281.7	252.1	248.8
1.1.3 MINERALS	**0.833**	**203.5**	**210.2**	**222.4**	**222.5**	**224.5**
1.1.3.1 Metallic Minerals	0.648	191.7	206.0	212.8	212.8	214.3
1.1.3.2 Other Minerals	0.185	245.2	224.7	256.2	256.7	260.3
1.1.4 CRUDE PETROLEUM & NATURAL GAS	**2.410**	**158.4**	**165.5**	**149.8**	**155.0**	**142.9**
1.2 FUEL & POWER	**13.152**	**159.5**	**163.6**	**156.4**	**152.6**	**148.6**
1.2.1 COAL	**2.138**	**133.3**	**130.9**	**135.1**	**135.1**	**134.2**
1.2.1.1 Coking Coal	0.647	143.4	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	271.1	212.6	312.6	312.6	292.1
1.2.2 MINERAL OILS	**7.950**	**172.9**	**186.7**	**165.2**	**159.6**	**156.4**
1.2.3 ELECTRICITY	**3.064**	**143.3**	**126.4**	**148.4**	**146.6**	**138.6**
1.3 MANUFACTURED PRODUCTS	**64.231**	**142.6**	**145.0**	**141.3**	**141.2**	**140.7**
1.3.1 MANUFACTURE OF FOOD PRODUCTS	**9.122**	**165.3**	**170.8**	**160.8**	**160.3**	**159.1**
1.3.1.1 Processing and Preserving of meat	0.134	143.7	145.9	145.5	146.5	146.4
1.3.1.2 Processing and Preserving of fish, Crustaceans, Molluscs and products thereof	0.204	144.9	145.6	140.7	139.3	141.1
1.3.1.3 Processing and Preserving of fruit and Vegetables	0.138	125.8	122.8	126.6	127.4	129.1
1.3.1.4 Vegetable and Animal oils and Fats	2.643	181.9	213.6	157.9	156.1	150.5
1.3.1.5 Dairy products	1.165	167.0	160.7	176.4	175.9	177.6
1.3.1.6 Grain mill products	2.010	162.1	151.7	168.5	166.1	166.4
1.3.1.7 Starches and Starch products	0.110	158.9	159.5	157.1	156.1	154.7
1.3.1.8 Bakery products	0.215	163.0	156.3	166.2	165.0	163.8
1.3.1.9 Sugar, Molasses & honey	1.163	126.8	126.3	126.5	129.1	129.9
1.3.1.10 Cocoa, Chocolate and Sugar confectionery	0.175	135.9	134.3	137.1	137.2	138.2
1.3.1.11 Macaroni, Noodles, Couscous and Similar farinaceous products	0.026	155.8	158.0	154.4	150.6	148.3
1.3.1.12 Tea & Coffee products	0.371	178.2	178.0	173.7	181.0	183.1
1.3.1.13 Processed condiments & salt	0.163	176.5	170.3	182.7	180.1	182.1
1.3.1.14 Processed ready to eat food	0.024	141.2	140.8	141.8	141.9	143.3
1.3.1.15 Health supplements	0.225	179.4	170.4	178.7	179.2	179.9
1.3.1.16 Prepared animal feeds	0.356	208.8	207.0	206.9	207.3	205.6
1.3.2 MANUFACTURE OF BEVERAGES	**0.909**	**128.9**	**128.4**	**130.3**	**130.9**	**131.0**
1.3.2.1 Wines & spirits	0.408	129.3	127.6	131.2	132.5	132.3
1.3.2.2 Malt liquors and Malt	0.225	134.5	135.0	134.4	134.2	134.6
1.3.2.3 Soft drinks; Production of mineral waters and Other bottled waters	0.275	123.7	124.1	125.5	125.8	126.0
1.3.3 MANUFACTURE OF TOBACCO PRODUCTS	**0.514**	**165.3**	**164.3**	**169.2**	**168.7**	**171.2**
1.3.3.1 Tobacco products	0.514	165.3	164.3	169.2	168.7	171.2

No. 21: Wholesale Price Index (Contd.)

(Base: 2011-12 = 100)

Commodities	Weight	2022-23	2022	2023		
			May	Mar.	Apr. (P)	May (P)
1.3.4 MANUFACTURE OF TEXTILES	**4.881**	**142.7**	**148.5**	**136.8**	**137.4**	**136.2**
1.3.4.1 Preparation and Spinning of textile fibres	2.582	133.2	143.5	122.9	123.4	121.7
1.3.4.2 Weaving & Finishing of textiles	1.509	158.9	158.9	159.5	160.5	159.9
1.3.4.3 Knitted and Crocheted fabrics	0.193	129.9	133.4	123.4	122.7	120.5
1.3.4.4 Made-up textile articles, Except apparel	0.299	153.6	151.7	154.0	153.3	154.4
1.3.4.5 Cordage, Rope, Twine and Netting	0.098	156.8	167.4	145.1	145.3	140.3
1.3.4.6 Other textiles	0.201	132.2	135.1	127.9	129.4	130.4
1.3.5 MANUFACTURE OF WEARING APPAREL	**0.814**	**148.7**	**146.7**	**150.0**	**149.8**	**149.3**
1.3.5.1 Manufacture of Wearing Apparel (woven), Except fur Apparel	0.593	147.3	145.4	148.4	148.9	148.1
1.3.5.2 Knitted and Crocheted apparel	0.221	152.2	150.3	154.3	152.4	152.6
1.3.6 MANUFACTURE OF LEATHER AND RELATED PRODUCTS	**0.535**	**122.2**	**121.4**	**122.3**	**122.3**	**123.0**
1.3.6.1 Tanning and Dressing of leather; Dressing and Dyeing of fur	0.142	105.6	106.9	103.5	104.2	106.1
1.3.6.2 Luggage, HandbAgs, Saddlery and Harness	0.075	141.0	142.1	140.7	141.7	141.4
1.3.6.3 Footwear	0.318	125.2	123.0	126.3	125.7	126.2
1.3.7 MANUFACTURE OF WOOD AND PRODUCTS OF WOOD AND CORK	**0.772**	**143.2**	**141.7**	**143.0**	**143.1**	**144.4**
1.3.7.1 Saw milling and Planing of wood	0.124	137.6	136.3	138.7	138.8	137.0
1.3.7.2 Veneer sheets; Manufacture of plywood, Laminboard, Particle board and Other panels and Boards	0.493	141.8	140.1	140.8	141.0	142.8
1.3.7.3 Builder's carpentry and Joinery	0.036	204.0	201.5	205.0	204.6	206.2
1.3.7.4 Wooden containers	0.119	136.7	136.2	137.9	138.0	140.4
1.3.8 MANUFACTURE OF PAPER AND PAPER PRODUCTS	**1.113**	**152.0**	**156.3**	**147.0**	**146.6**	**146.4**
1.3.8.1 Pulp, Paper and Paperboard	0.493	158.4	157.9	156.5	155.6	154.7
1.3.8.2 Corrugated paper and Paperboard and Containers of paper and Paperboard	0.314	148.3	153.6	142.5	141.4	140.5
1.3.8.3 Other articles of paper and Paperboard	0.306	145.6	156.5	136.5	137.3	139.1
1.3.9 PRINTING AND REPRODUCTION OF RECORDED MEDIA	**0.676**	**172.5**	**167.7**	**179.8**	**178.6**	**178.6**
1.3.9.1 Printing	0.676	172.5	167.7	179.8	178.6	178.6
1.3.10 MANUFACTURE OF CHEMICALS AND CHEMICAL PRODUCTS	**6.465**	**145.4**	**147.0**	**142.2**	**140.9**	**140.2**
1.3.10.1 Basic chemicals	1.433	159.2	166.6	150.0	148.3	146.9
1.3.10.2 Fertilizers and Nitrogen compounds	1.485	144.8	139.2	146.0	144.4	144.6
1.3.10.3 Plastic and Synthetic rubber in primary form	1.001	143.2	152.0	138.5	137.2	136.3
1.3.10.4 Pesticides and Other agrochemical products	0.454	143.4	142.1	140.1	137.6	135.8
1.3.10.5 Paints, Varnishes and Similar coatings, Printing ink and Mastics	0.491	145.0	143.1	145.8	145.0	144.3
1.3.10.6 Soap and Detergents, Cleaning and Polishing preparations, Perfumes and Toilet preparations	0.612	140.8	138.1	141.1	140.7	140.4
1.3.10.7 Other chemical products	0.692	142.1	143.8	138.6	137.6	137.1
1.3.10.8 Man-made fibres	0.296	110.7	115.2	106.0	107.1	105.8
1.3.11 MANUFACTURE OF PHARMACEUTICALS, MEDICINAL CHEMICAL AND BOTANICAL PRODUCTS	**1.993**	**140.9**	**139.1**	**141.7**	**142.5**	**143.1**
1.3.11.1 Pharmaceuticals, Medicinal chemical and Botanical products	1.993	140.9	139.1	141.7	142.5	143.1
1.3.12 MANUFACTURE OF RUBBER AND PLASTICS PRODUCTS	**2.299**	**129.7**	**132.0**	**128.3**	**128.4**	**128.0**
1.3.12.1 Rubber Tyres and Tubes; Retreading and Rebuilding of Rubber Tyres	0.609	111.8	108.0	113.7	114.2	114.5
1.3.12.2 Other Rubber Products	0.272	106.4	106.6	105.8	106.2	107.4
1.3.12.3 Plastics products	1.418	141.8	147.2	138.9	138.8	137.7
1.3.13 MANUFACTURE OF OTHER NON-METALLIC MINERAL PRODUCTS	**3.202**	**133.7**	**131.9**	**134.6**	**134.9**	**134.5**
1.3.13.1 Glass and Glass products	0.295	158.1	148.5	163.5	163.5	164.2
1.3.13.2 Refractory products	0.223	119.0	118.3	118.7	119.3	120.3
1.3.13.3 Clay Building Materials	0.121	135.3	136.0	129.2	133.4	129.5
1.3.13.4 Other Porcelain and Ceramic Products	0.222	118.0	117.4	119.4	120.1	121.4
1.3.13.5 Cement, Lime and Plaster	1.645	137.2	136.1	137.9	137.7	136.8

No. 21: Wholesale Price Index (Contd.)

(Base: 2011-12 = 100)

Commodities	Weight	2022-23	2022	2023		
			May	Mar.	Apr. (P)	May (P)
1.3.13.6 Articles of Concrete, Cement and Plaster	0.292	134.4	134.1	135.5	137.4	137.0
1.3.13.7 Cutting, Shaping and Finishing of Stone	0.234	125.6	123.4	127.0	127.3	127.1
1.3.13.8 Other Non-Metallic Mineral Products	0.169	105.9	104.3	106.3	105.6	105.3
1.3.14 MANUFACTURE OF BASIC METALS	**9.646**	**148.7**	**158.2**	**146.2**	**145.4**	**143.7**
1.3.14.1 Inputs into steel making	1.411	159.7	176.1	152.4	151.7	148.5
1.3.14.2 Metallic Iron	0.653	165.9	174.8	158.0	157.6	157.6
1.3.14.3 Mild Steel - Semi Finished Steel	1.274	127.0	133.3	126.0	123.3	122.9
1.3.14.4 Mild Steel -Long Products	1.081	149.7	156.7	147.6	145.7	144.5
1.3.14.5 Mild Steel - Flat products	1.144	155.0	174.1	151.0	150.6	147.8
1.3.14.6 Alloy steel other than Stainless Steel- Shapes	0.067	146.9	149.2	144.9	144.4	145.5
1.3.14.7 Stainless Steel - Semi Finished	0.924	151.9	167.4	145.3	146.1	141.5
1.3.14.8 Pipes & tubes	0.205	175.4	177.0	173.8	172.5	170.7
1.3.14.9 Non-ferrous metals incl. precious metals	1.693	145.9	153.3	147.0	147.0	145.4
1.3.14.10 Castings	0.925	130.7	128.3	133.1	133.6	133.7
1.3.14.11 Forgings of steel	0.271	172.4	172.1	175.5	172.9	173.5
1.3.15 MANUFACTURE OF FABRICATED METAL PRODUCTS, EXCEPT MACHINERY AND EQUIPMENT	**3.155**	**139.0**	**140.6**	**139.2**	**138.7**	**139.6**
1.3.15.1 Structural Metal Products	1.031	132.7	133.7	133.1	131.4	132.9
1.3.15.2 Tanks, Reservoirs and Containers of Metal	0.660	161.1	170.3	160.5	160.9	161.2
1.3.15.3 Steam generators, Except Central Heating Hot Water Boilers	0.145	100.5	99.7	101.2	101.0	101.4
1.3.15.4 Forging, Pressing, Stamping and Roll-Forming of Metal; Powder Metallurgy	0.383	135.2	132.3	136.8	138.2	141.1
1.3.15.5 Cutlery, Hand Tools and General Hardware	0.208	112.2	112.2	110.6	110.7	110.6
1.3.15.6 Other Fabricated Metal Products	0.728	145.0	143.9	145.4	144.6	144.6
1.3.16 MANUFACTURE OF COMPUTER, ELECTRONIC AND OPTICAL PRODUCTS	**2.009**	**116.6**	**115.9**	**116.4**	**117.5**	**117.5**
1.3.16.1 Electronic Components	0.402	115.0	114.8	113.4	114.3	113.5
1.3.16.2 Computers and Peripheral Equipment	0.336	135.0	135.0	135.1	135.1	135.1
1.3.16.3 Communication Equipment	0.310	129.4	128.2	130.5	130.5	131.0
1.3.16.4 Consumer Electronics	0.641	99.7	98.7	100.0	102.4	102.7
1.3.16.5 Measuring, Testing, Navigating and Control equipment	0.181	112.8	112.7	111.7	113.0	113.0
1.3.16.6 Watches and Clocks	0.076	151.2	149.6	150.0	151.1	151.4
1.3.16.7 Irradiation, Electromedical and Electrotherapeutic equipment	0.055	108.9	106.1	106.8	106.8	106.4
1.3.16.8 Optical instruments and Photographic equipment	0.008	100.5	99.6	100.3	103.7	103.5
1.3.17 MANUFACTURE OF ELECTRICAL EQUIPMENT	**2.930**	**128.8**	**127.2**	**129.5**	**130.1**	**130.8**
1.3.17.1 Electric motors, Generators, Transformers and Electricity distribution and Control apparatus	1.298	126.3	122.6	126.0	127.6	129.0
1.3.17.2 Batteries and Accumulators	0.236	131.9	129.7	134.4	133.4	135.9
1.3.17.3 Fibre optic cables for data transmission or live transmission of images	0.133	116.6	108.6	121.6	119.7	119.9
1.3.17.4 Other electronic and Electric wires and Cables	0.428	146.3	152.0	148.3	148.8	146.9
1.3.17.5 Wiring devices, Electric lighting & display equipment	0.263	117.2	117.0	117.5	116.9	116.8
1.3.17.6 Domestic appliances	0.366	134.1	134.0	133.2	133.4	133.9
1.3.17.7 Other electrical equipment	0.206	117.4	114.7	120.8	121.2	122.5
1.3.18 MANUFACTURE OF MACHINERY AND EQUIPMENT	**4.789**	**126.2**	**124.9**	**128.0**	**128.4**	**128.4**
1.3.18.1 Engines and Turbines, Except aircraft, Vehicle and Two wheeler engines	0.638	126.9	127.7	127.4	128.0	127.6
1.3.18.2 Fluid power equipment	0.162	128.4	126.5	133.5	133.0	132.9
1.3.18.3 Other pumps, Compressors, Taps and Valves	0.552	117.6	117.6	117.8	117.9	117.9
1.3.18.4 Bearings, Gears, Gearing and Driving elements	0.340	124.2	120.5	127.7	128.1	126.8
1.3.18.5 Ovens, Furnaces and Furnace burners	0.008	79.8	78.1	80.9	80.2	81.6
1.3.18.6 Lifting and Handling equipment	0.285	126.3	125.3	128.3	127.9	127.7

No. 21: Wholesale Price Index (Concld.)

(Base: 2011-12 = 100)

Commodities	Weight	2022-23	2022	2023		
			May	Mar.	Apr. (P)	May (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	143.0	144.9	144.1	144.4	146.2
1.3.18.9 Agricultural and Forestry machinery	0.833	137.2	133.8	140.0	140.8	140.9
1.3.18.10 Metal-forming machinery and Machine tools	0.224	120.5	118.6	122.3	122.5	122.2
1.3.18.11 Machinery for mining, Quarrying and Construction	0.371	84.9	83.6	86.9	86.9	87.3
1.3.18.12 Machinery for food, Beverage and Tobacco processing	0.228	127.7	129.6	124.7	124.4	124.8
1.3.18.13 Machinery for textile, Apparel and Leather production	0.192	130.0	125.8	132.3	136.0	136.7
1.3.18.14 Other special-purpose machinery	0.468	140.6	137.2	144.0	144.0	143.8
1.3.18.15 Renewable electricity generating equipment	0.046	69.2	68.3	70.6	71.1	71.7
1.3.19 MANUFACTURE OF MOTOR VEHICLES, TRAILERS AND SEMI-TRAILERS	**4.969**	**127.6**	**127.5**	**128.4**	**127.9**	**127.9**
1.3.19.1 Motor vehicles	2.600	126.0	126.2	127.8	126.8	127.1
1.3.19.2 Parts and Accessories for motor vehicles	2.368	129.3	129.1	129.0	129.1	128.7
1.3.20 MANUFACTURE OF OTHER TRANSPORT EQUIPMENT	**1.648**	**137.4**	**135.3**	**141.6**	**142.0**	**141.9**
1.3.20.1 Building of ships and Floating structures	0.117	162.5	159.1	163.6	163.6	163.6
1.3.20.2 Railway locomotives and Rolling stock	0.110	105.5	103.8	106.3	104.6	104.8
1.3.20.3 Motor cycles	1.302	137.6	135.3	142.8	143.6	143.4
1.3.20.4 Bicycles and Invalid carriages	0.117	139.8	139.9	138.6	137.2	137.1
1.3.20.5 Other transport equipment	0.002	152.5	146.5	156.2	155.8	158.2
1.3.21 MANUFACTURE OF FURNITURE	**0.727**	**157.2**	**155.9**	**160.1**	**160.5**	**160.0**
1.3.21.1 Furniture	0.727	157.2	155.9	160.1	160.5	160.0
1.3.22 OTHER MANUFACTURING	**1.064**	**147.7**	**144.1**	**154.0**	**159.5**	**157.9**
1.3.22.1 Jewellery and Related articles	0.996	146.5	142.3	153.3	159.1	157.6
1.3.22.2 Musical instruments	0.001	189.3	186.8	201.4	193.9	187.7
1.3.22.3 Sports goods	0.012	150.5	147.5	152.6	154.7	155.7
1.3.22.4 Games and Toys	0.005	159.0	156.7	157.6	159.4	158.9
1.3.22.5 Medical and Dental instruments and Supplies	0.049	170.4	175.7	166.3	166.3	163.6
2 FOOD INDEX	**24.378**	**174.2**	**175.6**	**172.1**	**173.6**	**172.8**

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	2021-22	2022-23	March		April	
				2022	2023	2022	2023
	1	2	3	4	5	4	5
General Index	100.00	131.6	138.4	148.8	151.4	134.5	140.2
1 Sectoral Classification							
1.1 Mining	14.37	113.3	119.9	144.4	154.2	116.6	122.5
1.2 Manufacturing	77.63	131.0	137.1	145.3	147.1	131.6	138.1
1.3 Electricity	7.99	170.1	185.2	191.0	188.0	194.5	192.3
2 Use-Based Classification							
2.1 Primary Goods	34.05	129.5	139.2	153.2	158.3	139.5	142.1
2.2 Capital Goods	8.22	88.7	100.1	111.8	122.0	88.5	94.0
2.3 Intermediate Goods	17.22	143.9	149.4	156.6	159.3	149.5	150.7
2.4 Infrastructure/ Construction Goods	12.34	148.2	160.6	169.5	181.3	149.7	168.8
2.5 Consumer Durables	12.84	113.8	114.5	128.9	118.5	110.7	106.8
2.6 Consumer Non-Durables	15.33	146.7	147.5	150.3	146.2	138.9	153.7

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

(Amount in ₹ Crore)

Item	2023-24			2022-23		
	Budget Estimates	April 2023		Provisional Accounts	Revised Estimates	Provisional Accounts as per cent to Revised Estimates
		Actuals	Percent to Budget Estimates			
	1	2	3	4	5	6
1 Revenue Receipts	**2632281**	**169859**	**6.5**	**2383519**	**2348413**	**101.5**
1.1 Tax Revenue (Net)	2330631	158901	6.8	2097368	2086662	100.5
1.2 Non-Tax Revenue	301650	10958	3.6	286151	261751	109.3
2 Non Debt Capital Receipts	**84000**	**642**	**0.8**	**72187**	**83500**	**86.5**
2.1 Recovery of Loans	23000	592	2.6	26152	23500	111.3
2.2 Other Receipts	61000	50	0.1	46035	60000	76.7
3 Total Receipts (1+2)	**2716281**	**170501**	**6.3**	**2455706**	**2431913**	**101.0**
4 Revenue Expenditure	3502136	225639	6.4	3452518	3458959	99.8
of which :						
4.1 Interest Payments	1079971	47929	4.4	928424	940651	98.7
5 Capital Expenditure	1000961	78457	7.8	736319	728274	101.1
6 Total Expenditure (4+5)	**4503097**	**304096**	6.8	**4188837**	**4187232**	**100.0**
7 Revenue Deficit (4-1)	869855	**55780**	6.4	1068999	1110546	96.3
8 Fiscal Deficit (6-3)	**1786816**	**133595**	7.5	**1733131**	**1755319**	**98.7**
9 Gross Primary Deficit (8-4.1)	**706845**	**85666**	12.1	**804707**	**814668**	**98.8**

Source: Controller General of Accounts, Ministry of Finance, Government of India and Union Budget 2023-24.

No. 24: Treasury Bills – Ownership Pattern

(₹ Crore)

Item	2022-23	2022	2023					
		Apr. 29	Mar. 24	Mar. 31	Apr. 7	Apr. 14	Apr. 21	Apr. 28
	1	2	3	4	5	6	7	8
1 91-day								
1.1 Banks	8724	7549	12487	8724	9250	11705	14537	14273
1.2 Primary Dealers	20071	21356	20869	20071	19833	17998	22480	25288
1.3 State Governments	8038	53950	10738	8038	8238	13238	15115	15339
1.4 Others	80452	89280	89874	80452	86395	91583	89533	92012
2 182-day								
2.1 Banks	67606	79249	68739	67606	71192	72289	68755	71005
2.2 Primary Dealers	97274	90726	93275	97274	106344	109136	115456	120906
2.3 State Governments	2592	20311	3592	2592	12798	12798	13158	14658
2.4 Others	109742	83968	104230	109742	104726	109210	111510	108830
3 364-day								
3.1 Banks	105646	101687	99495	105646	108812	105547	106319	105465
3.2 Primary Dealers	146080	164687	143712	146080	137857	137673	141197	138309
3.3 State Governments	48284	26514	48221	48284	44539	44079	43546	47496
3.4 Others	148827	141150	158273	148827	154668	155904	152224	154695
4 14-day Intermediate								
4.1 Banks								
4.2 Primary Dealers								
4.3 State Governments	212758	183862	319035	212758	147544	180231	180691	167840
4.4 Others	926	899	426	926	399	426	1683	696
Total Treasury Bills (Excluding 14 day Intermediate T Bills) #	843335	880427	853504	843335	864652	881158	893828	908276

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										
Mar. 29	9000	164	45950	881	0	0	0	0	–	–
2023-24										
Apr. 5	12000	111	33996	733	54	11967	733	12700	98.30	6.9192
Apr. 12	12000	134	39436	5050	52	11950	5050	17000	98.35	6.7300
Apr. 19	12000	137	33787	9545	83	11955	9545	21500	98.34	6.7764
Apr. 26	12000	119	29284	761	59	11963	761	12724	98.33	6.8225
182-day Treasury Bills										
2022-23										
Mar. 29	16000	162	50558	36	49	15964	36	16000	96.50	7.2820
2023-24										
Apr. 5	12000	197	37125	10336	89	11979	10336	22314	96.54	7.1797
Apr. 12	12000	198	41888	63	71	11937	63	12000	96.64	6.9796
Apr. 19	12000	227	47025	2010	37	11962	2010	13971	96.65	6.9513
Apr. 26	12000	138	29461	1695	71	11805	1695	13500	96.64	6.9723
364-day Treasury Bills										
2022-23										
Mar. 29	14000	144	35745	82	44	13980	82	14062	93.21	7.3064
2023-24										
Apr. 5	8000	181	31067	176	56	7974	176	8150	93.28	7.2187
Apr. 12	8000	177	30096	34	31	7966	34	8000	93.46	7.0197
Apr. 19	8000	229	35195	44	40	7956	44	8000	93.47	7.0094
Apr. 26	8000	171	31445	4321	41	7980	4321	12300	93.47	7.0040

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
April 3, 2023	4.60-6.40	6.31
April 5, 2023	4.60-6.35	6.26
April 6, 2023	4.00-6.70	6.39
April 10, 2023	4.60-6.40	6.32
April 11, 2023	4.60-6.40	6.31
April 12, 2023	4.60-6.40	6.31
April 13, 2023	4.60-6.50	6.35
April 15, 2023	5.50-6.35	6.15
April 17, 2023	5.00-6.85	6.43
April 18, 2023	5.00-6.85	6.56
April 19, 2023	4.95-6.65	6.50
April 20, 2023	5.00-6.85	6.55
April 21, 2023	5.00-6.80	6.64
April 24, 2023	5.00-6.90	6.64
April 25, 2023	5.10-6.90	6.70
April 26, 2023	5.10-6.90	6.69
April 27, 2023	5.10-6.95	6.72
April 28, 2023	5.00-6.90	6.75
April 29, 2023	5.55-6.75	6.20
May 2, 2023	5.10-6.80	6.58
May 3, 2023	5.10-6.85	6.67
May 4, 2023	5.10-6.95	6.77
May 6, 2023	5.55-7.00	6.63
May 8, 2023	2.85-6.85	6.73
May 9, 2023	4.90-7.00	6.79
May 10, 2023	4.90-7.00	6.78
May 11, 2023	5.15-6.90	6.75
May 12, 2023	5.15-7.00	6.77
May 15, 2023	5.15-6.90	6.76

Note: Includes Notice Money.

No. 27: Certificates of Deposit

Item	2022	2023			
	Apr. 22	Mar. 10	Mar. 24	Apr. 7	Apr. 21
	1	2	3	4	5
1 Amount Outstanding (₹ Crore)	201427.56	290353.28	304521.02	301402.80	300404.89
1.1 Issued during the fortnight (₹ Crore)	5160.29	45368.65	40358.05	10659.73	11657.30
2 Rate of Interest (per cent)	4.38-5.75	7.28-8.05	7.07-7.80	6.99-7.92	6.90-7.79

No. 28: Commercial Paper

Item	2022	2023			
	Apr. 30	Mar. 15	Mar. 31	Apr. 15	Apr. 30
	1	2	3	4	5
1 Amount Outstanding (₹ Crore)	364999.65	371326.70	353688.25	391420.90	421736.55
1.1 Reported during the fortnight (₹ Crore)	64930.35	65488.90	61469.10	52791.25	58226.95
2 Rate of Interest (per cent)	3.77-13.41	6.92-10.78	6.88-12.67	6.73-13.84	6.75-13.84

No. 29: Average Daily Turnover in Select Financial Markets

(₹ Crore)

Item	2022-23	2022	2023					
		Apr. 29	Mar. 24	Mar. 31	Apr. 7	Apr. 14	Apr. 21	Apr. 28
	1	2	3	4	5	6	7	8
1 Call Money	19987	16222	23713	23318	28101	18976	19389	16349
2 Notice Money	2605	4541	240	1044	1033	6762	261	4787
3 Term Money	612	286	219	602	1885	1509	976	670
4 Triparty Repo	697245	721457	514966	673254	614907	607795	536030	615665
5 Market Repo	504418	481888	563292	740470	813416	782271	650656	759202
6 Repo in Corporate Bond	2085	241	2289	2854	0	6574	474	612
7 Forex (US $ million)	67793	112085	99542	125368	92871	87120	92494	106579
8 Govt. of India Dated Securities	66200	82491	64094	79541	80997	101221	84715	143286
9 State Govt. Securities	5450	7136	13892	15014	7211	11755	10468	9866
10 Treasury Bills								
10.1 91-Day	4380	3490	4121	5710	6330	5549	3729	3125
10.2 182-Day	4480	5341	5365	6554	16839	12407	10675	5049
10.3 364-Day	2900	3538	1831	7835	10897	13171	4745	4241
10.4 Cash Management Bills								
11 Total Govt. Securities (8+9+10)	83410	101995	89303	114655	122275	144103	114332	165566
11.1 RBI	660	376	585	7197	1	31	164	632

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

(Amount in ₹ Crore)

Security & Type of Issue	2022-23		2022-23 (Apr.-Apr.)		2023-24 (Apr.-Apr.) *		Apr. 2022		Apr. 2023 *	
	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	**237**	**45266**	**15**	**4957**	**14**	**1981**	**15**	**4957**	**14**	**1981**
1A Premium	218	42408	14	4865	13	1900	14	4865	13	1900
1.1 Public	164	38515	10	4819	10	1110	10	4819	10	1110
1.1.1 Premium	161	37158	10	4760	10	1064	10	4760	10	1064
1.2 Rights	73	6751	5	138	4	871	5	138	4	871
1.2.1 Premium	57	5250	4	105	3	836	4	105	3	836
2 Preference Shares	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**
2.1 Public	–	–	–	–	–	–	–	–	–	–
2.2 Rights	–	–	–	–	–	–	–	–	–	–
3 Bonds & Debentures	**34**	**9221**	**6**	**1343**	**7**	**2036**	**6**	**1343**	**7**	**2036**
3.1 Convertible	–	–	–	–	–	–	–	–	–	–
3.1.1 Public	–	–	–	–	–	–	–	–	–	–
3.1.2 Rights	–	–	–	–	–	–	–	–	–	–
3.2 Non-Convertible	34	9221	6	1343	7	2036	6	1343	7	2036
3.2.1 Public	34	9221	6	1343	7	2036	6	1343	7	2036
3.2.2 Rights	–	–	–	–	–	–	–	–	–	–
4 Total(1+2+3)	**271**	**54487**	**21**	**6301**	**21**	**4017**	**21**	**6301**	**21**	**4017**
4.1 Public	198	47736	16	6163	17	3146	16	6163	17	3146
4.2 Rights	73	6751	5	138	4	871	5	138	4	871

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	2022-23	2022		2023			
			Apr.	Dec.	Jan.	Feb.	Mar.	Apr.
		1	2	3	4	5	6	7
1 Exports	₹ Crore	3620631	302381	313927	293041	305610	344781	284935
	US $ Million	450958	39699	38068	35780	36995	41899	34739
1.1 Oil	₹ Crore	781744	59870	68786	63017	64688	68347	53241
	US $ Million	97401	7860	8341	7694	7831	8306	6491
1.2 Non-oil	₹ Crore	2838887	242511	245141	230024	240921	276434	231694
	US $ Million	353558	31839	29727	28086	29164	33593	28248
2 Imports	₹ Crore	5733959	442213	504831	427747	439144	493854	409152
	US $ Million	714042	58058	61218	52228	53160	60015	49884
2.1 Oil	₹ Crore	1682475	134307	159545	130040	139479	148300	124444
	US $ Million	209418	17633	19347	15878	16884	18022	15172
2.2 Non-oil	₹ Crore	4051483	307906	345287	297707	299665	345554	284708
	US $ Million	504624	40425	41871	36350	36275	41993	34712
3 Trade Balance	₹ Crore	-2113328	-139832	-190904	-134706	-133534	-149073	-124217
	US $ Million	-263084	-18358	-23150	-16448	-16165	-18116	-15145
3.1 Oil	₹ Crore	-900731	-74437	-90758	-67023	-74791	-79953	-71203
	US $ Million	-112018	-9773	-11006	-8184	-9054	-9716	-8681
3.2 Non-oil	₹ Crore	-1212596	-65395	-100146	-67683	-58744	-69120	-53014
	US $ Million	-151066	-8586	-12144	-8264	-7111	-8400	-6463

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

No. 32: Foreign Exchange Reserves

Item	Unit	2022	2023					
		May 27	Apr. 21	Apr. 28	May 5	May 12	May 19	May 26
		1	2	3	4	5	6	7
1 Total Reserves	**₹ Crore**	**4665848**	**4797026**	**4818457**	**4875737**	**4926121**	**4905462**	**4864556**
	US $ Million	**601363**	**584248**	**588780**	**595976**	**599529**	**593477**	**589138**
1.1 Foreign Currency Assets	₹ Crore	4166344	4224244	4251387	4303465	4351530	4338981	4301298
	US $ Million	536988	514489	519485	526021	529598	524945	520931
1.2 Gold	₹ Crore	317466	378926	373648	378914	380870	373000	370756
	US $ Million	40917	46151	45657	46315	46353	45127	44902
	Volume (Metric Tonnes)	765.09	794.63	794.63	794.63	794.63	795.57	796.5
1.3 SDRs	SDRs Million	13657	13667	13667	13667	13674	13674	13674
	₹ Crore	143058	151329	151122	150918	151290	151059	150207
	US $ Million	18438	18431	18466	18447	18413	18276	18192
1.4 Reserve Tranche Position in IMF	₹ Crore	38980	42526	42300	42439	42431	42422	42295
	US $ Million	5019	5176	5172	5192	5164	5130	5113

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

No. 33: Non-Resident Deposits

(US$ Million)

Scheme	Outstanding				Flows	
	2022-23	2022	2023		2021-22	2022-23
		Mar.	Feb.	Mar.	Apr.-Mar.	Apr.-Mar.
	1	2	3	4	5	6
1 NRI Deposits	**138879**	**139022**	**135542**	**138879**	**3234**	**8989**
1.1 FCNR(B)	19363	16918	18402	19363	-3555	2445
1.2 NR(E)RA	95817	100801	94135	95817	3332	2505
1.3 NRO	23699	21303	23005	23699	3456	4039

No. 34: Foreign Investment Inflows

(US$ Million)

Item	2022-23	2022-23	2023-24	2022	2023	
		Apr.	Apr.	Apr.	Mar.	Apr.
	1	2	3	4	5	6
1.1 Net Foreign Direct Investment (1.1.1–1.1.2)	**27994**	**5324**	**2773**	**5324**	**357**	**2773**
1.1.1 Direct Investment to India (1.1.1.1–1. 1.1.2)	**41622**	**6346**	**4015**	**6346**	**1116**	**4015**
1.1.1.1 Gross Inflows/Gross Investments	**70970**	**8417**	**6927**	**8417**	**4534**	**6927**
1.1.1.1.1 Equity	47424	6578	5224	6578	2464	5224
1.1.1.1.1.1 Government (SIA/FIPB)	692	63	25	63	9	25
1.1.1.1.1.2 RBI	37097	5839	4625	5839	1901	4625
1.1.1.1.1.3 Acquisition of shares	8245	558	455	558	471	455
1.1.1.1.1.4 Equity capital of unincorporated bodies	1390	118	118	118	82	118
1.1.1.1.2 Reinvested earnings	19354	1462	1462	1462	1743	1462
1.1.1.1.3 Other capital	4192	377	242	377	327	242
1.1.1.2 Repatriation/Disinvestment	**29348**	**2070**	**2913**	**2070**	**3418**	**2913**
1.1.1.2.1 Equity	27093	1932	1920	1932	3251	1920
1.1.1.2.2 Other capital	2255	138	993	138	166	993
1.1.2 Foreign Direct Investment by India (1.1.2.1+1.1.2.2+1.1.2.3–1.1.2.4)	**13628**	**1022**	**1241**	**1022**	**760**	**1241**
1.1.2.1 Equity capital	8710	487	750	487	699	750
1.1.2.2 Reinvested Earnings	4082	360	360	360	282	360
1.1.2.3 Other Capital	4713	360	397	360	440	397
1.1.2.4 Repatriation/Disinvestment	3877	184	265	184	660	265
1.2 Net Portfolio Investment (1.2.1+1.2.2+1.2.3–1.2.4)	**-5489**	**-3885**	**2045**	**-3885**	**1463**	**2045**
1.2.1 GDRs/ADRs	–	–	–	–	–	–
1.2.2 FIIs	-5407	-3894	2110	-3894	1617	2110
1.2.3 Offshore funds and others	–	–	–	–	–	–
1.2.4 Portfolio investment by India	82	-10	66	-10	154	66
1 Foreign Investment Inflows	**22505**	**1439**	**4818**	**1439**	**1819**	**4818**

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

(US$ Million)

Item	2022-23	2022	2023		
		Apr.	Feb.	Mar.	Apr.
	1	2	3	4	5
1 Outward Remittances under the LRS	**27140.65**	**2023.70**	**2101.38**	**2956.76**	**2332.08**
1.1 Deposit	1011.07	113.90	61.16	194.16	103.47
1.2 Purchase of immovable property	188.73	14.09	16.10	33.01	22.87
1.3 Investment in equity/debt	1256.15	76.24	132.15	232.86	82.19
1.4 Gift	3005.27	299.20	245.31	452.95	339.79
1.5 Donations	12.78	0.85	0.80	1.08	0.94
1.6 Travel	13662.15	880.78	1070.71	1149.85	1099.85
1.7 Maintenance of close relatives	4174.06	385.57	323.43	630.10	449.38
1.8 Medical Treatment	55.74	4.51	3.93	5.15	4.22
1.9 Studies Abroad	3427.81	232.95	229.34	228.49	209.76
1.10 Others	346.89	15.59	18.45	29.11	19.60

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

Item	2021-22	2022-23	2022	2023	
			May	April	May
	1	2	3	4	5
40-Currency Basket (Base: 2015-16=100)					
1 Trade-weighted					
1.1 NEER	93.13	91.27	93.13	89.12	89.23
1.2 REER	104.64	102.78	104.97	98.44	99.67
2 Export-weighted					
2.1 NEER	93.55	93.03	94.69	91.13	91.18
2.2 REER	103.46	101.04	103.37	96.51	97.56
6-Currency Basket (Trade-weighted)					
1 Base: 2015-16 = 100					
1.1 NEER	87.04	85.93	87.99	83.01	83.25
1.2 REER	102.22	101.90	104.08	98.54	99.32
2 Base: 2021-22 = 100					
2.1 NEER	100.00	98.72	101.09	95.37	95.64
2.2 REER	100.00	99.69	101.82	96.41	97.17

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

(Amount in US$ Million)

Item	2022-23	2022	2023	
		Apr	Mar	Apr
	1	2	3	4
1 Automatic Route				
1.1 Number	1093	65	134	102
1.2 Amount	24156	362	3466	1561
2 Approval Route				
2.1 Number	9	0	1	4
2.2 Amount	2473	0	374	3799
3 Total (1+2)				
3.1 Number	1102	65	135	106
3.2 Amount	26629	362	3840	5360
4 Weighted Average Maturity (in years)	5.72	5.30	5.60	5.40
5 Interest Rate (per cent)				
5.1 Weighted Average Margin over 6-month LIBOR or reference rate for Floating Rate Loans	1.68	1.63	1.81	0.92
5.2 Interest rate range for Fixed Rate Loans	0.00-11.80	0.00-11.80	0.50-11.00	0.00-11.50
Borrower Category				
I. Corporate Manufacturing	6925	174	678	413
II. Corporate-Infrastructure	8396	56	1985	3516
a.) Transport	333	50	174	3
b.) Energy	2235	5	10	205
c.) Water and Sanitation	32	0	1	0
d.) Communication	1538	0	0	2,799
e.) Social and Commercial Infrastructure	530	0	0	0
f.) Exploration,Mining and Refinery	2085	0	800	500
g.) Other Sub-Sectors	1643	1	1000	9
III. Corporate Service-Sector	1773	113	31	90
IV. Other Entities	1805	0	0	0
a.) units in SEZ	6	1	0	0
b.) SIDBI	0	0	0	0
c.) Exim Bank	1800	0	0	0
V. Banks	0	0	0	0
VI. Financial Institution (Other than NBFC)	0	0	0	0
VII. NBFCs	7540	8	1125	1327
a). NBFC- IFC/AFC	3031	0	574	1059
b). NBFC-MFI	313	8	74	18
c). NBFC-Others	4196	0	477	250
VIII. Non-Government Organization (NGO)	0	0	0	0
IX. Micro Finance Institution (MFI)	0	0	0	0
X. Others	189	10	21	14

No. 38: India's Overall Balance of Payments

(US$ Million)

Item	Oct-Dec 2021			Oct-Dec 2022 (P)		
	Credit	Debit	Net	Credit	Debit	Net
	1	2	3	4	5	6
Overall Balance of Payments(1+2+3)	**427124**	**426659**	**465**	**404167**	**393098**	**11069**
1 CURRENT ACCOUNT (1.1+ 1.2)	**205567**	**227734**	**-22167**	**227491**	**245734**	**-18243**
1.1 MERCHANDISE	**108927**	**168677**	**-59750**	**105609**	**178328**	**-72720**
1.2 INVISIBLES (1.2.1+1.2.2+1.2.3)	**96640**	**59057**	**37583**	**121883**	**67406**	**54477**
1.2.1 Services	67016	39207	27809	83422	44702	38719
1.2.1.1 Travel	2599	4335	-1735	8123	6910	1213
1.2.1.2 Transportation	8948	10037	-1089	8758	9409	-651
1.2.1.3 Insurance	844	644	200	783	797	-13
1.2.1.4 G.n.i.e.	223	264	-41	185	282	-97
1.2.1.5 Miscellaneous	54402	23927	30475	65572	27304	38268
1.2.1.5.1 Software Services	31740	3384	28356	37599	4058	33541
1.2.1.5.2 Business Services	15312	13722	1590	21198	15125	6073
1.2.1.5.3 Financial Services	1354	1535	-181	1949	1292	657
1.2.1.5.4 Communication Services	801	276	524	842	329	514
1.2.2 Transfers	23528	2216	21312	30867	2400	28467
1.2.2.1 Official	132	267	-135	58	232	-174
1.2.2.2 Private	23396	1949	21447	30809	2168	28641
1.2.3 Income	6096	17634	-11538	7594	20304	-12710
1.2.3.1 Investment Income	4449	16839	-12391	5878	19437	-13559
1.2.3.2 Compensation of Employees	1647	794	853	1716	867	850
2 CAPITAL ACCOUNT (2.1+2.2+2.3+2.4+2.5)	**221424**	**198925**	**22500**	**176675**	**146497**	**30178**
2.1 Foreign Investment (2.1.1+2.1.2)	**147690**	**148973**	**-1283**	**95253**	**88553**	**6700**
2.1.1 Foreign Direct Investment	19608	15050	4559	17002	14913	2089
2.1.1.1 In India	19032	10192	8840	16107	8796	7311
2.1.1.1.1 Equity	12259	9936	2324	10246	7932	2315
2.1.1.1.2 Reinvested Earnings	5072		5072	5067		5067
2.1.1.1.3 Other Capital	1701	257	1444	794	865	-71
2.1.1.2 Abroad	576	4857	-4281	895	6117	-5222
2.1.1.2.1 Equity	576	2573	-1997	895	3563	-2668
2.1.1.2.2 Reinvested Earnings	0	845	-845	0	1079	-1079
2.1.1.2.3 Other Capital	0	1439	-1439	0	1475	-1475
2.1.2 Portfolio Investment	128082	133924	-5842	78251	73641	4611
2.1.2.1 In India	127509	132213	-4704	77433	72916	4517
2.1.2.1.1 FIIs	127509	132213	-4704	77433	72916	4517
2.1.2.1.1.1 Equity	115423	119516	-4093	71477	65940	5537
2.1.2.1.1.2 Debt	12086	12697	-611	5956	6976	-1020
2.1.2.1.2 ADR/GDRs	0		0	0	0	0
2.1.2.2 Abroad	573	1711	-1138	818	724	93
2.2 Loans (2.2.1+2.2.2+2.2.3)	**29433**	**19410**	**10023**	**25903**	**24110**	**1793**
2.2.1 External Assistance	2692	1399	1293	3088	1584	1504
2.2.1.1 By India	13	16	-3	8	22	-14
2.2.1.2 To India	2680	1383	1297	3080	1562	1518
2.2.2 Commercial Borrowings	6111	6365	-254	4629	7089	-2460
2.2.2.1 By India	352	241	111	439	316	123
2.2.2.2 To India	5759	6124	-365	4190	6773	-2583
2.2.3 Short Term to India	20629	11645	8984	18186	15437	2749
2.2.3.1 Buyers' credit & Suppliers' Credit >180 days	12003	11645	357	17744	15437	2307
2.2.3.2 Suppliers' Credit up to 180 days	8626	0	8626	442	0	442
2.3 Banking Capital (2.3.1+2.3.2)	**25913**	**17707**	**8206**	**36230**	**21795**	**14435**
2.3.1 Commercial Banks	25913	17501	8412	36230	21649	14580
2.3.1.1 Assets	11213	6154	5058	18145	6135	12009
2.3.1.2 Liabilities	14700	11346	3353	18085	15514	2571
2.3.1.2.1 Non-Resident Deposits	12141	10809	1332	16928	14359	2569
2.3.2 Others	0	206	-206	0	145	-145
2.4 Rupee Debt Service	0	0	0	0	1	-1
2.5 Other Capital	18389	12835	5554	19289	12038	7251
3 Errors and Omissions	**132**	0	**132**	0	**866**	**-866**
4 Monetary Movements (4.1+ 4.2)	0	**465**	**-465**	0	**11069**	**-11069**
4.1 I.M.F.	0	0	0	0	0	0
4.2 Foreign Exchange Reserves (Increase - / Decrease +)		465	-465	0	11069	-11069

Note: P: Preliminary.

No. 39: India's Overall Balance of Payments

(₹ Crore)

Item	Oct-Dec 2021			Oct-Dec 2022 (P)		
	Credit	Debit	Net	Credit	Debit	Net
	1	2	3	4	5	6
Overall Balance of Payments(1+2+3)	**3200360**	**3196873**	**3487**	**3322449**	**3231457**	**90992**
1 CURRENT ACCOUNT (1.1+ 1.2)	**1540277**	**1706367**	**-166090**	**1870090**	**2020055**	**-149965**
1.1 MERCHANDISE	**816171**	**1263865**	**-447694**	**868155**	**1465946**	**-597791**
1.2 INVISIBLES (1.2.1+1.2.2+1.2.3)	**724106**	**442502**	**281604**	**1001935**	**554109**	**447826**
1.2.1 Services	502141	293771	208370	685767	367473	318293
1.2.1.1 Travel	19476	32478	-13002	66776	56807	9970
1.2.1.2 Transportation	67048	75208	-8160	71994	77348	-5354
1.2.1.3 Insurance	6327	4826	1501	6438	6548	-110
1.2.1.4 G.n.i.e.	1668	1976	-309	1520	2317	-797
1.2.1.5 Miscellaneous	407623	179283	228340	539038	224454	314584
1.2.1.5.1 Software Services	237819	25352	212467	309080	33356	275723
1.2.1.5.2 Business Services	114730	102817	11913	174257	124338	49919
1.2.1.5.3 Financial Services	10149	11503	-1354	16021	10624	5397
1.2.1.5.4 Communication Services	6000	2071	3929	6924	2701	4223
1.2.2 Transfers	176292	16607	159685	253741	19726	234014
1.2.2.1 Official	991	2002	-1011	478	1907	-1429
1.2.2.2 Private	175301	14605	160696	253262	17819	235443
1.2.3 Income	45673	132125	-86452	62427	166910	-104482
1.2.3.1 Investment Income	33333	126174	-92841	48318	159784	-111466
1.2.3.2 Compensation of Employees	12340	5951	6389	14109	7126	6984
2 CAPITAL ACCOUNT (2.1+2.2+2.3+2.4+2.5)	**1659091**	**1490505**	**168586**	**1452359**	**1204279**	**248080**
2.1 Foreign Investment (2.1.1+2.1.2)	**1106614**	**1116227**	**-9613**	**783028**	**727953**	**55075**
2.1.1 Foreign Direct Investment	146921	112764	34157	139765	122591	17174
2.1.1.1 In India	142606	76370	66235	132411	72310	60101
2.1.1.1.1 Equity	91856	74446	17411	84230	65203	19027
2.1.1.1.2 Reinvested Earnings	38004	0	38004	41657	0	41657
2.1.1.1.3 Other Capital	12745	1925	10821	6524	7107	-583
2.1.1.2 Abroad	4315	36393	-32078	7353	50281	-42928
2.1.1.2.1 Equity	4315	19279	-14964	7353	29287	-21934
2.1.1.2.2 Reinvested Earnings	0	6329	-6329	0	8871	-8871
2.1.1.2.3 Other Capital	0	10786	-10786	0	12123	-12123
2.1.2 Portfolio Investment	959694	1003463	-43770	643263	605362	37901
2.1.2.1 In India	955401	990645	-35244	636539	599406	37133
2.1.2.1.1 FIIs	955401	990645	-35244	636539	599406	37133
2.1.2.1.1.1 Equity	864845	895510	-30665	587580	542060	45520
2.1.2.1.1.2 Debt	90555	95135	-4580	48959	57346	-8387
2.1.2.1.2 ADR/GDRs	0	0	0	0	0	0
2.1.2.2 Abroad	4293	12818	-8525	6723	5955	768
2.2 Loans (2.2.1+2.2.2+2.2.3)	**220533**	**145432**	**75101**	**212938**	**198199**	**14739**
2.2.1 External Assistance	20174	10483	9690	25384	13021	12363
2.2.1.1 By India	95	120	-26	63	180	-117
2.2.1.2 To India	20079	10363	9716	25321	12841	12480
2.2.2 Commercial Borrowings	45789	47692	-1902	38055	58276	-20221
2.2.2.1 By India	2638	1806	833	3608	2599	1010
2.2.2.2 To India	43151	45886	-2735	34447	55677	-21231
2.2.3 Short Term to India	154570	87257	67313	149499	126902	22597
2.2.3.1 Buyers' credit & Suppliers' Credit >180 days	89934	87257	2677	145866	126902	18964
2.2.3.2 Suppliers' Credit up to 180 days	64636	0	64636	3633	0	3633
2.3 Banking Capital (2.3.1+2.3.2)	**194158**	**132675**	**61483**	**297825**	**179162**	**118663**
2.3.1 Commercial Banks	194158	131130	63028	297825	177967	119858
2.3.1.1 Assets	84016	46113	37902	149160	50436	98724
2.3.1.2 Liabilities	110142	85016	25126	148665	127531	21135
2.3.1.2.1 Non-Resident Deposits	90969	80991	9978	139159	118040	21119
2.3.2 Others	0	1546	-1546	0	1195	-1195
2.4 Rupee Debt Service	0	0	0	0	4	-4
2.5 Other Capital	137786	96171	41615	158568	98961	59607
3 Errors and Omissions	**992**	0	**992**	0	**7123**	**-7123**
4 Monetary Movements (4.1+ 4.2)	0	**3487**	**-3487**	0	**90992**	**-90992**
4.1 I.M.F.	0	0	0	0	0	0
4.2 Foreign Exchange Reserves (Increase - / Decrease +)	0	3487	-3487	0	90992	-90992

Note: P: Preliminary.

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

(US$ Million)

Item	Oct-Dec 2021			Oct-Dec 2022 (P)		
	Credit	Debit	Net	Credit	Debit	Net
	1	2	3	4	5	6
1 Current Account (1.A+1.B+1.C)	**205556**	**227712**	**-22156**	**227486**	**245714**	**-18227**
1.A Goods and Services (1.A.a+1.A.b)	**175944**	**207884**	**-31940**	**189030**	**223030**	**-34000**
1.A.a Goods (1.A.a.1 to 1.A.a.3)	**108927**	**168677**	**-59750**	**105609**	**178328**	**-72720**
1.A.a.1 General merchandise on a BOP basis	108811	154622	-45811	105247	170206	-64959
1.A.a.2 Net exports of goods under merchanting	116	0	116	362	0	362
1.A.a.3 Nonmonetary gold		14055	-14055		8123	-8123
1.A.b Services (1.A.b.1 to 1.A.b.13)	**67016**	**39207**	**27809**	**83422**	**44702**	**38719**
1.A.b.1 Manufacturing services on physical inputs owned by others	129	17	112	553	108	446
1.A.b.2 Maintenance and repair services n.i.e.	68	394	-326	55	255	-200
1.A.b.3 Transport	8948	10037	-1089	8758	9409	-651
1.A.b.4 Travel	2599	4335	-1735	8123	6910	1213
1.A.b.5 Construction	750	592	158	1129	573	556
1.A.b.6 Insurance and pension services	844	644	200	783	797	-13
1.A.b.7 Financial services	1354	1535	-181	1949	1292	657
1.A.b.8 Charges for the use of intellectual property n.i.e.	238	2363	-2125	318	3435	-3116
1.A.b.9 Telecommunications, computer, and information services	32638	3813	28825	38538	4590	33947
1.A.b.10 Other business services	15312	13722	1590	21198	15125	6073
1.A.b.11 Personal, cultural, and recreational services	834	1205	-371	997	1155	-158
1.A.b.12 Government goods and services n.i.e.	223	264	-41	185	282	-97
1.A.b.13 Others n.i.e.	3079	286	2793	835	770	65
1.B Primary Income (1.B.1 to 1.B.3)	**6096**	**17634**	**-11538**	**7594**	**20304**	**-12710**
1.B.1 Compensation of employees	1647	794	853	1716	867	850
1.B.2 Investment income	3067	16552	-13485	3746	18994	-15249
1.B.2.1 Direct investment	1750	11634	-9884	1784	11461	-9677
1.B.2.2 Portfolio investment	88	1941	-1853	69	2853	-2784
1.B.2.3 Other investment	82	2975	-2892	146	4579	-4433
1.B.2.4 Reserve assets	1147	2	1144	1746	101	1645
1.B.3 Other primary income	1382	287	1094	2132	443	1689
1.C Secondary Income (1.C.1+1.C.2)	**23516**	**2194**	**21322**	**30862**	**2379**	**28483**
1.C.1 Financial corporations, nonfinancial corporations, households, and NPISHs	23396	1949	21447	30809	2168	28641
1.C.1.1 Personal transfers (Current transfers between resident and/ non-resident households)	22443	1359	21084	29973	1548	28425
1.C.1.2 Other current transfers	953	590	363	836	619	216
1.C.2 General government	121	245	-125	53	212	-158
2 Capital Account (2.1+2.2)	**227**	**430**	**-202**	**127**	**188**	**-62**
2.1 Gross acquisitions (DR.)/disposals (CR.) of non-produced nonfinancial assets	94	166	-71	23	37	-14
2.2 Capital transfers	133	264	-131	104	151	-47
3 Financial Account (3.1 to 3.5)	**221209**	**198982**	**22226**	**176553**	**157398**	**19155**
3.1 Direct Investment (3.1A+3.1B)	**19608**	**15050**	**4559**	**17002**	**14913**	**2089**
3.1.A Direct Investment in India	19032	10192	8840	16107	8796	7311
3.1.A.1 Equity and investment fund shares	17331	9936	7396	15314	7932	7382
3.1.A.1.1 Equity other than reinvestment of earnings	12259	9936	2324	10246	7932	2315
3.1.A.1.2 Reinvestment of earnings	5072		5072	5067		5067
3.1.A.2 Debt instruments	1701	257	1444	794	865	-71
3.1.A.2.1 Direct investor in direct investment enterprises	1701	257	1444	794	865	-71
3.1.B Direct Investment by India	576	4857	-4281	895	6117	-5222
3.1.B.1 Equity and investment fund shares	576	3418	-2842	895	4642	-3747
3.1.B.1.1 Equity other than reinvestment of earnings	576	2573	-1997	895	3563	-2668
3.1.B.1.2 Reinvestment of earnings		845	-845		1079	-1079
3.1.B.2 Debt instruments	0	1439	-1439	0	1475	-1475
3.1.B.2.1 Direct investor in direct investment enterprises		1439	-1439		1475	-1475
3.2 Portfolio Investment	**128082**	**133924**	**-5842**	**78251**	**73641**	**4611**
3.2.A Portfolio Investment in India	127509	132213	-4704	77433	72916	4517
3.2.1 Equity and investment fund shares	115423	119516	-4093	71477	65940	5537
3.2.2 Debt securities	12086	12697	-611	5956	6976	-1020
3.2.B Portfolio Investment by India	573	1711	-1138	818	724	93
3.3 Financial derivatives (other than reserves) and employee stock options	**4851**	**6752**	**-1902**	**5509**	**5955**	**-446**
3.4 Other investment	**68668**	**42792**	**25876**	**75792**	**51821**	**23971**
3.4.1 Other equity (ADRs/GDRs)	0	0	0	0	0	0
3.4.2 Currency and deposits	12141	11015	1125	16928	14505	2424
3.4.2.1 Central bank (Rupee Debt Movements; NRG)	0	206	-206	0	145	-145
3.4.2.2 Deposit-taking corporations, except the central bank (NRI Deposits)	12141	10809	1332	16928	14359	2569
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)	22575	14456	8120	27018	15963	11055
3.4.3.A Loans to India	22211	14199	8012	26572	15625	10947
3.4.3.B Loans by India	365	257	108	447	338	109
3.4.4 Insurance, pension, and standardized guarantee schemes	70	89	-19	30	38	-8
3.4.5 Trade credit and advances	20629	11645	8984	18186	15437	2749
3.4.6 Other accounts receivable/payable - other	13253	5586	7667	13628	5878	7751
3.4.7 Special drawing rights			0			0
3.5 Reserve assets	0	**465**	**-465**	0	**11069**	**-11069**
3.5.1 Monetary gold			0			0
3.5.2 Special drawing rights n.a.			0			0
3.5.3 Reserve position in the IMF n.a.			0			0
3.5.4 Other reserve assets (Foreign Currency Assets)	0	465	-465	0	11069	-11069
4 Total assets/liabilities	**221209**	**198982**	**22226**	**176553**	**157398**	**19155**
4.1 Equity and investment fund shares	138824	141421	-2597	94043	85231	8811
4.2 Debt instruments	69132	51510	17622	68882	55220	13662
4.3 Other financial assets and liabilities	13253	6051	7202	13628	16947	-3318
5 Net errors and omissions	**132**		**132**		**866**	**-866**

Note: P: Preliminary.

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

(₹ Crore)

Item	Oct-Dec 2021			Oct-Dec 2022 (P)		
	Credit	Debit	Net	Credit	Debit	Net
	1	2	3	4	5	6
1 Current Account (1.A+1.B+1.C)	**1540189**	**1706202**	**-166013**	**1870049**	**2019887**	**-149838**
1.A Goods and Services (1.A.a+1.A.b)	**1318312**	**1557635**	**-239324**	**1553922**	**1833419**	**-279497**
1.A.a Goods (1.A.a.1 to 1.A.a.3)	**816171**	**1263865**	**-447694**	**868155**	**1465946**	**-597791**
1.A.a.1 General merchandise on a BOP basis	815302	1158554	-343253	865182	1399175	-533992
1.A.a.2 Net exports of goods under merchanting	869	0	869	2973	0	2973
1.A.a.3 Nonmonetary gold	0	105311	-105311	0	66771	-66771
1.A.b Services (1.A.b.1 to 1.A.b.13)	**502141**	**293771**	**208370**	**685767**	**367473**	**318293**
1.A.b.1 Manufacturing services on physical inputs owned by others	967	127	839	4547	885	3663
1.A.b.2 Maintenance and repair services n.i.e.	506	2950	-2444	451	2097	-1646
1.A.b.3 Transport	67048	75208	-8160	71994	77348	-5354
1.A.b.4 Travel	19476	32478	-13002	66776	56807	9970
1.A.b.5 Construction	5621	4437	1183	9284	4710	4575
1.A.b.6 Insurance and pension services	6327	4826	1501	6438	6548	-110
1.A.b.7 Financial services	10149	11503	-1354	16021	10624	5397
1.A.b.8 Charges for the use of intellectual property n.i.e.	1784	17709	-15926	2616	28234	-25618
1.A.b.9 Telecommunications, computer, and information services	244549	28566	215983	316797	37734	279063
1.A.b.10 Other business services	114730	102817	11913	174257	124338	49919
1.A.b.11 Personal, cultural, and recreational services	6250	9030	-2780	8199	9498	-1299
1.A.b.12 Government goods and services n.i.e.	1668	1976	-309	1520	2317	-797
1.A.b.13 Others n.i.e.	23068	2142	20925	6865	6334	531
1.B Primary Income (1.B.1 to 1.B.3)	**45673**	**132125**	**-86452**	**62427**	**166910**	**-104482**
1.B.1 Compensation of employees	12340	5951	6389	14109	7126	6984
1.B.2 Investment income	22980	124021	-101040	30791	156142	-125352
1.B.2.1 Direct investment	13111	87172	-74062	14664	94217	-79553
1.B.2.2 Portfolio investment	661	14541	-13881	569	23452	-22883
1.B.2.3 Other investment	617	22289	-21672	1203	37645	-36442
1.B.2.4 Reserve assets	8592	18	8574	14355	829	13527
1.B.3 Other primary income	10353	2153	8199	17527	3641	13886
1.C Secondary Income (1.C.1+1.C.2)	**176205**	**16442**	**159763**	**253700**	**19559**	**234141**
1.C.1 Financial corporations, nonfinancial corporations, households, and NPISHs	175301	14605	160696	253262	17819	235443
1.C.1.1 Personal transfers (Current transfers between resident and/ non-resident households)	168163	10186	157977	246394	12727	233667
1.C.1.2 Other current transfers	7138	4419	2719	6868	5092	1776
1.C.2 General government	903	1837	-933	438	1740	-1302
2 Capital Account (2.1+2.2)	**1704**	**3220**	**-1516**	**1043**	**1549**	**-506**
2.1 Gross acquisitions (DR.)/disposals (CR.) of non-produced nonfinancial assets	707	1241	-535	190	307	-117
2.2 Capital transfers	998	1979	-981	852	1242	-390
3 Financial Account (3.1 to 3.5)	**1657474**	**1490938**	**166537**	**1451356**	**1293890**	**157467**
3.1 Direct Investment (3.1A+3.1B)	**146921**	**112764**	**34157**	**139765**	**122591**	**17174**
3.1.A Direct Investment in India	142606	76370	66235	132411	72310	60101
3.1.A.1 Equity and investment fund shares	129860	74446	55415	125887	65203	60684
3.1.A.1.1 Equity other than reinvestment of earnings	91856	74446	17411	84230	65203	19027
3.1.A.1.2 Reinvestment of earnings	38004	0	38004	41657	0	41657
3.1.A.2 Debt instruments	12745	1925	10821	6524	7107	-583
3.1.A.2.1 Direct investor in direct investment enterprises	12745	1925	10821	6524	7107	-583
3.1.B Direct Investment by India	4315	36393	-32078	7353	50281	-42928
3.1.B.1 Equity and investment fund shares	4315	25608	-21293	7353	38158	-30805
3.1.B.1.1 Equity other than reinvestment of earnings	4315	19279	-14964	7353	29287	-21934
3.1.B.1.2 Reinvestment of earnings	0	6329	-6329	0	8871	-8871
3.1.B.2 Debt instruments	0	10786	-10786	0	12123	-12123
3.1.B.2.1 Direct investor in direct investment enterprises	0	10786	-10786	0	12123	-12123
3.2 Portfolio Investment	**959694**	**1003463**	**-43770**	**643263**	**605362**	**37901**
3.2.A Portfolio Investment in India	955401	990645	-35244	636539	599406	37133
3.2.1 Equity and investment fund shares	864845	895510	-30665	587580	542060	45520
3.2.2 Debt securities	90555	95135	-4580	48959	57346	-8387
3.2.B Portfolio Investment by India	4293	12818	-8525	6723	5955	768
3.3 Financial derivatives (other than reserves) and employee stock options	**36345**	**50593**	**-14248**	**45283**	**48951**	**-3668**
3.4 Other investment	**514515**	**320631**	**193885**	**623046**	**425994**	**197052**
3.4.1 Other equity (ADRs/GDRs)	0	0	0	0	0	0
3.4.2 Currency and deposits	90969	82537	8432	139159	119235	19924
3.4.2.1 Central bank (Rupee Debt Movements; NRG)	0	1546	-1546	0	1195	-1195
3.4.2.2 Deposit-taking corporations, except the central bank (NRI Deposits)	90969	80991	9978	139159	118040	21119
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)	169152	108314	60838	222105	131224	90881
3.4.3.A Loans to India	166419	106388	60031	218433	128445	89988
3.4.3.B Loans by India	2733	1926	807	3671	2779	893
3.4.4 Insurance, pension, and standardized guarantee schemes	522	668	-146	250	315	-65
3.4.5 Trade credit and advances	154570	87257	67313	149499	126902	22597
3.4.6 Other accounts receivable/payable - other	99302	41855	57447	112033	48318	63715
3.4.7 Special drawing rights	0	0	0	0	0	0
3.5 Reserve assets	**0**	**3487**	**-3487**	**0**	**90992**	**-90992**
3.5.1 Monetary gold	0	0	0	0	0	0
3.5.2 Special drawing rights n.a.	0	0	0	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	3487	-3487	0	90992	-90992
4 Total assets/liabilities	**1657474**	**1490938**	**166537**	**1451356**	**1293890**	**157467**
4.1 Equity and investment fund shares	1040181	1059643	-19462	773077	700643	72434
4.2 Debt instruments	517992	385953	132039	566247	453937	112310
4.3 Other financial assets and liabilities	99302	45342	53960	112033	139310	-27277
5 Net errors and omissions	**992**	**0**	**992**	**0**	**7123**	**-7123**

Note: P: Preliminary.

No. 42: India's International Investment Position

(US$ Million)

Item	As on Financial Year /Quarter End							
	2021-22		2021		2022			
			Dec.		Sep.		Dec.	
	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
	1	2	3	4	5	6	7	8
1. Direct investment Abroad/in India	211573	521632	208096	514112	217335	510150	222557	510719
1.1 Equity Capital *	132765	493987	130904	487895	136255	481972	140002	482118
1.2 Other Capital	78807	27645	77192	26217	81080	28178	82554	28601
2. Portfolio investment	10642	270484	9716	284708	10983	245793	10890	245679
2.1 Equity	1110	156381	6113	172794	6312	137013	8624	140469
2.2 Debt	9533	114103	3603	111914	4671	108779	2266	105209
3. Other investment	90974	486635	76447	481692	85917	477453	79570	493790
3.1 Trade credit	18561	118147	12849	113439	24675	123520	26125	126252
3.2 Loan	10474	195290	8856	194917	8084	188463	8628	194842
3.3 Currency and Deposits	42081	140994	34796	143502	33528	135621	27093	136132
3.4 Other Assets/Liabilities	19858	32203	19946	29833	19630	29850	17723	36564
4. Reserves	607309		633614		532664		562721	
5. Total Assets/Liabilities	920498	1278751	927873	1280511	846899	1233395	875737	1250187
6. Net IIP (Assets - Liabilities)	-358253		-352638		-386496		-374451	

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 2022-23	2022	2023		FY 2022-23	2022	2023	
		Apr.	Mar.	Apr.		Apr.	Mar.	Apr.
	1	2	3	4	5	6	7	8
A. Settlement Systems								
Financial Market Infrastructures (FMIs)								
1 CCIL Operated Systems (1.1 to 1.3)	41.44	3.06	3.66	3.21	258797336	18651860	22458408	20115131
1.1 Govt. Securities Clearing (1.1.1 to 1.1.3)	15.00	1.08	1.25	1.32	172251292	11915370	14269424	13093142
1.1.1 Outright	7.99	0.59	0.65	0.79	10090700	870328	952079	1158660
1.1.2 Repo	4.07	0.25	0.40	0.36	68032487	4315711	6682508	6633808
1.1.3 Tri-party Repo	2.94	0.23	0.20	0.17	94128105	6729332	6634836	5300674
1.2 Forex Clearing	25.16	1.87	2.28	1.79	78932050	6124936	7329087	6450151
1.3 Rupee Derivatives @	1.27	0.11	0.13	0.09	7613994	611554	859897	571838
B. Payment Systems								
I Financial Market Infrastructures (FMIs)	–	–	–	–	–	–	–	–
1 Credit Transfers - RTGS (1.1 to 1.2)	2425.62	195.32	248.01	201.57	149946286	11097594	16122902	11876806
1.1 Customer Transactions	2411.19	194.11	246.66	200.44	131667176	9780600	14416322	10452024
1.2 Interbank Transactions	14.43	1.21	1.35	1.13	18279111	1316994	1706580	1424781
II Retail								
2 Credit Transfers - Retail (2.1 to 2.6)	983694.78	66747.57	100851.12	100492.45	55012192	4050335	5906936	4834441
2.1 AePS (Fund Transfers) @	5.90	0.55	0.36	0.36	356	33	24	25
2.2 APBS $	17898.09	1119.53	1932.07	1066.77	247580	11118	26400	19744
2.3 IMPS	56532.64	4716.26	4970.56	4957.93	5585441	444670	546235	521050
2.4 NACH Cr $	19267.00	1329.76	1962.73	1009.42	1544342	112354	178757	117079
2.5 NEFT	52847.43	3737.59	5469.06	4825.37	33719541	2498587	3750569	2761038
2.6 UPI @	837143.73	55843.88	86516.34	88632.60	13914932	983573	1404951	1415505
2.6.1 of which USSD @	17.21	0.86	1.50	1.64	197	12	18	19
3 Debit Transfers and Direct Debits (3.1 to 3.3)	15343.22	1121.68	1403.39	1398.58	1289393	93616	126113	120185
3.1 BHIM Aadhaar Pay @	214.22	16.76	12.92	16.09	6791	580	492	604
3.2 NACH Dr $	13502.69	996.72	1246.53	1242.93	1280001	92902	125376	119338
3.3 NETC (linked to bank account) @	1626.31	108.20	143.94	139.56	2601	135	246	243
4 Card Payments (4.1 to 4.2)	63344.50	5541.17	5016.79	4887.94	2152425	170521	191035	187396
4.1 Credit Cards (4.1.1 to 4.1.2)	29145.25	2229.30	2634.29	2592.55	1432255	105459	137311	132769
4.1.1 PoS based $	15598.70	1152.87	1404.60	1408.20	541944	39807	50920	51624
4.1.2 Others $	13546.54	1076.43	1229.69	1184.35	890311	65652	86391	81144
4.2 Debit Cards (4.2.1 to 4.2.1)	34199.25	3311.87	2382.50	2295.38	720169	65062	53724	54627
4.2.1 PoS based $	22917.38	2131.77	1652.35	1633.96	476693	43530	35222	37647
4.2.2 Others $	11281.87	1180.10	730.15	661.43	243477	21532	18502	16980
5 Prepaid Payment Instruments (5.1 to 5.2)	74667.44	6455.19	6225.98	6277.47	287111	25317	22988	22525
5.1 Wallets	59112.76	5036.17	5036.24	5134.90	221896	19360	18801	18874
5.2 Cards (5.2.1 to 5.2.2)	15554.69	1419.02	1189.74	1142.57	65215	5957	4188	3651
5.2.1 PoS based $	1013.09	169.32	64.17	61.87	14777	3187	825	876
5.2.2 Others $	14541.60	1249.70	1125.57	1080.70	50438	2770	3363	2775
6 Paper-based Instruments (6.1 to 6.2)	7087.81	624.01	642.40	554.06	7162537	670259	701109	639281
6.1 CTS (NPCI Managed)	7087.81	624.01	642.40	554.06	7162537	670259	701109	639281
6.2 Others	0.00	–	–	–	–	–	–	–
Total - Retail Payments (2+3+4+5+6)	1144137.76	80489.63	114139.67	113610.50	65903658	5010048	6948181	5803828
Total Payments (1+2+3+4+5+6)	1146563.37	80684.95	114387.68	113812.06	215849944	16107643	23071084	17680633
Total Digital Payments (1+2+3+4+5)	1139475.57	80060.94	113745.28	113258.00	208687407	15437383	22369974	17041352

PART II - Payment Modes and Channels

System	Volume (Lakh)				Value (₹ Crore)			
	FY 2022-23	2022	2023		FY 2022-23	2022	2023	
		Apr.	Mar.	Apr.		Apr.	Mar.	Apr.
	1	2	3	4	5	6	7	8
A. Other Payment Channels								
1 Mobile Payments (mobile app based) (1.1 to 1.2)	904589.23	59769.17	92896.37	83595.17	23341497	1684726	2401075	2154811
1.1 Intra-bank $	62306.61	4515.85	5868.83	5789.55	4191430	312810	436885	402248
1.2 Inter-bank $	842282.62	55253.32	87027.54	77805.62	19150067	1371916	1964190	1752562
2 Internet Payments (Netbanking / Internet Browser Based) @ (2.1 to 2.2)	42630.64	3670.77	3879.51	3406.99	91539296	7219903	8981727	7036829
2.1 Intra-bank @	10703.78	967.14	987.21	855.07	53506133	4297281	4769894	3713764
2.2 Inter-bank @	31926.86	2703.63	2892.30	2551.92	38033163	2922622	4211833	3323065
B. ATMs								
3 Cash Withdrawal at ATMs $ (3.1 to 3.3)	69464.85	5830.37	5921.72	5707.07	3305007	286411	286762	282827
3.1 Using Credit Cards $	88.37	6.12	8.26	7.49	4296	303	402	313
3.2 Using Debit Cards $	68971.46	5792.97	5878.89	5667.31	3286748	285011	284949	281248
3.3 Using Pre-paid Cards $	405.32	31.28	34.56	32.28	13963	1097	1411	1266
4 Cash Withdrawal at PoS $ (4.1 to 4.2)	27.80	2.32	2.33	2.11	284	22	24	18
4.1 Using Debit Cards $	27.47	2.24	2.32	2.10	282	22	23	18
4.2 Using Pre-paid Cards $	0.33	0.08	0.02	0.02	2	1	0	0
5 Cash Withrawal at Micro ATMs @	12375.16	984.19	1083.61	998.82	333966	27824	30015	28954
5.1 AePS @	12375.16	984.19	1083.61	998.82	333966	27824	30015	28954

PART III - Payment Infrastructures (Lakh)

System	As on March 2023	2022	2023	
		Apr.	Mar.	Apr.
	1	2	3	4
Payment System Infrastructures				
1 Number of Cards (1.1 to 1.2)	10465.62	9956.84	10465.62	10535.25
1.1 Credit Cards	853.03	751.66	853.03	865.13
1.2 Debit Cards	9612.59	9205.18	9612.59	9670.12
2 Number of PPIs @ (2.1 to 2.2)	16185.26	15541.30	16185.26	16387.76
2.1 Wallets @	13384.68	12865.09	13384.68	13509.02
2.2 Cards @	2800.58	2676.21	2800.58	2878.75
3 Number of ATMs (3.1 to 3.2)	2.59	2.51	2.59	2.55
3.1 Bank owned ATMs $	2.23	2.19	2.23	2.19
3.2 White Label ATMs $	0.36	0.32	0.36	0.36
4 Number of Micro ATMs @	16.11	9.48	16.11	14.28
5 Number of PoS Terminals	77.90	61.26	77.90	78.37
6 Bharat QR @	53.82	40.90	53.82	54.36
7 UPI QR *	2563.77	1807.21	2563.77	2609.08

@: 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		2021-22	2021	2022		
			Sep.	Jul.	Aug.	Sep.
		1	2	3	4	5
1 Small Savings	**Receipts**	**203175**	**18026**	**15819**	**12197**	**12355**
	Outstanding	**1463777**	**1352069**	**1521550**	**1533729**	**1546025**
1.1 Total Deposits	**Receipts**	**144749**	**13381**	**11812**	**8985**	**9351**
	Outstanding	**1012241**	**936317**	**1056249**	**1065235**	**1074586**
1.1.1 Post Office Saving Bank Deposits	Receipts	17581	1889	915	799	1480
	Outstanding	188433	176577	194162	194961	196440
1.1.2 Sukanya Samriddhi Yojna	Receipts	23748	1316	1596	1463	1560
	Outstanding	58783	42852	65757	67221	68781
1.1.3 National Saving Scheme, 1987	Receipts	-1524	-26	-23	-20	-24
	Outstanding	1894	3267	1765	1745	1721
1.1.4 National Saving Scheme, 1992	Receipts	-352	-3	-3	-2	-3
	Outstanding	-177	156	-189	-191	-193
1.1.5 Monthly Income Scheme	Receipts	14441	1575	1164	661	485
	Outstanding	235820	229035	239019	239680	240165
1.1.6 Senior Citizen Scheme 2004	Receipts	22281	2306	2059	1632	1527
	Outstanding	119333	109048	126002	127634	129161
1.1.7 Post Office Time Deposits	Receipts	43725	4452	3949	2634	2392
	Outstanding	251282	230879	265259	267893	270285
1.1.7.1 1 year Time Deposits	Outstanding	118282	113935	122606	123289	123883
1.1.7.2 2 year Time Deposits	Outstanding	8008	7852	8308	8357	8389
1.1.7.3 3 year Time Deposits	Outstanding	6918	7098	6851	6836	6812
1.1.7.4 5 year Time Deposits	Outstanding	118074	101994	127494	129411	131201
1.1.8 Post Office Recurring Deposits	Receipts	24840	1873	2152	1818	1934
	Outstanding	156869	144508	164377	166195	168129
1.1.9 Post Office Cumulative Time Deposits	Receipts	7	-1	0	0	0
	Outstanding	-19	-26	-19	-19	-19
1.1.10 Other Deposits	Receipts	2	0	0	0	0
	Outstanding	23	21	22	22	22
1.1.11 PM Care for children	Receipts	..	..	3	0	0
	Outstanding	..	..	94	94	94
1.2 Saving Certificates	**Receipts**	**45307**	**4509**	**3749**	**2965**	**2660**
	Outstanding	**333189**	**309381**	**345766**	**348712**	**351313**
1.2.1 National Savings Certificate VIII issue	Receipts	19696	1965	1446	1098	876
	Outstanding	155043	145477	159386	160485	161361
1.2.2 Indira Vikas Patras	Receipts	-16	0	0	0	0
	Outstanding	143	158	142	142	142
1.2.3 Kisan Vikas Patras	Receipts	-1115	-171	-160	-156	-286
	Outstanding	-7891	-8013	-8726	-8882	-9168
1.2.4 Kisan Vikas Patras - 2014	Receipts	26619	2715	2463	2023	2070
	Outstanding	174560	161601	183673	185696	187766
1.2.5 National Saving Certificate VI issue	Receipts	92	0	0	0	0
	Outstanding	-22	-114	-22	-22	-22
1.2.6 National Saving Certificate VII issue	Receipts	31	0	0	0	0
	Outstanding	-44	-74	-44	-44	-44
1.2.7 Other Certificates	Outstanding	11400	10346	11357	11337	11278
1.3 Public Provident Fund	**Receipts**	**13119**	**136**	**258**	**247**	**344**
	Outstanding	**118347**	**106371**	**119535**	**119782**	**120126**

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	2022				2023
	Mar.	Jun.	Sep.	Dec.	Mar.
	1	2	3	4	5
(A) Total (in ₹. Crore)	**8529036**	**8784931**	**9098788**	**9373372**	**9645776**
1 Commercial Banks	35.93	36.16	36.44	36.13	36.61
2 Co-operative Banks	1.81	1.84	1.80	1.70	1.64
3 Non-Bank PDs	0.29	0.33	0.38	0.44	0.49
4 Insurance Companies	25.89	26.34	25.94	26.14	25.97
5 Mutual Funds	2.91	2.32	2.58	2.87	2.81
6 Provident Funds	4.60	4.77	4.66	4.67	4.71
7 Pension Funds	3.50	3.61	3.84	3.91	3.98
8 Financial Institutions	0.94	1.09	0.98	1.07	0.98
9 Corporates	1.47	1.52	1.58	1.57	1.62
10 Foreign Portfolio Investors	1.56	1.43	1.38	1.31	1.36
11 RBI	16.62	16.06	15.28	14.73	14.26
12 Others	4.46	4.57	5.14	5.45	5.57
12.1 State Governments	1.82	1.84	1.83	1.88	2.03

State Governments Securities					
Category	2022				2023
	Mar.	Jun.	Sep.	Dec.	Mar.
	1	2	3	4	5
(B) Total (in ₹. Crore)	**4410250**	**4472011**	**4589128**	**4712902**	**4929079**
1 Commercial Banks	34.39	34.22	34.37	34.34	33.91
2 Co-operative Banks	4.04	4.06	3.89	3.80	3.64
3 Non-Bank PDs	0.38	0.41	0.36	0.44	0.62
4 Insurance Companies	28.42	28.39	27.71	27.42	26.80
5 Mutual Funds	1.82	1.89	2.08	2.02	1.94
6 Provident Funds	20.79	20.52	20.18	20.31	21.29
7 Pension Funds	4.32	4.43	4.73	4.74	4.81
8 Financial Institutions	1.72	1.73	1.71	1.77	1.84
9 Corporates	1.82	1.98	1.85	1.94	2.00
10 Foreign Portfolio Investors	0.02	0.02	0.02	0.02	0.02
11 RBI	0.80	0.79	0.79	0.75	0.72
12 Others	1.48	1.56	2.32	2.45	2.42
12.1 State Governments	0.20	0.21	0.21	0.24	0.27

Treasury Bills					
Category	2022				2023
	Mar.	Jun.	Sep.	Dec.	Mar.
	1	2	3	4	5
(C) Total (in ₹. Crore)	**757198**	**1022053**	**920205**	**839931**	**823313**
1 Commercial Banks	49.04	51.37	50.91	49.15	53.92
2 Co-operative Banks	1.79	1.34	1.48	1.27	1.29
3 Non-Bank PDs	4.20	2.49	2.12	2.17	2.85
4 Insurance Companies	6.58	5.34	5.46	5.81	6.11
5 Mutual Funds	14.01	14.86	11.98	14.23	15.30
6 Provident Funds	0.21	1.70	3.21	1.37	0.10
7 Pension Funds	0.03	0.05	0.02	0.02	0.07
8 Financial Institutions	3.53	3.73	4.17	4.52	3.72
9 Corporates	3.47	4.27	3.86	3.59	4.99
10 Foreign Portfolio Investors	0.49	0.40	0.53	0.50	0.40
11 RBI	0.00	0.00	0.00	0.00	0.00
12 Others	16.66	14.45	16.25	17.37	11.25
12.1 State Governments	11.54	10.99	12.27	13.38	7.16

No. 46: Combined Receipts and Disbursements of the Central and State Governments

(₹ Crore)

Item	2017-18	2018-19	2019-20	2020-21	2021-22 RE	2022-23 BE
	1	2	3	4	5	6
1 Total Disbursements	**4515946**	**5040747**	**5410887**	**6353359**	**7453320**	**8008684**
1.1 Developmental	2635110	2882758	3074492	3823423	4489442	4761567
1.1.1 Revenue	2029044	2224367	2446605	3150221	3444624	3536719
1.1.2 Capital	519356	596774	588233	550358	963856	1144725
1.1.3 Loans	86710	61617	39654	122844	80962	80123
1.2 Non-Developmental	1812455	2078276	2253027	2442941	2864084	3140466
1.2.1 Revenue	1741432	1965907	2109629	2271637	2653832	2928102
1.2.1.1 Interest Payments	814757	894520	955801	1060602	1244104	1408929
1.2.2 Capital	69370	111029	141457	169155	178038	209892
1.2.3 Loans	1654	1340	1941	2148	32214	2472
1.3 Others	68381	79713	83368	86995	99794	106652
2 Total Receipts	**4528422**	**5023352**	**5734166**	**6397162**	**7193029**	**7944834**
2.1 Revenue Receipts	3376416	3797731	3851563	3688030	4894050	5497245
2.1.1 Tax Receipts	2978134	3278947	3231582	3193390	4026487	4551271
2.1.1.1 Taxes on commodities and services	1853859	2030050	2012578	2076013	2608666	2904479
2.1.1.2 Taxes on Income and Property	1121189	1246083	1216203	1114805	1414088	1642678
2.1.1.3 Taxes of Union Territories (Without Legislature)	3086	2814	2800	2572	3732	4115
2.1.2 Non-Tax Receipts	398282	518783	619981	494640	867564	945974
2.1.2.1 Interest Receipts	34224	36273	31137	33448	40481	46552
2.2 Non-debt Capital Receipts	142433	140287	110094	64994	117937	90824
2.2.1 Recovery of Loans & Advances	42213	44667	59515	16951	33188	19835
2.2.2 Disinvestment proceeds	100219	95621	50578	48044	84748	70989
3 Gross Fiscal Deficit [1 - (2.1 + 2.2)]	**997097**	**1102729**	**1449230**	**2600335**	**2441333**	**2420614**
3A Sources of Financing: Institution-wise						
3A.1 Domestic Financing	989167	1097210	1440548	2530155	2421587	2401363
3A.1.1 Net Bank Credit to Government	144792	387091	571872	890012	627255	-----
3A.1.1.1 Net RBI Credit to Government	-144847	325987	190241	107493	350911	-----
3A.1.2 Non-Bank Credit to Government	844375	710119	868676	1640143	1794332	2401363
3A.2 External Financing	7931	5519	8682	70180	19746	19251
3B Sources of Financing: Instrument-wise						
3B.1 Domestic Financing	989167	1097210	1440548	2530155	2421587	2401363
3B.1.1 Market Borrowings (net)	794856	795845	971378	1696012	1377060	1808401
3B.1.2 Small Savings (net)	71222	88961	209232	458801	565522	398870
3B.1.3 State Provident Funds (net)	42351	51004	38280	41273	45133	44731
3B.1.4 Reserve Funds	18423	-18298	10411	4545	-1675	5824
3B.1.5 Deposits and Advances	25138	66289	-14227	25682	32945	34029
3B.1.6 Cash Balances	-12476	17395	-323279	-43802	260291	63850
3B.1.7 Others	49653	96014	548753	347643	142310	45659
3B.2 External Financing	7931	5519	8682	70180	19746	19251
4 Total Disbursements as per cent of GDP	*26.4*	*26.7*	*27.0*	*32.1*	*31.5*	*31.0*
5 Total Receipts as per cent of GDP	*26.5*	*26.6*	*28.6*	*32.3*	*30.4*	*30.8*
6 Revenue Receipts as per cent of GDP	*19.8*	*20.1*	*19.2*	*18.6*	*20.7*	*21.3*
7 Tax Receipts as per cent of GDP	*17.4*	*17.3*	*16.1*	*16.1*	*17.0*	*17.6*
8 Gross Fiscal Deficit as per cent of GDP	*5.8*	*5.8*	*7.2*	*13.1*	*10.3*	*9.4*

…: 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 April-2023					
		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	622.41	26	1515.11	25	730.61	3
2	Arunachal Pradesh	-	-	-	-	-	-
3	Assam	-	-	-	-	-	-
4	Bihar	-	-	-	-	-	-
5	Chhattisgarh	-	-	-	-	-	-
6	Goa	-	-	-	-	-	-
7	Gujarat	-	-	-	-	-	-
8	Haryana	-	-	-	-	-	-
9	Himachal Pradesh	-	-	-	-	-	-
10	Jammu & Kashmir UT	-	-	663.09	26	966.09	3
11	Jharkhand	-	-	-	-	-	-
12	Karnataka	-	-	-	-	-	-
13	Kerala	-	-	-	-	-	-
14	Madhya Pradesh	-	-	-	-	-	-
15	Maharashtra	-	-	-	-	-	-
16	Manipur	-	-	199.81	30	131.10	22
17	Meghalaya	8.46	2	-	-	-	-
18	Mizoram	-	-	-	-	-	-
19	Nagaland	-	-	183.26	12	-	-
20	Odisha	-	-	-	-	-	-
21	Puducherry	-	-	-	-	-	-
22	Punjab	1432.56	25	-	-	-	-
23	Rajasthan	3332.97	22	-	-	-	-
24	Tamil Nadu	-	-	-	-	-	-
25	Telangana	652.62	27	932.63	21	285.82	6
26	Tripura	-	-	-	-	-	-
27	Uttar Pradesh	-	-	-	-	-	-
28	Uttarakhand	-	-	-	-	-	-
29	West Bengal	-	-	-	-	-	-

Notes: 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 amount 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 April 2023			
		Consolidated Sinking Fund (CSF)	Guarantee Redemption Fund (GRF)	Government Securities	Auction Treasury Bills (ATBs)
	1	2	3	4	5
1	Andhra Pradesh	10148	998	0	0
2	Arunachal Pradesh	2263	4	0	0
3	Assam	5162	78	0	0
4	Bihar	8168	-	0	0
5	Chhattisgarh	6452	5	1	3800
6	Goa	833	401	0	0
7	Gujarat	10754	586	0	10000
8	Haryana	1788	1487	0	0
9	Himachal Pradesh	-	-	0	0
10	Jammu & Kashmir UT	-	-	0	0
11	Jharkhand	1570	-	0	0
12	Karnataka	14229	315	0	33169
13	Kerala	2614	-	0	0
14	Madhya Pradesh	-	1120	0	0
15	Maharashtra	58447	1233	0	2000
16	Manipur	61	123	0	0
17	Meghalaya	1035	82	8	0
18	Mizoram	373	66	0	0
19	Nagaland	1563	41	0	0
20	Odisha	15923	1791	103	16037
21	Puducherry	474	-	0	1250
22	Punjab	6461	0	0	0
23	Rajasthan	-	-	129	8000
24	Tamil Nadu	8182	-	18	2412
25	Telangana	6918	1514	0	0
26	Tripura	983	21	0	825
27	Uttarakhand	4311	177	0	0
28	Uttar Pradesh	5768	-	116	0
29	West Bengal	11195	816	239	0
	Total	**185673**	**10858**	**613**	**77493**

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	2021-22		2022-23		2022-23				2023-24		Total amount raised, so far in 2023-24	
						February		March		April			
		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	46443	36103	57478	45814	3557	1807	5618	4452	6000	5417	6000	5417
2	Arunachal Pradesh	563	530	559	389	-	-	-	-100	-	-	-	-
3	Assam	12753	10753	17100	16105	2400	2400	1000	305	1000	1000	1000	1000
4	Bihar	28489	24334	36800	27467	6000	5500	5800	2345	-	-	-	-
5	Chhattisgarh	4000	913	2000	-2287	-	-	2000	-287	-	-	-	-
6	Goa	2000	1450	1350	500	-	-	-	-200	-	-	-	-
7	Gujarat	31054	13554	43000	28300	5000	4000	9500	9500	1000	-	1000	-
8	Haryana	30500	20683	45158	28638	6000	4660	8658	4198	2000	1337	2000	1337
9	Himachal Pradesh	4000	1875	14000	11941	1300	1011	3200	2990	-	-250	-	-250
10	Jammu & Kashmir UT	8562	5373	8473	5969	500	500	1728	964	-	-200	-	-200
11	Jharkhand	5000	3191	4000	-155	1000	-	-	-1655	-	-	-	-
12	Karnataka	59000	49000	36000	26000	-	-1000	-	-1000	-	-	-	-
13	Kerala	27000	18120	30839	15620	2000	1000	7800	5567	-	-1000	-	-1000
14	Madhya Pradesh	22000	13900	40158	26849	13000	11000	15158	8349	-	-500	-	-500
15	Maharashtra	68750	40790	72000	42815	-	-3375	22000	18375	3000	3000	3000	3000
16	Manipur	1476	1326	1422	1147	200	200	200	200	-	-	-	-
17	Meghalaya	1608	1298	1753	1356	-	-	-	-68	-	-100	-	-100
18	Mizoram	747	447	1315	1129	100	100	125	54	-	-80	-	-80
19	Nagaland	1727	1222	1854	1199	248	248	91	-114	300	180	300	180
20	Odisha	0	-6473	0	-7500	-	-1500	-	-1000	-	-	-	-
21	Puducherry	1374	841	1200	698	500	500	-	-	-	-	-	-
22	Punjab	25814	12428	45500	33660	4200	3700	8900	7414	2500	500	2500	500
23	Rajasthan	51149	38243	46057	30110	4000	3826	11306	6615	4500	3000	4500	3000
24	Sikkim	1511	1471	1414	1320	437	437	100	76	-	-	-	-
25	Tamil Nadu	87000	72500	87000	65722	9000	6600	19000	17119	-	-3000	-	-3000
26	Telangana	45716	39256	40150	30922	3500	2250	5150	3424	2000	1583	2000	1583
27	Tripura	300	0	0	-645	-	-	-	-330	-	-	-	-
28	Uttar Pradesh	62500	42355	55612	41797	12500	12500	22112	20084	-	-	-	-
29	Uttarakhand	3200	1800	3200	1450	750	-350	1450	1450	-	-	-	-
30	West Bengal	67390	45199	63000	42500	1000	500	21000	18300	-	-1000	-	-1000
	Grand Total	701626	492483	758392	518829	77192	56514	171896	127026	22300	9887	22300	9887

- : 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 2021-22 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 table format is revised since June 2023 issue of the bulletin.

State Government Securities include special bonds issued under Ujjwal DISCOM Assurance Yojana (UDAY).

Bank PDs are clubbed under Commercial Banks. However, they form very small fraction of total outstanding securities.

The category 'Others' comprises State Governments, DICGC, PSUs, Trusts, Foreign Central Banks, HUF/ Individuals *etc.*

Table No. 46

GDP data is based on 2011-12 base. GDP for 2022-23 is from Union Budget 2022-23.

Data pertains to all States and Union Territories.

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 2022-23	₹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. 43, No. 1, 2022	₹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.