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CONTENTS

Governor's Statement

Governor's Statement	1
----------------------	---

Monetary Policy Statement for 2023-24

Resolution of the Monetary Policy Committee (MPC)	
December 6-8, 2023	9

Statement on Developmental and Regulatory Policies

Statement on Developmental and Regulatory Policies	13
--	----

Speeches

Winning in Uncertain Times: The Indian Experience Shaktikanta Das	15
Changing Paradigms in the Financial Landscape M. Rajeshwar Rao	21

Articles

State of the Economy	27
Government Finances 2023-24: A Half-Yearly Review	73
'Low' Stagflation Risk in India	93
Assessing Oil Price Trajectory: An Evaluation of Alternate Sources of Information	105
Government Borrowing and G-Sec Yields – An Analytical Enquiry	117
Recent Inflation Dynamics in India: Role of Supply <i>vis-à-vis</i> Demand	129
Monetary Policy Report as a Communication Tool: Evidence from Textual Analysis	143

Current Statistics

Recent Publications	157
---------------------	-----

Recent Publications	210
---------------------	-----

GOVERNOR'S STATEMENT

Governor's Statement

Governor's Statement*

Shaktikanta Das

As 2023 comes to an end and a new year begins, the long-awaited normality still eludes the global economy. The years 2020 to 2023 will perhaps go down in history as the period of 'Great Volatility', comprising a host of black swan events in quick succession. The global economy is showing signs of slowdown, though unevenly across geographies and sectors. The Emerging Market Economies (EMEs) as a group have remained resilient during the current bout of volatility, unlike previous episodes. While headline inflation has receded from the highs of last year, it remains above target in many countries. Core inflation continues to be sticky, impeding the last mile of disinflation. Major central banks have kept rates on hold while refraining from forward guidance in view of the prevailing uncertainties. Financial markets remain volatile in their quest for definitive signals about the future path of interest rates.

Against this unsettled global economic backdrop, the Indian economy presents a picture of resilience and momentum. The real gross domestic product (GDP) growth for Q2 of the current financial year has exceeded all forecasts. The fundamentals of the Indian economy remain strong with banks and corporates showing healthier balance sheets; fiscal consolidation on course; external balance remaining eminently manageable; and forex reserves providing cushion against external shocks. These factors, combined with consumer and business optimism, create congenial conditions for sustained growth of the Indian economy. Looking ahead, it is our endeavour to further build on these fundamentals which are the best buffer against global shocks in today's uncertain world.

Decisions and Deliberations of the Monetary Policy Committee (MPC)

The Monetary Policy Committee (MPC) met on 6th, 7th and 8th December 2023. After a detailed assessment of the evolving macroeconomic and financial developments and the outlook, it 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 to the target, while supporting growth.

I shall now briefly set out the rationale for these decisions. Since the last policy, CPI headline inflation moderated to 4.9 per cent in October from 7.4 per cent in July. The moderation was observed in all components of CPI – food, fuel and core (CPI excluding food and fuel). There has been broad-based easing in core inflation which is indicative of successful disinflation through monetary policy actions. The near-term outlook, however, is masked by risks to food inflation which might lead to an inflation uptick in November and December. This needs to be watched for second round effects, if any. Domestic economic activity is holding up well as assessed in the previous MPC meetings and as reflected in the Q2:2023-24 GDP growth.

Against this backdrop, the MPC decided to keep the policy repo rate unchanged at 6.50 per cent, but remain highly alert and prepared to undertake appropriate policy actions, as warranted. Monetary policy must continue to be actively disinflationary to ensure fuller transmission and anchoring of inflation expectations. The rate action so far is still working its way into the economy. Hence, the MPC decided to remain focused on withdrawal of accommodation

* Governor's Statement - December 8, 2023.

to ensure that inflation progressively aligns to the target, while supporting growth.

Assessment of Growth and Inflation

Global Growth

The global economy continues to remain fragile. World trade is decelerating amidst global tide of protectionism.¹ Despite significant restoration of global supply chains,² factors like elevated debt levels, lingering geopolitical hostilities and extreme weather conditions aggravate the risks to global growth and inflation outlook. Easing of inflation in advanced economies has led to expectations of an early end to the monetary tightening cycle, shoring up market sentiments. Sovereign bond yields are softening as markets are not factoring in any further rate hikes.

Domestic Growth

Economic activity exhibited buoyancy in Q2 aided by strong domestic demand. GDP posted a robust growth of 7.6 per cent in Q2:2023-24, driven by investment and government consumption.³

Turning to Q3, two-third of *rabi* sowing has been completed despite late harvest of *kharif* crops in some states.⁴ Manufacturing sector gained strength with easing input cost pressures and pick up in demand

conditions.⁵ Eight core industries recorded healthy growth in October and continued their high growth since June this year.⁶ The purchasing managers' index (PMI) for manufacturing rose in November.⁷ The services sector buoyancy has remained intact as reflected in high frequency indicators.⁸ GST collections at ₹1.68 lakh crore in November 2023 were buoyant.⁹ Services PMI displayed healthy expansion in November.¹⁰

On the demand side, households' consumption is supported by durable urban demand¹¹ and gradual turnaround in rural demand as reflected in sales of fast moving consumer goods (FMCG) and other indicators.¹² Festival related demand is also spurring households' discretionary consumption in Q3.¹³ Investment activity continues to be aided by buoyancy in public sector capex.¹⁴ This is also reflected in the strong growth in steel consumption, cement

⁵ Results of 1,703 manufacturing companies for Q2:2023-24 exhibit robust growth in profits as well as salaries and wages component.

⁶ Eight core industries grew by 8.4 per cent in June; 8.5 per cent in July; 12.5 per cent in August; 9.2 per cent in September; and 12.1 per cent in October.

⁷ PMI manufacturing continued to expand at 56.0 in November 2023.

⁸ In October 2023, e-way bills (30.5 per cent), toll collections (13.0 per cent), port traffic (13.8 per cent), railway freight traffic (8.5 per cent) and diesel consumption (9.3 per cent) recorded robust growth. In November 2023, e-way bills (8.5 per cent), toll collections (12.3 per cent) and port traffic (17.0 per cent) continued to post strong growth.

⁹ The growth of GST collections in November 2023 was the highest in 11 months.

¹⁰ PMI services continued to expand at 56.9 in November 2023.

¹¹ Indicators of urban demand like domestic air passenger traffic, passenger vehicle sales and household credit expanded by double-digit rate in October.

¹² According to Nielsen data, FMCG volumes in rural segment grew by 6.4 per cent in Q2:2023-24 as compared to (-) 3.6 per cent during Q2:2022-23 (4.0 per cent in Q1:2023-24). Amongst rural demand indicators, two-wheeler sales posted a significant turnaround and the contraction in tractor sales moderated in October.

¹³ According to Federation of Automobile Dealers Associations (FADA), for the 42 days festive period during October-November 2023, retail sales of two-wheeler and passenger vehicles recorded a growth of 20.7 per cent and 10.3 per cent, respectively

¹⁴ The combined (Centre plus States) Capital Outlay (viz., capital expenditure minus loans and advances) recorded a growth of 36.7 per cent in April-October 2023 as against 29.4 per cent last year.

¹ The International Monetary Fund (IMF) in October 2023, projected world trade volume (goods and services) growth to decline sharply from 5.1 per cent in 2022 to 0.9 per cent in 2023 (revised down by 1.1 percentage points from the July 2023 projection before rising to 3.5 per cent in 2024 (revised down by 0.2 percentage points).

² The global supply chain pressures index (GSCPI), as released by Federal Reserve Bank of New York, eased during the current financial year. It continues to remain below its historical average since February 2023 and fell sharply from the pandemic-era highs.

³ In Q2:2023-24, the government final consumption expenditure increased by 12.4 per cent, while gross fixed capital formation (investment) posted a growth of 11.0 per cent. On the supply side, real gross value added (GVA) rose by 7.4 per cent, powered by 13.9 per cent increase in manufacturing and 13.3 per cent in construction activity.

⁴ As of December 1, 2023, *rabi* sowing stood at 434.7 lakh hectares (out of full season normal area of 648.3 lakh hectares) which is 5.3 per cent lower than last year, but 4.3 per cent higher than 5-year average (normal acreage) as on date.

production and imports of capital goods.¹⁵ Capacity utilisation (CU) in the manufacturing sector continues to remain above the long period average.¹⁶ Investments in fixed assets by listed private manufacturing companies also registered healthy growth in H1:2023-24, primarily driven by key industries such as petroleum, steel, chemicals and cement. The total flow of resources to the commercial sector from banks and other sources at ₹17.6 lakh crore during the current financial year so far is significantly higher than that of last year (₹14.5 lakh crore). Despite weakness in external demand, both goods and services exports returned to positive territory in October.¹⁷

Looking ahead, private consumption should gain support from gradual improvement in rural demand, strengthening of manufacturing activity and continued buoyancy in services. The healthy twin balance sheets of banks and corporates, high capacity utilisation, continuing business optimism and government's thrust on infrastructure spending should propel private sector capex. The drag from external demand is also expected to moderate with a turnaround in merchandise and services exports. The protracted geopolitical turmoil, volatility in global financial markets and growing geo-economic fragmentations, however, pose risks to the outlook. Taking all these factors into consideration, real GDP growth for 2023-24 is projected at 7.0 per cent with Q3 at 6.5 per cent; and Q4 at 6.0 per cent. Real GDP growth for Q1:2024-25 is projected at 6.7 per cent; Q2 at 6.5 per cent; and Q3 at 6.4 per cent. The risks are evenly balanced.

¹⁵ Steel consumption (15.3 per cent), cement production (17.1 per cent) and imports of capital goods (9.4 per cent) grew strongly in October.

¹⁶ Early survey results suggest capacity utilisation increased by 40 bps to 74.0 per cent in Q2:2023-24. The long-term average is 73.7 per cent which pertains to the period Q1:2008-09 to Q1:2023-24 excluding Q1:2020-21. Seasonally adjusted CU, however, declined by 90 bps and stands at 74.5 per cent in Q2.

¹⁷ India's merchandise exports expanded by 6.1 per cent to \$33.5 billion, while imports increased by 9.6 per cent to \$63.5 billion in October. Services exports expanded by 10.8 per cent, while imports declined by 0.4 per cent in October.

Inflation

Food inflation, which was in double-digits in July, has since then moderated to 6.2 per cent in October with the correction in vegetable prices.¹⁸ Fuel inflation slipped into deflation since September primarily reflecting the sharp fall in LPG prices in end-August. The disinflation in core gathered momentum during September-October and reached levels last seen during Q4:2019-20 due to the combined effect of policy rate increases and reduction in cost-push pressures across core goods and services.

Going ahead, inflation outlook would be considerably influenced by uncertain food prices. High frequency food price indicators point to an increase in prices of key vegetables which may push CPI inflation higher in the near-term. The ongoing *rabi* sowing progress for key crops like wheat, spices and pulses needs to be closely monitored. Elevated global sugar prices is also a matter of concern.

On the positive side, global commodity prices, particularly, agricultural commodity prices, have softened except rice.¹⁹ For highly import dependent food items like edible oils, international prices continue to remain soft. Domestic milk prices are stabilising. Pro-active supply side interventions by the government are also containing domestic food price pressures. Crude oil has softened considerably, though it may remain volatile. Taking into account these factors and on the assumption of normal monsoons, CPI inflation is projected at 5.4 per cent for 2023-24, with Q3 at 5.6 per cent and Q4 at 5.2 per cent. CPI inflation for Q1:2024-25 is projected at 5.2 per cent; Q2 at 4.0 per cent; and Q3 at 4.7 per cent. The risks are evenly balanced.

¹⁸ The persistence of inflation pressures across various sub-groups, such as cereals, pulses and spices, and pick-up in inflation in eggs, fruits and sugar, however, has kept food inflation in October still elevated.

¹⁹ Bloomberg Commodity Price Index moderated since the last MPC meeting. As per United States Department of Agriculture (USDA) most agricultural commodities prices have moderated. Food and Agriculture Organisation's (FAO's) food price index has eased since August 2023.

What do these Inflation and Growth Conditions mean for Monetary Policy?

We have made significant progress in bringing down inflation to below 5 per cent in October 2023 despite occasional blips due to intermittent supply shocks. The summer of 2022 is behind us. Our policy of prioritising inflation over growth, hiking policy rate by 250 basis points in a calibrated manner and draining out excess liquidity have worked well, alongside supply-side measures taken by the government, to bring about this disinflation. The fact that core inflation has also trended lower and household inflation expectations have become better anchored gives us the confidence and conviction that monetary policy is doing its job.²⁰ On the other hand, growth remains resilient and robust, surprising everyone on the upside.

Notwithstanding this progress, the target of 4.0 per cent CPI is yet to be reached and we have to stay the course. Headline inflation continues to be volatile due to multiple supply side shocks which have become more frequent and intense. The trajectory of food inflation needs to be closely monitored. Intermittent vegetable price shocks could once again push up headline inflation in November and December. While monetary policy would look-through such one-off shocks, it has to stay alert to the risk of such shocks becoming generalised and derailing the ongoing disinflation process. In the midst of these uncertainties, monetary policy has to remain actively disinflationary to ensure a durable alignment of headline inflation to the target rate of 4.0 per cent, while supporting growth.

Liquidity and Financial Market Conditions

Like most other central banks, the Reserve Bank had injected additional liquidity into the

²⁰ According to the Reserve Bank's survey of households, between September 2022 and November 2023 inflation expectations for 3 months ahead and 1 year ahead softened by 170 and 90 basis points, respectively.

system to counter the COVID-19 related onslaught on the economy. Consequently, the size of Reserve Bank's balance sheet had expanded significantly. Persistence of such expanded balance sheet far too long could have created macroeconomic and financial instability. It is worth noting that the Reserve Bank has successfully reduced its balance sheet size well in time. Illustratively, the size of the Reserve Bank's balance sheet swelled to 28.6 per cent of GDP in 2020-21. With modulation in liquidity in the post COVID period, the balance sheet size moderated to 23.3 per cent of GDP in 2022-23 and further to 21.6 per cent in the current financial year (up to December 1).²¹ We consider this as a significant achievement.

System liquidity, as measured by the net position under the liquidity adjustment facility (LAF), turned into deficit mode for the first time in September 2023 after a gap of nearly four and a half years since May 2019. Deficit liquidity conditions persisted during October and November prompting large recourse to the marginal standing facility (MSF) by banks.²² In parallel, utilisation of the standing deposit facility (SDF) has also been high.²³

The overall tightening of liquidity conditions is attributed mainly to higher currency leakage during the festive season, government cash balances and Reserve Bank's market operations. Driven by these autonomous factors, system liquidity tightened significantly compared to what was envisaged in the October policy statement. Consequently, the need to undertake auction of OMO sales has not arisen so far. The evolution of liquidity conditions has been in alignment with the monetary policy stance. More recently, however, as government spending has picked

²¹ As on December 1, 2023, the balance sheet size was ₹65.1 lakh crore and based on the estimated nominal GDP of ₹301.8 lakh crore in the Union Budget 2023-24, the balance sheet size to GDP ratio works out to 21.6 per cent.

²² MSF borrowing averaged nearly ₹0.95 lakh crore during September which further increased to ₹1.2 lakh crore during October-November 2023.

²³ Average fund parked under the SDF was at ₹0.62 lakh crore and ₹0.58 lakh crore in October and November, respectively.

up and system liquidity has got more evenly balanced among market participants, pressures have eased and the net LAF position has evened out broadly. Going forward, government spending is likely to further ease liquidity conditions. On our part, the Reserve Bank will remain nimble in liquidity management.

Different segments of the financial market have witnessed monetary transmission of varying extent. Long-term G-sec yields have softened, reflecting strong demand for these bonds from financial institutions and softening of global bond yields. In the credit market, monetary policy transmission is still working its way through the system.²⁴

With regard to the standing facilities of the Reserve Bank under the LAF, we have noticed simultaneous high utilisation of both MSF and SDF by the banks. This was pointed out in the last monetary policy statement. We propose to address this situation and have decided to allow reversal of liquidity facilities under both SDF and MSF even during weekends and holidays with effect from December 30, 2023.²⁵ It is expected that this measure will facilitate better fund management by the banks. This measure will be reviewed after six months or earlier, if needed.

The Indian rupee has exhibited low volatility compared to its EME peers in the calendar year 2023, despite elevated US treasury yields and a stronger US dollar.²⁶ The relative stability of the Indian rupee

reflects the improving macroeconomic fundamentals of the Indian economy and its resilience in the face of formidable global tsunamis.

Recently, the Reserve Bank and the Bank of England have signed a Memorandum of Understanding on cooperation and exchange of information relating to the Clearing Corporation of India Ltd (CCIL), a Central Counterparty (CCP),²⁷ regulated and supervised by the Reserve Bank. The MOU will enable the Bank of England to assess CCIL for recognition as a third country CCP for UK based banks to clear their transactions through CCIL. This MOU is based on principles of mutual cooperation and trust among regulators of both the countries. We hope regulators of other jurisdictions also accept these principles.

Financial Stability

Financial stability is a public good. The Reserve Bank judiciously uses micro and macro-prudential tools to safeguard financial stability. The recent pre-emptive measures²⁸ taken by the Reserve Bank in respect of Banks and NBFCs were geared towards addressing potential risks and preserving the resilience of the financial sector.²⁹ We do not wait for the house to catch fire and then act. Prudence at all

²⁴ The weighted average lending rate (WALR) on fresh rupee loans rose by 199 basis points (bps) while that on outstanding loans rose by 112 bps during the current tightening cycle (May 2022 – October 2023). The weighted average domestic term deposit rates (WADTDRs) on fresh deposits and outstanding deposits rose by 228 bps and 172 bps, respectively, during the same period.

²⁵ At present, the standing facilities of the Reserve Bank under the LAF – the SDF and the MSF – can be availed from 17:30 hours to 23:59 hours on all days including weekends and holidays. However, the reversal of the facilities – withdrawal of deposited funds for SDF and repayment of borrowed funds for MSF – for the transactions over the weekends and holidays, is available only on the next working day in Mumbai.

²⁶ The coefficient of variation for the daily INR exchange rate *vis-à-vis* the US dollar was 0.66 (CY 2023), which is the lowest among peer emerging economies, including China, Malaysia, Russia, Turkey, Vietnam, South Africa and Thailand.

²⁷ Central counterparties (CCPs) help manage counterparty credit risk and consequently reduce systemic risks of financial markets by mitigating the impact of failure of an institution.

²⁸ On November 16, 2023, the Reserve Bank increased the risk weights on unsecured consumer credit exposures of banks and NBFCs (including credit card receivables) as well as bank lending to NBFCs, other than housing finance companies (HFCs). The regulated entities have also been advised to put in place Board approved limits for various sub-segments under consumer credit, specifically unsecured consumer credit.

²⁹ The key financial indicators of scheduled commercial banks (SCBs) show further improvement. In September 2023, CRAR of SCBs increased to 16.8 per cent from 16.0 per cent in September 2022. Gross non-performing assets (GNPA) and net non-performing assets (NNPA) ratios declined to a decadal low of 3.3 per cent and 0.8 per cent, respectively as of September 2023. The return on asset (RoA) of SCBs increased to 1.3 per cent as of September 2023 from 1.0 per cent in September 2022. Net interest margin (NIM) of SCBs improved to 3.7 per cent as of September 2023 from 3.5 per cent in September 2022. The liquidity coverage ratio (LCR) of SCBs was comfortable at 135.4, much above the minimum stipulation of 100. The indicators of non-banking financial companies are also in line with that of the banking system as per the latest available data.

times should be the guiding philosophy, both for the regulators and the regulated entities.

External Sector

In October 2023, both merchandise exports and imports came back into the expansionary zone. Services exports remained buoyant during Q2:2023-24. India has remained the top remittance-receiving country.³⁰ The net balance under services and remittances is expected to partly offset India's current account deficit and keep it within the parameters of viability.

On the financing side, foreign portfolio investment (FPI) flows have seen a significant turnaround in 2023-24 with net FPI inflows of US\$ 24.9 billion (up to December 6) as against net outflows in the preceding two years.³¹ Net foreign direct investment (FDI), on the other hand, moderated to US\$ 10.4 billion in April-October 2023 from US\$ 20.8 billion a year ago. Net inflows under external commercial borrowings (ECBs) and non-resident deposit accounts are much higher than last year.³² India's external vulnerability indicators³³ exhibit higher resilience in comparison with EME peers as well as since the taper tantrum period. India's foreign exchange reserves stood at US\$ 604 billion as on December 1, 2023. We remain confident of meeting our external financing requirements comfortably.

Additional Measures

I shall now announce certain additional measures.

³⁰ As per India's balance of payments statistics, India's inward remittances stood at US\$ 112.5 billion in 2022-23.

³¹ Net outflows of US\$ 14.1 billion in 2021-22 and US\$ 4.8 billion in 2022-23.

³² Net inflows of ECBs to India were US\$ 3.9 billion during April-October 2023 as against net outflows of US\$ 4.2 billion a year ago. Non-resident deposit accounts witnessed higher net inflows at US\$ 5.4 billion during April-September 2023 as compared with US\$ 2.8 billion a year ago.

³³ External debt to GDP ratio and reserves to external debt ratio were placed at 18.6 per cent and 94.6 per cent at end-June 2023, respectively. The reserve cover of imports is over 10 months.

Review of the Regulatory Framework for Hedging of Foreign Exchange Risks

The regulatory framework for foreign exchange derivative transactions was last reviewed in 2020. Based on market developments and feedback received from market participants, the extant regulatory framework for forex derivative transactions has been refined and consolidated under a single master direction. This will further deepen the forex derivatives market by enhancing operational efficiency and ease of access for users.

Framework for Connected Lending

The extant guidelines on connected lending are limited in scope. It has been decided to come out with a unified regulatory framework on connected lending for all regulated entities of the Reserve Bank. This will further strengthen the pricing and management of credit by regulated entities.

Regulatory Framework for Web-Aggregation of Loan Products

The Reserve Bank had introduced the regulatory framework for digital lending in August/September 2022. The digital lending ecosystem also comprises of services that aggregate loan offers from lenders (called web-aggregation of loan products) for guidance of customers. Several concerns relating to such web-aggregation of loan products harming consumers' interest have come to our notice. It has, therefore, been decided to lay down a regulatory framework for web-aggregation of loan products. This is expected to result in enhanced customer centricity and transparency in digital lending.

Setting up of Fintech Repository

Financial entities like banks and NBFCs in India are increasingly partnering with Fintechs. For better understanding of developments in the Fintech ecosystem and to support this sector, it is proposed to set-up a Fintech Repository. This will be

operationalised by the Reserve Bank Innovation Hub in April 2024 or earlier. FinTechs would be encouraged to provide relevant information voluntarily to this Repository.

Enhancing UPI Transaction Limit for Specified Categories

The limit for various categories of UPI transactions has been reviewed from time to time. It is now proposed to enhance the UPI transaction limit for payment to hospitals and educational institutions from ₹1 lakh to ₹5 lakh per transaction. This will help the consumers to make UPI payments of higher amounts for education and healthcare purposes.

e-Mandates for recurring online transactions – Enhancement of limit for specified categories

e-Mandates for making payments of recurring nature have become popular among customers. Under this framework, an additional factor of authentication (AFA) is currently required for recurring transactions exceeding ₹15,000. It is now proposed to enhance this limit to ₹1 lakh per transaction for recurring payments of mutual fund subscriptions, insurance premium subscriptions and credit card repayments. This measure will further accelerate the usage of e-mandates.

Establishment of Cloud Facility for the Financial Sector in India

Banks and financial entities are maintaining an ever-increasing volume of data. Many of them are utilising the cloud facilities for this purpose. The Reserve Bank is working on establishing a cloud facility

for the financial sector in India for this purpose. Such facility would enhance data security, integrity and privacy. It would also facilitate better scalability and business continuity. The cloud facility is intended to be rolled out in a calibrated fashion over the medium term.

Conclusion

In a global economy clouded by uncertainties, monetary policy actions and communication can be a stabilising force by anchoring the expectations of economic agents. Clarity and consistency in action and communication is a time-tested principle for effective monetary policy. Policy makers have to be mindful of the risk of being carried away by a few months of good data or by the fact that CPI inflation has come within the target range. They have to be also mindful of the risk of overtightening, especially when large structural changes, geopolitical and geoeconomic shifts are taking place. On top of this, they have to be watchful of the risks from new shocks that could hit the economy from anywhere anytime.

We have now reached a stage when every action has to be thought through even more carefully to ensure overall macroeconomic and financial stability; more so, because the conditions ahead could be fickle. We have to remain vigilant and ready to act, as per the evolving outlook. India is better placed to withstand the uncertainties compared to many other countries. As the Indian economy treads the path to a brighter future, I recall the wise words of Mahatma Gandhi: "*Progress is absolutely assured whenever there is an unalterable determination.*"³⁴

³⁴ Collected Works of Mahatma Gandhi, Volume 46.

MONETARY POLICY STATEMENT FOR 2023~24

Resolution of the Monetary Policy Committee (MPC)
December 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 (December 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 to 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.

Assessment and Outlook

2. Global growth is slowing at a divergent pace across economies. Inflation continues to ebb though it remains above target with underlying inflationary pressures staying relatively stubborn. Market sentiments have improved since the last MPC meeting – sovereign bond yields have declined, the US dollar has depreciated, and global equity markets have strengthened. Emerging market economies (EMEs) continue to face volatile capital flows.

3. Domestic economic activity is exhibiting resilience. Real gross domestic product (GDP) grew year-on-year (y-o-y) by 7.6 per cent in Q2:2023-24, underpinned by robust investment and government consumption, which cushioned the drag from net external demand. On the supply side, gross value added (GVA) rose by 7.4 per cent in Q2, driven by buoyant manufacturing and construction activities.

4. Continued strengthening of manufacturing activity, buoyancy in construction, and gradual recovery in the rural sector are expected to brighten the prospects of household consumption. Healthy balance sheets of banks and corporates, supply chain normalisation, improving business optimism, and rise in public and private capex should bolster investment going forward. With improvement in exports, the drag from external demand is expected to moderate. Headwinds from the geopolitical turmoil, volatility in international financial markets and geoeconomic fragmentation pose risks to the outlook. Taking all these factors into consideration, real GDP growth for 2023-24 is projected at 7.0 per cent with Q3 at 6.5 per cent; and Q4 at 6.0 per cent. Real GDP growth for Q1:2024-25 is projected at 6.7 per cent; Q2 at 6.5 per cent; and Q3 at 6.4 per cent (Chart 1). The risks are evenly balanced.

5. CPI headline inflation fell by about 2 percentage points since the last meeting of the MPC to 4.9 per cent in October 2023 on sharp correction in prices of certain vegetables, deflation in fuel and a broad-based moderation in core inflation (CPI inflation excluding food and fuel).

6. Uncertainties in food prices along with unfavourable base effects are likely to lead to a pick-up in headline inflation in November-December. *Kharif* harvest arrivals and progress in *rabi* sowing together with *El Niño* weather conditions need to be monitored. Adequate buffer stocks for cereals and a sharp moderation in international food prices, along

* Released on December 8, 2023

with pro-active supply side interventions by the Government may keep these food price pressures under check. Crude oil prices may remain volatile. Early results from the firms polled in the Reserve Bank's enterprise surveys indicate softer growth in input costs and selling prices for the manufacturing firms in Q4 relative to the previous quarter, while price pressures persist for services and infrastructure firms. Taking into account these factors, CPI inflation is projected at 5.4 per cent for 2023-24, with Q3 at 5.6 per cent; and Q4 at 5.2 per cent. Assuming a normal monsoon next year, CPI inflation for Q1:2024-25 is projected at 5.2 per cent; Q2 at 4.0 per cent; and Q3 at 4.7 per cent (Chart 2). The risks are evenly balanced.

7. The MPC observed that recurring food price shocks are impeding the ongoing disinflation process. Core disinflation has been steady, indicative of the impact of past monetary policy actions. Headline inflation, however, remains volatile, with possible implications for the anchoring of expectations. Domestic food inflation unpredictability, and volatility in crude oil prices and financial markets in an uncertain international environment pose risks to

the inflation outlook. The path of disinflation needs to be sustained. The MPC will carefully monitor any signs of generalisation of food price pressures which can fritter away the gains in easing of core inflation. On the growth front, improved momentum in investment demand along with business and consumer optimism, would support domestic economic activity and ease supply constraints. As the cumulative policy repo rate hike is still working its way through the economy, the MPC decided to keep the policy repo rate unchanged at 6.50 per cent in this meeting, but with preparedness to undertake appropriate and timely policy actions, should the situation so warrant. Monetary policy must continue to be actively disinflationary to ensure anchoring of inflation expectations and fuller transmission. The MPC will remain resolute in its commitment to aligning inflation to the target. The MPC also decided to remain focused on withdrawal of accommodation to ensure that inflation progressively aligns to the target, while supporting growth.

8. All members of the MPC – Dr. Shashanka Bhide, Dr. Ashima Goyal, Prof. Jayanth R. Varma, Dr. Rajiv Ranjan, Dr. Michael Debabrata Patra and Shri

Chart 1: Quarterly Projection of Real GDP Growth (y-o-y)

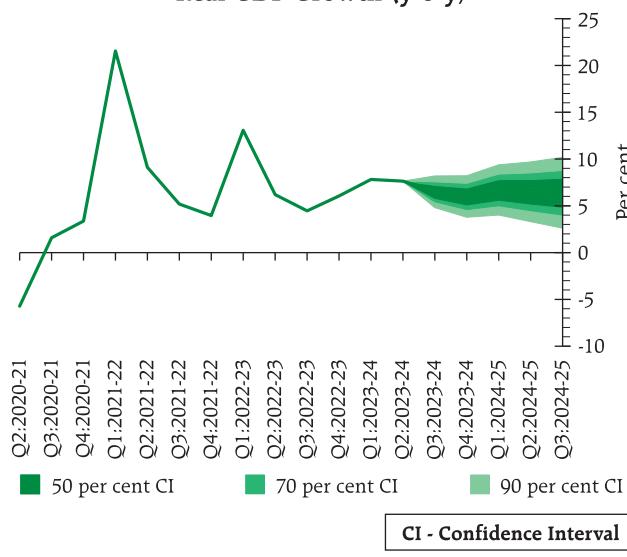
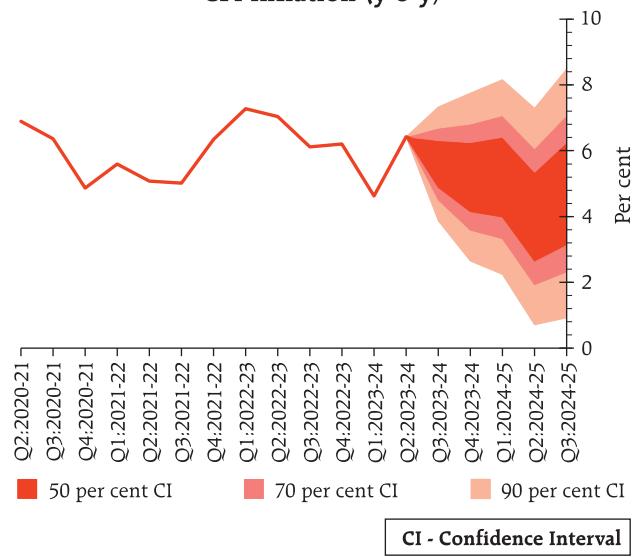


Chart 2: Quarterly Projection of CPI Inflation (y-o-y)



Shaktikanta Das – unanimously voted to keep the policy repo rate unchanged at 6.50 per cent.

9. 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 to the target, while supporting

growth. Prof. Jayanth R. Varma expressed reservations on this part of the resolution.

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

11. The next meeting of the MPC is scheduled during February 6-8, 2024.

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) Regulations; and (iii) Payment Systems and Fintech.

I. Financial Markets

1. Review of the regulatory framework for hedging of foreign exchange risks

The regulatory framework governing the hedging of foreign exchange risks was comprehensively reviewed in 2020 with a view to ushering in a principle-based regime. Based on the feedback received from market participants and experience gained since then, the regulatory framework has been made more comprehensive by consolidating the directions in respect of all types of transactions – over-the-counter (OTC) and exchange traded - under a single Master Direction. The framework has also been refined to enhance operational efficiency and ease access to foreign exchange derivatives, especially for users with small exposures. This will also ensure that a broader set of customers with the necessary risk management expertise are given the flexibility to manage their exposures efficiently. The Master Direction will be issued separately.

II. Regulations

2. Framework for Connected Lending

Connected lending or lending to persons who are in a position to control or influence the decision of a lender can be of concern, if the lender does not maintain an arm's length relationship with such borrowers. Such lending can involve moral hazard issues leading to compromise in pricing and credit management. The extant guidelines on the issue are limited in scope and are not applicable uniformly to all regulated entities. It has accordingly been decided

to come out with a unified regulatory framework on connected lending for all the regulated entities of the Reserve Bank. A draft circular in this regard will be issued for public comments.

3. Regulatory Framework for Web-Aggregation of loan products

The Reserve Bank had accepted, vide its Press Release dated August 10, 2022, the recommendation of the Working Group on Digital Lending (Chairman: Shri Jayant Kumar Dash) to come up with a regulatory framework for web-aggregators of loan products (WALP). WALP entails aggregation of loan offers from multiple lenders on an electronic platform which enables the borrowers to compare and choose the best available option to avail loan from one of the available lenders.

Based on the recommendation of the Working Group, it has been decided to bring such loan aggregation services offered by the Lending Service Providers (LSPs) under a comprehensive regulatory framework. The framework will focus on enhancing the transparency in the operations of WALPs, increase customer centricity and enable the borrowers to make informed choices. The detailed guidelines will be issued separately.

III. Payment Systems and Fintech

4. Enhancing UPI transaction limit for Specified Categories

Unified Payments Interface or UPI continues to grow in popularity. The transaction limit for UPI is capped at ₹1 lakh, except a few categories like Capital Markets (AMC, Broking, Mutual Funds, etc.), Collections (Credit card payments, Loan re-payments, EMI), Insurance etc. where the transaction limit is ₹2 lakh. In December 2021, the transaction limit for UPI payments for Retail Direct Scheme and for IPO subscriptions was increased to ₹5 lakh.

To encourage the use of UPI for medical and educational services, it is proposed to enhance the

limit for payments to hospitals and educational institutions from ₹1 lakh to ₹5 lakh per transaction. Separate instructions will be issued shortly.

5. e-Mandates for recurring online transactions – Enhancement of limit for specified categories

The framework for processing of e-mandates for recurring transactions was introduced in August 2019 to balance the safety and security of digital transactions with customer convenience. The limits for execution of e-mandates without Additional Factor of Authentication (AFA) currently stands at ₹15,000/- (last updated in June 2022).

The number of e-mandates registered currently stands at 8.5 crore, processing nearly ₹2800 crores of transactions per month. The system has stabilised, but in categories such as subscription to mutual funds, payment of insurance premium and credit card bill payments, where the transaction sizes are more than ₹15,000, a need to enhance the limit has been expressed as adoption has been lagging.

It is, therefore, proposed to exempt the requirement of AFA for transactions up to ₹1 lakh for the following categories, *viz.*, subscription to mutual funds, payment of insurance premium and payments of credit card bills. The other existing requirements such as pre- and post-transaction notifications, opt-out facility for user, etc. shall continue to apply to these transactions. The revised circular will be issued shortly.

6. Establishment of Cloud Facility for the Financial Sector in India

Banks and financial entities are maintaining an ever-increasing volume of data. Many of them are

utilising various public and private cloud facilities for this purpose. The Reserve Bank is working on establishing a cloud facility for the financial sector in India. The proposed facility would enhance the security, integrity and privacy of financial sector data. It is also expected to facilitate scalability and business continuity. The cloud facility will be set up and initially operated by Indian Financial Technology & Allied Services (IFTAS), a wholly-owned subsidiary of RBI. Eventually, the cloud facility will be transferred to a separate entity owned by the financial sector participants. This cloud facility is intended to be rolled out in a calibrated fashion in the medium term.

7. Setting up of Fintech Repository

To ensure a resilient FinTech sector and promote best practices, regulators and stakeholders need to have relevant and timely information on FinTech entities, including the nature of their activities. Today, FinTechs are using emerging technologies like Distributed Ledger Technology (DLT), Artificial Intelligence / Machine Learning (AI / ML), and so on. For better understanding of the developments in the FinTech ecosystem with an objective to appropriately support the sector, it is proposed to set-up a Repository for capturing essential information about FinTechs, encompassing their activities, products, technology stack, financial information etc. FinTechs would be encouraged to provide relevant information voluntarily to the Repository which will aid in designing appropriate policy approaches. The Repository will be operationalised by the Reserve Bank Innovation Hub in April 2024 or earlier. Necessary guidelines for this will be issued separately.

SPEECHES

Winning in Uncertain Times: The Indian Experience
Shaktikanta Das

Changing Paradigms in the Financial Landscape
M. Rajeshwar Rao

*Winning in Uncertain Times: The Indian Experience**

Shaktikanta Das

I am thankful to FICCI and IBA for once again inviting me to this FIBAC Conference.¹ As momentous changes are taking place in the financial and business landscape, events like this provide an opportunity to industry leaders, bankers and policymakers to deliberate on issues of our times and crystallise our thoughts for future guidance. Today the world is grappling with an unending string of challenges since 2020. Geopolitical conflicts, geo-economic fragmentations, volatile commodity prices, uncertainty in trajectory of monetary policies and their macro-financial implications, increasing frequency and ferocity of climate shocks, all these prevailing together, present a very complicated or should I say, deadly mix of challenges. Historical regularities are looking improbable and policymakers are being put to test. In this backdrop, the theme of today's conference – "winning in uncertain times" – aptly captures the long-standing quest of humanity to make progress against all odds and challenges. I am an optimist and I remain confident that we can work together and navigate through this stormy weather.

In tune with the theme of the conference, I would like to touch upon the Reserve Bank's policies and actions in the last one and half years to maintain macroeconomic stability. I would then proceed to talk about India's growth drivers and emerging opportunities that can be harnessed to enhance India's potential growth. In the end, I propose to highlight

certain key issues which merit the attention of banks, NBFCs, financial sector entities and even businesses.

The Conduct of Monetary Policy in the Year Gone By

The monetary policy actions of the Reserve Bank over the last one and half years consisting of prioritisation of inflation ahead of growth, narrowing the Liquidity Adjustment Facility (LAF) corridor, increasing the policy repo rate by 250 bps, draining out excess liquidity – together with supply side measures by the Government – have facilitated significant softening of headline inflation to 4.9 per cent in October 2023. The moderation in core inflation, in particular, is noteworthy.

There is also recent evidence of household inflation expectations becoming more anchored.² Headline inflation, however, remains vulnerable to recurring and overlapping food price shocks coming from global factors and adverse weather events. The frequency and intensity of such shocks have increased in recent period. Monetary policy in such a scenario needs to remain watchful and actively disinflationary while supporting growth.

I must add that our actions over the past one and a half years did not engender any financial stability risks as witnessed in some advanced economies in the early part of 2023. This may be attributed to the regulatory requirements prescribed by the Reserve Bank which banks are expected to follow to manage their interest rate risk. These requirements act as safeguards for future stress that may arise when the upturn of the interest rate cycle takes place.³

² Mooring of household inflation expectations has been underway since September 2022. Inflation expectations for three months ahead fell by 90 bps from 10.0 per cent (July 2023 round) to 9.1 per cent (September 2023 round) and by 40 bps for one year ahead from 10.3 per cent (July 2023 round) to 9.9 per cent (September 2023 round).

³ The capital and liquidity requirements in India are uniformly applied to all the scheduled commercial banks, irrespective of their asset size and exposure. Investment fluctuation reserves (IFR) have also been created in the banks. Valuation guidelines on available for sale (AFS) category of investment are stringent and follow a conservative approach.

* Inaugural Speech by Shri Shaktikanta Das, Governor, Reserve Bank of India - November 22, 2023 - Delivered at the FIBAC 2023 Conference Organised Jointly by FICCI and IBA at Mumbai.

¹ Federation of Indian Chambers of Commerce and Industry (FICCI) and Indian Banks Association (IBA).

On the exchange rate front, the Indian rupee (INR) has exhibited low volatility and orderly movements relative to peers despite elevated US treasury yields and a stronger US dollar.⁴ Movements in the INR are consistent with the strength of the underlying macro-fundamentals and the reassuring availability of buffers.

Growth Drivers and Opportunities

As many business leaders are present here, let me now dwell upon India's growth drivers and the opportunities that lie ahead. The Indian economy rebounded strongly from the COVID-induced 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. India's real GDP is expected to grow by 6.5 per cent in both 2023-24 and 2024-25, making it one of the fastest growing large economies in the world.⁵ In fact, India is already the third largest economy in the world in terms of purchasing power parity (PPP). Despite global slowdown, the Indian economy has remained resilient and continued to grow due to its higher reliance on domestic demand which enabled the economy to weather multiple global headwinds. Although India has made rapid strides in external openness through trade and financial channels and gained competitiveness, its dependence on domestic demand provides a cushion against external shocks. At the same time, various structural reforms implemented in areas of banking, taxation, inflation management and manufacturing sector, etc. over the last few years,

have laid the foundation for sustainable and higher growth.

We have moved from an era of twin deficit and twin balance sheet stress to the current period of twin balance sheet advantage.⁶ While balance sheets of banks witnessed significant improvement on the back of improved asset quality and profitability, corporates also display stronger financials, having deleveraged their balance sheets. The improved health of the banks and corporates is also reflected in their recent second quarter results of 2023-24. The corporate performance parameters based on 1501 listed non-government non-financial companies suggest strong growth in profitability and staff costs in Q2:2023-24. The Reserve Bank's latest industrial outlook survey indicates that business outlook further improved with manufacturing firms being optimistic about demand condition in Q3:2023-34. Capacity utilisation (CU) in the manufacturing sector, on a seasonally adjusted basis, continues to trend up, which augurs well for investment activity. The continued thrust on capex by the government is also favourable for investment activity. It is now for corporates and other businesses to evaluate the current situation and future potential of India and move forward.

On the supply side, the agriculture sector has kept good momentum over the last few years and its performance is expected to remain stable during 2023-24 despite uneven south-west monsoon and lower kharif production. Production of foodgrains as well as horticulture have reached record levels year after year. The diversification of exports, both in terms of products and destinations, is enhancing the economy's capacity to withstand shocks. The agricultural sector continues to provide employment to a large part of our workforce.

⁴ As of November 20, 2023, the INR had depreciated (on calendar year basis) by 0.7 per cent against the dollar, performing well when compared to its EME peers including the Chinese yuan, the Thailand baht, the Vietnamese dong, Argentine peso and the Malaysian ringgit. It had appreciated by 12.4 per cent against the Japanese yen, while it depreciated by 2.7 per cent against Euro and by 3.7 per cent against the UK pound.

⁵ According to the International Monetary Fund (IMF), India will become the third-largest economy before 2030, with its GDP projected to surpass both Japan and Germany by 2026 and 2027, respectively. India is already the third largest economy in the world in terms of purchasing power parity (PPP) (with a share of 7 per cent of global GDP) after China and the USA (Source: IMF, World Economic Outlook (WEO) database).

⁶ While twin deficit refers to the situation when an economy suffers from both the fiscal deficit and the current account deficit, twin balance sheet stress is a scenario where banks are under severe stress and the corporates are overleveraged to the extent that they cannot repay their loans.

There are, however, several challenges relating to productivity gaps, water usage and irrigation facilities, shifting consumer preferences and sudden weather events. All these require heavy investments in infrastructure and innovation to modernise the agricultural sector and realise its true potential for achieving higher productivity; more efficient access to markets; maximising farmers' income; and increasing its contribution to GDP. As a nation we must find a way of carrying out certain reforms, especially in the area of agricultural marketing and the connected value chains. These reforms are critical not only for sustained high growth but also for durable price stability and to mitigate the frequency and intensity of food price shocks. It is important that private sector comes forward in a big way and becomes a crucial partner in this journey. There are opportunities for the private sector to invest in strategic areas of agriculture and allied activities such as supply chains; food processing involving variety of fruits, vegetables and food grains; scaling up dairy, poultry and fishing; and creating marketing infrastructure. Private sector can accelerate farm-firm (*i.e.*, agri-industry) linkage and improve the efficiency of the entire value chain right up to the end customer.

As regards the manufacturing sector, even as its share in the economy has been around 17-18 per cent over the years, it has potential to accelerate its contribution to growth and employment. India's demographic advantage with its young labour force also presents a unique opportunity to become a key player in global manufacturing. It is important for us to be part of the global supply chains which are undergoing realignments in the fragmented global economy. Initiatives like the production-linked incentive (PLI) scheme create conducive conditions to enhance the share of manufacturing in our GDP. Sectors such as smart phones, large-scale electronics, pharma, food processing, auto and auto components have recorded

good performance under the PLI scheme. There is also huge potential in emerging areas such as aerospace and defence, low-carbon technologies, electric vehicles and semiconductors. Our efforts towards building robust public digital infrastructure, which is fostering digitisation and ease of doing transactions across the spectrum, will continue to provide strong fillip to technology adoption and productivity.

At present, the services sector contributes the largest share in India's GDP and remains an anchor of overall growth. The Indian services sector is fast adopting new technologies such as artificial intelligence, internet of things, cloud computing and data analytics to improve service delivery, reach, and competitiveness. The newly emerging start-ups are also largely concentrated in the services sector. There is a steady shift from low-skill consumer-oriented services towards more technology-enabled business services. Indeed, there is a case for Indian businesses to recognise this undercurrent and work towards upscaling their activities to meet the external demand in this sector.

In fact, India commands a strong external position, thanks to the strength of our services exports, which have largely remained resilient. They have supported India's current account deficit, even as merchandise exports have been under pressure in the face of weakening global demand. The current account deficit to GDP ratio has remained under 2 per cent for almost 10 years. India's services exports are diversifying from information technology (IT) related services to other professional services such as business development, research and development, professional management, accountancy and legal services.

Overall, India's growth journey with active participation of manufacturing and services sectors and dependence on domestic demand could be self-fulfilling in the years to come.

Some Reflections on Financial Sector Issues

Let me now turn to the financial sector. As the Indian economy strives to grow in an evolving and uncertain global environment, it is imperative that our financial sector remains strong. The Indian banking system continues to be resilient, backed by improved capital ratios, asset quality and robust earnings growth. The financial indicators of non-banking financial companies (NBFCs) are also in line with that of the banking system as per the latest available data. While banks and NBFCs are showing good performance now, sustaining it requires concerted efforts. In good times like these, banks and NBFCs need to reflect and introspect as to where potential risks could possibly originate. Now is the time for them to further strengthen their risk management practices and build additional buffers to face the situation, if the business cycle turns adverse.

On our part, the Reserve Bank of India has significantly strengthened its regulation and the supervision of banks, NBFCs and other regulated entities in recent years. We have also very recently announced a few macro prudential measures in the overall interest of sustainability. These measures are pre-emptive in nature. They are calibrated and targeted. It may be relevant to note that major growth drivers like loans for housing, vehicles and MSME sector have been excluded from these measures. We continue to focus on strengthening governance and assurance functions, ensuring effective risk management and robust lending practices. We are monitoring the supervised entities through various onsite and off-site tools, stress testing, vulnerability assessments, thematic studies, data dump analysis, etc. as part of our proactive and forward-looking supervisory approach. Banks, NBFCs and other financial entities must continue to do stress testing of their books. In fact, there is a strong case for companies in the real sector also to stress test their businesses and balance sheets. Many of them may already be doing so, but it would be desirable that many more also do this.

At the current juncture there may not be any immediate cause for worry, but to remain on top of things, Banks and NBFCs would be well advised to take certain precautionary measures. In this context, I would like to highlight four points.

First, while credit growth is accelerating in the current period, banks and NBFCs may take due care to ensure that credit growth at the overall, sectoral and sub-sectoral levels remain sustainable and all forms of exuberance are avoided. Expansion of the credit portfolio itself and pricing of the same should be in sync with the risks envisaged. Banks and NBFCs also need to further strengthen their asset liability management. They may give greater attention to their liabilities side. In certain cases, we have observed increased reliance on high cost short term bulk deposits while the tenure of the loans, both in retail and corporate loans, is getting elongated.

Second, given the increasing importance of non-bank financial companies (NBFCs) in the financial system,⁷ the increasing interconnectedness between banks and non-banks merits close attention. NBFCs are large net borrowers of funds from the financial system, with their exposure from the banks being the highest. Banks are also one of the key subscribers to the debentures and commercial papers issued by NBFCs. NBFCs also maintain borrowing relationships with multiple banks simultaneously. Needless to state that such concentrated linkages may create a contagion risk. Though the banks are well capitalised, they must constantly evaluate their exposure to NBFCs and the exposure of individual NBFCs to multiple banks. The NBFCs on their part should focus on broad basing their funding sources and reducing over-dependence on bank funding.

Third, microfinance has emerged as an important financial conduit to foster financial inclusion. As

⁷ The widening presence of NBFCs is reflected in their increasing credit to GDP ratio - from 8.6 per cent to 12.3 per cent between 2012-13 and 2021-22.

Micro Finance Institutions (MFIs) are catering to the marginalised clientele, they have to bear in mind the affordability and repayment capacity of the borrowers. Though the interest rates are deregulated, certain NBFCs-MFIs appear to be enjoying relatively higher net interest margins. It is indeed for micro finance lenders to ensure that the flexibility provided to them in setting interest rates is used judiciously. They are expected to ensure that interest rates are transparent and not usurious.

Fourth, the increased collaboration of Banks and NBFCs with FinTechs is facilitating introduction of innovative products and services and new business models. Digital technologies are offering a powerful medium to access banking and financial services. This has also brought down the operational costs and helped in enhancing the reach of financial services providers. An important aspect that merits attention in this context is with regard to model-based lending through analytics. Banks and NBFCs need to be careful in relying solely on pre-set algorithms as assumptions based on which the models are operated. These models should be robust and tested and re-tested periodically. They may require to be calibrated and re-calibrated

from time to time based on the changing contours of the financial ecosystem and fresh information. It is necessary to be watchful of any undue risk build up in the system due to information gaps in these models, which may cause dilution of underwriting standards.

Concluding Observations

We are living in highly uncertain times in an interconnected world. New risks are emerging from time to time. New sources of risk are also coming up. In such a scenario, building up further on resilience would be the best insurance against shocks and uncertainties. This holds good for all businesses and financial entities. As I see many banking and corporate leaders in the audience, let me also stress that new opportunities are knocking at our doors. It is for us to capitalise on them. There has to greater focus on investment in capacity building, skilling of human resources and adoption of newer technology by all players. The international confidence on India's prospects is at a new high; it is an opportune time to make this India's moment and work towards strong, sustainable and inclusive growth.

Thank you, Namaskar!

*Changing Paradigms in the Financial Landscape**

M. Rajeshwar Rao

Distinguished guests, Good evening.

First of all, let me thank the Indian Banking Association (IBA) and FICCI for inviting me over to deliver this address today. It's a pleasure to be here amidst such a gathering of important stakeholders across the spectrum of our financial landscape. In a very short span of time, FIBAC has achieved a prominent status for being a premier brainstorming event on emerging themes of relevance to the financial world.

I am sure that you have had an open and insightful discussions on several important issues over last two days. The theme for FIBAC 2023 - 'winning in the uncertain times' is very apt in the current scenario. Therefore, my remarks today would centre around this theme, i.e., managing the uncertainties that we are living with and those which lurk on the horizon, and later, dwell upon how we could navigate such uncertain times.

Prudent Risk Management

When we think of uncertainty, we immediately think of risk and risk management. The people in the field of finance often have a love-hate relationship with risk. While most entities are willing to assume risks on their balance sheets, sometimes, there are reservations to plan and provide for it, often due to costs involved. While there are obvious incentives for taking risks, an overdose of risk in a leveraged entity like a bank or a finance company can be disastrous if

not managed efficiently. Therefore, the regulators and policy-makers endeavour to make policies to facilitate overall financial stability and occasionally, give out didactic fiats and guidance stressing on importance of systemic resilience.

To give you an analogy, the prudential guidelines are akin to a diet plan given by the physician. If you stick to them, your balance sheets would look healthy. Then as the supervisor, RBI also conducts annual health check-ups in the form of onsite visits to see that what looks healthy from outside, reflects the position accurately with no hidden illness. If indeed there are symptoms of illness, medication in terms of time-bound action plan, to not only treat the symptoms but to address the root cause, is prescribed. In a way, prevention is better than cure is an apt mantra in the financial world too.

Drawing a reference to the five natural elements which human body is composed of, let me outline my version of five elements make the foundation of a robust and resilient financial system. These are - (a) Strong governance and management, (b) Sound regulatory principles, (c) Adequate capital and liquidity, (d) Strong supervisory and risk management practices, and, (e) Effective crisis management and resolution frameworks. I do not think that I need to elaborate on these as these elements will be quite familiar to this audience.

Our micro-prudential risk management framework revolves around two very simple yet powerful measures – provisioning and capital requirement – one for anticipated loss component of the asset portfolio at risk and another for unexpected loss component. The third component, i.e., liquidity has been under lot of discussion in global forums of late. However, it may yet be worth reiterating that, in India, we implemented the Statutory Liquidity Ratio (SLR) way back in 1949, which required the banks to maintain a level of high quality liquid assets, mostly in the form of government securities to essentially address this concern.

* Remarks delivered by Shri M. Rajeshwar Rao, Deputy Governor, Reserve Bank of India – November 23, 2023 - at the FIBAC 2023 conference organised jointly by FICCI and IBA at Mumbai. The inputs provided by Rupesh Kumar Kanaujiya, Saurabh Pratap Singh, Peshimam Khabeer Ahmed and Pradeep Kumar are gratefully acknowledged.

The importance of these measures have been reinforced repeatedly through the frequent international episodes of financial crises. Perhaps the higher quantum and better quality regulatory capital requirements have helped the financial system around the globe to navigate the turbulence in the wake of Covid and other crises that we experienced of late. A resilient financial system is one that can withstand and quickly recover from the episodes of financial shocks and crises. Such a financial system also requires early identification of vulnerabilities and risk build-up within each entity as well as at the system level, and initiation of appropriate corrective actions.

So, it is of utmost importance that banks as well as other financial entities are always vigilant regarding build-up of risk pockets in their balance sheets and operations, adopt prudent risk management practices and are transparent in disclosing risks to the regulator and other stakeholders.

Changing paradigms in banking

The recent crisis episodes in the US and Europe have brought back the question of robust and sustainable business models again to the fore. The business models of the banks have evolved depending on the roles they have played throughout the history, with the current focus being on the intermediation paradigm i.e., acceptance of deposits and credit creation. However, this approach needs to change with newer players entering the financial service space and disrupting the traditional rules of the game. In the newer paradigm, markets are likely to become the central point for intermediation where banks may become but one amongst the host of other entities interacting in the marketplace. The traditional banking business model needs to pivot to address this evolving paradigm.

Another important transition which is underway is the changing consumer preferences. While this

customer driven evolution is often slow, it's mostly definitive and non-reversionary. The future of banking cannot be imagined without visualising the needs of post Generation Z consumers, those that are yet to be tagged by an alphabet. The future generation of customers are likely to consume financial service in the same way that they consume other products and service, and banks may have to be prepared to make that transition.

Therefore, let me imagine the contours around a few aspects of where we would likely see banking in the next decade or so under the marketplace based and consumer preference driven paradigm. Let me emphasise here that what I am going to tell lies in future, more in the realm of the probable, but the undercurrents of this transition are already visible.

(i) **The first point is that the banks will have to transition from a sectoral approach to an ecosystem approach.** The oft-repeated pitch is that all the banks of future will actually be technology companies also undertaking business of banking. While it's difficult to be certain that this will indeed be the case, it is likely that the era of exclusiveness of providing banking services by banks are over. With Banking-as-a-Service (BaaS) model making steady and silent inroads, the banks have to operate as a part of the larger ecosystem with good number and varieties of non-bank players in the mix. A lot of these transformations are already becoming visible. Banks and NBFCs are partnering with FinTechs to deliver financial products and services by deploying innovative methods and technological solutions.

(ii) **Second, the banking of future is going to be hyper-personalised, and banks may have to shift from isolated service provisions to hyper-personalised embedded banking.** In future, probably banking may cease to be a separate service. Instead, banking would be embedded in

all the products and services which consumers are expected to avail. Embedded finance is the integration of financial services or tools within the products or services of a non-financial organisation. So, in future, customer may not have to visit a bank branch to avail a home loan. For example, when you log-in on the builder's app to book a flat, the app could be integrated to the bank's app or to a fintech's platform and when you enter your KYC identifier, the loan eligibility would be automatically calculated using your consent to pull your financial and non-financial information through account aggregator/ Digi Locker and loan would get disbursed. All this would take place within few minutes if not seconds.

Technological solutions would allow banks to offer prices that could continuously adjust to customer behavior and preferences while responding to supply and demand position, margin requirements, and competition. All this hyper-personalisation would become possible as we increase our digital footprints and banks, or their partnering digital companies learn how to get AI/ML based decision outputs from this data.

(iii) Third, the current form of business segmentation may give way to customer preferences-based verticals. The focus of tomorrow's banks has to go beyond just its business to better meet customer's needs. Hence the segmentation will be based on homogenous customer groups and all products would be designed to serve these segments. Hence, the core strength of the successful banks would be customer segment specific. Even now, some banks, often in partnership with fintechs, are trying to target some specific segments such as MSMEs, Women, Senior Citizens, millennials, etc. We already have examples elsewhere, that where the traditional banks have failed to innovate and adapt to the new needs of the

customers, disruptors such as Nu Bank in Brazil have come in and captured the market, filling the vacuum and offering products and services that were demanded by the customers.

(iv) Finally, the traditional break-up of assets and liabilities may likely undergo drastic changes.

Currently, the balance sheet of Indian Banks is dominated by loans on the assets side and deposits in liabilities side. We could expect transformation of composition of bank balance sheets during the forthcoming decade, driven by the natural progression of the Indian economy. This transformation will be further propelled by the widespread integration of technology into business operations and decision-making.

It is possible that customer preferences in future may shift from the passive saving products like a fixed deposit to more esoteric and market linked investment products. Alternate avenues will compete to tap the depositors' money on account of better returns and convenience of a finance super app to meet all financial needs may become the norm. Tokenisation of assets and liabilities using the power of DLT may change the way bank balance sheet is structured. All these changes would mean adjustments to the traditional asset-liability structure of banks.

So given these risks and changing paradigms, let me share a few thoughts so as to how we will have to manage these challenges.

- i. As the bank balance sheet transforms, we, and when I say we, it means both RBI and banks, would have to refocus our priorities from a risk management perspective. From the regulatory side, we may have to relook at the risk management frameworks, especially for liquidity and market risk. From the bank's side, active monitoring of deposit concentration and diversification of funding sources may become even more important.

- ii. As the March 2023 banking crisis in the United States and the events at Credit Suisse showed, despite having capital and liquidity comparable or in some cases, better than the industry level/peer levels, the banks failed. Therefore, to address these concerns, we may have to look at qualitative metrics such as enhanced disclosures, strong code of conduct and clear governance structures. Simultaneously, the self-regulation by the industry through Self-Regulatory Organisation (SROs) needs strengthening to promote responsible conduct and innovation.
- iii. We have to focus on fortifying cyber security and prevention of cyber frauds in the hyper-personalised and tech-banking environment. The banking landscape is fast evolving with increase in financial inclusion, customer access, product choices, and convenience. However, the risks to the consumer have also increased. There are increasing instances of frauds and data breaches. Customer today are facing threat from technology induced frauds such as fraudulent apps, breach of privacy and deep fakes. Even mis-selling has emerged in a digital avatar now – called Dark Patterns. Dark patterns are design interfaces and tactics used to trick users into desired behaviour such as availing high-cost short-term consumer credit masquerading as an instant loan. We must work hard, work smart and work together to protect customer from these threats to retain and strengthen their trust.
- iv. A key element of protecting customers is to provide them an efficient, prompt and cost effective grievance redress mechanism. Unfortunately, it appears that the efforts of the banks to provide timely solutions to customer grievances have not kept pace with

explosion in technology and products. While banks are hugely invested in forging new and innovative ways of customer acquisition, very little thought seems to be going on improving the customer grievance redress mechanisms. To me, this seems very odd for a sector which prides itself on being a service industry. We definitely wish to see more serious thought and intent emerging from the Boards and top executives on quality of grievance redressal instead of just monitoring TAT and MIS on complaints.

- v. A related point which would help banks in winning the customer segmentation paradigm is bringing in greater empathy into their services, products and operations. For example, there is a need for greater effort to provide safe and friendly tech-banking to senior citizens. Banks must require their employees to treat senior citizens, people with special needs, those that are technologically challenged or someone who may need help otherwise with special care and empathy. The Boards must ensure that their access points – branches, websites, and apps are user friendly and convenient for the customers with special needs. From the regulatory side, we are taking up these subjects more vigorously in our interaction with the industry but there is also a need for a cultural and attitudinal change within the fraternity that I would like to emphasise.

Conclusion

To conclude,

Over the course of time, it has been said several times that we need banking, but not banks. This prophecy is yet to become true. I am certain that banks will continue to be the primary drivers of India's growth story, but the trajectory that the banks would

adopt during this transition will determine how the banking landscape will look in the next decade.

As far as regulations are concerned, they have to keep in view of the overall financial system stability, ensure resilience of the institutions, and attempt to bridge the information asymmetry. While we laud the fact that next-gen banking is fast becoming a reality, aided by innovations in the fintech space, we also need to continuously work to redefine the regulations

and the regulatory frameworks to support these innovations and deliver on our mandate of financial stability while protecting the customers. At the same time, the innovations and collaborations need to be well thought out, risks properly analysed, and mitigation plans put in place before offering them to customers.

Thank you once again for this opportunity to share my thoughts with you.

ARTICLES

State of the Economy

Government Finances 2023-24: A Half-Yearly Review

'Low' Stagflation Risk in India

Assessing Oil Price Trajectory: An Evaluation of
Alternate Sources of Information

Government Borrowing and G-Sec Yields –
An Analytical Enquiry

Recent Inflation Dynamics in India:
Role of Supply *vis-à-vis* Demand

Monetary Policy Report as a Communication Tool:
Evidence from Textual Analysis

*State of the Economy**

The pace of global growth may slow further in 2024 while disinflation at varying pace in different geographies may pave the way for interest rate reductions. In India, the broad-based strengthening of economic activity that is under way will likely be sustained by easing input costs and corporate profitability. CPI inflation rose to 5.6 per cent in November as the recurrence of food price spikes punctured a brief respite in September and October, but it is expected to ease to 4.6 per cent in the first three quarters of 2024-25. Domestic financial markets have been lifted by the abiding strength of the real economy.

The month of December heralds the beginning of the end of 2023. It has been a tumultuous year by any standards, replete with wars, political turbulence, price and interest rate surges, extraordinary volatility in financial markets and apocalyptic visions of economies biting the dust. It has also been a year of remarkable resilience, triumphal financial markets and of many economies round the world defying the inexorability of recession and financial distress. Now that 2023 is almost behind us, it is the time when tea leaves are read again and crystal balls are gazed into – what will 2024 be like?

At this stage, there seems to be a loose consensus that the pace of global growth may slow but contraction will be avoided. Disinflation at varying paces in different geographies may pave the way of interest rate reductions and dissipation of monetary policy hawkishness. In some countries, economic activity could even be supported by policy stimulus.

* This article has been prepared by G. V. Nadhanael, Biswajeet Mohanty, Shashi Kant, Kunal Priyadarshi, Rohan Bansal, Ramesh Kumar Gupta, Pankaj Kumar, Harendra Behera, Satyarth Singh, Amit Kumar, Jobin Sebastian, Satyendra Kumar, Harshita Yadav, Rachit Solanki, Shivam, Shelja Bhatia, Shesadri Banerjee, Bhimappa Arjun Talwar, Kartikey Bhargav, Amit Pawar, Avnish Kumar, Ayan Paul, Snigdha Yogindran, Dibyarka Chaule, Khushi Sinha, Sakshi Awasthy, 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.

Geopolitical strife may persist, but the global economy may take it in its stride. Fiscal risks will dominate the outlook, with implications for borrowing costs and the wall of debt that faces both corporates and governments in 2024 and 2025. Markets may be sporadically destabilized by credit, liquidity and equity events, remaining vulnerable to dramatic swings in sentiments. Underlying these possible developments, climate risks may rise and the fragmentation of the global economy and international relations may continue to polarize.

That said, the recent descent of inflation, mainly due to easing of external price pressures, has brought relief and this may continue. In the latest demonstration of this inexorable tendency, crude prices fell despite OPEC+ members agreeing in December 2023 to make additional voluntary production cuts in 2024. Besides reflecting signs of strains within the grouping, the weakening global economy imparted uncertainty and bearishness. Yet, inflation will likely remain elevated relative to targets unless recessions set in and take their toll. Hence many central banks will not declare victory prematurely – this is already evident in their reluctance to commit to time stamping future interest rate cuts, although it is more certain now that they may not raise rates further. More recently, systemic central banks have expressed willingness 'to adjust the stance of monetary policy as appropriate'.¹ It is in this context that they lament the travails of the 'last mile'. They know it involves the vanquishing of home-grown price pressures, including from tight labour markets in advanced economies (AEs), that are feeding into prices of services.

At this time, however, this narrative and its credibility is being front-run by exuberant financial markets that are already pricing in rate cuts in early 2024 and loosening financial conditions. Equity markets are posting relief rallies and futures markets are pricing in a near 100 per cent probability of rate

¹ US Federal Reserve FOMC Statement, December 13, 2023.

cuts as early as May 2024. Rejuvenated risk appetite is being mirrored in corporate debt markets which are experiencing a flood of issuances, a boost to bond valuations and a driving down of borrowing costs and spreads for even the riskiest entities. The fear gauge – VIX – is hovering around its lowest levels since the pandemic, signaling overall investor optimism. In fact, central banks are being pilloried for their conservative USP – their 'navigating by the stars under cloudy skies'² - which could be rendering them slow-footed in realizing that the inflation crisis may be ebbing just as they delayed in seeing inflation rising two years ago. Hence, they are being warned of the costly policy error of keeping borrowing costs higher for longer, thereby undermining economic activity, denting earnings and pulling down stock valuations. The sense is that the European Central Bank (ECB) will lead the rate cutting cycle as stagnation and recessionary forces broaden across the euro area, and the US Fed and the Bank of England will follow. The Bank of Japan has effectively given up its yield control policy but cannot communicate it due to upside inflation fears. It is widely believed that when central banks get going, rate cuts will be speedy.

Over the next two years, the global economy is expected to slow moderately before returning to near-trend rates. Global growth is projected to weaken to its lowest annual rate in 2024 since the global financial crisis other than the first year of the pandemic³. With inflation expected to converge to targets only by 2025, monetary policy may grudgingly give up its disinflationary stance although the effects of past tightening will linger. Wages may recover as inflation eases and the increase in labour costs may be absorbed by a decline in profit shares. Fiscal policy may remain modestly restrictive and government final consumption is expected to remain subdued. Business investment is projected to stagnate before picking

up towards the latter part of 2025 while household saving may remain broadly stable. For most AEs, real gross domestic product (GDP) growth is projected in a 0.7-1.7 per cent range for 2024, and around 4 per cent for emerging economies (OECD Economic Outlook). Global trade may recover gradually, aided by the cyclical improvement in demand.

2023 is likely to end as the hottest year on record – the United Nations Environment Programme estimates that the world is on track for temperature of up to 2.9 degrees Celsius above pre-industrial levels as greenhouse gas emissions keep rising. There is only a 14 per cent chance of limiting warming to the 1.5 degrees Celsius goal even if countries honour all current pledges. A greater recognition is gaining ground that if we have to save our planet and ourselves, climate action has to intensify, and climate pledges must be stepped up. At the 28th Conference of Parties (COP28) in Dubai from November 30 to December 12, therefore, more than US\$ 420 million was secured to seed a loss and damage fund to be hosted by the World Bank to help developing nations deal with climate change. In another successful initiative on the sidelines, 118 countries pledged to triple global renewable energy capacity by 2030 from around 3400 GW today to over 11000 GW. This represents the most accessible and cost-effective solution in addressing climate urgency. It emanated in the New Delhi G20 Summit declaration in September 2023. The countries that signed on in Dubai also agreed to double the global annual rate of energy efficiency. Fifty companies representing over 40 per cent of global oil production committed themselves to zero carbon emissions by 2050. Also, 60 countries committed to reducing global cooling emissions - that account for nearly 7 per cent of global emissions – by 68 per cent by 2050. COP28 also saw 22 countries sign a declaration to triple nuclear energy capacity.

In a latest show of strength and poise, India left sceptics gasping and woefully behind the curve as real

² Jerome. H. Powell, "Inflation: Progress and the Path Ahead." Speech at the Jackson Hole Symposium, August 25, 2023.

³ OECD Annual Economic Outlook, November 2023.

GDP clocked a growth of 7.7 per cent in the first half of 2023-24. The key value of these numbers lies in what they tell about the future. There is a distinct shift in the momentum of the economy from a contraction in the first quarter to not just positive territory but also to well above trend in the second quarter. High frequency indicators suggest that this build-up in momentum will sustain over the rest of the year. A silver lining is that hitherto tepid rural demand is on the mend. The recent release of ₹10,000 crore to meet enhanced expenditure under the rural job guarantee scheme and the provision of free foodgrains to about 81 crore beneficiaries under the *Pradhan Mantri Garib Kalyan Anna Yojana* (PMGKAY) for a period of five years with effect from January 1, 2024 would cushion rural consumption and preserve the stimulus from government final consumption expenditure. A major driver of growth has been the public policy thrust on infrastructure which has propelled gross fixed capital formation into double digit growth. This boost is also likely to be sustained as the quality of public spending improves on an ongoing basis. Merchandise exports recorded a positive momentum and incoming data will indicate if this is a turnaround from a long contraction. Meanwhile, services exports go from strength to strength, especially with global IT spending expected to surge in 2024 after remaining lukewarm in the preceding three years. Indian global capability centres (GCCs) are increasingly emerging as a hub for leaders with global roles. India is currently home to 1580 GCCs employing close to 2 million people, a testimony to talent, growing capital markets and maturity of services competencies. Indian GCCs are evolving into a sandbox for global organisations driving large-scale transformation in skills like artificial intelligence, generative technologies, internet of things, quantum computing and blockchain. Increasingly, they are taking end-to-end product ownership, building niche competencies and challenging untapped frontiers.

On the supply side, agriculture is flattening after seven consecutive years of record foodgrain

production, but prospects remain bright for allied activities such as livestock, forestry and fishing. The biggest upside surprise is stemming from the broad-based strengthening of industrial value added, especially manufacturing. The surge in profitability, aided by easing input costs, is expected to sustain this dynamism. As inflation eases, a revival of topline growth will support the manufacturing expansion. Among services, construction activity remains robust, boosted by housing demand. Other categories of services are normalizing from the post-pandemic revenge spending, but underlying momentum remains resilient.

The main risk to the outlook stems from the evolution of inflation in the months ahead. The recurrence of food price spikes in November has punctured a brief respite in September and October. It is expected that these pressures will linger on into December before the usual winter softening sets in and dispels these adversities. The repetitive nature of food imbalances impinging on prices reinforces our view that for India, it is the food category that is the true 'core' of inflation, with second order effects that delay the policy goal of aligning headline inflation with the target. Consequently, a lasting solution to these sporadic flares is the only panacea. Supply augmenting measures and adjustments have the lead role here, but monetary policy shall have to respond if food inflation as a whole becomes lastingly elevated and sends secondary impulses across other prices. On the other hand, core inflation has been steadily disinflating, attesting to the efficacy of monetary policy actions and stance.

Domestic financial markets have been lifted by the abiding strength of the real economy. The primary segment of the equity markets has been set afire by a blitz of oversubscribed – some of them massively-initial public offerings (IPOs) by more than 40 companies and more than 60 having filed for more. It coincides with an ebullient bullish sentiment, the

ongoing rally in mid-cap and small-cap stocks in the secondary market and the strength of the underlying macro-fundamentals. It has been a broad-based rebound spanning diverse sectors ranging across small finance banks, jewellery, supply chain management, infrastructure, hospitality and biotechnology. The reduction in the timeline for listing shares on the stock exchanges after closure of IPOs from T+6 to T+3 in August 2023 has also given investors the opportunity to participate in more IPOs, obtain faster access to capital and do business better.

Another important indicator of the innate strength of the economy is the stability of the Indian rupee (INR). On a trade-weighted basis, the nominal value of the INR has undergone an appreciation by 1.6 per cent during 2023-24 (April-December 8, 2023). Adjusted for inflation differentials, the INR's appreciation is even higher at 4.5 per cent. Over this period, the US dollar has appreciated by 1.5 per cent against a broad index of currencies. The strength of the INR reflects no less to the active hands-on management by the RBI in allowing the currency to find its level in a market-determined manner but in eschewing volatility in a time of formidable global spillovers and an extremely uncertain international environment.

Corporate bond issuances have rebounded in November, with fund-raising assessed to be the third highest in any month in the current financial year. Issuances in December are widely expected to surpass these levels in a clear reflection of positive market sentiment and the sense of stability that has followed in the wake of expectations that interest rates have peaked and are slated to ease.

Set against this backdrop, the remainder of the article is structured into four sections. Section II covers the rapidly evolving developments in the global economy. An assessment of domestic macroeconomic conditions is set out in Section III. Section IV encapsulates financial conditions in India, while the last Section sets out concluding remarks.

II. Global Setting

For most of 2023, global growth was weighed by a host of factors, including ongoing geo-political tensions, adverse weather conditions and tight financial conditions, although incoming data point toward the global economy avoiding a hard landing. In Q3:2023, growth accelerated in the US, buoyed by households' spending; and in China, it was propelled by a slew of policy stimuli, whereas GDP contracted in the Euro area and Japan, and stagnated in the UK. The Organization for Economic Cooperation and Development (OECD) in its Economic Outlook of November 2023 projected the global economy to grow by 2.9 per cent in 2023 and by 2.7 per cent in 2024 as much of the headwinds for global growth are expected to continue in the next year as well (Table II.1).

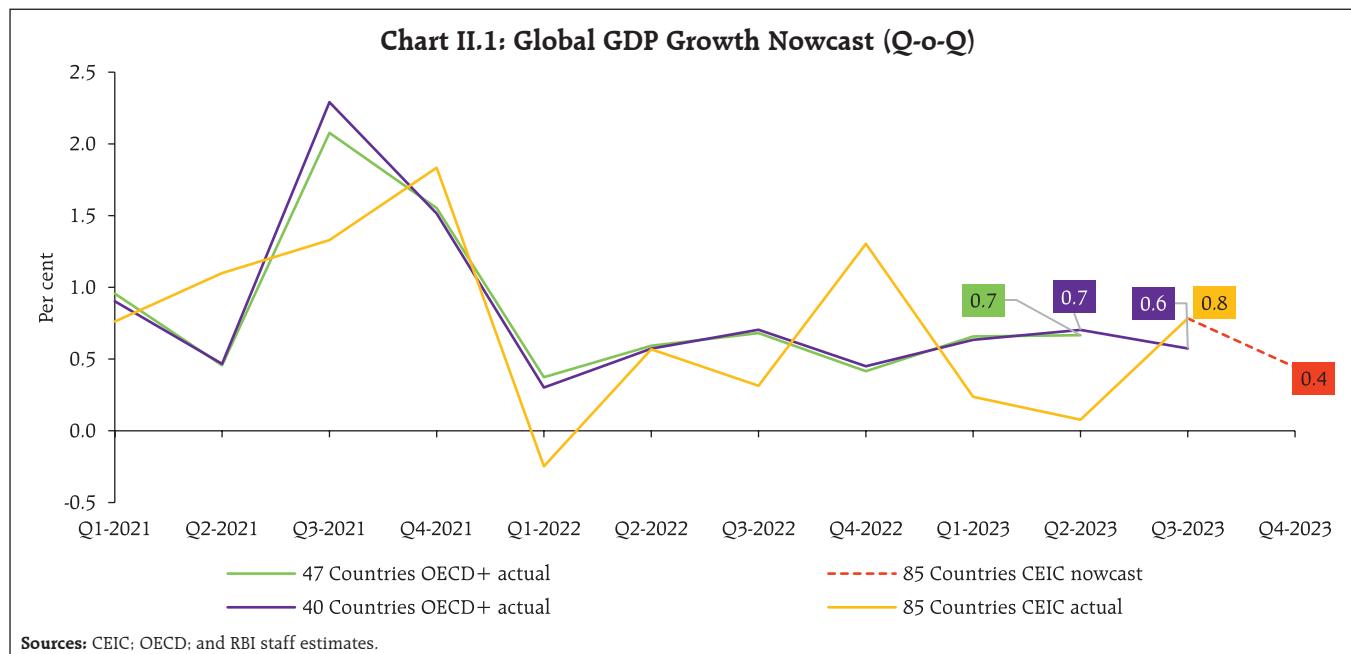
Our nowcast for global GDP using the latest high-frequency data points to global growth momentum losing steam in Q4:2023 (Chart II.1)

Table II.1: GDP Growth Projections

(Per cent)

Month of Projection →	2023		2024	
	Region/Country ↓	November 2023	September 2023	November 2023
 World	2.9	3.0	2.7	2.7
AEs				
 US	2.4	2.2	1.5	1.3
 UK	0.5	0.3	0.7	0.8
 Euro area	0.6	0.6	0.9	1.1
 Japan	1.7	1.8	1.0	1.0
Emerging Market Economies (EMEs)				
 Brazil	3.0	3.2	1.8	1.7
 India	6.3	6.3	6.1	6.0
 China	5.2	5.1	4.7	4.6
 South Africa	0.7	0.6	1.0	1.1

Source: OECD.



Looking ahead, the global growth divergence is expected to continue in 2024 and 2025 as well, but with India remaining the fastest growing major economy (Chart II.2).

The global supply chain pressures index (GSCPI) rose to 0.11 in November 2023, marking its first above historical average reading since January 2023 (Chart

II.3a). This was largely engendered by an increase in geopolitical risk, with the global geo-political risk indicator rising to a fifteen-month high in November (Chart II.3b).

Consumer sentiments remained pessimistic across countries, although some sequential improvement was witnessed in the UK (Chart II.4a). Financial

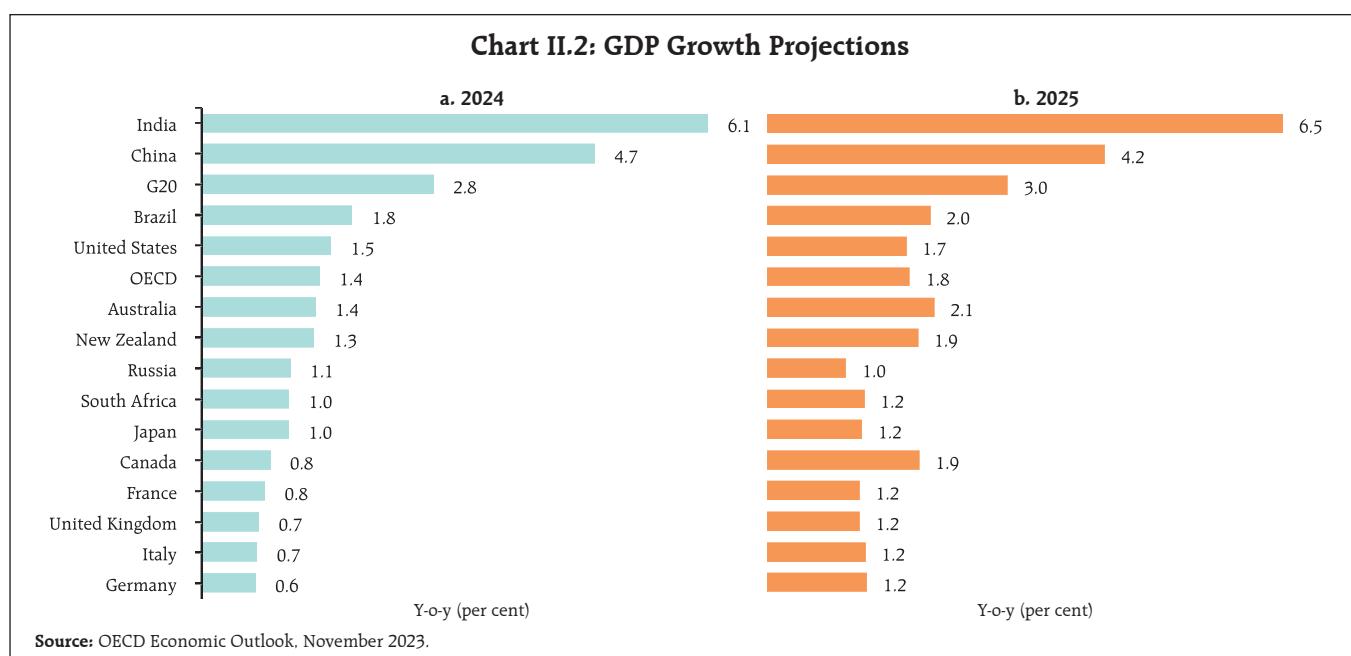
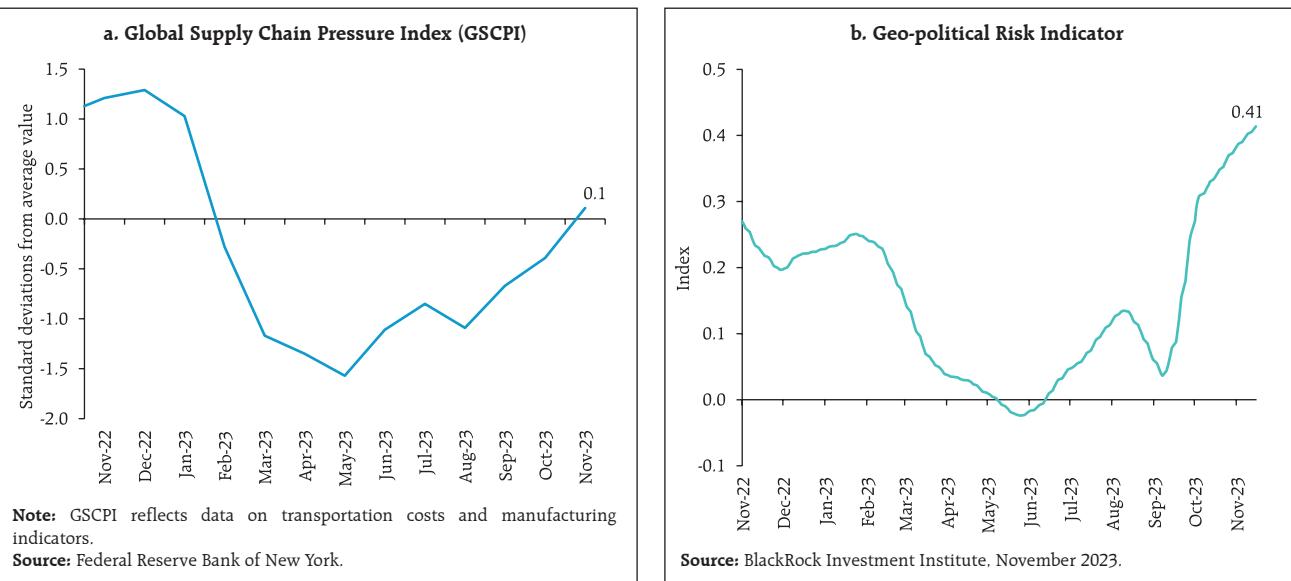


Chart II.3: Trends in Supply Chain Pressures and Geo-political Risks

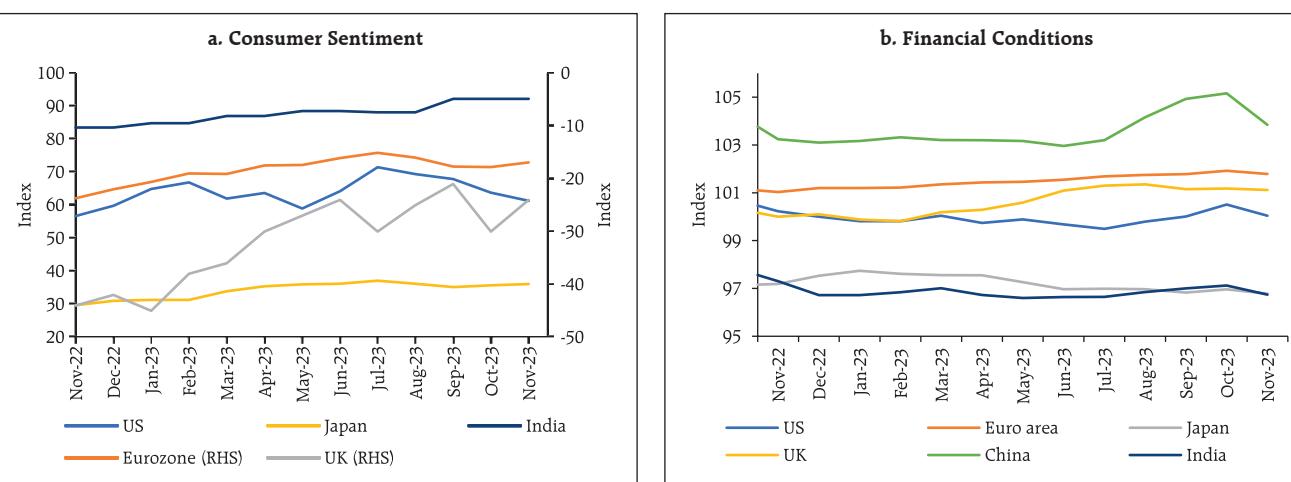


conditions, on the other hand, recorded some easing as the expectations of an earlier than expected end of policy tightening cycle gained traction (Chart II.4b).

The global composite purchasing managers' index (PMI) returned to the expansionary zone at 50.4 in November as stabilisation of new orders supported an uptick in output (Chart II.5). The global manufacturing PMI rose to a six-month high of 49.3

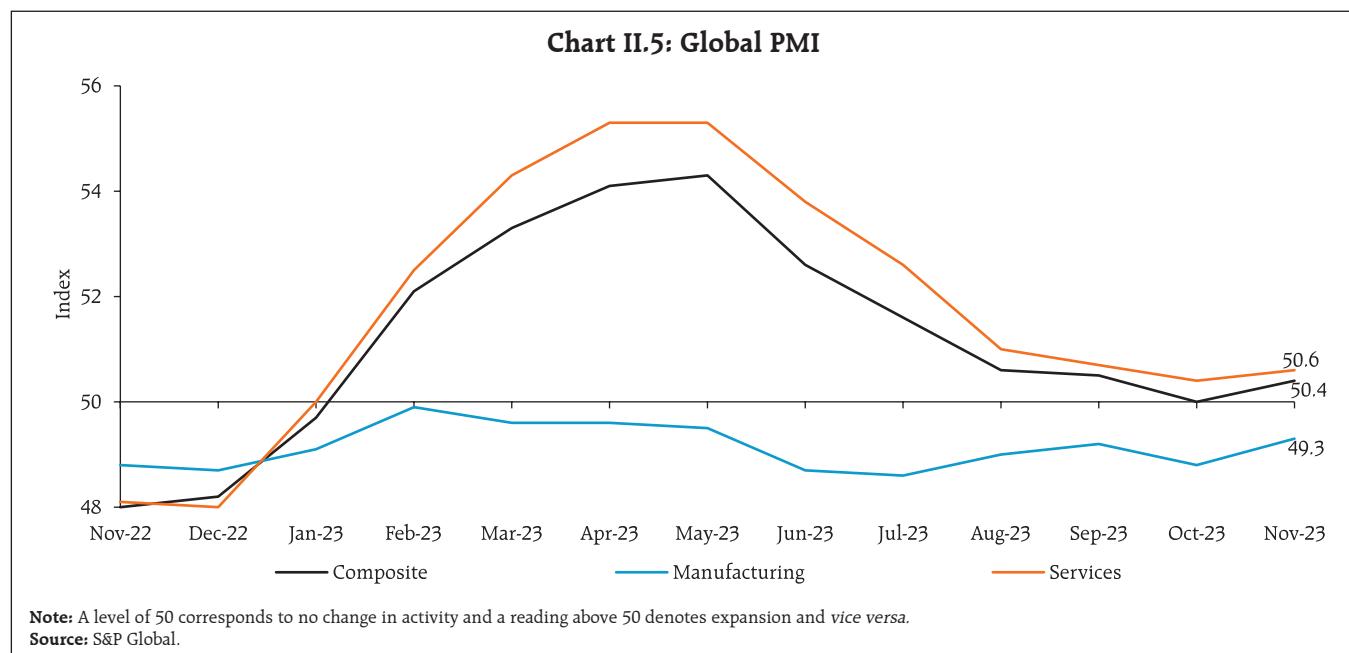
in November 2023, although declines in production, new orders and slowdown in export business kept it in the contractionary zone. The services PMI remained in expansion, buoyed by a sequential improvement in new businesses. At a sectoral level, output increases were recorded in the services sector, notably in software and related services, pharmaceuticals and biotechnology, and insurance.

Chart II.4: Sentiment and Financial Conditions



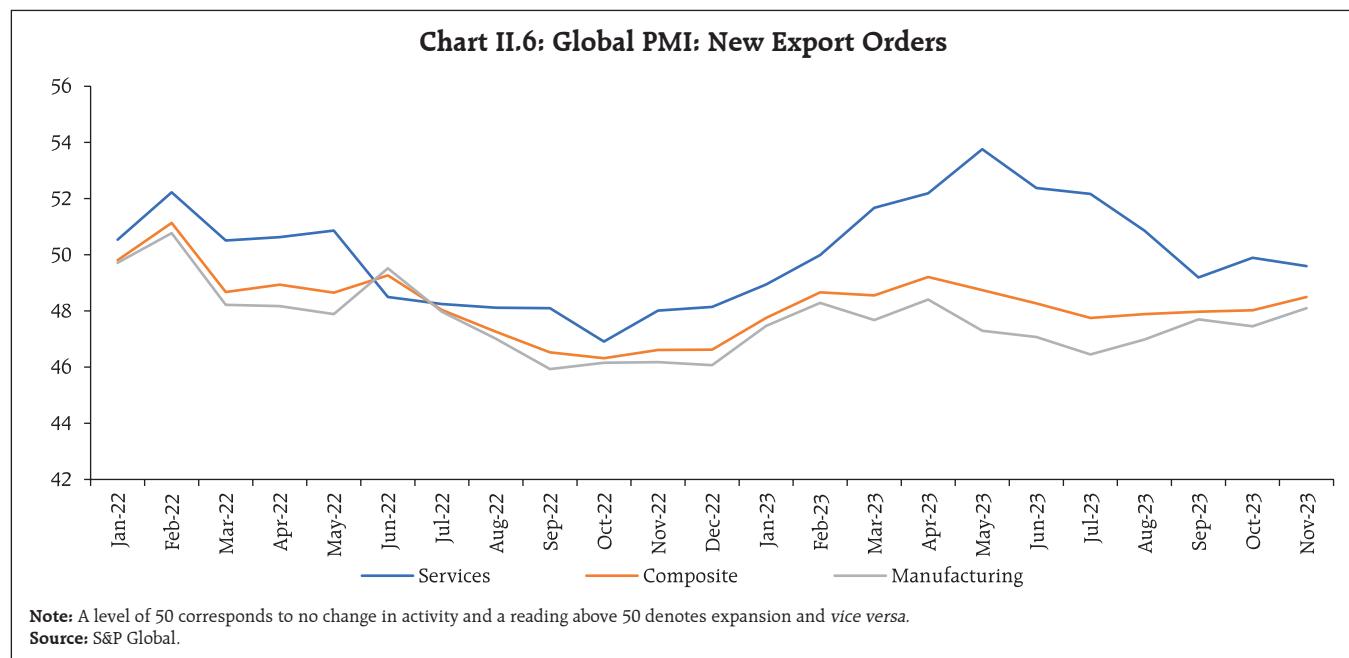
Notes: 1. Japan: A score above 50 indicates consumer optimism, below 50 shows lack of consumer confidence and 50 indicates neutrality.
 2. Eurozone and UK: (-)100 indicates extreme lack of confidence, 0 neutrality and 100 extreme confidence.
 3. India and US: Higher the value, higher is the consumer confidence.

Source: Bloomberg.



Global trade continues to face significant headwinds and PMIs for new export orders remained in the contractionary zone in November. Export orders for manufacturing recorded a sequential improvement, while they moderated for services (Chart II.6).

In November, global commodity prices eased, primarily driven by energy prices, with the Bloomberg Commodity Price Index falling by 1.6 per cent (m-o-m) with the downward trend persisting into December so far [Chart II.7a]. Crude oil prices⁴ softened from US\$ 91.1 per barrel in October to US\$ 83.2 per



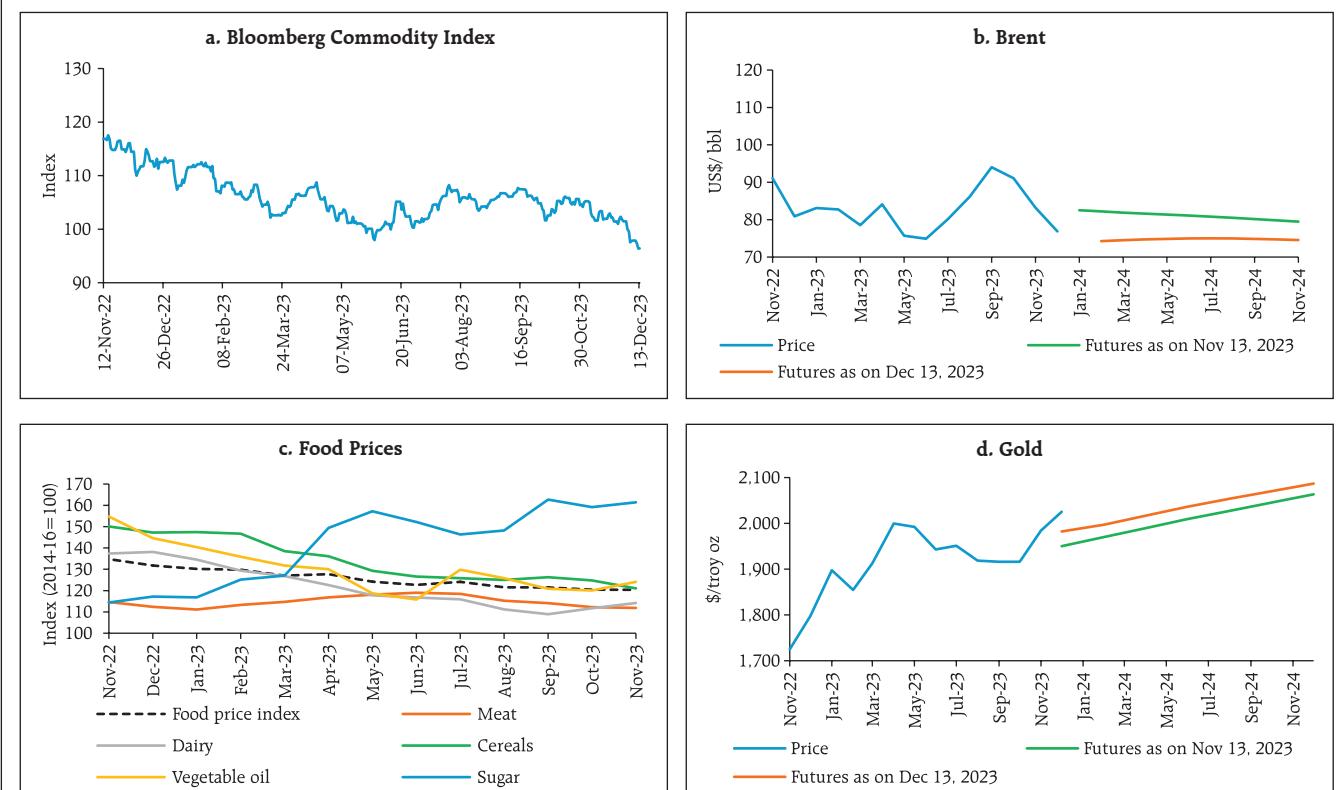
⁴ On December 6, 2023, oil prices fell to their lowest level since June as momentum and declining market volumes worsened the recent slump. US natural gas futures are trading at the lowest levels in almost three months as warmer-than-usual weather and rising reserves increase concerns about oversupply heading into the Northern Hemisphere winter.

barrel in November due to easing supply concerns, a build-up in US and Brazil crude inventories and concerns over slowing global demand. Oil prices continued to decline in December so far, despite OPEC+ members' additional voluntary supply cut commitments, as discussed in the introduction (Chart II.7b). Prices of most base metals, however, increased amidst continuing positive sentiment around stimulus measures in China. The Food and Agriculture Organization's (FAO's) food price index remained unchanged in November as increases in the price indices for vegetable oils, dairy products and sugar were offset by declines in those for meat and cereals (Chart II.7c). Gold prices edged up further in November and December as the US dollar weakened

and lower treasury yields reduced the opportunity cost of holding non-interest-bearing bullion (Chart II.7d).

Headline inflation has been on a downward trajectory, even though it is still above the target in most AEs.⁵ In the US, the headline personal consumption expenditure (PCE) inflation moderated to 3.0 per cent (y-o-y) in October after remaining steady for the past three consecutive months at 3.4 per cent. CPI inflation in the US also declined to 3.1 per cent in November from 3.2 per cent in October. As per the flash estimates, euro area inflation fell to 2.4 per cent in November from 2.9 per cent in October, reaching its lowest level since July 2021 (Chart II.8a). In the UK, CPI inflation edged down

Chart II.7: Commodity and Food Prices



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

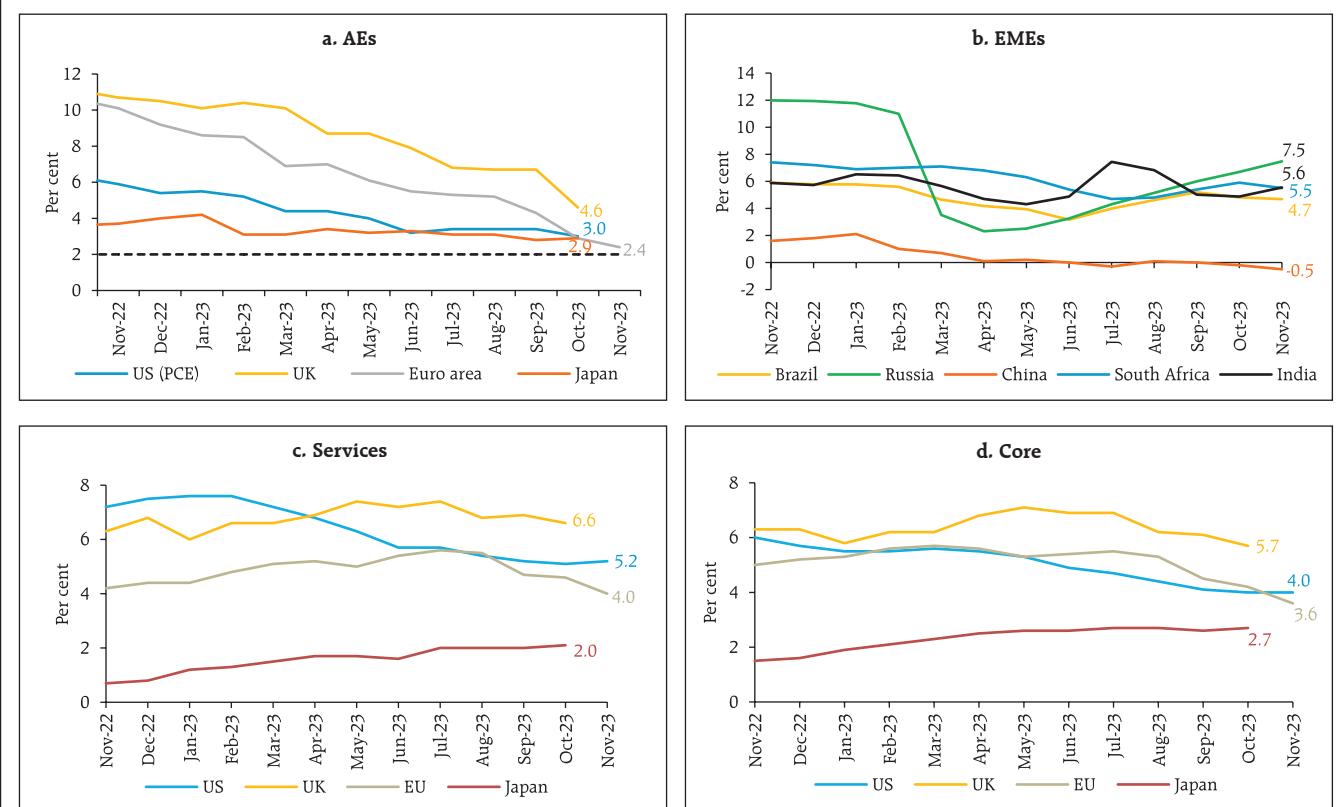
⁵ As per the latest Economic Outlook of the OECD, annual OECD headline inflation is expected to fall gradually to 5.2 per cent and 3.8 per cent in 2024 and 2025 respectively, from 7.0 per cent in 2023.

to 4.6 per cent in October, reaching its lowest level since October 2021, while Japan's inflation (CPI excluding fresh food) picked up marginally to 2.9 per cent in October. Among EMEs, inflation moderated in South Africa and Brazil in November. Inflation in Russia accelerated for the seventh month in a row, reaching 7.5 per cent in November. China recorded deflation of 0.5 per cent in November (Chart II.8b). Core inflation has also moderated in AEs, *albeit* at a much slower pace than the headline (Chart II.8c and II.8d).

Global equity markets registered gains in November, tracking the fall in US Treasury yields from their October 2023 highs after the announcement of a slower pace of debt issuance in the US. Equity markets have remained buoyant in December so far

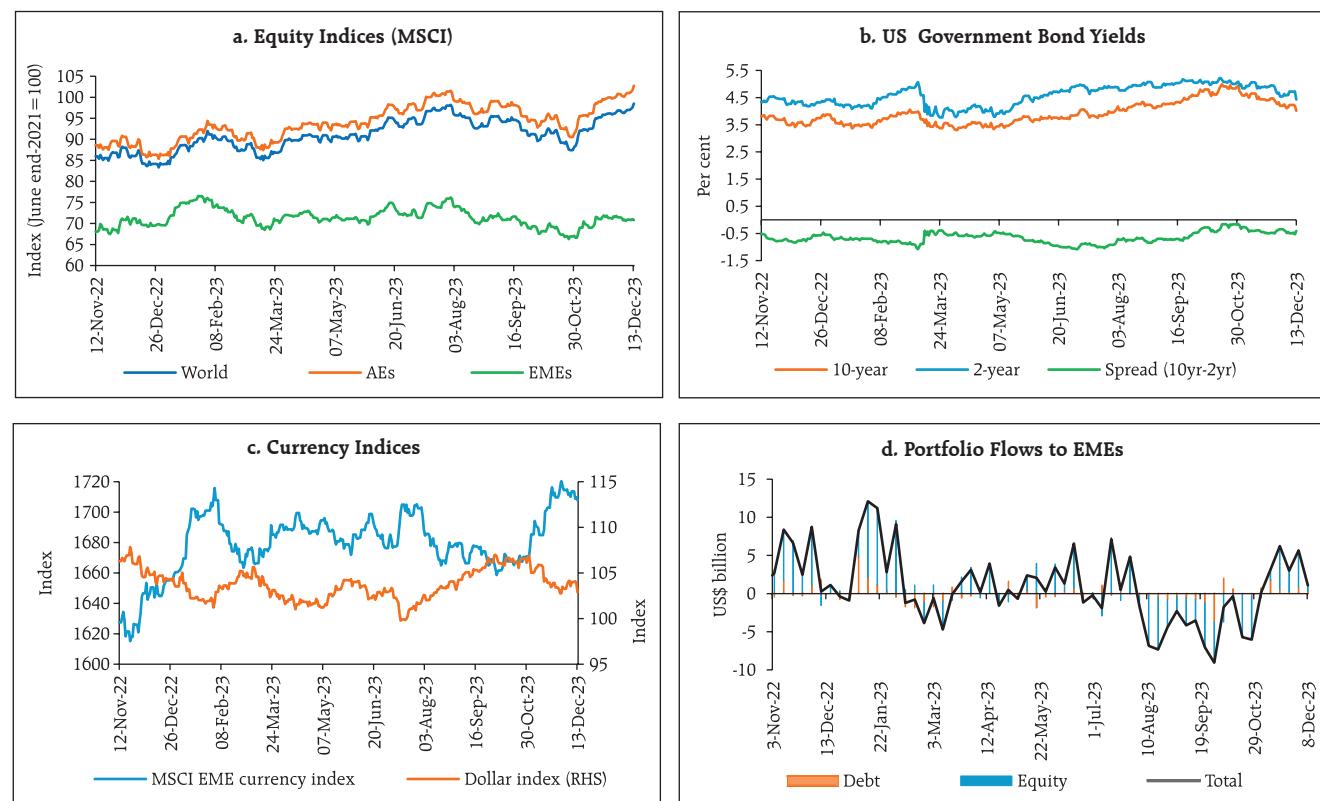
and recorded robust momentum after the US Federal Reserve (Fed) signalled end of its rate hiking cycle and possible rate cuts next year. Treasury yields experienced fluctuations, initially rising after stronger-than-anticipated US jobs data but subsequently declined with the 10-year US treasury yields breaking below 4 per cent for the first time since August, post the Fed announcement (Chart II.9a and II.9b). These developments were also reflected in the currency markets. The dollar index depreciated by 1.7 per cent (m-o-m) in November and continued to decline in December. Concomitantly, the Morgan Stanley Capital International (MSCI) currency index for EMEs gained by 1.9 per cent in November as capital inflows, mostly in the equity segment, remained buoyant (Chart II.9c and II.9d).

Chart II.8: Inflation - AEs and EMEs



Sources: Bloomberg; and OECD.

Chart II.9: Global Financial Markets

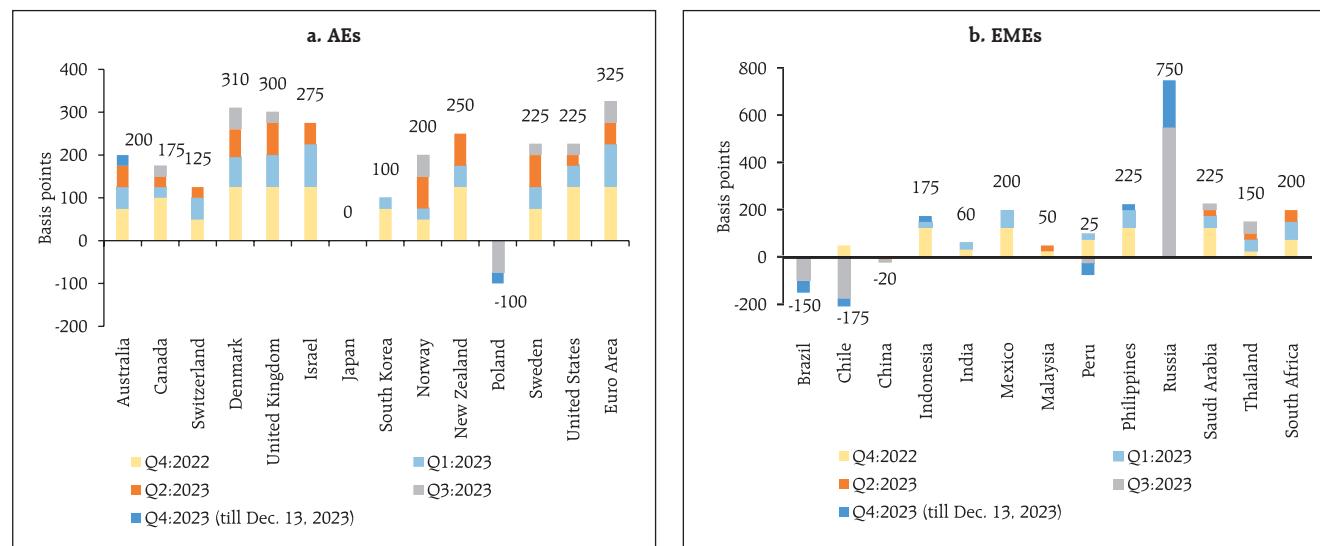


Sources: Bloomberg; and IIF.

AE central banks, in general, kept their policy rates unchanged while EMEs resorted to divergent

policy paths. In their December policy meetings, the US Fed, European Central Bank (ECB), the Bank

Chart II.10: Changes in Policy Rates



Sources: Bloomberg.

of England kept their key rates unchanged while the Norges Bank hiked its policy rate by 25 bps (Chart II.10a). Among EMEs, Brazil reduced its benchmark rate by 50 bps each in its November and December meeting (Chart II.10b). The People's Bank of China (PBoC) injected net liquidity of 600 billion yuan (\$82.9 billion) into the financial system through its one-year medium-term lending facility (MLF) at an unchanged interest rate of 2.5 per cent. Turkey, in contrast, hiked its policy rates by 500 bps in November while Russia raised its policy rate by 100 bps in December.

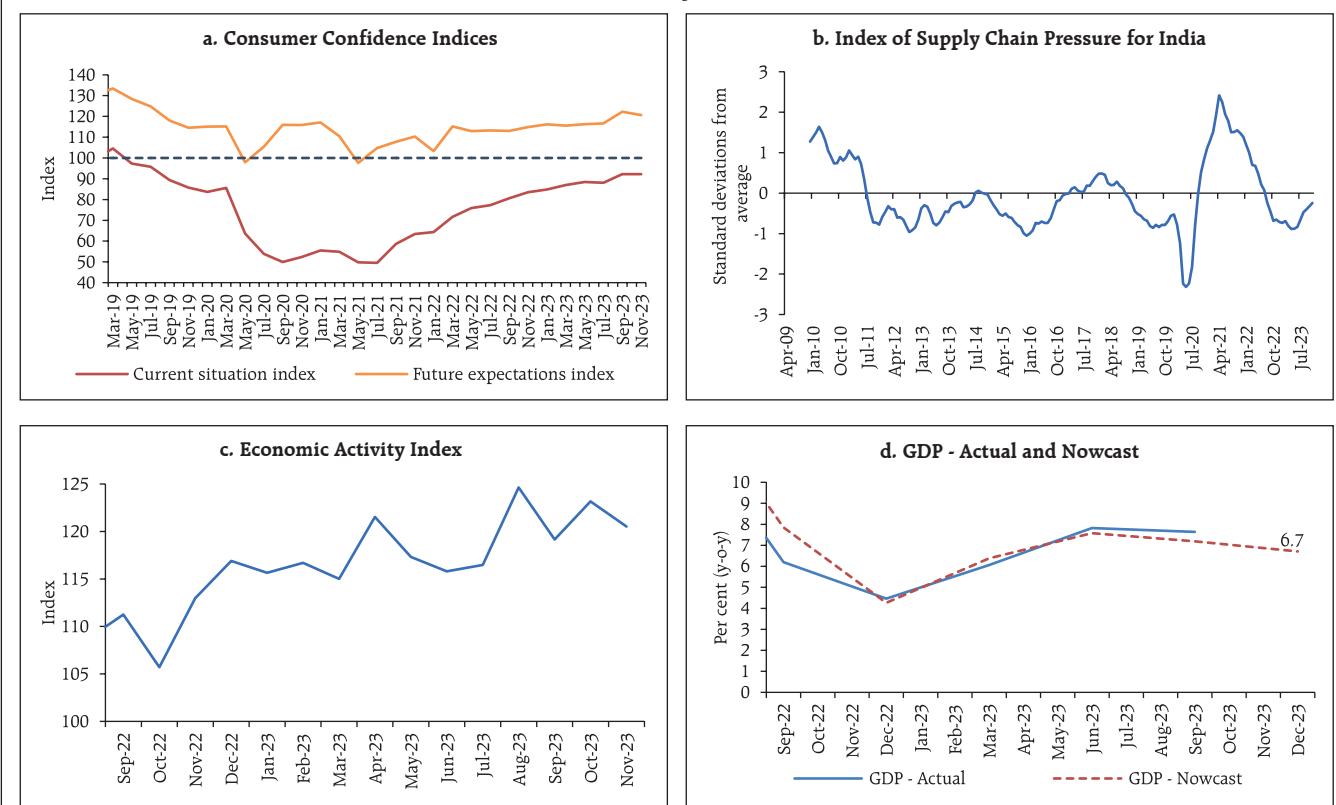
III. Domestic Developments

Despite significant global headwinds, the Indian economy remained the fastest growing major economy in 2023. The outlook is one of cautious

optimism as consumer confidence remains positive and perceptions about current income turned up in the RBI's latest survey of households in November 2023 (Chart III.1a). Supply chain pressures in India remain below historical average levels, although they have edged up in recent months (Chart III.1b). Our economic activity index (EAI) nowcasts GDP growth for Q3:2023-24 at 6.7 per cent (Chart III.1c and III.1d).

Looking ahead, projections from our Dynamic Stochastic General Equilibrium (DSGE) model for the Indian economy, which captures the dynamic interactions between various agents in the economy as well as their response to shocks, show that the growth is likely to be sustained in H2:2023-24 and 2024-25 despite some moderation (Box 1).

Chart III.1: 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. The EAI is scaled to 100 in February 2020 and 0 in April 2020, the worst affected month due to mobility restrictions.
Sources: Consumer Confidence Survey, RBI; National Statistical Office (NSO); and RBI staff estimates.

Box 1: Medium-term Outlook for GDP Growth and Headline CPI Inflation

As part of the suite of models for informing monetary policy formulation, the RBI has developed a dynamic stochastic general equilibrium (DSGE) model that is based on microeconomic foundations and rational expectations characterising the choices of agents such as the representative consumer, producer and the central bank. In order to understand their collective interplay in economic fluctuations and the role of policy interventions, the model involves shocks, *i.e.*, surprises in the form of mismatches between expectations and outcomes, and subsequent demand-supply adjustments.⁶

The model's estimation includes the following variables: GDP growth (*y-o-y*), CPI inflation seasonally adjusted annual rate (saar), the policy repo rate, global GDP growth (*y-o-y*), global CPI inflation (*y-o-y*), the nominal INR/USD exchange rate (annualised *q-o-q*), and the US Fed funds rate. Under the assumptions of (i) global GDP growth of 2.6 per cent and 2.1 per cent for 2023-24 and 2024-25, respectively; (ii) global CPI inflation of 5.5 per cent and 4.0 per cent for 2023-24 and 2024-25, respectively; (iii) unchanged policy repo rate and US Fed funds rate at 6.5 per cent and 5.5 per cent for the current and next financial year, respectively, the baseline forecast suggests that after a phase of high growth in the first half of 2023-24, the Indian economy is likely to undergo some

moderation in subsequent quarters. Growth for 2023-24 is projected at 7.1 per cent, followed by a relatively slower and uneven expansion of 6.0 per cent during 2024-25. The trajectory of CPI inflation indicates a moderation after Q3:2023-24, with annual CPI inflation averaging 5.3 per cent in 2023-24 and moderating further to reach 4.8 per cent in 2024-25 (Table 1 and Chart 1).

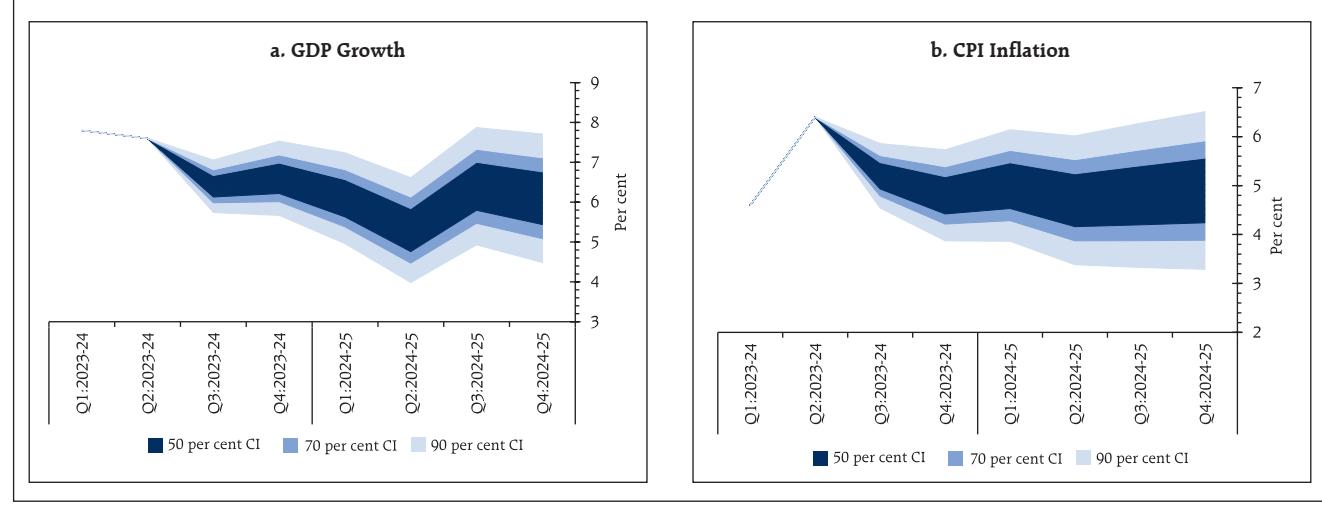
There are both favourable demand side drivers and easing of supply side constraints at work. GDP is expected to sustain momentum alongside moderation in inflation, despite global headwinds. Upside idiosyncratic risks to the inflation forecast cannot, however, be ruled out.

Table 1: Baseline Projections (in *y-o-y* %)

Periods	GDP Growth	CPI Inflation
Q1:2023-24	7.8	4.6
Q2:2023-24	7.6	6.4
Q3:2023-24	6.4	5.2
Q4:2023-24	6.6	4.8
FY 2023-24	7.1	5.3
Q1:2024-25	6.1	5.0
Q2:2024-25	5.3	4.7
Q3:2024-25	6.4	4.8
Q4:2024-25	6.1	4.9
FY 2024-25	6.0	4.8

Note: Red fonts indicate projected numbers.

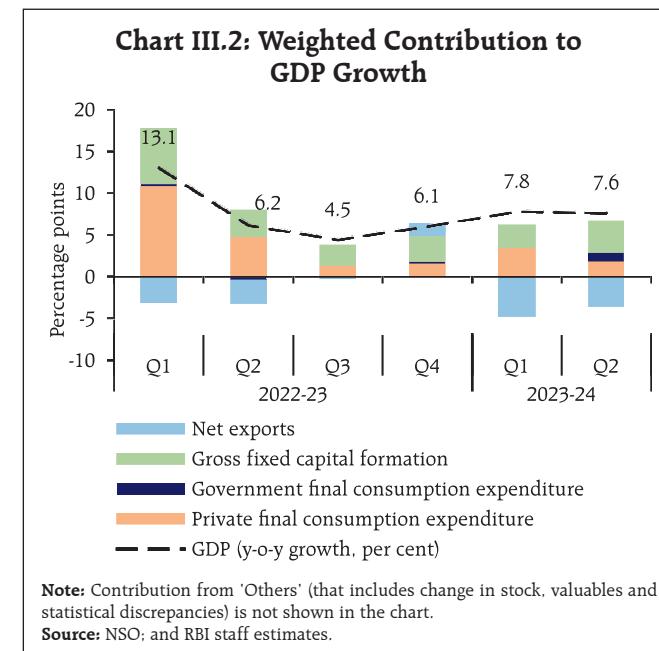
Chart 1: Fan Charts of GDP Growth and CPI Inflation



⁶ Banerjee, S., Behera, H., & Patra, M. D. (2023). A Prototype Dynamic Stochastic General Equilibrium Model for India. *RBI Bulletin*, July.

Aggregate Demand

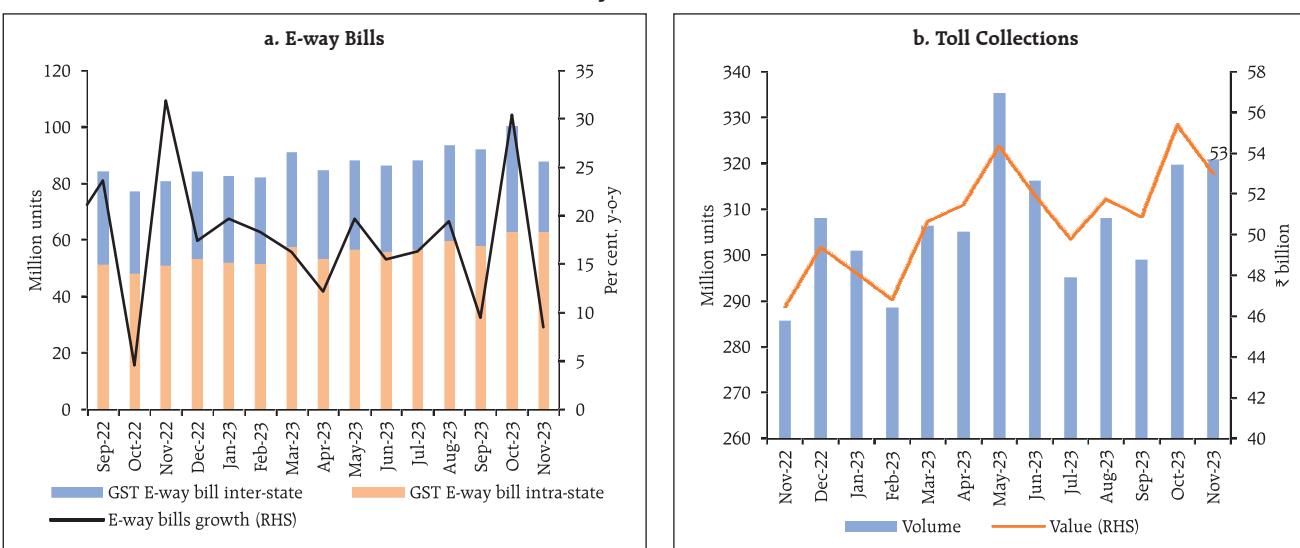
Real GDP registered a growth of 7.6 per cent in Q2:2023-24, up from 6.2 per cent in Q2:2022-23 (7.8 per cent in Q1:2023-24) and exceeding market expectations. The robust expansion of activity in Q2:2023-24 was primarily led by domestic drivers – government consumption and fixed investment (Chart III.2). Among the components of real GDP, private final consumption expenditure (PFCE) recorded a moderate growth of 3.1 per cent in Q2, primarily due to tepid rural demand conditions following lower *kharif* production. The growth in government final consumption expenditure, however, surged to 12.4 per cent, primarily led by the Union government's spending while that of the State governments remained steady. Buoyed by the government's thrust on infrastructure, gross fixed capital formation (GFCF) recorded a double-digit growth of 11.0 per cent. Consequently, the share of GFCF in real GDP surged to 35.3 per cent. This was also reflected in a sharp acceleration in its proximate coincident indicators – steel consumption; cement production; and production and imports of capital goods. With import growth exceeding that of exports,



net exports contributed negatively to GDP growth in Q2:2023-24.

Evidence from high frequency indicators point towards sustained strength in demand conditions. E-way bills posted a growth of 8.5 per cent in November 2023, albeit moderating sequentially from an all-time high recorded in October due to overstocking induced by the festival demand (Chart III.3a). Toll collection

Chart III.3: E-way Bills and Toll Collections



receipts expanded by 14.1 per cent (y-o-y) in November (Chart III.3b).

Automobile sales registered an expansion of 26.5 per cent (y-o-y) in November on the back of festival demand (Chart III.4a and III.4b). Both two and three-wheeler sales recorded y-o-y growth of 30 per cent in November. Tractor sales expanded by 6.4 per cent in November after contracting for the past two months. Vehicle registrations also recorded strong y-o-y growth in November (Chart III.4c). The consumption of petroleum grew by 9.4 per cent y-o-y in November (Chart III.4d).

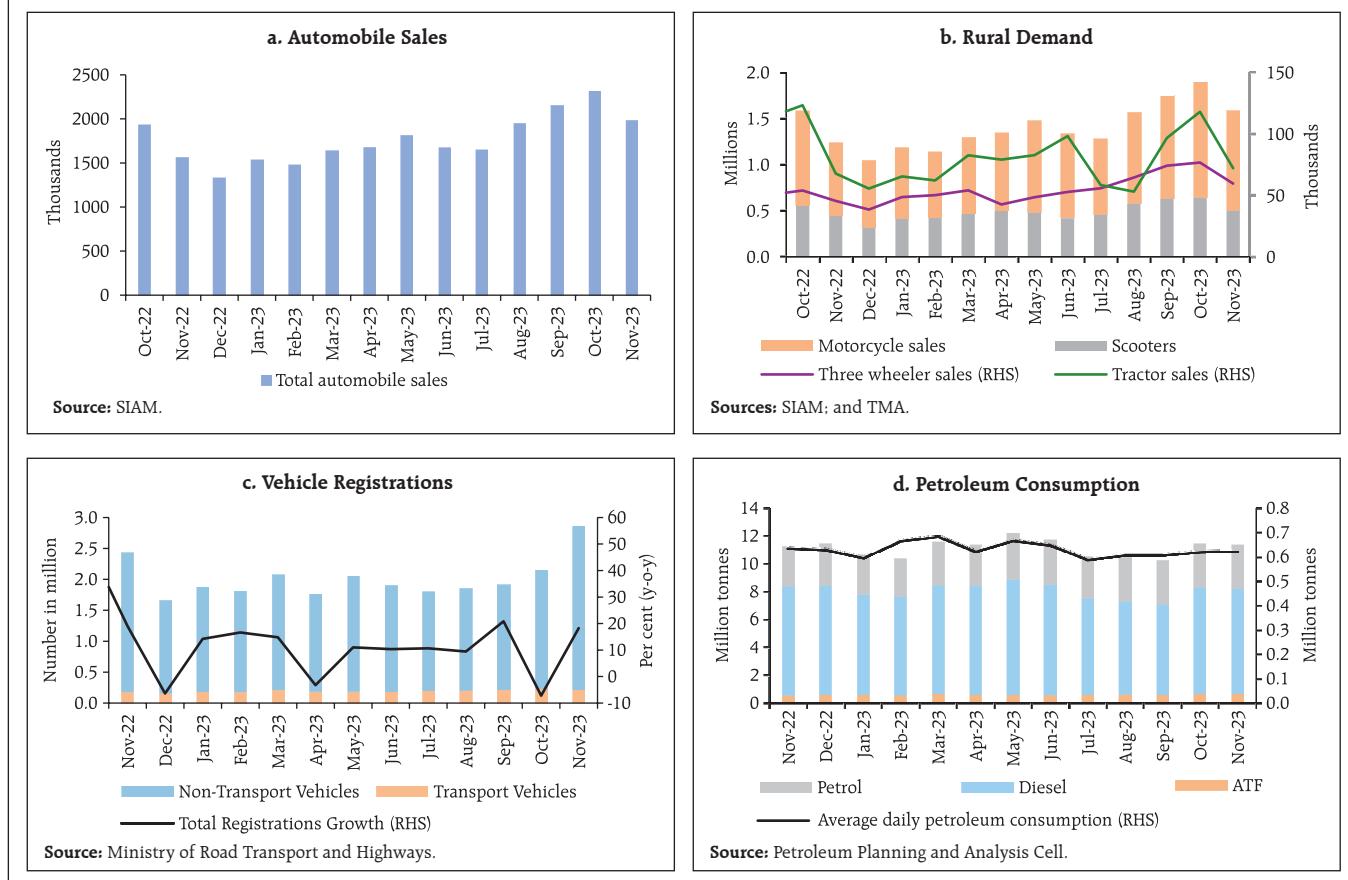
As per the data available from the Centre for Monitoring of Indian Economy (CMIE), the all-India unemployment rate (UR) fell to 9.2 per cent in November, driven by lower UR in rural areas even as urban UR recorded an increase (Chart III.5a). The labour

force participation rate (LFPR) recorded a fall in both urban and rural areas (Chart III.5b). The employment rate (ER) increased in rural areas whereas it decreased in urban areas.

Results from the recently released Periodic Labour Force Survey (PLFS) conducted by National Sample Survey Office (NSSO) point towards increasing trend in Labour Force Participation Rate (LFPR) and Worker Population Ratio (WPR) as well as a general decrease in Unemployment Rate (UR) (Box 2).

The employment outlook in the organised sector, as polled by the PMIs for manufacturing and services, remained in the expansionary zone (Chart III.6). For manufacturing, it recorded a sequential pick-up in November whereas for services it recorded a m-o-m moderation.

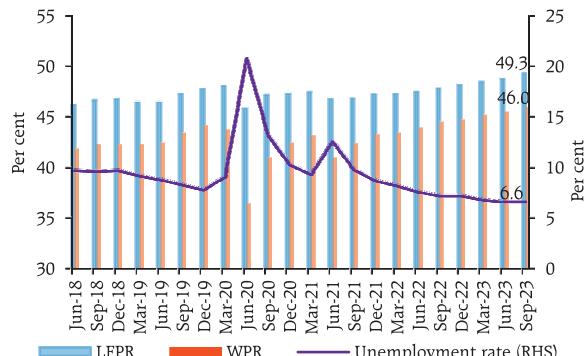
Chart III.4: Automobile Sector Indicators



Box 2: Emerging Labour Market Trends- Evidence from PLFS Surveys

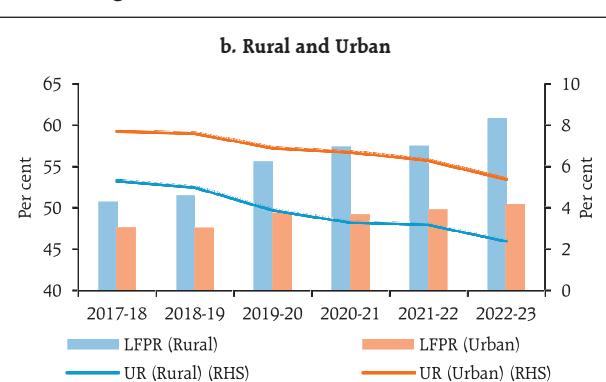
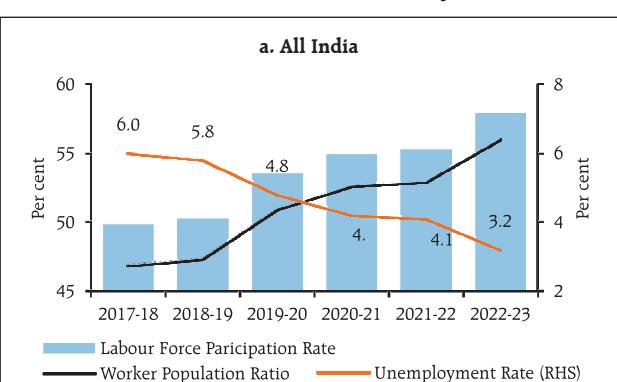
As brought out in the September 2022 issue of the State of the Economy, the National Sample Survey Office (NSSO) launched the Periodic Labour Force Survey (PLFS) in April 2017 which provides data on key labour market indicators on an annual frequency at the all-India level and on a quarterly basis for urban areas.⁷ In its latest release (for July-September 2023) the labour force participation rate (LFPR) for persons aged 15 years and above in urban areas at 49.3 per cent was the highest since the inception of the survey (Chart 1), largely driven by women. The Worker Population Ratio (WPR), which indicates the proportion of the population engaged in gainful employment, increased to 46.0 per cent in July-September 2023 from

Chart 1: Quarterly PLFS: Urban (age 15 and above)



Source: PLFS.

Chart 2: Key Labour Market Indicators (age 15 and above)



Source: PLFS.

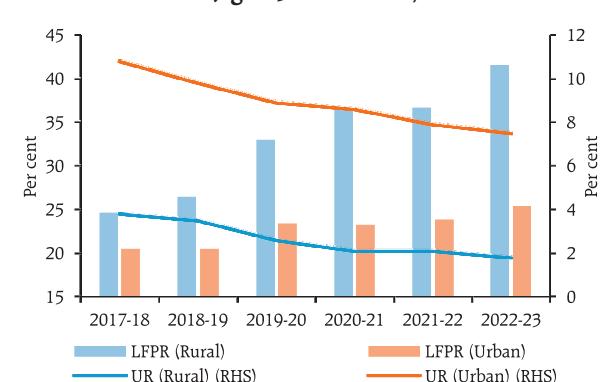
45.5 a quarter ago, both male and female WPR showing an improvement. The unemployment rate (UR) among females declined from 9.1 per cent in April-June 2023 to 8.6 per cent in July-September 2023.

Annual data covering both urban and rural areas indicate LFPR and WPR at 57.9 per cent and 56.0 per cent respectively in 2022-23. The all-India unemployment rate (UR) fell to a series low of 3.2 per cent, with both rural and urban unemployment on a decline (Chart 2a & 2b).

The LFPR was driven up by an increase in female participation, especially in rural areas (Chart 3).

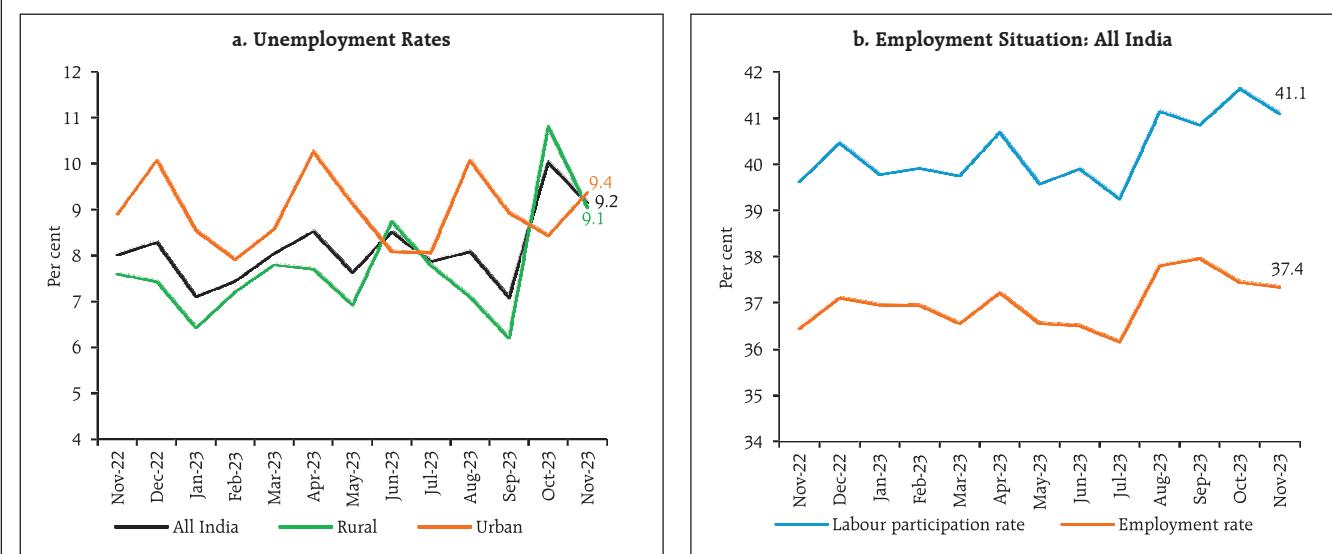
The labour market points towards an improvement in the pace of economic activity.

Chart 3: Female LFPR and Unemployment rate (age 15 and above)



Source: PLFS.

⁷ Please see 'Annex: Labour Market Data: Diverging Trends?,' State of the Economy, RBI Bulletin, September 2022, for a detailed discussion on the methodology and comparison with alternate data sources.

Chart III.5: Labour Market Conditions

Source: CMIE.

With the advancement in the North-east monsoon and *rabi* sowing, the number of households demanding work under the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) registered its first y-o-y decline since March 2023 (Chart III.7).

India's merchandise exports at US\$ 33.9 billion in November 2023 registered a contraction of 2.8

per cent (y-o-y), but this essentially reflected an unfavourable base effect (Chart III.8). In terms of m-o-m momentum, however, it grew by 1.0 per cent. Out of 30 major commodities, 15 commodities, including petroleum products, organic and inorganic chemicals, engineering goods and rice registered contraction on a y-o-y basis. On the other hand, iron ore, gems and jewellery, drugs and pharmaceuticals,

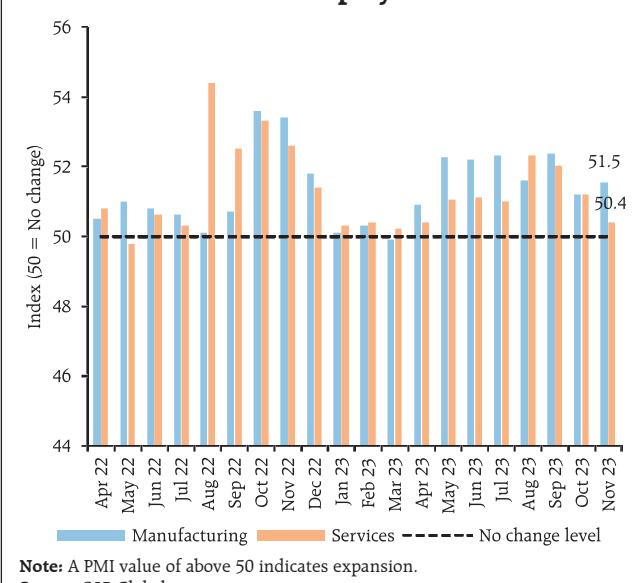
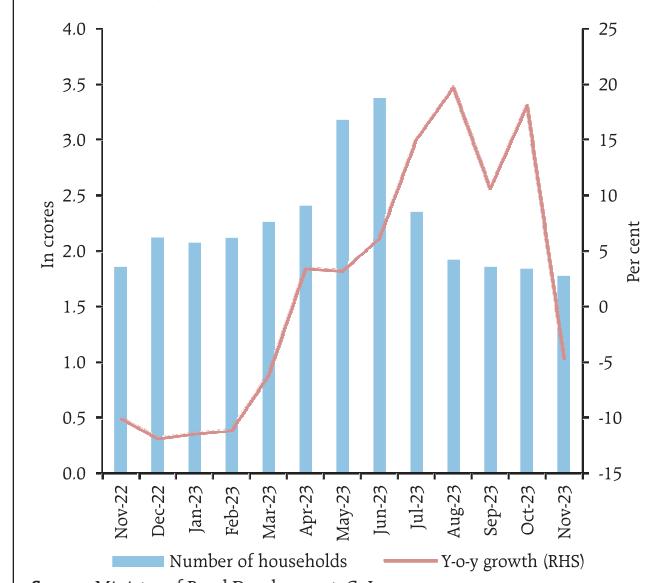
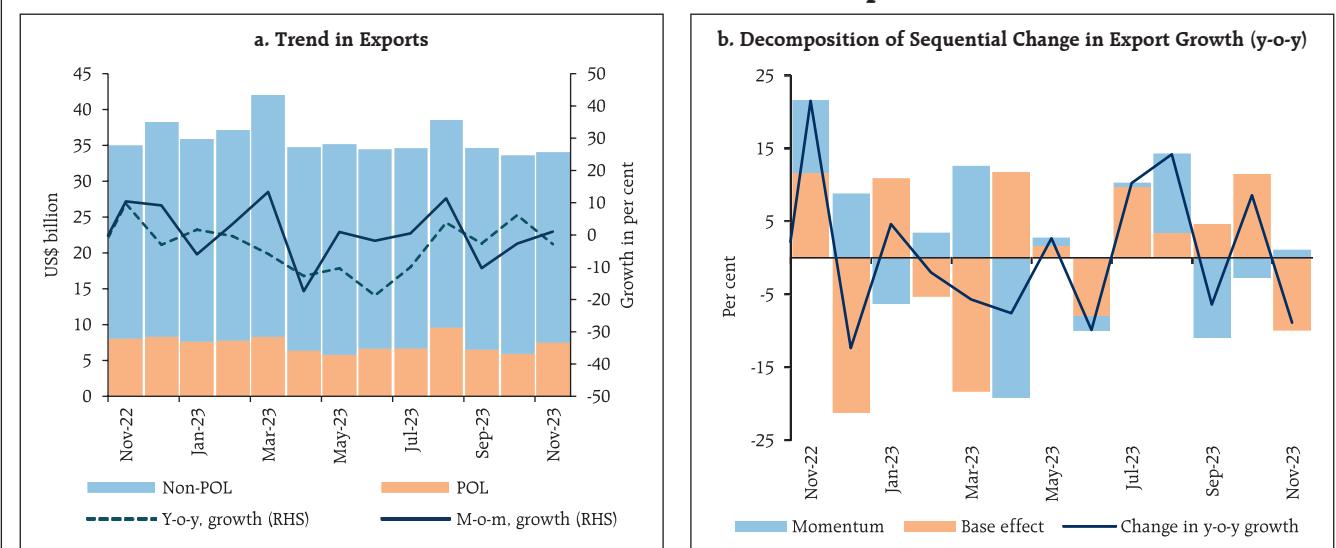
Chart III.6: PMI Employment Indices**Chart III.7: Demand for Work under MGNREGS**

Chart III.8: India's Merchandise Exports

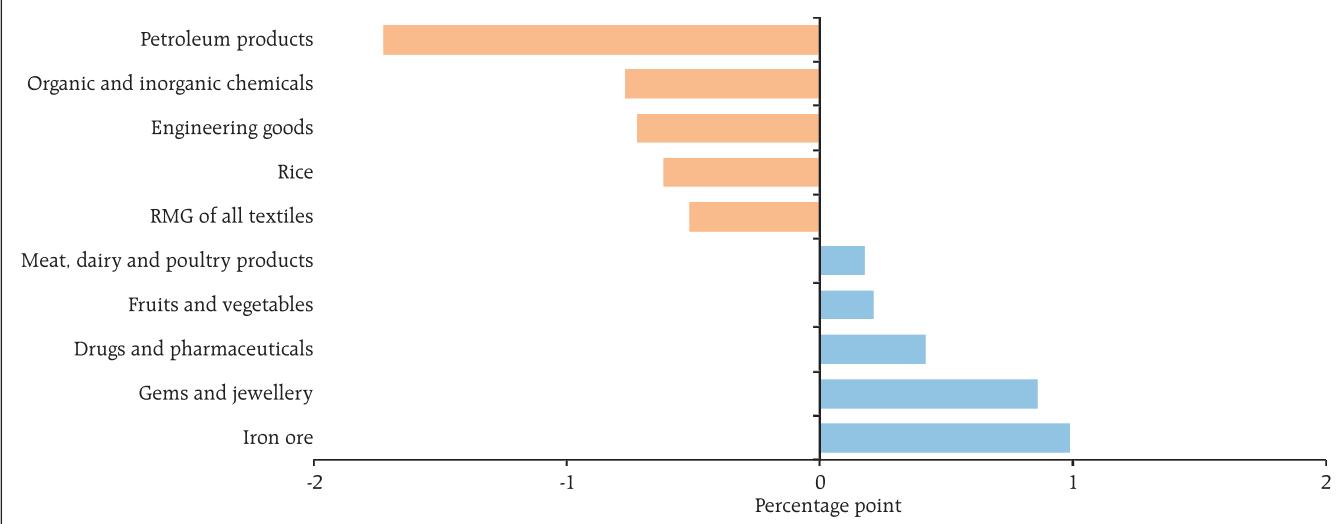
Sources: DGCI&S; and RBI staff estimates.

fruits and vegetables and meat, dairy and poultry registered expansion and supported overall export growth (Chart III.9).

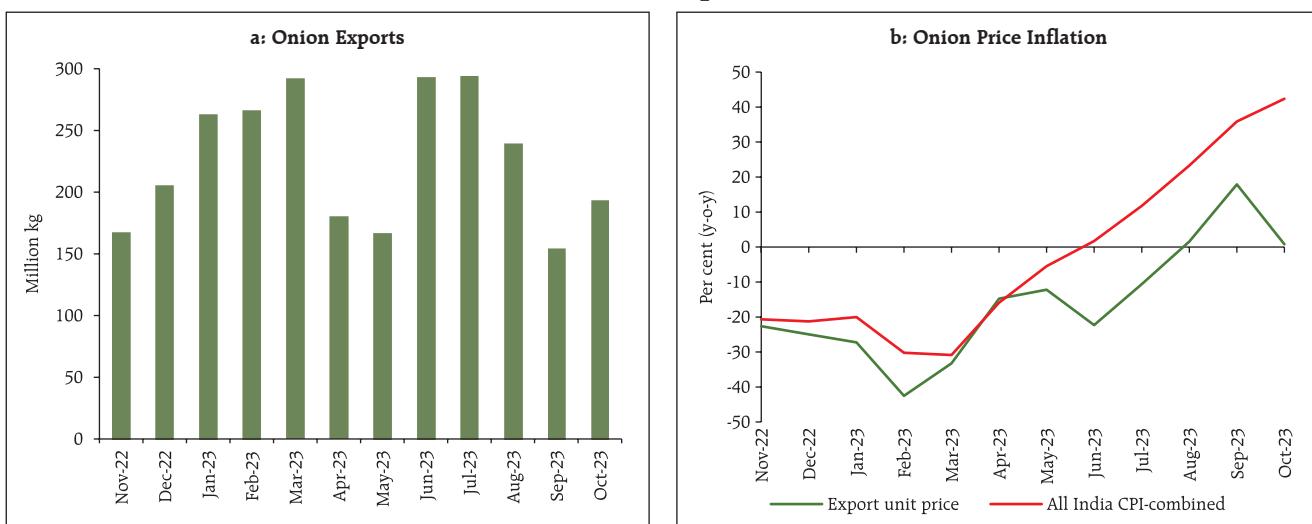
India is the third largest exporter of onions, with a share of 12 per cent in total exports in 2022. In view of the spike in domestic prices, customs duty of 40 per cent was levied on onion exports in August 2023. This led to a 35.7 per cent (m-o-m) decline in onion exports

(in quantity terms) in September, but recorded a partial rebound in October (Chart III.10a).

During episodes of high onion price increases in recent years, the Government has embargoed onion exports. In recent months, inflation in terms of domestic prices of onions is much higher than export prices (Chart III.10b). A minimum export price (MEP) of US\$ 800 per metric ton on all varieties of onions

**Chart III.9: India's Merchandise Exports – Relative Contribution
(November 2023 over November 2022)**

Source: DGCI&S; and RBI staff estimates.

Chart III.10: Onion Exports and Prices

Note: The export unit price of onion in Chart (b) is calculated by dividing the onion export value by volume for each month.

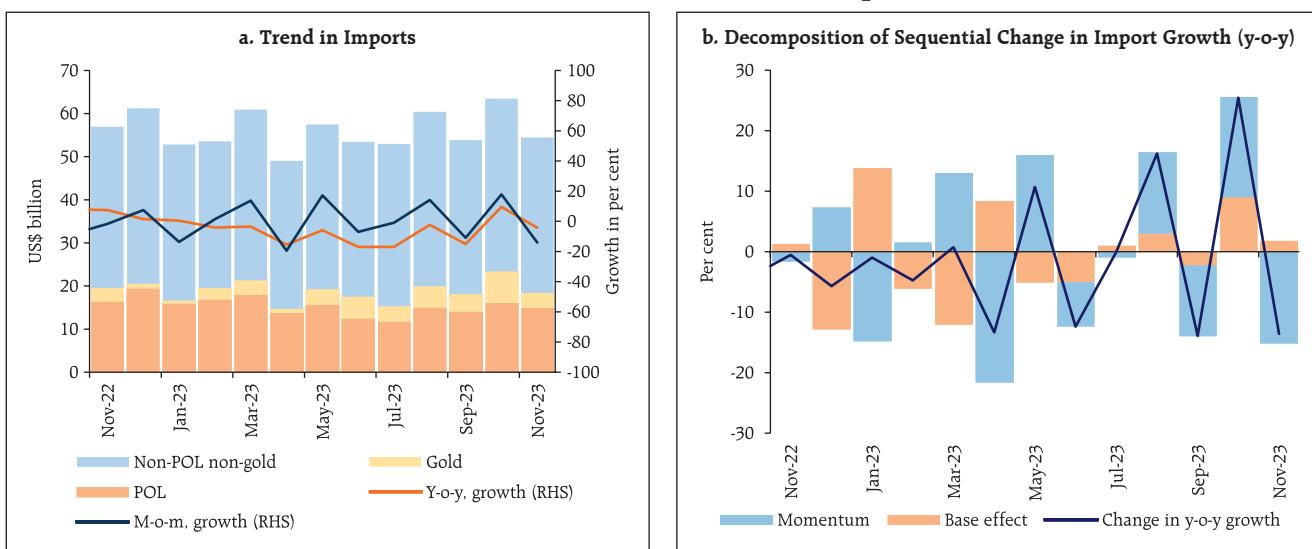
Sources: DGCI&S; MOSPI, and RBI staff estimates.

was made applicable effective November 23, 2023. Furthermore, on December 8, 2023 onion exports were prohibited till end-March 2024 to arrest the domestic price rise.

Merchandise imports at US\$ 54.5 billion swung back into contraction in November. The y-o-y decline of 4.3 per cent was due to a negative momentum of 14.1 per cent which offset a positive base effect

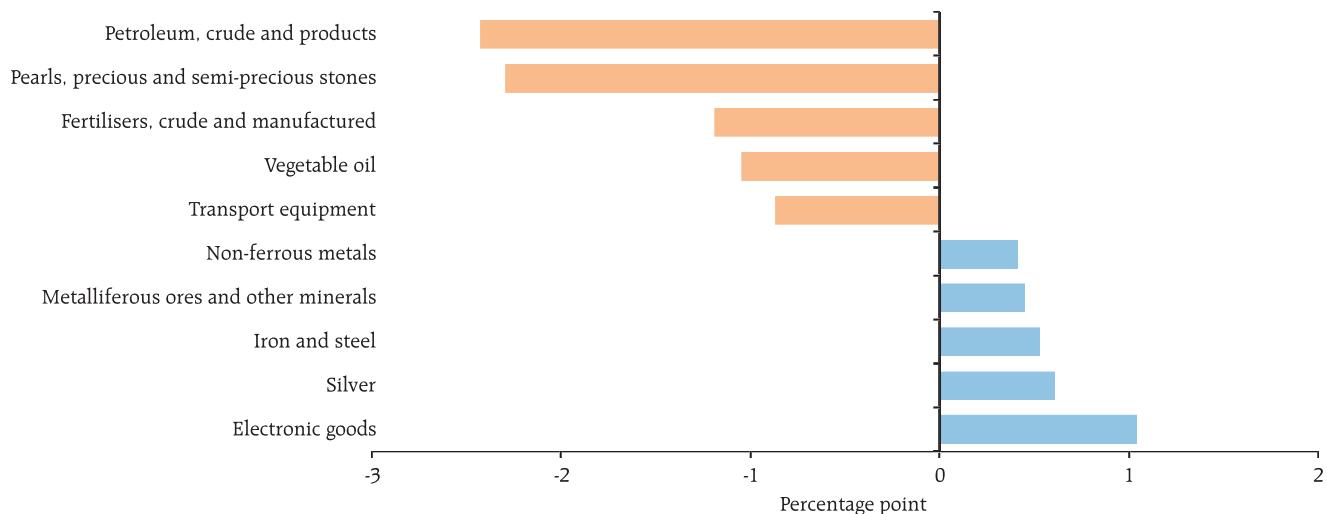
(Chart III.11). Among 30 major commodities, 15 commodities accounting for 61.8 per cent of the import basket (share in 2022-23) recorded a y-o-y decline.

Petroleum, oil, and lubricants (POL), pearls, precious and semi-precious stones, fertilisers, vegetable oil and transport equipment were the main items that dragged import growth down, while

Chart III.11: India's Merchandise Imports

Sources: DGCI&S; and RBI staff estimates.

**Chart III.12: India's Merchandise Imports – Relative Contribution
(November 2023 over November 2022)**



Source: DGCI&S; and RBI staff estimates.

electronic goods, silver, iron and steel, metalliferous ores and other minerals; and non-ferrous metals supported import growth in November (Chart III.12).

With decline in imports and increase in exports on a sequential basis the merchandise trade deficit in November 2023 narrowed to US\$ 20.6 billion from the high of US\$ 29.9 billion a month ago. The share of oil in the total merchandise trade balance increased in November (Chart III.13).

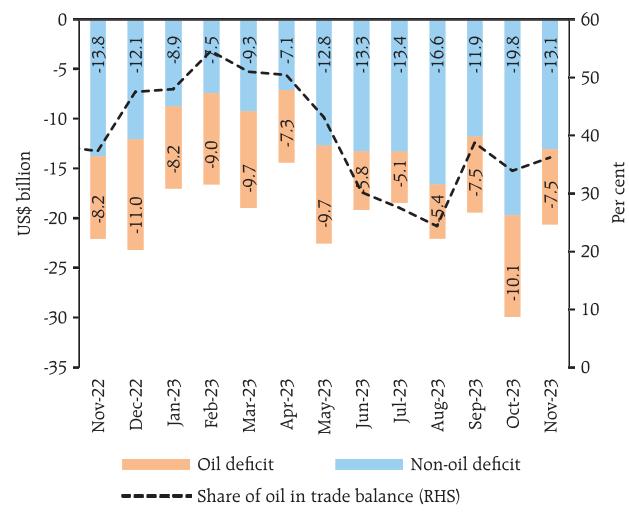
During April-November 2023, India's merchandise exports at US\$ 298.2 billion contracted by 6.5 per cent (y-o-y). Merchandise imports at US\$ 487.4 billion declined by 8.7 per cent (y-o-y). Consequently, the merchandise trade deficit narrowed to US\$ 166.4 billion from US\$ 189.2 billion during the corresponding period a year ago. Petroleum products were the major source of the trade deficit, followed by electronic goods (Chart III.14).

In October 2023, services exports increased by 10.8 per cent on a y-o-y basis to US\$ 28.0 billion, led by growth in software services, business services and travel services. On the other hand, services imports

declined by 0.4 per cent y-o-y to US\$ 13.5 billion, mainly due to a fall in transportation services (Chart III.15). As a result, net services earnings improved by 23.6 per cent (y-o-y) to US\$ 14.6 billion in October 2023.

During April-October 2023-24, the gross fiscal deficit (GFD) of the Central government stood at 45.0

Chart III.13: Decomposition of India's Merchandise Trade Deficit



Sources: DGCI&S; and RBI staff estimates.

Chart III.14: Commodity-wise Merchandise Trade Deficit

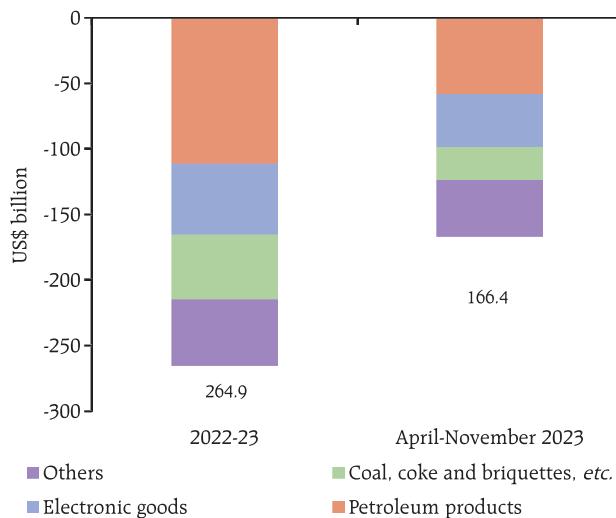
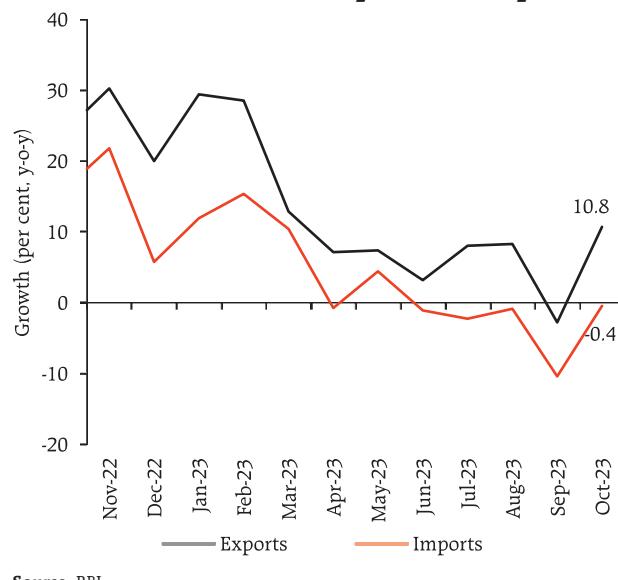


Chart III.15: Services Exports and Imports

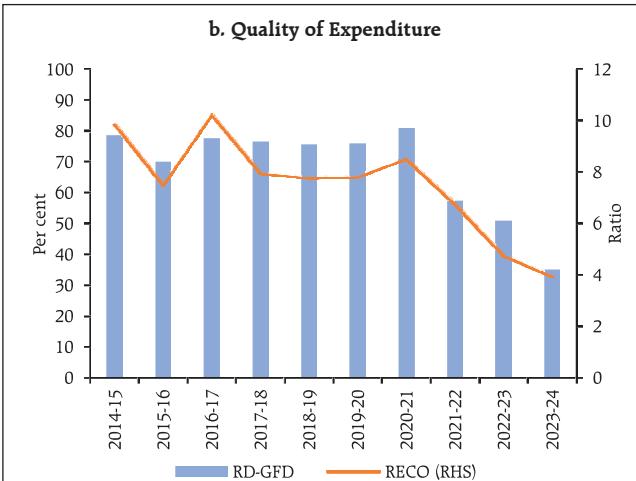
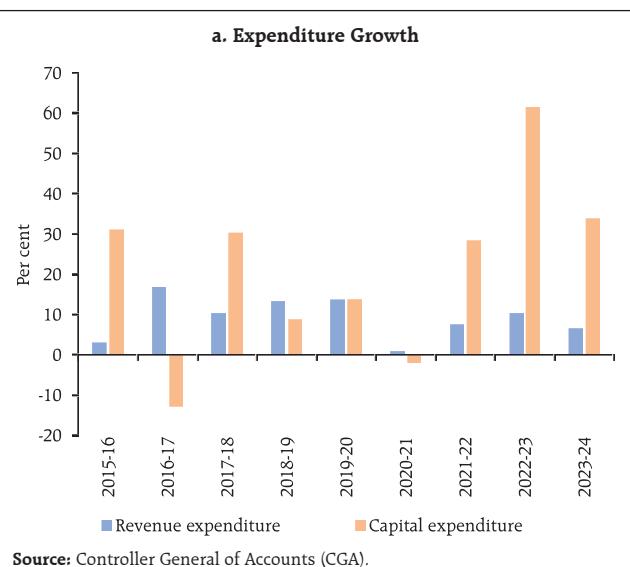


per cent of the budget estimates (BE), marginally lower than 45.6 per cent of BE during the corresponding period of the previous year. On the expenditure side, capital spending recorded an increase of 33.7 per cent (y-o-y) while revenue expenditure registered a growth of 6.5 per cent (y-o-y) (Chart III.16a). Capital outlay (*i.e.*, capital expenditure excluding loans and advances) recorded an increase of 28.6 per cent,

resulting in a marked improvement in the quality of spending of the Central government as depicted by a declining revenue deficit to gross fiscal deficit ratio (RD-GFD) and revenue expenditure to capital outlay ratio (RECO) [Chart III.16b].

On the receipts side, direct tax collections recorded a growth of 23.9 per cent (y-o-y) during

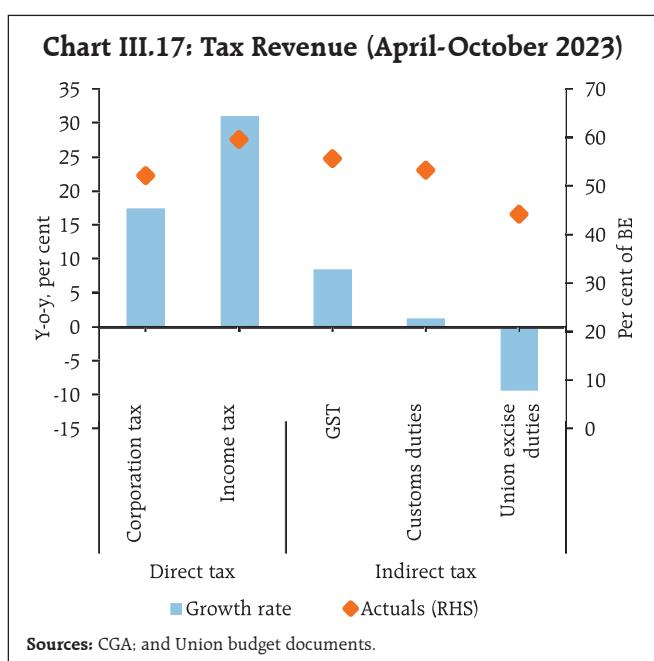
Chart III.16: Government Expenditure (April-October)



April-October 2023, with income tax and corporate tax collections growing at 31.1 per cent and 17.4 per cent, respectively. On the other hand, indirect tax collections rose by 3.6 per cent (y-o-y), driven by growth in goods and services tax (GST) collections. Overall, gross tax revenue recorded a growth of 14.0 per cent over the previous year, led by the robust improvement in direct tax collections (Chart III.17).

Non-tax revenues recorded a y-o-y growth of 48.7 per cent during April-October 2023 on the back of higher than budgeted surplus transfer from the Reserve Bank⁸ while non-debt capital receipts contracted by 35.6 per cent⁹ (Chart III.18). Total receipts of the Central government recorded a y-o-y expansion of 14.8 per cent.

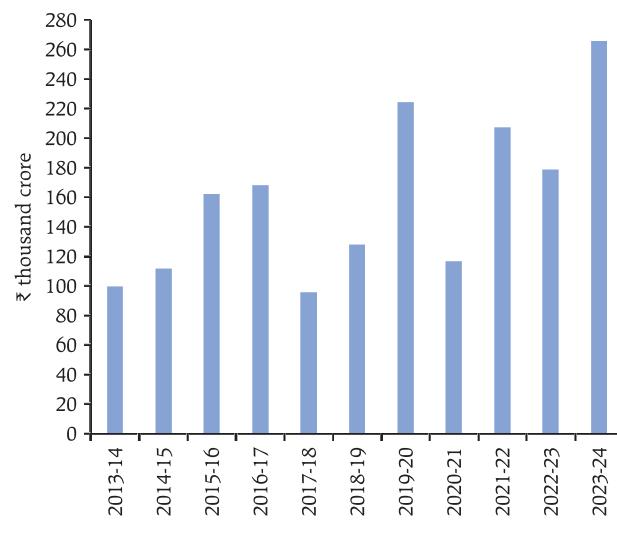
GST collection (Centre plus States) grew by 15.1 per cent (y-o-y) to ₹1.68 lakh crore in November 2023, which is the highest monthly y-o-y growth in 2023-24



⁸ During 2023-24, the Reserve Bank transferred a surplus of ₹87,416.22 crore to the Central government which is higher than both the amount transferred last year (₹30,307.45 crore) and the budgeted amount under Dividend/Surplus transfer of Reserve Bank of India, Nationalised Banks and Financial Institutions in the Union Budget 2023-24 (₹48,000 crore).

⁹ During April October 2023-24, the Government mobilised ₹8,000 crore in the form of disinvestment receipts as compared with ₹24,590 crore during the corresponding period of the previous year.

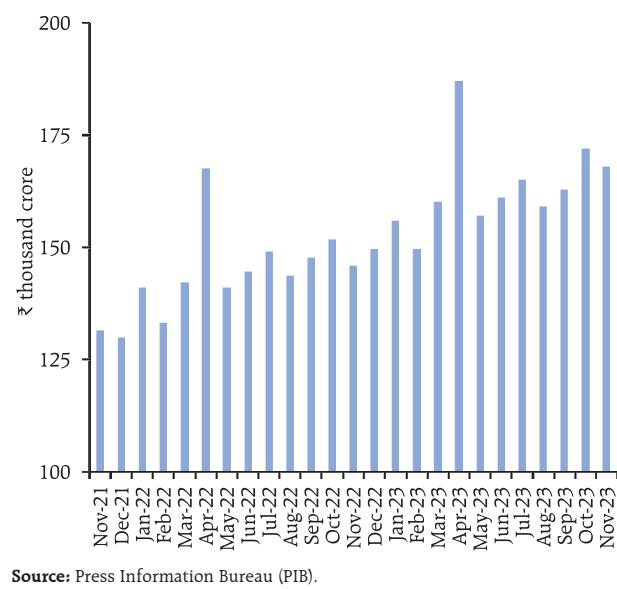
Chart III.18: Non-tax Revenue (April-October)



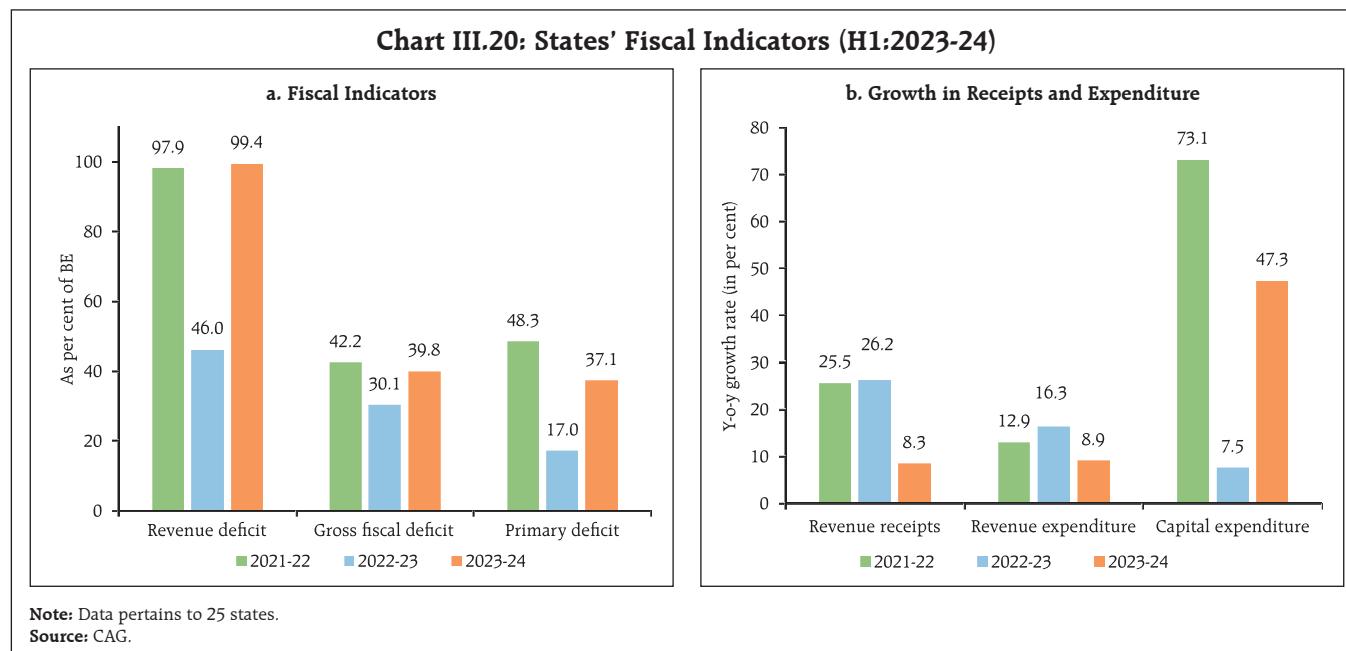
so far (Chart III.19). Gross GST collection during April-November 2023-24 (₹13.3 lakh crore) was 11.9 per cent higher than ₹11.9 lakh crore during the corresponding period of 2022-23.

During H1:2023-24, the GFD of the states¹⁰ stood at 39.8 per cent of BE (Chart III.20a). A slower growth

Chart III.19: Monthly GST Revenue



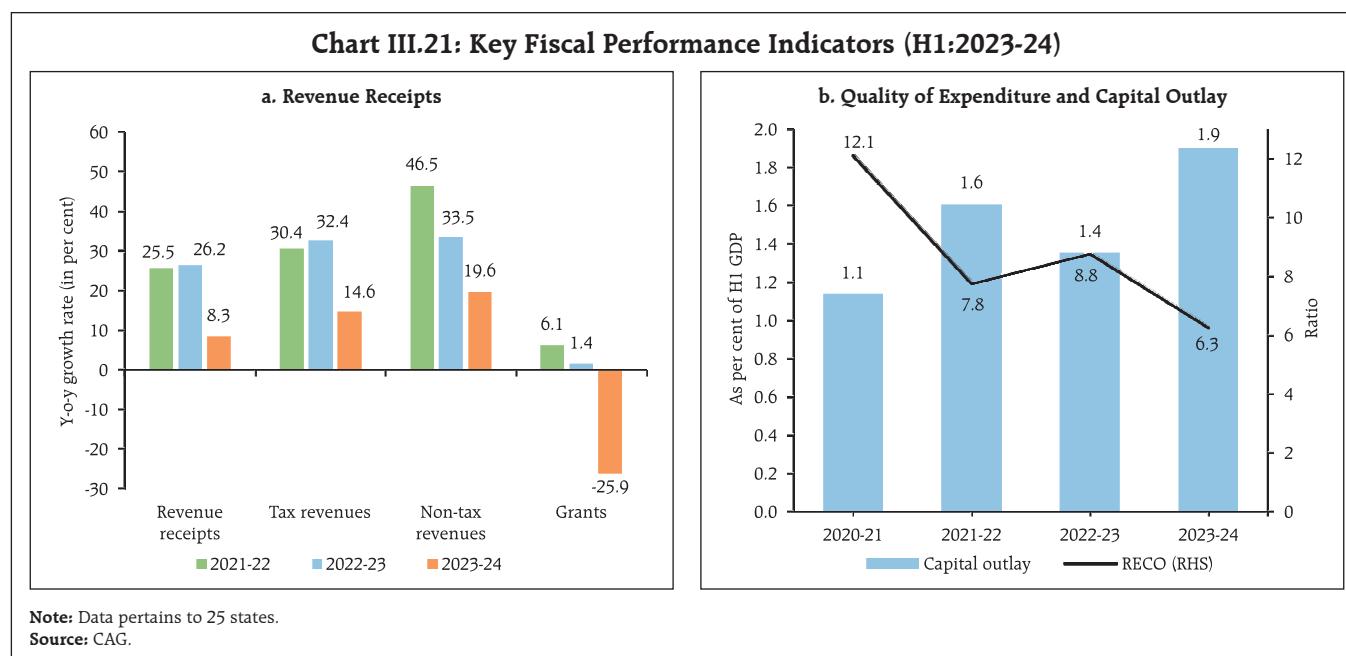
¹⁰ Data pertain to 25 states.



in revenue receipts *vis-à-vis* revenue expenditure resulted in a higher revenue deficit (Chart III.20b). Tax and non-tax revenues recorded a lower growth on a high base. Grants from the Centre witnessed a contraction due to cessation of GST compensation to states and tapering of finance commission grants.

States' thrust on capital spending has continued with a 47.3 per cent growth in capital expenditure,

aided by the Union government's '*Scheme for Special Assistance to States for Capital Investment*'. As at end-October 2023, the Union government has approved outgoes under this head amounting to ₹96,206 crore (accounting for 74 per cent of the ₹1.3 lakh crore budgeted for 2023-24), out of which ₹58,494 crore has already been disbursed to the states, improving the quality of their expenditure (Chart III.21).



Aggregate Supply

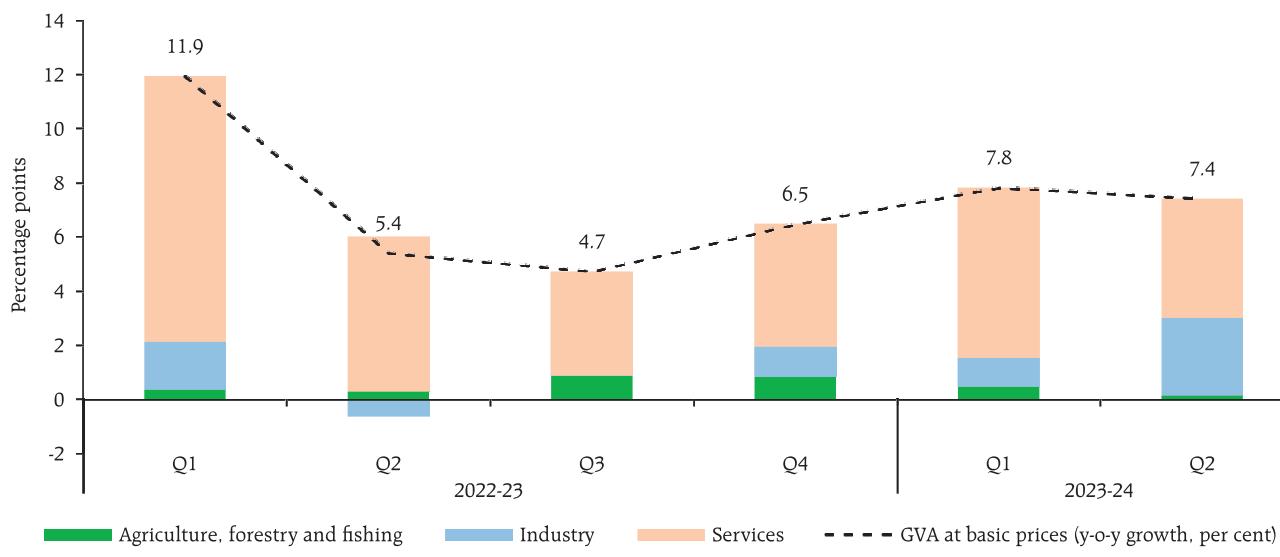
Aggregate supply – measured by gross value added (GVA) at basic prices – expanded by 7.4 per cent in Q2:2023-24, up from a growth of 5.4 per cent a year ago (7.8 per cent in Q1:2023-24). This was propelled by industrial and services sectors, while agriculture recorded a marginal expansion (Chart III.22). The growth in agriculture, forestry and fishing moderated to 1.2 per cent in Q2:2023-24 from 2.5 per cent a year ago. This was largely on account of a 4.6 per cent contraction in *kharif* foodgrains production in 2023-24, reflecting the impact of the uneven temporal and spatial distribution of the south-west monsoon rainfall. Manufacturing – the dominant component of the industrial sector – registered a strong growth of 13.9 per cent, boosted by a sharp increase in profit margins of corporates as input cost pressures declined. This is also reflected in the deflation in the wholesale price index (WPI) for manufacturing products during Q2. Services sector growth at 6.7 per cent witnessed some moderation as compared with double-digit growth in the preceding quarter. The continued expansion of construction activity in

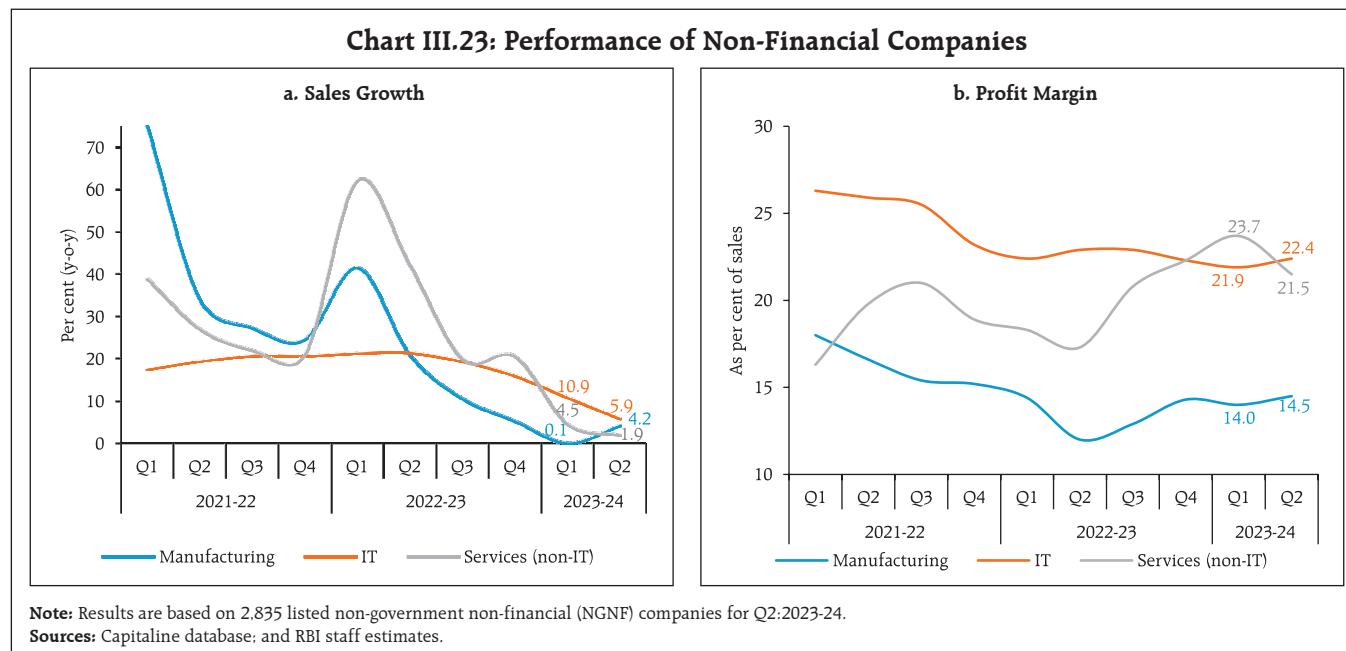
Q2 was reflected in robust growth recorded by both steel consumption and cement production. Trade, hotels, transport, communication and services related to broadcasting and financial, real estate and professional services – the two major services sub-sectors – recorded moderation in Q2. Public administration, defence, and other services (PADO) expanded on a y-o-y basis by 7.6 per cent in Q2 on account of acceleration in the Central government's revenue expenditure.

Sales of listed non-financial private manufacturing companies grew by 4.2 per cent (y-o-y) during Q2:2023-24 (Chart III.23). Their operating profits surged by 30.1 per cent and margins improved, both annual as well as sequential. Sales growth of information technology (IT) firms moderated to 5.9 per cent (y-o-y) after recording double digit growth in the previous nine consecutive quarters, whereas non-IT service companies recorded a modest growth of 1.9 per cent.

The debt-to-equity ratio for listed private manufacturing firms fell to 30.5 per cent during H1:2023-24 from 33.7 per cent a year ago on the back

Chart III.22: Weighted Contribution to GVA Growth





of fresh capital infusion and higher profits. Improving demand conditions have encouraged firms to increase financial allocations towards capital investment; fixed assets increased by 10.5 per cent (y-o-y) and the share of fixed assets in total assets has improved over the last one year (Chart III.24).

Amidst pick-up in credit demand and rising interest rates, revenue of listed banks grew strongly at more than 30 per cent (y-o-y). However, with stronger rise in expenditure coupled with slower total income growth, the growth in profits moderated in Q2:2023-24 (Chart III.25a). Income and operating profits of listed

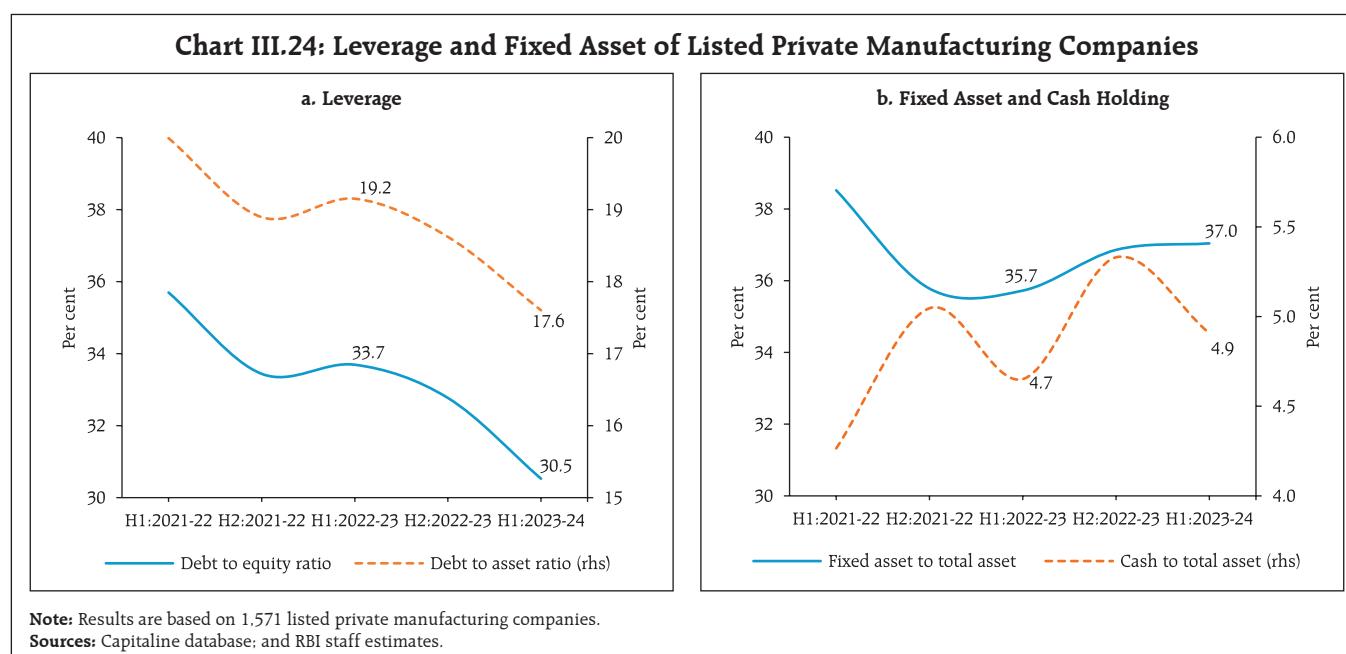
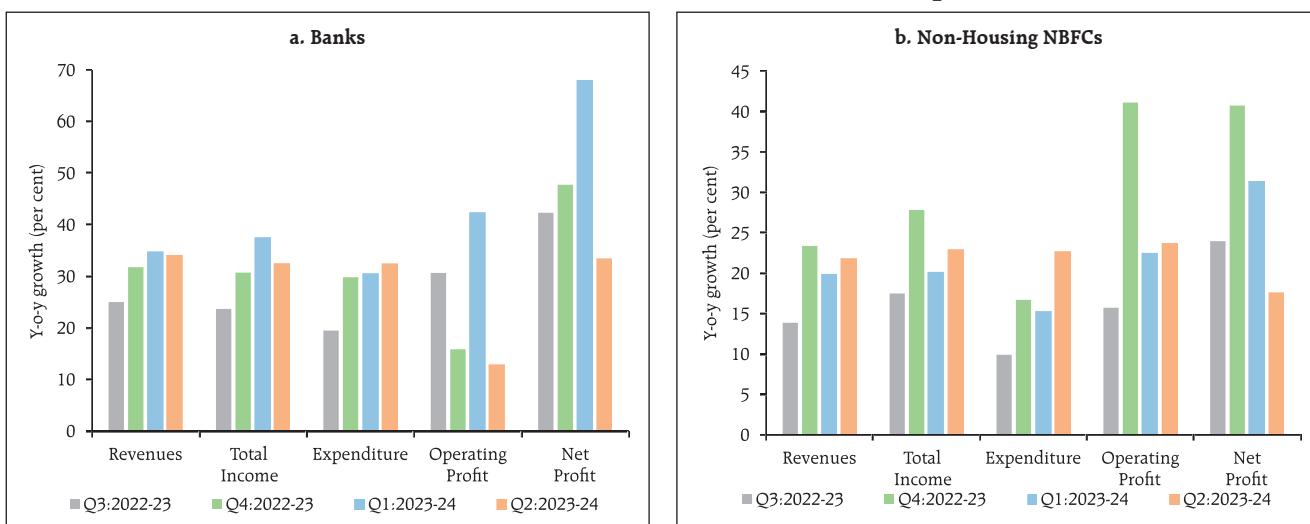


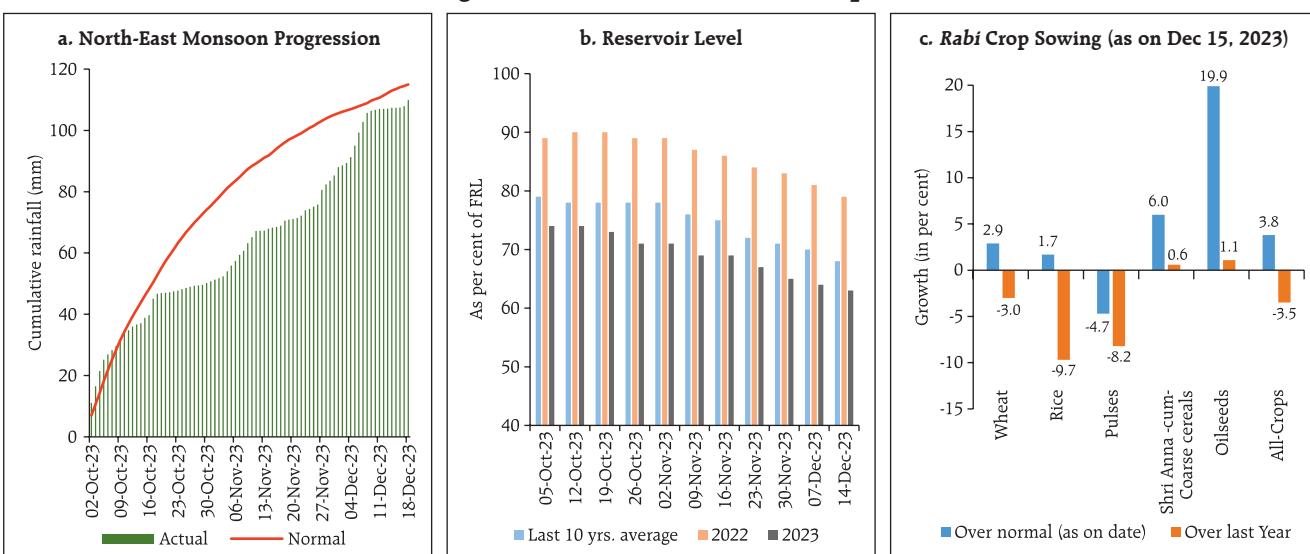
Chart III.25: Performance of Listed Financial Companies

Note: Results are based on 36 listed Banks and 498 listed NBFCs.

Sources: Capitaline database; and RBI staff estimates.

non-banking financial companies (NBFCs), excluding housing finance companies, rose by 22.9 per cent and 23.7 per cent on an annual (y-o-y) basis in Q2:2023-24. Their net profits rose by 17.6 per cent, aided by decline in the expenses to income ratio to 63.9 per cent from 69.0 per cent in the previous quarter (Chart III.25b).

Turning to Q3, the north-east monsoon remains deficient (with a cumulative deviation of -4.0 per cent during Oct.01- Dec.18, 2023), driven down by below normal rainfall in Central India (-21.0 per cent) and Southern peninsula (-12.0 per cent) (Chart III.26a). The reservoir position has also remained below that of previous years as well as decade average levels

Chart III.26: Progress of Monsoon and Rabi Crop Season 2023-24

Note: FRL: Full reservoir level.

Sources: India Meteorological Department; Central Water Commission; and Ministry of Agriculture and Farmers' Welfare.

(Chart III.26b). Additionally, localised unseasonal rains in many parts of the country have also impeded *rabi* sowing. As on December 15, *rabi* sowing declined in all the major crop groups, except oilseeds and coarse cereals, from levels recorded a year ago (Chart III.26c). Nonetheless, the acreage under major crops is expected to improve in the coming weeks as weather conditions normalise.

Along with the prediction of moderate to strong *El Niño* conditions, the Indian Meteorological Department (IMD) has also indicated the likely occurrence of above-normal maximum and minimum temperatures over most parts of the country in the winter season (Chart III.27a and III.27b).

The cumulative procurement of rice in *Kharif* Marketing Season 2023-24 (KMS 2023-24) at 245 lakh tonnes as on December 17 was 15 per cent lower than a year ago, reflecting the lower production of *kharif* paddy (as per first advance estimates) in most of the rice producing states. *Mandi* arrivals have, however, shown a significant improvement in response to the higher prices than the minimum support price (MSP) for paddy. On the other hand, cumulative

wheat procurement in *Rabi* Marketing Season (RMS) 2023-24 rose by 39.4 per cent (y-o-y). The combined cereal stock stood at 2.0 times the combined buffer norm in end-November, 13.2 per cent higher y-o-y. As part of measures to tame domestic inflation, the Government started weekly e-auctions under the open market sale scheme (OMSS) in June 2023. So far, twenty-five e-auctions have been completed up to December 13, 2023.

The headline PMI for the manufacturing sector expanded to 56.0 in November 2023 from 55.5 a month ago on the back of an increase in new orders, output and employment (Chart III.28a). The PMI for services remained strong at 56.9 in November, albeit undergoing a sequential moderation (Chart III.28b).

Various indicators of transport activity point towards a gathering pace. Cargo traffic at major ports recorded a growth of 17 per cent (y-o-y) in November 2023, driven by increased freight traffic of coal, iron ore and petroleum, oil and lubricants (POL) [Chart III.29a]. A pick-up in freight movement of coal and containerised cargo also resulted in railway freight

Chart III.27: Probability Forecast of Temperature for December 2023 to February 2024

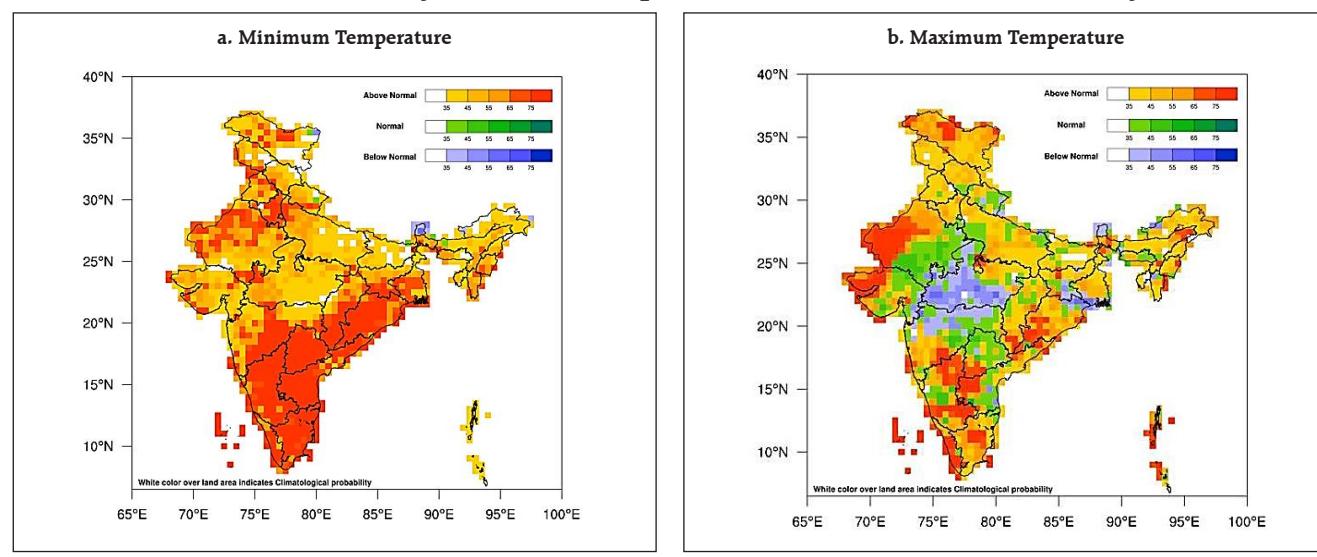
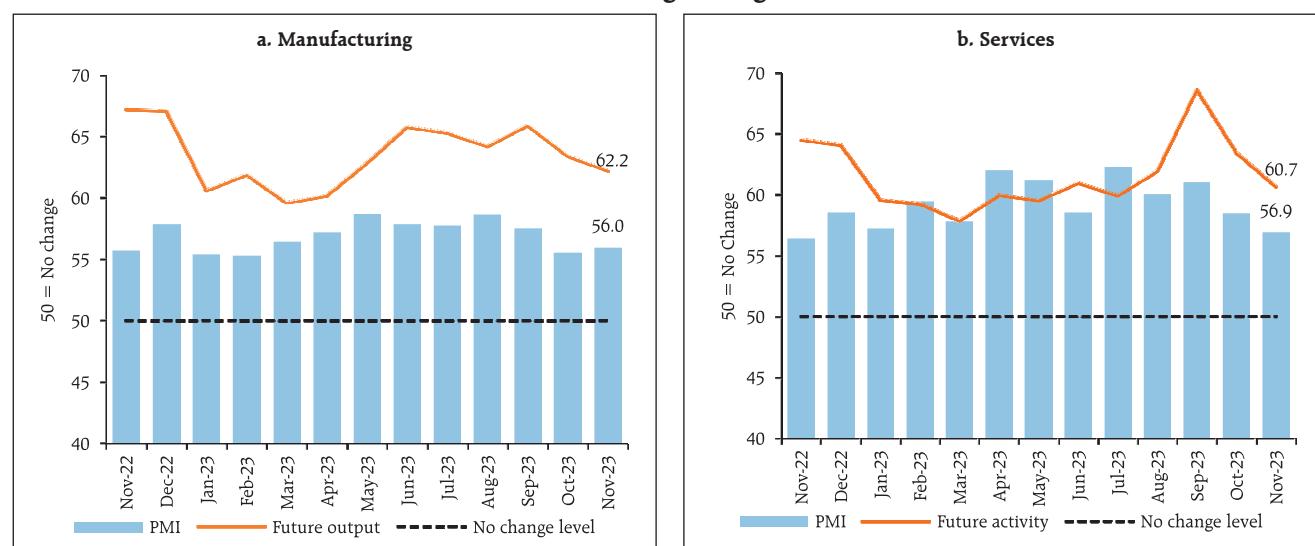


Chart III.28: Purchasing Managers' Index (PMI)

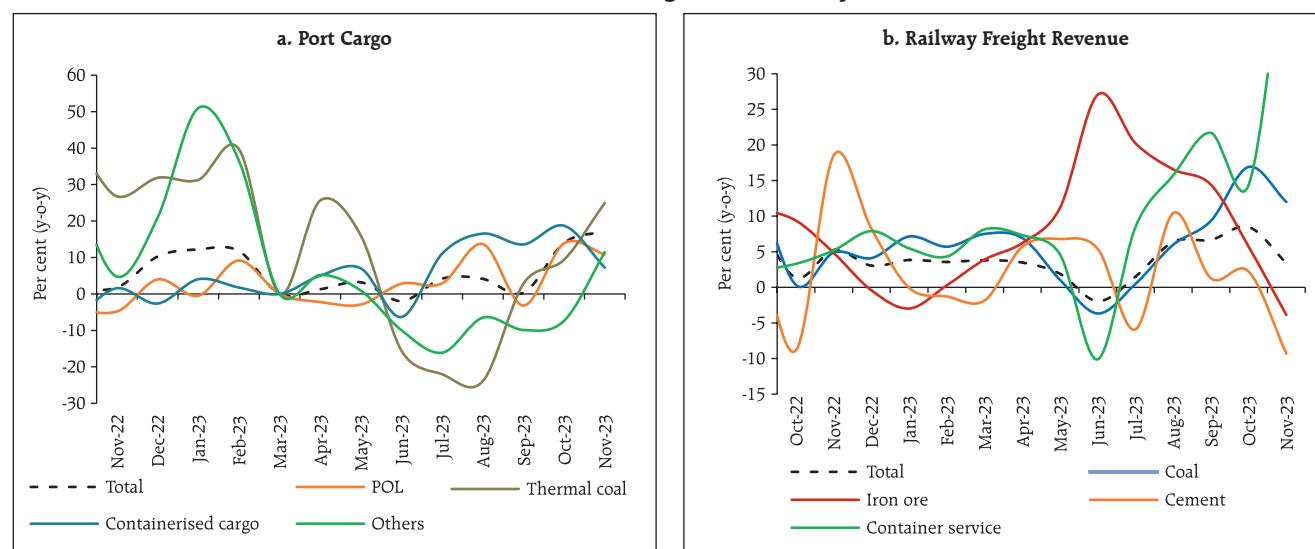
Source: S&P Global.

revenue maintaining growth *albeit* with a dip in momentum (Chart III.29b).

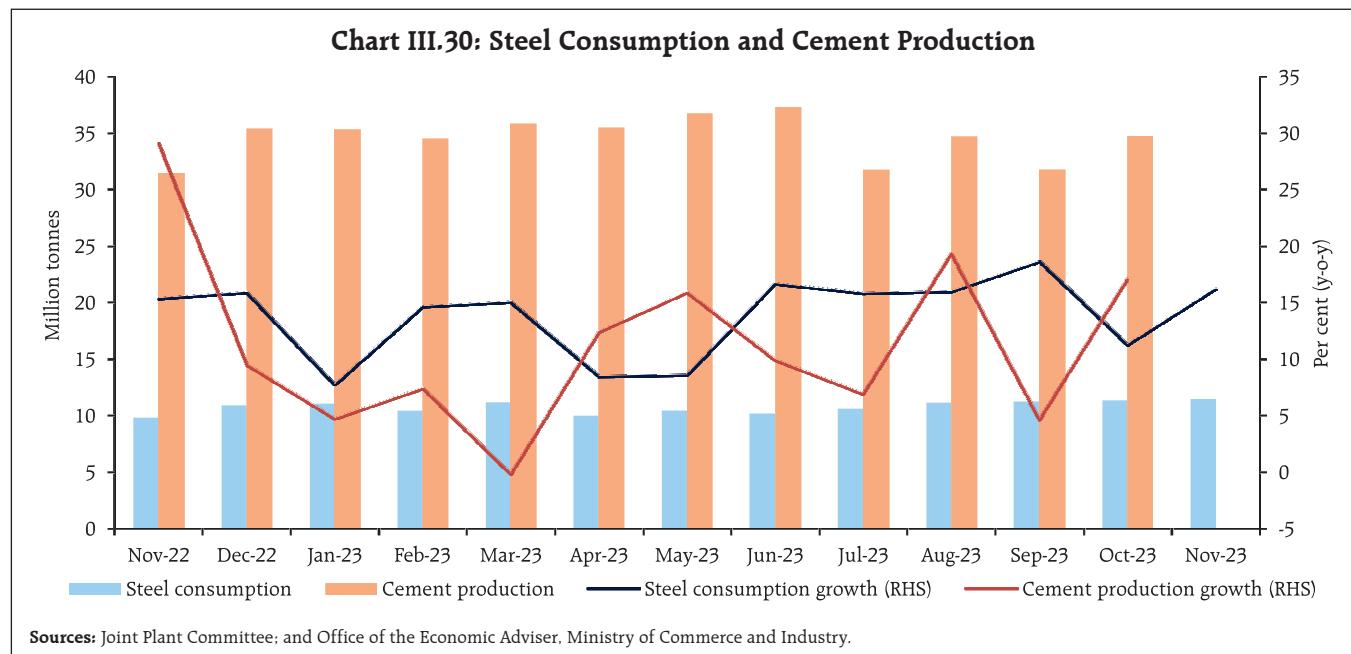
The construction sector continued its momentum as steel consumption grew by 16.2 per cent (y-o-y) in November and cement production expanded by 17.1 per cent in October (Chart III.30).

High frequency indicators for the services sector remained robust in October/November 2023, led by festival demand (Table III.1).

In terms of regional policy initiatives, West Bengal launched a series of new policies – West Bengal Logistics Policy; West Bengal New and Renewable Energy Manufacturing Promotion Policy; West Bengal

Chart III.29: Port Cargo and Railway Traffic

Source: Rail Drishti.



Export Promotion Policy; and Industrial and Economic Corridor Policy – that aim to raise exports, meet

energy demand through renewable sources, improve logistics, and become the top industrial destination.

Table III.1: High-Frequency Indicators – Services

Growth (y-o-y, per cent)												
Sector	Indicator	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23
Urban demand	Passenger Vehicles Sales	17.2	11.0	4.5	12.9	14.9	1.6	2.9	11.6	3.1	17.3	4.3
Rural demand	Two Wheeler Sales	5.0	7.6	7.7	15.1	17.4	1.7	-7.2	0.6	0.8	20.1	31.3
	Three Wheeler Sales	103.0	86.1	69.2	104.2	70.4	98.6	78.9	68.8	47.0	42.1	30.8
	Tractor Sales	24.4	20.0	13.7	-11.1	1.2	4.2	6.1	1.1	-14.7	-4.3	6.4
Trade, hotels, transport, communication	Commercial Vehicles Sales	11.8			-3.3			6.9				
	Railway Freight Traffic	3.8	3.6	3.8	3.5	1.9	-1.9	1.5	6.4	6.7	8.5	
	Port Cargo Traffic	12.2	11.8		1.3	3.2	-2.0	4.2	4.1	0.3	13.8	17.0
	Domestic Air Cargo Traffic*	2.4	8.1	3.3	7.6	-4.5	-5.6	-4.1	6.0	-4.5	10.6	0.9
	International Air Cargo Traffic*	-7.5	-1.7	0.3	-4.8	2.7	2.7	1.0	7.4	2.7	15.0	5.1
	Domestic Air Passenger Traffic *	96.8	57.4	21.6	22.6	15.7	19.2	26.3	23.6	19.3	10.7	9.3
	International Air Passenger Traffic *	121.9	109.3	60.9	43.0	37.2	26.5	23.6	21.5	19.6	17.5	20.1
	GST E-way Bills (Total)	19.7	18.4	16.3	12.2	19.7	15.5	16.4	19.5	9.5	30.5	8.5
	GST E-way Bills (Intra State)	24.1	22.2	20.7	16.2	23.0	18.8	20.8	22.6	12.4	30.0	22.7
	GST E-way Bills (Inter State)	12.8	12.4	9.3	5.9	14.3	9.9	9.1	14.4	4.9	31.2	-16.2
	Hotel occupancy rate@	64.9	71.2	62.7	63.2	61.9	64.0	60.9	60.9	61.0	62.5	
Construction	Average revenue per room	53.1	62.0	39.6	21.2	15.8	14.0	14.2	13.9	18.3	14.8	
	Tourist Arrivals	330.8	259.4	132.5	53.7	41.3	24.0	13.6	22.6	17.5	19.8	
PMI Index#	Steel Consumption	7.7	14.6	15.0	8.4	8.6	16.7	15.8	16.0	18.6	11.3	16.2
	Cement Production	4.7	7.4	-0.2	12.4	15.9	9.9	6.9	19.3	4.6	17.1	
PMI Index#	Services	57.2	59.4	57.8	62.0	61.2	58.5	62.3	60.1	61.0	58.4	56.9

Note: #: Data in levels. *: Data are based on the monthly average of daily figures. @: Data in rate, not in y-o-y rate of growth.

Sources: CMIE; CEIC; IHS Markit; SIAM; Airports Authority of India; and Joint Plant Committee.

Arunachal Pradesh launched a logistics policy to augment and integrate multimodal connectivity infrastructure. Tamil Nadu launched India's first AI-focused technology business incubator "AI Venture Factory" to provide AI entrepreneurs a nurturing environment through technological, business, and financial support.¹¹

Inflation

Headline inflation, as measured by y-o-y changes in the all-India consumer price index (CPI)¹², increased to 5.6 per cent in November 2023 from 4.9 per cent in October (Chart III.31). This pick-up was driven by a positive momentum of around 55 bps on top of an unfavourable base effect of around 10 bps. All the three major groups recorded positive momentum with a m-o-m increase of around 90 bps in food prices, 5 bps in fuel prices, and 25 bps in the core group (*i.e.*, excluding food and fuel).

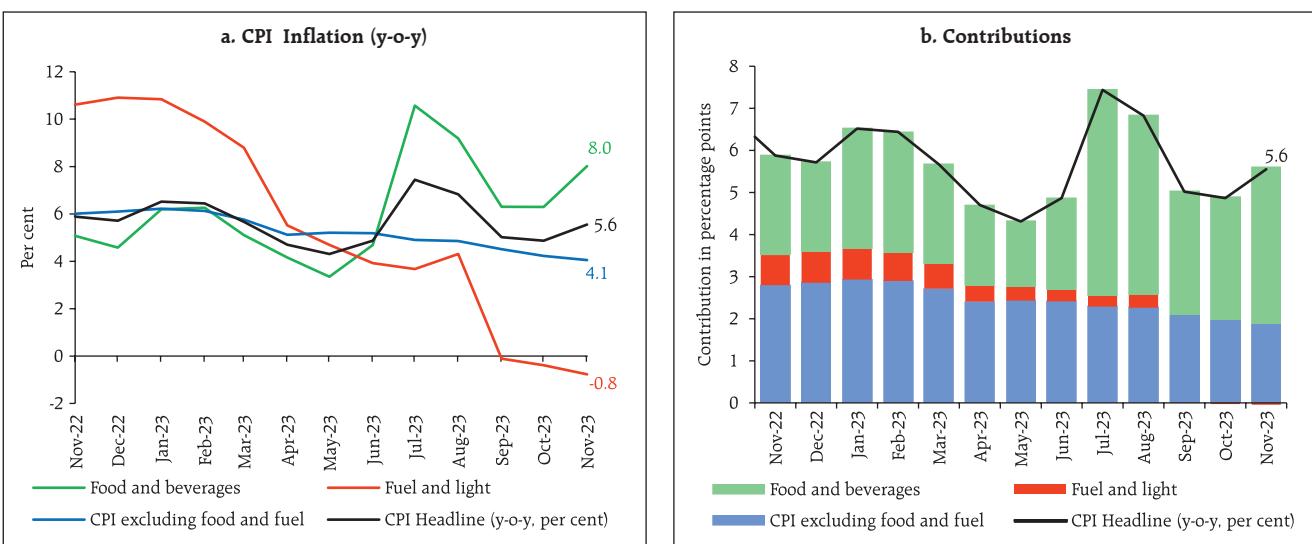
Food inflation (y-o-y) registered an increase of 1.7 percentage points, rising to 8.0 per cent in November from 6.3 per cent during September-October. This

was on account of a sharp price momentum of 90 bps reinforced by an unfavourable base effect of 70 bps. In terms of sub-groups, inflation in vegetables picked up sharply due to a steep rise in onion and tomato prices. Inflation in pulses, fruits, sugar and non-alcoholic beverages also registered an increase while it moderated in respect of cereals, meat and fish, eggs, milk, spices and prepared meals. The rate of deflation in edible oils and fats deepened in November (Chart III.32).

The fuel and light group moved further into deflation to (-) 0.8 per cent in November from (-) 0.4 per cent in October, mainly due to softening of inflation in firewood and other cooking fuel. The deflation in kerosene prices deepened in November. While LPG prices remained in double digit deflation, electricity price inflation continued to be in double digit (y-o-y).

Core inflation moderated to 4.1 per cent in November from 4.2 per cent in October, softening across sub-groups such as clothing and footwear, housing, household goods and services, recreation

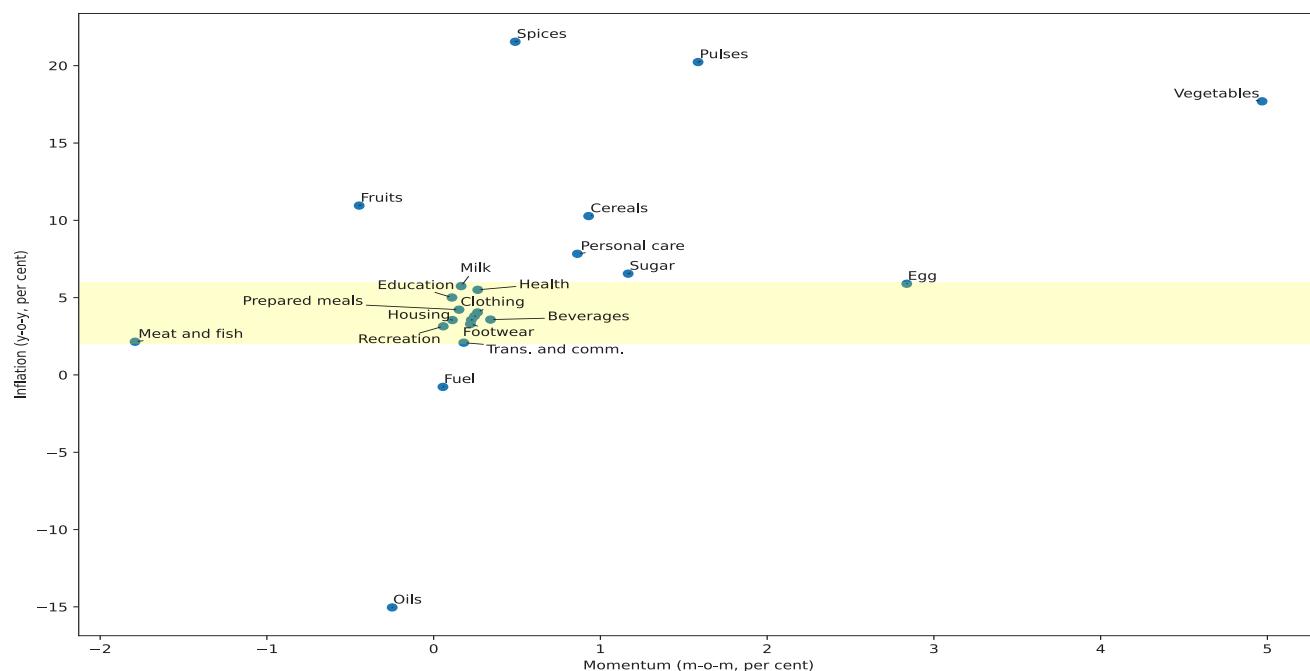
Chart III.31: Trends and Drivers of CPI Inflation



Sources: National Statistical Office (NSO); and RBI staff estimates.

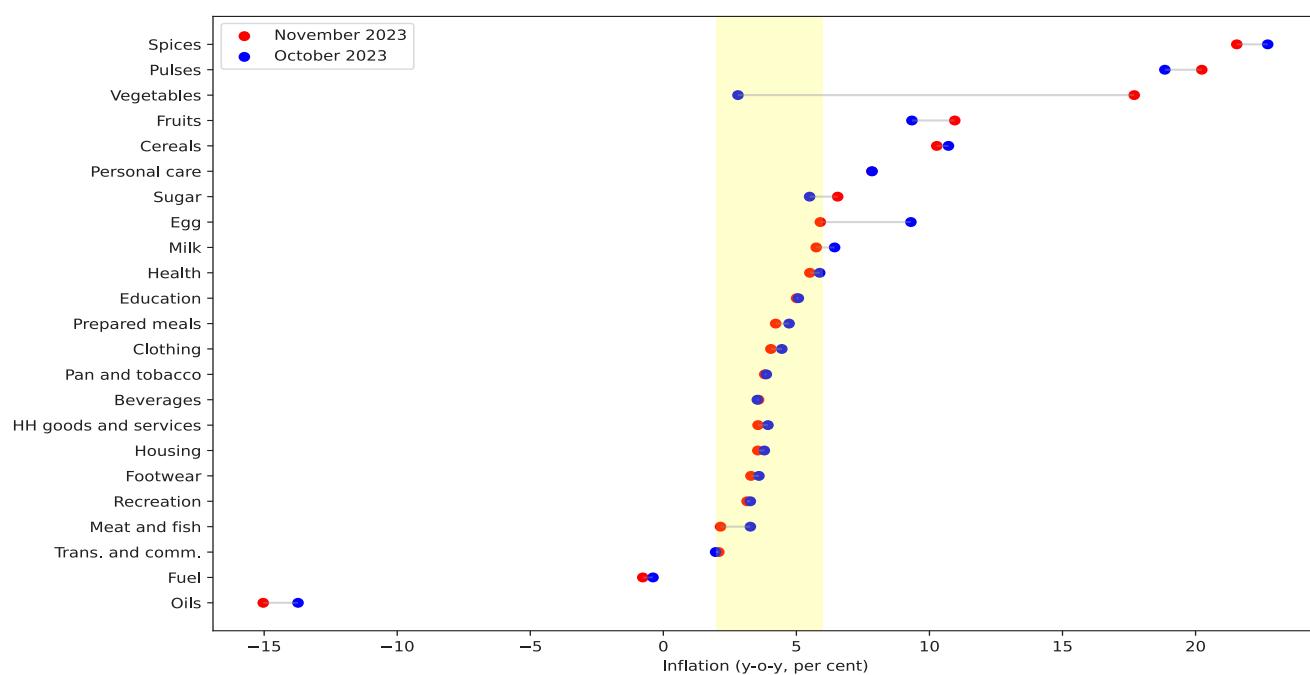
¹¹ <https://www.dtnext.in/news/tamilnadu/tn-govt-launches-indias-first-ai-incubator-to-train-tamil-youths-747062>
<https://startup.outlookindia.com/sector/saas/tamil-nadu-minister-for-msme-launches-ai-venture-factory-news-9824>

¹² As per the provisional data released by the National Statistical Office (NSO) on December 12, 2023.

Chart III.32: Annual Inflation (y-o-y) and Momentum (m-o-m) across Sub-groups

and amusement, pan tobacco and intoxicants, and education. Inflation in personal care and effects

remained steady while that of transport and communication edged up (Chart III.33).

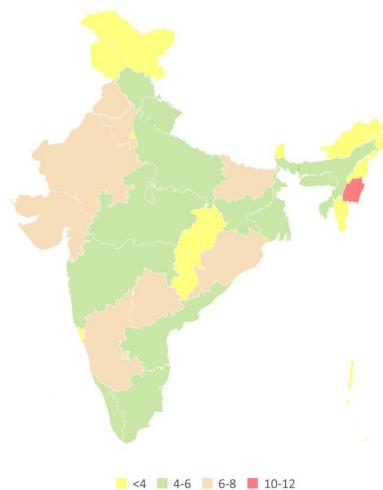
Chart III.33: Annual Inflation across Sub-groups (November 2023 versus October 2023)

In terms of regional distribution, rural inflation stood at 5.85 per cent, higher than urban inflation at 5.26 per cent in November 2023. Majority of the states recorded inflation less than 6 per cent (Chart III.34).

High frequency food price data for December so far (up to 18th) show that while cereal and pulses prices rose further, edible oil prices continued on a broad-based decline (Chart III.35). Amongst key vegetables, onion prices, though elevated, are showing signs of correction in December. Potato prices declined while tomato prices registered an uptick.

Retail selling prices of petrol and diesel in the four major metros have remained stable in December so far (up to 18th). While kerosene prices softened

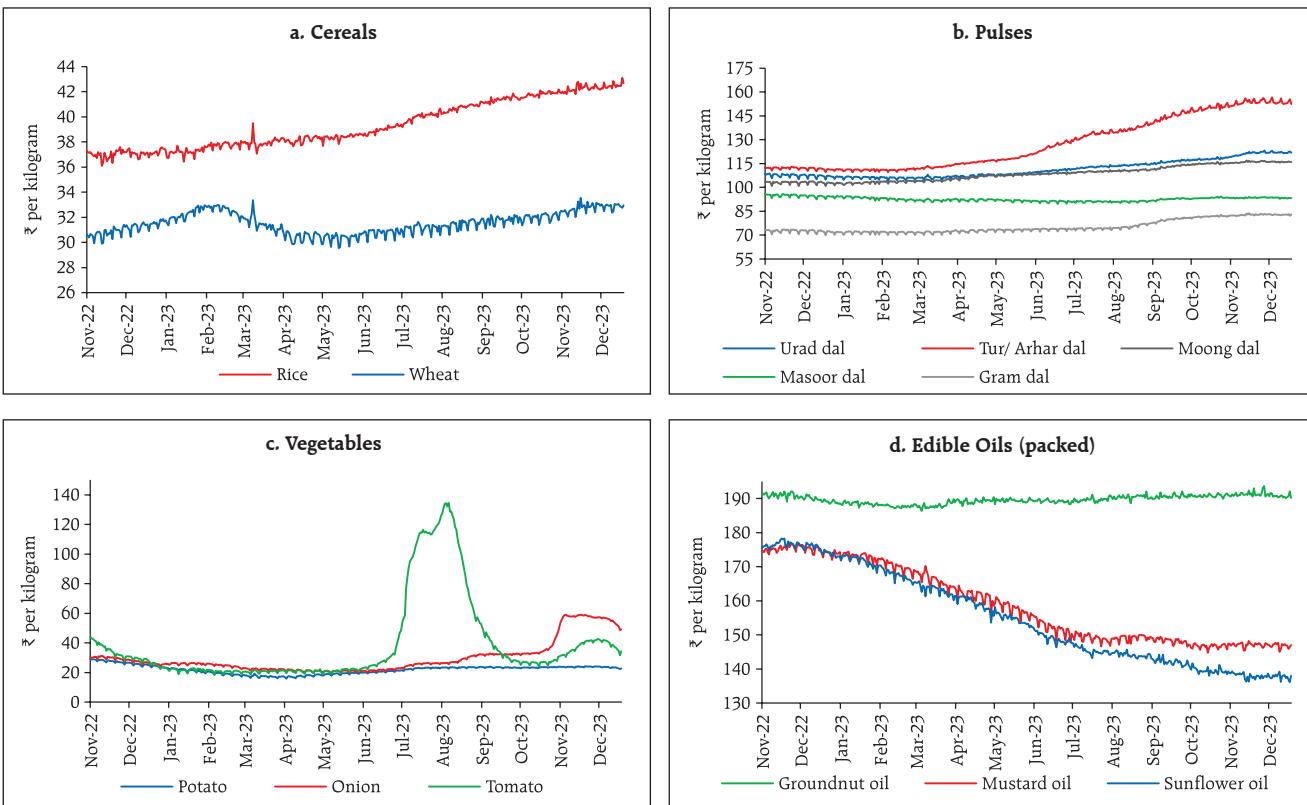
Chart III.34: Spatial Distribution of Inflation November 2023 (CPI-Combined, y-o-y, per cent)



Note: Map is for illustrative purposes only.

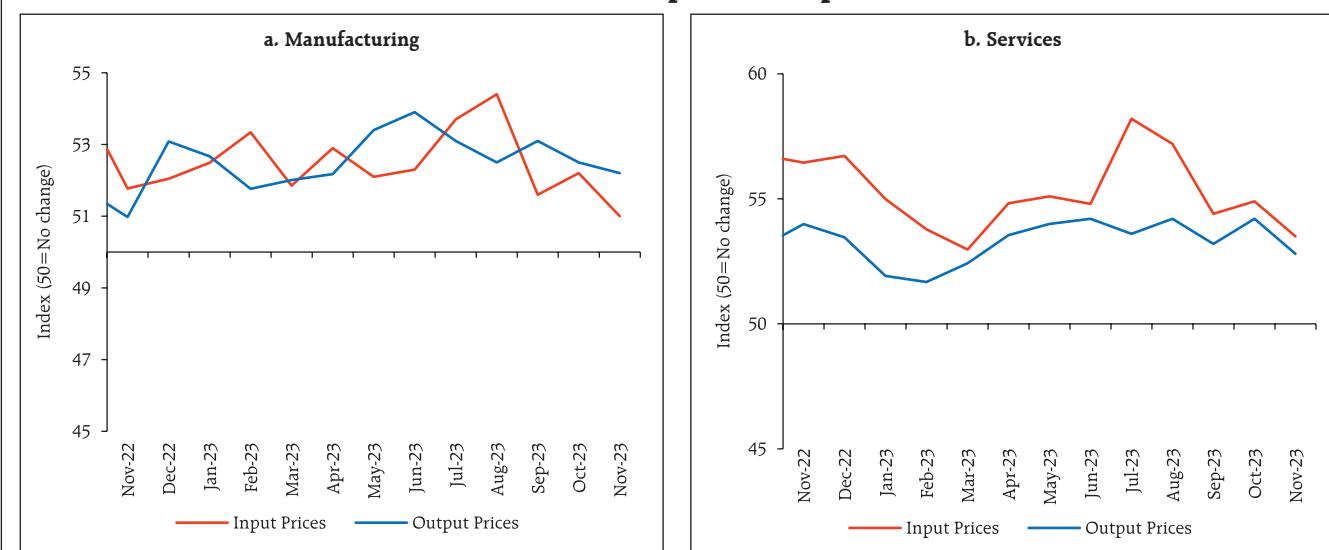
Sources: NSO; and RBI staff estimates.

Chart III.35: DCA Essential Commodity Prices



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

Chart III.36: PMI: Input and Output Prices



Source: S&P Global.

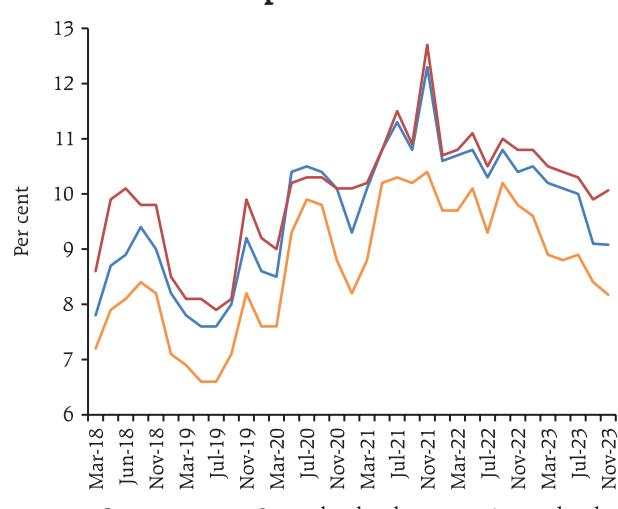
further, LPG prices remained unchanged in December so far (Table III.2).

The PMIs for November 2023 indicated a moderation in input as well as output costs across manufacturing and service sectors (Chart III.36).

Household's inflation perceptions of current inflation continued to decline in November 2023 (Chart

III.37).¹³ Three month ahead inflation expectations remained unchanged in single digits, while the one year ahead expectations exhibited a pick-up by 20bps in November.

Chart III.37: Households' Median Inflation Expectations



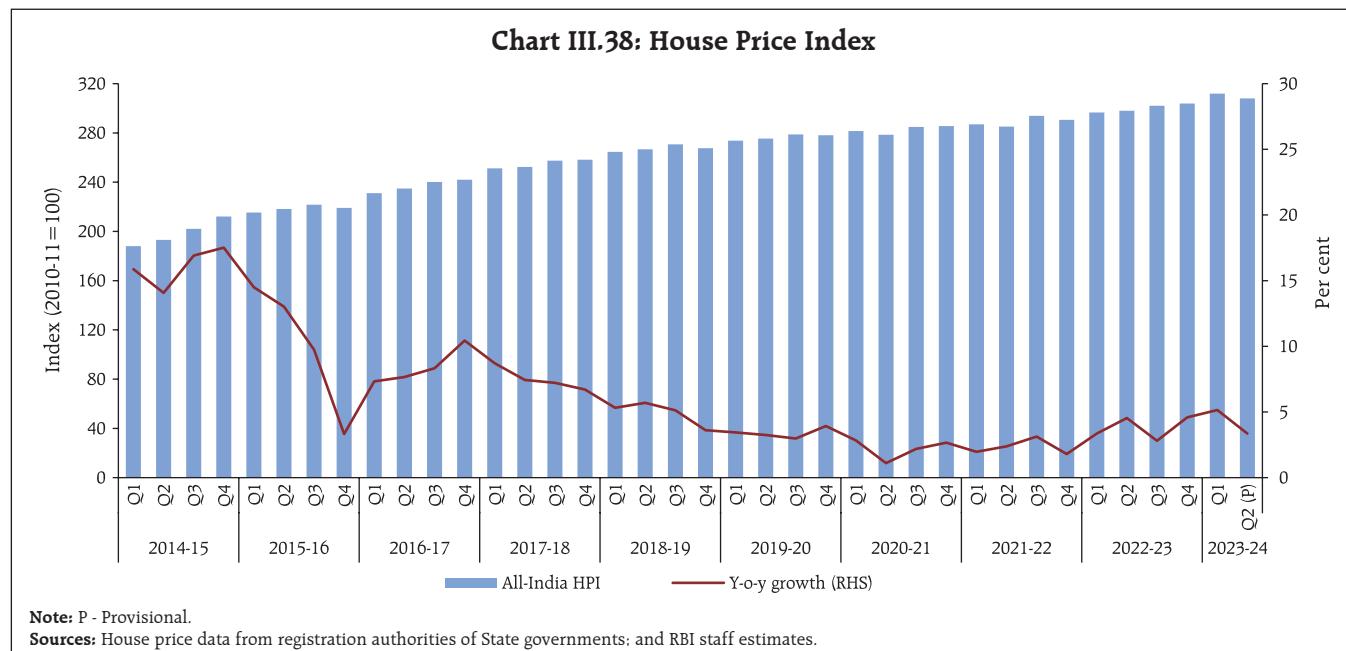
Source: IESH, RBI.

¹³ For the period December 1-18, 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.

¹³ As per the RBI's bi-monthly inflation expectation survey of households (IESH).



The all-India house price index (HPI)¹⁴ increased by 3.4 per cent (y-o-y) during Q2:2023-24 as against 5.1 per cent in the previous quarter and 4.5 per cent a year ago. On a sequential basis (q-o-q), however, the HPI declined by 1.2 per cent, despite seven out of the ten cities covered in the index exhibiting sequential increases (Chart III.38).

IV. Financial Conditions

Elevated government cash balances on account of robust tax collections resulted in withdrawal of liquidity from the banking system despite the return of currency during the second half of November 2023. The usual month-end government spending alleviated the stress to some extent. Banks took larger recourse to the marginal standing facility (MSF) during November 16–December 15, 2023 than during October 16–November 15, 2023 (Chart IV.1). At the same time, deployment of funds by the banks under the standing deposit facility (SDF) also averaged higher than during October 16–November 15, 2023. In view of the likely

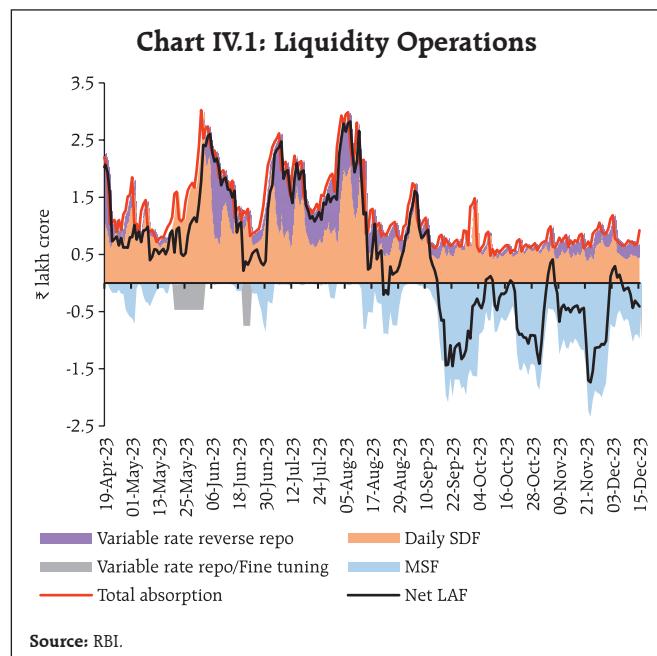
outflows from the banking system on account of advance tax and GST payments in December, the Reserve Bank injected liquidity amounting to ₹1.0 lakh crore on December 15 by conducting a 7-day VRR auction (in *lieu* of the main operation). Overall, injection of liquidity on a net basis under the liquidity adjustment facility (LAF) averaged ₹0.5 lakh crore during November 16–December 15, 2023.

As noted in the Governor's policy statement of October 2023, the simultaneous placement of large funds under the SDF and large recourse to the MSF is somewhat paradoxical. In order to enable better fund management by the banks, it was decided in December to allow reversal of liquidity facilities under both the SDF and the MSF even during weekends and holidays with effect from December 30, 2023. This is expected to alleviate the tightness in liquidity conditions during the weekends, provide banks with flexibility in operations and impart greater efficiency to liquidity management.¹⁵

Reflecting these developments, overnight money market rates – the weighted average call rate (WACR);

¹⁴ House price index (base: 2010-11=100) is compiled based on transaction-level data received from the registration authorities in ten major cities (*viz.*, Ahmedabad, Bengaluru, Chennai, Delhi, Jaipur, Kanpur, Kochi, Kolkata, Lucknow and Mumbai).

¹⁵ If required, this will undergo a review after six months or earlier.

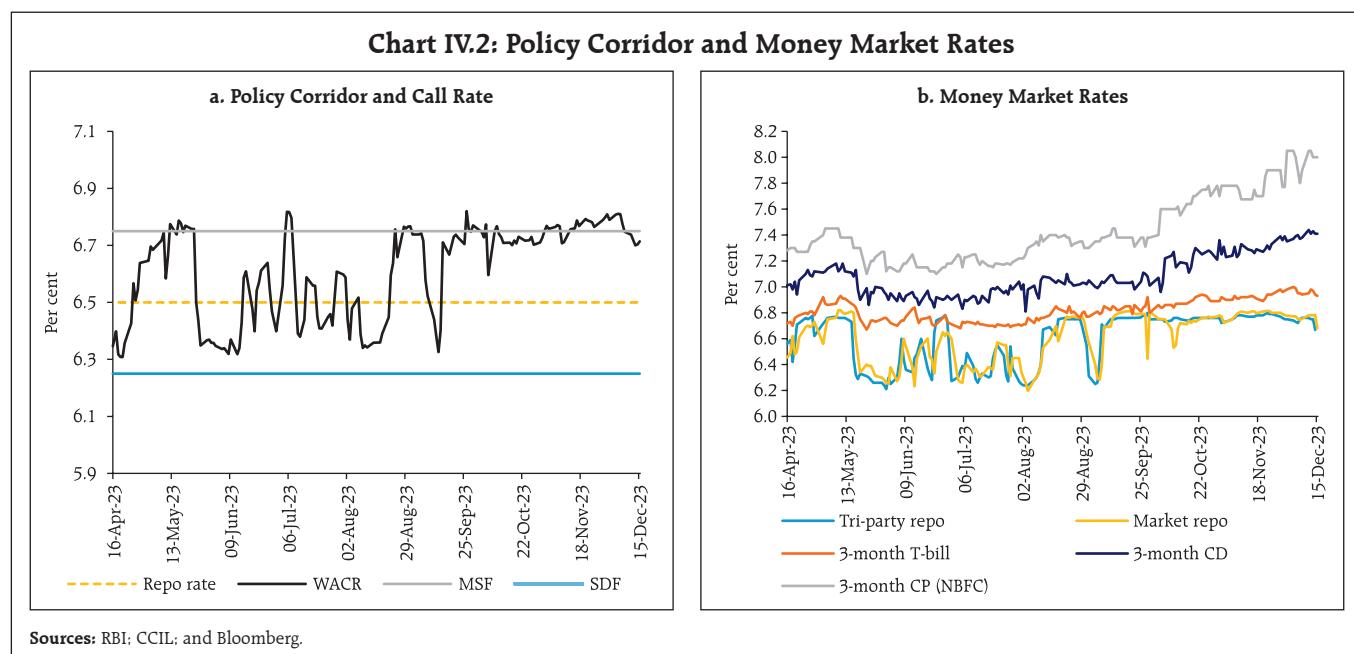


the triparty repo rate; and the market repo rate hovered around the ceiling of the LAF corridor. The average spread over the policy repo rate at 23 bps, 28 bps and 29 bps, respectively, during November 16 - 30 (including Saturday/ holidays), eased to 19 bps, 23 bps and 22 bps, respectively, during December 1 - 15, 2023.

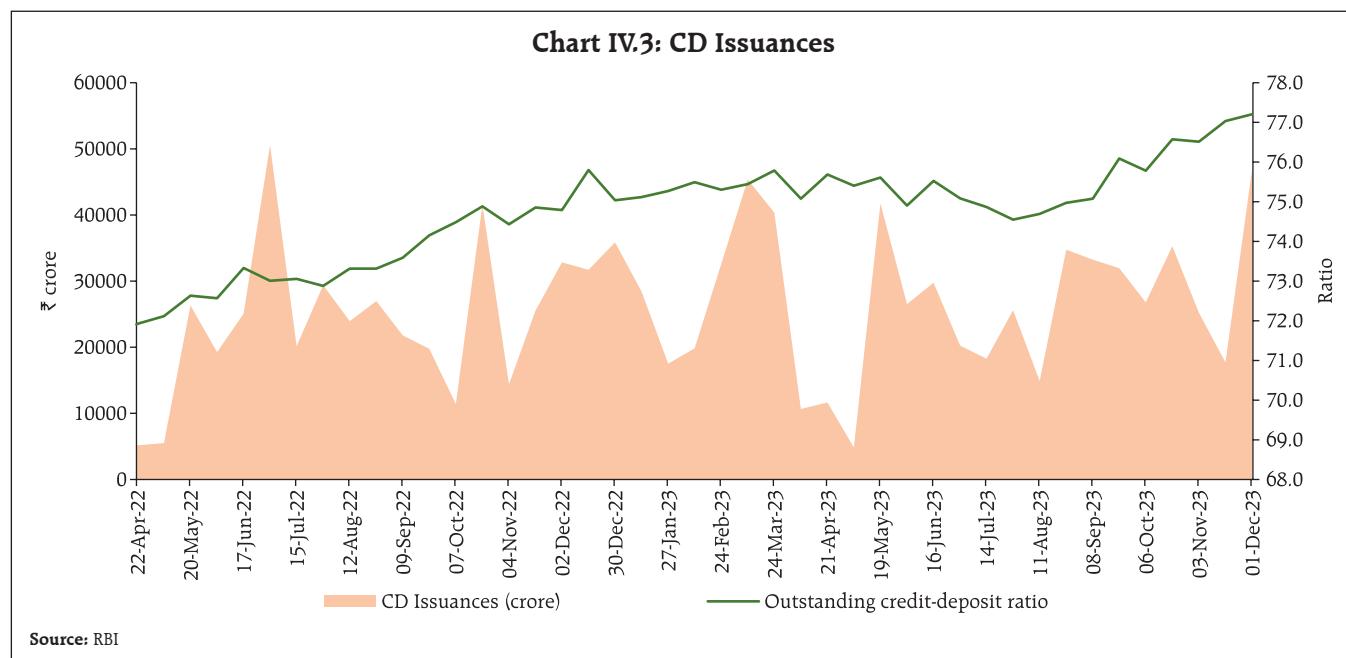
In the term money segment, yields firmed up across 3-month treasury bills (T-bills), 3-month certificates of deposit (CDs) and 3-month commercial papers (CPs) for non-banking financial companies (NBFCs) [Chart IV.2b]. In particular, the regulatory measures on consumer credit and bank credit to NBFCs announced by the Reserve Bank on November 16, 2023 had a significant hardening impact on CP rates for NBFCs.¹⁶ Accordingly, the money market risk premium (3 month CP for NBFCs minus 91 days T-bill rate) hardened to 95 bps during November 16–December 15 from 82 bps during October 16–November 15, 2023.

In the primary market, fund mobilisation through issuances of CDs remained robust at ₹4.6 lakh crore during 2023-24 (up to December 1), higher than ₹4.2 lakh crore a year ago. Banks' issuance of CDs increased to bridge the gap between credit offtake and deposit growth (Chart IV.3). CP issuances at ₹8.9 lakh crore (up to November 30) were lower than ₹9.3 lakh crore during the same period a year ago.

Softening US treasury yields and buying support from foreign portfolio investors (FPIs) kept G-sec



¹⁶ These measures included increase in the risk weight of (i) consumer credit; (ii) consumer credit exposure of NBFCs; (iii) credit card receivables of scheduled commercial banks (SCBs) and NBFCs; and (iv) exposure of SCBs to NBFCs by 25 percentage points each.



yields largely range bound. The yield on the 10-year G-sec benchmark was at 7.16 per cent on December 15 as compared with 7.22 per cent on November 15 (Chart IV.4a and IV.4b). The average term spread in the G-sec market (10-year minus 91-day treasury Bills) during November 16 to December 15 at 30 bps remained moderate, reflecting stable domestic financial conditions.

Three-year corporate bond yields and associated risk premia declined sharply, reflecting healthy investor appetite in this segment while it firmed up in the 5-year segment during November 16 - December 15, 2023 (Table IV.1). Overall, corporate bond issuances during 2023-24 (up to November) were higher at ₹5.0 lakh crore than ₹3.9 lakh crore a year ago.

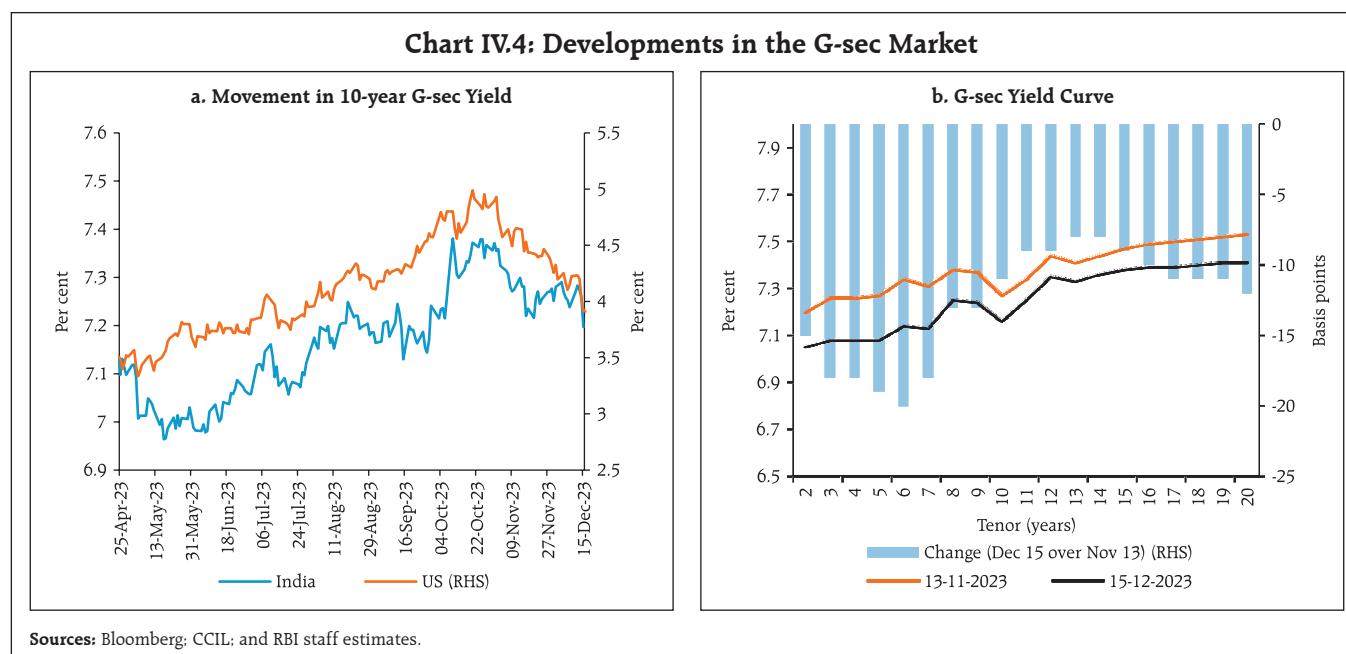


Table IV.1: Corporate Bonds - Rates and Spread

Instrument	Interest Rates (per cent)			Spread (basis points) (Over Corresponding Risk-free Rate)		
	Oct 16, 2023 – Nov 15, 2023	Nov 16, 2023 – Dec 15, 2023	Variation	Oct 16, 2023 – Nov 15, 2023	Nov 16, 2023 – Dec 15, 2023	Variation
1	2	3	(4 = 3-2)	5	6	(7 = 6-5)
Corporate Bonds						
(i) AAA (1-year)	7.80	7.90	10	54	64	10
(ii) AAA (3-year)	8.00	7.75	-25	55	40	-15
(iii) AAA (5-year)	7.82	7.92	10	36	55	19
(iv) AA (3-year)	8.61	8.40	-21	117	105	-12
(v) BBB-(3-year)	12.26	12.03	-23	482	468	-14

Note: Yields and spreads are computed as monthly averages.

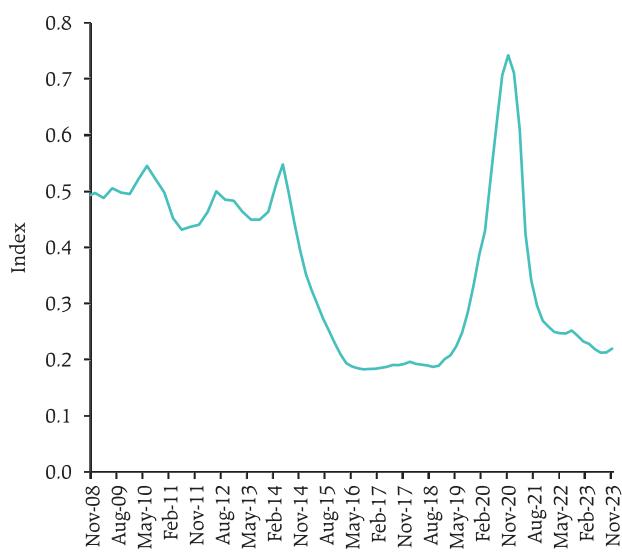
Sources: FIMMDA; and Bloomberg.

Macroeconomic uncertainty, as measured from responses of professional forecasters (SPF)¹⁷ survey suggested that uncertainty induced by the COVID-19 pandemic in 2020 ebbed from 2022 and has continued to remain benign since then (Chart IV.5).

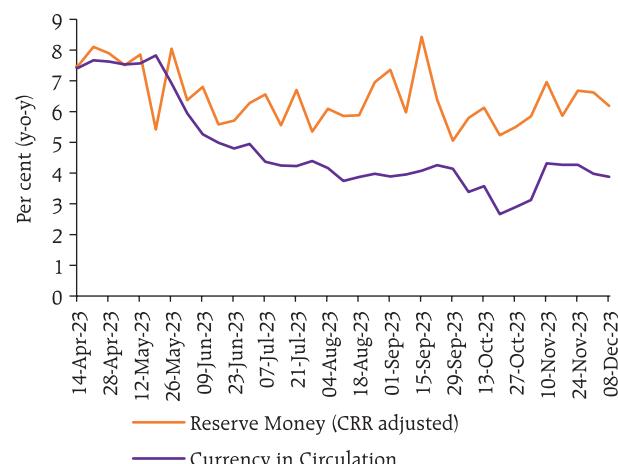
Reserve money (RM), excluding the first-round impact of change in the cash reserve ratio (CRR), recorded a growth of 6.2 per cent (y-o-y) as on

December 8, 2023 (8.2 per cent a year ago) [Chart IV.6]. Currency in circulation (CiC), the largest component of RM, decelerated to 4 per cent from 8 per cent a year ago, reflecting the withdrawal of ₹2,000 banknotes.¹⁸

Money supply (M_3), excluding the impact of the merger of a non-bank with a bank (with effect from July 1, 2023), rose by 11.2 per cent (y-o-y) as on

Chart IV.5: Macroeconomic Uncertainty

Source: RBI staff estimates based on SPF, RBI.

Chart IV.6: Reserve Money and Currency in Circulation

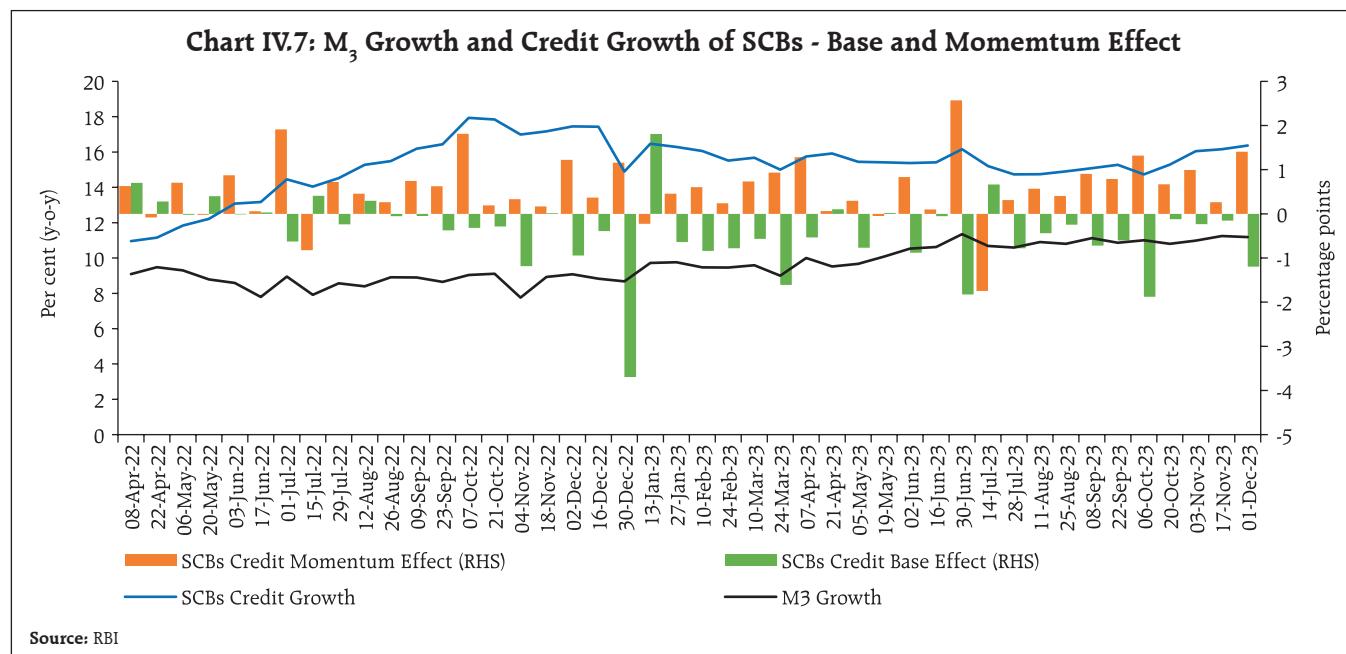
Note: 1. Data pertain to last Friday of every month.

2. Latest data for reserve money pertain to December 8, 2023.

Source: RBI.

¹⁷ Patra, M. D., Mohan, R., John, J. and Bhattacharyya, I. (2023). Measuring Uncertainty: An Indian Perspective *RBI Bulletin*, October.

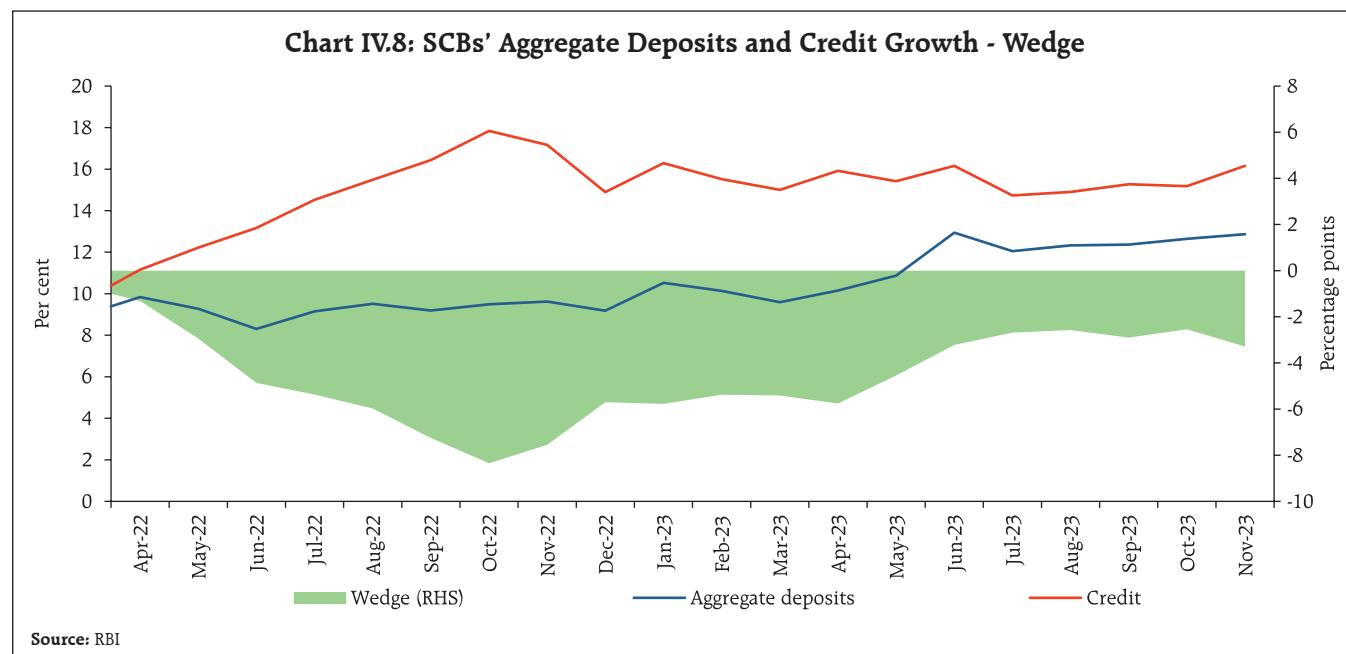
¹⁸ Announced on May 19, 2023.

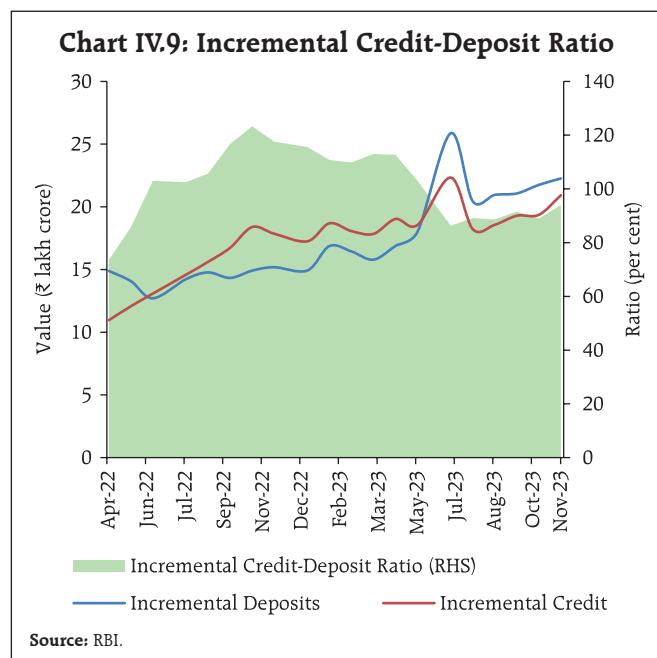


December 1, 2023 (9.1 per cent a year ago). Aggregate deposits with banks, the largest component of M₃, increased by 12.2 per cent (9.3 per cent a year ago). SCBs' credit growth (excluding the impact of the merger) moderated from 17.5 per cent a year ago to 16.4 per cent as on December 1, 2023 (Chart IV.7).

Deposit growth (excluding the impact of the merger), which had spurted in the wake of withdrawal of ₹2000 banknotes, has now stabilised (Chart IV.8).

During June 2022-May 2023, the incremental credit-deposit ratio rose above 100 per cent, but has been declining thereafter reflecting the surge





in deposits mobilisation. In November 2023, the incremental credit-deposit ratio stood at 94.0 per cent, above its decadal average of 76.8 per cent (Chart IV.9).

Monetary policy transmission is still working its way through the credit market.¹⁹ During May 2022²⁰ to October 2023, the weighted average lending rate (WALR) on fresh rupee loans increased by 199 bps, including an increase of 18 bps since April 2023. The

WALR on outstanding rupee loans increased by 112 bps during May 2022 to October 2023. On the deposit side, the weighted average domestic term deposit rates (WADTDRs) on fresh and outstanding deposits increased by 228 bps and 172 bps, respectively, during the same period. While the WADTDR on fresh deposits has declined in recent months, rates on outstanding term deposits continue to increase with the repricing of term deposits (Table IV.2).

The pass-through to WALR on fresh rupee loans and to WADTDR on fresh deposits was higher for public sector banks than for private banks, while the transmission to WALR on outstanding loans was higher for private banks (Chart IV.10).

In November 2023, domestic equity indices recorded gains, propelled by positive global cues and favourable corporate earnings for Q2:2023-24. In December so far, the momentum has been reinforced, with the BSE Sensex recording a significant increase from the end of October and closing at a new all-time high of 71,315 as of December 18, 2023 (Chart IV.11).

During the same period, the broader market indices, as measured by the BSE midcap and BSE smallcap index, gained by 16.2 per cent and 14.5

Table IV.2: Transmission from the Repo Rate to Banks' Deposit and Lending Rates

(Variation in basis points)

Period	Repo Rate	Term Deposit Rates		Lending Rates			
		WADTDR (Fresh Deposits)	WADTDR (Outstanding Deposits)	EBLR	1 - Year MCLR (Median)	WALR (Fresh Rupee Loans)	WALR (Outstanding Rupee Loans)
Feb 2019 to Mar 2022	-250	-259	-188	-250	-155	-232	-150
May 2022 to Oct 2023	250	228	172	250	156*	199	112
Of which:							
Apr to Oct 2023	0	-17	59	0	20*	18	12

*: Latest data on MCLR are up to November 2023.

Notes: 1. WALR: Weighted average lending rate; WADTDR: Weighted average domestic term deposit rate; EBLR: External benchmark-based lending rate; and MCLR: Marginal cost of funds-based lending rate.

2. Data on EBLR pertain to 32 domestic banks.

Source: RBI.

¹⁹ Governor's Statement: December 8, 2023. https://www.rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=56887

²⁰ The month of first policy rate increase in the current phase.

Chart IV.10: Transmission to Lending and Deposit Rates across Bank Groups (May 2022 to October 2023)

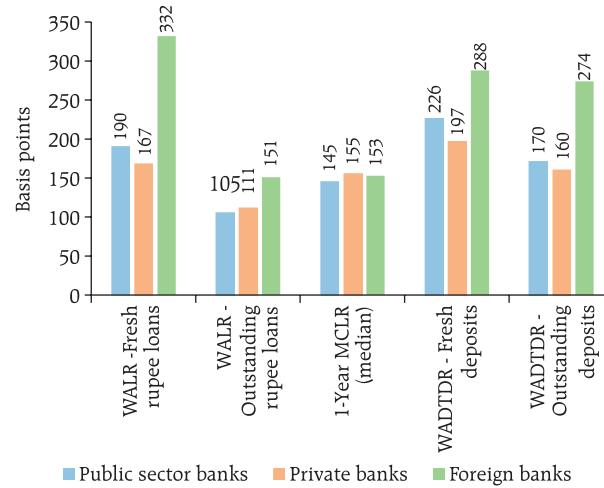
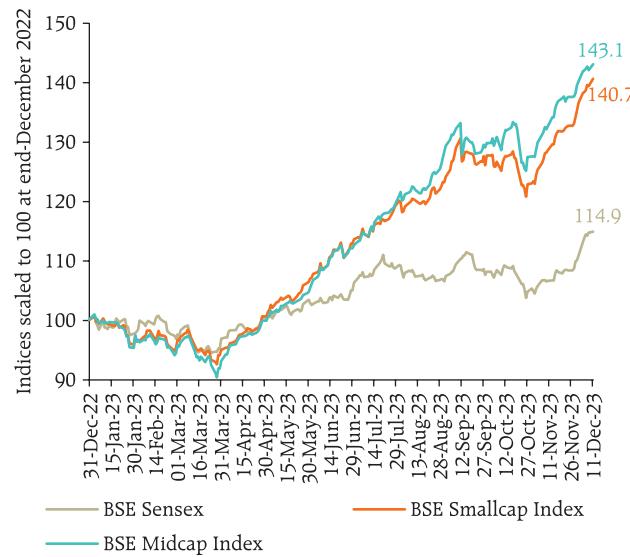


Chart IV.12: Performance of Broad Indices in 2023



per cent, respectively, extending their recent outperformance *vis-à-vis* the benchmark Sensex (Chart IV.12). The total market capitalisation of BSE listed firms crossed the historic US\$ 4 trillion mark on November 29, making the Indian market the fifth largest in the world.

Low secondary market volatility and attractive valuations aided primary market fund raising through initial public offerings (IPOs). In November, primary market fund raising through IPOs stood at ₹13,431 crore which was the highest single month tally since May 2022 (Chart IV.13).

Chart IV.11: BSE Sensex and Institutional Flows

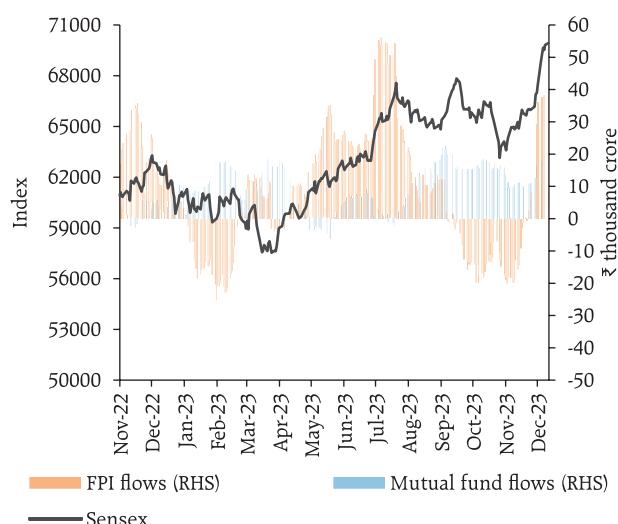
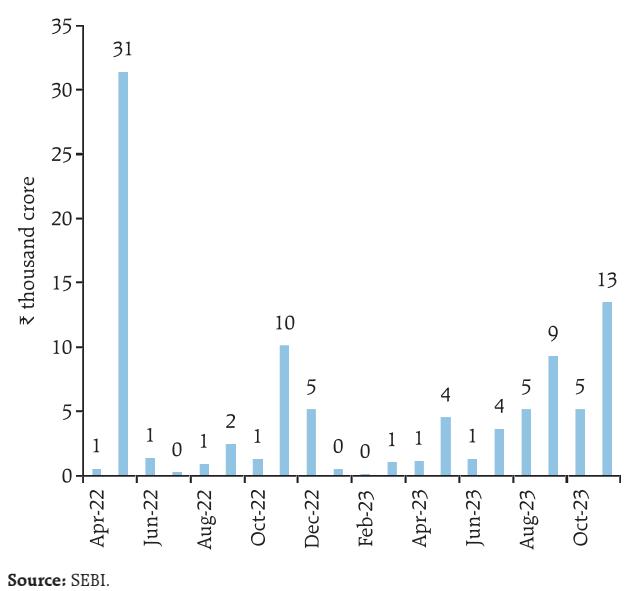
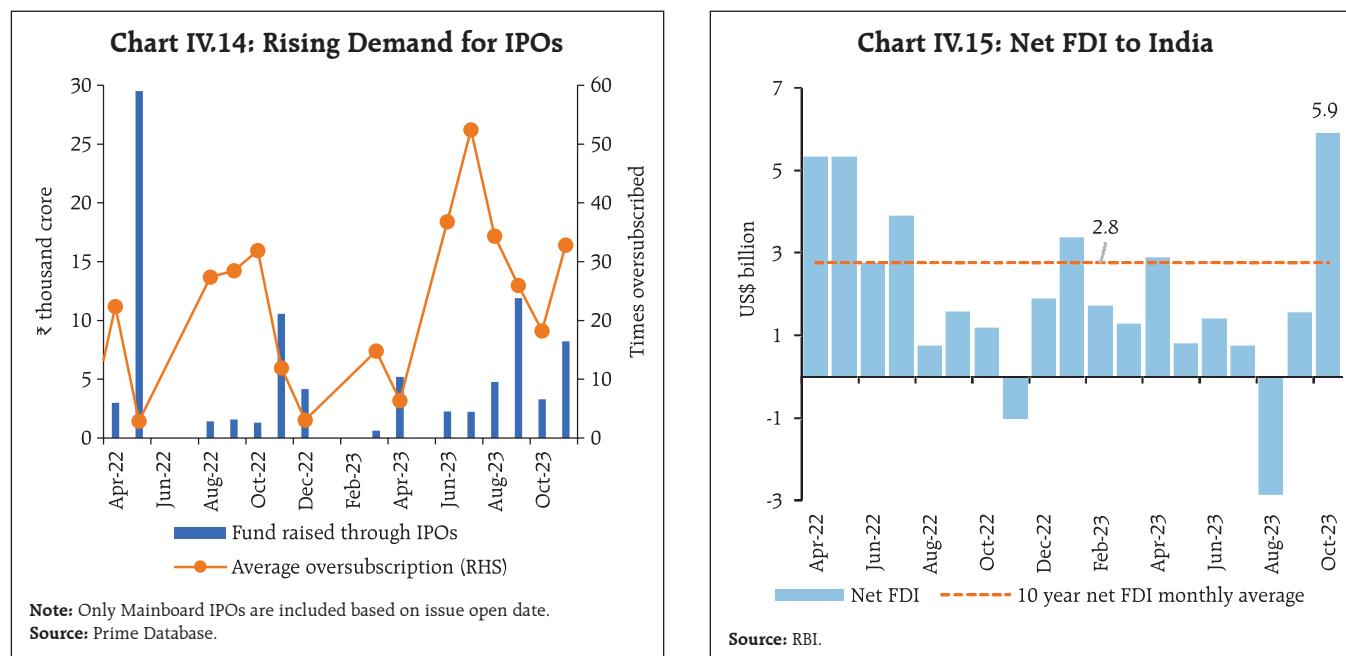


Chart IV.13: Monthly IPO Issuances





Five mainboard IPOs were listed in the last week of November²¹ with an average oversubscription²² of 32.2 times. The total IPO subscription from these issues amounted to ₹2.6 lakh crore as against a total issue size of ₹7,379 crore. New issuances have witnessed heavy oversubscription in 2023-24 so far. (Chart IV.14).

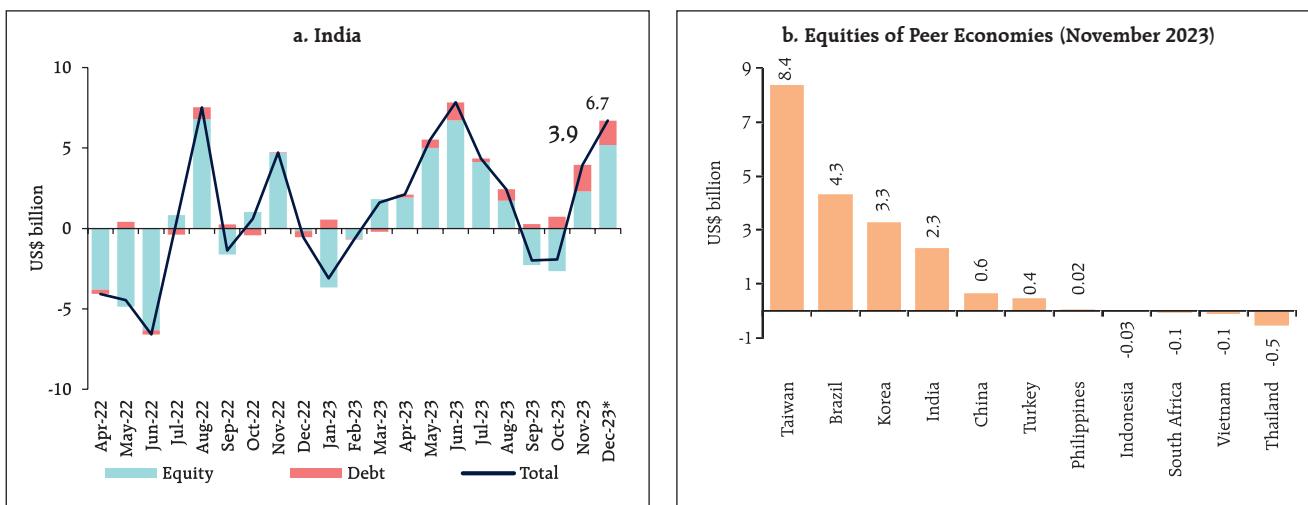
Net foreign direct investment (FDI) at US\$ 5.9 billion rose to a 21-month high in October 2023, primarily due to strong gross inflows and lower repatriation (Chart IV.15). Around four-fifths of the gross inward FDI equity flows were received in manufacturing, retail and wholesale trade, electricity and other energy sector, and financial services sector. The major source countries were Mauritius, Singapore, Cyprus and Japan, contributing more than four-fifths of the total FDI inflows in October 2023. During 2023-24 so far (April-October), net FDI moderated to US\$ 10.4 billion from US\$ 20.8 billion a year ago. Amidst global de-risking efforts, emerging economies like India remain attractive investment destinations.

²¹ This includes one IPO that got listed on December 1, 2023.

²² Oversubscription is an indicator of high demand for a particular IPO.

FPIs turned net buyers in Indian capital markets in November 2023 after two months. Net FPI inflows were to the tune of US\$ 3.9 billion in November (Chart IV.16a). Net inflows in the equity segment stood at US\$ 2.3 billion in November, comparable to other emerging market peers (Chart IV.16b). Sovereign bond, consumer services and capital goods attracted the highest investments during the month. The debt segment has attracted inflows throughout the current financial year, reaching the highest monthly level in November 2023 since September 2021. This is supported by the announcement of the inclusion of Indian government bonds in the Global Bond Index-Emerging Markets (GBI-EM) index next year. FPIs invested US\$ 6.7 billion in domestic markets in December 2023 (up to December 15). During the current financial year (up to December 15), net FPI inflows to India remained strong at US\$ 29.0 billion, reversing net outflows of US\$ 15.3 billion and US\$ 5.9 billion in 2021-22 and 2022-23, respectively.

During April-October 2023, net accretions to non-resident deposits rose to US\$ 6.1 billion from US\$ 3.1 billion a year ago, primarily led by a rise in net accretions to Foreign Currency Non-Resident [FCNR(B)] accounts.

Chart IV.16: Net Portfolio Investments

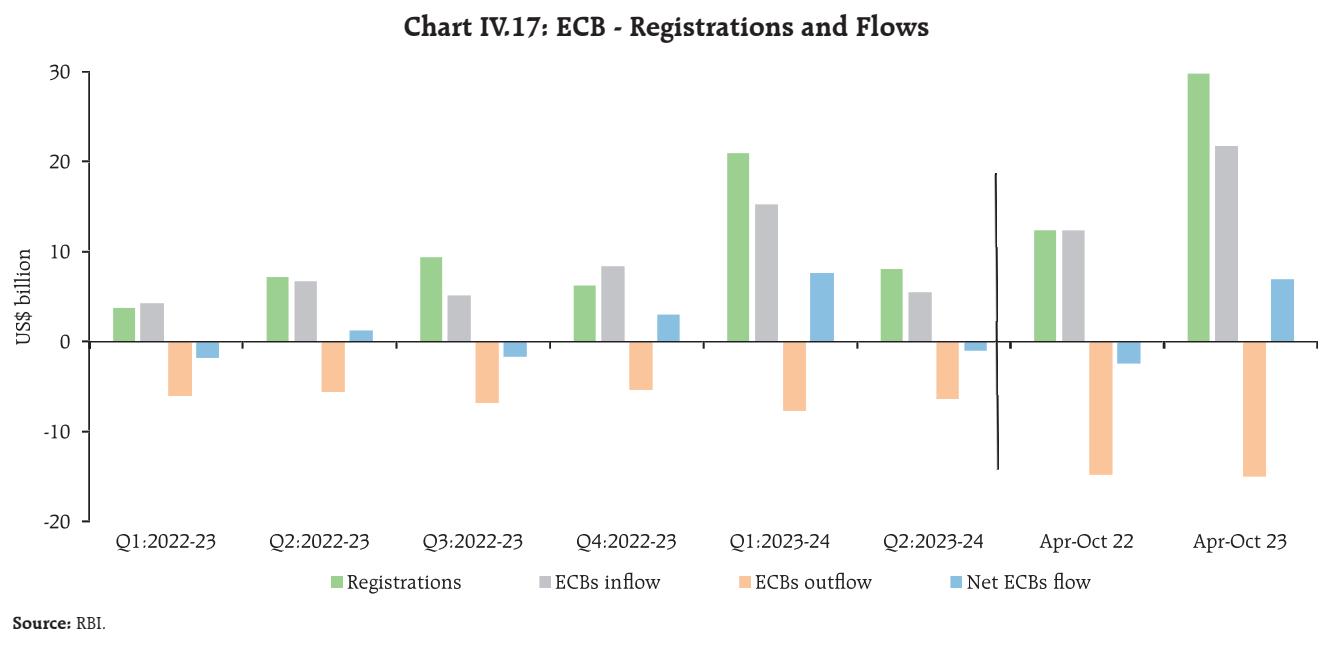
Notes: 1. Debt includes investments under the voluntary retention route (VRR) and hybrid instruments.

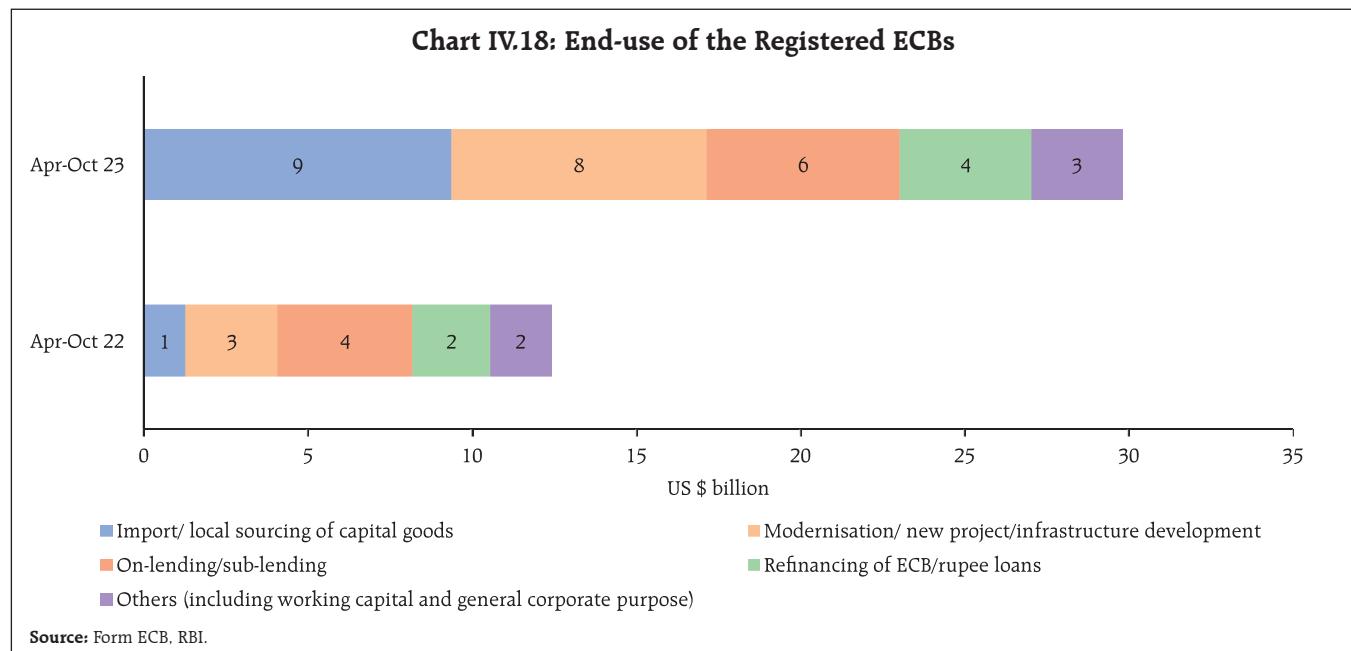
2.*. Data up to December 15, 2023.

Sources: National Securities Depository Limited; and Institute of International Finance.

ECB registrations and disbursements were higher at US\$ 29.8 billion and US\$ 21.8 billion, respectively, during April-October 2023 than in the corresponding period last year. Adjusting for principal repayments, net ECB inflows stood at US\$ 6.9 billion this year so far as against a net outflow of US\$ 2.4 billion a year ago (Chart IV.17).

Nearly three-fourths of the new ECBs registrations during April-October 2023 were earmarked for capital expenditure (*viz.*, development, whereas the rest was raised for refinancing of earlier ECBs/rupee loans, working capital and other purposes (Chart IV.18).

Chart IV.17: ECB - Registrations and Flows



The cost of ECBs continues to rise in step with the global monetary policy tightening cycle, *viz.*, the secured overnight financing rate (SOFR) rose by 48 bps during March–October 2023. Combined with the movement in the weighted average interest margin (WAIM), it resulted in a rise in the overall cost of ECBs to 7.3 per cent in October 2023 from 6.7 per

cent in March 2023. Over the last one year, the average cost of ECB loans rose by 314 bps even as WAIM came down to 154 bps from 170 bps a year ago (Chart IV.19).

The foreign exchange reserves stood at US\$ 606.9 billion on December 8, 2023 covering 10.4 months of imports projected for 2023-24 and 96 per cent of

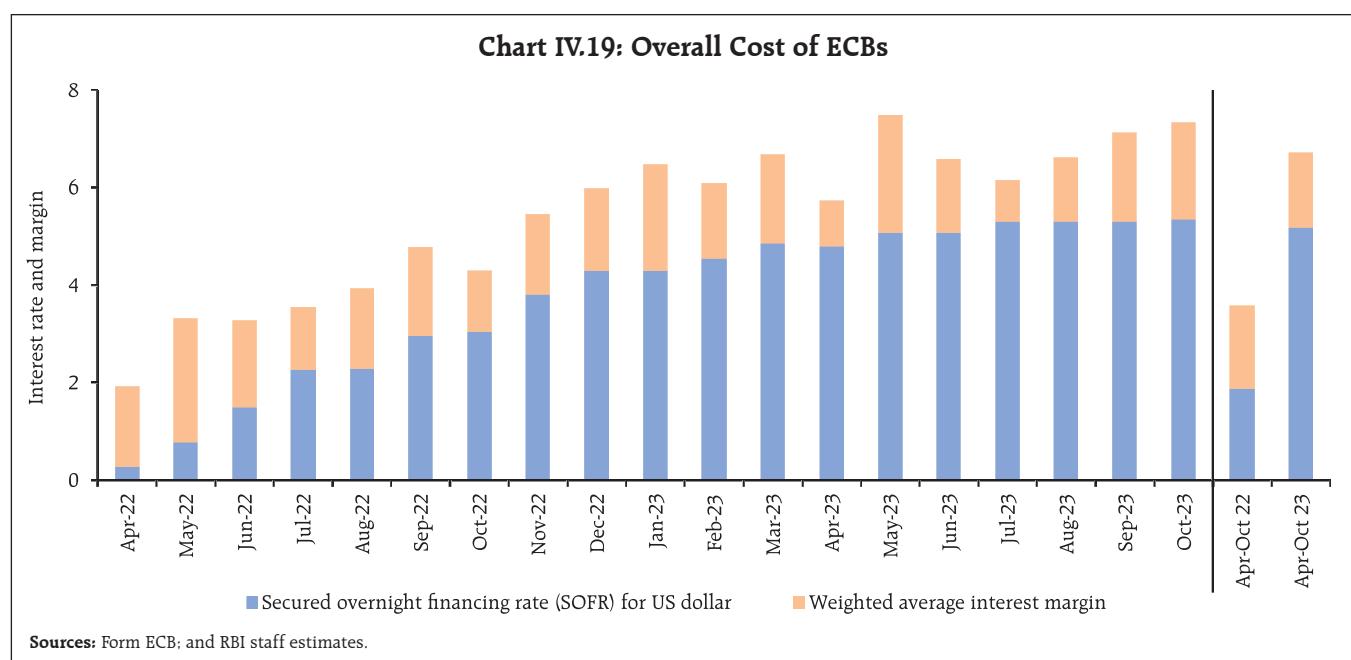
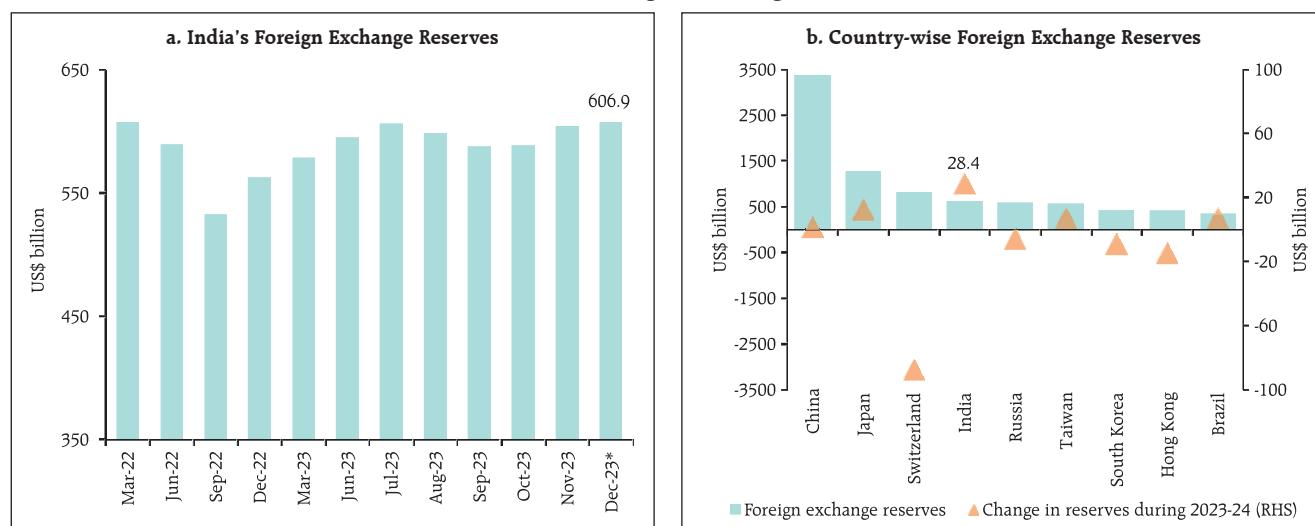


Chart IV.20: Foreign Exchange Reserves

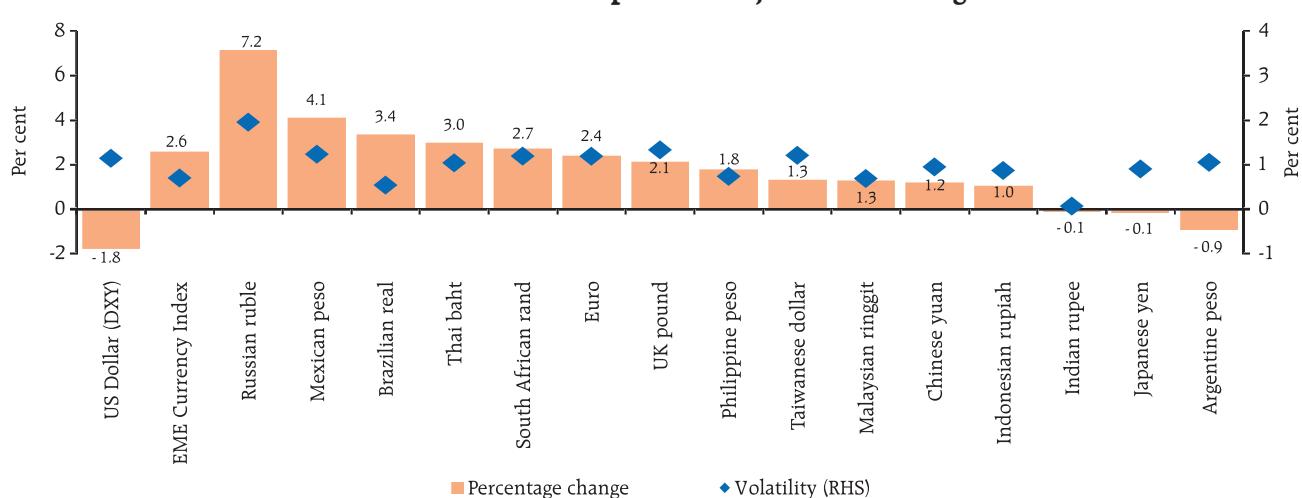
Note: Data for India and Russia is for December 8, 2023, end-October for Hong Kong and Switzerland, and end-November for the remaining countries.
Sources: RBI; and respective central bank websites.

total external debt outstanding at end-June 2023 (Chart IV.20a). India's foreign exchange reserves were the fourth highest among major foreign exchange reserves holding countries, having increased by US\$ 28.4 billion during 2023-24 so far (Chart IV.20b).

The INR exhibited the least volatility among major currencies depreciating modestly by 0.1 per

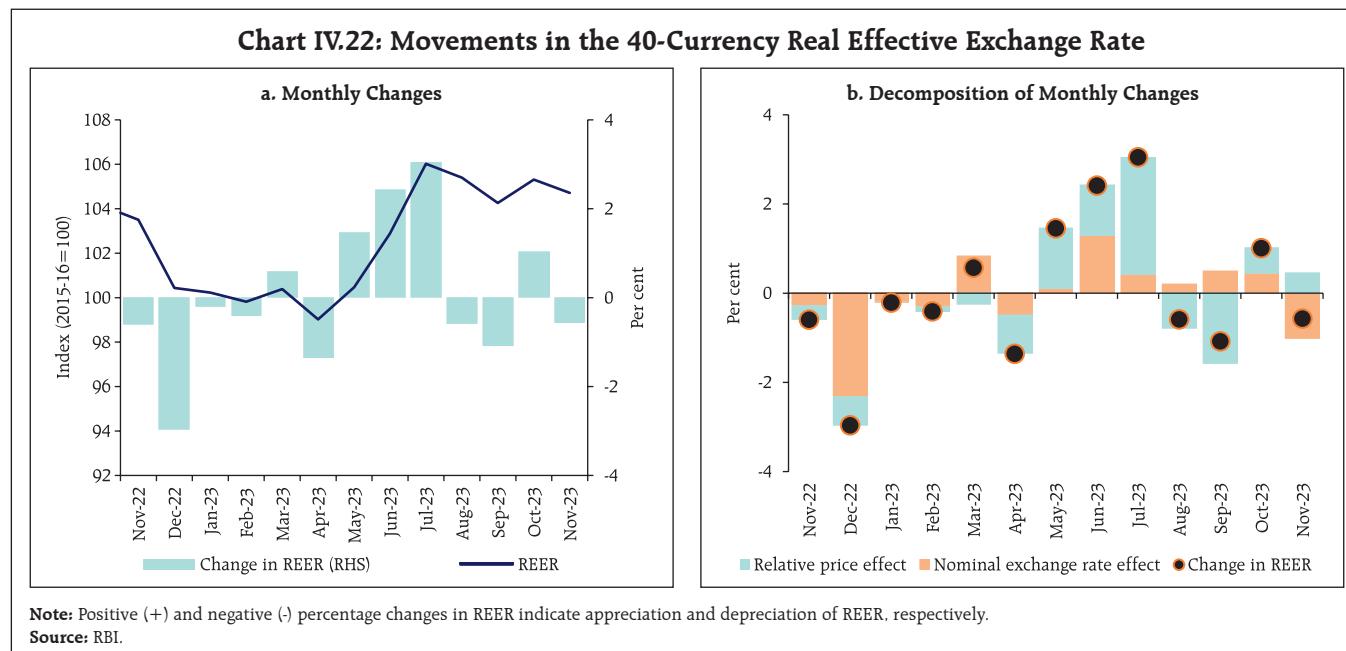
cent (m-o-m) vis-à-vis the US dollar in November 2023 (Chart IV.21).

The INR depreciated (m-o-m) in terms of 40-currency real effective exchange rate (REER) in November 2023 as depreciation of the INR in nominal effective terms more than offset positive relative price/cost differentials (Chart IV.22).

Chart IV.21: Movements of the Indian Rupee and Major Currencies against the US Dollar

Notes: 1. Data represents m-o-m change (November 2023 over October 2023).
 2. Positive (+) and negative (-) percentage changes indicate appreciation and depreciation of currencies, respectively.
 3. US dollar (DXY) measures the movements of the US dollar against a basket of major currencies (Euro, Japanese yen, British pound, Canadian dollar, Swedish krona, Swiss franc).

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



Payment Systems

Digital transactions posted robust growth in November 2023 across major payment systems (Table IV.3). E-commerce order volumes surged by 37 per cent (y-o-y) due to festival sales and more than 50 per cent of the total sales in the year occurred through online platforms.²³ On the retail front, the Unified Payments Interface (UPI) achieved a record transaction value of ₹17.4 lakh crore, despite a

marginal dip in volumes. Merchant transactions on the UPI platform, however, recorded a 74 per cent jump (y-o-y), totalling over 6.5 billion transactions. Credit card spending also reached a high of ₹1.8 lakh crore in October, reflecting a 38 per cent rise (y-o-y). Transactions under the National Automated Clearing House (NACH) also point to a boost in demand from rural and semi-urban centres, attributed to fund disbursals and loan repayments.

Table IV.3: Growth in Select Payment Systems

(y-o-y in per cent)

Payment System Indicators	Transaction Volume				Transaction Value			
	Oct-22	Oct-23	Nov-22	Nov-23	Oct-22	Oct-23	Nov-22	Nov-23
RTGS	3.4	18.0	19.9	6.2	14.0	16.6	11.9	10.6
NEFT	27.9	38.2	29.3	45.7	10.1	19.6	18.0	17.5
UPI	73.2	56.2	74.6	53.7	57.1	41.6	54.9	46.1
IMPS	12.0	2.2	12.5	1.9	25.7	15.5	24.7	17.7
NACH	19.4	-1.5	6.7	65.9	20.3	11.9	35.9	27.2
NETC	32.1	13.0	33.4	12.3	32.6	24.4	46.2	14.1
BBPS	55.1	26.6	59.2	29.5	56.4	59.2	61.7	66.7

Note: **RTGS:** Real Time Gross Settlement; **NEFT:** National Electronic Funds Transfer; **UPI:** Unified Payments Interface; **IMPS:** Immediate Payment Service; **NACH:** National Automated Clearing House; **NETC:** National Electronic Toll Collection; **BBPS:** Bharat Bill Payment System
Source: RBI.

²³ https://www.business-standard.com/industry/news/festive-cheers-e-commerce-platforms-online-brands-sales-shine-on-diwali-123111300320_1.html

In a move towards enhanced cross-border cooperation in international clearing, the Reserve Bank and the Bank of England (BoE) signed a Memorandum of Understanding (MoU) for exchange of information in relation to the Clearing Corporation of India Limited (CCIL). On the payments front, the National Payments Corporation of India (NPCI) issued guidelines for merchant onboarding under the peer-to-peer-merchant (P2PM) category, aimed at integrating small merchants with low-value transaction sizes into the digital framework and aligning category-specific guidelines within the UPI ecosystem.²⁴

In the Statement on Developmental and Regulatory Policies announced on December 08, 2023²⁵, the Reserve Bank announced a slew of measures to bolster the ongoing digital drive, including the enhancement of the UPI transaction limit for payments to hospitals and educational institutions from ₹1 lakh to ₹5 lakh per transaction; enhancement of the limits for e-mandates for recurring online payments without any additional factor of authentication (AFA) from ₹15,000 to ₹1 lakh for mutual fund subscriptions, insurance premiums and credit card payments; establishment of a cloud facility for the Indian financial sector; and the setting up of a FinTech repository to gather information about FinTechs for designing appropriate policy approaches.

Conclusion

In this challenging *milieu*, the monetary policy committee (MPC) revised upwards the real GDP forecast for 2023-24 to 7 per cent, maintained its inflation forecast for the year at 5.4 per cent and voted in its fifth bi-monthly meeting for the year 2023-24 to maintain *status quo* with regard to the policy interest rate. It also persevered with its stance of withdrawal of accommodation, stressing that the

course of disinflation needs to be sustained. While it drew comfort from the steady easing of core inflation in response to the restrictiveness of monetary policy, the MPC expressed concerns that 'recurring food price shocks are impeding the ongoing disinflation' and rendering headline inflation volatile. This runs the risk of un-anchoring inflation expectations. The MPC also took note of the strong momentum in investment demand that is driving growth but remained 'resolute in its commitment to aligning inflation to the target'.²⁶

The softer inflation prints for September and October 2023 and the prolonged pause in the stance of monetary policy has engendered a certain hypermetropia among some stakeholders – an irrational long-sightedness whereby inflation forecasts gravitating towards the 4 per cent target sometime in the distant future are sighted clearly whereas high near-term risks of spikes in inflation outcomes on the back of food volatility are blurred. Under these conditions, a clamour rises for rate cuts or at least that the central bank commits to a path of moderation in the level of the policy rate.

Such views imperil the conduct of monetary policy in the pursuit of its goal of durably aligning inflation with the target. These views also undermine the foundations of growth. Projections indicate that inflation will go up further from the September-October 2023 average of 4.9 per cent before it can come down – the projection for Q3: 2023-24 is 5.6 per cent; for the year 2023-24 it is 5.4 per cent; and for the first three quarters of 2024-25 it is 4.6 per cent. The objective of aligning inflation with the target on a durable basis is far from assured. In earlier editions of this article, we have pointed out that households' inflation expectations are still not settled; business and consumer confidence in the inflation outlook is yet to turn optimistic. On a real-time basis, inflation is

²⁴ NPCI Circular, November 16, 2023

²⁵ https://www.rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=56889

²⁶ Resolution of the Monetary Policy Committee, December 8, 2023.

hurting discretionary consumer spending and this, in turn, is holding back topline growth of manufacturing companies as well as their capex. If inflation is not brought back to the target and tethered there, there is a strong likelihood that growth may falter.

On this note, we conclude with a befitting reference to the words of Shri Shaktikanta Das, Governor,²⁷ "Policy makers have to be mindful of the risk of being carried away by a few months of good

data or by the fact that CPI inflation has come within the target range.....they have to be watchful of the risks from new shocks that could hit the economy from anywhere anytime. We have now reached a stage when every action has to be thought through even more carefully to ensure overall macroeconomic and financial stability; more so, because the conditions ahead could be fickle. We have to remain vigilant and ready to act, as per the evolving outlook."

²⁷ Monetary Policy Statement for 2023-24, Governor's Statement: December 8, 2023.

Government Finances 2023-24: A Half-Yearly Review

by *Harshita Yadav, Kovuri Akash Yadav, Rachit Solanki, Saksham Sood, Anoop K Suresh, Samir Ranjan Behera and Atri Mukherjee* ^

The fiscal position of the Centre and States remained resilient during H1:2023-24. Their receipts were broadly in line with budget estimates and the containment of revenue expenditure while preserving capital expenditure demonstrated commitment to prudent fiscal management. The improvement in the quality of government expenditure bodes well for medium-term growth prospects and fiscal consolidation.

I. Introduction

The Union Budget 2023-24 was announced at a time when the Indian economy was being hailed as a 'bright spot' in terms of high growth aided by strong macroeconomic fundamentals. The Union Budget 2023-24 prioritised enhancing citizens' opportunities, accelerating growth, job creation, and macroeconomic stability. Towards fulfilment of these objectives, the Union government continued its thrust on infrastructure development with the allocation of a record level of capital expenditure. Likewise, to incentivise States' capital spending, allocation for the scheme providing financial assistance to States for capital expenditure, introduced in 2021-22, was enhanced by 30 per cent and extended into 2023-24. Furthermore, the government has curtailed its revenue expenditure, prioritising capital spending to enhance the overall quality of government expenditure.

The Centre aimed for a feasible order of fiscal consolidation for 2023-24, in line with the medium-term gross fiscal deficit (GFD) target of 4.5 per cent of the GDP by 2025-26. The States too have endeavoured for fiscal consolidation in 2023-24, budgeting a consolidated GFD of 3.1 per cent of the GDP, down from 3.4 per cent in 2022-23 (RE).^{1,2} The government finances for the Centre and States, as evident from the half yearly review for the financial year 2023-24 (viz., H1:2023-24) was robust, notwithstanding the prevailing geo-political tensions as well as the elevated likelihood of a recession in several advanced economies.

The Centre's major direct and indirect tax heads such as income tax, corporation tax, and goods and services tax (GST) recorded impressive growth in H1:2023-24. On the expenditure side, the Centre has ensured front-loading of its capital expenditure which would catalyse economic recovery from the scars left behind by the pandemic. On the other hand, the Centre has successfully contained its revenue expenditure to below 50 per cent of the BE for 2023-24 in H1:2023-24. States' tax revenues remained buoyant during H1:2023-24, with a noticeable increase in their own tax revenue (OTR). Additionally, they have benefitted from a substantial increase, exceeding 20 per cent, in the transfer of tax revenue (viz., assignment to States) under the devolution formula. States have also sustained the pace of their total expenditure with notable increase in capital spending during H1:2023-24 on the back of the Union government's Scheme for Special Assistance to States for Capital Investment.³

¹ The data pertain to 25 States for which the data for April-September 2023 are available. GFD-GDP ratio is estimated using GSDP data for the same 25 States.

² Detailed statements on half yearly and quarterly financial position of the Centre as well as States are provided in Appendix Tables (I to IV).

³ As of end-October 2023, the Union government had approved expenditure amounting to ₹96,206 crore (accounting for 74 per cent of the ₹1.3 lakh crore budgeted for 2023-24 under the Scheme for Special Assistance to States for Capital Investment), out of which ₹58,494 crore has already been disbursed to the States.

[^] The authors are from the Department of Economic and Policy Research (DEPR) of the Reserve Bank of India. The views expressed in this article are those of the authors and do not represent the views of the Reserve Bank of India.

The rest of the article is structured as follows: Section II analyses the receipt and expenditure of the Centre and States (at a quarterly frequency) for H1:2023-24. Section III deals with the outcomes in terms of key deficit indicators and their financing for the Centre as well as States. Section IV presents estimates on general government (Centre *plus* States) finances for Q1 and Q2 of 2023-24 along with projections for the second half (H2) of 2023-24. Section V sets out the concluding observations and the near-term fiscal outlook.

II. Fiscal Outcomes in Q1 and Q2 of 2023-24

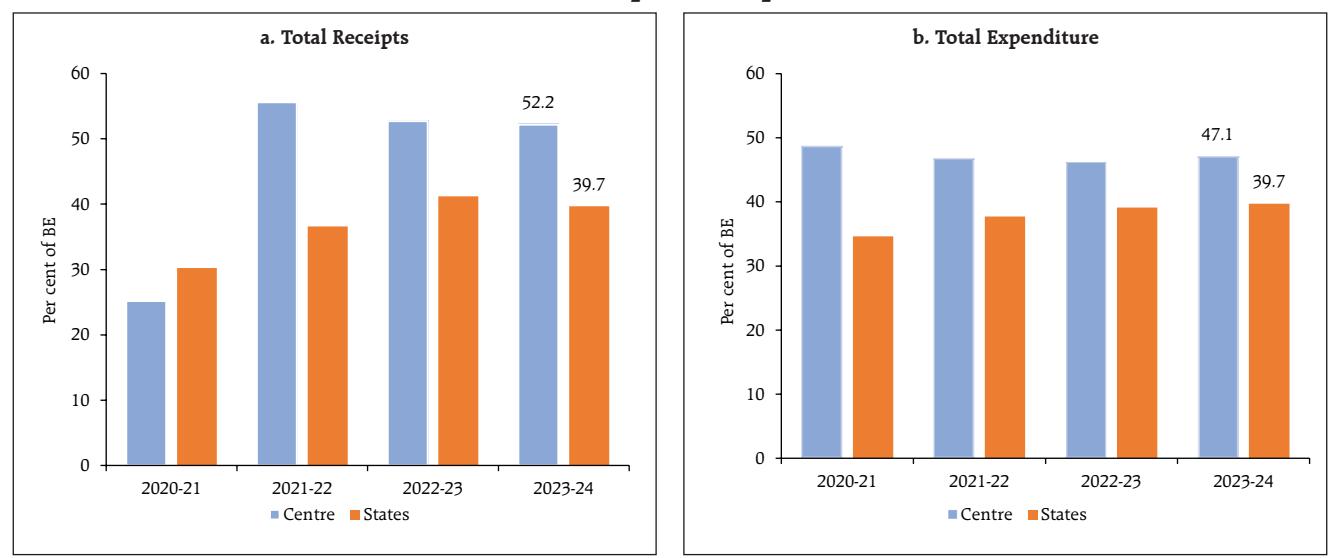
In line with the trend witnessed during H1:2021-22 and H1:2022-23, more than 50 per cent of the budgeted total receipts of the Central government was realised during H1:2023-24. On the other hand, the Centre's total expenditure remained contained below 50 per cent of the BE in H1:2023-24, in line with the pattern observed during the past three years. For States, both receipts and expenditure recorded robust growth. However, States' GFD stood at 39.8 per cent of

the BE in H1:2023-24, higher than in the previous year, attributable to growth in total expenditure outpacing growth in total receipts. Nevertheless, the States' total receipts remained resilient, with the proportion of budgeted receipts in H1:2023-24 (39.7 per cent) close to H1:2022-23 (41.2 per cent). On the expenditure side, the States have expended 39.7 per cent of their budgeted total expenditure during H1:2023-24, broadly in line with the past spending patterns (Chart 1 a and b).

a. Receipts

Revenue receipts of the Central government registered a growth of 3.6 per cent in Q1:2023-24, attributable to a high growth in non-tax revenue, on the back of more than budgeted surplus transfer by the Reserve Bank.⁴ However, it was partly offset by sub-par tax collections and non-debt capital receipts.⁵ With a pick-up in tax revenues in Q2:2023-24, the growth in revenue receipts improved to 34.4 per cent (Chart 2 a and b).

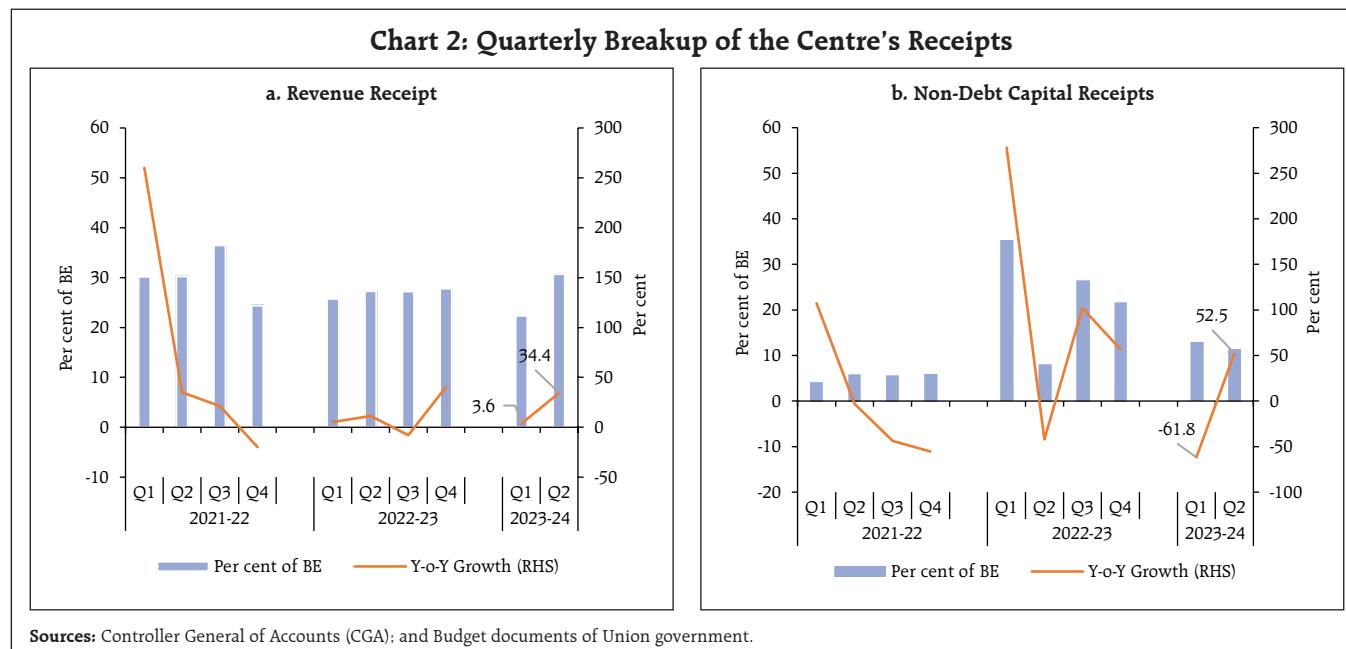
Chart 1: Total Receipts and Expenditure in H1



Sources: Controller General of Accounts (CGA); and Comptroller and Auditor General (CAG).

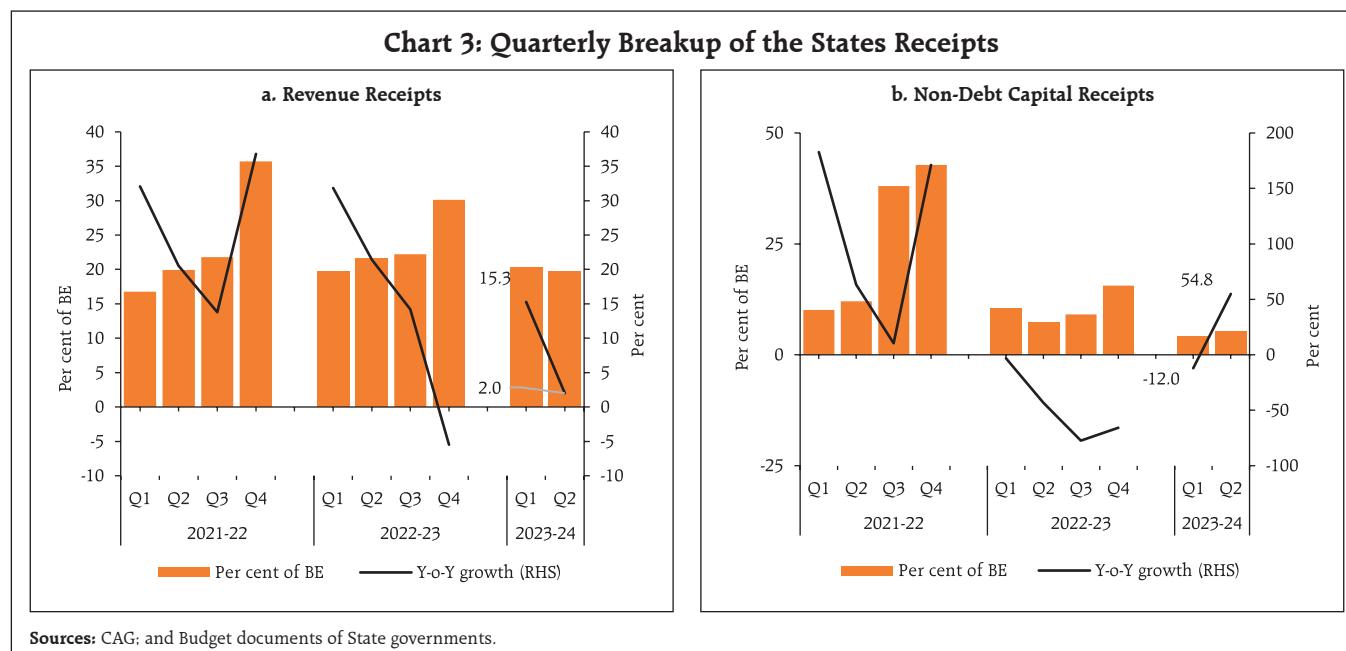
⁴ During 2023-24, the Reserve Bank transferred a surplus of ₹87,416 crore to the Central government, higher than the amount transferred last year (₹30,307 crore) and the budgeted amount under Dividend/ Surplus transfer of Reserve Bank of India, Nationalised Banks and Financial Institutions in the Union Budget 2023-24 (₹48,000 crore).

⁵ Non-debt capital receipts include recoveries of loans and advances and miscellaneous capital receipts (*viz.*, disinvestment and other receipts).

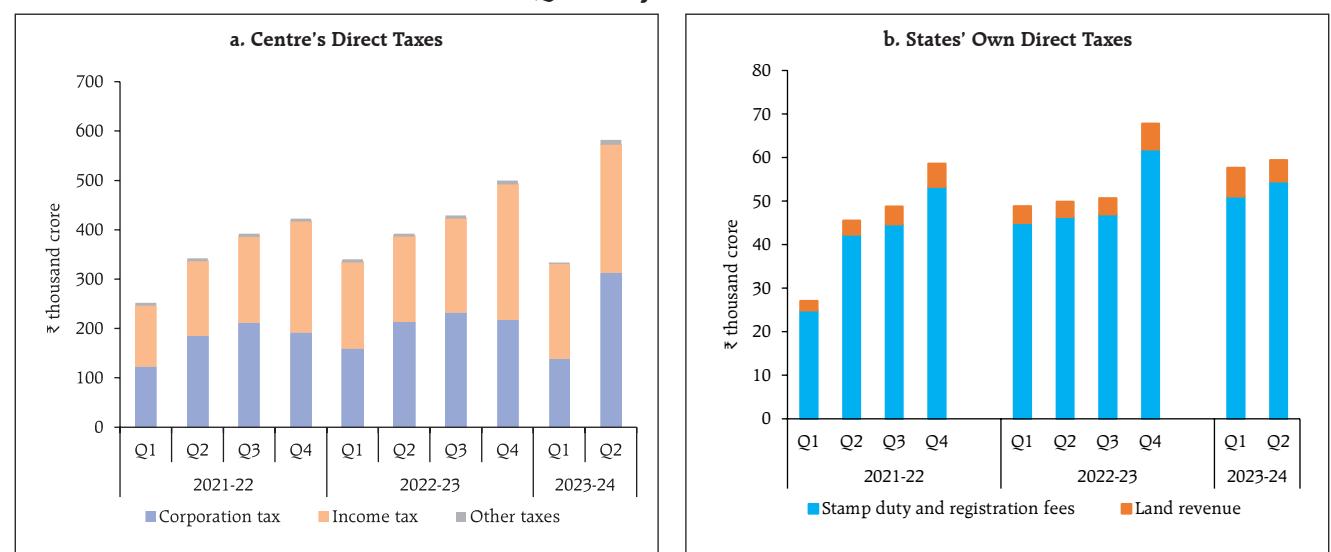


States' revenue receipts clocked a y-o-y growth of 8.3 per cent in H1:2023-24 (over the appreciable y-o-y growth of 26.2 per cent in H1:2022-23). This growth was spread over Q1:2023-24 and Q2:2023-24, at 15.3 per cent and 2.0 per cent, respectively. Tax revenue, which accounted for 81 per cent of the revenue

receipts during H1:2023-24, exhibited a growth of 22.4 per cent and 8.1 per cent in Q1:2023-24 and Q2:2023-24, respectively. States' non-debt capital receipts⁶, however, witnessed a contraction in Q1:2023-24 but recorded a strong recovery in Q2:2023-24 (Chart 3 a and b).



⁶ Non-debt capital receipts of the States comprise recoveries of loans and advances disbursed by them to subordinate/ parastatal entities and other miscellaneous capital receipts.

Chart 4: Quarterly Direct Tax Collection

Sources: Controller General of Accounts (CGA); and Comptroller and Auditor General (CAG).

The Centre's direct tax collections grew by 25.2 per cent (y-o-y) in H1:2023-24, led by growth in corporation tax and income tax collections of 20.2 per cent and 31.1 per cent, respectively. In Q1:2023-24, the Centre's direct tax collections contracted by 1.8 per cent owing to a 13.9 per cent decline in corporate tax collections whereas in Q2:2023-24 it recorded a robust growth of 48.7 per cent on a y-o-y basis owing to both income tax and corporate tax collections. Direct taxes experienced an upswing in August-September 2023-24, which helped to shed off the sluggishness observed during April-July. Direct tax collections in H1:2023-24 benefitted from increased compliance, higher advance tax collections and widening of tax base (Chart 4a).^{7,8,9} On the other hand, the Centre's indirect tax collections increased by 6.5 per cent (y-o-y) in H1:2023-24, with robust growth in major heads except union excise duty collections which experienced contraction, partly on account of the slashing of the excise duty on petrol and diesel in May 2022.¹⁰

⁷ Press Information Bureau (PIB), November 1, 2023.

⁸ PIB, October 26, 2023.

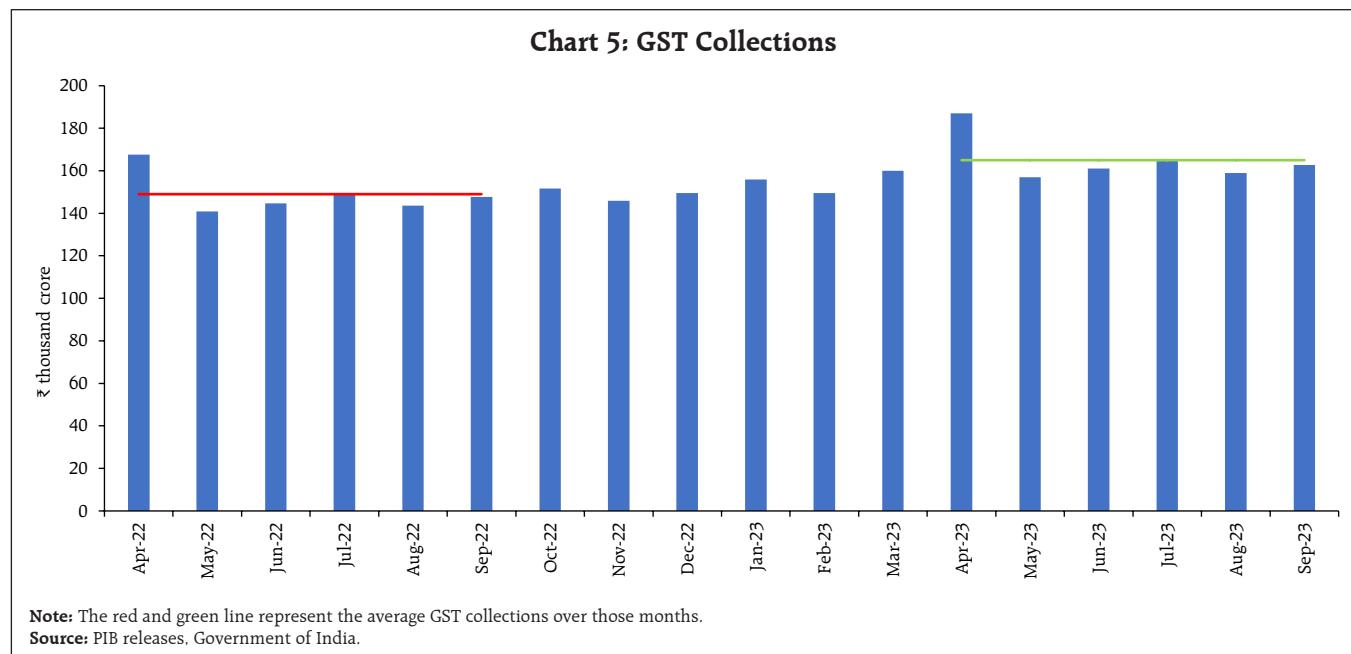
⁹ PIB, September 18, 2023.

¹⁰ For petrol, the excise duty cut was ₹8 per litre whereas in case of diesel, the excise was cut by ₹6 per litre effective from May 22, 2022.

States' own direct tax collection (comprising land revenue and receipts from stamp duty and registration fees) performed well during H1:2023-24. It recorded a growth of 18.1 per cent in Q1:2023-24 followed by a growth of 19.2 per cent in Q2:2023-24 over the corresponding quarters of the previous year (Chart 4b).

The GST collections (Centre *plus* States) have remained buoyant, recording a y-o-y growth of 11.1 per cent and averaging ₹1.7 lakh crore during H1:2023-24, as against an average of ₹1.5 lakh crore during H1:2022-23 on the back of improved economic activity as well as increased compliance. GST collections recorded a growth of 11.6 per cent in Q1:2023-24 and 10.6 per cent in Q2:2023-24 on a y-o-y basis (Chart 5).

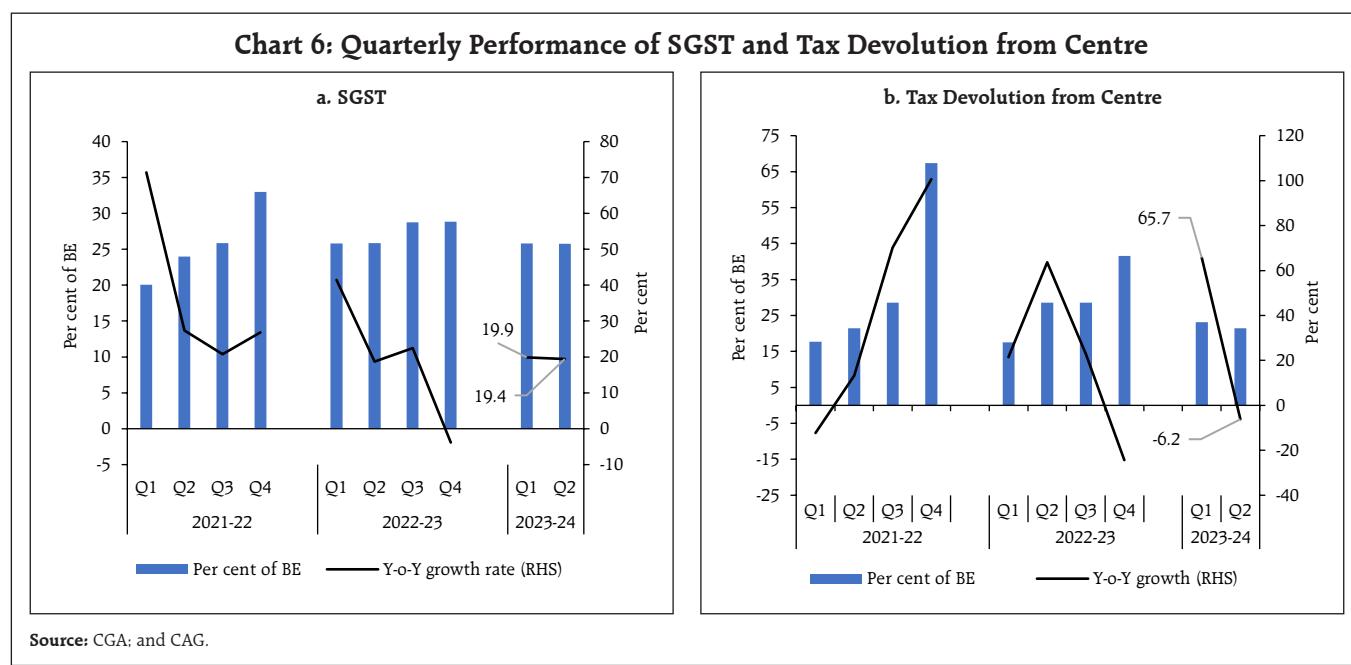
For States, higher and stable collection of States GST [viz., SGST] (on account of rising demand and greater compliance), and tax devolution from the Centre (on account of higher buoyancy) contributed to the growth in revenues. In H1:2023-24, the assignment to States (i.e., regular instalment to the States) recorded a growth of 20.9 per cent over the corresponding period of the previous year, on



top of the record y-o-y growth of around 45 percent attained in H1:2022-23. Notably, in June 2023, the government had released one advance instalment of tax devolution in addition to the assignment to States to enable them to speed up capital spending, finance their development related expenditure and to make

available resources for priority projects (Chart 6 a and b).¹¹

As per cent of BE, the tax devolution to States in H1:2023-24 from the Centre was 44.6 per cent of the budgeted amount for 2023-24 (as against 46.1 per cent in H1:2022-23). Greater and timely tax devolution by



¹¹ PIB, June 12, 2023.

the Centre enable States to plan better spending of resources, especially capex, as well as address the

issue of horizontal fiscal imbalance¹² inherent among the Indian States (Box 1).

Box 1: Horizontal Imbalances: Club Convergence Analysis of States' Own Tax Revenues

Due to the heterogeneity amongst the States, horizontal fiscal imbalances among the subnational units are expected. Equalisation transfers are designed to overcome the horizontal fiscal imbalances. In this context, measuring the fiscal gap and mapping the trajectory of the imbalances is vital for designing fiscal transfers. Convergence analysis can be useful in measuring horizontal inequities and understanding the dynamics of disparities over time. The convergence hypothesis says that poorer regions grow faster than the richer regions and eventually catch up. Club convergence analysis can reveal distinct convergence patterns within and among regions. It recognizes that regions may not all converge to a single common level but may converge to different stable groups or 'clubs' based on their characteristics and development trajectories. It helps in identifying the specific factors and characteristics that led regions to follow different paths and reach different stable income or growth levels.

The club convergence hypothesis for the per capita States' Own Tax Revenues (SOTR) across 16 Indian States from 2001-2022 was investigated using the 'log T-test' following Phillips and Sul (2007, 2009). The results indicated that, for all the 16 Indian States, there is divergence at the aggregate level. However, clustering algorithm¹³ suggests that the States form into two distinct clubs each constituting 8 States. The average per capita SOTR of Club 1 is higher than that of Club 2 (Chart B1 and Table B1.a).

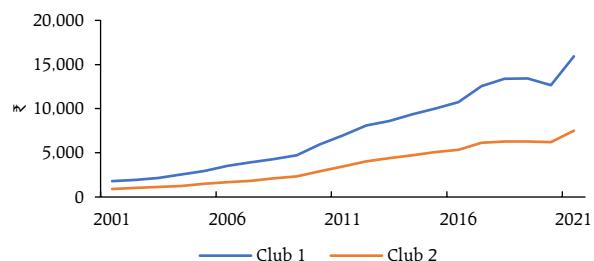
The speed of convergence, as indicated by the coefficient, is faster for Club 1 compared to Club 2 indicating that the richer States are converging faster than the poorer States.

For exploring the determinants of club formation, a binary probit model was estimated with the following variables: initial social, economic and structural factors such as initial per capita income, initial literacy rate,

Table B1.a: Club Convergence of States' Own Tax Revenues

	All States	Club 1	Club 2
Number of States	16	8	8
Coefficient	-0.18	0.24	0.06
T-stat	-5.85	4.45	1.40

Chart B1: Average Per Capita States' Own Tax Revenue



Source: RBI staff estimates.

share of agriculture in GSDP and growth in GSDP per capita. Overall, the estimates suggest that States having low share of agriculture in GSDP have more probability to be in a club with higher average own tax revenues (Table B1.b). Initial level of per capita income, and social factors as represented by literacy rate also significantly impact the membership of a club.

In sum, club convergence analysis suggests a widening gap between States. The poorer States are impaired by both structural and initial social and economic conditions. However, equalisation transfers can improve the fiscal capacity of States as well as address horizontal fiscal imbalances.

Table B1.b: Factors Determining Club Formation

Explanatory Variables	Coefficient	Standard Error
Ln share of agriculture	-2.65***	0.40
Ln initial per capita income	1.63***	0.40
Ln growth in per capita income	0.28**	0.12
Ln initial literacy rate	3.01**	1.45
Constant	-21.49***	4.90

No. of Observations = 306, t=21, n=16.

LR chi2 (4) = 214.27, Prob > chi2 = 0.0

Pseudo R2 = 0.5052

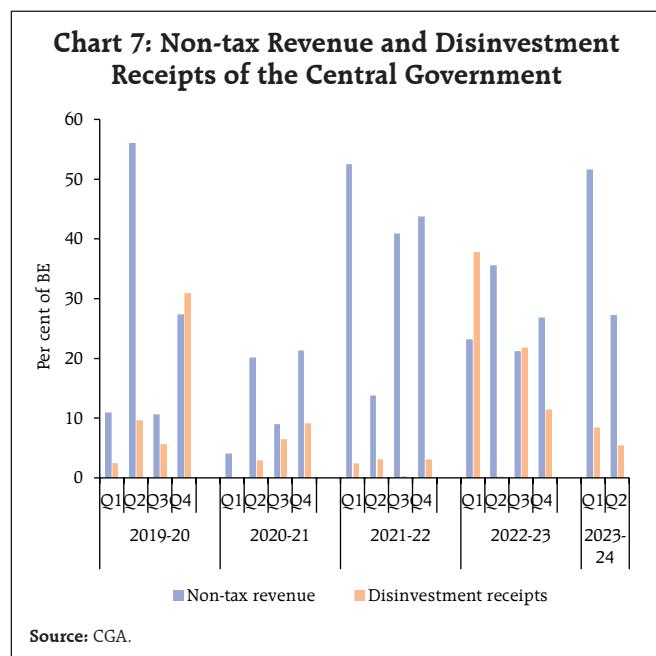
Note: ***: p < 0.01, **: p<0.05.

Reference:

Phillips, P. C., & Sul, D. (2007). Transition Modeling and Econometric Convergence Tests. *Econometrica*, 75(6), 1771-1855.

¹² Horizontal fiscal imbalances refer to disparities in abilities of the States to raise resources from their own tax base.

¹³ Phillips and Sul's algorithm automatically groups units that converge similarly, avoiding arbitrary pre-selection. It identifies core units based on their data and iteratively assigns remaining units to suitable clubs. Units with high residual variance within their assigned club are re-assigned for better fit. This dynamic process allows for diverse convergence speeds and exposes hidden patterns in the data.



Centre's non-tax revenues increased in Q1:2023-24 on the back of more than budgeted surplus transfer by the Reserve Bank but witnessed a contraction of 14.3 per cent in Q2:2023-24, as growth in revenue from dividends and profits¹⁴ was offset by contraction in revenue from economic services.¹⁵ On the disinvestment front, around 14 per cent of the budgeted disinvestment target of ₹51,000 crore was raised in H1:2023-24 as against 38 per cent in H1:2022-23 (Chart 7).¹⁶

b. Expenditure

In 2023-24 (BE), the total expenditure of the Central government was budgeted to grow by 7.5 per cent¹⁷, lower than 10.4 per cent growth in 2022-23

¹⁴ Non-tax revenue from 'dividends and profits' accounts for 30.2 per cent of the budgeted non-tax revenue in 2023-24.

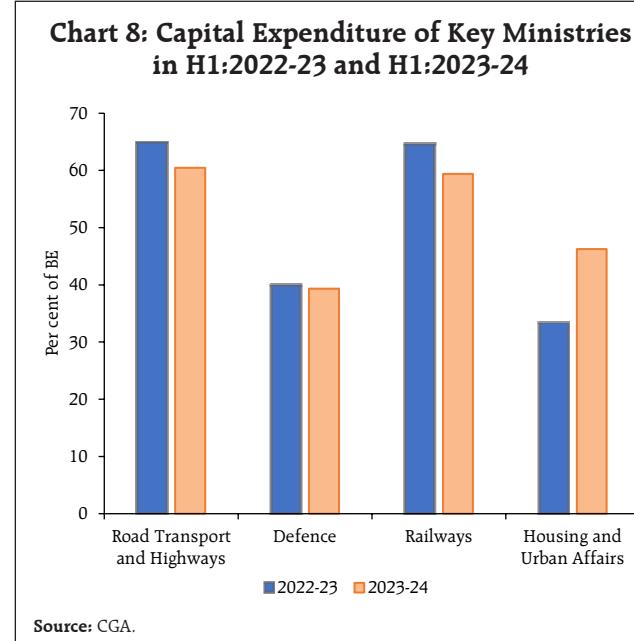
¹⁵ Non-tax revenue from economic services includes agriculture and allied activities (receipts from agricultural farms, commercial crops, fees from agricultural education, fees for quality control and grading of agricultural products, etc.), irrigation and flood control (receipts of Central Water Commission and Central Water Power Research Station, Pune etc.), communication (includes license fees from telecom operators and receipts on account of spectrum usage charges) etc. Non-tax revenue from economic services accounts for 50.3 per cent of the budgeted non-tax revenues in 2023-24.

¹⁶ During H1:2023-24, the government mobilised ₹6,950 crore in the form of disinvestment receipts as compared with ₹24,590 crore during the corresponding period of the previous year.

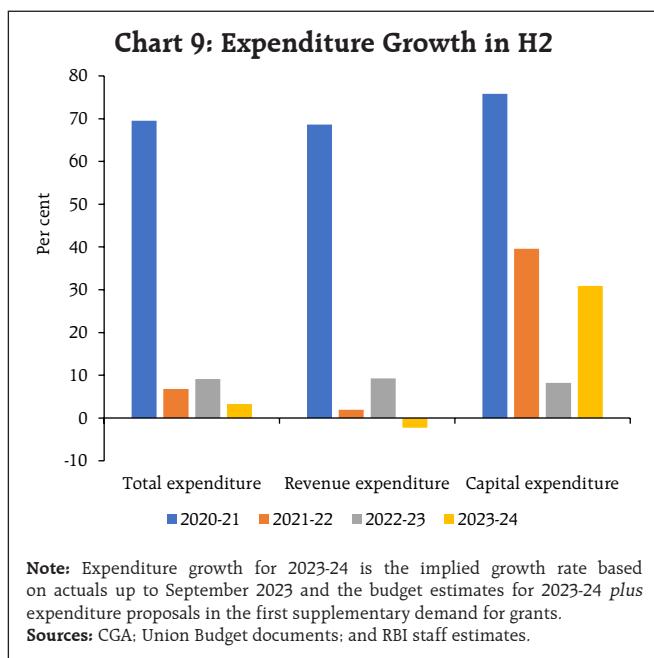
¹⁷ Over 2022-23 (PA), the total expenditure of the central government in 2023-24 (BE) is also budgeted to grow by 7.5 per cent.

(RE). Revenue expenditure growth was budgeted to grow at a modest rate of 1.3 per cent whereas capital expenditure growth was pegged at 37.4 per cent.¹⁸ In H1:2023-24, total expenditure of the Centre stood at 47.1 per cent of the budget estimates for 2023-24 (46.7 and 46.2 per cent of the budget estimates in 2021-22 and 2022-23, respectively). Revenue expenditure attained 46.5 per cent of 2023-24 BE (as compared with 47.7 and 46.3 per cent in 2021-22 and 2022-23, respectively) while capital expenditure was 49.0 per cent of 2023-24 BE (41.4 and 45.7 per cent of the BE was observed during 2021-22 and 2022-23, respectively).

The capital expenditure has been front-loaded in H1:2023-24 by the Central government which bodes well for the medium-term growth prospects of the economy. In H1:2023-24, key ministries such as the Ministry of Road Transport and Highways, the Ministry of Defence and the Ministry of Railways accounted for more than 75 per cent of the total capital expenditure (Chart 8).



¹⁸ Capital outlay (viz., capital expenditure excluding loans and advances) was budgeted to increase by 35.0 per cent in 2023-24, on top of an increase of 16.03 per cent in 2022-23 (RE).

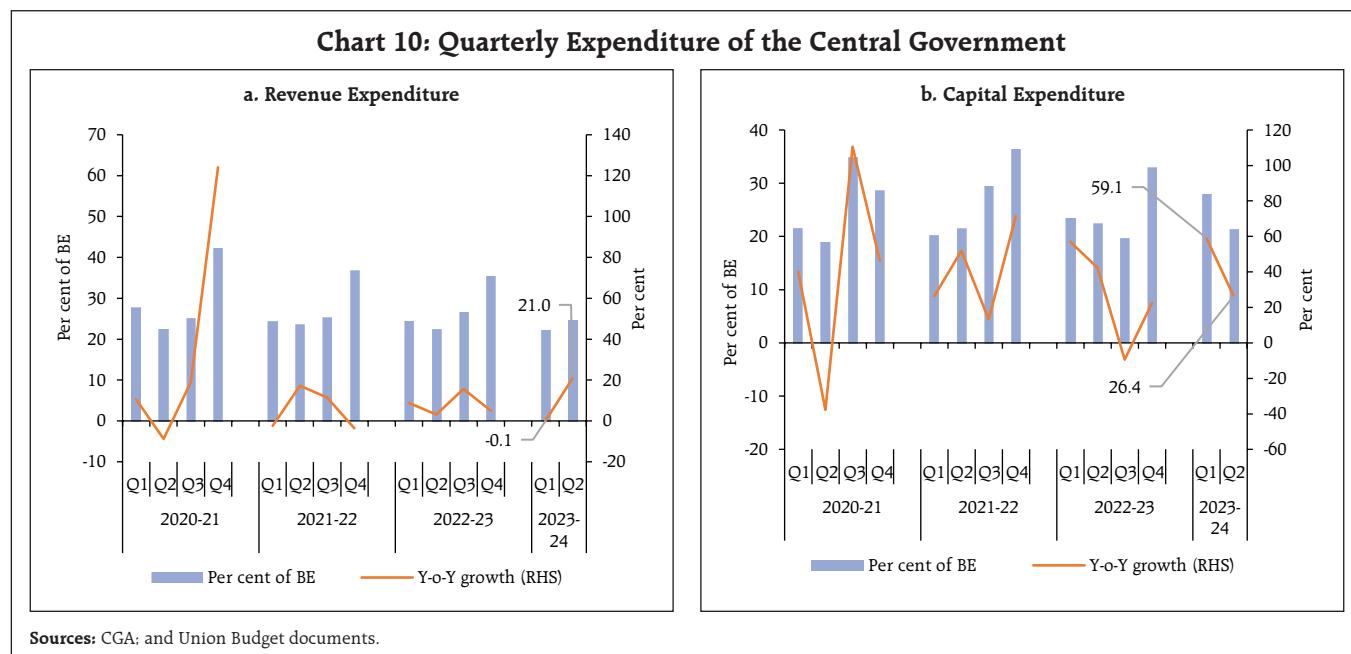


The Union government had placed before the Parliament the first batch of supplementary demand for grants (SDG-I) for 2023-24 during the winter session

of the Parliament¹⁹ which involved an additional cash outgo of ₹58,378 crore.²⁰ Going forward, in H2:2023-24, total expenditure growth is likely to increase marginally, primarily on back of robust growth in capital expenditure (Chart 9).

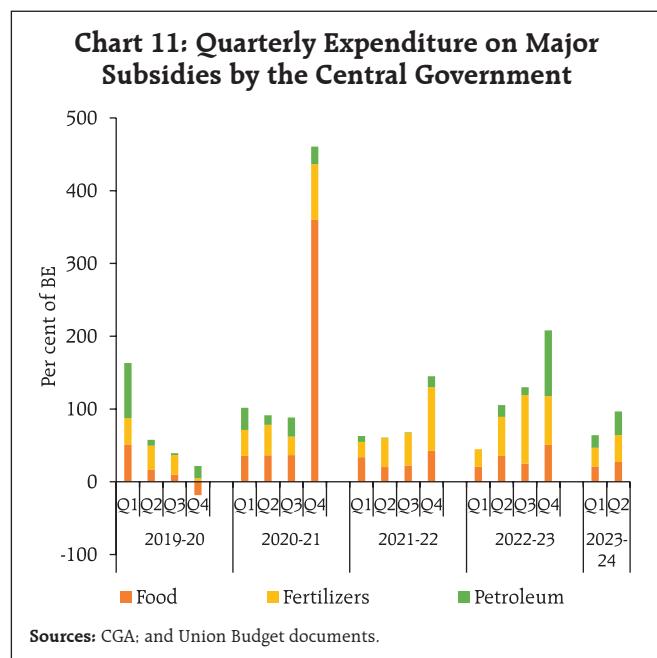
Quarterly trends indicate that revenue expenditure increased in Q2:2023-24 after remaining flat in Q1:2023-24. On the other hand, capital expenditure displayed robust growth (y-o-y basis) in both Q1:2023-24 and Q2:2023-24 with growth in the former being higher than the latter (Chart 10 a and b).

The major subsidies outgo of the Central government, comprising food, fuel and fertilisers, stood at 55.1 per cent of BE in H1:2023-24 *vis-a-vis* 62.6 per cent of BE in H1:2022-23. Fertiliser and food subsidies accounted for 53.4 per cent and 46.1 per cent of total outgo on major subsidies in H1:2023-24 *vis-à-vis* 41.1 per cent and 58.4 per cent, respectively.



¹⁹ Held during December 2023.

²⁰ The SDG-I for 2022-23 placed before Parliament in December 2022 involved a net cash outgo of ₹3.25 lakh crore.



in the corresponding period of the previous year (Chart 11).

States' revenue expenditure growth in Q1 and Q2 of 2023-24, at 7.8 per cent and 10 per cent, respectively, was much lower than the growth registered in the corresponding quarters of 2022-23. Nevertheless,

keeping in line with the spending behaviour of the previous year, States have exhausted 41.0 per cent of their budgeted revenue expenditure in H1:2023-24 (as compared with 41.5 per cent in H1:2022-23). On the other hand, capital expenditure was front-loaded by the States resulting in y-o-y growth of 47.3 per cent in H1:2023-24, with Q1:2023-24 and Q2:2023-24 at 72.4 per cent and 33.6 per cent, respectively. More importantly, capital outlay (capital expenditure minus loans and advances) registered an even higher growth of 52.6 per cent in H1:2023-24 *vis-a-vis* a marginal growth of 2.9 during H1:2022-23 (Chart 12 a and b).

III. Fiscal Deficit and its Financing

Central Government

a. Fiscal Deficit

The Union government had budgeted for a GFD of 5.9 per cent of GDP in 2023-24 which is in line with the medium-term GFD target of 4.5 per cent of GDP by 2025-26. During H1:2023-24, GFD of the Union government stood at 39.3 per cent of the BE, marginally higher than the GFD of 37.3 per cent during the corresponding period of the previous year,

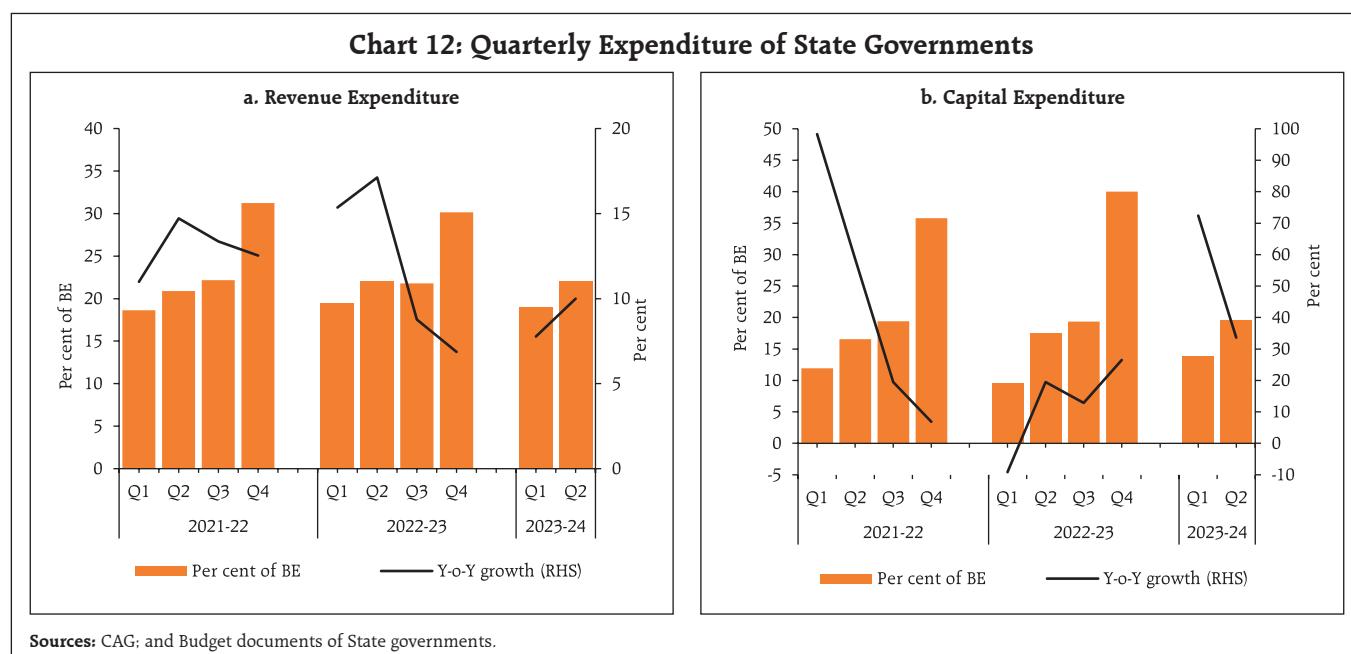
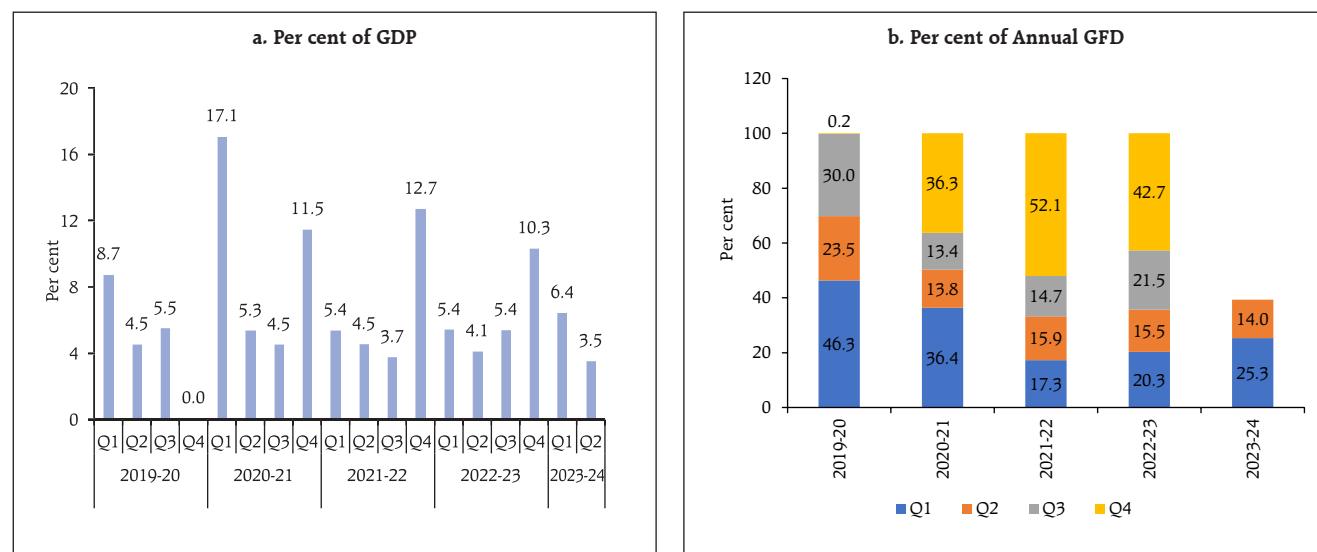


Chart 13: Centre's Gross Fiscal Deficit

Sources: CGA; and Union Budget documents.

attributable to front-loading of capital expenditure by the Central government. Robust tax collections in

Q2:2023:24 contained fiscal deficit at 14.0 per cent of BE during the period (Chart 13 a and b) (Box 2).

Box 2: Changing Quarterly Trend in the Gross Fiscal Deficit of the Union Government

The quarterly trends in GFD of the Union government has undergone a notable transformation in the recent years. Prior to 2020-21, GFD in the first quarter itself usually crossed 50 per cent of the full year amount, even touching as high as 74.7 per cent in 2017-18, while the fourth quarter saw a minimal fiscal deficit or even an occasional fiscal surplus, resulting in higher borrowing requirements in the first half of the year. However, in the last three fiscal years, there has been a reversal in quarterly distribution of GFD, primarily led by a more even distribution of tax and non-tax revenues.

With the introduction of Goods and Services Tax (GST) in 2017-18, indirect taxes have become more uniformly distributed across the quarters. The share of direct taxes has also increased in Q1 which may be attributed to better tax compliance measures enforced by the Centre (Chart B2.a). Within non-tax revenue, with the change in accounting year of the Reserve Bank from July-June to April-March with effect from 2021-22, surplus transfer to the Union government is now credited in the month of

May instead of August. Thus, 2021-22 onwards, the Union government has been receiving a relatively larger share of non-tax revenue in the first quarter of each financial year (Chart B2.b).

At the same time, total expenditure has moved slightly in the opposite direction with more than one-third of the total expenditure incurred in Q4 during 2020-21 to 2022-23 as against the average of 23.5 per cent during 2014-20 (Chart B2.c). Consequently, there has been a sharp reduction in GFD in the first two quarters; GFD in Q4 now accounts for the largest share of the full year GFD (Chart B2.d).

The early influx of tax revenue facilitates more accurate budgeting and forecasting as government agencies can plan their expenditures based on a more reliable estimate of available funds, reducing the risk of budgetary shortfalls. This has also allowed the Union government to give advance instalments of tax devolution to States in

(Contd..)

Chart B2: Quarterly Distribution of Centre's Tax Revenue

Sources: CGA; and Union Budget documents.

the last three fiscal years. A more consistent cash flow throughout the year reduces the government's reliance on

short-term borrowings and results in cost savings due to lower interest payments.

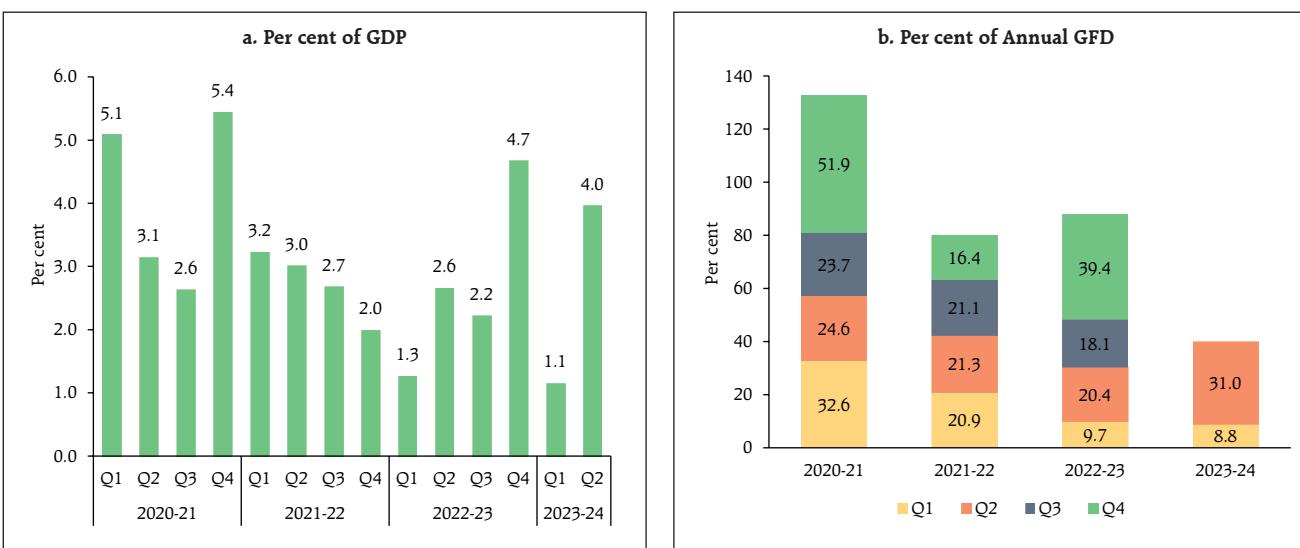
b. Financing of GFD

In H1:2023-24, the Union government completed 61.8 per cent of the budgeted net market borrowings for 2023-24. The market borrowings were followed by the utilisation of National Small Savings Fund (NSSF) for financing the GFD of the Union government. The Centre's decision to stick to its borrowing target for H2:2023-24 signals its confidence of attaining the fiscal deficit target of 5.9 per cent of the GDP. This is attributable to the Centre's tax revenue that has been growing at a robust pace apart from the more than anticipated collections on the non-tax front.

State Government

a. Fiscal Deficit

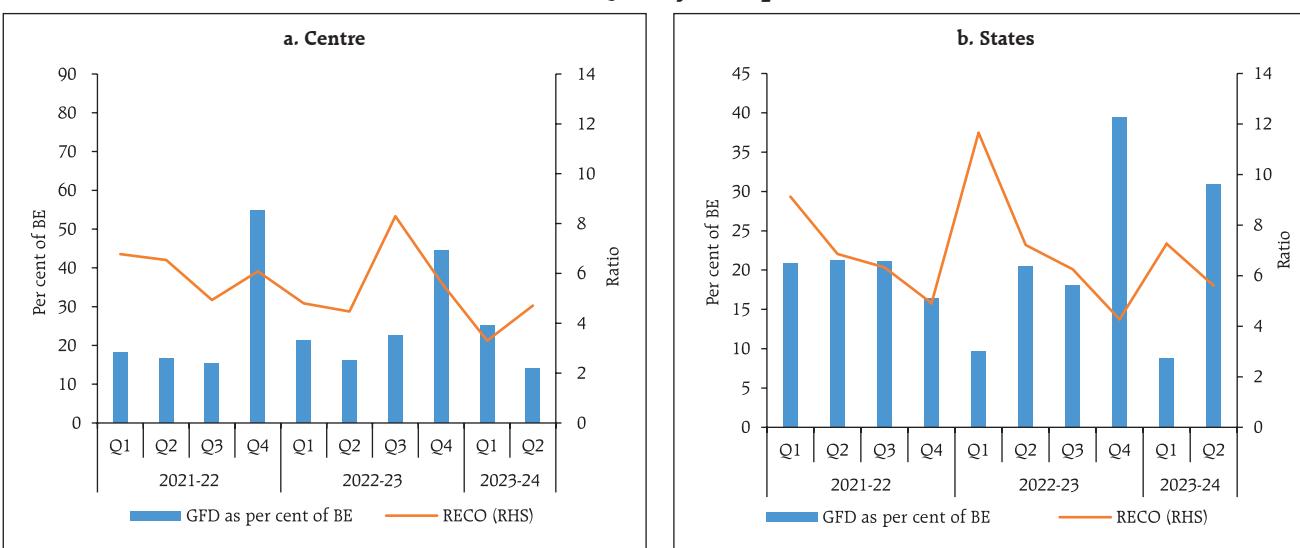
States had budgeted a consolidated GFD of 3.1 per cent of GDP for 2023-24 (BE), down from 3.4 per cent in 2022-23 (RE). During 2023-24, States have exhausted a lower proportion of their budgeted GFD in Q1, while in Q2, the GFD has been higher. Correspondingly, the fiscal space available to States in the latter half of 2023-24 has been reduced to 60.2 per cent of their budgeted GFD from 69.9 per cent for the corresponding period of the previous year (Chart 14 a and b).

Chart 14: States' Gross Fiscal Deficit

Sources: CAG; and Budget documents of State governments.

The quality of expenditure [as measured by the revenue expenditure to capital outlay (RECO) ratio²¹] for the Centre improved in H1:2023-24, attributed to the higher thrust placed by the Central government on capital expenditure.²² On similar lines, the expenditure

quality of the States has been continuously improving in the post-pandemic period. In Q1 and Q2 of 2023-24, their RECO ratio reduced to 7.3 and 5.6, respectively, from 11.6 and 7.2 in the corresponding period of the previous year (Chart 15 a and b).

Chart 15: Gross Fiscal Deficit and Quality of Expenditure for Centre and States

Sources: CGA; CAG; Budget documents of the Centre and States.

²¹ A decline in RECO ratio indicate improvement in quality of expenditure and vice versa.

²² In H1:2023-24, RECO ratio for the Centre stood at 3.9 vis-à-vis 4.6 registered during the corresponding period of the previous year.

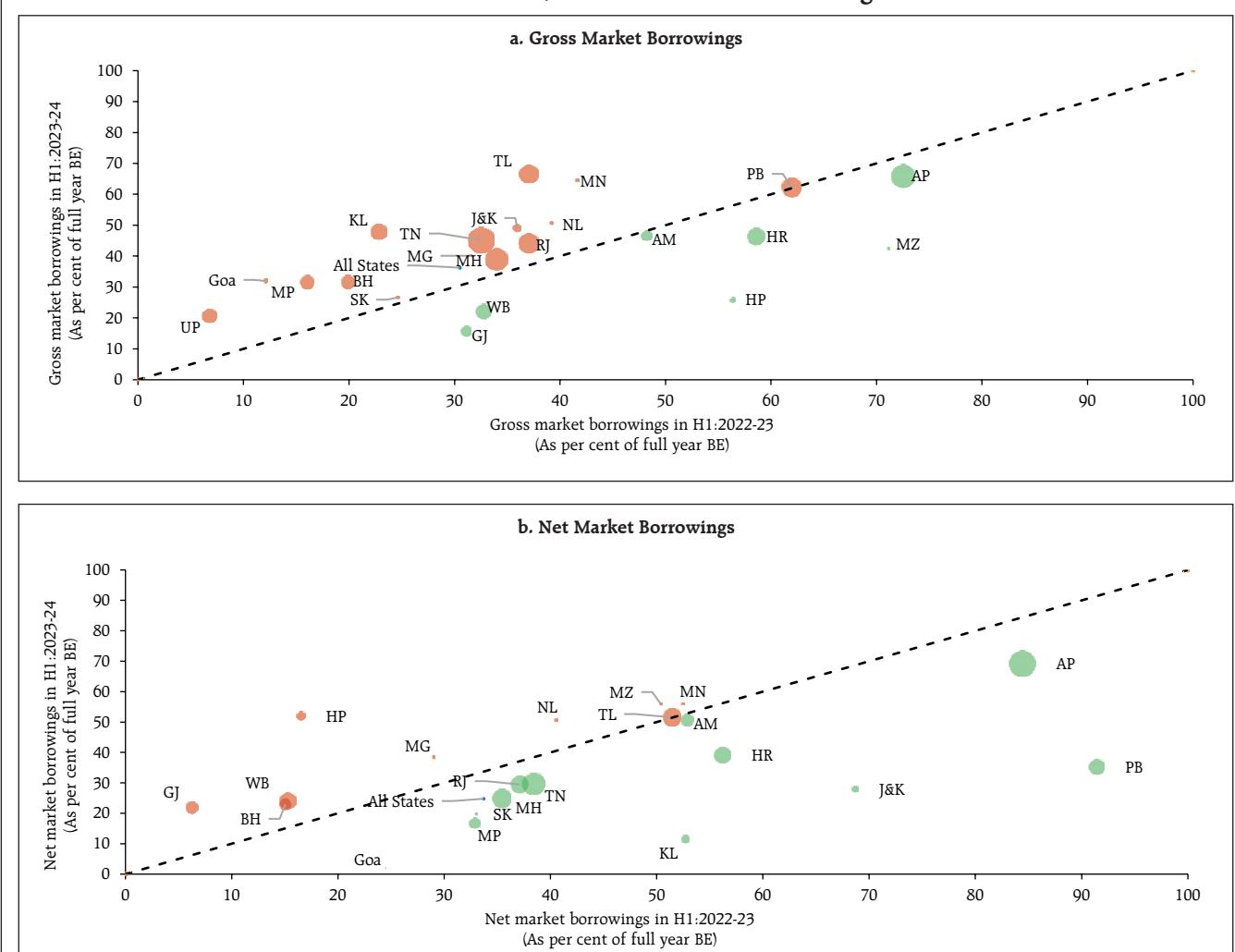
b. Financing of GFD

The net market borrowings of the States during H1:2023-24 witnessed a y-o-y decline of 23.1 per cent and accounted for only 24.8 per cent of their BE (33.7 per cent during H1:2022-23). Eight States had zero or negative net borrowing in H1:2023-24. Gross market borrowings, however, were 9.0 per cent higher than last year (Chart 16 a and b).

The financial accommodation availed by the States under various facilities provided by the

Reserve Bank increased by 61.1 per cent (y-o-y) during H1:2023-24. The average amount availed by the States under Ways and Means Advances (WMA), and Special Drawing Facility (SDF) increased by 14.9 per cent and 115.4 per cent, respectively, while the Overdraft (OD) availment declined by 15.8 per cent. Himachal Pradesh, Manipur, Mizoram and Nagaland decreased their daily utilisation of WMA in H1:2023-24 over the same period in the previous year (Chart 17 a and b).

Chart 16: State/ UT-wise Market Borrowings

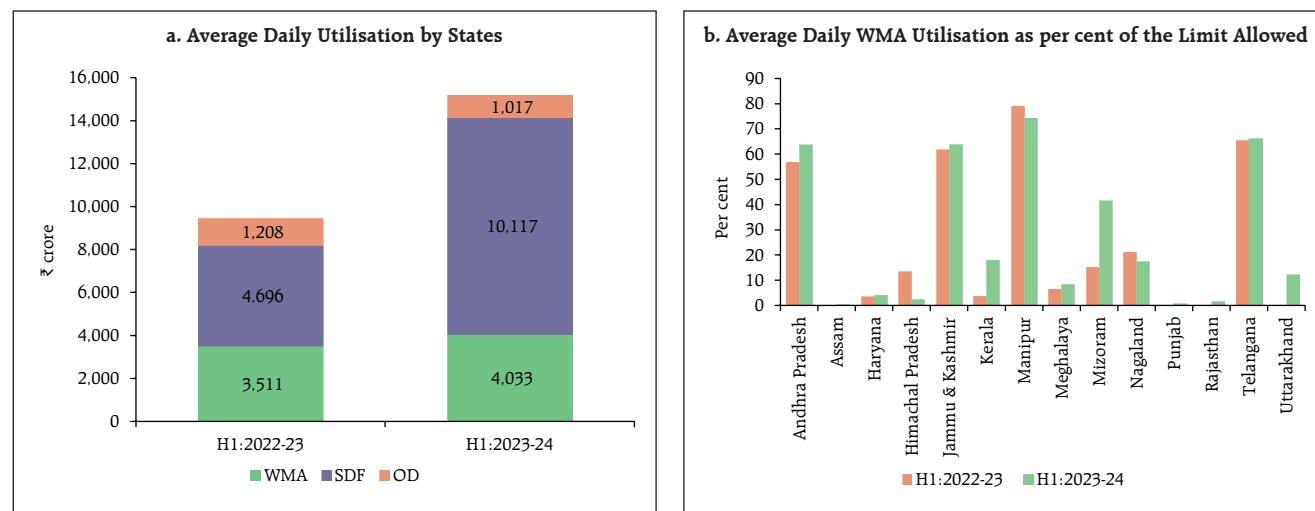


Notes: 1. Size of the bubble corresponds to the share of the State in H1:2023-24 market borrowings.

2. The 45-degree line corresponds to no change.

Sources: RBI; and Budget documents of States/UTs.

Chart 17: Financial Accommodation Availed by the States Under Various Facilities Available with the Reserve Bank



Sources: RBI Bulletin several issues; and RBI staff estimates.

IV. General Government Finances

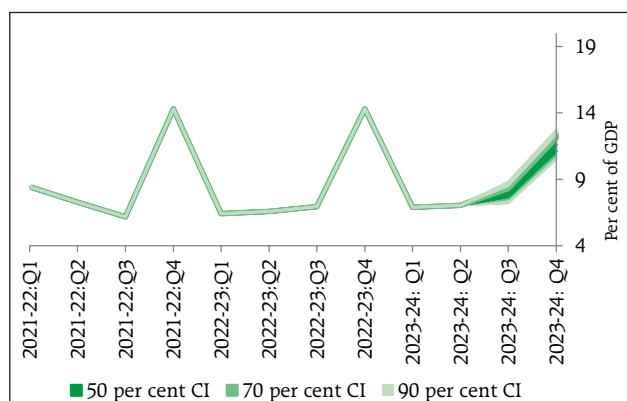
The general government GFD for 2023-24 is budgeted at 8.6 per cent of GDP as compared with 9.5 per cent of GDP in 2022-23 (RE). In continuation of the effort to provide timely fiscal data on the general government, the quarterly fiscal position of the

general government has been compiled till Q2:2023-24. Improved revenue mobilisation by the Centre and States kept the general government GFD in Q1 and Q2 of 2023-24 in line with the previous year's trends. Going forward, while tax collections are expected to remain buoyant in H2, a pick-up in expenditure by the Centre and States could result in a general government deficit of 8.2 per cent and 11.9 per cent of GDP in Q3 and Q4 (projected), respectively (Chart 18).

V. Conclusion

The combined finances of the Centre and the States remained robust in H1:2023-24. The Centre recorded robust tax collections, both direct and indirect taxes reflecting sustained recovery of the economy, enhanced tax governance and administration as well as improved profitability of the corporate sector. Lower disinvestment receipts are likely to be offset by sharp gains in non-tax revenues, mainly attributable to higher dividends from the Reserve Bank and other financial institutions. On the expenditure front, the capex thrust has ensured significant improvement in the quality of expenditure of the Central government. By reiterating its GFD target of 4.5 per cent of

Chart 18: General Government Gross Fiscal Deficit: Actual and Projection



Notes: 1. The thick green shaded area represents 50 per cent confidence interval (CI) implying that there is 50 per cent probability that actual outcome will be within the range given by the thick green shaded area. Likewise, for 70 per cent and 90 per cent confidence intervals, there is 70 per cent and 90 per cent probability, respectively, that the actual outcomes will be in the range represented by the respective shaded areas.

2. The actual combined GFD-GDP ratio is for Centre plus 25 States.

Source: RBI staff estimates.

GDP by 2025-26, the Centre has exhibited its firm commitment to fiscal consolidation while at the same time prioritising capital expenditure to drive the recovery in growth and create a virtuous cycle to crowd in private investment. The Centre achieved more than half of its budgeted revenue in H1:2023-24 while containing its expenditure to less than half of what it had projected for the entire financial year. This would augur well for the Centre to meet its GFD target of 5.9 per cent of GDP for 2023-24.

The States too have witnessed strengthening of their fiscal parameters as is evident from their continued buoyancy in tax revenues. Notably, they have also increased their capital spending in line with the Centre's stance to front-load capex, by using both central funds linked to reforms and their

own resources. However, the States grapple with several challenges in sustaining the momentum of their capital expenditure, on both the expenditure and revenue fronts. The reversion to the old pension scheme (OPS) by a few States and reports of some other States moving in the same direction would exert a huge burden on State finances and restrict their capacity to undertake growth enhancing capital expenditures. Given the discontinuation of GST compensation, continued buoyancy of tax revenues is critical alongside fiscal prudence while maintaining the quality of expenditure and concurrently expanding their fiscal capacity. This would augur well for bolstering medium-term growth prospects while maintaining fiscal sustainability.

Appendix Tables

Table I: Budgetary Position of the Central Government during April-September								
Item	(₹ thousand crore)				(Per cent)			
	Actuals		Budget Estimates		Percent of BE		Y-o-Y Growth Rate	
	2023-24	2022-23	2023-24	2022-23	2023-24	2022-23	2023-24	2022-23
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. Revenue Receipts	1397.1	1169.6	2632.3	2204.4	53.1	53.1	19.5	8.2
1.1. Net Tax Revenue	1160.3	1012.0	2330.6	1934.7	49.8	52.3	14.7	9.9
1.2. Non-Tax Revenue	236.8	157.6	301.7	269.7	78.5	58.4	50.2	-1.7
1.3. Interest Receipts	17.3	12.5	24.8	18.0	69.7	69.4	38.7	21.1
2. Capital Receipts	20.2	34.2	84.0	79.3	24.0	43.1	-41.0	88.7
2.1. Recovery of Loans	13.2	9.6	23.0	14.3	57.5	67.2	37.7	6.6
2.2. Other Receipts	7.0	24.6	61.0	65.0	11.4	37.8	-71.7	169.8
3. Total Receipts (1+2)	1417.3	1203.7	2716.3	2283.7	52.2	52.7	17.7	9.5
4. Revenue Expenditure	1628.5	1480.7	3502.1	3194.7	46.5	46.3	10.0	6.0
<i>of which</i>								
(i) Interest Payments	484.3	436.7	1080.0	940.7	44.8	46.4	10.9	19.6
5. Capital Expenditure	490.6	342.9	1001.0	750.2	49.0	45.7	43.1	49.5
<i>of which</i>								
(i) Loans and Advances	74.8	23.6	163.8	140.1	45.7	16.8	217.5	20.8
6. Total Expenditure (4+5)	2119.1	1823.6	4503.1	3944.9	47.1	46.2	16.2	12.2
7. Revenue Deficit (4-1)	231.4	311.1	869.9	990.2	26.6	31.4	-25.6	-1.4
8. Fiscal Deficit (6-3)	701.9	619.8	1786.8	1661.2	39.3	37.3	13.2	17.7
9. Gross Primary Deficit {8-4(i)}	217.5	183.2	706.8	720.5	30.8	25.4	18.8	12.3

Source: Office of Controller General of Accounts, Ministry of Finance, Government of India.

Table II: Quarterly Position of the Central Government Finances

Item	(₹ thousand crore)				(Per cent)					
	Q1		Q2		Per cent of BE				Y-o-Y Growth Rate	
					Q1		Q2		2023-24	
	2023-24	2022-23	2023-24	2022-23	2023-24	2022-23	2023-24	2022-23	Q1	Q2
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1. Revenue Receipts	588.6	568.1	808.5	601.5	22.4	25.8	30.7	27.3	3.6	34.4
1.1. Net Tax Revenue	433.6	505.9	726.7	506.1	18.6	26.1	31.2	26.2	-14.3	43.6
1.2. Non-Tax Revenue	155.0	62.2	81.8	95.4	51.4	23.1	27.1	35.4	149.3	-14.3
1.3. Interest Receipts	9.5	5.1	7.8	7.4	38.5	28.1	31.3	41.3	88.8	4.5
2. Capital Receipts	10.7	28.0	9.5	6.2	12.7	35.3	11.3	7.8	-61.8	52.5
2.1. Recovery of Loans	6.5	3.4	6.7	6.2	28.1	24.0	29.3	43.2	89.0	9.3
2.2. Other Receipts	4.2	24.6	2.7	0.0	6.9	37.8	4.5	0.0	-82.8	8658.1
3. Total Receipts	599.3	596.0	818.0	607.7	22.1	26.1	30.1	26.6	0.5	34.6
4. Revenue Expenditure	772.2	772.8	856.3	707.9	22.0	24.2	24.5	22.2	-0.1	21.0
<i>of which</i>										
(i) Interest Payments	243.7	228.6	240.6	208.1	22.6	24.3	22.3	22.1	6.6	15.6
5. Capital Expenditure	278.5	175.1	212.1	167.8	27.8	23.3	21.2	22.4	59.1	26.4
<i>of which</i>										
(i) Loans and Advances	44.6	14.1	30.2	9.5	27.2	10.1	18.4	6.8	216.3	219.4
(ii) Capital Outlay	233.9	161.0	181.9	158.4	27.9	26.4	21.7	26.0	45.3	14.9
6. Total Expenditure	1050.7	947.9	1068.5	875.7	23.3	24.0	23.7	22.2	10.8	22.0
7. Revenue Deficit (4-1)	183.6	204.8	47.8	106.4	21.1	20.7	5.5	10.7	-10.4	-55.1
8. Fiscal Deficit (6-3)	451.4	351.9	250.5	268.0	25.3	21.2	14.0	16.1	28.3	-6.5
9. Gross Primary Deficit {8-4(i)}	207.7	123.3	9.9	59.9	29.4	17.1	1.4	8.3	68.5	-83.5

Source: Office of Controller General of Accounts, Ministry of Finance, Government of India.

Table III: Budgetary Position of the State Governments during April-September 2023

Item	(₹ thousand crore)					(Per cent)			
	Actuals		Budget Estimates		Per cent of BE		Y-o-Y Growth Rate		
	2022-23	2023-24	2022-23	2023-24	2022-23	2023-24	2022-23	2023-24	
1	2	3	4	5	6	7	8	9	
1. Revenue Receipts	1,499.9	1,625.0	3,627.6	4,064.2	41.3	40.0	26.2	8.3	
1.1. Tax Revenue	1,141.9	1,308.7	2,514.4	3,025.2	45.4	43.3	32.4	14.6	
1.2. Non-Tax Revenue	112.5	134.5	305.8	332.3	36.8	40.5	33.5	19.6	
1.3. Grants-in-aid and Contributions	245.5	181.9	807.5	706.7	30.4	25.7	1.4	-25.9	
2. Capital Receipts	3.5	4.0	19.8	42.8	17.7	9.4	-25.0	15.4	
2.1. Recovery of Loans and Advances	3.4	3.7	13.8	18.9	24.7	19.4	-25.3	8.2	
2.2. Other Receipts	0.1	0.4	6.0	23.9	1.5	1.5	-7.8	285.0	
3. Total Receipts	1,503.4	1,629.0	3,647.4	4,107.0	41.2	39.7	26.0	8.4	
4. Revenue Expenditure	1,558.0	1,697.4	3,753.9	4,137.0	41.5	41.0	16.3	8.9	
4.1 Interest Payments	188.9	211.2	455.6	501.8	41.5	42.1	20.6	11.8	
5. Capital Expenditure	201.0	296.1	742.8	885.4	27.1	33.4	7.5	47.3	
5.1 Capital Outlay	177.4	270.7	683.1	801.9	26.0	33.8	2.9	52.6	
6. Total Expenditure	1,758.9	1,993.5	4,496.6	5,022.4	39.1	39.7	15.2	13.3	
7. Revenue Deficit (4-1)	58.1	72.4	126.2	72.8	46.0	99.4	-61.5	24.6	
8. Fiscal Deficit (6-3)	255.6	364.4	849.2	915.4	30.1	39.8	-23.3	42.6	
9. Gross Primary Deficit (8 - 4.1)	66.6	153.2	393.6	413.6	16.9	37.0	-62.3	129.9	

Note: Data pertains to 25 States.

Sources: Comptroller and Auditor General of India; and Budget documents of the States.

Table IV: Quarterly Position of State Government Finances

Item	(₹ thousand crore)				(Per cent)					
	Actuals				Per cent of BE				Y-o-Y Growth Rate	
	Q1		Q2		Q1		Q2		2023-24	
	2022-23	2023-24	2022-23	2023-24	2022-23	2023-24	2022-23	2023-24	Q1	Q2
1. Revenue Receipts	715.8	825.2	784.1	799.8	19.7	20.3	21.6	19.7	15.3	2.0
1.1. Tax Revenue	523.2	640.2	618.7	668.5	20.8	21.2	24.6	22.1	22.4	8.1
1.2. Non-Tax Revenue	59.8	53.9	52.7	80.6	19.5	16.2	17.2	24.3	-9.9	52.9
1.3. Grants-in-aid and Contributions	132.8	131.1	112.7	50.8	16.4	18.6	14.0	7.2	-1.3	-55.0
2. Capital Receipts	2.1	1.8	1.4	2.2	10.4	4.2	7.3	5.2	-12.0	54.8
2.1. Recovery of Loans and Advances	2.0	1.7	1.4	1.9	14.8	9.2	9.9	10.2	-14.2	41.6
2.2. Other Receipts	0.0	0.1	0.1	0.3	0.3	0.3	1.2	1.2	208.1	306.6
3. Total Receipts	717.9	827.0	785.5	802.0	19.7	20.1	21.5	19.5	15.2	2.1
4. Revenue Expenditure	728.7	785.4	829.2	912.0	19.4	19.0	22.1	22.0	7.8	10.0
4.1 Interest Payments	83.0	87.9	105.9	123.4	18.2	17.5	23.3	24.6	5.9	16.4
5. Capital Expenditure	71.1	122.6	129.9	173.5	9.6	13.8	17.5	19.6	72.4	33.6
5.1. Capital Outlay	62.6	108.1	114.8	162.5	9.2	13.5	16.8	20.3	72.9	41.5
6. Total Expenditure	799.8	907.9	959.1	1,085.5	17.8	18.1	21.3	21.6	13.5	13.2
7. Revenue Deficit	12.9	-39.8	45.2	112.2	10.2	-54.7	35.8	154.0	-408.3	148.4
8. Fiscal Deficit (6-3)	82.0	80.9	173.6	283.5	9.7	8.8	20.4	31.0	-1.3	63.3
9. Gross Primary Deficit (8 - 4.1)	-1.0	-6.9	67.7	160.1	-0.3	-1.7	17.2	38.7	588.8	136.7

Note: Data pertains to 25 States.

Sources: Comptroller and Auditor General of India; and Budget documents of the States.

Low' Stagflation Risk in India

by Deba Prasad Rath, Silu Muduli and
Himani Shekhar[^]

This study integrates the “Inflation at Risk” (IaR) and “Growth at Risk” (GaR) frameworks to identify stagflation risk in India. Elevated risks of stagflation were experienced during specific episodes like the Asian Crisis, the Global Financial Crisis, the taper tantrum, and the COVID-19 pandemic. The empirical findings suggest supply-side shocks such as spikes in commodity prices along with tighter financial conditions and relatively higher depreciation of domestic currency are the major determinants of stagflation risk in India.

Introduction

Post COVID-19 pandemic, the global economic landscape faced challenges that led to an increased risk of stagflation, portmanteau of economic stagnation alongside high inflation. Various factors, such as the COVID-19 pandemic, geopolitical tensions, lockdowns in China, and supply chain disruptions, have contributed to this situation (World Bank, 2022). However, compared to stagflationary period of the 1970s, currently the risk of stagflation is lower attributable to favourable macroeconomic conditions. Unlike the severe commodity price shocks experienced in the 1970s, during which crude oil almost increased four-fold, the increase in energy prices during 2022 was lesser. Additionally, central banks worldwide are now more focused on maintaining price stability and, financial institutions have healthier financial positions. The long-term inflation expectations are well-anchored to the inflation target unlike during the 1970s when inflation expectations were weakly-anchored and went to exorbitantly high levels

(Pattanaik *et al.*, 2023). These factors collectively contribute to limiting the risk of stagflation in the current global landscape compared to the 1970s.

Historically, various events during the last two decades including global financial crises, the taper tantrum, and the COVID-19 pandemic have increased risks of stagflation. Recent evidence from 22 economies that rely heavily on non-commodity exports highlights two significant factors that could elevate the risk of stagflation in emerging markets - higher commodity prices and the appreciation of the US dollar (Hofmann *et al.*, 2023). These factors can lead to weak economic growth and high inflation exacerbating the stagflationary risk in these economies. Post COVID-19 pandemic, the delays in the monetary normalisation process have also raised concerns of costly stagflation (Enders *et al.*, 2022) as pursuing price stability along with an accommodative stance by monetary authorities may lead to the deanchoring of inflation expectations (Dierks, 2023). Such situations might give rise to delicate trade-offs resulting in financial instability as tightening financial conditions in response to such instability can further deepen the economic slowdown (Canuto, 2022).

India as an emerging market economy also faced challenges post-COVID-19 with a pickup in inflation along with weak demand initially raising stagflation risks. Stagflation risk becomes a concern for policymakers as it has the potential to destabilise the entire macroeconomic framework of the economy through creating an environment of uncertainty. The Reserve Bank of India (RBI) is entrusted with the primary objective of maintaining price stability while keeping in mind the objective of growth¹ which requires constant monitoring of any arising stagflation risk. In the Indian context, Ghosh *et al.* (2023) uses Growth at Risk (GaR) framework for

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¹ Under the Reserve Bank of India, Act,1934 (RBI Act,1934) (as amended in 2016), RBI is entrusted with the responsibility of conducting monetary policy in India with the primary objective of maintaining price stability while keeping in mind the objective of growth.

assessing the entire distribution of future GDP growth and quantifying the likelihood of lower quantiles of GDP growth. While for inflation, Muduli and Shekhar (2023) estimate tail risks of consumer price index (CPI) inflation in India using a quantile regression framework. However, none of the studies have analysed the risks to growth and inflation together in the case of India even though these are interconnected macroeconomic issues. These factors motivate us to empirically examine the risk of stagflation in India in the current macroeconomic environment.

This study focuses on identifying risk factors for stagflation, which is characterised by periods of recession coupled with high inflation. It attempts an assessment of the stagflation risks by examining the role of some key variables such as financial conditions, the exchange rate [(INR) against the United States Dollar (USD)] and crude oil price. In a parallel analysis, the study integrates the "IaR" and "GaR" frameworks (Adrian et al., 2019; Banerjee et al., 2020) to redefine stagflationary situations and evaluate risks to it. The empirical findings reveal that tightening financial conditions and exchange rate depreciation significantly contribute to stagflation, while crude oil prices portray a limited impact even though India depends significantly on crude oil imports. The limited impact of crude oil prices to stagflation risk reflects the partial pass-through of global crude oil prices to domestic pump prices which contains the pass-through of input cost pressures to growth as well as inflation. Encouragingly, the estimated results indicate that recent improvements such as eased financial conditions, moderate domestic currency depreciation and stable crude oil prices have helped reduce the risk of stagflation in India.

The study is structured as follows: Section II provides a brief review of the existing literature on stagflation and recent perspectives. In Section III, some stylised facts, data description along with empirical analysis and results are presented. Finally,

Section IV presents the conclusions of the study offering insights into the current macroeconomic situation and the potential risk of stagflation.

II. Review of Related Literature

The stagflationary situation experienced in the 1970s was primarily driven by a substantial spike in international crude oil prices. Some researchers argued that it was also impacted adversely by the implementation of a tightening monetary policy aimed at stabilising prices (Bernanke et al., 1997; Jiménez-Rodriguez et al., 2010). However, the effectiveness of this policy in managing supply-side shocks was limited. Barsky et al. (2001) provided insights into the relationship between price fluctuations and economic fluctuations, highlighting that the coincidence of an oil price shock with an economic contraction contributed to the stagflationary situation in the 1970s. Moreover, during that period, uncertainty in monetary policy led to a costly disinflationary process. Since then significant progress has been made in reducing this uncertainty with the widespread adoption of inflation targeting in various advanced and emerging market economies (Khan et al., 2015).

The 1970s episode was further exacerbated by higher import prices and low productivity levels, which deepened the economic downturn (Grubb et al., 1982). A critical aspect that emerged was the rational perception of economic agents regarding persistently high inflation and unemployment. Such a perception can have detrimental effects on overall productivity (Brunner et al., 1980).

In more recent episodes, delays in the monetary normalisation process have raised concerns about the potential for a costly stagflation (Enders et al., 2022). The pursuit of price stability by monetary authorities, if combined with an accommodative stance, can lead to the de-anchoring of inflation expectations, in turn, destabilising inflation dynamics (Dierks, 2023). This creates a delicate trade-off that may also result in a

situation of financial instability. Tightening financial conditions in response to such instability can further deepen the economic slowdown (Canuto, 2022).

Literature in the Indian context remains scanty in this field. Muduli and Shekhar (2023) have estimated tail risks of inflation for various macroeconomic situations that include supply-side shocks and their adverse impact on both upper and lower tail risks of inflation in India. Similarly, Growth-at-risk framework for real GDP growth has been used to analyse the low probability extreme events for monitoring risks to financial stability and macro-prudential policy implementation (Ghosh *et al.*, 2023). Nonetheless, to the best of our knowledge we have not come across studies in the Indian context that together estimate the risks to growth and inflation *i.e.*, stagflation risk. This study would try to fill this gap by analysing the risks to stagflation and also integrating both the GaR and IaR.

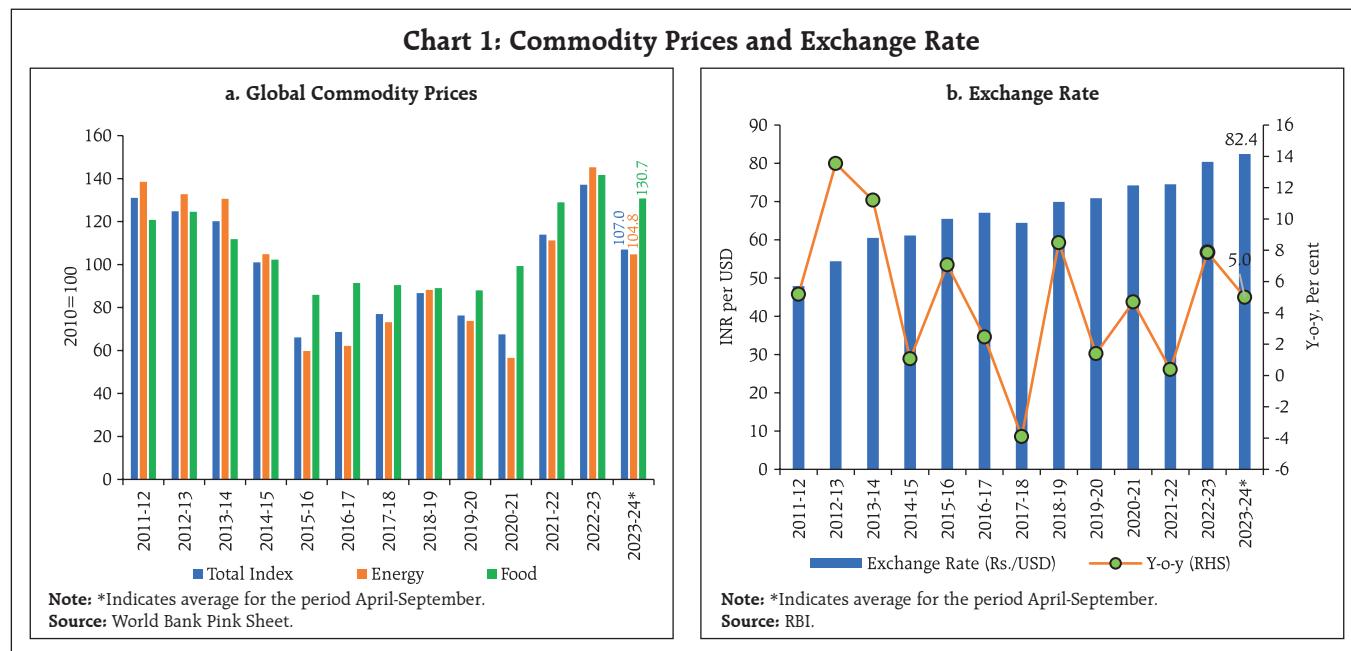
Given the global economic landscape considerably impacted by various events, such as the COVID-19 pandemic, Ukraine-Russia tension, rising commodity prices, and supply-side disruptions, Siddiqui (2022) highlighted the need for globally coordinated policies to mitigate stagflation risks. In light of these challenges, this study aims to estimate the risk of stagflation in India where periods of recession coupled with high inflation are considered as stagflationary situations by examining key variables such as financial conditions, exchange rate depreciation, and crude oil prices. In order to add robustness to the estimates, the study would incorporate the concepts of GaR and IaR to redefine stagflationary situations (Adrian *et al.*, 2019; Hofmann *et al.*, 2023). This holistic approach will enhance the study's accuracy in identifying the key determinants of stagflation risk for the Indian economy and contribute to the nascent literature.

III. Empirical Analysis

Stylised Facts

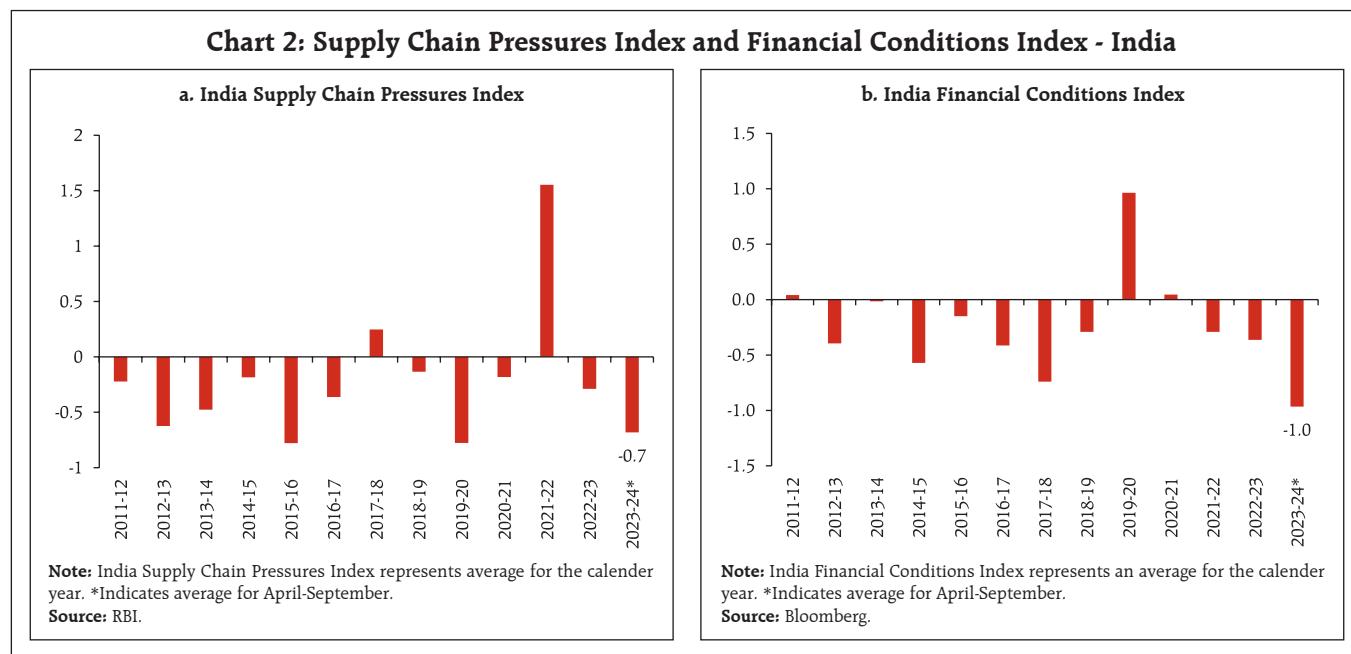
After the COVID-19 pandemic, several factors including pent-up demand for goods and services, supply chain disruptions, rising energy and commodity prices, monetary stimulus, and depreciation of domestic currency caused concerns for the global economy. The initial slump in demand by job losses and lockdowns were soon replaced by pent up demand once restrictions were lifted. There were issues with production, labour availability, supply chains, and availability of raw materials. To boost the economy, both fiscal and monetary stimulus was provided globally. Consequently, gradually demand started recovering faster than the recovery in supplies leading to pick up in commodity prices and domestic currency depreciation. This situation posed a risk of prices going up, leading to higher inflation, while also posing a risk of slower economic growth.

Global commodity prices picked up during the years 2021-22 and 2022-23 post the dip seen in 2020-21 raising concerns for both inflation and economic growth as prices of energy, metals and agricultural inputs rose resulting in input cost pressures (Chart 1.a). Higher commodity prices can lead to increased production costs reducing profit margins potentially discouraging investment and expansion plans. If businesses are unable to absorb the higher costs, they may pass them on to consumers, exacerbating inflationary pressures. Moreover, currency depreciation in 2022-23 by 7.9 per cent raised risks of imported inflation as well as higher imported costs for firms (Chart 1.b). These twin risks from higher global commodity prices and currency depreciation raised concerns of stagflation globally.



Post pandemic, stagflation issue needed careful attention from the policy makers to support the economy. Supply chain issues arose after the pandemic in response to lockdowns and production delays in different parts of the world particularly during

2021-22 leading to shortage of inputs and containers which raised concerns for growth and inflation (Chart 2.a). A higher value of India Supply Chain Pressures Index (ISPI)² indicates supply chain pressures.



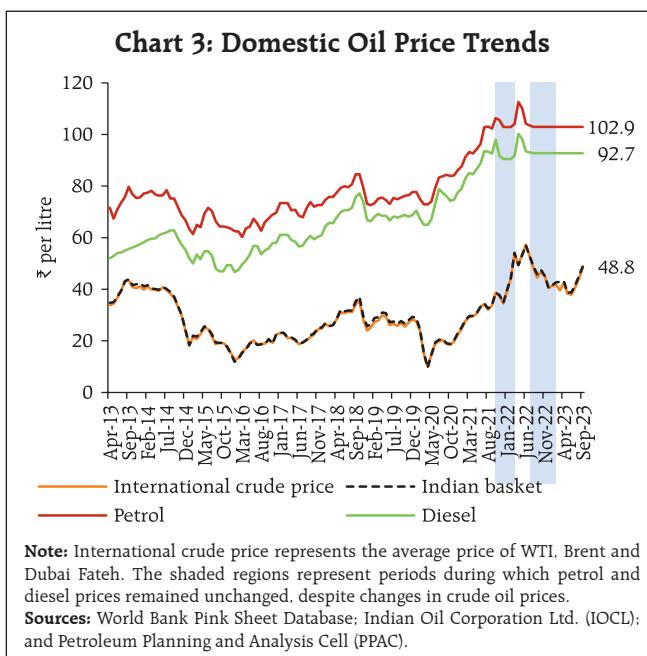
² ISPI has been developed by extracting common factors latent in domestic and global variables and it tracks supply chain pressures on the Indian economy efficiently (Patra et al. 2022).

While stagflation is usually a result of supply shocks such as a sudden spike in commodity prices, the risks could also propagate through knock-on effects through their impact on other macroeconomic variables such as a sudden depreciation of the exchange rate or a tightening of financial conditions. Growth and inflation, in such a scenario, could be impacted through multiple channels such as increased borrowing constraints for firms or large exchange rate pass-through effects on domestic prices. When firms face higher borrowing constraints, they may respond by raising their prices (Banerjee *et al.*, 2020). This, in turn, poses an additional risk of higher inflation as well as lower economic growth. In essence, the ripple effects of market volatility and tightened financial conditions can have significant implications for both inflation and overall economic growth *i.e.*, higher inflation and lower growth, over and above the direct impact of the supply shock. The tight financial conditions³ prevailing in the economy during 2019-20 were a source of concern for growth (Chart 2.b). A higher value of Citi Financial Conditions Index (FCI) indicates tight monetary conditions, a lower value indicated easy financial condition. However, both supply chain pressures and the tightness in the financial conditions have shown signs of improvement recently suggesting that the situation may be gradually improving.

The sharp pick-up in domestic energy prices since May 2020 posed risks to both inflation and growth outlook as it adds to the cost of production. Besides fuel and light group in CPI, transport subgroup containing petrol, diesel and fares are also impacted

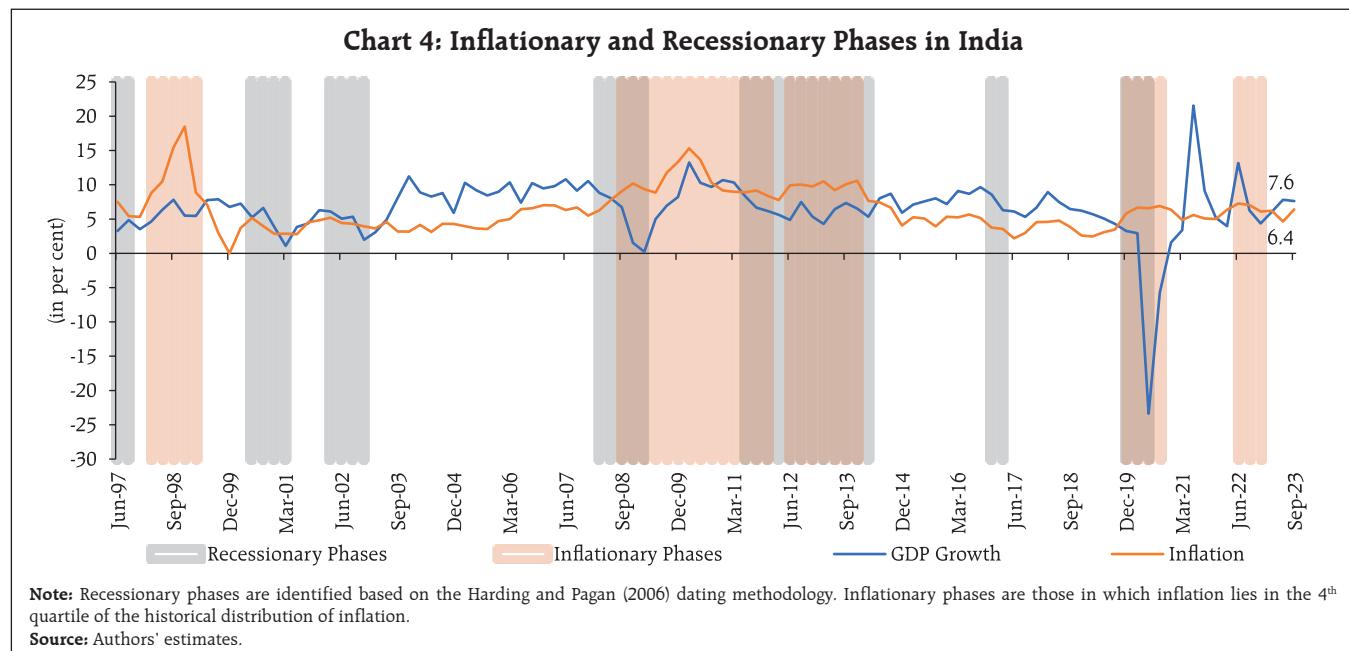
³ The financial conditions have been measured using Citi FCI which consists of a weighted average of the following variables: corporate spreads, money supply, equity values, mortgage rates, the trade-weighted dollar, and energy prices.

⁴ For instance, during December 2021- March 2022 global prices increased steeply, but domestic prices increased gradually with a lag indicating contained risks from crude oil prices to growth and inflation during the same period. Further, global crude oil prices have moderated significantly post June 2022; however, domestic petrol and diesel prices have not been revised down.



by the movement in petroleum products. India being the 3rd largest consumer of crude oil and depending on imports to the tune of around 80 per cent makes the role of supply management very critical for country's energy security. Prices of petroleum products are mostly administered in the sense OMCs (Oil Marketing Companies) usually announce the prices of LPG, kerosene, petrol and diesel by taking into account base price, dealer's margin and different duties set by the government. Reflecting all these factors, the pass-through of global crude oil prices to domestic pump prices of petrol and diesel has not always been uniform⁴ (Chart 3) and the correlations between the global crude oil prices and domestic retail prices of petrol and diesel weakened during certain periods (for details please refer to annex Chart A1). This highlights the fact that different factors can have different impacts on the growth and inflation trajectory depending on the underlying dynamics of pass-through.

Against this backdrop, we have analysed the past data and observed different phases of inflation and recession in history. Data over the past two decades indicates that India experienced a higher risk of



stagflation during global financial crises, the taper tantrum, and the COVID-19 pandemic (Chart 4). India witnessed an economic slowdown in several phases; however, it witnessed inflationary pressures for a prolonged period during the Global Financial Crisis (2007-08). A tight domestic monetary policy and sluggish global growth might have led to the economic slowdown in 2011. The uncertainty and capital outflows resulting from the taper tantrum in 2013 also impacted India's economic growth momentum. CPI inflation was above 10 per cent in a few months which together with weak growth led to a stagflationary situation. The emergence of the COVID-19 pandemic and elevated inflation in 2020, although for a short period, raised the risk of stagflation.

Data and Methodology

In our empirical analysis, we have utilised quarterly data spanning from Q1:1996-97 to Q2:2023-24 for various indicators to assess and estimate the risk of stagflation. We have taken quarterly real GDP growth provided by the National Statistical Office

(NSO). For inflation, CPI headline from 2011 onwards has been considered. While prior to 2011 CPI headline is not available. So, we have used CPI for industrial workers (CPI IW) as a proxy for CPI headline inflation between June 1996 and December 2011. Financial conditions have been incorporated in the estimation by using the Citi India FCI⁵ sourced from Bloomberg. This index helps us understand the overall state of the financial markets and their potential impact on the economy. A higher value of Citi India FCI indicates tighter financial conditions, while a lower value suggests an easing of financial conditions which consequently has an impact on investment decisions as well as costs. For evaluating the credit conditions of the Indian economy, we have relied on the credit-to-GDP ratio, a measure published by the Bank for International Settlements (BIS). This ratio serves as a proxy for understanding the availability and accessibility of credit in the economy. Additionally, we have taken into account the exchange rate dynamics by considering the INR/USD exchange rate published by the RBI as fluctuations in the exchange rate can have significant implications for the economy. Depreciation of domestic currency can potentially

⁵ This index has a relatively better forecasting power in predicting real economic activity (Hatzis et al., 2010).

lead to imported input costs and imported inflation. Since, energy is an important factor of production and it has a significant weight in the CPI basket, we have incorporated the Indian Basket Crude Oil price in our estimation framework. We propose two approaches to identify the stagflationary phase and examine its determinants. These two approaches are discussed as follows.

Baseline Approach

First, we define a stagflationary situation. At time t , it is said to be a *stagflationary situation* if it is a recessionary phase and inflation is above the 75th quantile of the historical distribution of inflation

To identify the recessionary phase, we use the methodology proposed by Harding and Pagan (2006) algorithm. First, it detrends the time series data by eliminating the underlying trend component by fitting a polynomial curve to the data and subsequently subtracting this polynomial from the original dataset. Subsequently, the algorithm proceeds to identify turning points within the data. A turning point is recognised when the smoothed data changes direction, specifically when it shifts from being positive to negative. This signifies the presence of a peak in the data. Conversely, a turning point is also identified when the smoothed data transitions from negative to positive, indicating the presence of a trough. Based on this definition, we create a binary dummy variable, which we will refer to as "Stagflation Dummy". This variable takes a value of 1 if the economy is in a stagflationary phase, indicating both high inflation and stagnant economic growth, and 0 otherwise. To understand the factors contributing to the likelihood of stagflation in India, we investigate the role of three key variables: the Citi India FCI, the INR/USD exchange rate, and crude oil prices. The India Basket crude oil prices has been used as a representative of commodity price shocks. The empirical exercise employs the Probit methodology which uses the above-mentioned explanatory variables to determine the probability of

Table 1: Probit Model Results – Approach 1

Explanatory Variable	Dependent Variable - Stagflation Dummy		
	Model 1	Model 2	Model 3
Citi India FCI _t	0.421** (0.167)	0.254 (0.205)	0.245 (0.217)
Exchange rate _t		0.091*** (0.028)	0.117*** (0.034)
Crude oil price _t			0.009 (0.005)
Constant	-1.194*** (0.164)	-1.718*** (0.261)	-1.973*** (0.330)
No. of observations	106	106	106
Pseudo R ²	0.08	0.25	0.28

Note: * $p < 0.1$. ** $p < 0.05$. *** $p < 0.01$. Standard errors in parentheses. Here, stagflation dummy refers to a binary variable that takes a value of 1 if the economy is in a stagflationary phase, indicating both high inflation and stagnant economic growth, and 0 otherwise.

Source: Authors' estimates.

a stagflationary situation. Formally,

$$Prob(Y = 1|X) = \phi(X^t \beta) \quad \dots(1)$$

Where Y is the dichotomous variable representing the stagflationary situation, X is the set of explanatory variables that includes Citi India FCI, INR/USD exchange rate and India basket crude oil price. ϕ is the cumulative standard normal distribution function. The exchange rate explains the defined stagflationary phase in both specifications 2 and 3. Financial conditions also serve as a significant indicator in specification 1. However, the risk from a spike in crude prices is limited and does not turn out to be statistically significant given the weak pass-through of global crude oil prices to domestic petrol and diesel prices.

Integration of Inflation at Risk and Growth at Risk Approach

In order to add robustness to our estimates, we employ another approach where stagflationary situations have been identified by employing the IaR and GaR methodologies. These frameworks allow us to estimate the risk of stagflation both in historical contexts and in the current economic landscape. The "at risk" framework utilises quantile regression to

estimate tail risks for inflation and growth, providing insights into potential extreme scenarios identified by the given level of probability parameter (Adrian *et al.*, 2019; Banerjee *et al.*, 2020).

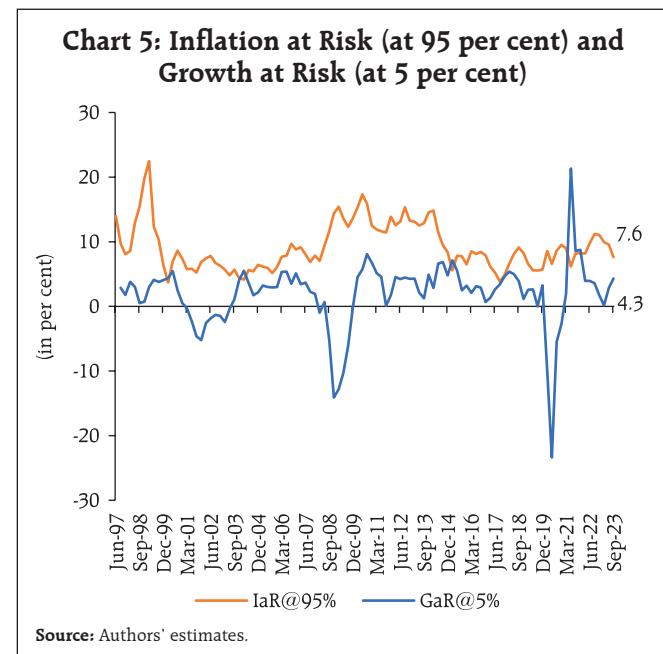
In the IaR framework, we consider various risk factors to assess the likelihood of stagflation. These factors include the output gap, crude oil prices and the INR/USD exchange rate. The output gap provides a measure of the difference between actual and potential GDP, offering insights into an economy's utilisation of resources. Fluctuations in crude oil prices can lead to a pick up in input costs as well as fuel prices which can impact inflation trajectory. Additionally, the exchange rate (INR/USD) can influence the cost of imports contributing to inflationary pressures.

On the other hand, the GaR framework considers a broader set of indicators to estimate growth risk. These indicators include leading economic indicators from CEIC, financial conditions, credit-to-GDP ratio, and US real GDP growth. Leading economic indicators provide crucial insights into the future direction of economic activity, helping gauge potential risks to economic growth. Financial conditions encompass various aspects of the financial system such as interest rates and credit availability which can impact investment and consumption influencing economic growth. The credit-to-GDP ratio serves as a measure of credit conditions in the economy reflecting the availability of credit and potential risks of financial instability. Finally, considering the US real GDP growth allows us to account for external factors that may affect India's economic growth given its integration into the global economy.

Using quantile regression, we can estimate tail risks which provide information on extreme outcomes with a given level of probability. Formally, the quantile regression approach is given by:

$$y_{t,q} = \alpha_q + \beta_q X_t + \epsilon_t \quad \dots(2)$$

Where y is the dependent variable which is inflation for IaR and real GDP growth for GaR. X_t is the



set of respective explanatory variables as explained above for IaR and GaR. The parameter $q \in (0,1)$ is the quantile or probability parameter that is aimed for estimation. This approach allows us to better assess the potential severity of stagflationary episodes and devise appropriate policy responses. The IaR for $q = 95$ per cent and GaR for $q = 5$ per cent is plotted in Chart 5.

In this scenario, we define a stagflation dummy as a binary variable which takes value 1 when IaR is at the 95th percentile (indicating upside risk to inflation) in the fourth quartile and GaR is at the 5th percentile (indicating downside risk to growth) in the first quartile and, 0 otherwise.

We continue to utilise the probit model defined in equation (1) to estimate the risk of stagflation. This model incorporates factors such as financial conditions, crude oil prices and the INR/USD exchange rate. Tighter financial conditions and depreciation of the exchange rate are found to increase the risk of stagflation whereas crude oil prices have a limited impact on stagflation risk in line with the contained impact of global prices to domestic prices (Table 2).

Table 2: Probit Model Results – Approach 2

Explanatory Variable	Dependent Variable- Stagflation Dummy		
	Model 1	Model 2	Model 3
India FCI _t	0.592*** (0.188)	0.455** (0.223)	0.440** (0.223)
Exchange rate _t		0.079** (0.033)	0.062 (0.038)
Crude oil price _t			-0.007 (0.009)
Constant	-1.753*** (0.239)	-2.261** (0.376)	-2.145*** (0.387)
No. of observations	106	106	106
Pseudo R ²	0.21	0.36	0.38

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Standard errors in parentheses. Here, we define a stagflation dummy as a binary variable when it takes value 1 when IaR is at the 95th percentile (indicating upside risk to inflation) in the fourth quartile, and GaR is at the 5th percentile (indicating downside risk to growth) in the first quartile and, 0 otherwise.

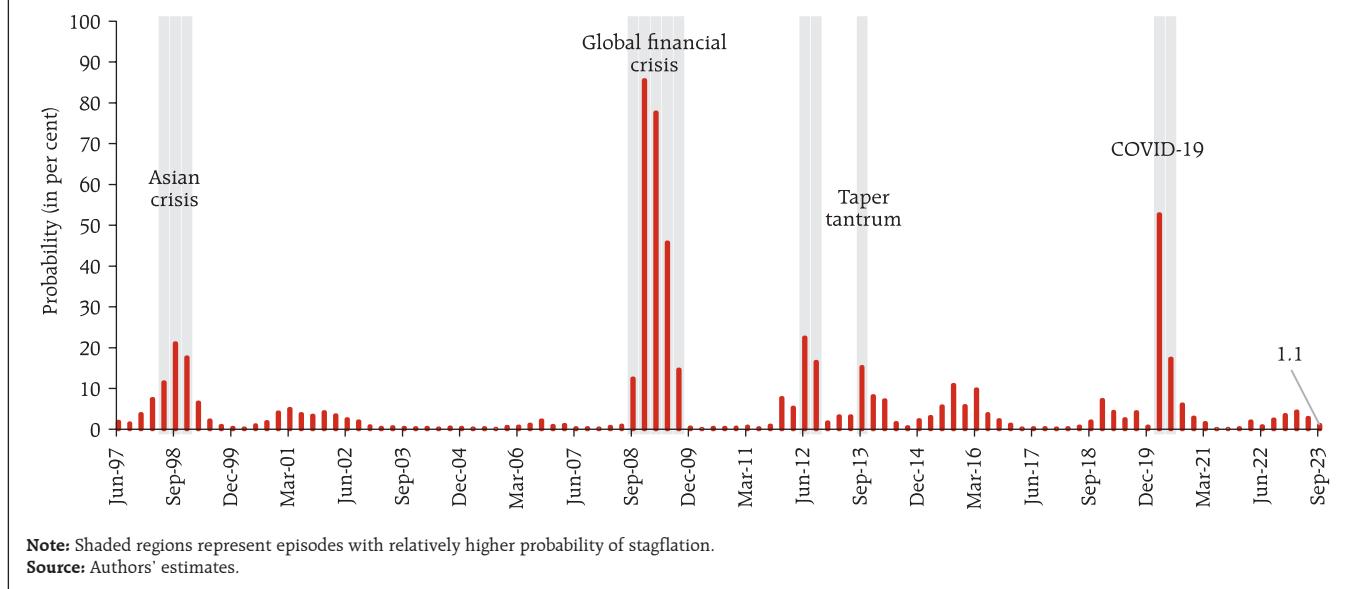
Source: Authors' estimates.

Our historical analysis reveals specific periods with higher stagflation risk, notably during events like the Asian Crisis (1997-98), the Global Financial Crisis (2007-09), the Taper Tantrum (2013), and the COVID-19 pandemic (Chart 6)⁶. During these

identified periods, the risk of stagflation was elevated due to various economic challenges and external shocks. However, the stagflation risk arising post COVID-19 has subsided reflecting easing of financial conditions, contained depreciation of the INR/USD exchange rate and stable domestic petrol and diesel prices. Furthermore, post-pandemic gradual recovery in demand conditions and moderation in CPI headline inflation have been in line of our assessment of reduction in stagflation risk to about 1 per cent (Chart 6).

IV. Conclusion

Stagflation has the potential to destabilise the entire macroeconomic framework of an economy by creating an environment of uncertainty. It is a major concern for the RBI as it is entrusted with the primary objective of maintaining price stability while keeping in mind the objective of growth requiring constant monitoring of any arising stagflation risk. Further, higher commodity prices and the appreciation of the US dollar post-pandemic raised

Chart 6: Probability of Stagflation

⁶ The Receiver Operating Characteristic Curve (ROC-AUC) for the explanatory variables is 0.86, which falls within an acceptable range. This indicates that the explanatory variables have significant signalling power in predicting the stagflationary situation (Mandrekar, 2010).

concerns of stagflation globally. The delays in the monetary normalization process after the pandemic have also raised concerns about the potential for a costly stagflation. Against this backdrop, this article attempts to assess the stagflation risk in India and identifies two significant risk factors: financial conditions and depreciation of the INR against the USD. These factors prominently influence the likelihood of stagflation as corroborated by the empirical estimates. Similar results after using the integrated IaR and GaR frameworks to evaluate the stagflation risks adds further credence to our findings. However, given the weak pass-through of crude oil prices to domestic petrol and diesel prices, it has limited predictive power for stagflation.

Compared to the historical episodes stagflation risk is currently lower at about 1 per cent which could be attributable to several factors. Commodity price shocks are not as severe and persistent as they were back then. Moreover, given the focus of central banks on maintaining price stability worldwide and healthier financial positions of financial institutions, the long-term inflation expectations have largely remained well-anchored to the inflation target unlike during the 1970s when inflation expectations were weakly-anchored and went to exorbitantly high levels.

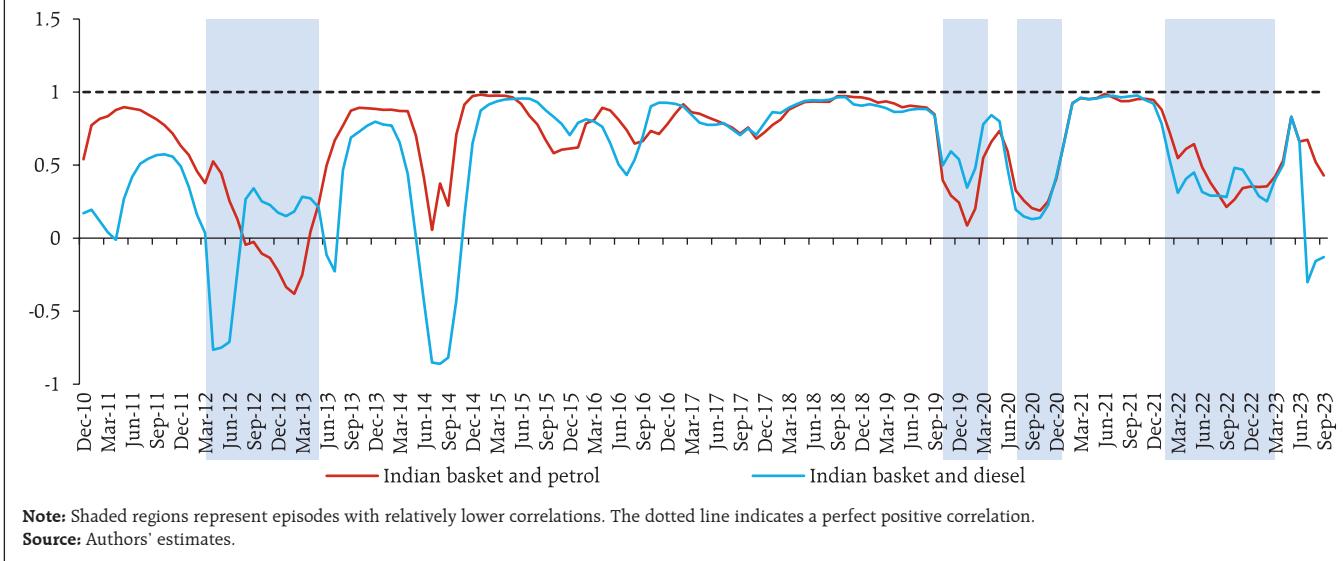
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Annex

Chart A1: 1-Year Rolling Correlations between Indian basket Crude Oil Price and Petrol and Diesel Retail Prices



Assessing Oil Price Trajectory: An Evaluation of Alternate Sources of Information

by Deba Prasad Rath, G V Nadhanael and
Shobhit Goel[^]

This article analyses the extent of forward-looking information contained in various sources of information about the trajectory of crude oil prices. Our results show that qualitative information, such as the forecasts available from the Survey of Professional Forecasters (SPF), tends to outperform the futures prices. The forecast accuracy of futures prices improves once we account for trends in real economic activity, such as capacity utilisation in key oil consumer economies. Also, our results indicate that forecast accuracy tends to improve for all forecasts methods including, naïve forecast, futures prices, adjusted futures prices, SPF and those provided by US-Energy Information Administration (EIA), when the futures trajectory is lower than the current price (backwardation), highlighting the role of market conditions in shaping forecast accuracy.

I. Introduction

Understanding the dynamics of crude oil markets and assessing the likely trajectory of prices in the future are important for policymakers for a number of reasons. For central banks, especially those with a mandate for inflation targeting, making reliable and robust inflation forecasts is paramount for both 'anchoring' inflation expectations and also for its own 'credibility' (Baumeister & Kilian, 2014b; Garga et al., 2022). Given India's large share of food and fuel in overall consumption, coming up with the best possible forecasts for these supply-side drivers of inflation is critical. In India, crude oil prices significantly impact inflation through their direct and indirect effects on

prices of goods and services that use crude oil and its products as inputs (John et al., 2020). Given this, crude oil price outlook is an essential input for the Monetary Policy Committee's (MPC's) deliberations on inflation projections.

Although the dependency of economic activity on crude oil has fallen steadily over the last thirty years with a shift towards cleaner and renewable sources of energy, crude oil continues to play a critical role in the economy (Blanchard & Gali, 2007; Pagano & Pisani, 2009). Crude oil is crucial for producing a wide range of goods and services, especially transportation. Higher oil prices raise the cost of inputs, and when they are passed through to output prices, they contribute to inflation. If these cost increases can't be passed on to consumers, profit margins of firms could be impacted, denting the growth and investment outlook. Conversely, a drop in oil prices can stimulate economic growth by reducing production costs and encouraging production (Ahmad et al., 2022; da Silva Souza & de Mattos, 2023; Sadath & Acharya, 2021). If administered prices suppress the inflation impact of high oil prices, it could lead to fiscal strain, as the subsidy burden would increase. Further, higher oil prices widen the current account deficit (CAD), given the high import dependency. As crude oil prices influence a host of these macroeconomic variables, their forecasts play an essential role in setting the outlook for these variables.

This article examines the alternate sources of information - including naïve forecasts¹, futures prices², adjusted futures prices, US Energy Information Administration (EIA) and the Survey of Professional Forecasters (SPF) of the Reserve Bank of India (RBI)

[^] The authors are from the Department of Economic and Policy Research. The views expressed in this article are those of the authors and not of the Reserve Bank of India.

¹ In naïve forecasting, it is assumed that the price of crude oil at time $t+1$ is equal to the same at time t (current price). In other words, it is a no-change forecast.

² Futures (plural) is being used to refer to futures contract based price, while future (singular) is used to refer to future as tense.

forecast for crude oil prices - on the future trajectory of oil prices and attempts to assess their usefulness for arriving at a realistic outlook for the oil price trajectory. Specifically, the article contributes to the literature by providing a comprehensive analysis of various sources of information on oil price outlook and comparing their forecast accuracy. Also, our methodology of adjusting for demand conditions adds a different dimension to using oil prices for forecasting. Moreover, this article also compares the forecast performance across different market conditions as characterized by the market conditions, *i.e.*, whether the futures prices are higher or lower than current prices.

We first provide an overview of the forecasting methods used to project oil prices. Specifically, we analyse the assessment of the US EIA and the SPF of the RBI. Thereafter, we analyse the extent to which forward-looking information is contained in the oil futures prices and empirically assess whether explicitly accounting for demand factors can help improve the predictive power of futures prices. Thereafter, we look at the forecast performance of these alternate sources across different market conditions and their policy implications.

II. Approaches to Forecasting Oil Prices

The oil price forecasting methods can be broadly classified into two categories. The first category, qualitative forecasting, uses traditional methods that rely on estimates provided by professional forecasters and industry experts, focusing on assessing the impact of infrequent events such as wars and natural disasters on oil prices (Alquist *et al.*, 2011). More recently, qualitative information is also analysed in a more structured manner. Machine learning and Artificial Intelligence (AI)-based techniques³ which leverage on advanced computational tools to analyse

vast amounts of information and extract valuable insights for predicting oil prices are also being increasingly used (Bashiri *et al.*, 2013).

On the other hand, the second category, quantitative forecasting, relies on econometric methods that employ statistical techniques to model and predict oil prices. Time series models play a crucial role in this category by utilising historical data to identify systematic patterns, such as autocorrelation, to make projections for crude oil prices (Frey *et al.*, 2009). They are particularly well-suited for crude oil prices, as the data exhibits recurring patterns. Additionally, financial market models explore the intricate relationship between spot and futures prices, shedding light on how they influence one another. Meanwhile, structural models delve into the impact of specific economic factors and the behaviour of economic agents on the future spot crude oil prices, offering valuable insights into the underlying mechanisms driving price movements. Furthermore, non-standard models such as Artificial Neural Networks (ANN) and Support Vector Machines (SVM) provide alternative approaches that leverage advanced computational techniques to enhance oil price forecasts beyond the capabilities of traditional econometric methods. These models represent a dynamic and evolving field in research on oil price forecasting.

Traditional Qualitative Forecasts

Estimates provided by professional forecasters and industry experts can be considered under the category of qualitative forecasts as they often are based on the qualitative judgments of the forecasters who employ their overall understanding and experience to provide a forecast, especially in case of estimating the impact of infrequent events such as wars and natural disasters.⁴ We look at two such sources in detail.

³ These encompass methodologies like the Delphi method, belief networks, fuzzy logic, expert systems, and web text mining.

⁴ These forecasters also use econometric as well as structural models as inputs for making their assessments, but do not solely rely on them.

First is the information from the U.S. Energy Information Administration (EIA), which provides monthly forecasts for up to 2 years ahead. The EIA forecast is based on analysts' judgments using different variables as guides. These include (1) price forecasts from the pooled and regression models, (2) the previous month's price forecast, and (3) futures prices. The pooling model utilises an average of five separate models based on historical economic and oil market activity data utilizing different quantitative techniques. These include a vector autoregressive (VAR) model, a model based on the spread between oil futures prices and the spot price of oil, a model using non-oil industrial commodity prices, a model with a time-varying parameter representing the relationship between the spreads between the U.S spot prices of gasoline and heating oil and the spot price of crude oil, and a model based on the cumulative change in U.S. crude oil inventory levels. Another input utilised by EIA is a linear regression model based on inputs from the Short-term Economic Outlook (STEO) global oil market forecast. It considers month-to-month changes in US petroleum inventory levels, global GDP, and petroleum inventory levels in Organisation for Economic Co-operation and Development (OECD) countries. As inventory levels can reflect short-term market imbalances, they are seen to capture better the cumulative effect of demand and supply side factors (EIA US, 2020).

The second source we analyse in detail is the Reserve Bank of India (RBI)'s Survey of Professional Forecasters (SPF) which provides aggregated results from a bi-monthly survey of professional forecasters. The survey elucidates the participants' forecast for crude oil price for the coming quarters. The SPF was initiated as a quarterly survey in the second quarter of 2007-08, and the crude price forecast has been published since 2008-09:Q4 round (7th round), which provides a forecast for 2009-10:Q1. In order to align with the monetary policy cycle, the SPF was shifted

to a bi-monthly frequency from the 28th round. The SPF in a way is also a combination forecast as it takes the median forecast price predicted by different professional forecasters all of whom may have used different forecasting techniques and models.

Structural Models

In structural models, the crude oil price forecast is modelled to be dependent on a group of fundamental economic variables, with standard explanatory variables being OPEC output commitments, inventory levels in major oil consumers, oil consumption and production of major economies, and other macroeconomic variables like GDP growth rate, interest rate, exchange rate, and other commodity prices. Yang *et al.* (2002) utilises an error correction model (ECM) to estimate the demand equation and related elasticities. It includes the impact of income effect and resultant demand shift for crude oil and supply side structure by including OPEC market structure and its attempt at cartelization. Further, simple models to forecast short-term WTI crude oil spot prices by using OECD petroleum inventories have been attempted in literature (Merino & Alvaro Ortiz, 2005; Ye *et al.*, 2002, 2005). Merino & Alvaro Ortiz (2005) attempts to estimate if other variables, including the oil market, financial market, and commodity prices, apart from inventory levels, improve the original model, but that non-oil market variables do not improve the model and only oil market variables like speculation and OPEC spare capacity improve the overall explanatory power. Vector autoregressive (VAR) and Structural VAR (SVAR) models to forecast crude oil prices have gained significant attention in the literature, as these models allow for endogenizing the price of oil instead of assuming exogenous oil prices. Kilian (2009) creates a global real economic activity index, which decomposes the oil price shocks into three components: oil supply shock, global demand shock for all industrial activities, and a specific demand shock for oil. Baumeister & Kilian (2012) finds that the real-time forecasts made

using the VAR model based on global oil market variables are more accurate than the no-change forecast and even Autoregressive (AR), Autoregressive moving-average (ARMA), and futures prices-based forecast, especially for horizons up to one year. VAR models can also be used to evaluate the sensitivity of the baseline forecast to alternative forecast scenarios, which may involve shocks to demand and supply of oil (Baumeister & Kilian, 2014a). Wang *et al.*, (2015) employed a model which included variables such as futures price, global oil production, global economic activity, and changes in oil inventory, among other variables, to forecast crude oil prices. They found the model to have superior performance than a no-change model.

Futures Prices

Another category of quantitative forecasting model is based on financial market data. These models investigate if futures prices can be used to obtain unbiased and efficient forecasts of crude oil prices. If the crude oil futures markets are efficient, then futures prices should reflect all presently available information which may drive the crude oil prices in future, making them a helpful tool for predicting crude oil prices (Gulen, 1998). Futures prices may be useful in predicting crude oil prices, particularly in the short term. On an evaluation of the predictive accuracy of 1, 3, 6, 9, and 12 months ahead crude oil futures prices for forecasting the crude oil prices, Abosedra *et al.*, (2004) finds that although futures prices and naïve forecasts are unbiased at all forecast horizons, only the 1 and 12 month ahead futures prices based forecasts outperform the naïve forecast. Therefore, given the limitations of using futures prices alone to predict crude oil prices, even in an efficient market, it is important to consider other factors that can affect crude oil prices, such as macroeconomic conditions, changes in production and consumption patterns, and geopolitical events. Furthermore, sudden supply disturbances, such as

any major geo-political event, can adversely affect the predictive accuracy of futures prices as futures prices also respond to news about supply-side developments like spot prices. Although Chinn *et al.*, (2005) found that futures prices are unbiased predictors of crude oil prices and do slightly outperform time series and random walk models in predicting crude oil prices, they have limited predictive capacity. Recent literature, however, find that futures price-based forecasts can produce reasonable forecasts, especially for short and medium-term periods. To improve forecast performance, some have argued for a model that imposes very little structure on the relationship between spot and futures prices; others have proposed the usage of the term structure (Bredin *et al.*, 2021; Chu *et al.*, 2022).

Adjusted Futures Prices

Attempts have been made to correct the biases in futures prices to improve their forecast performance. Pagano and Pisani (2009) find that the futures prices are not unbiased predictors of crude oil prices, as the mean forecast error for each forecast horizon is significantly negative, ranging from US\$ 0.73, US\$ 1.89, and US\$ 4.37 for 3-, 6- and 12-month horizon. They used a monthly average of futures prices for West Texas Intermediate (WTI) grade of crude oil for different horizons. They further investigated whether business cycle phases explained the forecast errors and regressed the error on the US capacity utilisation data released by the Federal Reserve every month. They found that forecast errors and capacity utilisation are negatively related. The slope coefficient increases in magnitude with the increase in forecast horizon and is also statistically significant from the 4-month horizon onwards. Using an out-of-sample forecasting exercise, they found that adjusted forecasts are more precise than those obtained with unadjusted futures, random walk, or futures adjusted for a constant value, particularly at longer horizons (greater than six months).

Since our objective is to assess the relative forecast performance of various sources of information, we also attempt to generate an adjusted futures price series. Following the methodology utilized by Pagano *et.al.* (2009), we examine whether the futures prices are an unbiased estimator of crude oil prices and then try to adjust the futures prices with real sector indicators. Our approach, however, differs on specific accounts. We utilise the average quarterly price to generate and evaluate the forecast to maintain comparability with different sources. Therefore, we take the average of the 3-month ahead futures prices for each quarter to obtain the unadjusted futures prices-based forecast for the subsequent quarter. Further, our analysis is based on the Brent futures prices. Even though our objective is to assess the trajectory of the Indian basket of crude oil⁵, futures prices are not available for the Indian basket, and Brent is the closest proxy.⁶

More importantly, while Pagano *et.al.* (2009) used capacity utilisation (CU) for the US to adjust for macroeconomic factors, we augment it with CU for China. China is the second largest oil consumer, accounting for nearly 16 per cent of global crude oil consumption. In the early 2000s, US was the leading consumer of crude oil, accounting for nearly 25 per cent of the global consumption of crude oil. However, China's crude oil consumption has increased significantly in the last two decades, rising from less than 7 per cent in 2001 to more than 16 per cent in 2021. India has emerged as the third largest consumer of crude oil, although its share in global crude oil consumption is still below 5 per cent (Table 1).

⁵ The composition of Indian Basket of Crude represents Average of Oman & Dubai for sour grades and Brent (Dated) for sweet grade in the ratio of crude processed during previous financial year. The data for Indian Basket of Crude is provided by the Petroleum Planning & Analysis Cell (PPAC) under the Ministry of Petroleum and Natural Gas for both daily and monthly frequencies.

⁶ Our assumption is that the trajectory of brent futures could adequately capture the same of Indian basket within the forecast relevant period (one quarter).

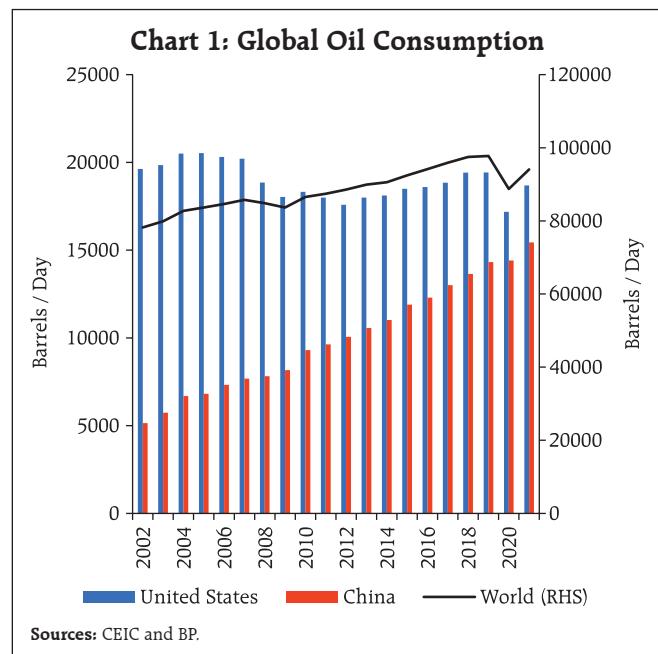
**Table 1: Consumption of Crude Oil
(thousand barrels per day)**

Region	2002	2011	2021
United States	19625	17993	18684
China	5144	9630	15442
India	2359	3475	4878
Saudi Arabia	1810	3285	3595
Russian Federation	2544	3094	3407
Global	78210	87433	94088

Source: BP Stats Review 2022.

On the other hand, US's consumption in absolute terms has remained broadly stable but has declined in share of global consumption to less than 20 per cent. Thus, in the last decade, China has become an important player in the global crude oil price dynamics (Chart 1). Further, the US has of late reduced dependence on the import of crude oil and has moved towards usage of domestically produced shale oil.

We take the quarterly average of Brent 3 months ahead futures prices⁷. We first compute the forecast error (f_{et}) by using the quarterly average of Brent 3-month ahead futures prices in the previous quarter⁸



⁷ The average of daily price of Brent 3 month ahead futures in the preceding quarter is taken as the forecast for the next quarter.

⁸ Unadjusted futures prices based forecast.

(f_{t-1}) and the actual observed prices of brent prices in the current quarter (p_t).

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

This forecast error is the dependent variable with CA_{US} (average quarterly capacity utilisation for the US) and CA_{CN} (quarterly capacity utilisation for China) as the independent variables.⁹ The Federal Reserve provides capacity utilisation for the US on a monthly frequency; therefore, we take a quarterly average is taken for this model. The National Bureau of Statistics of China provides capacity utilisation data for China on a quarterly basis.

$$e_t = a + b * CA_{US,t-1} + c * CA_{CN,t-1} + \epsilon_t \quad \dots(2)$$

$CA_{US,t-1}$ is the Capacity Utilisation for US at time 't-1' which is actually the latest quarterly available data for it when the forecast is made for the subsequent quarter. Similarly, $CA_{CN,t-1}$ is the Capacity Utilisation for China at time 't-1'. All the series, namely forecast error, capacity utilisation of US and capacity utilisation of China, have been found to be stationary¹⁰.

Table 2: Results: Capacity Utilisation and Forecast Error

Analysis of Variance (ANOVA)				
	Degrees of freedom (Df)	Mean Square (MS)	F statistic	Significance F
Regression	2	486.842	5.64657	0.007242
Residual	37	86.21908		
Total	39			
	Coefficient	Standard Error	t Stat	P-value
Intercept	87.49944	68.09937	1.284879	0.20682
CA_US	1.256385	0.609505	2.06132	0.046351
CA_CN	-2.41698	0.796701	-3.03374	0.0044

⁹ We use one period lag for capacity utilisation as the data on capacity utilisation is available with a lag of one quarter. So, for a forecaster at time t , only information about CU of $t-1$ is available. Given that CU has a high level of persistence, previous period CU is taken as a proxy.

¹⁰ Augmented Dickie Fuller (ADF) showed that the series are stationary (Forecast error and capacity utilisation of China at 1 per cent significance and for capacity utilisation for US at 10 per cent significance).

From the regression results, we find that the regression model is highly significant based on F statistic. Further, CA_{US} has a positive sign and is significant at 5 per cent level, while CA_{CN} has a negative sign and is highly significant at 1 per cent level.¹¹

The coefficients from the regression model are then used to obtain the crude oil price forecast adjusted for real sector variables (\hat{f}_t) using equation (3):

$$\hat{f}_t = f_t - \hat{a} - \hat{b} * CA_{US,t-1} - \hat{c} * CA_{CN,t-1} \quad \dots(3)$$

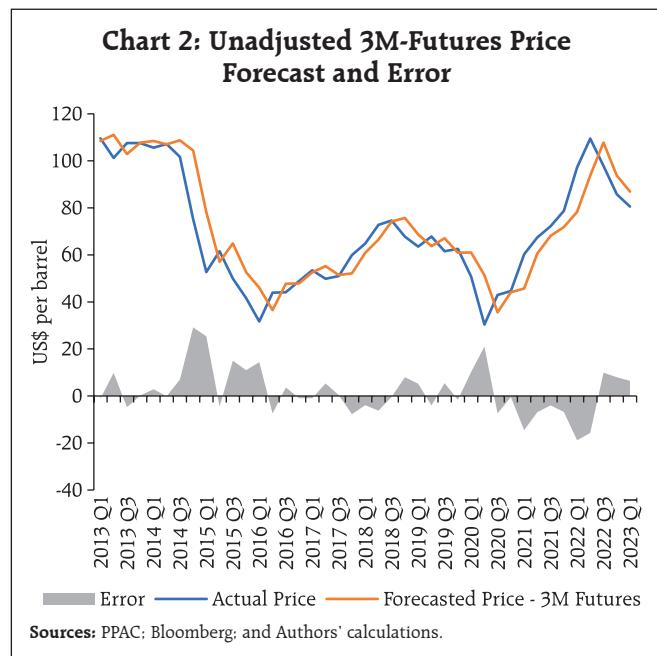
The larger magnitude for the co-efficient for capacity utilisation for China implies that China is playing a more significant role in global crude oil dynamics. Any fall in the capacity utilisation for China would lead to the adjusted Brent 3-M futures forecast being revised downwards and vice-versa.

IV. Comparing Forecast Performance of Alternate Models

To evaluate the forecast performance of SPF crude oil forecast, the next quarter forecast for crude oil prices from the 7th to 27th round is taken as they are available with a quarterly frequency. From the 28th round, due to bi-monthly frequency, we proceed as follows. For Q2 and Q4 of each calendar year, an end of earlier period forecast is directly taken as they correspond to the quarter end. In the Q1 and Q3 of each calendar year, the forecast from the February round and August round is taken. It may be noted that this gives the forecaster some information advantage as they can incorporate information regarding crude oil price behaviour in the first 15-30 days of the forecasted quarter.

We first evaluate the forecast performance of unadjusted 3-month Brent futures prices (Chart 2).

¹¹ The CU for US shows up in the regression with an opposite sign than expected which could be also indicative of the fact that futures prices, are putting more weight on US CU whereas it is underweighting China CU (which is reflected in the negative sign).



The unadjusted Brent 3M futures prices are seen to lag when used as a forecast measure, as they seem to be more influenced by the current spot prices than by futures price expectations.

First, we look at the average of forecast errors to see if there is a positive or negative bias in the forecast. In the period from Q2:2013 to Q1:2023, we find that the Brent 3M futures prices-based forecast has an average error of US\$ 0.86, while for the SPF forecast, the average forecast error is US\$ 1.56 and is US\$ 0.72 for the PPAC no-change forecast and US\$ 0.79 for Brent no-change forecast. It is however, the lowest for US-EIA forecast with an average forecast error of US\$ (-)0.07.

The upward bias in the forecast may be due to various factors including the inability to predict sudden collapse in crude oil prices due to some unexpected demand collapse (as seen during COVID-19). It can also be due to the supply conditions normalising faster than expected or the temporary demand spike cooling off. Also, at times higher crude oil prices are due to collective actions of oil producers, namely OPEC, to restrain supply and drive-up oil prices but

the supply cuts may not be successful for longer runs, with all producers having an incentive to increase their individual production to garner higher revenues, reflecting a classic game theory situation. Further, professional forecasters, forecasters at monetary authorities and even analysts using crude oil price forecast as an input may also tend to be conservative in the prediction for crude oil prices even when they expect the prices to cool down, reflecting loss aversion behaviour. This is because if the prices fail to cool down to the levels forecasted by them, a larger penalty is incurred in terms of higher inflation, thus raising questions over the efficacy of their forecasting prowess. On the other hand, if prices cool down more than expected it is a positive surprise in terms of cost and inflation, thereby escaping scrutiny. Thus, forecasters see lower perceived cost in forecasting a higher crude oil price and thus having an upward bias than predicting a lower crude oil price and risking scrutiny.

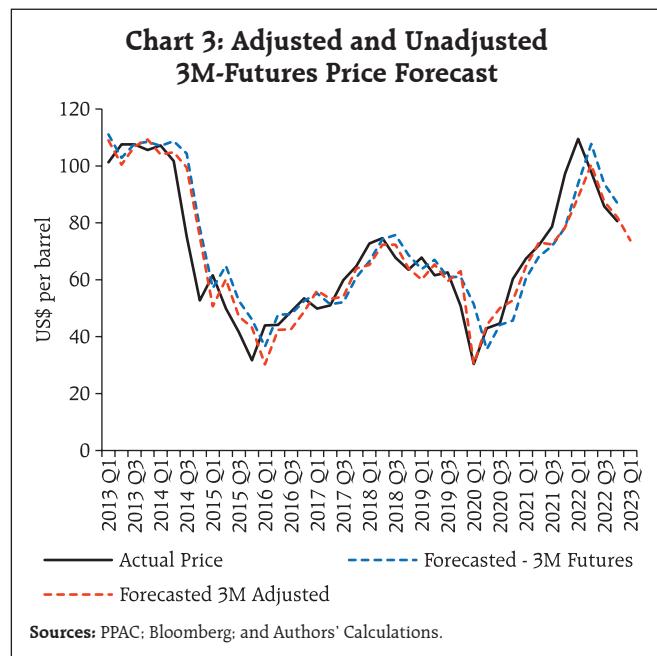
Next, we look at the forecast accuracy by evaluating the root mean square of error (RMSE). The Brent 3M futures prices show only a marginal improvement in the root mean square of error (RMSE) score over the Brent no-change forecast, highlighting the limitations of using unadjusted futures prices as a forecast. On the other hand, the SPF forecast significantly outperforms it in RMSE (Table 3). Further, the errors from futures

Table 3: Performance of Different Forecast Methods (Q2:2013-Q1:2023)

Forecast Method	Average Forecast Error	RMSE
Brent 3M Futures Unadjusted*	0.86	8.09
US – EIA Next Quarter*	-0.07	7.57
Brent No-change Forecast*	0.79	8.27
SPF – Next Quarter	1.56	5.62
PPAC No-change Forecast	0.72	8.11

Note: Brent 3M Futures Unadjusted, US-EIA Next Quarter and Brent No Change Forecast have been compared to Brent Spot Prices, while others have been compared with the Indian Crude Oil Basket Price provided by PPAC. Further, the Brent Spot Price and the Indian Crude Oil Basket Price are highly correlated with a correlation coefficient of 0.99.

Source: Authors' calculations.



prices are substantial during periods where there is a secular increase or decline in crude oil prices, as highlighted in the literature.

The comparison of the adjusted forecast *vis-à-vis* the unadjusted forecast shows that the adjusted forecast was able to better predict the fall in crude price during periods of a sudden drop in industrial activity like during the outbreak of COVID in 2020-21:Q1 and pickup in crude prices due to revival in industrial demand activity since 2020-21:Q2.

The improvement in prediction power of the adjusted Brent 3M futures prices forecast is reflected in its lower RMSE score of 6.89 down from 8.09 for the unadjusted forecast. This reflects a marked improvement over the no-change forecast. However, the SPF forecast continues to outperform, highlighting the advantage of using a combination of forecasts.

A snapshot view of the properties and merits and demerits of relying on all the above discussed sources of information are presented in Annex 1.

A critical factor in determining the predictive power of futures prices is the nature of the market in terms of whether the futures curve indicate a decline

Table 4: Performance of Different Forecast Methods (Q1:2013 - Q1: 2023)

Forecast Method	Average of Forecast Error	RMSE
Brent 3M Futures Unadjusted*	0.86	8.09
Brent 3M Futures Adjusted*	- ^	6.89
US – EIA Next Quarter*	-0.07	7.57
Brent No-change Forecast*	0.79	8.27
SPF – Next Quarter	1.56	5.62
PPAC No Change Forecast	0.72	8.11

*Compared with Brent Spot Crude Prices.

^ The average forecast error for Brent 3M Futures Adjusted is not presented here, as by design we have adjusted the forecast error obtained from unadjusted futures prices for capacity utilisation levels, thereby making them incomparable with other forecast methods.

Source: Authors' Calculations.

or an increase in prices going ahead. Therefore, in the next step, we identify the period of backwardation (the spot price of the asset is higher than the futures price) and contango (the spot price of the asset is lower than the futures price) and compare the forecast performance of various sources during these periods separately. Many plausible reasons for backwardation include short-term supply shortages, temporary demand spikes, expectations of deflation or recession, and convenience yield. Contango, conversely, usually occurs when the market predicts a supply shortage or demand spike in the future. Normal inflationary pressures and storage costs also lead to higher futures prices than the spot prices.

In the sample period considered, backwardation and contango are broadly equally occurring phenomenon. We find the average forecast error and RMSE separately for the period of backwardation and contango.¹² The forecast performance as measured by RMSE is less satisfactory when the market prices are in contango, with a large positive upward bias in the forecast being found as measured by the average of forecast error. This implies that when the futures oil prices are trading higher; all the forecast models

¹² Backwardation and Contango are estimated in the quarter the forecasts are made.

Table 5: Performance of Different Forecast Methods (Q2:2013 Q1:2023)

Forecast Method	Average of Forecast Error		RMSE	
	Contango	Backward- ation	Contango	Backward- ation
Brent 3M Futures Unadjusted*	3.67	-1.94	9.19	7.00
Brent 3M Futures Adjusted*	2.07	-2.07	7.88	5.90
US EIA – Next Quarter*	1.35	-1.50	7.86	7.27
Brent No-change Forecast*	1.87	-0.30	9.26	7.28
SPF – Next Quarter	2.34	0.78	5.78	5.47
PPAC No Change Forecast	1.96	-0.51	9.44	6.78

*Compared with Brent Spot Crude Prices.

Source: Authors' calculations.

overpredict oil prices, thus leading to a substantial upward error in forecast.

The magnitude of error in a scenario of contango is the highest in the case of Brent's 3-month futures price-based unadjusted forecast. This bias in prediction is also reflected in a higher RMSE of 9.19 during the period of contango as contrasted with an RMSE of 7.00 during the backwardation period. The adjusted Brent 3-month futures considerably reduces this bias during the contango periods, resulting in RMSE improving to 7.88 from 9.19. This improvement can be attributed to the inclusion of the forward-looking economic indicators of oil demand, which helps to predict any demand shock-induced collapse in oil prices. Similarly, under backwardation, Brent 3-month adjusted futures perform almost as well as the SPF forecast.

IV. Conclusion

In this article, we looked at the relative performance of various forward-looking sources of information of oil prices in terms of their forecast accuracy. We find that qualitative information such as the median forecast available from the SPF tends to outperform futures prices; and futures prices, at best, can match a naïve forecast where we assume that the prices would continue to remain the same at the current level. We, however, find that the predictive

power of futures prices improves significantly once we account for the impact of industrial activity on oil demand by incorporating information on capacity utilisation for the two largest consumers of crude oil, the US and China. Our results also indicate that the forecast performance of all the sources analysed is better under a backwardation period, when current prices are higher than futures prices. These indicate that relying upon any specific individual source of information alone may not be the prudent approach and an assessment of the future trajectory of oil prices should ideally take into account all the available information from various data sources, trends in actual economic activity in major oil consuming economies. Moreover, the current state of the oil market as indicated by the shape of futures curve, i.e., whether it is in contango or backwardation, also provides valuable information regarding the degree of accuracy with which crude oil prices can be forecasted.

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Annex 1 : Summary of Different Forecast Approaches

	Brent Futures	Naïve	Brent Futures Adjusted	SPF	US-EIA
Data Source	Bloomberg	Bloomberg/PPAC	Bloomberg, Federal Reserve Board (US), National Bureau of Statistics (China)	RBI	US EIA
Periodicity	Daily	Daily	Quarterly	Bi-Monthly	Monthly
Bias	Upward	Upward	Not Applicable	High Upward	Negligible
Historical Forecast Performance*	Low	Low	Medium	High	Medium
Advantages	Low data requirement No assumption regarding oil price dynamics Based on actual market data Market participants are expected to incorporate all available information	Low data requirement No assumption regarding model for oil price dynamics Easy to formulate	Higher accuracy than futures or naïve forecast Considers oil demand conditions Easier to comprehend opposed to structural and ML based models	Most accurate in terms of prediction Form of combination forecast (literature says is best performing) Limited individual forecaster bias (uses average of forecast value) Forecasters can use qualitative data and experience	Form of combination forecast (literature says is best performing) Analysts can use qualitative data and experience
Disadvantage	Low Accuracy Futures are used for hedging and speculation rather than as a forecast for prices	Low Accuracy Don't consider any information	Data availability constraints prevent higher frequency and more robust back testing Doesn't incorporate other real sector information	High upward bias Forecasters may include their personal bias	Unclear methodology in case of conflict between different inputs/models High personal bias of analyst

^ Naïve forecast assumes no change in oil prices in future.

*As measured by Root Mean Square Error (RMSE).

Government Borrowing and G-Sec Yields – An Analytical Enquiry

by Ipsita Padhi, Priyanka Sachdeva,
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Indranil Bhattacharyya[^]

This article revisits the debate on the “Conventional” versus the “Keynesian” view on the key drivers of G-sec yields while analysing the nexus between the size of the government borrowing programme and yields on government securities. Based on data spanning January 2012 – May 2023, an event study analysis finds a significant instantaneous impact of budget and monetary policy announcements on G-sec yields. Results from an autoregressive distributed lag (ARDL) model suggest that the amount of government borrowing, monetary policy actions, US treasury yields, inflation and banking system liquidity have a bearing on domestic bond yields.

Introduction

The government securities (G-sec) market or the sovereign bond market plays a key role in the financial architecture of a developing economy in several ways. First, it is the operating platform through which most central banks alter liquidity conditions in the financial system through open market operations (OMOs) – the purchase/sale of government securities. Second, it is an important element of the term structure of interest rates in the economy that facilitates the transmission of monetary policy signals from the short end of the yield curve to the longer end impacting economic activity. Third, it is the primary source of raising funds to meet the budgetary funding gap of governments

that incur fiscal deficits continuously. Fourth, the G-sec market provides the benchmark yield – the risk-free rate – to investors for the pricing of other financial market instruments (Zaja et al., 2018). Fifth, government securities act as eligible collateral for financial entities (banks and other intermediaries) in availing central bank liquidity facilities. As such, the government securities market is a vital cog in the wheel of economic activity. From an investor's perspective, close monitoring of G-sec yields is also crucial for assessing the potential gains/losses from their investment portfolios, which include government bonds (Pinho and Barradas, 2021).

Post-globalisation, the availability of the global financial savings pool has made the price (and yield) of G-sec in emerging market economies (EMEs) increasingly dependent on global investors' preferences, with country-specific risk factors playing a more limited role (Kumar and Okimoto, 2011). Thus, factors like global risk appetite, interest rates, savings and investment have gained importance in the pricing of long-term sovereign debt instruments, although government deficits/debt levels and other country-specific factors continue to play a significant role (Naidu et al., 2016). Therefore, a clear understanding of the determinants or drivers of government bond yields, viz., fiscal and monetary policy measures, regulatory announcements, significant domestic and global macroeconomic developments and geopolitical news, is essential for market participants and policymakers.

Although substantial cross-country literature exists, the debate on the determinants of bond yields and the relative importance of its key drivers remains unsettled (Schrynmakers, 2016). The divergence in findings is attributable to factors such as the choice of empirical methods, sample diversity, the nature of proxies measuring the various risk factors, and the periodicity of these studies (Pepino, 2013). The existing literature brings to light two contrasting strands of

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thought, *viz.*, (i) the Conventional view; and (ii) the Keynesian view. The conventional view states that higher government debt and deficit (as a proportion of GDP) exert upward pressure on government bond yields, based on the classical loanable funds' theory of interest (Min *et al.*, 2003; Ardagna *et al.*, 2007; Baldacci and Kumar, 2010; Tokuoka and Lam, 2011; Gruber and Kamin, 2012; Martinez *et al.*, 2013; Cebula, 2014; Perovic, 2015; Poghosyan, 2014; Paccagnini, 2016). In contrast, the Keynesian view suggests that the central bank's policy rate, along with other monetary policy instruments, plays a decisive role in determining G-sec yields, while fiscal indicators such as deficit and debt have no role (Kregel, 2011; Simoski, 2019).

The relationship between the government's fiscal condition and long-term interest rates has been an intensely debated issue. For instance, the deterioration of the long-term budget outlook in the United States raised questions as to whether and to what extent the expected rise in federal government debt will impact long-term interest rates (Cebula, 2014). In this regard, fiscal consolidation in the late 1990s by the United Kingdom and Canada did lower government bond yields. Furthermore, the yield differential on government securities attributable to the difference in the fiscal position of the eurozone economies drew wide attention (Akram and Das, 2017). On the other hand, the proposition that stressed government finances in Japan had affected government bond yields remains contentious (Akram and Das, 2014a; 2014b). All these contrasting arguments call for closer empirical scrutiny of the nexus between the government's fiscal position and G-sec yields.

The empirical evidence on factors determining Indian G-sec yields is quite varied. While short-term interest rates and the pace of inflation are found to be key determinants of G-sec yields, fiscal variables such as deficit and debt hardly have any impact (Akram and Das, 2019). In contrast, another study *inter alia* found that the deficit and borrowing requirements of the

government have an impact on G-sec yields (Kapur *et al.*, 2018). These conflicting evidences call for a relook at the debate between the "Conventional" *vis-a-vis* the "Keynesian" view.

Against this backdrop, the rest of the article is divided into four sections. After a brief review of the literature in Section II, Section III presents some stylised facts on the evolution of government borrowing and G-sec yields in the Indian context. The empirical methodology and results are presented in Section IV, while the final Section sets out the concluding observations.

II. Related Literature

The theoretical literature on the impact of fiscal policy on long-term domestic yields is somewhat discordant without any consensus. Consistent with the loanable funds approach, neoclassical theory postulates that a rise in fiscal deficit reduces national savings and raises interest rates (Elmendorf and Mankiw, 1998). In contrast, the Ricardian view suggests that any increase in government deficit is perceived by forward-looking economic agents as a mere shift in tax liability to the future; therefore, rational agents would save more today (in an intertemporal sense) to meet higher tax obligations later, which would mitigate/offset the adverse impact on interest rates (Barro, 1974). A more acceptable view is that if taxes are non-distortionary and individuals are heterogeneous, debt accumulation may be consistent with a rise in interest rates in the short-run but may not have a pronounced impact on long-term bond yields (Mankiw, 2000). In an open economy framework with international capital mobility, the link between fiscal deficit and interest rate is tenuous as fiscal policy influences interest rates only through its impact on the risk premium (Mundell, 1963).

Much of the earlier work on the relationship between the government's fiscal balance and interest rate pertains to advanced economies (AEs), though

studies on EMEs proliferated in the aftermath of the global financial crisis (GFC). Many EME-centric studies concede that the role of fiscal balance, amongst other domestic and global factors, is crucial in driving interest rates. In a study comprising both AEs and EMEs, higher fiscal deficits and public debt are found to increase long-term interest rates significantly, with the magnitude varying because of the ingrained differences in institutional, fiscal and other structural conditions; moreover, these effects are exacerbated in times of global risk aversion and heightened uncertainty (Baldacci and Kumar, 2010). Taking cognisance of increased inflows into EMEs engendered by the low-interest rate environment post-GFC, many subsequent studies have incorporated global factors (US interest rates, VIX) in their analysis of EMEs.

In a panel-based study of 10 EMEs that explicitly modelled the foreign participation in the domestic bond market, the fiscal balance-to-GDP ratio was found to have a positive effect on long-term bond yields, whereas domestic monetary aggregates and real economic activity did not have any significant impact. In addition, long-term yields were found to be influenced by changes in inflationary expectations, policy interest rates, and foreign participation in domestic bond markets (Peiris, 2010). Expectations regarding fiscal deficits and government debt were found to play a significant role in determining domestic bond yields during periods of high-risk aversion, while real GDP and inflation expectations were more important during tranquil times (Jaramillo and Weber, 2013a). Moreover, the extent of EMEs' vulnerability to these factors depended on country-specific characteristics, including financial sector openness, fiscal fundamentals, and external current account balance (Jaramillo and Weber, 2013b). Domestic factors such as expectations of short-term interest rates and the fiscal balance were found to be relatively more important in driving bond yields of

EMEs than global factors such as US bond yields and the VIX (Miyajima *et al.*, 2015). The role of fiscal deficit was also important in the transmission of exchange rate risk to domestic bond yields in EMEs, *i.e.*, less favourable fiscal conditions tended to increase the sensitivity of local currency bond yields to expected exchange rate depreciation (Gadanecz *et al.*, 2018).

In the Indian context, the literature on the role of fiscal indicators in determining interest rates is mixed. A recent study employing the autoregressive distributed lag (ARDL) methodology found that interest rates and fiscal deficits are positively associated, while money supply and inflation have a negative relationship with the real rate of interest in the long run (Rani and Kumar, 2016). Similarly, government deficit and borrowing requirements – apart from the Reserve Bank's policy rate, prevailing liquidity conditions, non-resident investment flows into domestic bond markets as well as sovereign bond yields in the U.S. and other major AEs – are found to impact G-sec yields (Kapur *et al.*, 2018).

While examining the transmission channel from fiscal policy to interest rates for the period Q1:1996 to Q3:2018 in a structural vector autoregression (SVAR) framework, it was found that fiscal deficit had a direct (though temporary) impact on interest rate in the short run while the indirect impact through inflation was larger in the long run. Besides, foreign interest rate shocks also had a positive impact on domestic interest rates in the long run (Mohanty and Bhanumurthy, 2020). Using similar methodology, a study on the relationship between public debt, inflation, interest rate, economic growth, and investment revealed that public debt (of the central as well as combined government) had an adverse impact on economic growth and a hardening impact on long-term interest rates (Mohanty and Panda, 2020).

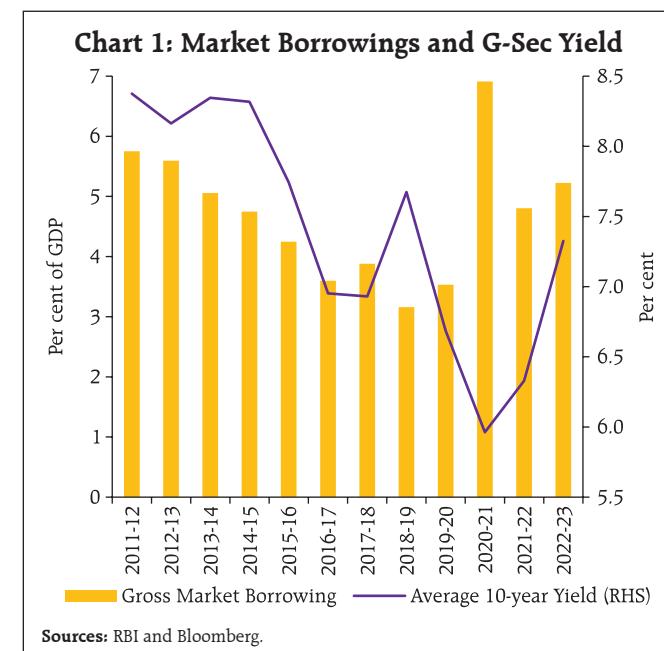
In contrast, some other studies found a negligible role of fiscal deficit in determining interest rates – both the short- and the long-term – in India. Changes

in the short-term interest rate, after controlling for other important variables like changes in inflation rate and the pace of economic activity, were found to be the key drivers of government bond yields (Chakraborty, 2012). Moreover, the government's fiscal position did not have any hardening impact on bond yields in the short run (Akram and Das, 2015a; 2015b), which supported the Keynesian view. Subsequently, the authors extended their study to the long run using ARDL methodology and concurred with their earlier findings on short-run dynamics; additionally, longer-term bond yields were found to be positively associated with the short-term rate, industrial production, and inflation (Akram and Das, 2019).

III. Government Borrowing and G-Sec Yields

Gross market borrowing of the central government (as a proportion of GDP) declined steadily from 5.8 per cent in 2011-12 to around 3.6 per cent in 2016-17 as the government embarked on fiscal consolidation. Concomitantly, the yield on 10-year government paper moderated from an average of 8.4 per cent in 2011-12 to 7.0 per cent in 2016-17 (Chart 1). Yields, however, rose intermittently during 2013-14 and H1:2014-15 as the Reserve Bank undertook liquidity tightening measures after the *taper tantrum*-induced market volatility, and subsequently increased policy rates to arrest inflation pressures in accordance with the 'glide path' for disinflation as recommended by an expert committee (RBI, 2014).¹ Barring these episodes, G-sec yields eased in tandem with the reduction in government borrowing, reaching a trough of 6.4 per cent in January 2017, as unprecedented surplus liquidity conditions triggered a sharp decline in yields following the withdrawal of ₹500 and ₹1000 denomination currency notes from circulation in November 2016.

¹ Report of the Expert Committee to Revise and Strengthen the Monetary Policy Framework (Chairman: Dr. Urjit Patel), January 2014.



Yields, however, started hardening from H2:2017-18 *inter alia* due to increased market borrowings, higher crude oil prices and rising US yields. Market borrowings moderated in 2018-19, but yields continued to harden during H1:2018-19 because of rising crude oil prices and capital outflows triggered by global trade tensions and faster than anticipated normalisation of US monetary policy. In H2:2018-19, yields moderated on the back of large-scale OMO purchases by the Reserve Bank, easing crude oil prices and decline in the US treasury yields.

In 2019-20 and 2020-21, market borrowings surged as the COVID crisis impinged on government revenues, even as the pandemic necessitated higher spending. Nevertheless, yields declined from 8.09 per cent in September 2018 to a decadal low of 5.82 per cent in July 2020, driven by the extraordinary monetary and liquidity measures undertaken by the Reserve Bank, including Operation Twist (OT), wherein the Reserve Bank simultaneously bought long-term and sold short-term government securities (generally of identical amounts) to compress the term premium (Talwar et al., 2021; Patra and Bhattacharyya, 2022). Market borrowing remained elevated in 2021-22, but yields

were supported by the Reserve Bank's secondary market G-sec acquisition programme (G-SAP). With the termination of the G-SAP programme in October 2021 and the outbreak of hostilities in Europe in Q4:2021-22, yields hardened. During 2022-23, bond yields were conditioned by domestic inflation dynamics, domestic policy normalisation, lower than anticipated market borrowing programme of the central government for 2023-24 (announced in February 2023) and investor demand for safe assets following the banking turmoil in some AEs in March 2023. In addition, yields were significantly influenced by the US Fed actions.

IV. Methodology and Results

To examine the interlinkages of government borrowing and G-sec yields, a dual empirical strategy is adopted; first, the instantaneous announcement effect of Union Budget and monetary policy is examined in an event study (ES) framework; second, an ARDL model is used to estimate both the short run dynamics and the long run impact of government borrowing on G-sec yields.

Announcement Effect

Important policy announcements like the Union Budget or monetary policy can impact government bond yields. The instantaneous impact of such announcements on the benchmark 10-year G-sec yield is examined in an event study (ES) framework following the recent literature (Hartley and Rebucci, 2020; Talwar *et al.*, 2021). The analysis is based on daily data for the period January 2012 to May 2023, which include 76 monetary policy and 12 Union Budget announcements. Usually, budget and monetary policy announcements are made in the forenoon well within trading hours; thus, the difference between closing and opening yield on the date of the announcement, controlled for other factors, captures the announcement effect.

To assess the announcement effect, two separate equations are estimated in which intraday change

Table 1: ADF Unit Root Test

Variable	Level	First Difference
Intra-day change in 10-year G-sec Yield	-51.077***	-19.762***
Crude Oil Prices	-1.958	-54.893***
India VIX	-6.045***	-20.623***
Net LAF to NDTL	-1.973	-9.958***

Note: (1) * represents probability value; *, ** and *** imply significance at 10 percent, 5 percent, and 1 percent, respectively.

(2) The ADF unit root test is based on daily data.

Source: Authors' estimates.

in 10-year benchmark G-sec yield is regressed on its own lag and Union Budget announcement as well as monetary policy announcement dates (as dummies) with control for other main variables that can impact the intraday yields (Model 1 and 2, respectively). The impact of the two announcements is estimated separately as they are not coincidental. The control variables used for the analysis include global factors such as international crude oil prices; intraday liquidity position measured by net LAF to NDTL ratio²; and market volatility measured by India VIX. While the dependent variable, *i.e.*, the intraday change in 10-year G-sec yield and the control variable India VIX, is stationary at level, the other control variables are found to be stationary at the first difference (Table 1).

In the estimated results, the positive coefficient of the Union Budget dummy in Model 1 suggests that G-sec yields have generally hardened on Budget days (Table 2). The positive and significant coefficient of the monetary policy dummy in Model 2 confirms that yield moves in tandem with monetary policy announcements – policy tightening raises yields and *vice versa*. Among the control variables, a rise in crude oil prices and higher market volatility hardens G-sec yields in both models. Surplus liquidity captured in the positive net LAF to NDTL ratio has a staggered sobering impact on yields, as indicated by the negative coefficient of the lagged term. Diagnostic test, *viz.*, the

² Positive net LAF to NDTL implies liquidity absorption by the Reserve Bank and thus, surplus liquidity within the banking system and *vice versa*.

Table 2: Results of Announcement Effect

Explanatory/Control Variables	Model 1	Model 2
	Dependent Variable: Intraday change in 10-year G-sec yield (ΔY)	
Constant (C)	0.0005	0.0003
Lag (ΔY)	0.0548***	0.0448**
Budget Dummy	0.0887***	
Monetary Policy Dummy		0.0116***
Δ Crude Oil Prices	0.0010***	0.0010***
Δ India VIX	0.0021***	0.0025***
Δ Liquidity (-2)	-0.0061**	-0.0061**
Diagnostic (P-value)		
Arch-LM Test	0.7446	0.6037

Note: * represents probability value; *, ** and *** imply significance at 10 percent, 5 percent, and 1 percent, respectively.

Source: Authors' estimates.

ARCH-LM test, confirms robustness of the estimated models. Thus, the announcement impact of both the Union Budget and monetary policy is positive and significant.

ARDL Model

In addition to government borrowing, G-sec yields are likely to be impacted by several other factors, as suggested in the literature, *viz.*, policy rate, inflation expectations, liquidity conditions and global factors. The impact of US treasury yields is in consonance with the global financial cycle hypothesis (Miranda-Agrippino and Rey, 2021), which posits that the financing conditions and the monetary policy stance in the premier global financing centre, *i.e.*, the US sets the tone for other countries. For EMEs, currency appreciation goes hand in hand with compressed sovereign bond spreads, even for local currency sovereign bonds, due to a reduction in the credit risk premium (Hofmann *et al.*, 2019). Accordingly, the following independent variables are included in the ARDL model: government borrowing as proportion of G-sec volume (BORRVOL) to capture bond supply dynamics (Patra *et al.*, 2021), weighted average call rate (WACR) as a proxy for the RBI's policy repo rate, inflation as measured by the year-on-year

(y-o-y) change in consumer price index (CPI), 10-year US treasury yield (UST) and exchange rate movements captured by y-o-y changes in the USD-INR. Liquidity condition is incorporated as a dummy variable in which surplus liquidity, as proxied by the net LAF position, is assigned a value of 1 and deficit as 0. The empirical investigation is conducted using monthly data, from January 2012 to May 2023. Sources of all data are detailed in Annex – Table 1.

Before model estimation, all variables are tested for stationarity (Table 3). Since the variables are found to be a combination of stationary [I(0)] and non-stationary series [I(1)], an ARDL framework is preferred. The ARDL model integrates the short-run impact of the variables and the long-run equilibrium through an error correction term, helping to assess both short-run and long-run relationships between the variables (Sharma and Mittal, 2021).

Before applying the ARDL model, the existence of long-run relationships among the variables needs to be tested using a bounds test. The ARDL model can be specified as:

$$\begin{aligned} Yield_t = & a_0 + \sum_{i=1}^p a_{1i} Yield_{t-i} + \sum_{i=0}^q a_{2i} BORRVOL_{t-i} + \sum_{i=0}^q a_{3i} WACR_{t-i} + \\ & \sum_{i=0}^q a_{4i} UST_{t-i} + \sum_{i=0}^q a_{5i} CPI_{t-i} \sum_{i=0}^q a_{6i} USDINR_{t-i} + \\ & a_7 LAFDUMMY + u_t \end{aligned} \quad \dots (1)$$

Where, p and q are the lag orders of the dependent and independent variables and u_t indicates the residual

Table 3: ADF Unit Root Test

Variable	Level	First Difference
10-Year G-sec Yield	-1.967	-7.725***
BORRVOL	-5.475***	-8.349***
WACR	-1.983	-8.546***
UST	-1.597	-8.422***
CPI	-1.977	-5.132***
USDINR	-3.292**	-8.443***

Notes: (1) * represents probability value; *, ** and *** imply significance at 10 percent, 5 percent, and 1 percent, respectively.

(2) The ADF unit root test is based on monthly data.

Source: Authors' estimates.

term. Furthermore, the error correction representation of the ARDL model can be specified as:

$$\Delta Yield_t = b_0 + \sum_{i=1}^p b_{1i} \Delta Yield_{t-i} + \sum_{i=0}^q b_{2i} \Delta BORRVOL_{t-i} + \\ \sum_{i=0}^q b_{3i} \Delta WACR_{t-i} + \sum_{i=0}^q b_{4i} \Delta UST_{t-i} + \\ \sum_{i=0}^q b_{5i} \Delta CPI_{t-i} + \sum_{i=0}^q b_{6i} \Delta USDINR_{t-i} + \\ b_7 LAFDUMMY + \phi ECM_{t-1} + \omega_t \quad \dots(2)$$

where Δ denotes the first difference; b_0 represents the intercept term; b_1 to b_7 represent the short-run coefficients; p and q are the lags of dependent and independent variables, respectively; ECM_{t-1} is the error correction term; ϕ denotes the speed of adjustment, and ω_t depicts the residual term.

Short-run and Long-run Dynamics

The results from the ARDL bounds test for cointegration are presented in Table 4. Since the F-statistic is higher than the upper bound critical value, cointegration between variables/ long-run relationship is confirmed.

The estimates from the long-run form and error correction model are presented in Table 5. The results suggest a positive and significant impact of borrowing to volume ratio, WACR, US T-bill yield and CPI on G-sec yields in the long run. A rise in the ratio of government borrowing to volume by 100 basis points (bps) can lead to an increase in 10-year G-sec yield by around 19 bps in the long-run. Similarly, an increase of 100 bps in the WACR can result in an increase of around 20 bps in the 10-year yield over time. US treasury yield movements also have a sizeable impact on domestic bond yield, in consonance with the results of several studies that long-term domestic interest rates are also dependent on global factors (Kumar and Okimoto, 2011; Abhilasha *et al.*, 2023). Inflationary pressures also result in higher yields, possibly due to higher inflation premiums demanded by investors.

In the short-run equation, US treasury yield, USDINR and liquidity position have a significant

Table 4: Bounds Test for Cointegration

F-Statistic	95 per cent lower bound	95 per cent upper bound	Inference
4.45	2.39	3.38	Cointegrated

Source: Authors' estimates.

impact. The negative coefficient for the LAF dummy implies the softening impact of surplus liquidity on G-sec yields. Similarly, currency appreciation is also found to have a negative impact on bond yields (corroborating Hofmann *et al.*, 2019). The error correction term, that represents the speed of adjustment if a deviation occurs from the long-run steady-state value, is negative and significant – its coefficient of about -0.16 indicates that the short-run deviation from the steady-state path gets corrected in about six months.

The diagnostics and stability tests confirm the robustness of the estimates. The Breusch–Godfrey Serial Correlation Lagrange Multiplier (LM) test failed to reject the null hypothesis of no serial

Table 5: Results from ARDL Estimation

Variable	Dependent Variable: G-sec yield
Long-run	
BORRVOL	0.1914*
WACR	0.1989**
UST	0.5730***
CPI	0.1281**
C	4.1465***
Short-run	
D(10-yr G-sec(-1))	0.3238***
D(UST)	0.2101***
D(USDINR)	-0.010*
LAFDUMMY	-0.0874***
Error-correction term	
CointEq (-1)*	-0.1554***
Diagnostics test	
Breusch-Godfrey Serial Correlation LM Test	0.1440
Heteroskedasticity Test: Breusch-Pagan-Godfrey	0.6753

Notes: (1) * represents probability value; *, ** and *** indicate significance at 10 per cent, 5 per cent and 1 per cent level, respectively.

(2) Table reports probability chi-square statistic for diagnostic tests and regression coefficients for the remaining variables.

Source: Authors' estimates

correlation with a probability chi-square of 0.1440. Similarly, the null hypothesis of homoscedastic errors could not be rejected by the Breusch-Pagan-Godfrey heteroskedasticity test with a probability chi-square of 0.6753. The stability of the long-run coefficients in the ARDL model is confirmed by the cumulative sum (CUSUM) of recursive residuals and the cumulative sum of squares of recursive residuals (Annex – Chart 1).

V. Conclusion

While government borrowing has declined from the pandemic-induced peak of 2020-21, it stands at 5.2 per cent of GDP in 2022-23, which is higher than the decadal average of 4.5 per cent (2010-11 to 2019-20). Since the size of borrowing determines the supply of securities in the market, it is an important determinant of G-sec yield. Furthermore, sovereign bond yields are an essential conduit for the effective transmission of monetary policy to the spectrum of financial prices (through the risk premium channel) and the broader real economy.

This article analysed the impact of government borrowings on G-sec yields in India, both in the short-run as well as the long-run after factoring in other relevant control variables that have a bearing on yields, such as the monetary policy stance and the global financial cycle. The results from the empirical exercise indicate that government deficit, domestic inflation, and domestic as well as global monetary policy are major driver of yields. In the short-run, banking system liquidity has a significant bearing on yields. Thus, the findings are in consonance with both the Classical and the Keynesian views. From a policy perspective, the ongoing fiscal consolidation undertaken by the government and proactive debt management policies of the Reserve Bank are contributing to an orderly movement in g-sec yields.

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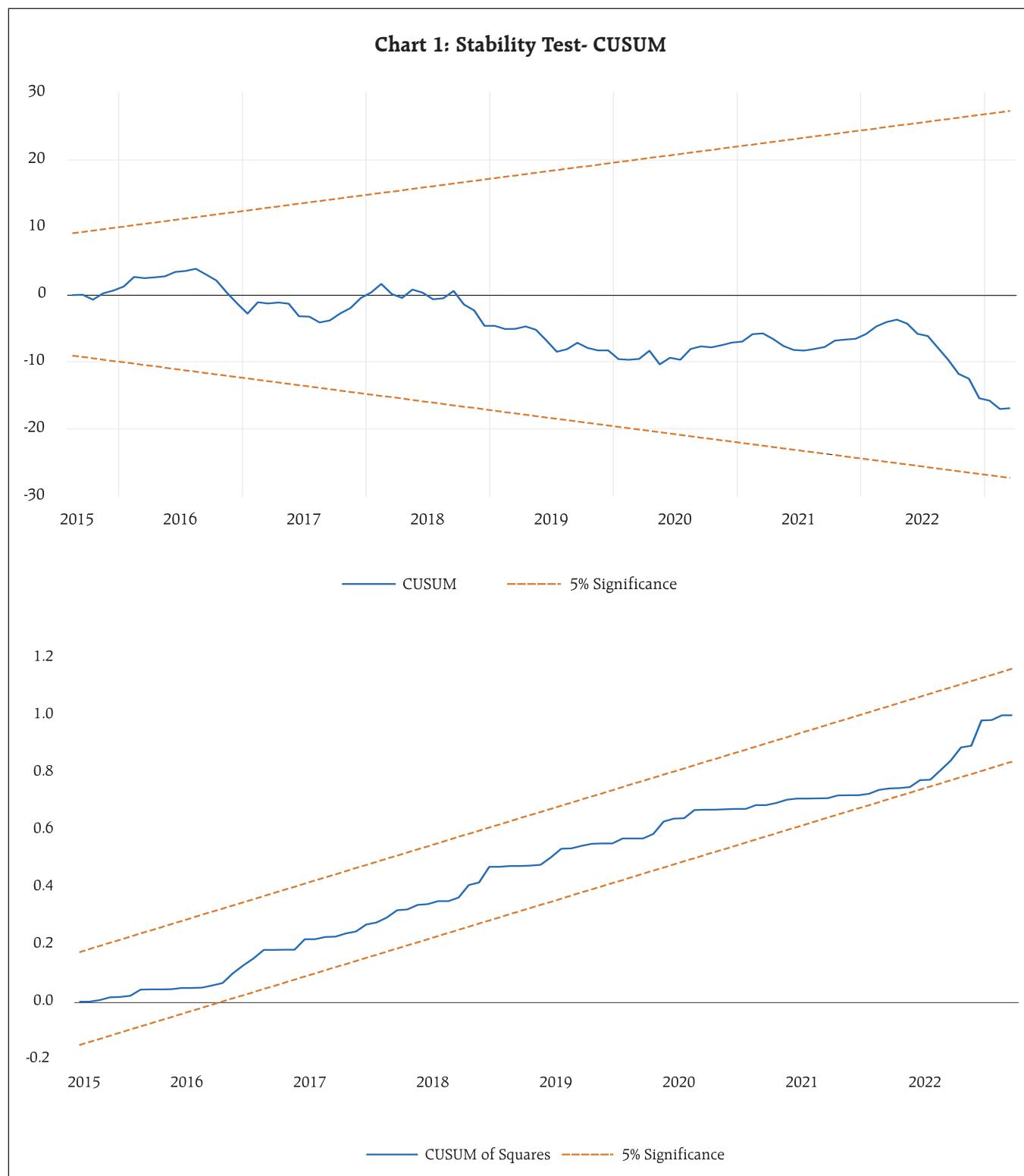
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Annex**Table 1: Data Sources**

Variables	Sources
G-sec Yield	Bloomberg
Crude oil	Bloomberg
US treasury yield	Bloomberg
India VIX	Bloomberg
Net LAF to NDTL	RBI
CPI Inflation	MOSPI
USDINR currency	Bloomberg
Call Rate	CCIL



Recent Inflation Dynamics in India: Role of Supply vis-à-vis Demand

by Himani Shekhar, Vimal Kishore and Binod B. Bhoi[^]

This study disentangles the role of demand and supply in driving inflation in India by using consumer price index (CPI) subgroups as indicators of prices and deflated consumption expenditure data from the Centre for Monitoring Indian Economy (CMIE) as proxy for quantity in a vector auto regression (VAR) framework. The estimated residuals from one-period ahead forecasts of price and quantity with the same signs are interpreted as reflective of demand factors, and with the opposite signs as indicative of supply factors. The results show that the inflation surge during the first wave of COVID-19 was mainly supply driven, while it was increasingly demand driven post the Russia-Ukraine conflict.

I. Introduction

The post-pandemic surge in inflation across economies posed a major challenge for monetary policy makers around the world. Amidst repeated waves of COVID-19 infections and associated lockdowns and restrictions, the Russia-Ukraine conflict with the consequent supply disruptions and commodity price boom, and the large-scale fiscal and monetary policy stimuli since the onset of the pandemic, it became challenging for central banks to assess the relative role of demand and supply factors in the evolving inflation dynamics. In the early phase of the pandemic, lockdowns and restrictions across advanced economies (AEs) and emerging market and developing economies (EMDEs) led to contraction in economic activities. The vaccine rollout and

adaptation to the pandemic life opened scope for gradual easing of pandemic time restrictions and shift in demand towards goods away from contact intensive services, creating sectoral supply-demand imbalances and price pressures. Subsequently, the release of pent-up demand supported by fiscal and monetary impetus led to rebound in commodity prices, a stronger than expected economic recovery across regions and marked increase in consumer price inflation in many AEs and EMDEs. In this regard, the IMF noted that, "while monetary policy can generally look through transitory increases in inflation, central banks should be prepared to act quickly if the risks of rising inflation expectations become more material in this uncharted recovery" (IMF, 2021). In the highly uncertain environment, accommodative policies continued in most economies during 2021.

The outbreak of Russia-Ukraine conflict in February 2022, however, led to renewed supply disruptions and global shortages in key food, energy and other commodities, causing a sharp increase in their prices. Consequently, a number of economies experienced a rapid rise in inflation, which in an environment of tighter labour market conditions, especially in AEs, raised the risks of destabilisation of inflation expectations and inflation becoming generalised. As a result, many central banks, both AEs and EMDEs, resorted to aggressive tightening of monetary policy to keep inflation expectations anchored and bring inflation back to the target. EMDEs had to additionally contend with heightened financial market volatility and depreciation pressures on their currencies. The globalisation of inflation, and an assessment that the price pressures are not transitory led to a synchronised monetary policy tightening (RBI, 2023). It has also been argued that central banks erred on the side of interpreting the initial inflation surge as temporary and fell behind the curve in their inflation fight (Walsh, 2022; Kronick and Ambler, 2023) which led inflation to reach multi-decade highs in many AEs.

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A pertinent question that arises is what could have helped central banks to react to the inflation surge in a timely manner? Post-pandemic literature emphasised on the role of both adverse supply shocks such as supply bottlenecks and higher energy prices (Budianto *et al.*, 2021) as well as excess demand caused by catch-up effects and large-scale monetary and fiscal stimulus due to the COVID-19 pandemic (Summers, 2021; Furman, 2022). Amidst both demand- and supply-side factors at play, it is crucial to understand to what extent the post-COVID surge in inflation is led by demand or supply, as while the former would suggest for monetary and fiscal policy tightening, the later would lead to tricky policy trade-offs (Eickmeier and Hofmann, 2022). In this context, assessing disaggregated personal consumption expenditure (PCE) inflation by spending category in the US, Shapiro (2022a) provided a novel approach to quantify and track the evolving impact of supply-driven versus demand-driven factors on inflation on a monthly basis to guide policy.

India has experienced episodes of short inflation spikes even before the pandemic (for example, December 2019–February 2020) due to weather induced food price shocks, but its frequency has increased since the pandemic with overlapping global shocks – Russia-Ukraine conflict and synchronised monetary policy tightening - disrupting supply, pushing up commodity prices and inducing financial market volatility. Notably, food and fuel occupy more than 50 per cent of India's CPI basket suggesting that the role of supply side shocks in driving inflation may be higher compared to AEs. Despite India being a food surplus country, recent experiences show that supply issues from not only weather disturbances but also trade channel¹ could be significant in influencing domestic food inflation dynamics, while volatility in international crude oil prices could

impinge on inflation both directly and indirectly in view of large import dependence. Moreover, CPI food basket contains protein rich items which could exhibit demand driven price pressures associated with increase in income levels (Gokarn, 2011). Thus, while certain supply shocks in food items such as vegetables could be temporary, some others related to global supply concerns and consumption shifts induced by rising incomes could be persistent. On the other hand, most of the items in core (*i.e.*, excluding food and fuel) could be largely driven by demand, but could also reflect the pass-through of sustained input costs pressures. Thus, with both demand and supply factors affecting prices of different CPI items/sub-groups to varying degrees during different episodes, it may be pertinent not only to analyse the drivers of inflation but also quantify the impact of demand- and supply-factors driven inflation regularly to guide policy making.

With RBI being entrusted with the primary objective of maintaining price stability² and the impact of shocks varying from temporary to persistent, a constant monitoring of the demand-supply dynamics assumes greater importance for designing appropriate policy response. Against this backdrop, following the methodology used by Shapiro (2022a) this study runs a bi-variate vector auto regressive (VAR) model on a rolling window on price and quantity equations and analyses their one-period ahead forecast residuals (*i.e.*, actual minus predicted value) to determine the direction of price and volume shocks for various CPI groups. The unexpected change in price and quantity in the same direction would suggest a dominance of demand factors, while opposite direction movements would suggest supply factors at work.

¹ For instance, wheat from export side and edible oil from import side.

² Under the Reserve Bank of India, Act,1934 (RBI Act,1934) (as amended in 2016), RBI is entrusted with the responsibility of conducting monetary policy in India with the primary objective of maintaining price stability while keeping in mind the objective of growth.

The study finds that supply-driven factors remained the key driver of inflation during COVID-19. In contrast, demand driven inflation attained importance post the Russia-Ukraine conflict. Furthermore, a 9-month rolling window analysis on the contributions of demand and supply to inflation shows that demand drivers of inflation not only increased but also remained consistently elevated post-April 2022 in contrast with the first wave of COVID-19 when it gradually tapered off. On the other hand, supply driven inflation which rose sharply after the first wave of COVID-19, tapered off significantly thereafter, until the Russia-Ukraine conflict again pushed up its contribution to some extent. In view of these inflation dynamics and drivers, the commencement of monetary tightening in April-May 2022 in India was timely. The policy repo rate was increased by 250 basis points (bps) during May 2022–February 2023 to keep inflation expectations anchored and to ensure that inflation progressively aligns to the target.

The remainder of this article is organised along the following lines. The associated literature and global perspectives are discussed in Section II. The historical and structural aspects of India's CPI inflation are provided in Section III, while the methodology associated with disentangling demand- and supply-factors driving inflation is discussed in Section IV. Using the methodology outlined in the previous section, Section V provides the empirical estimates and presents the key findings. Section VI concludes the article.

II. Literature

Both supply and demand factors have been identified by researchers and policymakers as the proximate causes for the post-pandemic surges in inflation across AEs. Barnichon and Shapiro (2022) illustrated the effects of supply-side elements such as labour shortages, whereas Barnichon, *et al.*, (2021) and Jordà *et al.*, (2023) highlighted the significance of

increased demand resulting from pandemic-related tax relief. Using a structural factor model and applying principal component analysis to identify aggregate demand and supply indicators for the US, the increase in inflation since the middle of 2021 was found to be driven by a mix of expansionary demand and tight supply (Eickmeier and Hoffman, 2022).

Estimates using structural VAR models indicated that demand shocks in the US explained about 75 per cent of the observed inflation during January 1997 to December 2022, while in the case of Euro area the shocks were balanced (Dreger, 2023). Using a multi-sector, open-economy New Keynesian framework, binding constraints either due to increased demand or reductions in capacity for domestic and foreign producers were found to shift domestic and import price Phillips curves up, which explained around 50 per cent of the increase in inflation during 2021 and 2022 in the US (Comin, *et al.*, 2023). Supply-driven price increases accounted for a major part of the increase in inflation particularly for energy-intensive and trade-intensive items (Chen and Tombe, 2023).

Demand-led economic recovery explained around 1.4 percentage point of the 5.6 percentage point rise in US inflation during March 2021 to September 2022 (Cerrato and Gitti, 2022). Around 60 per cent of US inflation over the period 2019–2021 was due to the increase in demand for goods, while 40 per cent was due to supply-related issues that amplified the impact of higher demand (Di Giovanni, 2022). This study claims that fiscal stimulus and other demand related factors would not have increased US inflation to such a high without the supply constraints associated with the pandemic. A decomposition analysis of headline inflation into core inflation and deviations of headline from core finds that shocks to headline inflation are mainly explained by energy price increases and supply chain problems (Ball *et al.*, 2022). Supply factors reflecting continued labour shortages and global supply disruptions linked to the pandemic and the

war in Ukraine accounted for more than half of the elevated PCE inflation in the US, while demand-side factors were responsible for about a third (Shapiro, 2022b). Although central banks typically react to increases in demand pressures for price stability, they cannot ignore supply side issues that can lead to second-round impact, particularly if the stabilisation of long-term inflation expectations is in jeopardy (Global Economic Outlook, 2022). The persistence of supply shocks could also increase the risks of high inflation with suppressed economic growth (Shapiro, 2022a).

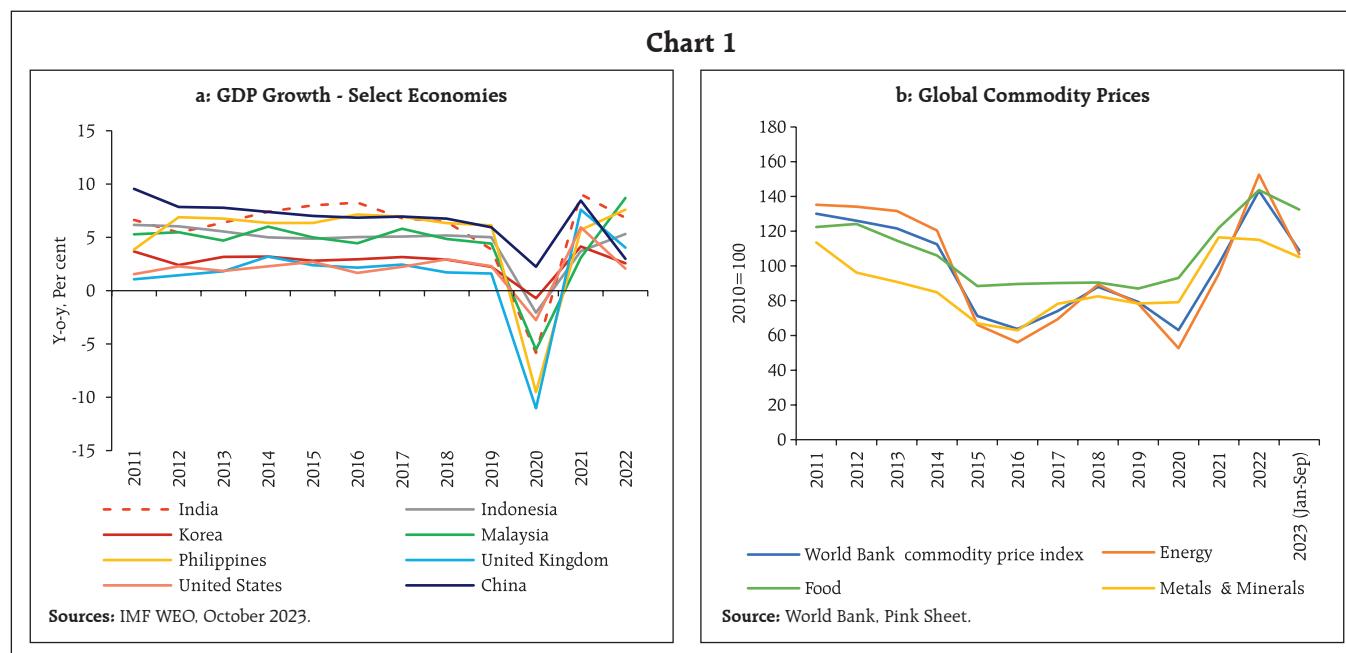
For India, the role of supply side shocks may be higher compared to AEs due to the high weight of food in the CPI basket, which is more prone to supply shocks caused by unseasonal rains, rainfall deficiency, excess rains, cyclones, and other extreme weather events. In the absence of a stronger response of food supply, food inflation could be higher than non-food inflation on an average by 2.5–3.0 percentage points per annum (Anand *et al.*, 2016). The study suggests that high weight of food in household expenditure along with the increase in income led to significant demand-side pressures. However, due to lower growth in agricultural supply relative to the growth in real personal consumption expenditure during the period of study, food prices increased relative to non-food prices. Demand factors such as money supply growth and output gap explained a large part of the variation in headline and food inflation, while supply side factors like global crude oil and food prices also played an important role (Dua and Goel, 2021). An augmented Phillips curve indicated that supply shocks only had a temporary effect on both headline and core inflation (Srinivasan *et al.*, 2006). The study argues that supply shocks *per se* are not the key determinants of inflation rather how monetary policy responds to these supply shocks are. Another study found that inflation dynamics in India have altered over time with different determinants displaying noteworthy time variation,

especially after the global financial crisis (Mohanty and John, 2014). Higher uncertainty is associated with both a fall in output and an increase in inflationary pressures, and therefore a clear understanding of inflation dynamics is important to avoid costly policy errors (Patra *et al.*, 2023). However, while the existing studies have analysed a number of aspects relating to the inflation process in India, an assessment of the relative contributions of evolving demand and supply on a monthly basis to CPI headline inflation in the post-pandemic period has not been attempted so far. This study is an attempt to fill this gap.

III. Stylised Facts

The halt in production and slump in demand due to lockdowns at the onset of COVID-19 pandemic led to a sharp fall in economic growth across countries (Chart 1a). Due to the consequent weakness in overall demand conditions, commodity prices fell initially. Gradually, with the opening of the economy on vaccine rollout and release of pent-up demand, overall demand recovered faster than supply, thereby putting pressures on commodity prices (Chart 1b). Prices rose across all major categories, *i.e.*, food, fuel and metals reflecting supply constraints amid demand recovery. COVID-related restrictions also heightened supply chain disruptions during 2021 and led to increases in freight costs, labour shortages and delays in delivery. The Russia-Ukraine conflict in early 2022 further amplified supply chain disruptions and commodity price pressures.

In the early phase of the pandemic, AEs experienced a sharp fall in inflation in 2020 alongside contraction in economic activities due to the lockdowns and restrictions. In the EMDEs, however, inflation did not fall uniformly in 2020 even as economic activities contracted. Post the Ukraine conflict, inflation rose to multi-year highs across AEs and EMDEs in 2022 amid rising food and energy prices, renewed supply disruptions, stimulus-led faster economic recovery, tighter labour market conditions in AEs, and currency



depreciation in EMDEs (Chart 2a). Compared to what was anticipated initially, inflation turned out to be more stubborn and persistent. This, in turn, prompted synchronised aggressive tightening of monetary policy across economies in 2022 (Chart 2b).

India also witnessed contraction in economic activity in 2020-21 due to the pandemic. However,

in contrast with the experience of AEs, inflation rose in India reflecting the impact of weather induced food price shock and lockdown related supply disruptions and remained generally elevated during the various COVID-19 waves (Chart 3a). Amid pandemic uncertainties, the outbreak of Russia-Ukraine conflict further pushed up global commodity

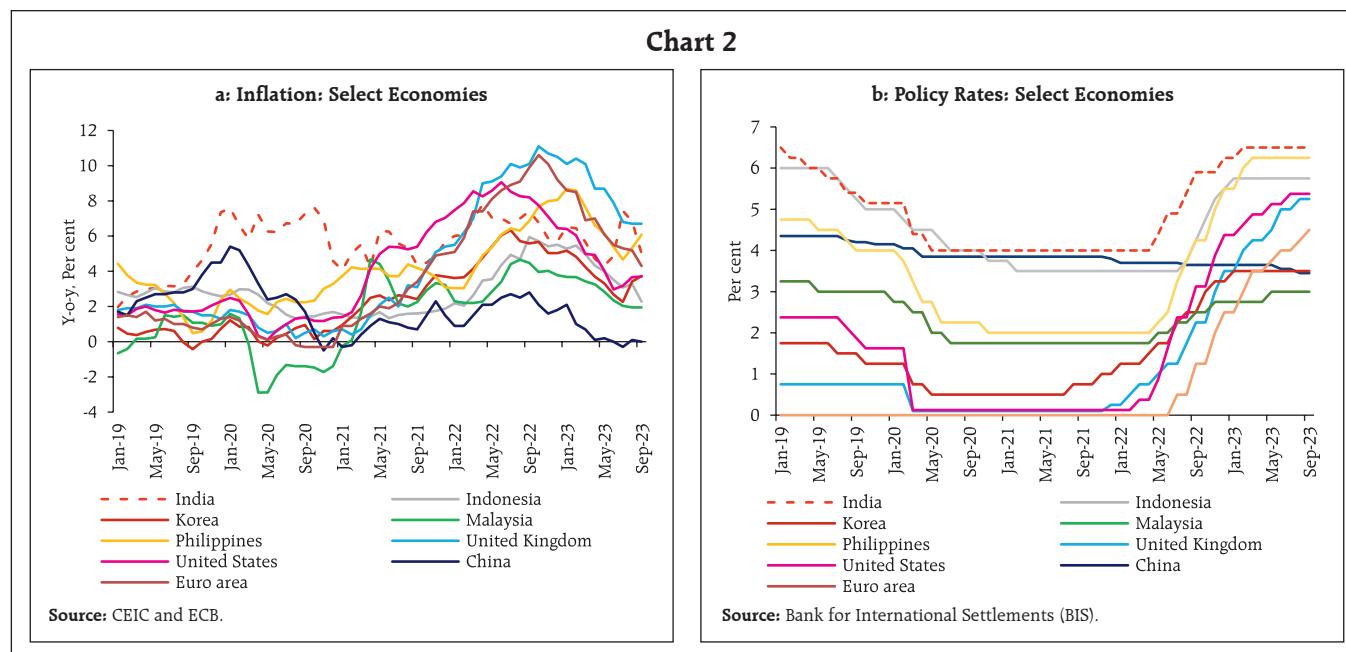
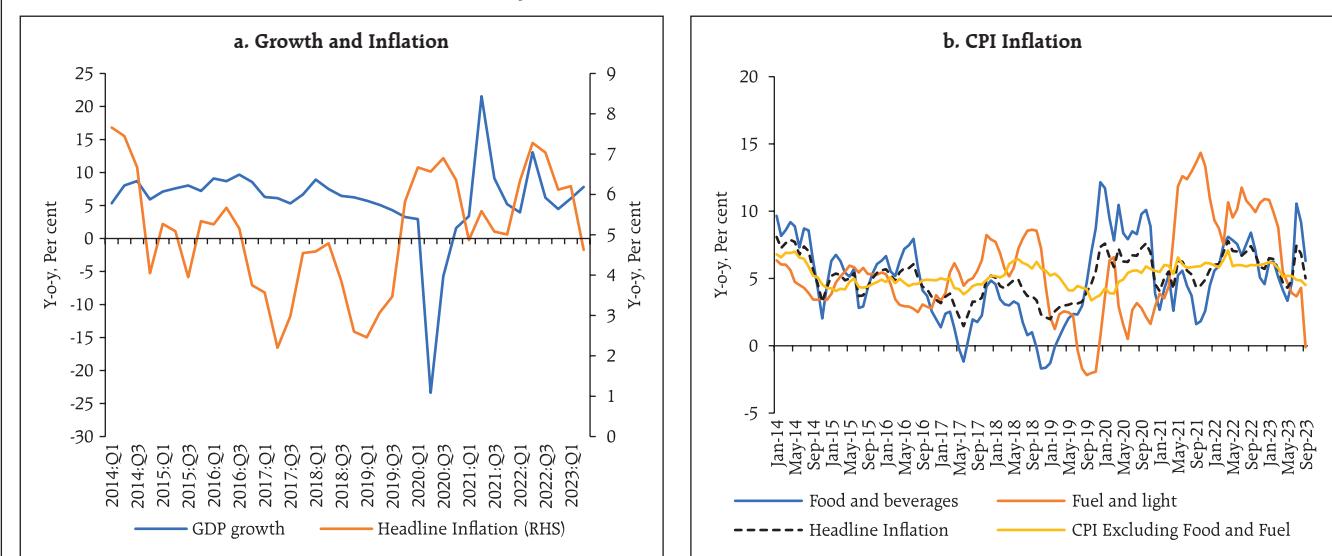


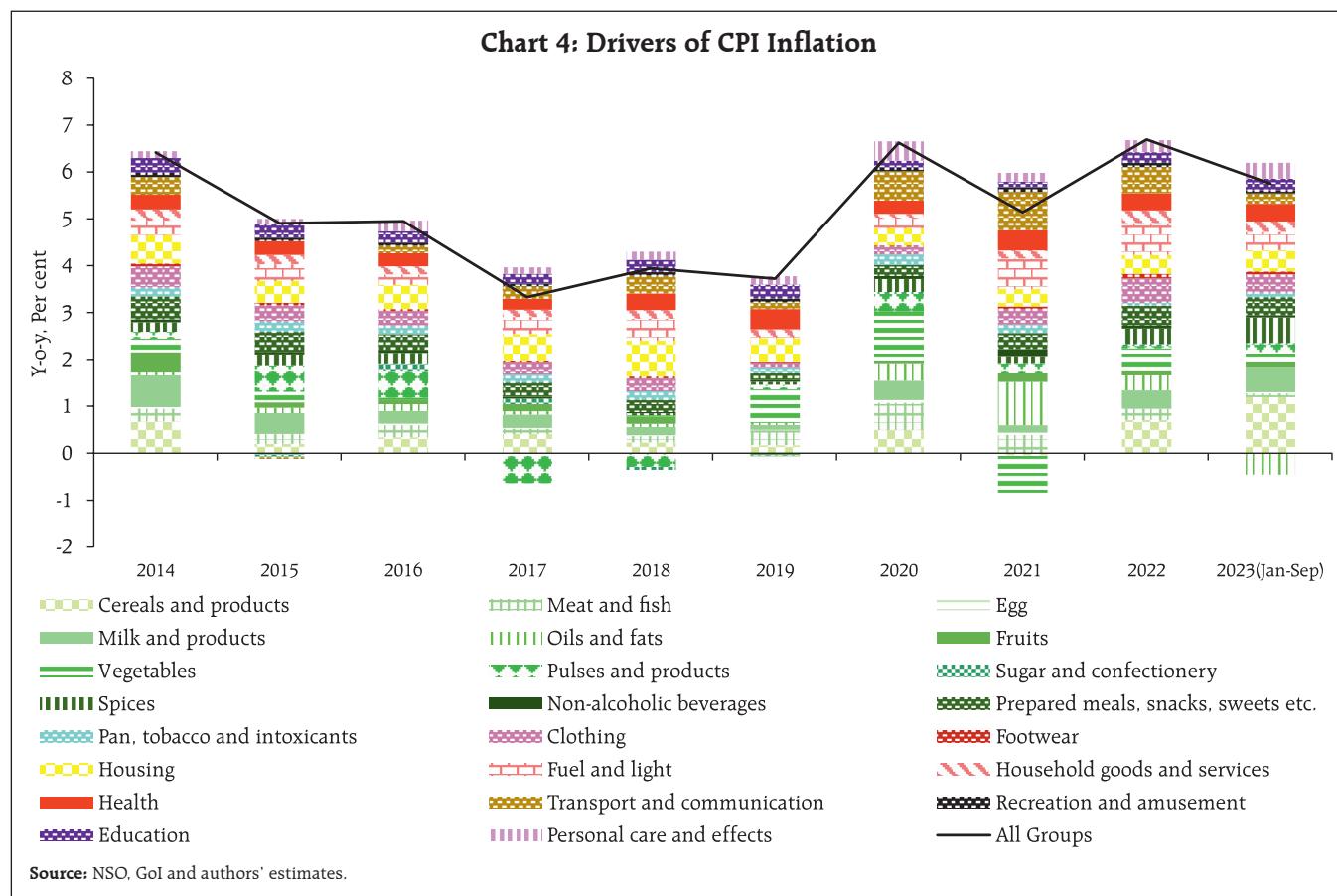
Chart 3: Growth and Inflation in India

prices and aggravated supply disruptions leading to sharp increase in input cost pressures. This was gradually passed-on to output prices in line with economic recovery, which resulted in elevated core (*i.e.*, CPI excluding food and fuel) inflation (Chart 3b). Consequently, headline inflation peaked at 7.8 per cent in April 2022.

It is difficult to gauge whether the inflation surges are temporary or persistent on a real time basis. These challenges are accentuated during periods of heightened macroeconomic uncertainty, and aggregative measures such as output gap and labour market conditions often fail to provide a clear signal about the entire economy due to shock induced distortions as well as lags in data availability. In this environment, an ongoing assessment of relative importance of demand and supply in driving inflation could be a useful guide for policy making. A decomposition of drivers of CPI inflation covering all the sub-groups can provide information on relative contributions to inflation (Chart 4). Such an exercise cannot, however, identify the inherent

demand-supply mismatches in each category. This is notwithstanding the fact that inflation in food and fuel groups is generally assumed to be supply driven, while core inflation components are largely demand driven.

To overcome this limitation and to provide a clear distinction between demand and supply drivers of inflation on a real time basis, Shapiro (2022a) provided a novel approach of using Personal Consumption Expenditures (PCE) based matching price and quantity data and the direction of their unexpected movements to disentangle the role of demand and supply. In the absence of matching price and quantity data, Organisation for Economic Co-operation and Development (OECD, 2022) extended the same approach to CPI as proxy for prices and national accounts data on household consumption expenditure as proxy for quantity. In the case of India, matching price and quantity (consumption by purpose) data are not available from the national accounts. CPI-Combined series (base year 2012) provide indices for 23 sub-groups which could be



used as proxy for prices. National accounts provide household consumption expenditure data by purpose, but they are not available at higher frequency and required disaggregation³ making it difficult to map with the CPI sub-groups. However, the Centre for

Monitoring Indian Economy (CMIE) releases survey-based consumer expenditure data for households (called Consumer Pyramid Household Survey – CPHS - data)⁴ on a monthly basis under 153 distinct expense heads (groups/items), which could be mapped to CPI sub-groups. A comparison of the expenditure shares in CPI and mapped CPHS expenditure categories shows that they are broadly similar, except mainly for housing, and therefore the two sources can be mapped and used as price and quantity for assessing the role of demand and supply (Table 1).

³ National accounts provide household consumption expenditure by purpose at a disaggregated level but at annual frequency, while available data on quarterly frequency are limited.

⁴ CPHS provides household consumption expenditure for various categories but they do not provide the matching quantity or volume data pertaining to those expenditure categories.

Table 1: CPI-C Weights and Share of Expenditure in Mapped CMIE CPHS Categories

CPI Subgroups (Base 2012=100)	Weight in CPI-C (per cent) (Base: 2012=100)	Expenditure Shares (per cent)								
		2014	2015	2016	2017	2018	2019	2020	2021	2022
Cereals and products	9.7	5.7	7.4	7.3	7.0	6.4	6.3	6.7	6.0	5.7
Meat and fish	3.6	3.5	4.0	3.9	4.0	3.9	4.1	3.9	4.3	5.2
Egg	0.4	0.7	0.9	1.0	0.9	0.7	0.7	0.8	0.8	0.9
Milk and products	6.6	10.1	9.3	8.5	8.4	8.5	8.5	11.0	10.1	9.1
Oils and fats	3.6	4.3	4.5	4.3	4.2	4.0	4.0	4.9	5.4	5.4
Fruits	2.9	1.9	1.6	1.4	1.3	1.2	1.3	1.4	1.5	1.5
Vegetables	6.0	7.1	6.7	6.5	6.4	6.3	6.3	7.2	6.9	6.3
Pulses and products	2.4	2.9	2.9	2.9	2.6	2.2	2.2	2.5	2.4	2.2
Sugar and confectionery	1.4	2.2	2.0	1.9	1.8	1.7	1.7	2.0	1.7	1.4
Spices	2.5	1.7	1.8	1.7	1.6	1.4	1.3	1.5	1.4	1.3
Non-alcoholic beverages	1.3	0.5	0.4	0.4	0.5	0.6	0.7	0.5	0.6	0.7
Prepared meals, snacks, sweets etc.	5.6	5.8	5.3	5.1	5.3	5.1	5.3	5.3	5.4	5.5
Food and beverages	45.9	46.5	46.7	44.9	44.1	42.1	42.4	47.7	46.3	45.2
Pan, tobacco and intoxicants	2.4	3.1	3.4	3.3	3.4	3.5	3.8	3.8	4.1	3.8
Clothing	5.6	3.4	3.7	4.1	4.0	4.2	4.2	3.0	2.9	2.9
Footwear	1.0	1.0	1.0	1.1	1.0	1.0	1.0	0.8	0.8	0.9
Housing	10.1	1.5	1.2	1.4	1.2	1.1	0.9	0.8	0.7	0.6
Fuel and light	6.8	9.8	9.7	9.7	9.8	9.7	9.2	10.0	9.9	9.6
Household goods and services	3.8	3.1	3.1	3.3	3.6	4.3	4.1	3.5	3.0	3.0
Health	5.9	2.1	2.2	2.8	3.1	3.6	3.6	3.0	3.2	3.1
Transport and communication	8.6	16.9	15.6	14.6	15.5	16.2	17.1	16.8	18.8	19.5
Recreation and amusement	1.7	0.5	0.5	0.6	0.7	0.7	0.7	0.2	0.2	0.4
Education	4.5	4.4	4.2	5.2	4.5	4.8	4.5	1.8	2.0	2.8
Personal care and effects	3.9	7.7	8.6	9.0	9.0	8.8	8.6	8.7	8.2	8.1
Total (CMIE CPHS)⁵	100	100	100	100	100	100	100	100	100	100

Note: The expenditure shares are worked out based on only the mapped items/sub-groups and not the total 153 expenditure categories covered in CMIE CPHS and therefore are not strictly comparable; they are presented for indicative purpose.

Source: NSO, GoI; CMIE CPHS; and authors' estimates.

IV. Methodology

The literature uses matching price and volume data for different components of PCE/CPI to distinguish between the roles of demand and supply shocks (Shapiro, 2022a; OECD, 2022). If unexpected change in prices and quantities in a month move in the same direction, this method classifies inflation in that month as demand driven - higher demand increases both prices and quantities (volumes) and; lower demand reduces both prices and quantities.

⁵ The shares of subgroup/group are derived as a proportion of total CMIE items/groups mapped to CPI (and not all 153 expenditure categories covered in CPHS) for this study.

It is classified as supply driven, on the other hand, if unexpected change in prices and quantities move in the opposite direction – lower supply means a decrease in volume with an increase in price and vice versa. Such a classification is done by running bivariate vector auto regressive (VAR) model for prices and quantities for different components of CPI on a rolling window basis and analysing the one period ahead forecast residuals to determine the direction of price and volume shocks for different items.

In the case of India, as noted earlier, the CMIE CPHS consumption expenditure data at the all-India level available for 153 items falling under different

groups/sub-groups are mapped with the 23 CPI sub-group price indices⁶. To get a homogeneous base for both the series, they are rebased to January 2014=100 as CMIE data are available from January 2014 and then de-seasonalised. The mapped CMIE CPHS expenditure categories are then deflated by the corresponding CPI sub-groups to derive a proxy for volume. Using the CPI sub-group level price indices as a proxy for prices and deflated CMIE CPHS mapped expenditure categories as a proxy for volume (quantity) for the period January 2014 to May 2023 (as CMIE CPHS data are available from 2014), following OECD (2022), a two-equation VAR model for prices and quantities is run on a five-year rolling window basis as follows:

$$P_{i,t} = z_{i,t-1}\gamma + \varepsilon_{i,t}^p \dots\dots\dots (1)$$

$$Q_{i,t} = z_{i,t-1}\gamma + \varepsilon_{i,t}^q \dots\dots\dots (2)$$

where $P_{i,t}$ and $Q_{i,t}$ are the log-differences of the price and quantity indices, respectively, of category i in month t and $z_{i,t-1}$ is a vector of lags of the log-differences of price and quantity indices of category i in month t and $\varepsilon_{i,t}^p$ and $\varepsilon_{i,t}^q$ are the price and quantity residuals for category i in month t . Lags in the VAR have been selected using AIC (Akaike's Information Criteria).

The one-period ahead forecasts of both price and quantity are produced for each of the 23-mapped categories and contrasted with their actual values and then are classified into demand, supply and ambiguous components every month during January 2019-May 2023⁷. Same signs of the residuals for forecasted price and quantity are classified as demand

driven price movement, while residuals of opposite signs are interpreted as indicative of supply driven. Furthermore, when either of the actual values is found to be close enough to its forecasted value⁸ (i.e., the residual is statistically indistinguishable from zero), the category is classified as ambiguous. After categorisation, the sub-group level CPI weights are used to combine the individual contributions to get an overall picture of demand driven and supply driven inflation in a month along with the contributions of ambiguous component to inflation.

V. Results

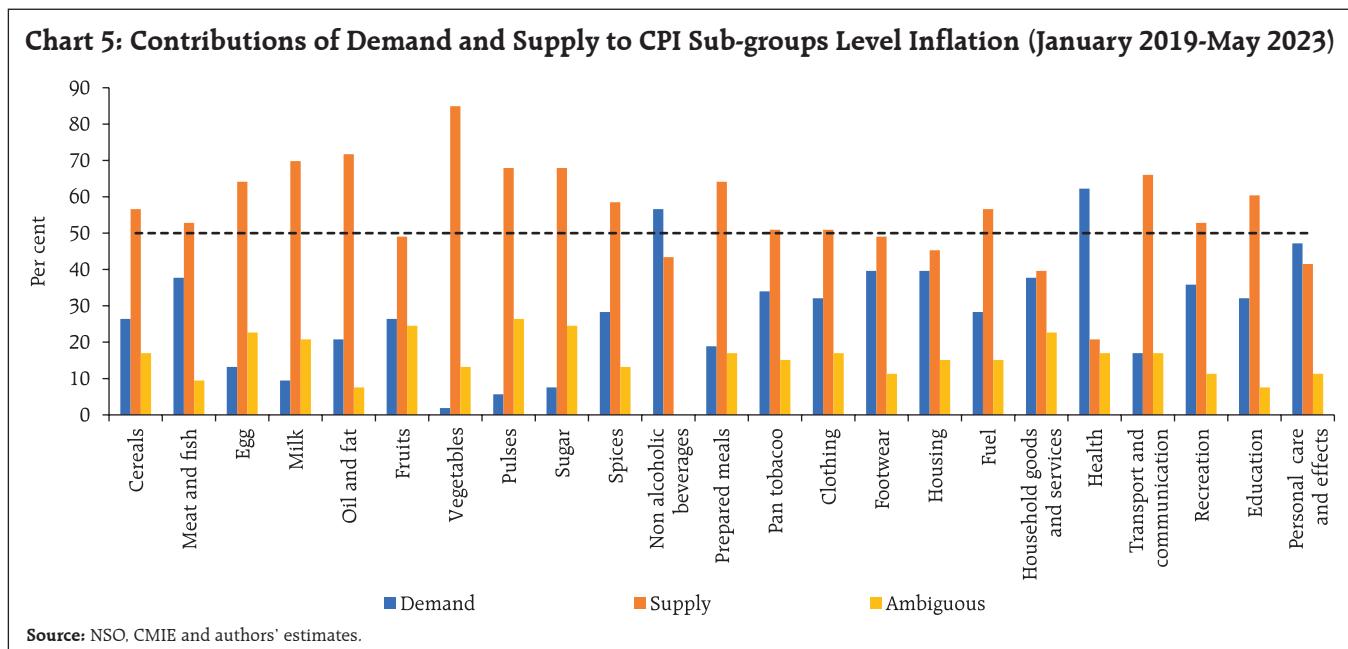
Based on the methodology described in the previous section, the estimates for the period January 2019-May 2023 indicate that sub-groups like vegetables, oils and fat, milk, egg, pulses and sugar witness recurrent supply-side pressures, while non-alcoholic beverages, personal care and effects, and health are mainly impacted by demand side factors (Chart 5). Apart from food, groups like fuel, and transport and communication (which contains transport fuels such as petrol and diesel) are also susceptible to supply shocks.

The sub-group level demand and supply factors are combined using the CPI weights to provide a gauge on headline inflation. The results show that inflation was mostly supply driven during October 2019-January 2020 (on excess rain induced supply shocks) as well as during different waves of COVID-19 (on restrictions and supply chain disruptions) and at the start of the Russia-Ukraine conflict (on supply shortages and surges in global commodity prices). The supply side factors, on an average, contributed around 55 per cent to CPI headline inflation during the period January

⁶ As CPHS does not provide prices data corresponding to the 153 nominal expenditure categories, they are mapped with the corresponding CPI sub-groups to derive a proxy for quantity.

⁷ Depending on data availability at the time of estimation, the sample period for the exercise has been chosen from January 2014 to May 2023 (CMIE data are available from January 2014 and the latest month was for May 2023). As VAR models for prices and quantities are run on a 5-year rolling window with the first window being January 2014-Decemeber 2018, first one period ahead forecasts are available for January 2019. Therefore, results are reported for the period January 2019 to May 2023.

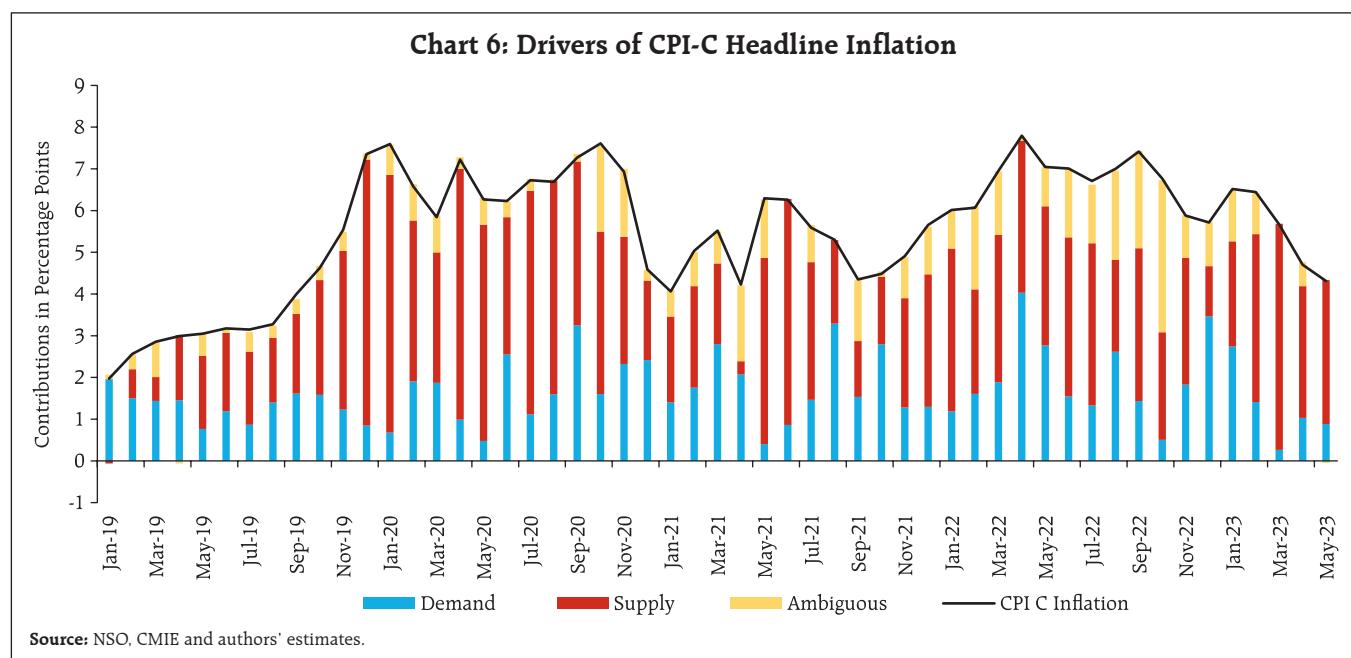
⁸ Following Chen and Tombe, 2023, residuals falling under the 45th and 55th percentiles in each rolling (5-year) window is classified as ambiguous. The results are broadly unchanged if the threshold for the 'ambiguous' category is changed from the middle 10 per cent of the residuals in the respective regression sample distributions by category to the middle 20 per cent (following Shapiro, 2022b) as shown in Annex Chart A1.

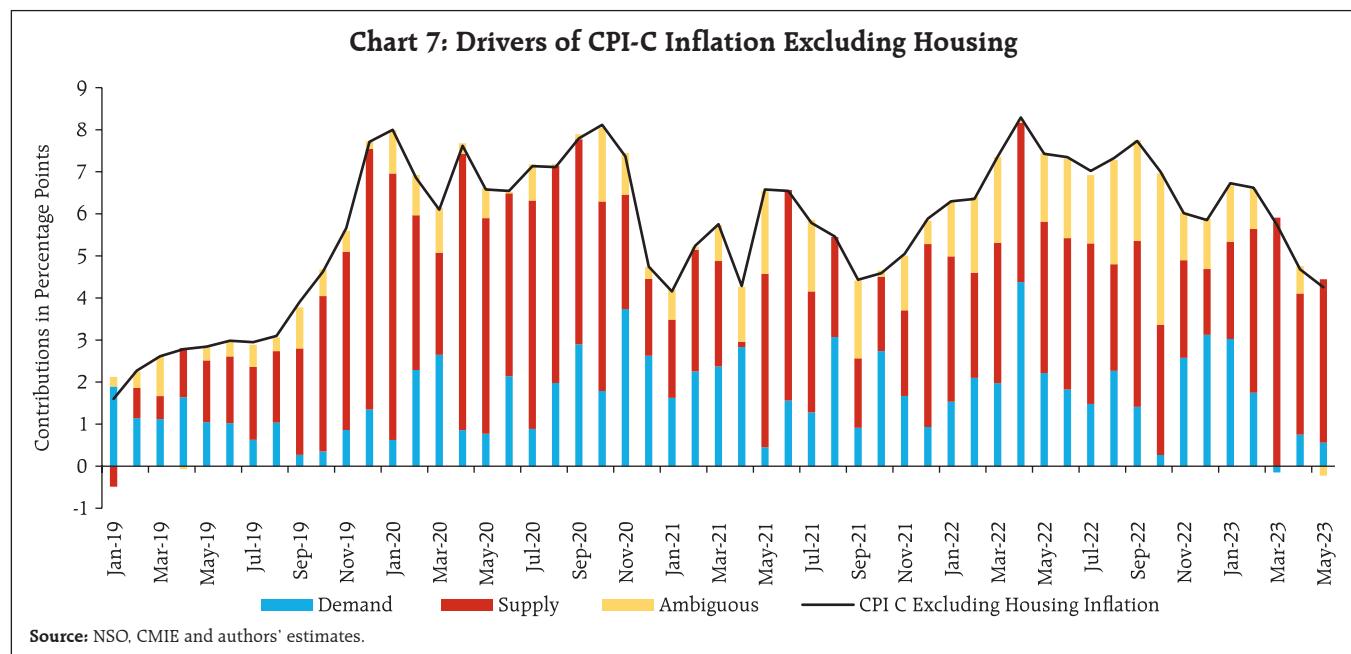


2019-May 2023 (Chart 6). In contrast, the contribution of demand side factors to headline inflation fell during the COVID-19 shock to 27.1 per cent in 2020, from 41.5 per cent in 2019. Subsequently, however, the importance of demand-side factors in driving inflation increased intermittently with the easing of COVID time restrictions after the first and second

waves, and post the Russia-Ukraine conflict, and its contributions dominated the headline inflation peak of April 2022. The overall contribution of demand drivers to inflation during the full sample period (January 2019 to May 2023) was 31 per cent.

As housing component in the CMIE-CPHS basket does not appear to be properly mapped with the CPI,

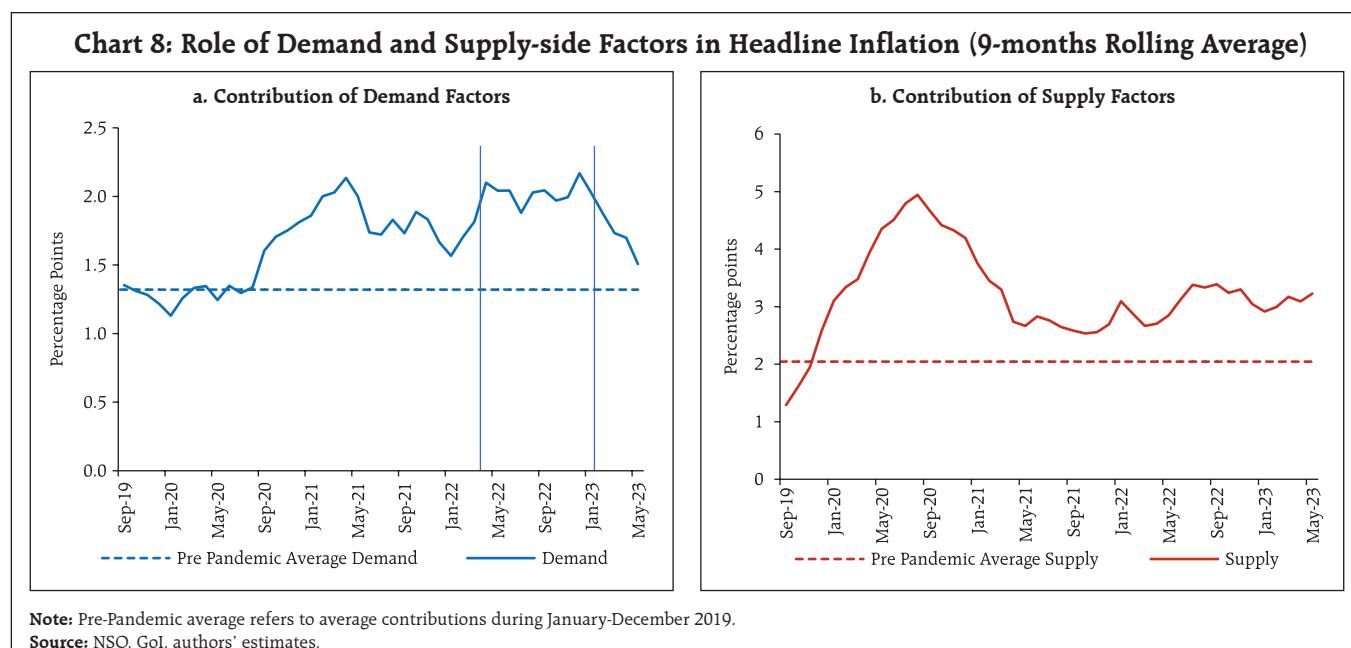




the above exercise is also carried out by excluding housing for robustness. The results confirm a similar behaviour of demand and supply drivers of inflation even after excluding housing (Chart 7).

In view of volatility in monthly CPI inflation, an analysis of the average contributions of demand and supply on a 9-month moving average basis

shows that the contributions of demand increased since February 2022 and remained elevated during April-December 2022 in contrast with the post-first wave of COVID-19 when it gradually tapered off (Chart 8a). On the other hand, the share of supply driven inflation which rose sharply in the aftermath of first phase of COVID-19, tapered off significantly



thereafter until the Russia-Ukraine conflict. While it increased post the conflict, it remained lower than the COVID time peak (Chart 8b).

VI. Conclusion

An evaluation of the relative importance of supply and demand factors driving inflation on a real time basis is a useful guide for the conduct of forward-looking monetary policy. However, it has become challenging in the presence of overlapping shocks since the pandemic and the pandemic-time fiscal and monetary policy stimulus. Nonetheless, a real time assessment of the relative importance of demand and supply is needed for timely policy actions to manage policy trade-offs between growth and inflation. Following the post-COVID literature, this study attempts to disentangle demand and supply drivers of inflation in India by running bi-variate VAR models on prices (proxied by 23-sub-groups of monthly CPI), and quantities (proxied by CMIE-CPHS consumption expenditure data deflated by mapped CPIs). The results indicate that, on an average, supply side factors are dominant in driving inflation in India, but demand factors also assume importance on occasions. Inflation was largely driven by supply shocks during both the COVID-19 waves. On the other hand, demand factors became the dominant drivers in the aftermath of the Russia-Ukraine conflict. These developments prompted a reversal in monetary policy stance in April 2022 to 'withdrawal of accommodation' and hike in the policy rate beginning May 2022 to control inflation. Monetary measures and targeted supply side interventions by the government helped to moderate headline inflation during 2023-24, barring the July-August 2023 spike driven by the vegetable price shock.

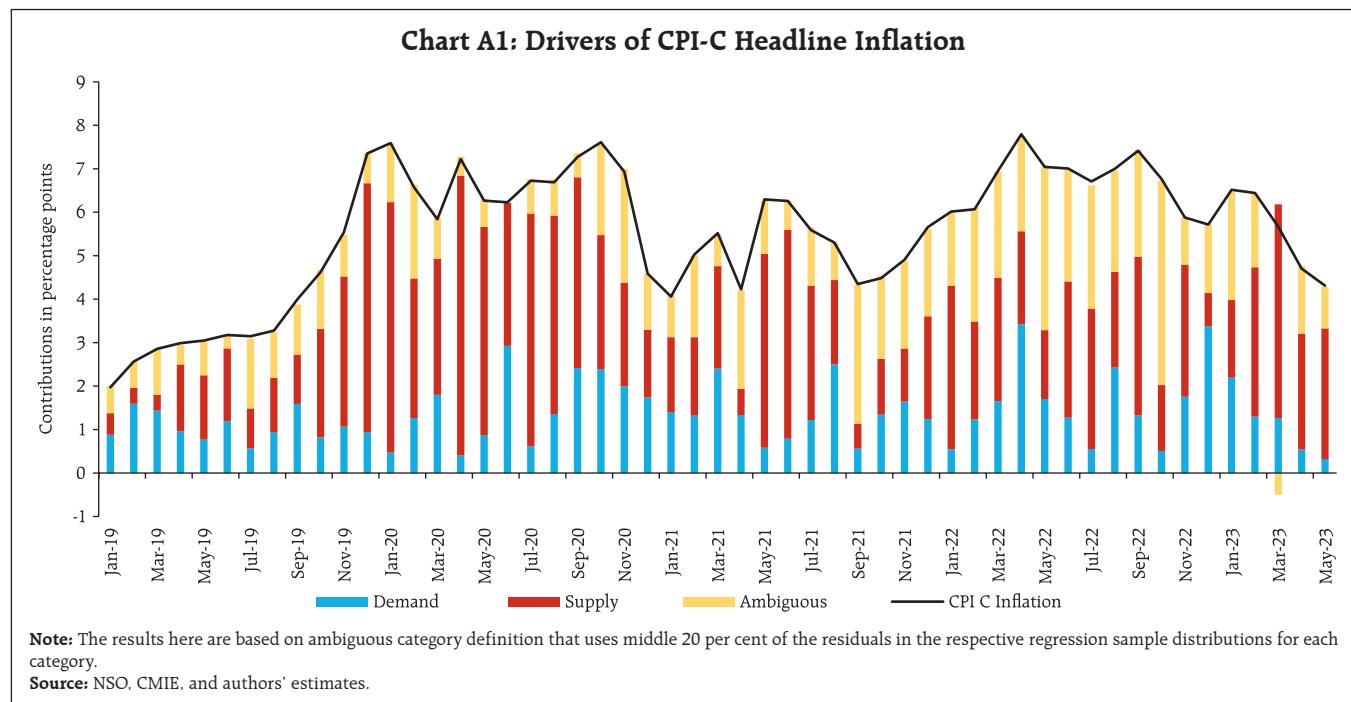
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Annex



Monetary Policy Report as a Communication Tool: Evidence from Textual Analysis

by Sangita Misra and Aastha ^

Using semi-automated textual analysis, this study, parsing through the RBI's flagship half-yearly publication, the Monetary Policy Report (MPR), since 2016 assesses the following – (a) What central bank communicates – its focus, (b) How it communicates – its tone and subjectivity and (c) How well it communicates – its readability. It draws the conclusion that MPR broadly fairs well in all these aspects, thus, upholding its remit under the RBI Act as an important communication tool.

Introduction

There has been greater recognition of the importance of communication as an influential instrument for monetary policy in the recent years. Constructive ambiguity of yesteryears has given way to communicating with prescience and clarity, the latter being a key to effective monetary policy, which can better anchor consumer expectations, guide markets and enhance monetary policy transmission (Das, 2022; Bouscasse et al., 2023; and RBNZ, 2020).

In this endeavour towards clear communication, central banks very often face challenges varying across economies, reflecting different economic and institutional setups in their countries. While advanced economies (AEs) have used forward guidance as a powerful tool to directly make an impact on the public's expectations since the global financial crisis (GFC), emerging market economies (EMEs) have faced different challenges concerning the need for communication to support the transition to new

frameworks or explaining policy outcomes in the existence of several objectives that central bank had to deliver. Over the last twenty years, central banks have increasingly adopted a Flexible Inflation Targeting (FIT) regime. The FIT framework facilitates the desired balancing between the medium-term objective of the central bank of price stability and the needed flexibility to accommodate short-term objectives. However, the scale of short-term flexibility varies among central banks, related directly to the credibility gained by the central bank over the years, indicating effective communication and consistent policy actions (Gaspar, 2016). Central bank communication acts as a primary and significant tool to enhance policy dialogue with the general public, better anchor market expectations and in the process significantly upscale monetary policy credibility to achieve macroeconomic stability (Blinder, 1998; Bernanke and Reinhart, 2004; Sturm and De Haan, 2011; Berger et al., 2011; and Oshima and Matsubayashi, 2018).

The Reserve Bank of India (RBI) reaches out to the general public through several tools – the bi-monthly Monetary Policy Committee (MPC) resolutions and minutes; Governor's statement; press conferences/media interactions, speeches, monthly RBI Bulletin and statutory RBI publications - Annual Report, as well as the full-fledged semi-annual publication, the Monetary Policy Report (MPR). Section 45ZM of RBI Act, 1934 read along with Regulation 6 of Reserve Bank of India Monetary Policy Committee and Monetary Policy Process Regulations, 2016, indicate that the Bank shall publish a document to be called the MPR once in every six months, containing the following: (a) Explanation of inflation dynamics in the last six months and the near term inflation outlook; (b) Projections of inflation and growth and the balance of risks; (c) An assessment of the state of the economy, covering the real economy, financial markets and stability, fiscal situation, and the external sector, which may entail a bearing on monetary policy decisions; (d) An updated review of the operating

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procedure of monetary policy; and (e) An assessment of projection performance.

Applying textual analysis to this flagship monetary policy publication of the RBI, this paper attempts to check the effectiveness of using MPR as a communicating tool. Construing through 16 issues of the MPR since April 2016, we check for its focus, sentiment or tone, subjectivity, readability, and overall consistency with other macroeconomic variables.

The article is structured as follows. Section II presents a quick overview of the literature. Section III deliberates on the methodology for the sentiment analysis while the results are explained in Section IV. Section V concludes.

II. Review of Literature

After the 2008 GFC, the key policy challenge for central banks was to effectively manage the market and expectations of agents. According to Naghdaliyev (2011), a central bank can avoid the knowledge burden that could lead to the "*deterioration of the rational decision-making process by the public*" by initiating a transparent and effective communication style. Such a communication style should involve both transitional and final objectives as given in Figure 1.

With the increasing importance of communication as a tool in the monetary policy arsenal, literature in this area has surged over the past decade focussing on quantitative assessments of monetary policy documents to examine how best they serve this role. Such evidence is more commonly found among AEs, inflation targeting countries and mostly for analysing policy documents and press releases/statements (Cherry and Tong, 2023; Gonzalez and Tadle, 2021; and Shapiro and Wilson, 2019) and occasionally for inflation reports by central banks as well (Bulir *et al.*, 2012). Small open economies like Nigeria and Ghana have also attempted similar studies on the tone and readability of the MPC's communication. A brief overview of such studies is shown in Table 1. Cross correlation across nations established that during international crises, the tone of monetary policy press releases moves closer together (Gonzalez and Tadle, 2021).

Textual analysis, whereby, big analytical reports are transformed into quantitative structured formats to get meaningful insights has been a preferred method for such analysis. Text sentiment analysis is a branch of Natural Language Processing and is now employed for many purposes, such as social

Figure 1: Central Bank Communication Objective

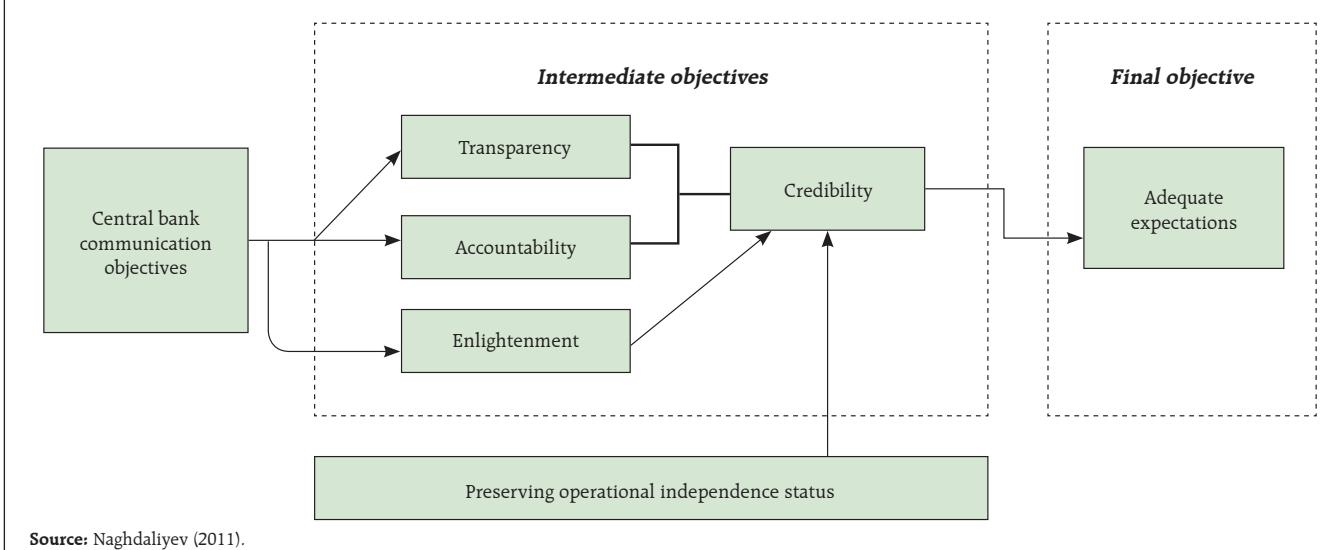


Table 1: Central Bank Communication Studies

Country-wise			
Country	Study	Coverage	Key Results
United States	Shapiro and Wilson (2019)	FOMC Transcripts, minutes, and speeches during 1986-2013.	<ul style="list-style-type: none"> Computed metric for monetary policy sentiment. Negative sentiments were inversely related to US's output.
Canada	Binette and Tchebotarev (2019)	MPRs.	<ul style="list-style-type: none"> Report is complex for an average citizen of the country to understand. Important macroeconomic events of country were associated with increased levels of verbal innovation in the reports.
New Zealand	Cherry and Tong (2023)	Monetary Policy Statements during Q1:1997 -Q4:2021.	<ul style="list-style-type: none"> The tone of MPS has been neutral and objective in nature. The Monetary Policy Snapshots proved to make communication easier.
South Africa	Segawa (2021)	MPC statements during January 2000 - January 2021.	<ul style="list-style-type: none"> Computed measure of readability using the FK Grade level index. Readability improved since 2016.
Ghana	Omotosho (2020)	12 monetary policy releases during 2018-2019.	<ul style="list-style-type: none"> Monetary policy releases have become simpler to read.
Nigeria	Tumala and Omotosho (2019)	MPC Communication during 2004-2019	<ul style="list-style-type: none"> MPC communication (word and sentence structures) became more complex, thus reducing its readability over time.
Cross-country			
18 Central Banks ¹	Gonzalez and Tadle (2021)	Monetary Policy Press releases.	<ul style="list-style-type: none"> In most cases, some level of college education required to understand the policy documents. The tone of press releases of central banks tends to move closer together during periods of international crises.
Latin American Central Banks	Taborda (2015)	Minutes of Board meetings in the central banks. ²	<ul style="list-style-type: none"> Readability of the central bank minutes has been broadly unchanged in case of Latin American countries.
Chile, England, Thailand, Czech National Bank, ECB, Poland, and Sverige's RiksBank	Bulir <i>et al.</i> (2012)	Inflation Reports during 1997-2012.	<ul style="list-style-type: none"> Inflation reports have become vibrant over time in Chile, Sweden, and England. ECB's monthly bulletins and Thai inflation reports were less clear during the period.

Sources: Shapiro and Wilson (2019); Binette and Tchebotarev (2019); Cherry and Tong (2023); Segawa (2021); Omotosho (2020); Tumala and Omotosho (2019); Gonzalez and Tadle, (2021); Taborda (2015); and Bulir *et al.*, (2012).

media analysis, digital trading, customer experience management, economic, and financial research. The related economic literature is rapidly growing; the technique provides various ways to quantify a sentiment indicator for different types of economic texts (*i.e.*, articles, speeches, notes, minutes *etc*). Text mining techniques have been applied to many central banking areas like communication in monetary policy (Cherry and Tong, 2023; Ferrara and Angino, 2022);

banking reforms (Amadharif *et al.*, 2019), and financial stability reports (Correa *et al.*, 2017) *etc*.

While Machine Learning techniques are still at a nascent stage for applicability in economic text analysis (Shapiro *et al.*, 2020), the lexicon method of textual study is extensively used in economics and finance literature. Its main benefit is that it is scalable for a particular document with consistency and transparency being less of a concern (Hansen and

¹ Australia, Brazil, Canada, Chile, Hungary, Iceland, Indonesia, Israel, New Zealand, Norway, Peru, Philippines, Poland, Romania, South Africa, South Korea, Sweden, and Thailand.

² 133 from Brazil; 172 from Chile; 80 from Colombia; 24 from Mexico, and 155 from Peru.

McMohan, 2016). The dictionary built by Loughran and McDonald (LM) [2011]³ is specific to the domain of economics and finance and has been used extensively for undertaking this exercise. As noted by LM, most dictionaries are not specifically built for economic texts, hence some words inside them could have an opposite connotation if considering an economic context. Therefore, they built their own dictionary precisely designed for the domain of finance and economics (LM dictionary). Given the advantages offered by this approach over alternative approaches in terms of simplicity, efficiency and easy comparability across nations, literature using this lexicon mushroomed since the second half of the 21st century, by when monetary policy communication itself had graduated from the veils of secrecy to the realms of transparency and accountability. Shapiro and Wilson (2019) applied it to minutes of the Federal Open Market Committee's meetings; Armelius *et al.* (2020) used it for Central Bankers' speeches; more recently, Cherry and Tong (2023) used it for analysing the Reserve Bank of New Zealand's monetary policy statements, to cite a few. It is claimed that the predictive accuracy of the LM dictionary on economic texts is comparable to the Harvard General Inquirer Dictionary (Shapiro *et al.*, 2020); particularly, the sentiment scores assigned by the LM lexicon is comparable with those assigned by human ratings on the same articles. While many studies have created their own dictionaries with innovations to suit country circumstances, given the standardisation that the LM dictionary has established, very often their study results are compared with those of LM dictionary as a robustness check (Gonzalez and Tadle, 2021).

Against this background, we have used text mining practices to examine the MPR from 2016 to 2023. This study is novel in its contribution to the literature in the Indian context as it applies the automated text

³ The first public version of the Loughran–McDonald sentiment dictionaries appeared in Loughran and McDonald (2011). The lists and accompanying dictionary are updated periodically and made available at <https://sraf.nd.edu>. The latest update is for 2021 which has been used for the study.

mining attempt to document data from RBI source. We also measure the legibility of the published MPRs over time by computing readability scores. This work builds on some of the country-specific work as well as cross-country exercise undertaken recently for inflation targeting countries (Cherry and Tong, 2023; Gonzalez and Tadle, 2021).

III. Methodology

For each MPR document starting from April 2016, the text is first separated from the rest *i.e.*, we removed charts, graphs, and other text deterrents to achieve 16 separate text corpuses. In line with customary methods for text mining analysis, we first start with pre-processing our corpus by removing numbers, punctuations, white spaces, and special characters from the documents.

Starting with topic analysis to examine the focus of the publication, many text bags are created to account for select topics. To explore related but distinct topics, we first create a list of keywords each for three aspects – inflation and growth (which are the primary objectives mentioned in the Act) and uncertainty (specified by LM) as well which has been a key variable influencing policy decisions, especially in the last few years.⁴

In order to measure the tone of MPRs, we have used the approach indicated by Cherry and Tong (2023) using text mining measures. From the LM dictionary, we have computed positive and negative scores based on the count of words matched with each corpus of MPR. Subsequently, we obtain two parameters - Polarity Score⁵, and the Subjectivity Score⁶ for all the MPRs published since April 2016.

⁴ The words selected for each topic are shown subsequently in results section.

⁵ The polarity score is a ratio between -1 and 1. A score in the range of -1 to -0.5 typically indicates negative sentiment. A score between -0.5 and 0.5 indicates neutral sentiment, and a score in the range of 0.5 to 1 typically indicates positive sentiment.

⁶ The subjectivity score captures the number of words that carries sentiment as a proportion of total number of words.

Once we obtain positive and negative scores, the difference between the two gives us an estimate for net sentiments as used by Twedt and Rees (2012). The net sentiment score is then normalised by the total number of positive and negative words in each MPR to obtain the polarity assessment, which is a much more balanced and unbiased indicator of sentiment, providing a range for analysis (-1 to +1), rather than a number. Hence, we compute the following scores for their simplicity and transparency (Table 2).

Recognising that readability of reports published by central banks is imperative for general public to understand monetary policy communication clarity of MPR is checked using two Readability metrics following the European Central Bank (Ferrara and Angino, 2022).⁷

The Flesch–Kincaid (FK) Grade Level specifies a score that can be interpreted as years of education necessary to comprehend a manuscript. The higher the score, the greater the difficulty of the language used. The FK formula is set out below (Kincaid *et al.*, 1975).

$$FK = 0.39 \frac{\text{Total words}}{\text{Total Sentences}} + 11.8 \frac{\text{Total syllables}}{\text{Total words}} - 15.6$$

The Gunning-Fog (FOG) Index considers the number of complex words, rather than total syllables.⁸

Table 2: Sentiment Analysis

Sr. No.	Sentiment Parameter	Expression
1.	Polarity Score	$Polarity_t = \frac{Positive_t - Negative_t}{Positive_t + Negative_t}$
2.	Subjectivity Score	$Subjectivity_t = 100 * \frac{Positive_t + Negative_t}{N_t}$

Note: $Positive_t$ and $Negative_t$ are the number of terms matched in each report and N_t is the total number of words used.

Source: Cherry and Tong (2023).

⁷ These two indices have also been used by other studies along with additional indices (Cherry and Tong, 2023).

⁸ The FOG Index is different from FK Grade Level as it is dependent on vocabulary-based features, namely word categories (e.g., familiar words, proper nouns, etc.) operationalised by pre-specified lists. Complex word is defined as words with three or more syllables, and that are not proper or compound nouns or familiar words.

Like FK, the final index is given in terms of number of years needed to understand the text, indicating the higher the index the lower the readability. The FOG Index is presented below (Gunning, 1952).

$$FOG = 0.4 \left[\left(\frac{\text{Total words}}{\text{Total Sentences}} \right) + 100 \left(\frac{\text{Complex words}}{\text{Total words}} \right) \right]$$

Our focus in this paper is on Chapters 1 to 3 of the MPR primarily for two reasons. First, these three chapters focus on inflation and growth dynamics, their projections and balance of risks. Second, it is these 3 chapters which provide a medium-term growth and inflation outlook, that is sought by the market and is important in influencing the sentiment.

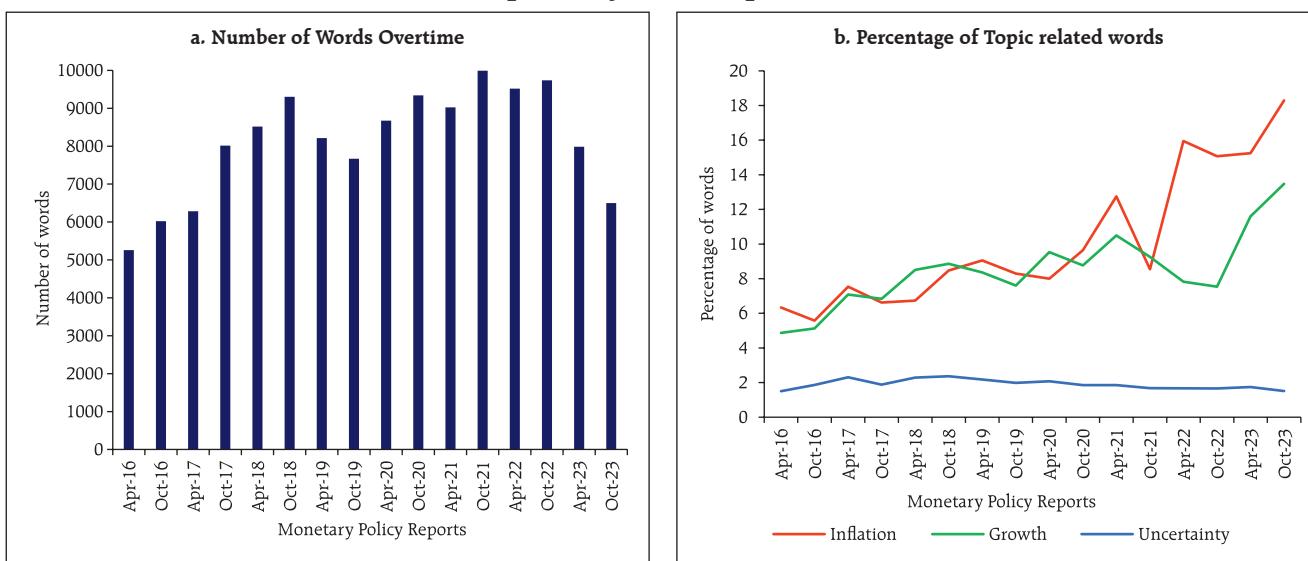
IV. Key Results

Topic Analysis

As per the topic analysis, total words of the MPR increased between 2016 and 2021 and have moderated since then (Chart 1a). October MPR has typically more words than April MPR (in 6 out of 8 occasions), probably reflecting more information by the middle of the year. The trend in words selected for the three topics (Annex I) – inflation, growth, and uncertainty – are indicated in Chart 1b. The share of inflation and growth topics has increased since inception, which is in line with its remit. The inflation related topics have been discussed more frequently *vis-à-vis* growth in the last few MPRs, mirroring the evolving inflation and growth dynamics (Annex II, Chart A1: a to d).

Sentiment Analysis

The overall sentiment associated with MPR is obtained by computing the polarity score, as stated in the methodology section using positive and negative sentiment words as selected by LM. A subset of positive and negative sentiment words picked up by LM as per standard practice and their respective share with respect to total sentiment words is enumerated in Table 3 and Chart 2, respectively. The choice of words duly takes care of the fact that inflation and

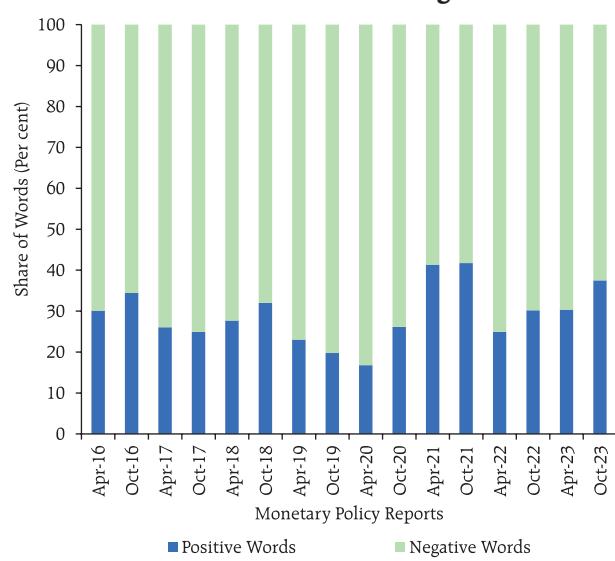
Chart 1: Topic Analysis of Chapters 1-3 of MPRs

Sources: RBI; and Authors' estimates.

growth variables may move in opposite directions to show the sentiment.

The polarity score, so obtained, is shown in Chart 3. It is observed to be time varying, yet broadly within the neutral range (-0.5 to +0.5). Thus, the text of MPR has largely been characterised by a neutral tone since its inception. There are some distinct trends that are pertinent to observe. First, a gradual decline in the sentiment had started even prior to pandemic, which reached the deepest during the COVID-19 pandemic when real GDP contracted sizeably and the sentiment index slipped into the negative range (below -0.5), although it was short-lived. Second, the recovery in sentiment post pandemic was quick and

fast, with the rebound in economic activity. Third, there was again a decline in the sentiment during the Russia-Ukraine conflict with inflation exceeding the upper tolerance level around the target (4 +/- 2 per cent). The sentiment index was at the border line between neutral and negative tone. Fourth, the sentiment has since then gradually improved with

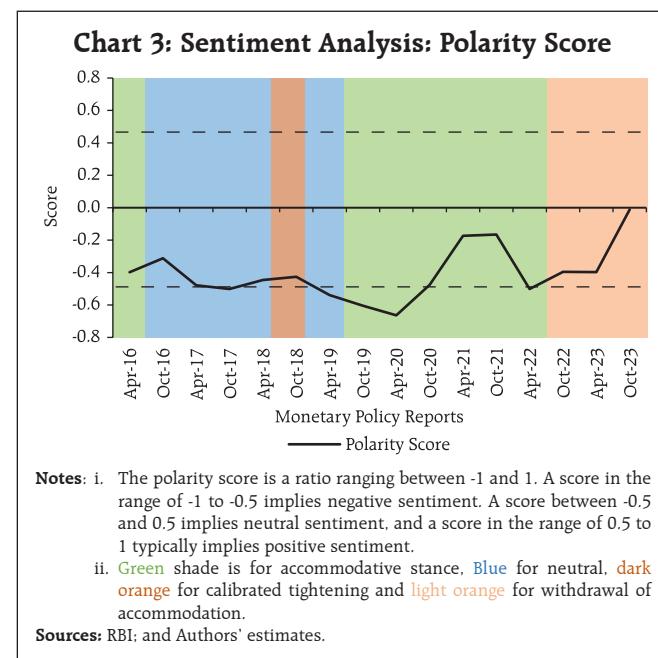
Chart 2: Share of Positive and Negative Words**Table 3: Sentiment Words**

Positive Words	improving, strong, progress, boost, optimistic, rebounded, leading, impressive, efficiency, profitability, abundant, upturn, opportunities, stability
Negative Words	volatility, adverse, decline, disruptions, slowing, contraction, errors, losses, recession, disruption, shortfalls, burden, dropped, stagnant, lost, unfavourable

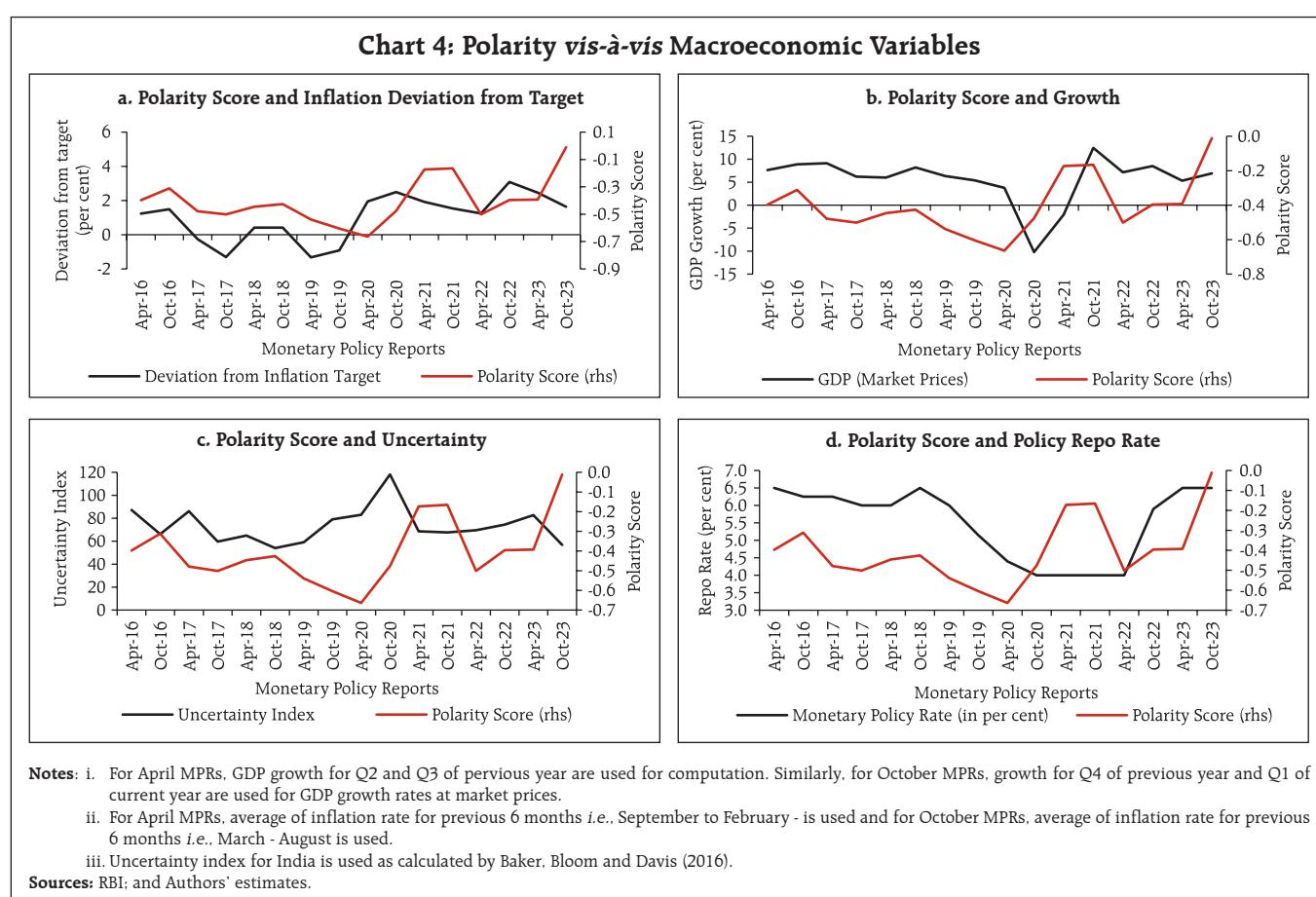
Sources: RBI; and Authors' estimates.

strengthening macro fundamentals, enunciating back again a neutral tone, closer to zero level in October 2023 (Chart 3). Fifth, the time varying nature of MPR sentiment tone mirrors evolving macroeconomic developments and not the monetary policy stance per se (whether accommodative stance or withdrawal of accommodation).

MPR being a bi-annual publication, only 16 MPRs have been released so far since 2016. Any examination of the relationship between polarity and macroeconomic variables through robust regression analysis will have to wait for more observations. However, a preliminary graphical analysis of the MPR tone as implied from Polarity score *vis-à-vis* the relevant macroeconomic variables (Chart 4) shows that MPR's tone seems to be positively correlated with growth and negatively correlated with deviation of inflation from its central target (4 per cent). Furthermore, the



MPR tone moves contra to uncertainty and policy repo rate, *i.e.*, higher uncertainty and higher policy rates



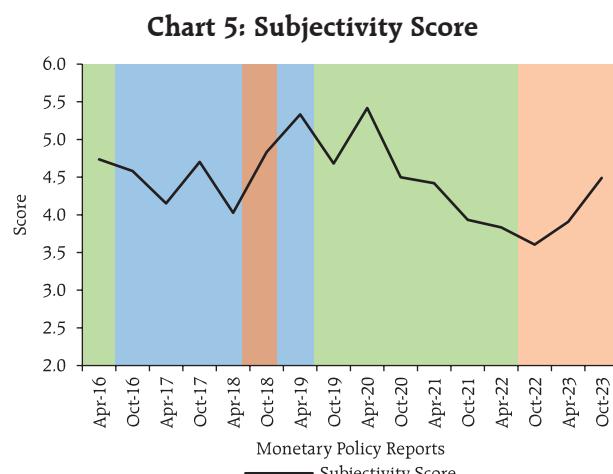
are associated with lower sentiment score. These associations seem to have strengthened over the years, particularly after 2019-2020 indicating that MPR as a monetary policy publication has matured over the years, giving the right signal amidst uncertainty and stance.⁹

Subjectivity Analysis

The MPR's subjectivity score as shown in Chart 5 is hovering in the range of 3.5 to 5.5 and is in line with other countries (Cherry and Tong, 2023). The subjectivity was high during the initial years of inception of FIT, and it trended downwards during the accommodative phase but has seen slight upward movement during the 'withdrawal of accommodation' phase.

Readability Analysis

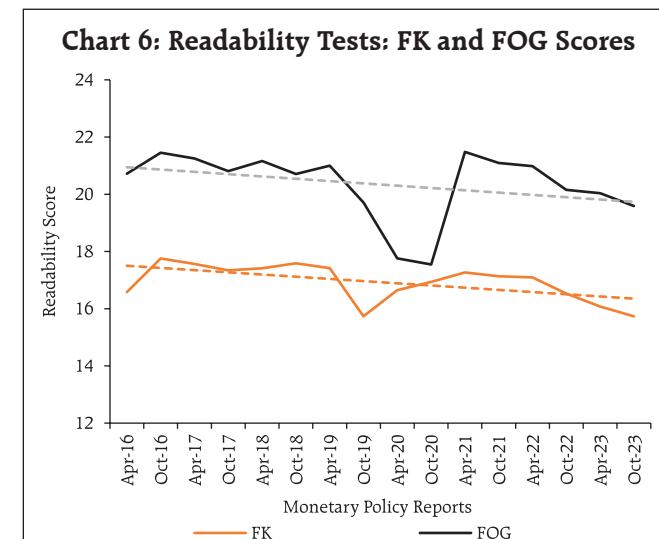
The results of two readability test – FK and FOG index - which gauge the years of formal training required to comprehend a writing are shown in Chart 6. The FK measure indicates that the MPR can be understood by readers who have completed about



- Notes:** i. Subjectivity captures number of words carrying sentiment as a proportion of the total number of words.
ii. Green shade is for accommodative stance, Blue for neutral, dark orange for calibrated tightening and light orange for withdrawal of accommodation.

Sources: RBI; and Authors' estimates.

⁹ This preliminary analysis needs to be further substantiated with empirical evidence as we populate with more data in coming years.



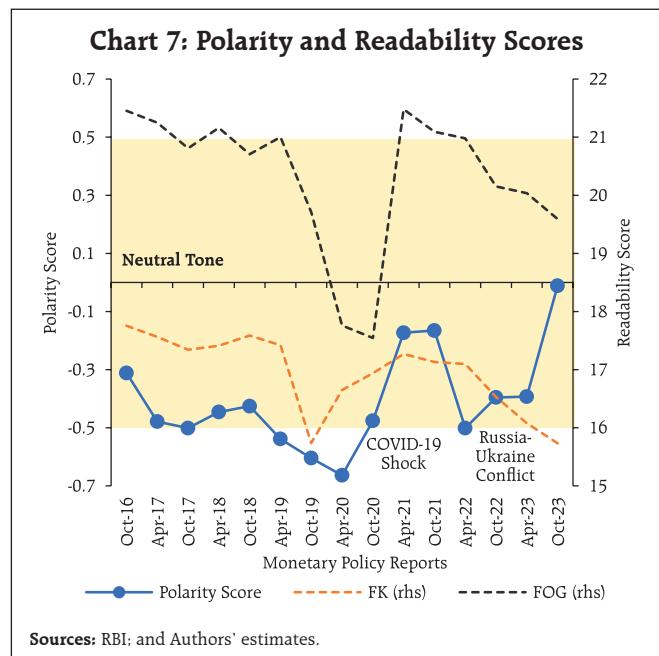
Note: FK grade level and the FOG score refer to the number of years of full-time education needed to understand the MPR. The higher these scores are, the harder it is to understand the text.

Sources: RBI; and Authors' estimates.

18 years of formal education while the FOG index suggests even stricter readability parameters with target audience being no less than graduates. This is in line with literature whereby central bank monetary policy press releases/statements are generally observed to have FK and FOG scores in the range of 12-18 years and 17-23 years, respectively (Cherry and Tong, 2023; Gonzalez and Tadle, 2021). Both the readability indices are trending downwards i.e., the readability is seeing a marginal improvement over the years.¹⁰ In this context, complementary communication tools like Governor's statement, press briefings, speeches, and monetary policy and MPR outreach programmes aimed at general public play an important role.

A comparison of polarity scores with readability scores, following Tumala and Omotosho (2019), indicates that whenever sentiment has moved from neutral to negative zone (viz, during COVID-19 pandemic and Russia-Ukraine conflict), readability score has improved to ensure better clarity in communication (Chart 7).

¹⁰ It may be noted that the FOG readability score saw a sharp, though short-lived, improvement during first wave of the pandemic.

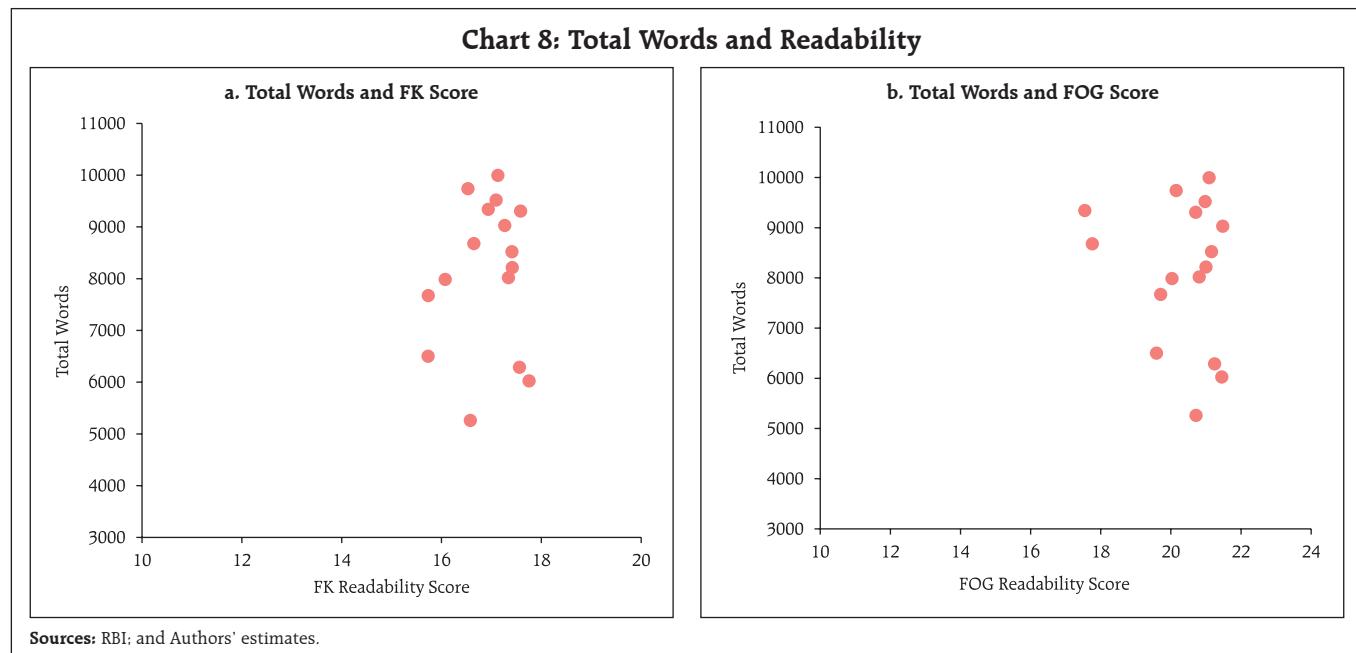


Following Taborda (2015), who associates the length of minutes with the readability score, we examine whether readability can be improved by modifying the length of the text, in our case the length of MPR. Such an analysis shows no trend or statistical

relationship between length and readability of MPRs (Chart 8). This suggests that the readability score is independent of length of MPR, in line with the results observed for Latin American central banks.¹¹

V. Conclusion

Parsing through 16 monetary policy reports (MPRs) since 2016 in India, this study attempts to decode intrinsic features regarding the focus, tone, objectivity and clarity of this flagship publication of RBI. The analysis suggests that the MPR broadly fairs well in all these features. First, the textual analysis shows that keywords mentioned in the MPR align broadly with the objectives in the Remit and move in line with incoming data and outlook. Second, the tone of MPR has been broadly neutral, neither too positive nor too negative, barring a few instances driven by large shocks like the COVID-19 pandemic and the Russia-Ukraine conflict. Third, the sentiment in the MPR seems to be moving in tandem with key macro variables. Fourth, the MPR has on the whole used objective language. Fifth, the publication, like



¹¹ Readability score improves irrespective of two divergent trends – size expansion of the minutes (Brazil, Colombia, Mexico, and Peru) and the size-contraction (Peru) (Taborda, 2015).

other central bank publications, requires a high school education or higher to understand it, though the readability is showing modest signs of improvement in recent years. Overall, even as the MPR is an important communication tool, given the diverse nature of the economy, multiple communication channels are critical for effective communication. Accordingly, the Reserve Bank actively uses a variety of tools – the MPC resolutions and minutes, Governor's exhaustive post-policy statements together with statement on developmental and regulatory measures, press conferences, speeches by top management, MPR and various other publications to anchor expectations (Das, 2022).

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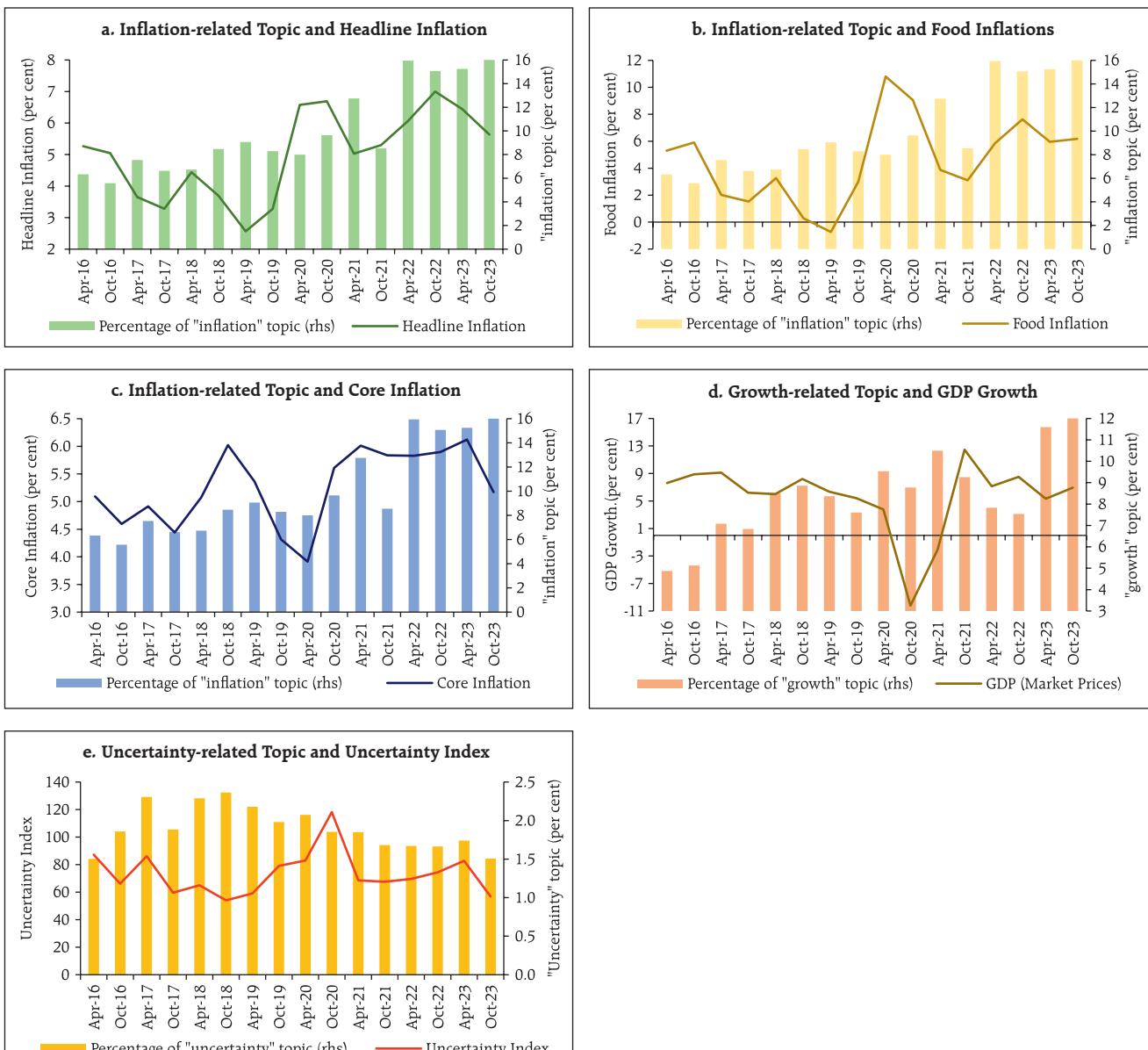
Annex I**Table A1: Select Words for Topic Analysis**

Inflation-related	price, cpi, headline, fuel, food, core, pulses, vegetables, costs, wpi, housing, oil, consumer, diesel, petrol, LPG, electricity, households, confidence, beverages, kerosene, deflator.
Growth-related	output, gdp, gva, manufacturing, services, demand, production, industrial, fiscal, business, investment, imports, exports, merchandise, fiscal, trade, cement, steel, passenger.
Uncertainty-related	risks, anticipated, assumption, reassessment, appears, contingent, volatile, deviation, unclear, possibility, vary, preliminary, random.

Sources: RBI; and Authors' estimates.

Annex II

Chart A1: Inflation, Growth and Uncertainty vis-à-vis their respective percentage in MPR words



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

No.	Title	Page
1	Select Economic Indicators	159
	Reserve Bank of India	
2	RBI – Liabilities and Assets	160
3	Liquidity Operations by RBI	161
4	Sale/ Purchase of U.S. Dollar by the RBI	162
4A	Maturity Breakdown (by Residual Maturity) of Outstanding Forwards of RBI (US\$ Million)	163
5	RBI's Standing Facilities	163
	Money and Banking	
6	Money Stock Measures	164
7	Sources of Money Stock (M_3)	165
8	Monetary Survey	166
9	Liquidity Aggregates	166
10	Reserve Bank of India Survey	167
11	Reserve Money – Components and Sources	167
12	Commercial Bank Survey	168
13	Scheduled Commercial Banks' Investments	168
14	Business in India – All Scheduled Banks and All Scheduled Commercial Banks	169
15	Deployment of Gross Bank Credit by Major Sectors	170
16	Industry-wise Deployment of Gross Bank Credit	171
17	State Co-operative Banks Maintaining Accounts with the Reserve Bank of India	172
	Prices and Production	
18	Consumer Price Index (Base: 2012=100)	173
19	Other Consumer Price Indices	173
20	Monthly Average Price of Gold and Silver in Mumbai	173
21	Wholesale Price Index	174
22	Index of Industrial Production (Base: 2011-12=100)	178
	Government Accounts and Treasury Bills	
23	Union Government Accounts at a Glance	178
24	Treasury Bills – Ownership Pattern	179
25	Auctions of Treasury Bills	179
	Financial Markets	
26	Daily Call Money Rates	180
27	Certificates of Deposit	181
28	Commercial Paper	181
29	Average Daily Turnover in Select Financial Markets	181
30	New Capital Issues by Non-Government Public Limited Companies	182

No.	Title	Page
External Sector		
31	Foreign Trade	183
32	Foreign Exchange Reserves	183
33	Non-Resident Deposits	183
34	Foreign Investment Inflows	184
35	Outward Remittances under the Liberalised Remittance Scheme (LRS) for Resident Individuals	184
36	Indices of Nominal Effective Exchange Rate (NEER) and Real Effective Exchange Rate (REER) of the Indian Rupee	185
37	External Commercial Borrowings (ECBs) – Registrations	186
38	India's Overall Balance of Payments (US \$ Million)	187
39	India's Overall Balance of Payments (₹ Crore)	188
40	Standard Presentation of BoP in India as per BPM6 (US \$ Million)	189
41	Standard Presentation of BoP in India as per BPM6 (₹ Crore)	190
42	India's International Investment Position	191
Payment and Settlement Systems		
43	Payment System Indicators	192
Occasional Series		
44	Small Savings	194
45	Ownership Pattern of Central and State Governments Securities	195
46	Combined Receipts and Disbursements of the Central and State Governments	196
47	Financial Accommodation Availed by State Governments under various Facilities	197
48	Investments by State Governments	198
49	Market Borrowings of State Governments	199
50 (a)	Flow of Financial Assets and Liabilities of Households - Instrument-wise	200
50 (b)	Stocks of Financial Assets and Liabilities of Households- Select Indicators	203

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

No. 1: Select Economic Indicators

Item	2022-23	2022-23		2023-24	
		Q1	Q2	Q1	Q2
	1	2	3	4	5
1 Real Sector (% Change)					
1.1 GVA at Basic Prices	7.0	11.9	5.4	7.8	7.4
1.1.1 Agriculture	4.0	2.4	2.5	3.5	1.2
1.1.2 Industry	2.4	7.3	-2.5	4.6	13.2
1.1.3 Services	9.5	16.3	8.9	10.0	6.7
1.1a Final Consumption Expenditure	6.4	16.5	6.6	4.9	4.3
1.1b Gross Fixed Capital Formation	11.4	20.4	9.6	8.0	11.0
	2022-23	2022		2023	
		Sep.	Oct.	Sep.	Oct.
	1	2	3	4	5
1.2 Index of Industrial Production	5.2	3.3	-4.1	6.2	11.7
2 Money and Banking (% Change)					
2.1 Scheduled Commercial Banks					
2.1.1 Deposits	9.6	12.5	8.9	11.5	12.5
2.1.2 Credit #	15.0	20.1	17.0	(12.3)	(13.2)
2.1.2.1 Non-food Credit #	15.4	20.7	17.4	13.0	15.8
2.1.3 Investment in Govt. Securities	14.5	8.7	8.6	(17.6)	(20.4)
2.2 Money Stock Measures					
2.2.1 Reserve Money (M0)	7.8	12.9	11.2	6.4	5.5
2.2.2 Broad Money (M3)	9.0	8.6	9.1	10.9	10.8
				(11.5)	(10.6)
3 Ratios (%)					
3.1 Cash Reserve Ratio	4.50	4.50	4.50	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	5.4	5.2	5.4	5.2
3.4 Credit-Deposit Ratio	75.8	74.3	74.5	75.3	76.7
3.5 Incremental Credit-Deposit Ratio#	113.0	105.8	120.0	(77.8)	(79.2)
3.6 Investment-Deposit Ratio	30.0	28.9	29.3	69.7	88.7
3.7 Incremental Investment-Deposit Ratio	43.5	31.7	41.5	(99.5)	(119.5)
				30.3	30.4
				(30.6)	(30.8)
				33.2	36.1
				(37.0)	(40.2)
4 Interest Rates (%)					
4.1 Policy Repo Rate	6.50	5.90	5.90	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	5.65	5.65	6.25	6.25
4.4 Marginal Standing Facility (MSF) Rate	6.75	6.15	6.15	6.75	6.75
4.5 Bank Rate	6.75	6.15	6.15	6.75	6.75
4.6 Base Rate	8.65/10.10	7.75/8.80	8.10/8.80	8.85/10.10	8.95/10.10
4.7 MCLR (Overnight)	7.50/8.50	6.85/7.75	6.95/7.85	7.95/8.45	7.95/8.45
4.8 Term Deposit Rate >1 Year	6.00/7.25	5.30/6.10	5.50/7.00	6.00/7.25	6.00/7.75
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	5.52	6.16	6.75	6.74
4.11 91-Day Treasury Bill (Primary) Yield	-	6.18	6.40	6.86	6.93
4.12 182-Day Treasury Bill (Primary) Yield	7.28	6.64	6.72	7.08	7.14
4.13 364-Day Treasury Bill (Primary) Yield	7.31	6.80	6.92	7.08	7.16
4.14 10-Year G-Sec Par Yield (FBIL)	7.31	7.41	7.45	7.22	7.35
5 Reference Rate and Forward Premiums					
5.1 INR-US\$ Spot Rate (Rs. Per Foreign Currency)	82.22	81.55	82.41	83.06	83.25
5.2 INR-Euro Spot Rate (Rs. Per Foreign Currency)	89.61	80.11	82.14	87.94	87.90
5.3 Forward Premiums of US\$ 1-month (%)	2.41	3.83	3.28	1.88	1.02
3-month (%)	2.19	3.38	2.86	1.69	1.33
6-month (%)	2.31	3.02	2.74	1.75	1.71
6 Inflation (%)					
6.1 All India Consumer Price Index	6.7	7.4	6.8	5.0	4.9
6.2 Consumer Price Index for Industrial Workers	6.1	6.5	6.1	4.7	4.5
6.3 Wholesale Price Index	9.6	10.6	8.7	-0.1	-0.5
6.3.1 Primary Articles	10.3	11.5	11.2	4.4	1.8
6.3.2 Fuel and Power	29.4	33.1	25.4	-3.3	-2.5
6.3.3 Manufactured Products	5.7	6.1	4.4	-1.3	-1.1
7 Foreign Trade (% Change)					
7.1 Imports	16.8	12.6	8.0	-15.0	9.6
7.2 Exports	6.9	4.7	-11.5	-2.6	6.1

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.

#: 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).

Figures in parentheses include the impact of merger of a non-bank with a bank.

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

Reserve Bank of India

No. 2: RBI - Liabilities and Assets *

(₹ Crore)

Item	As on the Last Friday/ Friday						
	2022-23	2022	2023				
		Nov.	Oct. 27	Nov. 03	Nov. 10	Nov. 17	Nov. 24
		1	2	3	4	5	6
1 Issue Department							
1.1 Liabilities							
1.1.1 Notes in Circulation	3348235	3188464	3271881	3280952	3329794	3323860	3323212
1.1.2 Notes Held in Banking Department	9	12	13	12	9	16	14
1.1/1.2 Total Liabilities (Total Notes Issued) or Assets	3348245	3188476	3271894	3280964	3329803	3323876	3323226
1.2 Assets							
1.2.1 Gold	140766	123030	143945	144645	142852	144368	145478
1.2.2 Foreign Securities	3207202	3065120	3127636	3136057	3186762	3179147	3177439
1.2.3 Rupee Coin	277	326	313	262	189	361	309
1.2.4 Government of India Rupee Securities	-	-	-	-	-	-	-
2 Banking Department							
2.1 Liabilities							
2.1.1 Deposits	1354217	1361809	1675645	1555831	1539978	1521248	1623298
2.1.1.1 Central Government	5001	101	101	100	100	100	100
2.1.1.2 Market Stabilisation Scheme							
2.1.1.3 State Governments	42	42	42	42	42	42	42
2.1.1.4 Scheduled Commercial Banks	868940	808841	906993	934236	922586	910823	931741
2.1.1.5 Scheduled State Co-operative Banks	8100	7401	8100	8330	7988	8051	8115
2.1.1.6 Non-Scheduled State Co-operative Banks	5177	4352	4610	4811	4859	4760	4644
2.1.1.7 Other Banks	48260	43959	47526	48132	49205	49371	49647
2.1.1.8 Others	316490	423287	566312	431815	437423	439924	506029
2.1.1.9 Financial Institution Outside India	102207	73825	141961	128365	117773	108176	122979
2.1.2 Other Liabilities	1642294	1417253	1499252	1545179	1548612	1615938	1628598
2.1/2.2 Total Liabilities or Assets	2996512	2779062	3174897	3101010	3088590	3137186	3251896
2.2 Assets							
2.2.1 Notes and Coins	9	12	13	12	9	16	14
2.2.2 Balances Held Abroad	1008993	944365	1225339	1255738	1209476	1249655	1274744
2.2.3 Loans and Advances							
2.2.3.1 Central Government	48677	-	-	-	-	-	-
2.2.3.2 State Governments	792	2944	21871	26781	20013	17338	16275
2.2.3.3 Scheduled Commercial Banks	112731	96669	160738	63816	117585	131042	207355
2.2.3.4 Scheduled State Co-op.Banks	-	35	-	-	-	-	-
2.2.3.5 Industrial Dev. Bank of India	-	-	-	-	-	-	-
2.2.3.6 NABARD	-	0	-	-	-	-	-
2.2.3.7 EXIM Bank	-	-	-	-	-	-	-
2.2.3.8 Others	24485	18174	3181	3181	3181	3181	3169
2.2.3.9 Financial Institution Outside India	102128	74791	141618	128933	118868	109443	124108
2.2.4 Bills Purchased and Discounted							
2.2.4.1 Internal	-	-	-	-	-	-	-
2.2.4.2 Government Treasury Bills	-	-	-	-	-	-	-
2.2.5 Investments	1408486	1420571	1371530	1371227	1370998	1375452	1373135
2.2.6 Other Assets	290209	221501	250608	251321	248460	251059	253095
2.2.6.1 Gold	230734	203252	238344	239503	236535	239045	240882

* 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		
Oct. 1, 2023	-	-	-	-	734	4757	-	-	-	-	-	-	-	-	-	-	-	-	-4023
Oct. 2, 2023	-	-	-	-	298	9737	-	-	-	-	-	-	-	-	-	-	-	-	-9439
Oct. 3, 2023	-	-	-	-	89746	57940	-605	-	-	-	-	-	-	-	-	-	-	-	31201
Oct. 4, 2023	-	-	-	-	86862	48970	725	610	-	-	-	-	-	-	-	-	-	-	38007
Oct. 5, 2023	-	-	-	-	80502	55695	-	825	-	-	-	-	-	-	-	-	-	-	23982
Oct. 6, 2023	-	-	-	6668	49317	60659	-	240	-	-	-	-	-	-	-	-	-	-	-18250
Oct. 7, 2023	-	-	-	-	15922	18552	-	-	-	-	-	-	-	-	-	-	-	-	-2630
Oct. 8, 2023	-	-	-	-	94	3775	-	-	-	-	-	-	-	-	-	-	-	-	-3681
Oct. 9, 2023	-	-	-	-	30749	40937	-	-	-	-	-	-	-	-	-	-	-	-	-10188
Oct. 10, 2023	-	-	-	-	85849	52546	-	340	-	-	-	-	-	-	-	-	-	-	32963
Oct. 11, 2023	-	-	-	-	84363	42457	-	-	-	-	-	-	-	-	-	-	-	-	41906
Oct. 12, 2023	-	-	-	-	71780	51429	-	-	-	-	-	-	-	-	-	-	-	-	20351
Oct. 13, 2023	-	-	-	-	59589	46632	-656	440	-	-	-	-	-	-	-	-	-	-	11861
Oct. 14, 2023	-	-	-	-	5606	4616	-	-	-	-	-	-	-	-	-	-	-	-	990
Oct. 15, 2023	-	-	-	-	661	4231	-	-	-	-	-	-	-	-	-	-	-	-	-3570
Oct. 16, 2023	-	-	-	-	57406	59628	656	920	-	-	-	-	-	-	-	-	-	-	-2486
Oct. 17, 2023	-	-	-	-	49178	59272	-	1050	-	-	-	-	-	-	-	-	-	-	-11144
Oct. 18, 2023	-	-	-	-	39800	45426	32	1425	-	-	-	-	-	-	-	-	-	-	-7019
Oct. 19, 2023	-	-	-	-	60006	50761	-	230	-	-	-	-	-	-	-	-	-	-	9015
Oct. 20, 2023	-	-	5354	-	124191	51661	-	550	-	-	-	-	-	-	-	-	-	-	66626
Oct. 21, 2023	-	-	-	-	27187	16149	-	-	-	-	-	-	-	-	-	-	-	-	11038
Oct. 22, 2023	-	-	-	-	1908	3386	-	-	-	-	-	-	-	-	-	-	-	-	-1478
Oct. 23, 2023	-	-	-	-	138595	50046	-	145	-	-	-	-	-	-	-	-	-	-	88404
Oct. 24, 2023	-	-	-	-	8668	8390	-	-	-	-	-	-	-	-	-	-	-	-	278
Oct. 25, 2023	-	-	-	-	161257	62105	-	825	-	-	-	-	-	-	-	-	-	-	98327
Oct. 26, 2023	-	-	-	-	142504	58066	-	300	-	-	-	-	-	-	-	-	-	-	84138
Oct. 27, 2023	-	-	-	-	141123	56571	-	1555	-	-	-	-	-	-	-	-	-	-	82997
Oct. 28, 2023	-	-	-	-	4630	3940	-	-	-	-	-	-	-	-	-	-	-	-	690
Oct. 29, 2023	-	-	-	-	32648	3581	-	-	-	-	-	-	-	-	-	-	-	-	29067
Oct. 30, 2023	-	-	-	-	186428	51882	-	460	-	-	-	-	-	-	-	-	-	-	134086
Oct. 31, 2023	-	-	-	-	154800	58695	-	-	-	-	-	-	-	-	-	-	-	-	96105

No. 4: Sale/ Purchase of U.S. Dollar by the RBI**i) Operations in onshore / offshore OTC segment**

Item	2022-23	2022		2023	
		Oct.	Sep.	Sep.	Oct.
		1	2	3	4
1 Net Purchase/ Sale of Foreign Currency (US \$ Million) (1.1-1.2)		-25516	-922	-1508	-310
1.1 Purchase (+)		187054	24855	27757	36650
1.2 Sale (-)		212570	25777	29265	36960
2 ₹ equivalent at contract rate (₹ Crores)		-217259	-10077	-12611	-3604
3 Cumulative (over end-March) (US \$ Million)		-25516	-34339	17687	17377
(₹ Crore)		-217259	-283631	144667	141063
4 Outstanding Net Forward Sales (-)/ Purchase (+) at the end of month (US \$ Million)		23600	241	4642	-14608

ii) Operations in currency futures segment

Item	2022-23	2022		2023	
		Oct.	Sep.	Sep.	Oct.
		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	1875	1598	1948
1.2 Sale (-)		10930	1875	1598	1948
2 Outstanding Net Currency Futures Sales (-)/ Purchase (+) at the end of month (US \$ Million)		0	-855	-1725	-4187

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

Item	As on October 31, 2023		
	Long (+)	Short (-)	Net (1-2)
	1	2	3
1. Upto 1 month	1293	27300	-26007
2. More than 1 month and upto 3 months	3325	1900	1425
3. More than 3 months and upto 1 year	9974	0	9974
4. More than 1 year	0	0	0
Total (1+2+3+4)	14592	29200	-14608

No. 5: RBI's Standing Facilities

(₹ Crore)

Item	As on the Last Reporting Friday							
	2022-23	2022	2023					
		Nov. 18	Jun. 30	Jul. 28	Aug. 25	Sep. 22	Oct. 20	Nov. 17
		1	2	3	4	5	6	7
1 MSF	28388	3250	31256	25417	73658	168348	124191	111386
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	1801	3319	3082	3122	3054	3181	3181
4 Others								
4.1 Limit	76000	76000	76000	76000	76000	76000	76000	76000
4.2 Outstanding	15900	10850						
5 Total Outstanding (1+2.2+3.2+4.2)	46730	15901	34575	28499	76780	171402	127372	114567

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		
		Oct. 21	Sep. 22	Oct. 06	Oct. 20
		1	2	3	4
1 Currency with the Public (1.1 + 1.2 + 1.3 – 1.4)	3276436	3088753	3195976	3188066	3201722
1.1 Notes in Circulation	3348219	3189311	3270406	3262307	3272342
1.2 Circulation of Rupee Coin	29542	28260	30657	30906	30906
1.3 Circulation of Small Coins	743	743	743	743	743
1.4 Cash on Hand with Banks	102085	129561	105887	105905	102339
2 Deposit Money of the Public	2398359	2237215	2416872	2511989	2466481
2.1 Demand Deposits with Banks	2320598	2167214	2344131	2438540	2393541
2.2 'Other' Deposits with Reserve Bank	77761	70001	72741	73449	72940
3 M1 (1 + 2)	5674795	5325968	5612848	5700055	5668203
4 Post Office Saving Bank Deposits	200257	196446	200257	200257	200257
5 M2 (3 + 4)	5875052	5522414	5813105	5900312	5868460
6 Time Deposits with Banks	16668966	15975981	17749453	17982629	17934860
			(17891449)	(17891449)	(17891449)
7 M3 (3 + 6)	22343760	21301949	23362301	23682684	23603064
			(23504298)	(23591504)	(23559653)
8 Total Post Office Deposits	1113230	1082287	1113230	1113230	1113230
9 M4 (7 + 8)	23456990	22384236	24475531	24795914	24716294
			(24617528)	(24704734)	(24672883)

Note: Figures in parentheses include the impact of merger of a non-bank with a bank.

No. 7: Sources of Money Stock (M₃)

(₹ Crore)

Sources	Outstanding as on March 31/last reporting Fridays of the month/ reporting Fridays				
	2022-23	2022	2023		
		Oct. 21	Sep. 22	Oct. 06	Oct. 20
	1	2	3	4	5
1 Net Bank Credit to Government	7165533	6444604	7179702	7370467	7273206
1.1 RBI's net credit to Government (1.1.1–1.1.2)	1451126	1091548	(7292666)	(7481630)	(7384463)
1.1.1 Claims on Government	1456169	1411232	1010573	1116642	1018574
1.1.1.1 Central Government	1455377	1406140	1392976	1378957	1372589
1.1.1.2 State Governments	792	5092	13480	24303	20227
1.1.2 Government deposits with RBI	5043	319684	395882	286618	374243
1.1.2.1 Central Government	5001	319642	395840	286576	374200
1.1.2.2 State Governments	42	42	42	42	42
1.2 Other Banks' Credit to Government	5714407	5353056	6169128	6253825	6254632
			(6282093)	(6364988)	(6365889)
2 Bank Credit to Commercial Sector	14429636	13620436	15290027	15484013	15587981
			(15882467)	(16072931)	(16174412)
2.1 RBI's credit to commercial sector	26549	18954	5118	5213	5245
2.2 Other banks' credit to commercial sector	14403087	13601482	15284909	15478800	15582737
			(15877350)	(16067718)	(16169167)
2.2.1 Bank credit by commercial banks	13675235	12883404	14558874	14751031	14852664
			(15151314)	(15339949)	(15439094)
2.2.2 Bank credit by co-operative banks	710187	700682	708331	709986	712806
2.2.3 Investments by commercial and co-operative banks in other securities	17665	17396	17704	17783	17266
			(17704)	(17783)	(17266)
3 Net Foreign Exchange Assets of Banking Sector (3.1 + 3.2)	4911766	4434718	4977878	4946925	4928957
3.1 RBI's net foreign exchange assets (3.1.1–3.1.2)	4587355	4179125	4735054	4704100	4686133
3.1.1 Gross foreign assets	4587616	4179365	4735313	4704354	4686386
3.1.2 Foreign liabilities	260	240	259	254	254
3.2 Other banks' net foreign exchange assets	324410	255593	242825	242825	242825
4 Government's Currency Liabilities to the Public	30285	29003	31400	31649	31649
5 Banking Sector's Net Non-monetary Liabilities	4193459	3226812	4116706	4150369	4218729
			(4680114)	(4711338)	(4782221)
5.1 Net non-monetary liabilities of RBI	1587565	1243594	1507527	1469220	1472881
5.2 Net non-monetary liabilities of other banks (residual)	2605895	1983218	2609178	2681149	2745849
			(3172587)	(3242118)	(3309341)
M₃(1+2+3+4–5)	22343760	21301949	23362301	23682684	23603064
			(23504298)	(23821796)	(23737259)

Note: Figures in parentheses include the impact of merger of a non-bank with a bank.

No. 8: Monetary Survey

(₹ Crore)

Item	Outstanding as on March 31/last reporting Fridays of the month/reporting Fridays				
	2022-23	2022	2023		
		Oct. 21	Sep. 22	Oct. 06	Oct. 20
	1	2	3	4	5
Monetary Aggregates					
NM ₁ (1.1+1.2.1+1.3)	5674795	5325968	5612848	5700055	5668203
NM ₂ (NM ₁ + 1.2.2.1)	13103413	12453325	13517264	13709155	13655704
NM ₃ (NM ₂ + 1.2.2.2 + 1.4 = 2.1 + 2.2 + 2.3 – 2.4 – 2.5)	22628165	21712620	24017844	24340239	24247853
			(24159840)	(24479351)	(24382048)
1 Components					
1.1 Currency with the Public	3276436	3088753	3195976	3188066	3201722
1.2 Aggregate Deposits of Residents	18828639	18005784	19909500	20236541	20143542
1.2.1 Demand Deposits	2320598	2167214	2344131	2438540	2393541
1.2.2 Time Deposits of Residents	16508041	15838570	17565368	17798001	17750001
1.2.2.1 Short-term Time Deposits	7428619	7127357	7904416	8009100	7987500
1.2.2.1.1 Certificates of Deposits (CDs)	303993	232680	280304	279158	306354
1.2.2.2 Long-term Time Deposits	9079423	8711214	9660953	9788900	9762500
			(9739051)	(9865412)	(9836308)
1.3 'Other' Deposits with RBI	77761	70001	72741	73449	72940
1.4 Call/Term Funding from Financial Institutions	445329	548081	839627	842183	829649
2 Sources					
2.1 Domestic Credit	22710730	21164743	23570334	23974138	23965111
2.1.1 Net Bank Credit to the Government	7165533	6444604	(24275739)	(24674220)	(24662798)
2.1.1.1 Net RBI credit to the Government	1451126	1091548	1010573	1116642	1018574
2.1.1.2 Credit to the Government by the Banking System	5714407	5353056	6169128	6253825	6254632
2.1.2 Bank Credit to the Commercial Sector	15545198	14720139	16390632	16603671	16691905
			(16983073)	(17192590)	(17278336)
2.1.2.1 RBI Credit to the Commercial Sector	26549	23508	5118	5213	5245
2.1.2.2 Credit to the Commercial Sector by the Banking System	15518649	14696631	16385515	16598458	16686661
			(16977955)	(17187377)	(17273091)
2.1.2.2.1 Other Investments (Non-SLR Securities)	1096333	1075015	1085195	1104309	1089235
2.2 Government's Currency Liabilities to the Public	30285	29003	31400	31649	31649
2.3 Net Foreign Exchange Assets of the Banking Sector	4699822	4368793	4759109	4728497	4695347
2.3.1 Net Foreign Exchange Assets of the RBI	4587355	4179125	4735054	4704100	4686133
2.3.2 Net Foreign Currency Assets of the Banking System	112467	189668	24056	24397	9214
2.4 Capital Account	3446786	3335928	3884768	3861644	3873660
2.5 Other items (net)	1365887	513991	1021640	1093370	1134086

Note: Figures in parentheses include the impact of merger of a non-bank with a bank.

No. 9: Liquidity Aggregates

(₹ Crore)

Aggregates	2022-23	2022	2023		
		Oct.	Aug.	Sep.	Oct.
	1	2	3	4	5
1 NM₃	22628165	21712620	23962818	24017844	24247853
2 Postal Deposits	668887	639185	656356	656356	656356
3 L₁ (1 + 2)	23297052	22351805	24619174	24674200	24904209
4 Liabilities of Financial Institutions	54724	58446	71557	65846	67084
4.1 Term Money Borrowings	1692	1518	1137	1152	1148
4.2 Certificates of Deposit	46407	49270	60285	53260	53260
4.3 Term Deposits	6625	7657	10136	11435	12676
5 L₂ (3 + 4)	23351776	22410250	24690731	24740046	24971293
6 Public Deposits with Non-Banking Financial Companies	85254	91373	..
7 L₃ (5 + 6)	23437030	22410250	24690731	24740046	24971293

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

2. Figures in parentheses include the impact of merger of a non-bank with a bank.

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		
		Oct. 21	Sep. 22	Oct. 6	Oct. 20
	1	2	3	4	5
1 Components					
1.1 Currency in Circulation	3378521	3218315	3301863	3293971	3304061
1.2 Bankers' Deposits with the RBI	930477	850449	1021317	1022569	978509
1.2.1 Scheduled Commercial Banks	868940	793425	959345	960612	917856
1.3 'Other' Deposits with the RBI	77761	70001	72741	73449	72940
Reserve Money (1.1 + 1.2 + 1.3 = 2.1 + 2.2 + 2.3 - 2.4 - 2.5)	4386759	4138765	4395920	4389988	4355510
2 Sources					
2.1 RBI's Domestic Credit	1356683	1174230	1136994	1123459	1110609
2.1.1 Net RBI credit to the Government	1451126	1091548	1010573	1116642	1018574
2.1.1.1 Net RBI credit to the Central Government (2.1.1.1 + 2.1.1.2 + 2.1.1.3 + 2.1.1.4 - 2.1.1.5)	1450376	1086498	997136	1092382	998389
2.1.1.1.1 Loans and Advances to the Central Government	48677	-	-	-	-
2.1.1.1.2 Investments in Treasury Bills	-	-	-	-	-
2.1.1.1.3 Investments in dated Government Securities	1406423	1405888	1392638	1378694	1372232
2.1.1.1.3.1 Central Government Securities	1406423	1405888	1392638	1378694	1372232
2.1.1.1.4 Rupee Coins	277	252	338	264	357
2.1.1.1.5 Deposits of the Central Government	5001	319642	395840	286576	374200
2.1.1.2 Net RBI credit to State Governments	749	5049	13437	24260	20185
2.1.2 RBI's Claims on Banks	-120992	59174	121303	1605	86791
2.1.2.1 Loans and Advances to Scheduled Commercial Banks	-120992	63728	121303	1605	86791
2.1.3 RBI's Credit to Commercial Sector	26549	23508	5118	5213	5245
2.1.3.1 Loans and Advances to Primary Dealers	8476	1022	3054	3149	3181
2.1.3.2 Loans and Advances to NABARD	-	4554	-	-	-
2.2 Government's Currency Liabilities to the Public	30285	29003	31400	31649	31649
2.3 Net Foreign Exchange Assets of the RBI	4587355	4179125	4735054	4704100	4686133
2.3.1 Gold	371500	307638	367410	352200	377545
2.3.2 Foreign Currency Assets	4215873	3871505	4367662	4351917	4308605
2.4 Capital Account	1505657	1412059	1622166	1593570	1599557
2.5 Other Items (net)	81908	-168465	-114638	-124350	-127076

No. 11: Reserve Money - Components and Sources

(₹ Crore)

Item	2022-23	Outstanding as on March 31/last Fridays of the month/Fridays					
		2022		2023			
		Oct. 28		Sep. 29	Oct. 6	Oct. 13	Oct. 20
		1	2	3	4	5	6
Reserve Money (1.1 + 1.2 + 1.3 = 2.1 + 2.2 + 2.3 + 2.4 + 2.5 - 2.6)	4386759	4118874	4395307	4389988	4361653	4355510	4345605
1 Components							
1.1 Currency in Circulation	3378521	3210947	3289165	3293971	3301582	3304061	3303821
1.2 Bankers' Deposits with RBI	930477	837571	1032373	1022569	986990	978509	967229
1.3 'Other' Deposits with RBI	77761	70356	73769	73449	73081	72940	74556
2 Sources							
2.1 Net Reserve Bank Credit to Government	1451126	1107220	1023924	1116642	1074456	1018574	966714
2.2 Reserve Bank Credit to Banks	-120992	54210	104528	1605	25904	86791	98814
2.3 Reserve Bank Credit to Commercial Sector	26549	19629	5080	5213	4557	5245	5244
2.4 Net Foreign Exchange Assets of RBI	4587355	4221465	4719356	4704100	4714848	4686133	4734666
2.5 Government's Currency Liabilities to the Public	30285	29212	31649	31649	31649	31649	31939
2.6 Net Non-Monetary Liabilities of RBI	1587565	1312863	1489230	1469220	1489760	1472881	1491772

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		
		Oct. 21	Sep. 22	Oct. 6	Oct. 20
	1	2	3	4	5
1 Components					
1.1 Aggregate Deposits of Residents	17882989	17066693	18954584	19280191	19194041
1.1.1 Demand Deposits			(19096581)	(19419303)	(19328236)
1.1.2 Time Deposits of Residents	2180431	2025649	2204591	2296668	2251866
1.1.2.1 Short-term Time Deposits	15702559	15041044	16749993	16983523	16942176
1.1.2.1.1 Certificates of Deposits (CDs)			(16891990)	(17122635)	(17076371)
1.1.2.2 Long-term Time Deposits	7066151	6768470	7537497	7642585	7623979
1.2 Call/Term Funding from Financial Institutions	8636407	8272574	9212496	9340938	9318197
2 Sources	445329	548081	839627	842183	829649
2.1 Domestic Credit	20197246	19021613	21519171	21812636	21899143
2.1.1 Credit to the Government			(22224577)	(22512717)	(22596830)
2.1.2 Credit to the Commercial Sector	5414322	5050880	5867696	5949950	5950559
2.1.2.1 Bank Credit	14782924	13970732	15651476	15862686	15948585
2.1.2.1.1 Non-food Credit	13675235	12883404	14558874	14751031	14852664
2.1.2.2 Net Credit to Primary Dealers			(16243916)	(16451604)	(16535015)
2.1.2.3 Investments in Other Approved Securities	13655330	12857749	14540009	14731752	14832823
2.1.2.4 Other Investments (in non-SLR Securities)			(15151314)	(15339949)	(15439094)
2.2 Net Foreign Currency Assets of Commercial Banks (2.2.1-2.2.2-2.2.3)	19491	20397	15674	15613	14953
2.2.1 Foreign Currency Assets	826	879	696	696	696
2.2.2 Non-resident Foreign Currency Repatriable Fixed Deposits	1087371	1066053	1076232	1095346	1080272
2.2.3 Overseas Foreign Currency Borrowings	112467	189668	24056	24397	9214
2.3 Net Bank Reserves (2.3.1+2.3.2-2.3.3)	351387	397181	321548	323098	307346
2.3.1 Balances with the RBI	160924	137411	184084	184629	184860
2.3.2 Cash in Hand	77996	70102	113408	114072	113272
2.3.3 Loans and Advances from the RBI	833002	846870	932184	1053092	921868
2.4 Capital Account	809907	793425	959345	960612	917856
2.5 Other items (net) (2.1+2.2+2.3-2.4-1.1-1.2)	90263	117173	94141	94084	90802
2.5.1 Other Demand and Time Liabilities (net of 2.2.3)	67168	63728	121303	1605	86791
2.5.2 Net Inter-Bank Liabilities (other than to PDS)	1916959	1899698	2238432	2243904	2249532
	897438	543679	442768	523847	557002
	711655	641670	763831	811171	787586
	44733	18150	175607	166619	171575

Note: Figures in parentheses include the impact of merger of a non-bank with a bank.

No. 13: Scheduled Commercial Banks' Investments

(₹ Crore)

Item	As on March 24, 2023	2022		2023		
		Oct. 21	Sep. 22	Oct. 06	Oct. 20	
				1	2	3
1 SLR Securities	5415148	5051759	5981357	6061809	6062511	
			(5868392)	(5950646)	(5951255)	
2 Other Government Securities (Non-SLR)	182265	172180	180020	179316	179196	
3 Commercial Paper	65058	64867	57960	55052	52711	
4 Shares issued by						
4.1 PSUs	9736	9833	8972	9144	9114	
4.2 Private Corporate Sector	71099	70864	83603	83143	83022	
4.3 Others	4500	5006	5399	5515	5491	
5 Bonds/Debentures issued by						
5.1 PSUs	92304	99795	91056	93043	92259	
5.2 Private Corporate Sector	325035	318587	287065	294406	292865	
5.3 Others	99384	92880	108132	131966	107791	
6 Instruments issued by						
6.1 Mutual funds	48810	49896	70679	61777	74225	
6.2 Financial institutions	189180	182144	183184	181984	183598	

Note: 1. Data since July 14, 2023 include the impact of the merger of a non-bank with a bank.

2. Figures in parentheses exclude the impact of the merger.

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	Oct.	Oct.
		Oct.	Sep.		Oct.	Oct.		
	1	2	3	4	5	6	7	8
Number of Reporting Banks	212	213	211	210	137	137	137	137
1 Liabilities to the Banking System	355252	297165	529155	513466	351843	293726	526671	508338
1.1 Demand and Time Deposits from Banks	228517	193184	255220	235646	226119	190380	252857	232079
1.2 Borrowings from Banks	67566	49654	202599	204553	67199	49559	202552	203787
1.3 Other Demand and Time Liabilities	59170	54327	71336	73267	58524	53787	71263	72472
2 Liabilities to Others	19730504	18930596	21883000	21721259	19278894	18489534	21423326	21267482
2.1 Aggregate Deposits	18477677	17700386	20141430	19992363	18043914	17276486	19701045	19560877
(20000678)	(19859151)						(19560294)	(19427665)
2.1.1 Demand	2225416	2168718	2455794	2338975	2180431	2122134	2408810	2293187
2.1.2 Time	16252261	15531668	17685635	17653387	15863483	15154352	17292236	17267690
2.2 Borrowings	449945	531081	795714	848559	445329	526165	791542	837714
2.3 Other Demand and Time Liabilities	802881	699129	945857	880338	789651	686882	930738	868891
3 Borrowings from Reserve Bank	165085	115906	170292	160738	165085	115871	170292	160738
3.1 Against Usance Bills /Promissory Notes	-	-	-	-	-	-	-	-
3.2 Others	165085	115906	170292	160738	165085	115871	170292	160738
4 Cash in Hand and Balances with Reserve Bank	920953	917764	1087103	1024876	900170	895631	1064207	1003049
4.1 Cash in Hand	92788	117154	97221	98698	90263	113818	94972	96056
4.2 Balances with Reserve Bank	828165	800610	989882	926178	809907	781814	969235	906993
5 Assets with the Banking System	397974	363559	437813	407999	326601	301785	375498	353220
5.1 Balances with Other Banks	232378	223969	236386	221925	193422	182243	194010	182491
5.1.1 In Current Account	18939	21248	18115	11360	15528	18279	14642	8952
5.1.2 In Other Accounts	213440	202721	218271	210565	177894	163964	179368	173540
5.2 Money at Call and Short Notice	49763	35719	51640	38380	24864	19512	35254	26277
5.3 Advances to Banks	45330	42548	51774	52436	41184	42123	51014	51793
5.4 Other Assets	70503	61323	98013	95259	67130	57906	95220	92659
6 Investment	5560664	5214515	6177145	6173363	5415148	5065922	6028859	6024145
6.1 Government Securities	5553702	5207703	6170331	6167015	5414322	5065093	6028163	6023428
6.2 Other Approved Securities	6963	6812	6814	6348	826	829	696	717
7 Bank Credit	14078261	13247172	15717431	15890807	13675235	12864695	15323660	15488344
7a Food Credit	65622	77717	59884	69256	19906	31998	18687	20829
7.1 Loans, Cash-credits and Overdrafts	13824693	13006889	15444677	15619677	13424906	12627183	15053691	15220100
7.2 Inland Bills-Purchased	39446	36939	47381	46713	39435	36921	47367	46701
7.3 Inland Bills-Discounted	165428	156910	183687	184831	162910	154838	181569	182597
7.4 Foreign Bills-Purchased	19758	17504	17124	16327	19545	17358	16896	16096
7.5 Foreign Bills-Discounted	28936	28930	24562	23259	28439	28396	24136	22849

Note: 1. Data since July 2023 include the impact of the merger of a non-bank with a bank.

2. Figures in parentheses exclude the impact of the merger.

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

(₹ Crore)

Sector	Outstanding as on				Growth(%)	
	Mar. 24, 2023	2023		Financial year so far	Y-o-Y	
		2022	Oct. 21	Sep. 22	Oct. 20	2023-24
		1	2	3	4	%
I. Bank Credit (II + III)	13675235	12883404	15151319	15425809	12.8	19.7
			(14558878)	(14839378)	(8.5)	(15.2)
II. Food Credit	19906	25655	18865	19841	-0.3	-22.7
III. Non-food Credit	13655330	12857749	15132454	15405968	12.8	19.8
			(14540013)	(14819537)	(8.5)	(15.3)
1. Agriculture & Allied Activities	1728063	1628525	1865244	1913176	10.7	17.5
2. Industry (Micro and Small, Medium and Large)	3416353	3372621	3559935	3572336	4.6	5.9
2.1 Micro and Small	633587	584734	664167	683272	7.8	16.9
2.2 Medium	268557	250439	277515	280782	4.6	12.1
2.3 Large	2514209	2537447	2618254	2608282	3.7	2.8
3. Services	3699716	3406075	4133627	4210925	13.8	23.6
			(4011029)	(4090350)	(10.6)	(20.1)
3.1 Transport Operators	192323	175472	210382	215248	11.9	22.7
3.2 Computer Software	24927	25300	25043	25496	2.3	0.8
3.3 Tourism, Hotels & Restaurants	69462	68396	76584	76413	10.0	11.7
3.4 Shipping	7074	7452	6647	6628	-6.3	-11.1
3.5 Aviation	28348	24062	39905	40129	41.6	66.8
3.6 Professional Services	139584	128894	153124	154091	10.4	19.5
3.7 Trade	853417	778326	903177	925451	8.4	18.9
3.7.1. Wholesale Trade ¹	422630	394044	447794	464535	9.9	17.9
3.7.2 Retail Trade	430788	384282	455382	460916	7.0	19.9
3.8 Commercial Real Estate	322573	312720	421008	424139	31.5	35.6
			(352419)	(356561)	(10.5)	(14.0)
3.9 Non-Banking Financial Companies (NBFCs) ² of which,	1342070	1209214	1428666	1476249	10.0	22.1
3.9.1 Housing Finance Companies (HFCs)	318729	315806	308711	322128	1.1	2.0
3.9.2 Public Financial Institutions (PFIs)	175714	158683	193196	190547	8.4	20.1
3.10 Other Services ³	719936	676240	869091	867081	20.4	28.2
			(830213)	(828940)	(15.1)	(22.6)
4. Personal Loans	4180838	3855873	4930890	4999349	19.6	29.7
			(4479273)	(4551584)	(8.9)	(18.0)
4.1 Consumer Durables	20983	20624	21909	22205	5.8	7.7
4.2 Housing	1988532	1873413	2529933	2564666	29.0	36.9
			(2106253)	(2144376)	(7.8)	(14.5)
4.3 Advances against Fixed Deposits	122116	97857	113830	113973	-6.7	16.5
4.4 Advances to Individuals against share & bonds	7634	8273	7814	7872	3.1	-4.9
4.5 Credit Card Outstanding	204708	188033	230280	240656	17.6	28.0
4.6 Education	96853	91790	109748	110715	14.3	20.6
4.7 Vehicle Loans	502377	460871	544614	553154	10.1	20.0
4.8 Loan against gold jewellery	89382	85288	98767	100004	11.9	17.3
4.9 Other Personal Loans	1148253	1029723	1273996	1286104	12.0	24.9
			(1246637)	(1259170)	(9.7)	(22.3)
5. Priority Sector (Memo)						
(i) Agriculture & Allied Activities ⁴	1746051	1658301	1884158	1938117	11.0	16.9
(ii) Micro & Small Enterprises ⁵	1645484	1492050	1823776	1853628	12.6	24.2
(iii) Medium Enterprises ⁶	423888	393424	449646	461620	8.9	17.3
(iv) Housing	622799	633096	737177	742535	19.2	17.3
			(636534)	(642678)	(3.2)	(1.5)
(v) Education Loans	59513	59421	61144	61543	3.4	3.6
(vi) Renewable Energy	4670	4207	4870	4810	3.0	14.3
(vii) Social Infrastructure	2464	2402	2584	2610	6.0	8.7
(viii) Export Credit	15477	17308	8930	8016	-48.2	-53.7
(ix) Others	60835	50343	51048	59553	-2.1	18.3
(x) Weaker Sections including net PSLC- SF/MF	1411633	1330773	1498137	1554764	10.1	16.8

Notes:

(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 95 per cent of total non-food credit extended by all SCBs, pertaining to the last reporting Friday of the month.

(2) Data since July 28, 2023 include the impact of the merger of a non-bank with a bank. Figures in parentheses exclude the impact of the merger.

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 Fund (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
		Oct. 21	Sep. 22	Oct. 20	2023-24	2023
	1	2	3	4	%	%
2 Industries (2.1 to 2.19)	3416353	3372621	3559935 (3541778)	3572336 (3554596)	4.6 (4.0)	5.9 (5.4)
2.1 Mining & Quarrying (incl. Coal)	60978	54027	54163	54958	-9.9	1.7
2.2 Food Processing	185709	160486	176418	177320	-4.5	10.5
2.2.1 Sugar	22934	17922	16593	15035	-34.4	-16.1
2.2.2 Edible Oils & Vanaspati	19850	15793	18119	19090	-3.8	20.9
2.2.3 Tea	5219	6198	5816	6122	17.3	-1.2
2.2.4 Others	137706	120574	135889	137073	-0.5	13.7
2.3 Beverage & Tobacco	23975	19893	26309	26489	10.5	33.2
2.4 Textiles	236374	221531	249566	249192	5.4	12.5
2.4.1 Cotton Textiles	93054	83817	97034	97032	4.3	15.8
2.4.2 Jute Textiles	4044	3825	4154	4430	9.5	15.8
2.4.3 Man-Made Textiles	40909	39646	43383	44473	8.7	12.2
2.4.4 Other Textiles	98366	94243	104994	103258	5.0	9.6
2.5 Leather & Leather Products	12086	11984	12323	12386	2.5	3.4
2.6 Wood & Wood Products	21370	18918	22986	22767	6.5	20.3
2.7 Paper & Paper Products	45223	44039	45897	46375	2.5	5.3
2.8 Petroleum, Coal Products & Nuclear Fuels	149962	158529	138259	122055	-18.6	-23.0
2.9 Chemicals & Chemical Products	225174	231314	230965	232379	3.2	0.5
2.9.1 Fertiliser	34680	37980	30772	30666	-11.6	-19.3
2.9.2 Drugs & Pharmaceuticals	71058	70541	76794	77925	9.7	10.5
2.9.3 Petro Chemicals	20844	22138	21846	19531	-6.3	-11.8
2.9.4 Others	98592	100655	101553	104256	5.7	3.6
2.10 Rubber, Plastic & their Products	84522	82176	86654	87032	3.0	5.9
2.11 Glass & Glassware	9583	7974	10863	11022	15.0	38.2
2.12 Cement & Cement Products	58244	53601	61354	61683	5.9	15.1
2.13 Basic Metal & Metal Product	352218	319410	373525	373289	6.0	16.9
2.13.1 Iron & Steel	235399	216789	252184	253805	7.8	17.1
2.13.2 Other Metal & Metal Product	116819	102621	121341	119484	2.3	16.4
2.14 All Engineering	182500	179249	193347	196101	7.5	9.4
2.14.1 Electronics	43563	42270	46746	46835	7.5	10.8
2.14.2 Others	138938	136979	146601	149266	7.4	9.0
2.15 Vehicles, Vehicle Parts & Transport Equipment	103029	101963	112251	111540	8.3	9.4
2.16 Gems & Jewellery	81201	82376	95429	98292	21.0	19.3
2.17 Construction	127186	123074	129980	132648	4.3	7.8
2.18 Infrastructure	1212238	1255026	1263185	1267134	4.5	1.0
2.18.1 Power	623918	638358	623559	622002	-0.3	-2.6
2.18.2 Telecommunications	111600	131793	138461	141356	26.7	7.3
2.18.3 Roads	288216	281899	306439	306776	6.4	8.8
2.18.4 Airports	9579	9060	8029	7957	-16.9	-12.2
2.18.5 Ports	8197	8379	7953	7558	-7.8	-9.8
2.18.6 Railways	11255	11936	12747	12782	13.6	7.1
2.18.7 Other Infrastructure	159472	173602	165997	168702	5.8	-2.8
2.19 Other Industries	244781	247050	276463	289674	18.3	17.3

Note: Data since July 28, 2023 include the impact of the merger of a non-bank with a bank. Figures in parentheses exclude the impact of the merger.

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								
	2022-23	2022		2023					
		Sep. 30	Jul. 14	Jul. 28	Aug. 11	Aug. 25	Sep. 08	Sep. 22	Sep. 29
	1	2	3	4	5	6	7	8	9
Number of Reporting Banks	33	32	33	33	33	33	33	33	33
1 Aggregate Deposits (2.1.1.2+2.2.1.2)	144701.9	124590.8	138672.4	139476.4	139987.6	139938.2	139735.9	140020.2	139499.8
2 Demand and Time Liabilities									
2.1 Demand Liabilities	30241.2	24874.3	27362.1	28096.2	27425.8	26773.3	27707.4	27511.8	30578.4
2.1.1 Deposits									
2.1.1.1 Inter-Bank	6893.3	6051.1	6805.3	7260.0	6554.5	6615.2	6920.0	6776.7	7067.1
2.1.1.2 Others	18195.4	12836.4	14892.5	15206.0	15006.2	14594.4	14691.9	14761.8	16389.1
2.1.2 Borrowings from Banks	0.0	699.7							
2.1.3 Other Demand Liabilities	5152.4	5287.2	5664.3	5630.2	5865.1	5563.7	6095.5	5973.3	7122.2
2.2 Time Liabilities	194129.9	172837.7	181858.7	184270.2	182247.5	182044.5	181294.8	180651.5	179527.1
2.2.1 Deposits									
2.2.1.1 Inter-Bank	65875.0	56993.6	56166.7	56504.5	54804.5	53971.0	52770.3	52902.3	53493.1
2.2.1.2 Others	126506.5	111754.4	123779.9	124270.4	124981.4	125343.8	125044.0	125258.4	123110.7
2.2.2 Borrowings from Banks	845.8	1580.1	839.5	2399.5	1361.5	1584.5	2337.5	1315.5	1364.0
2.2.3 Other Time Liabilities	902.6	2509.7	1072.6	1095.8	1100.1	1145.2	1143.0	1175.3	1559.3
3 Borrowing from Reserve Bank	0.0	35.0							
4 Borrowings from a notified bank / Government	84382.5	70718.0	73111.5	69968.4	69348.8	68594.1	67150.0	69571.9	71616.1
4.1 Demand	20545.9	13633.4	19968.3	17964.1	15500.3	18516.2	18454.2	18402.6	18837.6
4.2 Time	63836.7	57084.6	53143.2	52004.3	53848.5	50077.9	48695.8	51169.3	52778.5
5 Cash in Hand and Balances with Reserve Bank	12386.8	10969.0	12172.0	11770.2	11835.6	11838.9	11915.6	11621.1	12007.1
5.1 Cash in Hand	1540.1	821.6	1033.6	766.7	726.8	664.1	790.5	728.2	709.5
5.2 Balance with Reserve Bank	10846.7	10147.4	11138.4	11003.5	11108.8	11174.8	11125.1	10892.9	11297.6
6 Balances with Other Banks in Current Account	3500.7	1520.6	2636.0	1704.7	1466.8	1475.4	1753.8	1727.7	2034.4
7 Investments in Government Securities	80906.4	72520.1	71605.8	72244.8	71733.8	71649.5	72671.3	71795.8	72473.9
8 Money at Call and Short Notice	34771.6	18267.2	19794.3	20748.8	21134.7	21285.0	29774.6	23652.0	22621.2
9 Bank Credit (10.1+11)	124978.1	121551.1	128149.5	127405.4	127603.3	125245.6	123133.3	119974.3	119241.1
10 Advances									
10.1 Loans, Cash-Credits and Overdrafts	124928.2	121528.1	128072.2	127329.1	127514.9	125169.9	123053.4	119921.6	119187.8
10.2 Due from Banks	131095.9	115486.6	120095.2	119210.1	118054.9	116627.8	116831.8	109260.6	119129.5
11 Bills Purchased and Discounted	49.9	23.1	77.3	76.3	88.4	75.7	79.9	52.7	53.3

Prices and Production

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

Group/Sub group	2022-23			Rural			Urban			Combined		
	Rural	Urban	Combined	Nov.22	Oct.23	Nov.23 (P)	Nov.22	Oct.23	Nov.23 (P)	Nov.22	Oct.23	Nov.23 (P)
	1	2	3	4	5	6	7	8	9	10	11	12
1 Food and beverages	173.9	179.7	176.0	176.6	188.5	190.2	181.3	194.9	196.7	178.3	190.9	192.6
1.1 Cereals and products	163.3	165.3	164.0	166.9	183.0	184.8	168.4	182.7	184.2	167.4	182.9	184.6
1.2 Meat and fish	208.7	215.2	211.0	207.2	215.1	210.9	213.4	222.9	219.5	209.4	217.8	213.9
1.3 Egg	174.7	177.1	175.6	180.2	185.2	190.4	183.2	189.3	194.7	181.4	186.8	192.1
1.4 Milk and products	170.1	170.7	170.3	172.3	181.8	182.2	172.3	182.2	182.3	172.3	181.9	182.2
1.5 Oils and fats	197.0	181.1	191.2	194.0	163.1	162.7	180.0	157.0	156.7	188.9	160.9	160.5
1.6 Fruits	164.1	169.6	166.7	159.1	174.9	174.6	162.6	183.8	182.6	160.7	179.1	178.3
1.7 Vegetables	160.8	198.7	173.6	171.6	190.5	199.9	205.5	234.1	245.9	183.1	205.3	215.5
1.8 Pulses and products	168.1	168.2	168.2	170.2	199.8	202.9	171.0	205.7	209.2	170.5	201.8	205.0
1.9 Sugar and confectionery	119.9	122.2	120.7	121.5	128.1	129.7	123.4	129.7	131.0	122.1	128.6	130.1
1.10 Spices	199.4	193.5	197.5	204.8	248.7	249.8	198.8	238.6	239.8	202.8	245.3	246.5
1.11 Non-alcoholic beverages	175.4	161.3	169.6	176.4	181.1	181.8	162.1	168.6	169.0	170.4	175.9	176.5
1.12 Prepared meals, snacks, sweets	185.1	190.4	187.6	186.9	193.5	193.7	192.4	201.4	201.9	189.5	197.2	197.5
2 Pan, tobacco and intoxicants	195.0	199.9	196.3	195.5	202.5	202.9	200.6	207.8	208.4	196.9	203.9	204.4
3 Clothing and footwear	184.5	172.9	179.9	186.9	193.2	193.7	174.7	182.1	182.4	182.1	188.8	189.2
3.1 Clothing	184.8	175.0	180.9	187.2	193.8	194.4	176.7	184.2	184.5	183.1	190.0	190.5
3.2 Footwear	182.7	161.4	173.9	185.2	189.5	189.8	163.5	170.6	171.0	176.2	181.6	182.0
4 Housing	--	170.0	170.0	--	--	--	171.8	177.7	177.9	171.8	177.7	177.9
5 Fuel and light	179.7	178.4	179.2	181.9	182.3	182.4	180.3	175.7	175.8	181.3	179.8	179.9
6 Miscellaneous	173.8	166.5	170.3	174.6	181.9	182.5	167.4	174.0	174.4	171.1	178.1	178.6
6.1 Household goods and services	173.7	165.1	169.6	175.5	181.7	182.1	166.9	171.9	172.3	171.4	177.1	177.5
6.2 Health	181.3	174.6	178.7	182.3	191.4	191.9	175.8	185.5	186.2	179.8	189.2	189.7
6.3 Transport and communication	167.3	158.8	162.8	167.5	171.4	171.7	158.9	161.4	161.6	163.0	166.1	166.4
6.4 Recreation and amusement	170.0	165.8	167.6	170.8	176.3	176.4	166.7	171.7	171.8	168.5	173.7	173.8
6.5 Education	175.6	169.7	172.2	176.9	184.8	185.1	171.5	180.4	180.5	173.7	182.2	182.4
6.6 Personal care and effects	173.2	173.4	173.3	173.4	185.2	186.7	173.8	186.2	188.0	173.6	185.6	187.2
General Index (All Groups)	175.8	173.5	174.7	177.8	187.0	188.2	175.0	183.4	184.2	176.5	185.3	186.3

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	
			Oct.	Sep.	Oct.	Sep.	Oct.	Sep.
			1	2	3	4	5	6
1 Consumer Price Index for Industrial Workers	2016	2.88	131.1	132.5	137.5	138.4		
2 Consumer Price Index for Agricultural Labourers	1986-87	5.89	1148	1159	1226	1241		
3 Consumer Price Index for Rural Labourers	1986-87	-	1160	1170	1237	1251		

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	
		Oct.	Sep.	Oct.	Sep.
		1	2	3	4
1 Standard Gold (₹ per 10 grams)		52731	50506	58743	58773
2 Silver (₹ per kilogram)		61991	57505	71852	70084

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	
			Nov.	Sep.	Oct.(P)	Nov.(P)
	1	2	3	4	5	6
1 ALL COMMODITIES	100.000	152.5	152.5	151.8	152.1	152.9
1.1 PRIMARY ARTICLES	22.618	176.8	178.4	183.6	184.5	186.9
1.1.1 FOOD ARTICLES	15.256	179.5	181.0	189.1	190.8	195.8
1.1.1.1 Food Grains (Cereals+Pulses)	3.462	178.6	181.9	194.2	197.1	199.6
1.1.1.2 Fruits & Vegetables	3.475	200.6	205.4	198.5	204.1	225.2
1.1.1.3 Milk	4.440	167.8	167.3	180.0	179.9	180.6
1.1.1.4 Eggs, Meat & Fish	2.402	170.6	166.8	174.2	172.3	169.2
1.1.1.5 Condiments & Spices	0.529	187.2	192.9	254.0	250.7	246.0
1.1.1.6 Other Food Articles	0.948	178.1	182.5	180.7	183.6	185.4
1.1.2 NON-FOOD ARTICLES	4.119	172.1	168.8	164.6	163.8	163.4
1.1.2.1 Fibres	0.839	203.0	192.7	171.4	167.4	166.8
1.1.2.2 Oil Seeds	1.115	205.2	199.7	185.5	181.9	185.4
1.1.2.3 Other non-food Articles	1.960	131.2	132.8	137.9	137.9	134.8
1.1.2.4 Floriculture	0.204	257.4	247.6	277.6	298.8	304.7
1.1.3 MINERALS	0.833	203.5	198.5	220.9	220.8	219.9
1.1.3.1 Metallic Minerals	0.648	191.7	183.4	200.6	200.5	202.7
1.1.3.2 Other Minerals	0.185	245.2	251.5	292.1	292.0	279.8
1.1.4 CRUDE PETROLEUM & NATURAL GAS	2.410	158.4	171.2	168.0	167.0	159.0
1.2 FUEL & POWER	13.152	159.5	162.8	153.1	154.1	155.3
1.2.1 COAL	2.138	133.3	134.3	136.7	136.7	136.7
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	125.8	125.8	125.8
1.2.1.3 Lignite	0.090	271.1	294.3	258.1	258.1	258.1
1.2.2 MINERAL OILS	7.950	172.9	172.4	163.7	165.8	162.5
1.2.3 ELECTRICITY	3.064	143.3	157.9	137.0	136.0	149.5
1.3 MANUFACTURED PRODUCTS	64.231	142.6	141.3	140.4	140.3	140.4
1.3.1 MANUFACTURE OF FOOD PRODUCTS	9.122	165.3	164.6	160.4	161.0	161.9
1.3.1.1 Processing and Preserving of meat	0.134	143.7	140.4	143.6	143.9	144.5
1.3.1.2 Processing and Preserving of fish, Crustaceans, Molluscs and products thereof	0.204	144.9	140.8	143.4	144.2	146.5
1.3.1.3 Processing and Preserving of fruit and Vegetables	0.138	125.8	128.0	130.8	129.5	130.6
1.3.1.4 Vegetable and Animal oils and Fats	2.643	181.9	174.7	142.7	142.3	142.5
1.3.1.5 Dairy products	1.165	167.0	168.6	180.0	179.7	179.5
1.3.1.6 Grain mill products	2.010	162.1	166.1	176.6	178.2	179.7
1.3.1.7 Starches and Starch products	0.110	158.9	160.5	152.7	152.7	157.2
1.3.1.8 Bakery products	0.215	163.0	164.7	165.5	165.1	165.5
1.3.1.9 Sugar, Molasses & honey	1.163	126.8	128.1	134.5	136.6	140.0
1.3.1.10 Cocoa, Chocolate and Sugar confectionery	0.175	135.9	136.4	138.3	138.7	140.6
1.3.1.11 Macaroni, Noodles, Couscous and Similar farinaceous products	0.026	155.8	145.2	149.6	150.6	155.1
1.3.1.12 Tea & Coffee products	0.371	178.2	176.8	178.9	183.0	180.0
1.3.1.13 Processed condiments & salt	0.163	176.5	181.6	193.8	192.3	198.2
1.3.1.14 Processed ready to eat food	0.024	141.2	140.2	146.4	146.9	146.7
1.3.1.15 Health supplements	0.225	179.4	182.2	181.7	181.5	179.9
1.3.1.16 Prepared animal feeds	0.356	208.8	212.1	212.1	212.0	212.4
1.3.2 MANUFACTURE OF BEVERAGES	0.909	128.9	129.1	131.3	131.3	131.7
1.3.2.1 Wines & spirits	0.408	129.3	130.7	133.3	133.5	134.6
1.3.2.2 Malt liquors and Malt	0.225	134.5	133.9	135.2	135.0	135.5
1.3.2.3 Soft drinks; Production of mineral waters and Other bottled waters	0.275	123.7	122.7	125.2	125.0	124.4

No. 21: Wholesale Price Index (Contd.)

(Base: 2011-12 = 100)

Commodities	Weight	2022-23	2022		2023	
			Nov.	Sep.	Oct.(P)	Nov.(P)
	1	2	3	4	5	6
1.3.3 MANUFACTURE OF TOBACCO PRODUCTS	0.514	165.3	163.9	173.8	174.2	174.2
1.3.3.1 Tobacco products	0.514	165.3	163.9	173.8	174.2	174.2
1.3.4 MANUFACTURE OF TEXTILES	4.881	142.7	139.2	134.3	134.7	134.3
1.3.4.1 Preparation and Spinning of textile fibres	2.582	133.2	126.6	120.0	120.5	120.2
1.3.4.2 Weaving & Finishing of textiles	1.509	158.9	159.2	157.1	156.9	156.2
1.3.4.3 Knitted and Crocheted fabrics	0.193	129.9	129.9	119.1	119.6	118.2
1.3.4.4 Made-up textile articles, Except apparel	0.299	153.6	154.2	156.8	156.7	156.7
1.3.4.5 Cordage, Rope, Twine and Netting	0.098	156.8	151.7	139.2	137.9	136.9
1.3.4.6 Other textiles	0.201	132.2	130.4	125.2	131.0	131.2
1.3.5 MANUFACTURE OF WEARING APPAREL	0.814	148.7	150.0	150.6	151.6	151.6
1.3.5.1 Manufacture of Wearing Apparel (woven), Except fur Apparel	0.593	147.3	148.6	148.4	149.1	148.8
1.3.5.2 Knitted and Crocheted apparel	0.221	152.2	153.8	156.4	158.6	159.2
1.3.6 MANUFACTURE OF LEATHER AND RELATED PRODUCTS	0.535	122.2	122.4	123.9	124.3	123.5
1.3.6.1 Tanning and Dressing of leather; Dressing and Dyeing of fur	0.142	105.6	104.8	106.2	106.5	105.2
1.3.6.2 Luggage, Handbags, Saddlery and Harness	0.075	141.0	140.3	141.2	142.1	141.2
1.3.6.3 Footwear	0.318	125.2	126.0	127.7	128.0	127.5
1.3.7 MANUFACTURE OF WOOD AND PRODUCTS OF WOOD AND CORK	0.772	143.2	143.0	146.5	145.8	147.6
1.3.7.1 Saw milling and Planing of wood	0.124	137.6	136.9	138.7	139.1	137.5
1.3.7.2 Veneer sheets; Manufacture of plywood, Laminboard, Particle board and Other panels and Boards	0.493	141.8	141.3	146.3	145.1	147.9
1.3.7.3 Builder's carpentry and Joinery	0.036	204.0	206.6	203.2	201.7	203.3
1.3.7.4 Wooden containers	0.119	136.7	137.0	138.7	138.8	140.4
1.3.8 MANUFACTURE OF PAPER AND PAPER PRODUCTS	1.113	152.0	150.9	138.4	138.9	138.4
1.3.8.1 Pulp, Paper and Paperboard	0.493	158.4	158.5	145.7	146.2	145.4
1.3.8.2 Corrugated paper and Paperboard and Containers of paper and Paperboard	0.314	148.3	148.2	140.1	141.1	140.8
1.3.8.3 Other articles of paper and Paperboard	0.306	145.6	141.5	124.9	124.8	124.4
1.3.9 PRINTING AND REPRODUCTION OF RECORDED MEDIA	0.676	172.5	174.5	182.5	183.2	183.9
1.3.9.1 Printing	0.676	172.5	174.5	182.5	183.2	183.9
1.3.10 MANUFACTURE OF CHEMICALS AND CHEMICAL PRODUCTS	6.465	145.4	145.2	136.3	136.3	136.3
1.3.10.1 Basic chemicals	1.433	159.2	158.1	139.0	139.6	139.2
1.3.10.2 Fertilizers and Nitrogen compounds	1.485	144.8	147.9	140.6	141.2	142.9
1.3.10.3 Plastic and Synthetic rubber in primary form	1.001	143.2	137.3	132.8	131.6	129.9
1.3.10.4 Pesticides and Other agrochemical products	0.454	143.4	144.5	132.8	132.7	132.9
1.3.10.5 Paints, Varnishes and Similar coatings, Printing ink and Mastics	0.491	145.0	145.9	144.2	143.7	144.7
1.3.10.6 Soap and Detergents, Cleaning and Polishing preparations, Perfumes and Toilet preparations	0.612	140.8	142.8	140.0	140.0	139.6
1.3.10.7 Other chemical products	0.692	142.1	142.0	134.1	133.7	133.0
1.3.10.8 Man-made fibres	0.296	110.7	106.8	103.4	103.4	102.9
1.3.11 MANUFACTURE OF PHARMACEUTICALS, MEDICINAL CHEMICAL AND BOTANICAL PRODUCTS	1.993	140.9	141.5	142.7	143.0	142.5
1.3.11.1 Pharmaceuticals, Medicinal chemical and Botanical products	1.993	140.9	141.5	142.7	143.0	142.5
1.3.12 MANUFACTURE OF RUBBER AND PLASTICS PRODUCTS	2.299	129.7	128.1	128.0	127.5	127.0
1.3.12.1 Rubber Tyres and Tubes; Retreading and Rebuilding of Rubber Tyres	0.609	111.8	113.1	113.4	113.5	113.3
1.3.12.2 Other Rubber Products	0.272	106.4	105.9	106.8	106.7	107.2
1.3.12.3 Plastics products	1.418	141.8	138.8	138.2	137.5	136.6

No. 21: Wholesale Price Index (Contd.)
 (Base: 2011-12 = 100)

Commodities	Weight	2022-23	2022		2023	
			Nov.	Sep.	Oct.(P)	Nov.(P)
	1	2	3	4	5	6
1.3.13 MANUFACTURE OF OTHER NON-METALLIC MINERAL PRODUCTS	3.202	133.7	134.3	135.0	135.2	134.8
1.3.13.1 Glass and Glass products	0.295	158.1	159.9	163.5	163.6	163.2
1.3.13.2 Refractory products	0.223	119.0	119.2	119.6	120.0	119.5
1.3.13.3 Clay Building Materials	0.121	135.3	139.3	130.3	128.6	122.0
1.3.13.4 Other Porcelain and Ceramic Products	0.222	118.0	118.5	122.1	122.3	122.6
1.3.13.5 Cement, Lime and Plaster	1.645	137.2	137.3	137.4	138.2	137.9
1.3.13.6 Articles of Concrete, Cement and Plaster	0.292	134.4	134.9	138.2	137.4	137.6
1.3.13.7 Cutting, Shaping and Finishing of Stone	0.234	125.6	126.8	131.3	130.8	132.1
1.3.13.8 Other Non-Metallic Mineral Products	0.169	105.9	106.6	101.5	101.2	99.9
1.3.14 MANUFACTURE OF BASIC METALS	9.646	148.7	143.2	143.0	142.3	141.0
1.3.14.1 Inputs into steel making	1.411	159.7	151.9	145.7	143.8	140.6
1.3.14.2 Metallic Iron	0.653	165.9	157.6	156.0	153.4	151.9
1.3.14.3 Mild Steel - Semi Finished Steel	1.274	127.0	123.2	121.7	120.3	118.5
1.3.14.4 Mild Steel -Long Products	1.081	149.7	144.9	143.8	143.1	143.2
1.3.14.5 Mild Steel - Flat products	1.144	155.0	146.4	144.7	145.9	143.5
1.3.14.6 Alloy steel other than Stainless Steel- Shapes	0.067	146.9	143.5	140.1	139.1	138.9
1.3.14.7 Stainless Steel - Semi Finished	0.924	151.9	142.7	137.1	136.1	134.3
1.3.14.8 Pipes & tubes	0.205	175.4	173.6	169.5	170.2	170.5
1.3.14.9 Non-ferrous metals incl. precious metals	1.693	145.9	140.6	144.5	143.8	143.4
1.3.14.10 Castings	0.925	130.7	131.2	144.4	145.5	145.0
1.3.14.11 Forgings of steel	0.271	172.4	172.6	174.0	172.8	175.1
1.3.15 MANUFACTURE OF FABRICATED METAL PRODUCTS, EXCEPT MACHINERY AND EQUIPMENT	3.155	139.0	137.8	139.4	138.9	139.5
1.3.15.1 Structural Metal Products	1.031	132.7	132.1	134.5	133.0	133.2
1.3.15.2 Tanks, Reservoirs and Containers of Metal	0.660	161.1	156.8	157.1	157.1	157.8
1.3.15.3 Steam generators, Except Central Heating Hot Water Boilers	0.145	100.5	102.9	106.1	105.7	106.3
1.3.15.4 Forging, Pressing, Stamping and Roll-Forming of Metal; Powder Metallurgy	0.383	135.2	134.1	143.3	143.3	146.0
1.3.15.5 Cutlery, Hand Tools and General Hardware	0.208	112.2	113.3	108.4	108.4	109.2
1.3.15.6 Other Fabricated Metal Products	0.728	145.0	144.4	143.5	143.6	143.6
1.3.16 MANUFACTURE OF COMPUTER, ELECTRONIC AND OPTICAL PRODUCTS	2.009	116.6	116.5	119.8	119.8	119.8
1.3.16.1 Electronic Components	0.402	115.0	115.1	116.7	116.1	115.5
1.3.16.2 Computers and Peripheral Equipment	0.336	135.0	134.9	135.9	135.9	135.1
1.3.16.3 Communication Equipment	0.310	129.4	129.6	136.1	136.1	137.3
1.3.16.4 Consumer Electronics	0.641	99.7	98.6	103.5	104.0	104.4
1.3.16.5 Measuring, Testing, Navigating and Control equipment	0.181	112.8	113.5	114.0	114.1	114.3
1.3.16.6 Watches and Clocks	0.076	151.2	151.9	158.0	157.3	157.0
1.3.16.7 Irradiation, Electromedical and Electrotherapeutic equipment	0.055	108.9	112.3	109.6	109.6	107.1
1.3.16.8 Optical instruments and Photographic equipment	0.008	100.5	101.7	103.5	103.5	103.8
1.3.17 MANUFACTURE OF ELECTRICAL EQUIPMENT	2.930	128.8	128.9	131.3	131.9	131.2
1.3.17.1 Electric motors, Generators, Transformers and Electricity distribution and Control apparatus	1.298	126.3	126.7	129.9	131.7	130.3

No. 21: Wholesale Price Index (Concl.)
(Base: 2011-12 = 100)

Commodities	Weight	2022-23	2022		2023		
			Nov.	Sep.	Oct.(P)	Nov.(P)	
		1	2	3	4	5	6
1.3.17.2 Batteries and Accumulators	0.236	131.9	133.2	137.2	137.3	137.7	
1.3.17.3 Fibre optic cables for data transmission or live transmission of images	0.133	116.6	120.4	124.8	123.5	123.6	
1.3.17.4 Other electronic and Electric wires and Cables	0.428	146.3	142.9	146.8	145.6	145.1	
1.3.17.5 Wiring devices, Electric lighting & display equipment	0.263	117.2	118.0	116.2	116.3	116.2	
1.3.17.6 Domestic appliances	0.366	134.1	134.5	133.2	133.6	134.0	
1.3.17.7 Other electrical equipment	0.206	117.4	118.0	120.8	121.7	120.1	
1.3.18 MANUFACTURE OF MACHINERY AND EQUIPMENT	4.789	126.2	126.7	129.2	129.0	128.9	
1.3.18.1 Engines and Turbines, Except aircraft, Vehicle and Two wheeler engines	0.638	126.9	126.6	129.3	128.6	128.3	
1.3.18.2 Fluid power equipment	0.162	128.4	128.5	131.2	131.4	131.5	
1.3.18.3 Other pumps, Compressors, Taps and Valves	0.552	117.6	117.2	116.6	117.1	116.8	
1.3.18.4 Bearings, Gears, Gearing and Driving elements	0.340	124.2	123.9	127.1	125.7	126.7	
1.3.18.5 Ovens, Furnaces and Furnace burners	0.008	79.8	81.0	82.3	81.4	83.2	
1.3.18.6 Lifting and Handling equipment	0.285	126.3	126.3	128.2	128.5	128.3	
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	141.6	146.7	145.8	145.1	
1.3.18.9 Agricultural and Forestry machinery	0.833	137.2	139.0	142.2	142.1	143.1	
1.3.18.10 Metal-forming machinery and Machine tools	0.224	120.5	121.1	122.9	122.9	122.9	
1.3.18.11 Machinery for mining, Quarrying and Construction	0.371	84.9	86.7	89.6	89.9	88.8	
1.3.18.12 Machinery for food, Beverage and Tobacco processing	0.228	127.7	125.5	124.5	124.6	124.2	
1.3.18.13 Machinery for textile, Apparel and Leather production	0.192	130.0	133.4	139.3	139.0	137.6	
1.3.18.14 Other special-purpose machinery	0.468	140.6	142.1	144.5	144.5	144.7	
1.3.18.15 Renewable electricity generating equipment	0.046	69.2	70.1	71.0	71.1	70.9	
1.3.19 MANUFACTURE OF MOTOR VEHICLES, TRAILERS AND SEMI-TRAILERS	4.969	127.6	127.7	128.0	127.7	128.2	
1.3.19.1 Motor vehicles	2.600	126.0	125.9	128.2	128.4	129.4	
1.3.19.2 Parts and Accessories for motor vehicles	2.368	129.3	129.7	127.6	126.9	126.8	
1.3.20 MANUFACTURE OF OTHER TRANSPORT EQUIPMENT	1.648	137.4	137.5	144.6	143.9	143.8	
1.3.20.1 Building of ships and Floating structures	0.117	162.5	163.6	163.7	163.7	163.7	
1.3.20.2 Railway locomotives and Rolling stock	0.110	105.5	104.5	106.6	106.4	108.9	
1.3.20.3 Motor cycles	1.302	137.6	137.6	146.6	145.8	145.4	
1.3.20.4 Bicycles and Invalid carriages	0.117	139.8	140.2	138.1	138.6	138.5	
1.3.20.5 Other transport equipment	0.002	152.5	156.9	159.8	160.8	163.0	
1.3.21 MANUFACTURE OF FURNITURE	0.727	157.2	155.9	160.1	160.0	160.2	
1.3.21.1 Furniture	0.727	157.2	155.9	160.1	160.0	160.2	
1.3.22 OTHER MANUFACTURING	1.064	147.7	146.9	154.8	153.4	161.3	
1.3.22.1 Jewellery and Related articles	0.996	146.5	145.7	154.3	152.8	161.3	
1.3.22.2 Musical instruments	0.001	189.3	193.9	180.3	189.4	186.0	
1.3.22.3 Sports goods	0.012	150.5	152.0	155.9	155.2	155.2	
1.3.22.4 Games and Toys	0.005	159.0	159.3	159.9	160.2	159.7	
1.3.22.5 Medical and Dental instruments and Supplies	0.049	170.4	168.0	162.7	162.7	162.2	
2 FOOD INDEX	24.378	174.2	174.9	178.4	179.6	183.1	

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	April-October		October	
				2022-23	2023-24	2022	2023
	1	2	3	4	5	6	7
General Index	100.00	131.6	138.5	134.3	143.5	129.5	144.7
1 Sectoral Classification							
1.1 Mining	14.37	113.3	119.9	109.1	119.4	112.6	127.4
1.2 Manufacturing	77.63	131.0	137.1	133.2	141.7	128.5	141.8
1.3 Electricity	7.99	170.1	185.2	189.7	204.8	169.3	203.8
2 Use-Based Classification							
2.1 Primary Goods	34.05	128.0	139.2	134.9	144.4	131.2	146.1
2.2 Capital Goods	8.22	87.1	100.3	95.9	104.5	87.2	106.9
2.3 Intermediate Goods	17.22	142.8	149.4	147.5	155.0	143.8	157.8
2.4 Infrastructure/ Construction Goods	12.34	146.5	160.7	153.0	171.8	156.2	173.9
2.5 Consumer Durables	12.84	112.9	114.5	116.8	118.4	106.1	123.0
Consumer non-durables	15.33	146.6	147.7	138.3	148.1	130.3	141.5

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	Financial Year 2023-24 (Budget Estimates)	April – October			
		2023-24 (Actuals)	2022-23 (Actuals)	Percentage to Budget Estimates	
				2023-24	2022-23
	1	2	3	4	5
1 Revenue Receipts	2632281	1567722	1349882	59.6	61.2
1.1 Tax Revenue (Net)	2330631	1301957	1171103	55.9	60.5
1.2 Non-Tax Revenue	301650	265765	178779	88.1	66.3
2 Non Debt Capital Receipt	84000	22990	35692	27.4	45.0
2.1 Recovery of Loans	23000	14990	11102	65.2	77.7
2.2 Other Receipts	61000	8000	24590	13.1	37.8
3 Total Receipts (excluding borrowings) (1+2)	2716281	1590712	1385574	58.6	60.7
4 Revenue Expenditure of which :	3502136	1847488	1734697	52.8	54.3
4.1 Interest Payments	1079971	545086	481172	50.5	51.2
5 Capital Expenditure	1000961	546924	409014	54.6	54.5
6 Total Expenditure (4+5)	4503097	2394412	2143711	53.2	54.3
7 Revenue Deficit (4-1)	869855	279766	384815	32.2	38.9
8 Fiscal Deficit (6-3)	1786816	803700	758137	45.0	45.6
9 Gross Primary Deficit (8-4.1)	706845	258614	276965	36.6	38.4

Source: Controller General of Accounts (CGA), Ministry of Finance, Government of India and Union Budget 2023-24.

No. 24: Treasury Bills – Ownership Pattern

(₹ Crore)

Item	2022-23	2022		2023					
		Oct. 28	Sep. 22	Sep. 29	Oct. 6	Oct. 13	Oct. 20	Oct. 27	
		1	2	3	4	5	6	7	8
1 91-day									
1.1 Banks		6191	8958	20263	19820	16946	15729	12548	10711
1.2 Primary Dealers		20071	26472	21111	17017	14614	17724	18953	21650
1.3 State Governments		8038	30691	32677	31677	31701	31091	26917	20974
1.4 Others		80638	97131	104126	106663	108940	104047	103499	99139
2 182-day									
2.1 Banks		53154	70527	75823	75415	70322	70588	74432	78300
2.2 Primary Dealers		97274	62901	113123	108252	110512	108714	101890	91001
2.3 State Governments		2592	30974	24268	25418	15527	15527	15056	13556
2.4 Others		110072	92822	85754	83033	81866	79398	78378	81399
3 364-day									
3.1 Banks		101834	91828	86465	87844	85834	81843	82735	82167
3.2 Primary Dealers		146080	193611	173310	172707	179792	181190	181530	187124
3.3 State Governments		48284	41753	46234	48023	48307	48395	47782	48417
3.4 Others		149086	134562	149225	149448	147373	152967	154735	152709
4 14-day Intermediate									
4.1 Banks									
4.2 Primary Dealers									
4.3 State Governments		212758	153302	147651	133789	84979	106822	109284	126331
4.4 Others		926	2614	1315	783	752	368	331	831
Total Treasury Bills (Excluding 14 day Intermediate T Bills) #		823313	882230	932378	925317	911734	907213	898455	887147

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			
91-day Treasury Bills													
2023-24													
Sep. 27	10000	182	27820	1034	47	9966	1034	11000	98.32	6.8648			
Oct. 4	7000	172	18860	1558	52	6966	1558	8524	98.32	6.8640			
Oct. 11	7000	143	26623	42	73	6958	42	7000	98.31	6.8847			
Oct. 18	7000	160	26543	2858	46	6968	2858	9826	98.31	6.8930			
Oct. 25	7000	114	20771	20	50	6980	20	7000	98.30	6.9349			
182-day Treasury Bills													
2023-24													
Sep. 27	8000	180	23043	1190	87	7960	1190	9150	96.59	7.0778			
Oct. 4	8000	180	19901	449	90	7974	449	8424	96.58	7.0999			
Oct. 11	8000	206	20044	38	132	7962	38	8000	96.57	7.1279			
Oct. 18	8000	205	24591	1545	87	7955	1545	9500	96.56	7.1372			
Oct. 25	8000	173	31071	35	26	7965	35	8000	96.56	7.1374			
364-day Treasury Bills													
2023-24													
Sep. 27	6000	165	22875	2894	26	5982	2894	8877	93.40	7.0846			
Oct. 4	9000	213	21501	303	113	8981	303	9284	93.36	7.1306			
Oct. 11	9000	219	24927	113	117	8975	113	9088	93.35	7.1450			
Oct. 18	9000	182	29675	30	39	8976	30	9006	93.35	7.1400			
Oct. 25	9000	159	21704	687	78	8988	687	9674	93.34	7.1600			

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
October 03 ,2023	5.00-6.90	6.76
October 04 ,2023	5.00-6.85	6.73
October 05 ,2023	5.00-6.85	6.73
October 06 ,2023	5.00-6.85	6.71
October 07 ,2023	5.00-6.75	6.14
October 09 ,2023	5.00-6.85	6.71
October 10 ,2023	5.00-6.85	6.70
October 11 ,2023	5.00-6.85	6.71
October 12 ,2023	5.00-6.85	6.71
October 13 ,2023	5.00-6.90	6.73
October 16 ,2023	5.00-6.85	6.71
October 17 ,2023	5.00-6.85	6.72
October 18 ,2023	6.00-6.85	6.73
October 19 ,2023	5.00-6.85	6.70
October 20 ,2023	5.50-6.90	6.71
October 21 ,2023	5.50-6.50	6.17
October 23 ,2023	5.50-6.85	6.72
October 25 ,2023	5.50-6.90	6.75
October 26 ,2023	5.00-6.85	6.76
October 27 ,2023	5.00-6.95	6.76
October 30 ,2023	5.25-6.85	6.77
October 31 ,2023	5.50-6.85	6.77
November 01 ,2023	5.50-6.90	6.77
November 02 ,2023	5.00-6.85	6.71
November 03 ,2023	5.50-6.85	6.71
November 04 ,2023	5.50-6.25	6.11
November 06 ,2023	5.00-6.85	6.76
November 07 ,2023	5.00-6.85	6.76
November 08 ,2023	5.00-6.95	6.79
November 09 ,2023	5.00-6.90	6.77
November 10 ,2023	5.00-6.90	6.79
November 13 ,2023	5.00-6.90	6.78
November 15 ,2023	5.00-6.90	6.79

Note: Includes Notice Money.

No. 27: Certificates of Deposit

Item	2022		2023		
	Oct. 21	Sep. 8	Sep. 22	Oct. 6	Oct. 20
	1	2	3	4	5
1 Amount Outstanding (₹ Crore)	240840.76	297684.67	291829.65	290340.93	313142.07
1.1 Issued during the fortnight (₹ Crore)	41536.05	33248.85	31959.30	26786.27	35271.26
2 Rate of Interest (per cent)	6.33-7.40	6.85-7.67	6.88-7.70	6.83-7.47	6.95-7.70

No. 28: Commercial Paper

Item	2022		2023		
	Oct. 31	Sep. 15	Sep. 30	Oct. 15	Oct. 31
	1	2	3	4	5
1 Amount Outstanding (₹ Crore)	373332.25	432568.65	412234.35	418804.10	413685.30
1.1 Reported during the fortnight (₹ Crore)	39745.20	71469.15	49675.85	25039.05	50039.65
2 Rate of Interest (per cent)	6.40-13.72	6.84-12.50	6.89-11.36	6.91-16.41	7.00-11.89

No. 29: Average Daily Turnover in Select Financial Markets

(₹ Crore)

Item	2022-23	2022		2023				
		Oct. 28	Sep. 22	Sep. 29	Oct. 6	Oct. 13	Oct. 20	Oct. 27
		1	2	3	4	5	6	7
1 Call Money	19987	15386	13738	13325	14100	16738	17617	16651
2 Notice Money	2605	8931	726	4295	3903	445	3646	336
3 Term Money	612	1675	638	312	1073	594	390	935
4 Triparty Repo	697245	911559	567907	559348	597299	630005	723083	568927
5 Market Repo	504418	638020	485473	444818	430642	459003	604415	483808
6 Repo in Corporate Bond	2085	3253	1574	152	370	548	835	1096
7 Forex (US \$ million)	67793	97414	98929	106919	81779	75624	78484	84618
8 Govt. of India Dated Securities	66200	49563	106801	117087	35095	91370	53654	51094
9 State Govt. Securities	5450	7884	2709	8406	3833	2327	2984	2423
10 Treasury Bills								
10.1 91-Day	4380	1155	5665	6645	816	5618	2114	4968
10.2 182-Day	4480	3203	8519	6311	969	3228	1572	5373
10.3 364-Day	2900	1846	1995	2936	2319	3814	1998	1837
10.4 Cash Management Bills								
11 Total Govt. Securities (8+9+10)	83410	63652	125689	141385	43033	106357	62322	65694
11.1 RBI	660	4	2161	560	161	544	1222	713

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

(Amount in ₹ Crore)

Security & Type of Issue	2022-23		2022-23 (Apr.-Oct.)		2023-24 (Apr.-Oct.) *		Oct. 2022		Oct. 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	122	23545	181	36445	25	1419	34	5288
1A Premium	218	42408	111	22088	172	34120	25	1212	34	5058
1.1 Public	164	38515	89	21760	139	30058	20	1257	30	5158
1.1.1 Premium	161	37158	86	20885	139	28923	20	1112	30	4957
1.2 Rights	73	6751	33	1785	42	6388	5	162	4	130
1.2.1 Premium	57	5250	25	1203	33	5198	5	100	4	100
2 Preference Shares	-	-	-	-	-	-	-	-	-	-
2.1 Public	-	-	-	-	-	-	-	-	-	-
2.2 Rights	-	-	-	-	-	-	-	-	-	-
3 Bonds & Debentures	34	9221	20	4623	25	10654	4	920	5	2972
3.1 Convertible	-	-	-	-	-	-	-	-	-	-
3.1.1 Public	-	-	-	-	-	-	-	-	-	-
3.1.2 Rights	-	-	-	-	-	-	-	-	-	-
3.2 Non-Convertible	34	9221	20	4623	25	10654	4	920	5	2972
3.2.1 Public	34	9221	20	4623	25	10654	4	920	5	2972
3.2.2 Rights	-	-	-	-	-	-	-	-	-	-
4 Total (1+2+3)	271	54487	142	28168	206	47099	29	2338	39	8260
4.1 Public	198	47736	109	26383	164	40712	24	2176	35	8130
4.2 Rights	73	6751	33	1785	42	6388	5	162	4	130

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			
				Oct.	Jun.	Jul.	Aug.	Sep.	Oct.
		1	2	3	4	5	6	7	
1 Exports	₹ Crore	3621550	260209	282434	283501	318065	286218	279210	
	US \$ Million	451070	31602	34345	34509	38420	34464	33545	
1.1 Oil	₹ Crore	782303	51863	55567	55069	79730	53814	49990	
	US \$ Million	97468	6299	6757	6703	9631	6480	6006	
1.2 Non-oil	₹ Crore	2839247	208346	226867	228432	238335	232404	229221	
	US \$ Million	353602	25303	27588	27806	28790	27984	27539	
2 Imports	₹ Crore	5749801	476836	439666	435008	500204	447121	528139	
	US \$ Million	715969	57910	53465	52952	60422	53839	63451	
2.1 Oil	₹ Crore	1682475	134561	103074	96790	124099	116167	134431	
	US \$ Million	209418	16342	12534	11782	14990	13988	16151	
2.2 Non-oil	₹ Crore	4067326	342275	336592	338218	376105	330953	393709	
	US \$ Million	506551	41568	40931	41170	45431	39851	47301	
3 Trade Balance	₹ Crore	-2128251	-216626	-157232	-151507	-182139	-160902	-248929	
	US \$ Million	-264899	-26309	-19120	-18442	-22001	-19375	-29907	
3.1 Oil	₹ Crore	-900172	-82698	-47507	-41721	-44369	-62353	-84441	
	US \$ Million	-111950	-10043	-5777	-5078	-5360	-7508	-10145	
3.2 Non-oil	₹ Crore	-1228079	-133928	-109725	-109786	-137770	-98549	-164488	
	US \$ Million	-152949	-16265	-13343	-13364	-16642	-11867	-19762	

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

No. 32: Foreign Exchange Reserves

Item	Unit	2022		2023					
		Dec. 02	Oct. 20	Oct. 27	Nov. 03	Nov. 10	Nov. 17	Nov. 24	
		1	2	3	4	5	6	7	
1 Total Reserves	₹ Crore	4563182	4850051	4879087	4920453	4920560	4958161	4985457	
	US \$ Million	561162	583532	586111	590783	590321	595397	597935	
1.1 Foreign Currency Assets	₹ Crore	4041370	4282084	4307970	4346726	4351110	4383515	4406784	
	US \$ Million	496984	515202	517504	521896	522004	526391	528531	
1.2 Gold	₹ Crore	333606	377545	382289	384148	379388	383413	386360	
	US \$ Million	41025	45425	45923	46123	45515	46042	46338	
	Volume (Metric Tonnes)	786.28	803.58	803.58	803.58	803.58	803.58	803.58	
1.3 SDRs	SDRs Million	13662	13681	13681	13681	13681	13688	13688	
	₹ Crore	146740	148987	149095	149706	150127	150988	151898	
	US \$ Million	18045	17925	17910	17975	18011	18131	18218	
1.4 Reserve Tranche Position in IMF	₹ Crore	41466	41436	39733	39873	39935	40244	40415	
	US \$ Million	5108	4980	4773	4789	4791	4833	4848	

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

No. 33: Non-Resident Deposits

(US \$ Million)

Scheme	Outstanding				Flows	
	2022-23	2022		2023		2022-23
		Oct.	Sep.	Oct. (P)	Apr.-Oct.	Apr.-Oct.(P)
	1	2	3	4	5	6
1 NRI Deposits	138879	132661	143070	143481	3050	6112
1.1 FCNR(B)	19363	16104	21284	21427	-814	2064
1.2 NR(E)RA	95817	94758	96458	96566	1675	1950
1.3 NRO	23699	21798	25328	25487	2189	2099

P: Provisional.

No. 34: Foreign Investment Inflows

(US \$ Million)

Item	2022-23	2022-23	2023-24	2022	2023	
		Apr.-Oct.	Apr.-Oct.	Oct.	Sep.	Oct.
		1	2	3	4	5
1.1 Net Foreign Direct Investment (1.1.1-1.1.2)	27986	20769	10439	1168	1547	5904
1.1.1 Direct Investment to India (1.1.1.1-1.1.1.2)	42006	27536	17334	2177	2780	7269
1.1.1.1 Gross Inflows/Gross Investments	71355	44483	41498	5109	6210	8373
1.1.1.1.1 Equity	47600	30796	27660	3150	4215	6475
1.1.1.1.1.1 Government (SIA/FIPB)	692	559	193	3	15	2
1.1.1.1.1.2 RBI	37097	23572	17934	2493	2587	2757
1.1.1.1.1.3 Acquisition of shares	8245	5793	8699	517	1486	3578
1.1.1.1.1.4 Equity capital of unincorporated bodies	1566	873	833	137	126	137
1.1.1.1.2 Reinvested earnings	19105	10751	10928	1689	1557	1689
1.1.1.1.3 Other capital	4650	2936	2910	270	438	210
1.1.1.2 Repatriation/Disinvestment	29349	16947	24164	2932	3430	1104
1.1.1.2.1 Equity	27094	15552	22579	2644	3346	1004
1.1.1.2.2 Other capital	2255	1395	1586	288	84	101
1.1.2 Foreign Direct Investment by India (1.1.2.1+1.1.2.2+1.1.2.3-1.1.2.4)	14020	6767	6894	1009	1233	1365
1.1.2.1 Equity capital	8771	3877	4142	841	542	903
1.1.2.2 Reinvested Earnings	4412	2574	2601	368	368	368
1.1.2.3 Other Capital	4714	2370	2630	98	490	221
1.1.2.4 Repatriation/Disinvestment	3877	2054	2479	298	166	127
1.2 Net Portfolio Investment (1.2.1+1.2.2+1.2.3-1.2.4)	-5152	-7536	18256	562	-2098	-2001
1.2.1 GDRs/ADRs	-	-	-	-	-	-
1.2.2 FIIs	-4828	-7226	18953	531	-1996	-1920
1.2.3 Offshore funds and others	-	-	-	-	-	-
1.2.4 Portfolio investment by India	324	310	697	-31	102	81
1 Foreign Investment Inflows	22834	13233	28695	1730	-551	3903

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

(US \$ Million)

Item	2022-23	2022	2023		
		Oct.	Aug.	Sep.	Oct.
		1	2	3	4
1 Outward Remittances under the LRS	27140.65	1924.09	3379.54	3492.91	2176.98
1.1 Deposit	1011.07	64.28	60.74	118.56	26.28
1.2 Purchase of immovable property	188.73	15.28	16.29	29.13	11.02
1.3 Investment in equity/debt	1256.15	111.41	94.08	208.45	83.86
1.4 Gift	3005.27	208.11	268.89	383.70	184.79
1.5 Donations	12.78	1.68	0.63	0.91	0.96
1.6 Travel	13662.15	973.50	2039.72	1765.07	1368.98
1.7 Maintenance of close relatives	4174.06	280.67	378.41	559.79	206.16
1.8 Medical Treatment	55.74	4.02	4.41	4.85	8.53
1.9 Studies Abroad	3427.81	217.87	483.29	396.08	269.19
1.10 Others	346.89	47.27	33.10	26.37	17.22

**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	
			Nov	Oct	Nov	Oct
	1	2	3	4	5	
40-Currency Basket (Base: 2015-16=100)						
1 Trade-Weighted						
1.1 NEER	93.13	91.27	91.42	91.74	90.80	
1.2 REER	104.67	102.86	103.51	105.32	104.71	
2 Export-Weighted						
2.1 NEER	93.55	93.03	92.99	94.05	93.21	
2.2 REER	103.48	101.12	101.33	102.56	102.10	
6-Currency Basket (Trade-weighted)						
1 Base : 2015-16 =100						
1.1 NEER	87.04	85.93	86.29	84.52	83.61	
1.2 REER	102.22	101.90	102.72	103.28	102.86	
2 Base : 2021-22 =100						
2.1 NEER	100.00	98.72	99.13	97.10	96.05	
2.2 REER	100.00	99.69	100.49	101.04	100.63	

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

(Amount in US \$ Million)

Item	2022-23	2022		2023	
		Oct.	Sep.	Oct.	Oct.
	1	2	3	4	
1 Automatic Route					
1.1 Number	1093	77	81	90	
1.2 Amount	24156	931	2200	742	
2 Approval Route					
2.1 Number	9	3	2	0	
2.2 Amount	2473	499	564	0	
3 Total (1+2)					
3.1 Number	1102	80	83	90	
3.2 Amount	26629	1430	2764	742	
4 Weighted Average Maturity (in years)	5.72	5.30	5.20	13.90	
5 Interest Rate (per cent)					
5.1 Weighted Average Margin over 6-month LIBOR or reference rate for Floating Rate Loans	1.68	1.24	1.82	1.98	
5.2 Interest rate range for Fixed Rate Loans	0.00-11.80	0.00-9.00	0.00-15.00	0.00-27.00	
Borrower Category					
I. Corporate Manufacturing	6925	198	130	184	
II. Corporate-Infrastructure	8396	464	712	351	
a.) Transport	333	0	281	350	
b.) Energy	2235	14	331	0	
c.) Water and Sanitation	32	0	0	0	
d.) Communication	1538	0	0	0	
e.) Social and Commercial Infrastructure	530	100	0	0	
f.) Exploration,Mining and Refinery	2085	350	100	0	
g.) Other Sub-Sectors	1643	0	0	1	
III. Corporate Service-Sector	1773	213	495	26	
IV. Other Entities	1805	100	0	0	
a.) units in SEZ	6	0	0	0	
b.) SIDBI	0	0	0	0	
c.) Exim Bank	1800	100	0	0	
V. Banks	0	0	0	0	
VI. Financial Institution (Other than NBFC)	0	0	0	0	
VII. NBFCs	7540	450	1402	31	
a). NBFC- IFC/AFC	3031	399	1193	0	
b). NBFC-MFI	313	0	13	2	
c). NBFC-Others	4196	51	196	29	
VIII. Non-Government Organization (NGO)	0	0	0	0	
IX. Micro Finance Institution (MFI)	0	0	0	0	
X. Others	189	5	25	150	

Note: Based on applications for ECB/Foreign Currency Convertible Bonds (FCCBs) which have been allotted loan registration number during the period.

No. 38: India's Overall Balance of Payments

(US\$ Million)

Item	Apr-Jun 2022			Apr-Jun 2023 (P)		
	Credit	Debit	Net	Credit	Debit	Net
	1	2	3	4	5	6
Overall Balance Of Payments (1+2+3)	424381	419786	4595	403245	378813	24432
1 Current Account (1.1+ 1.2)	231036	249000	-17964	221417	230631	-9214
1.1 Merchandise	122797	185851	-63054	105029	161625	-56596
1.2 Invisibles (1.2.1+1.2.2+1.2.3)	108239	63149	45090	116388	69006	47382
1.2.1 Services	76093	45024	31069	80573	45448	35125
1.2.1.1 Travel	4705	6299	-1593	6412	9489	-3077
1.2.1.2 Transportation	9849	11780	-1931	7412	7693	-281
1.2.1.3 Insurance	915	510	405	761	591	170
1.2.1.4 G.n.i.e.	170	207	-37	159	250	-91
1.2.1.5 Miscellaneous	60454	26230	34225	65830	27426	38404
1.2.1.5.1 Software Services	34476	3784	30692	38172	4243	33928
1.2.1.5.2 Business Services	17751	14303	3448	21831	15203	6627
1.2.1.5.3 Financial Services	1660	1514	146	1891	1152	739
1.2.1.5.4 Communication Services	961	439	522	831	324	507
1.2.2 Transfers	25651	2777	22874	27117	4251	22866
1.2.2.1 Official	31	222	-191	20	227	-208
1.2.2.2 Private	25620	2555	23065	27097	4024	23073
1.2.3 Income	6495	15348	-8853	8698	19307	-10609
1.2.3.1 Investment Income	4804	14565	-9761	6871	18439	-11568
1.2.3.2 Compensation of Employees	1691	783	908	1827	868	959
2 Capital Account (2.1+2.2+2.3+2.4+2.5)	192841	170786	22055	181828	147453	34374
2.1 Foreign Investment (2.1.1+2.1.2)	106256	107494	-1238	109044	88232	20812
2.1.1 Foreign Direct Investment	23025	9633	13392	19268	14188	5081
2.1.1.1 In India	22474	6211	16263	17780	10427	7352
2.1.1.1.1 Equity	16948	5797	11151	11265	9351	1914
2.1.1.1.2 Reinvested Earnings	4390	0	4390	4567	0	4567
2.1.1.1.3 Other Capital	1136	415	722	1948	1077	871
2.1.1.2 Abroad	552	3422	-2870	1489	3760	-2271
2.1.1.2.1 Equity	552	1254	-702	1489	1813	-324
2.1.1.2.2 Reinvested Earnings	0	1103	-1103	0	1130	-1130
2.1.1.2.3 Other Capital	0	1065	-1065	0	817	-817
2.1.2 Portfolio Investment	83231	97861	-14630	89775	74045	15731
2.1.2.1 In India	82548	97207	-14659	88743	72654	16089
2.1.2.1.1 FIIs	82548	97207	-14659	88743	72654	16089
2.1.2.1.1.1 Equity	72768	87798	-15029	77174	63525	13649
2.1.2.1.1.2 Debt	9780	9410	370	11569	9129	2440
2.1.2.1.2 ADR/GDRs	0	0	0	0	0	0
2.1.2.2 Abroad	683	654	29	1032	1391	-358
2.2 Loans (2.2.1+2.2.2+2.2.3)	23965	19905	4060	30287	28038	2249
2.2.1 External Assistance	3229	1424	1805	3030	1577	1454
2.2.1.1 By India	8	23	-15	7	23	-16
2.2.1.2 To India	3221	1400	1820	3023	1553	1470
2.2.2 Commercial Borrowings	3252	6062	-2809	15382	9597	5784
2.2.2.1 By India	216	138	78	2212	2071	140
2.2.2.2 To India	3037	5924	-2887	13170	7526	5644
2.2.3 Short Term to India	17484	12420	5064	11875	16864	-4989
2.2.3.1 Buyers' credit & Suppliers' Credit >180 days	17484	11502	5982	11875	14352	-2477
2.2.3.2 Suppliers' Credit up to 180 days	0	918	-918	0	2512	-2512
2.3 Banking Capital (2.3.1+2.3.2)	49574	30533	19041	33355	20408	12947
2.3.1 Commercial Banks	49574	30018	19556	33183	20408	12776
2.3.1.1 Assets	35834	16375	19458	13391	3451	9941
2.3.1.2 Liabilities	13741	13643	97	19792	16957	2835
2.3.1.2.1 Non-Resident Deposits	12287	11937	349	18896	16688	2208
2.3.2 Others	0	514	-514	172	0	172
2.4 Rupee Debt Service	0	59	-59	0	62	-62
2.5 Other Capital	13045	12795	251	9142	10713	-1571
3 Errors & Omissions	505	0	505	0	728	-728
4 Monetary Movements (4.1+ 4.2)	0	4595	-4595	0	24432	-24432
4.1 I.M.F.	0	0	0	0	0	0
4.2 Foreign Exchange Reserves (Increase - / Decrease +)	0	4595	-4595	0	24432	-24432

Note: P: Preliminary.

No. 39: India's Overall Balance of Payments

(₹ Crore)

Item	Apr-Jun 2022			Apr-Jun 2023 (P)		
	Credit	Debit	Net	Credit	Debit	Net
	1	2	3	4	5	6
Overall Balance Of Payments (1+2+3)	3275683	3240212	35471	3314641	3113815	200826
1 Current Account (1.1+ 1.2)	1783304	1921965	-138662	1820030	1895772	-75742
1.1 Merchandise	947837	1434534	-486697	863329	1328547	-465219
1.2 Invisibles (1.2.1+1.2.2+1.2.3)	835466	487431	348035	956701	567225	389477
1.2.1 Services	587342	347531	239811	662307	373579	288728
1.2.1.1 Travel	36320	48618	-12298	52702	77997	-25295
1.2.1.2 Transportation	76019	90923	-14904	60923	63237	-2314
1.2.1.3 Insurance	7061	3936	3125	6255	4854	1401
1.2.1.4 G.n.i.e.	1314	1596	-282	1305	2051	-746
1.2.1.5 Miscellaneous	466628	202458	264170	541121	225440	315681
1.2.1.5.1 Software Services	266112	29209	236902	313769	34880	278889
1.2.1.5.2 Business Services	137013	110398	26614	179448	124971	54477
1.2.1.5.3 Financial Services	12811	11683	1129	15546	9473	6073
1.2.1.5.4 Communication Services	7419	3390	4029	6827	2663	4165
1.2.2 Transfers	197995	21434	176560	222898	34944	187954
1.2.2.1 Official	241	1713	-1472	160	1869	-1708
1.2.2.2 Private	197753	19722	178032	222738	33076	189662
1.2.3 Income	50130	118466	-68336	71495	158701	-87206
1.2.3.1 Investment Income	37081	112425	-75344	56477	151570	-95092
1.2.3.2 Compensation of Employees	13049	6041	7008	15018	7132	7886
2 Capital Account (2.1+2.2+2.3+2.4+2.5)	1488483	1318247	170236	1494611	1212057	282555
2.1 Foreign Investment (2.1.1+2.1.2)	820164	829717	-9553	896332	725262	171070
2.1.1 Foreign Direct Investment	177727	74355	103373	158385	116622	41764
2.1.1.1 In India	173468	47943	125526	146148	85713	60435
2.1.1.1.1 Equity	130813	44743	86070	92594	76861	15733
2.1.1.1.2 Reinvested Earnings	33883	0	33883	37542	0	37542
2.1.1.1.3 Other Capital	8772	3200	5572	16012	8853	7160
2.1.1.2 Abroad	4259	26412	-22153	12237	30908	-18671
2.1.1.2.1 Equity	4259	9676	-5417	12237	14902	-2665
2.1.1.2.2 Reinvested Earnings	0	8513	-8513	0	9291	-9291
2.1.1.2.3 Other Capital	0	8222	-8222	0	6715	-6715
2.1.2 Portfolio Investment	642437	755362	-112926	737947	608641	129306
2.1.2.1 In India	637168	750316	-113148	729461	597209	132252
2.1.2.1.1 FIIs	637168	750316	-113148	729461	597209	132252
2.1.2.1.1.1 Equity	561680	677686	-116006	634364	522169	112195
2.1.2.1.1.2 Debt	75489	72631	2858	95097	75040	20058
2.1.2.1.2 ADR/GDRs	0	0	0	0	0	0
2.1.2.2 Abroad	5268	5046	222	8486	11432	-2946
2.2 Loans (2.2.1+2.2.2+2.2.3)	184977	153640	31336	248958	230472	18486
2.2.1 External Assistance	24922	10988	13934	24910	12961	11949
2.2.1.1 By India	63	180	-117	61	192	-131
2.2.1.2 To India	24859	10808	14051	24849	12769	12080
2.2.2 Commercial Borrowings	25103	46788	-21685	126436	78890	47546
2.2.2.1 By India	1664	1062	603	18179	17027	1153
2.2.2.2 To India	23438	45726	-22287	108257	61863	46393
2.2.3 Short Term to India	134952	95864	39087	97612	138621	-41009
2.2.3.1 Buyers' credit & Suppliers' Credit >180 days	134952	88778	46173	97612	117969	-20357
2.2.3.2 Suppliers' Credit up to 180 days	0	7086	-7086	0	20652	-20652
2.3 Banking Capital (2.3.1+2.3.2)	382650	235676	146974	274174	167750	106424
2.3.1 Commercial Banks	382650	231704	150945	272764	167750	105014
2.3.1.1 Assets	276591	126397	150194	110076	28366	81710
2.3.1.2 Liabilities	106059	105308	752	162687	139384	23304
2.3.1.2.1 Non-Resident Deposits	94837	92139	2697	155328	137175	18153
2.3.2 Others	0	3971	-3971	1410	0	1410
2.4 Rupee Debt Service	0	456	-456	0	512	-512
2.5 Other Capital	100693	98758	1934	75147	88061	-12913
3 Errors & Omissions	3896	0	3896	0	5987	-5987
4 Monetary Movements (4.1+ 4.2)	0	35471	-35471	0	200826	-200826
4.1 I.M.F.	0	0	0	0	0	0
4.2 Foreign Exchange Reserves (Increase - / Decrease +)	0	35471	-35471	0	200826	-200826

Note: P: Preliminary.

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

Item	(US\$ Million)					
	Apr-Jun 2022			Apr-Jun 2023 (P)		
	Credit	Debit	Net	Credit	Debit	Net
1	2	3	4	5	6	
1 Current Account (1.A+1.B+1.C)						
1.A Goods and Services (1.A.a+1.A.b)						
1.A.a Goods (1.A.a.1 to 1.A.a.3)						
1.A.a.1 General merchandise on a BOP basis	231033	248979	-17945	221416	230612	-9195
1.A.a.2 Net exports of goods under merchanting	198890	230876	-31985	185602	207073	-21471
1.A.a.3 Nonmonetary gold	122797	185851	-63054	105029	161625	-56596
1.A.b Services (1.A.b.1 to 1.A.b.13)	122351	175362	-53011	104590	151928	-47337
1.A.b.1 Manufacturing services on physical inputs owned by others	446	0	446	438	0	438
1.A.b.2 Maintenance and repair services n.i.e.	0	10489	-10489	0	9698	-9698
1.A.b.3 Transport	76093	45024	31069	80573	45448	35125
1.A.b.4 Travel	321	28	293	481	42	439
1.A.b.5 Construction	48	432	-384	47	431	-385
1.A.b.6 Insurance and pension services	9849	11780	-1931	7412	7693	-281
1.A.b.7 Financial services	4705	6299	-1593	6412	9489	-3077
1.A.b.8 Charges for the use of intellectual property n.i.e.	1660	1514	146	1891	1152	739
1.A.b.9 Telecommunications, computer, and information services	332	2251	-1919	381	3647	-3266
1.A.b.10 Other business services	35521	4436	31085	39091	4859	34231
1.A.b.11 Personal, cultural, and recreational services	17751	14303	3448	21831	15203	6627
1.A.b.12 Government goods and services n.i.e.	946	1252	-306	968	1279	-312
1.A.b.13 Others n.i.e.	170	207	-37	159	250	-91
1.B Primary Income (1.B.1 to 1.B.3)	3137	1284	1853	272	115	157
1.B.1 Compensation of employees	6495	15348	-8853	8698	19307	-10609
1.B.2 Investment income	1691	783	908	1827	868	959
1.B.2.1 Direct investment	3631	14204	-10572	5461	18003	-12542
1.B.2.2 Portfolio investment	2274	9197	-6923	2039	9977	-7938
1.B.2.3 Other investment	62	1604	-1542	208	2250	-2042
1.B.2.4 Reserve assets	102	3388	-3286	517	5587	-5070
1.B.3 Other primary income	1193	15	1178	2697	189	2508
1.C Secondary Income (1.C.1+1.C.2)	1173	362	811	1410	436	973
1.C.1 Financial corporations, nonfinancial corporations, households, and NPISHs	25648	2755	22893	27116	4231	22885
1.C.1.1 Personal transfers (Current transfers between resident and non-resident households)	25620	2555	23065	27097	4024	23073
1.C.1.2 Other current transfers	24969	1806	23163	26325	2680	23645
1.C.2 General government	651	749	-98	772	1343	-571
2 Capital Account (2.1+2.2)	28	200	-172	19	208	-189
2.1 Gross acquisitions (DR.)/disposals (CR.) of non-produced nonfinancial assets	141	227	-86	150	142	8
2.2 Capital transfers	19	132	-113	12	51	-39
2.2.1 Direct investment in direct investment enterprises	123	96	27	138	91	47
3 Financial Account (3.1 to 3.5)						
3.1 Direct Investment (3.1A+3.1B)						
3.1.A Direct Investment in India	192702	175175	17527	181679	171763	9916
3.1.A.1 Equity and investment fund shares	23025	9633	13392	19268	14188	5081
3.1.A.1.1 Equity other than reinvestment of earnings	22474	6211	16263	17780	10427	7352
3.1.A.1.2 Reinvestment of earnings	21337	5797	15541	15832	9351	6481
3.1.A.2 Debt instruments	16948	5797	11151	11265	9351	1914
3.1.A.2.1 Direct investor in direct investment enterprises	4390	0	4390	4567	0	4567
3.1.B Direct Investment by India	1136	415	722	1948	1077	871
3.1.B.1 Equity and investment fund shares	552	3422	-2870	1489	3760	-2271
3.1.B.1.1 Equity other than reinvestment of earnings	552	2357	-1805	1489	2943	-1455
3.1.B.1.2 Reinvestment of earnings	0	1254	-702	1489	1813	-324
3.1.B.2 Debt instruments	0	1103	-1103	0	1130	-1130
3.1.B.2.1 Direct investor in direct investment enterprises	0	1065	-1065	0	817	-817
3.2 Portfolio Investment	0	1065	-1065	0	817	-817
3.2.A Portfolio Investment in India	83231	97861	-14630	89775	74045	15731
3.2.A.1 Equity and investment fund shares	82548	97207	-14659	88743	72654	16089
3.2.A.2 Debt securities	72768	87798	-15029	77174	63525	13649
3.2.B Portfolio Investment by India	9780	9410	370	11569	9129	2440
3.3 Financial derivatives (other than reserves) and employee stock options	683	654	29	1032	1391	-358
3.4 Other investment	5267	7658	-2391	5013	5736	-723
3.4.1 Other equity (ADRs/GDRs)	81179	55428	25751	67622	53363	14259
3.4.2 Currency and deposits	0	0	0	0	0	0
3.4.2.1 Central bank (Rupee Debt Movements; NRG)	12287	12452	-165	19068	16688	2380
3.4.2.2 Deposit-taking corporations, except the central bank (NRI Deposits)	0	514	-514	172	0	172
3.4.2.3 General government	12287	11937	349	18896	16688	2208
3.4.2.4 Other sectors	0	0	0	0	0	0
3.4.3 Loans (External Assistance, ECBs and Banking Capital)	43769	25567	18202	32699	14894	17805
3.4.3.A Loans to India	43545	25406	18139	30480	12799	17681
3.4.3.B Loans by India	224	161	63	2219	2095	124
3.4.4 Insurance, pension, and standardized guarantee schemes	74	184	-110	38	168	-130
3.4.5 Trade credit and advances	17484	12420	5064	11875	16864	-4989
3.4.6 Other accounts receivable/payable - other	7566	4807	2759	3942	4750	-807
3.4.7 Special drawing rights	0	0	0	0	0	0
3.5 Reserve assets	0	4595	-4595	0	24432	-24432
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	4595	-4595	0	24432	-24432
4 Total assets/liabilities	192702	175175	17527	181679	171763	9916
4.1 Equity and investment fund shares	100681	104446	-3765	100577	83113	17464
4.2 Debt instruments	84455	61327	23128	77159	59469	17690
4.3 Other financial assets and liabilities	7566	9402	-1836	3942	29181	-25239
5 Net errors and omissions	505	0	505	0	728	-728

Note: P: Preliminary.

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

(₹ Crore)

Item	Apr-Jun 2022			Apr-Jun 2023 (P)		
	Credit	Debit	Net	Credit	Debit	Net
	1	2	3	4	5	6
1 Current Account (1.A+1.B+1.C)	1783282	1921798	-138516	1820024	1895610	-75586
1.A Goods and Services (1.A.a+1.A.b)	1535179	1782065	-246886	1525636	1702127	-176490
1.A.a Goods (1.A.a.1 to 1.A.a.3)	947837	1434534	-486697	863329	1328547	-465219
1.A.a.1 General merchandise on a BOP basis	944394	1353574	-409180	859724	1248834	-389109
1.A.a.2 Net exports of goods under merchanting	3443	0	3443	3604	0	3604
1.A.a.3 Nonmonetary gold	0	80960	-80960	0	79714	-79714
1.A.b Services (1.A.b.1 to 1.A.b.13)	587342	347531	239811	662307	373579	288728
1.A.b.1 Manufacturing services on physical inputs owned by others	2474	213	2261	3955	345	3610
1.A.b.2 Maintenance and repair services n.i.e.	367	3334	-2967	382	3546	-3164
1.A.b.3 Transport	76019	90923	-14904	60923	63237	-2314
1.A.b.4 Travel	36320	48618	-12298	52702	77997	-25295
1.A.b.5 Construction	5705	5637	68	7153	5726	1427
1.A.b.6 Insurance and pension services	7061	3936	3125	6255	4854	1401
1.A.b.7 Financial services	12811	11683	1129	15546	9473	6073
1.A.b.8 Charges for the use of intellectual property n.i.e.	2560	17373	-14813	3128	29977	-26849
1.A.b.9 Telecommunications, computer, and information services	274180	34244	239936	321321	39942	281380
1.A.b.10 Other business services	137013	110398	26614	179448	124971	54477
1.A.b.11 Personal, cultural, and recreational services	7303	9666	-2363	7953	10515	-2562
1.A.b.12 Government goods and services n.i.e.	1314	1596	-282	1305	2051	-746
1.A.b.13 Others n.i.e.	24215	9910	14305	2235	945	1290
1.B Primary Income (1.B.1 to 1.B.3)	50130	118466	-68336	71495	158701	-87206
1.B.1 Compensation of employees	13049	6041	7008	15018	7132	7886
1.B.2 Investment income	28028	109634	-81605	44888	147982	-103094
1.B.2.1 Direct investment	17555	70988	-53433	16758	82009	-65250
1.B.2.2 Portfolio investment	476	12377	-11902	1710	18491	-16781
1.B.2.3 Other investment	789	26155	-25366	4252	45927	-41674
1.B.2.4 Reserve assets	9209	113	9095	22167	1555	20612
1.B.3 Other primary income	9053	2792	6261	11590	3588	8002
1.C Secondary Income (1.C.1+1.C.2)	197973	21267	176706	222893	34783	188110
1.C.1 Financial corporations, nonfinancial corporations, households, and NPISHs	197753	19722	178032	222738	33076	189662
1.C.1.1 Personal transfers (Current transfers between resident and/non-resident households)	192727	13938	178789	216392	22033	194358
1.C.1.2 Other current transfers	5026	5784	-757	6346	11042	-4696
1.C.2 General government	219	1545	-1326	155	1707	-1552
2 Capital Account (2.1+2.2)	1092	1755	-663	1232	1165	66
2.1 Gross acquisitions (DR.)/disposals (CR.) of non-produced nonfinancial assets	145	1016	-871	100	418	-319
2.2 Capital transfers	947	738	208	1132	747	385
3 Financial Account (3.1 to 3.5)	1487413	1352130	135283	1493386	1411879	81507
3.1 Direct Investment (3.1A+3.1B)	177727	74355	103373	158385	116622	41764
3.1.A Direct Investment in India	173468	47943	125526	146148	85713	60435
3.1.A.1 Equity and investment fund shares	164697	44743	119954	130136	76861	53275
3.1.A.1.1 Equity other than reinvestment of earnings	130813	44743	86070	92594	76861	15733
3.1.A.1.2 Reinvestment of earnings	33883	0	33883	37542	0	37542
3.1.A.2 Debt instruments	8772	3200	5572	16012	8853	7160
3.1.A.2.1 Direct investor in direct investment enterprises	8772	3200	5572	16012	8853	7160
3.1.B Direct Investment by India	4259	26412	-22153	12237	30908	-18671
3.1.B.1 Equity and investment fund shares	4259	18190	-13931	12237	24193	-11956
3.1.B.1.1 Equity other than reinvestment of earnings	4259	9676	-5417	12237	14902	-2665
3.1.B.1.2 Reinvestment of earnings	0	8513	-8513	0	9291	-9291
3.1.B.2 Debt instruments	0	8222	-8222	0	6715	-6715
3.1.B.2.1 Direct investor in direct investment enterprises	0	8222	-8222	0	6715	-6715
3.2 Portfolio Investment	642437	755362	-112926	737947	608641	129306
3.2.A Portfolio Investment in India	637168	750316	-113148	729461	597209	132252
3.2.1 Equity and investment fund shares	561680	677686	-116006	634364	522169	112195
3.2.2 Debt securities	75489	72631	2858	95097	75040	20058
3.2.B Portfolio Investment by India	5268	5046	222	8486	11432	-2946
3.3 Financial derivatives (other than reserves) and employee stock options	40653	59109	-18455	41207	47148	-5941
3.4 Other investment	626596	427834	198762	555847	438643	117204
3.4.1 Other equity (ADRs/GDRs)	0	0	0	0	0	0
3.4.2 Currency and deposits	94837	96111	-1274	156738	137175	19563
3.4.2.1 Central bank (Rupee Debt Movements; NRG)	0	3971	-3971	1410	0	1410
3.4.2.2 Deposit-taking corporations, except the central bank (NRI Deposits)	94837	92139	2697	155328	137175	18153
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)	337838	197341	140497	268782	122426	146356
3.4.3.A Loans to India	336111	196099	140012	250542	105207	145335
3.4.3.B Loans by India	1728	1242	485	18240	17219	1022
3.4.4 Insurance, pension, and standardized guarantee schemes	571	1417	-846	308	1380	-1072
3.4.5 Trade credit and advances	134952	95864	39087	97612	138621	-41009
3.4.6 Other accounts receivable/payable - other	58398	37101	21298	32407	39041	-6634
3.4.7 Special drawing rights	0	0	0	0	0	0
3.5 Reserve assets	0	35471	-35471	0	200826	-200826
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	35471	-35471	0	200826	-200826
4 Total assets/liabilities	1487413	1352130	135283	1493386	1411879	81507
4.1 Equity and investment fund shares	777128	806190	-29062	826738	683184	143554
4.2 Debt instruments	651887	473369	178518	634241	488829	145412
4.3 Other financial assets and liabilities	58398	72572	-14173	32407	239866	-207460
5 Net errors and omissions	3896	0	3896	0	5987	-5987

Note: P: Preliminary.

No. 42: India's International Investment Position

(US\$ Million)

Item	As on Financial Year/Quarter End							
	2022-23		2022		2023			
			Jun.		Mar.		Jun.	
	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
	1	2	3	4	5	6	7	8
1. Direct investment Abroad/in India	225592	523360	214443	517277	225592	523360	227864	532357
1.1 Equity Capital*	142071	493896	134570	489565	142071	493896	143525	501438
1.2 Other Capital	83521	29464	79872	27712	83521	29464	84338	30920
2. Portfolio investment	10966	243559	10614	244999	10966	243559	11325	258589
2.1 Equity	4958	138958	8153	135476	4958	138958	8698	152928
2.2 Debt	6008	104601	2461	109523	6008	104601	2627	105660
3. Other investment	87717	503353	77407	484558	87717	503353	92624	515595
3.1 Trade credit	27507	124301	21118	122817	27507	124301	29742	119313
3.2 Loan	10714	202589	6543	193367	10714	202589	14499	207118
3.3 Currency and Deposits	30526	141133	30242	137445	30526	141133	30584	144069
3.4 Other Assets/Liabilities	18970	35330	19504	30929	18970	35330	17798	45094
4. Reserves	578449		589155		578449		595051	
5. Total Assets/ Liabilities	902725	1270272	891618	1246835	902725	1270272	926864	1306541
6. Net IIP (Assets - Liabilities)		-367548		-355217		-367548		-379677

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	
		Oct.	Sep.	Oct.	Oct.		Oct.	Sep.	Oct.	Oct.
	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	3.73	3.31	258797336	20887702	21104039	21422005		
1.1 Govt. Securities Clearing (1.1.1 to 1.1.3)	15.00	1.07	1.52	1.26	172251292	13863316	13723954	13902085		
1.1.1 Outright	7.99	0.54	0.93	0.66	10090700	672816	1211320	889349		
1.1.2 Repo	4.07	0.31	0.41	0.40	68032487	5277168	5629136	5760793		
1.1.3 Tri-party Repo	2.94	0.22	0.19	0.20	94128105	7913333	6883498	7251944		
1.2 Forex Clearing	25.16	1.90	2.10	1.96	78932050	6514292	6811643	7018310		
1.3 Rupee Derivatives @	1.27	0.08	0.11	0.10	7613994	510094	568441	501610		
B. Payment Systems										
I Financial Market Infrastructures (FMIs)										
1 Credit Transfers - RTGS (1.1 to 1.2)	2425.62	190.34	213.94	224.62	149946286	11551277	14545183	13464400		
1.1 Customer Transactions	2411.19	189.18	212.80	223.48	131667176	10015711	12960210	11899324		
1.2 Interbank Transactions	14.43	1.15	1.13	1.14	18279111	1535565	1584974	1565076		
II Retail										
2 Credit Transfers - Retail (2.1 to 2.6)	983620.84	85748.55	119215.72	128356.32	55009620	4557107	5340256	5667254		
2.1 AePS (Fund Transfers) @	5.90	0.56	0.31	0.31	356	31	21	20		
2.2 APBS \$	17833.95	1843.72	1818.74	1745.79	247535	25462	17943	19666		
2.3 IMPS	56532.64	4824.59	4728.97	4928.80	5585441	466082	507497	538239		
2.4 NACH Cr \$	19257.19	1454.99	1512.78	1278.99	1541815	127118	109472	131546		
2.5 NEFT	52847.43	4570.48	5598.05	6314.53	33719541	2726827	3126190	3262015		
2.6 UPI @	837143.73	73054.21	105556.87	114087.90	13914932	1211588	1579133	1715768		
2.6.1 of which USSD @	17.21	1.26	2.52	2.63	197	15	37	38		
3 Debit Transfers and Direct Debits (3.1 to 3.3)	15343.05	1297.79	1514.68	1499.66	1289611	106956	138748	139050		
3.1 BHIM Aadhaar Pay @	214.22	19.99	13.87	15.14	6791	604	441	525		
3.2 NACH Dr \$	13502.52	1139.92	1371.81	1348.29	1280219	106131	138081	138287		
3.3 NETC (linked to bank account) @	1626.31	137.88	129.00	136.23	2601	221	226	238		
4 Card Payments (4.1 to 4.2)	63324.72	5516.40	4578.77	5105.51	2152245	195998	189199	230670		
4.1 Credit Cards (4.1.1 to 4.1.2)	29145.24	2554.02	2739.43	3200.48	1432255	129048	142320	178569		
4.1.1 PoS based \$	15598.46	1400.51	1420.96	1596.74	541932	51183	49440	57774		
4.1.2 Others \$	13546.79	1153.51	1318.47	1603.73	890323	77865	92879	120795		
4.2 Debit Cards (4.2.1 to 4.2.1)	34179.48	2962.38	1839.34	1905.04	719989	66950	46880	52101		
4.2.1 PoS based \$	22904.86	2045.27	1326.09	1375.63	476520	46016	30525	33731		
4.2.2 Others \$	11274.61	917.10	513.26	529.40	243470	20934	16355	18371		
5 Prepaid Payment Instruments (5.1 to 5.2)	74667.44	6167.35	6143.16	6687.84	287111	24296	23668	25012		
5.1 Wallets	59112.76	4877.04	4899.67	5301.96	221896	18450	19926	20630		
5.2 Cards (5.2.1 to 5.2.2)	15554.69	1290.31	1243.49	1385.88	65215	5846	3742	4382		
5.2.1 PoS based \$	1013.09	83.89	721.81	750.95	14777	1169	852	884		
5.2.2 Others \$	14541.60	1206.42	521.68	634.93	50438	4677	2890	3498		
6 Paper-based Instruments (6.1 to 6.2)	7109.28	561.89	538.35	559.90	7172904	549637	575021	584454		
6.1 CTS (NPCI Managed)	7109.28	561.89	538.35	559.90	7172904	549637	575021	584454		
6.2 Others	0.00	—	—	—	—	—	—	—		
Total - Retail Payments (2+3+4+5+6)	1144065.34	99291.97	131990.68	142209.23	65911490	5433995	6266892	6646440		
Total Payments (1+2+3+4+5+6)	1146490.96	99482.31	132204.62	142433.85	215857776	16985272	20812075	20110841		
Total Digital Payments (1+2+3+4+5)	1139381.68	98920.42	131666.27	141873.95	208684872	16435635	20237054	19526387		

PART II - Payment Modes and Channels

System	Volume (Lakh)				Value (₹ Crore)					
	FY 2022-23	2022		2023		FY 2022-23	2022		2023	
		Oct.	Sep.	Oct.	Oct.		Oct.	Sep.	Oct.	
	1	2	3	4	5	6	7	8		
A. Other Payment Channels										
1 Mobile Payments (mobile app based) (1.1 to 1.2)	805338.23	70328.74	101214.61	109331.98	22031628	1876993	2434721	2619059		
1.1 Intra-bank \$	62306.61	5473.11	6606.30	6877.75	4191430	351669	446014	474311		
1.2 Inter-bank \$	743031.61	64855.62	94608.31	102454.23	17840197	1525324	1988707	2144749		
2 Internet Payments (Netbanking / Internet Browser Based) @ (2.1 to 2.2)	42630.64	3619.15	3650.26	3736.00	91539296	7172840	8219961	8464802		
2.1 Intra-bank @	10703.78	873.32	988.10	983.49	53506133	4126602	4179061	4400612		
2.2 Inter-bank @	31926.86	2745.82	2662.16	2752.51	38033163	3046239	4040900	4064190		
B. ATMs										
3 Cash Withdrawal at ATMs \$ (3.1 to 3.3)	69468.87	6124.46	5377.33	5721.44	3305008	292144	260514	277825		
3.1 Using Credit Cards \$	88.37	7.67	7.85	8.54	4296	375	380	413		
3.2 Using Debit Cards \$	68975.18	6078.30	5340.80	5683.51	3286749	290557	259072	276282		
3.3 Using Pre-paid Cards \$	405.32	38.48	28.67	29.40	13963	1212	1062	1130		
4 Cash Withdrawal at PoS \$ (4.1 to 4.2)	27.73	2.14	0.97	0.85	278	21	9	8		
4.1 Using Debit Cards \$	27.41	2.11	0.96	0.84	276	21	9	8		
4.2 Using Pre-paid Cards \$	0.33	0.03	0.01	0.01	2	0	0	0		
5 Cash Withdrawal at Micro ATMs @	12375.16	1156.16	991.43	986.49	333966	30463	25477	25378		
5.1 AcPS @	12375.16	1156.16	991.43	986.49	333966	30463	25477	25378		

PART III - Payment Infrastructures (Lakh)

System	As on March 2023	2022		2023	
		Oct.	Sep.	Oct.	Oct.
	1	2	3	4	
Payment System Infrastructures					
1 Number of Cards (1.1 to 1.2)	10465.62	10235.99	10713.04	10748.82	
1.1 Credit Cards	853.03	793.68	930.17	947.11	
1.2 Debit Cards	9612.59	9442.32	9782.86	9801.71	
2 Number of PPIs @ (2.1 to 2.2)	16185.22	15985.59	16718.09	16830.87	
2.1 Wallets @	13384.65	13195.92	13437.06	13576.88	
2.2 Cards @	2800.57	2789.67	3281.03	3253.99	
3 Number of ATMs (3.1 to 3.2)	2.59	2.55	2.58	2.58	
3.1 Bank owned ATMs \$	2.23	2.20	2.23	2.23	
3.2 White Label ATMs \$	0.36	0.35	0.35	0.35	
4 Number of Micro ATMs @	16.11	12.91	14.87	15.30	
5 Number of PoS Terminals	77.90	72.11	83.03	83.48	
6 Bharat QR @	53.82	47.19	59.82	59.75	
7 UPI QR *	2563.77	2253.23	2950.06	3017.20	

@@: 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.

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 –

o Include transactions done through mobile apps of banks and UPI apps.

o 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.

Occasional Series

No. 44: Small Savings

(₹ Crore)

Scheme			2021-22		2022		2023	
			1	2	3	Feb.	Dec.	Jan.
								Feb.
1 Small Savings		Receipts	203175	13932	11632	11283	11210	
		Outstanding	1463777	1426737	1576921	1588155	1599193	
1.1 Total Deposits		Receipts	144749	9753	9136	7511	8093	
		Outstanding	1012241	990274	1097617	1105127	1113230	
1.1.1 Post Office Saving Bank Deposits		Receipts	17581	3568	3806	-772	1170	
		Outstanding	188433	233287	199859	199087	200257	
1.1.2 Sukanya Samridhi Yojna		Receipts	23748	0	1890	1844	1965	
		Outstanding	58783	0	73663	75507	77472	
1.1.3 National Saving Scheme, 1987		Receipts	-1524	-20	-22	-8	0	
		Outstanding	1894	3165	1659	1651	0	
1.1.4 National Saving Scheme, 1992		Receipts	-352	-777	-2	3	0	
		Outstanding	-177	-628	-200	-197	0	
1.1.5 Monthly Income Scheme		Receipts	14441	933	-125	893	484	
		Outstanding	235820	234825	240821	241714	242198	
1.1.6 Senior Citizen Scheme 2004		Receipts	22281	1490	935	1668	1475	
		Outstanding	119333	117239	132843	134511	135986	
1.1.7 Post Office Time Deposits		Receipts	43725	3217	527	2866	1814	
		Outstanding	251282	247690	274259	277125	278939	
1.1.7.1 1 year Time Deposits		Outstanding	118282	117578	123599	124739	125377	
1.1.7.2 2 year Time Deposits		Outstanding	8008	7996	8765	9056	9282	
1.1.7.3 3 year Time Deposits		Outstanding	6918	6944	6938	7196	7380	
1.1.7.4 5 year Time Deposits		Outstanding	118074	115172	134957	136134	136900	
1.1.8 Post Office Recurring Deposits		Receipts	24840	1338	2125	1017	1203	
		Outstanding	156869	154697	174616	175633	176836	
1.1.9 Post Office Cumulative Time Deposits		Receipts	7	4	0	0	0	
		Outstanding	-19	-22	-19	-19	0	
1.1.10 Other Deposits		Receipts	2	0	0	0	-18	
		Outstanding	23	21	22	21	1439	
1.1.11 PM Care for children		Receipts	0	0	2	0	0	
		Outstanding	0	0	94	94	103	
1.2 Saving Certificates		Receipts	45307	3583	2115	2928	2504	
		Outstanding	333189	328337	358362	361242	363564	
1.2.1 National Savings Certificate VIII issue		Receipts	19696	1585	446	868	658	
		Outstanding	155043	153724	163224	164092	164750	
1.2.2 Indira Vikas Patras		Receipts	-16	0	0	0	0	
		Outstanding	143	158	142	142	0	
1.2.3 Kisan Vikas Patras		Receipts	-1115	940	-238	-77	0	
		Outstanding	-7891	-7708	-9704	-9780	0	
1.2.4 Kisan Vikas Patras - 2014		Receipts	26619	1019	1907	2137	1846	
		Outstanding	174560	171996	193663	195800	197646	
1.2.5 National Saving Certificate VI issue		Receipts	92	23	0	0	0	
		Outstanding	-22	-90	-22	-22	0	
1.2.6 National Saving Certificate VII issue		Receipts	31	16	0	0	0	
		Outstanding	-44	-58	-44	-44	0	
1.2.7 Other Certificates		Outstanding	11400	10315	11103	11054	1168	
1.3 Public Provident Fund		Receipts	13119	596	381	844	613	
		Outstanding	118347	108126	120942	121786	122399	

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)

Category	Central Government Dated Securities				
	2022		2023		
	Sep.	Dec.	Mar.	Jun.	Sep.
	1	2	3	4	5
(A) Total (in ₹. Crore)	9098788	9373372	9645776	9898751	10383607
1 Commercial Banks	36.44	36.13	36.61	36.58	37.96
2 Co-operative Banks	1.80	1.70	1.64	1.56	1.52
3 Non-Bank PDs	0.38	0.44	0.49	0.73	0.66
4 Insurance Companies	25.94	26.14	25.97	26.21	26.05
5 Mutual Funds	2.58	2.87	2.81	2.69	3.02
6 Provident Funds	4.66	4.67	4.71	4.59	4.42
7 Pension Funds	3.84	3.91	3.98	4.18	4.32
8 Financial Institutions	0.98	1.07	0.98	1.20	0.54
9 Corporates	1.58	1.57	1.62	1.22	1.21
10 Foreign Portfolio Investors	1.38	1.31	1.36	1.59	1.61
11 RBI	15.28	14.73	14.26	13.78	13.06
12 Others	5.14	5.45	5.57	5.67	5.64
12.1 State Governments	1.83	1.88	2.03	2.03	2.04

Category	State Governments Securities				
	2022		2023		
	Sep.	Dec.	Mar.	Jun.	Sep.
	1	2	3	4	5
(B) Total (in ₹. Crore)	4589128	4712902	4929079	5050874	5161642
1 Commercial Banks	34.37	34.34	33.91	34.13	33.87
2 Co-operative Banks	3.89	3.80	3.64	3.68	3.60
3 Non-Bank PDs	0.36	0.44	0.62	0.50	0.61
4 Insurance Companies	27.71	27.42	26.80	26.73	26.97
5 Mutual Funds	2.08	2.02	1.94	2.08	1.86
6 Provident Funds	20.18	20.31	21.29	21.19	21.70
7 Pension Funds	4.73	4.74	4.81	4.84	4.82
8 Financial Institutions	1.71	1.77	1.84	1.82	1.65
9 Corporates	1.85	1.94	2.00	1.92	1.87
10 Foreign Portfolio Investors	0.02	0.02	0.02	0.02	0.02
11 RBI	0.79	0.75	0.72	0.70	0.69
12 Others	2.32	2.45	2.42	2.39	2.34
12.1 State Governments	0.21	0.24	0.27	0.27	0.27

Category	Treasury Bills				
	2022		2023		
	Sep.	Dec.	Mar.	Jun.	Sep.
	1	2	3	4	5
(C) Total (in ₹. Crore)	920205	839931	823313	1012301	925317
1 Commercial Banks	50.91	49.15	53.92	47.64	56.35
2 Co-operative Banks	1.48	1.27	1.29	1.20	1.20
3 Non-Bank PDs	2.12	2.17	2.85	1.99	0.54
4 Insurance Companies	5.46	5.81	6.11	4.93	5.26
5 Mutual Funds	11.98	14.23	15.30	17.04	12.74
6 Provident Funds	3.21	1.37	0.10	1.46	1.52
7 Pension Funds	0.02	0.02	0.07	0.01	0.01
8 Financial Institutions	4.17	4.52	3.72	7.96	4.10
9 Corporates	3.86	3.59	4.99	4.42	4.00
10 Foreign Portfolio Investors	0.53	0.50	0.40	0.12	0.10
11 RBI	0.00	0.00	0.00	0.00	0.00
12 Others	16.25	17.37	11.25	13.23	14.17
12.1 State Governments	12.27	13.38	7.16	10.33	11.36

No. 46: Combined Receipts and Disbursements of the Central and State Governments

(₹ Crore)

Item	2018-19	2019-20	2020-21	2021-22	2022-23 RE	2023-24 BE
	1	2	3	4	5	6
1 Total Disbursements	5040747	5410887	6353359	7098451	8376972	9045119
1.1 Developmental	2882758	3074492	3823423	4189146	5073367	5426440
1.1.1 Revenue	2224367	2446605	3150221	3255207	3838714	3836447
1.1.2 Capital	596774	588233	550358	861777	1146013	1471534
1.1.3 Loans	61617	39654	122844	72163	88639	118460
1.2 Non-Developmental	2078276	2253027	2442941	2810388	3188699	3490946
1.2.1 Revenue	1965907	2109629	2271637	2602750	2988556	3277722
1.2.1.1 Interest Payments	894520	955801	1060602	1226672	1403183	1589435
1.2.2 Capital	111029	141457	169155	175519	196688	208268
1.2.3 Loans	1340	1941	2148	32119	3455	4957
1.3 Others	79713	83368	86995	98916	114906	127733
2 Total Receipts	5023352	5734166	6397162	7156342	8258187	9149787
2.1 Revenue Receipts	3797731	3851563	3688030	4823821	5706246	6337126
2.1.1 Tax Receipts	3278947	3231582	3193390	4160414	4837048	5477428
2.1.1.1 Taxes on commodities and services	2030050	2012578	2076013	2626553	2967610	3372525
2.1.1.2 Taxes on Income and Property	1246083	1216203	1114805	1530636	1865298	2100430
2.1.1.3 Taxes of Union Territories (Without Legislature)	2814	2800	2572	3225	4140	4473
2.1.2 Non-Tax Receipts	518783	619981	494640	663407	869198	859698
2.1.2.1 Interest Receipts	36273	31137	33448	35250	37974	45199
2.2 Non-debt Capital Receipts	140287	110094	64994	44077	88273	119373
2.2.1 Recovery of Loans & Advances	44667	59515	16951	27665	25661	34501
2.2.2 Disinvestment proceeds	95621	50578	48044	16412	62611	84872
3 Gross Fiscal Deficit 1 - (2.1 + 2.2) 	1102729	1449230	2600335	2230553	2582453	2588620
3A Sources of Financing: Institution-wise						
3A.1 Domestic Financing	1097210	1440548	2530155	2194406	2558579	2566503
3A.1.1 Net Bank Credit to Government	387091	571872	890012	627255	687904
3A.1.1.1 Net RBI Credit to Government	325987	190241	107493	350911	529
3A.1.2 Non-Bank Credit to Government	710119	868676	1640143	1567151	1870675
3A.2 External Financing	5519	8682	70180	36147	23874	22118
3B Sources of Financing: Instrument-wise						
3B.1 Domestic Financing	1097210	1440548	2530155	2194406	2558579	2566503
3B.1.1 Market Borrowings (net)	795845	971378	1696012	1213169	1776747	1902862
3B.1.2 Small Savings (net)	88961	209232	458801	526693	403838	441189
3B.1.3 State Provident Funds (net)	51004	38280	41273	28100	36454	37114
3B.1.4 Reserve Funds	-18298	10411	4545	42153	3524	24429
3B.1.5 Deposits and Advances	66289	-14227	25682	42203	82485	58404
3B.1.6 Cash Balances	17395	-323279	-43802	-57891	118784	-104667
3B.1.7 Others	96014	548753	347643	399980	136748	207172
3B.2 External Financing	5519	8682	70180	36147	23874	22118
<i>4 Total Disbursements as per cent of GDP</i>	26.7	26.9	32.0	30.2	30.8	30.0
<i>5 Total Receipts as per cent of GDP</i>	26.6	28.5	32.3	30.5	30.3	30.3
<i>6 Revenue Receipts as per cent of GDP</i>	20.1	19.2	18.6	20.6	20.9	21.0
<i>7 Tax Receipts as per cent of GDP</i>	17.3	16.1	16.1	17.7	17.8	18.2
<i>8 Gross Fiscal Deficit as per cent of GDP</i>	5.8	7.2	13.1	9.5	9.5	8.6

... : Not available; RE: Revised Estimates; BE: Budget Estimates

Source : Budget Documents of Central and State Governments.

Note: GDP data is based on 2011-12 base. GDP for 2023-24 is from Union Budget 2023-24.

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.

No. 47: Financial Accommodation Availed by State Governments under various Facilities

(₹ Crore)

Sr. No	State/Union Territory	During October-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	837.07	31	2140.60	31	1009.96	23
2	Arunachal Pradesh	-	-	-	-	-	-
3	Assam	412.85	3	-	-	-	-
4	Bihar	-	-	-	-	-	-
5	Chhattisgarh	2058.34	31	-	-	-	-
6	Goa	3.09	2	-	-	-	-
7	Gujarat	-	-	-	-	-	-
8	Haryana	363.53	15	287.69	7	-	-
9	Himachal Pradesh	-	-	344.58	6	127.20	1
10	Jammu & Kashmir UT	-	-	898.11	24	395.79	17
11	Jharkhand	-	-	-	-	-	-
12	Karnataka	-	-	-	-	-	-
13	Kerala	204.98	13	262.53	10	-	-
14	Madhya Pradesh	-	-	-	-	-	-
15	Maharashtra	-	-	-	-	-	-
16	Manipur	13.78	30	214.89	30	128.79	21
17	Meghalaya	154.70	31	87.39	24	116.00	6
18	Mizoram	56.88	28	115.27	16	4.51	4
19	Nagaland	107.39	7	45.79	5	-	-
20	Odisha	-	-	-	-	-	-
21	Puducherry	-	-	-	-	-	-
22	Punjab	1381.54	22	270.13	2	-	-
23	Rajasthan	10016.65	31	488.03	20	-	-
24	Tamil Nadu	-	-	-	-	-	-
25	Telangana	816.76	31	1186.62	31	493.38	10
26	Tripura	-	-	-	-	-	-
27	Uttar Pradesh	-	-	-	-	-	-
28	Uttarakhand	458.02	12	541.45	10	294.77	8
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 October 2023			
		Consolidated Sinking Fund (CSF)	Guarantee Redemption Fund (GRF)	Government Securities	Auction Treasury Bills (ATBs)
1	2	3	4	5	
1	Andhra Pradesh	10514	1036	0	0
2	Arunachal Pradesh	2382	5	0	3000
3	Assam	6723	81	0	0
4	Bihar	8476	-	0	1200
5	Chhattisgarh	6678	5	1	3550
6	Goa	863	416	0	0
7	Gujarat	12135	607	0	11000
8	Haryana	1851	1546	0	0
9	Himachal Pradesh	-	-	0	0
10	Jammu & Kashmir UT	-	-	0	0
11	Jharkhand	1629	-	0	0
12	Karnataka	16668	473	0	25377
13	Kerala	2772	-	0	0
14	Madhya Pradesh	-	1161	0	0
15	Maharashtra	62093	1526	0	4000
16	Manipur	63	127	0	0
17	Meghalaya	1073	85	8	0
18	Mizoram	387	45	0	0
19	Nagaland	1624	42	0	0
20	Odisha	16518	1860	107	18488
21	Puducherry	492	-	0	1250
22	Punjab	8365	0	0	0
23	Rajasthan	-	-	129	11600
24	Tamil Nadu	8483	-	0	2856
25	Telangana	7178	1571	0	0
26	Tripura	1018	22	0	625
27	Uttarakhand	4570	193	0	0
28	Uttar Pradesh	6949	-	89	0
29	West Bengal	11619	847	239	0
	Total	201126	11649	572	82947

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		2023-24						Total amount raised, so far in 2023-24	
						August		September		October			
		Gross Amount Raised	Net Amount Raised	Gross	Net	Gross	Net						
1	2	3	4	5	6	7	8	9	10	11	12	13	
1	Andhra Pradesh	46443	36103	57478	45814	6000	3784	6000	4447	5450	4743	46950	41307
2	Arunachal Pradesh	563	530	559	389	-	-	-	-	-	-100	-	-100
3	Assam	12753	10753	17100	16105	1250	1250	1000	1000	2000	2000	10250	10250
4	Bihar	28489	24334	36800	27467	6000	2000	4000	1922	4000	1500	18000	5422
5	Chhattisgarh	4000	913	2000	-2287	-	-	2000	1300	1000	200	6000	3000
6	Goa	2000	1450	1350	500	300	150	450	450	200	200	1350	800
7	Gujarat	31054	13554	43000	28300	-	-1016	2500	416	1000	-469	9000	1431
8	Haryana	30500	20683	45158	28638	4000	1990	6000	5011	2500	1560	24500	14862
9	Himachal Pradesh	4000	1875	14000	11941	-	-	500	223	1000	1000	3300	2173
10	Jammu & Kashmir UT	8562	5373	8473	5969	1400	1400	873	873	700	260	5673	4033
11	Jharkhand	5000	3191	4000	-155	-	-500	-	-	-	-	-	-800
12	Karnataka	59000	49000	36000	26000	-	-2102	-	-1500	3000	1000	3000	-2602
13	Kerala	27000	18120	30839	15620	6300	3100	1000	1000	1000	-250	20800	12350
14	Madhya Pradesh	22000	13900	40158	26849	-	-1000	9000	7500	4000	3000	19000	15000
15	Maharashtra	68750	40790	72000	42815	3000	1114	7000	3966	4000	748	43000	25829
16	Manipur	1476	1326	1422	1147	200	200	200	100	100	100	1000	900
17	Meghalaya	1608	1298	1753	1356	-	-	-	-160	322	322	1022	762
18	Mizoram	747	447	1315	1129	80	80	-	-	60	60	570	420
19	Nagaland	1727	1222	1854	1199	-	-60	-	-	-	-	900	640
20	Odisha	0	-6473	0	-7500	-	-	-	-	-	-500	-	-2000
21	Puducherry	1374	841	1200	698	-	-	-	-125	-	-	-	-125
22	Punjab	25814	12428	45500	33660	6750	5250	4739	4127	2352	1752	30841	21958
23	Rajasthan	51149	38243	46057	30110	4500	3000	6000	3500	3000	1030	34000	20218
24	Sikkim	1511	1471	1414	1320	-	-45	250	250	400	355	950	860
25	Tamil Nadu	87000	72500	87000	65722	7000	5332	6000	4348	10000	7750	63000	39430
26	Telangana	45716	39256	40150	30922	5000	3416	5000	3890	3000	2495	30000	25967
27	Tripura	300	0	0	-645	-	-	-	-	-	-	-	-
28	Uttar Pradesh	62500	42355	55612	41797	6000	6000	-	-	12000	9774	27500	20041
29	Uttarakhand	3200	1800	3200	1450	-	-	1000	1000	1300	1300	2300	2300
30	West Bengal	67390	45199	63000	42500	4500	2566	6500	5000	5000	3434	22500	11500
	Grand Total	701626	492483	758392	518829	62280	35910	70012	48540	67384	43263	425406	275826

- : 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	2020-21				
	Q1	Q2	Q3	Q4	Annual
Net Financial Assets (I-II)	583412.7	554437.6	463583.5	679174.4	2280608.2
<i>Per cent of GDP</i>	15.0	11.7	8.5	11.8	11.5
I. Financial Assets	788786.3	592945.3	633317.9	1047276.1	3062325.6
<i>Per cent of GDP</i>	20.3	12.5	11.6	18.2	15.4
<i>of which:</i>					
1. Total Deposits (a+b)	297412.4	278631.7	158172.2	506213.3	1240429.7
(a) Bank Deposits	281191.3	264565.3	147096.0	507719.3	1200571.8
i. Commercial Banks	279010.5	262033.7	143558.6	462689.8	1147292.5
ii. Co-operative Banks	2180.8	2531.6	3537.3	45029.5	53279.3
(b) Non-Bank Deposits	16221.1	14066.4	11076.3	-1506.0	39857.9
<i>of which:</i>					
Other Financial Institutions (i+ii)	11040.9	8886.2	5896.0	-6686.2	19137.0
i. Non-Banking Financial Companies	1441.0	3763.0	3514.8	3521.2	12240.0
ii. Housing Finance Companies	9599.9	5123.2	2381.3	-10207.3	6897.0
2. Life Insurance Funds	124387.9	143462.2	157535.1	142216.5	567601.8
3. Provident and Pension Funds (including PPF)	114496.3	107087.9	105344.6	175769.3	502698.2
4. Currency	202432.7	21286.9	91456.0	66800.5	381976.1
5. Investments	6249.8	-12956.4	67659.3	63624.0	124576.7
<i>of which:</i>					
(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)	42751.6	54377.4	52095.1	91597.0	240821.1
II. Financial Liabilities	205373.6	38507.7	169734.4	368101.7	781717.4
<i>Per cent of GDP</i>	5.3	0.8	3.1	6.4	3.9
Loans/Borrowings					
1. Financial Corporations (a+b)	205490.3	38624.3	169851.0	368219.1	782184.7
(a) Banking Sector	211058.8	13213.0	139622.0	276579.8	640473.6
<i>of which:</i>					
i. Commercial Banks	211259.3	13213.8	140514.3	240050.4	605037.9
(b) Other Financial Institutions	-5568.6	25411.3	30229.0	91639.4	141711.1
i. Non-Banking Financial Companies	-15450.4	21627.1	15921.2	64881.1	86979.0
ii. Housing Finance Companies	10516.6	2875.1	13048.5	25336.1	51776.2
iii. Insurance Corporations	-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	-150.4	-150.4	-150.4	-150.4	-601.7

No. 50 (a): Flow of Financial Assets and Liabilities of Households - Instrument-wise (Contd.)

(Amount in ₹ Crore)

Item	2021-22				
	Q1	Q2	Q3	Q4	Annual
Net Financial Assets (I-II)	370115.8	334234.9	489774.4	503089.0	1696155.6
<i>Per cent of GDP</i>	7.2	6.0	7.9	7.7	7.2
I. Financial Assets	364661.7	527896.1	818355.4	887657.3	2597511.9
<i>Per cent of GDP</i>	7.1	9.4	13.1	13.6	11.1
<i>of which:</i>					
1.Total Deposits (a+b)	-82726.1	204033.6	426977.3	277625.7	824852.1
(a) Bank Deposits	-106428.9	197105.1	422392.9	264882.9	777952.1
i. Commercial Banks	-107940.7	195441.8	418267.0	262326.1	768094.3
ii. Co-operative Banks	1511.8	1663.4	4125.9	2556.8	9857.8
(b) Non-Bank Deposits	23702.8	6928.5	4584.5	12742.8	46900.0
<i>of which:</i>					
Other Financial Institutions (i+ii)	16950.0	170.7	-2178.3	5960.0	20902.3
i. Non-Banking Financial Companies	4972.6	-765.5	73.3	4211.8	8492.2
ii. Housing Finance Companies	11977.3	936.2	-2251.6	1748.2	12410.1
2. Life Insurance Funds	114711.5	127449.8	103248.6	121541.6	466951.5
3. Provident and Pension Funds (including PPF)	127624.0	115463.1	98146.0	221372.4	562605.5
4. Currency	128660.2	-68631.2	62793.3	146845.0	269667.4
5. Investments	24929.6	82305.4	69760.9	50972.1	227967.9
<i>of which:</i>					
(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)	50405.2	66218.1	56372.0	68243.2	241238.4
II. Financial Liabilities	-5454.1	193661.2	328581.0	384568.3	901356.3
<i>Per cent of GDP</i>	-0.1	3.5	5.3	5.9	3.8
Loans/Borrowings					
1. Financial Corporations (a+b)	-5562.3	193553.0	328472.8	384460.1	900923.7
(a) Banking Sector	21436.5	138722.6	267950.7	348360.4	776470.2
<i>of which:</i>					
i. Commercial Banks	26978.6	140268.7	265271.5	337009.8	769528.5
(b) Other Financial Institutions	-26998.8	54830.4	60522.2	36099.7	124453.5
i. Non-Banking Financial Companies	-34757.9	28876.8	29476.5	-2163.2	21432.2
ii. Housing Finance Companies	7132.0	24403.8	29494.8	37436.2	98466.8
iii. Insurance Corporations	627.1	1549.8	1550.9	826.7	4554.5
2. Non-Financial Corporations (Private Corporate Business)	33.8	33.8	33.8	33.8	135.1
3. General Government	74.4	74.4	74.4	74.4	297.4

No. 50 (a): Flow of Financial Assets and Liabilities of Households - Instrument-wise (Concl.)

(Amount in ₹ Crore)

Item	2022-23				Annual
	Q1	Q2	Q3	Q4	
Net Financial Assets (I-II)	297770.4	293705.1	279460.1	505937.8	1376873.5
Per cent of GDP	4.6	4.5	4.0	7.0	5.1
I. Financial Assets	586920.5	646714.8	750856.7	974558.5	2959050.5
Per cent of GDP	9.0	9.8	10.8	13.6	10.9
of which:					
1. Total Deposits (a+b)	183072.0	315216.2	276593.9	324746.6	1099628.6
(a) Bank Deposits	163162.9	299545.0	256363.7	307491.6	1026563.1
i. Commercial Banks	158613.3	300565.0	248459.8	284968.0	992606.2
ii. Co-operative Banks	4549.6	-1020.1	7903.8	22523.6	33956.9
(b) Non-Bank Deposits	19909.1	15671.3	20230.2	17255.0	73065.5
of which:					
Other Financial Institutions (i+ii)	6314.4	2076.7	6635.6	3660.4	18687.1
i. Non-Banking Financial Companies	4040.2	3267.2	1800.9	5372.2	14480.5
ii. Housing Finance Companies	2274.2	-1190.5	4834.7	-1711.8	4206.6
2. Life Insurance Funds	73669.9	152049.5	167894.1	141206.6	534820.1
3. Provident and Pension Funds (including PPF)	155604.2	132126.0	140204.4	235093.2	663027.7
4. Currency	66438.9	-54579.3	76760.1	148990.2	237609.8
5. Investments	51603.2	48630.6	49879.2	64168.5	214281.5
of which:					
(a) Mutual Funds	35443.5	44484.0	40205.9	58954.5	179087.8
(b) Equity	13560.9	1378.2	6434.1	1664.9	23038.1
6. Small Savings (excluding PPF)	54375.1	51114.5	37367.7	58196.2	201053.5
II. Financial Liabilities	289150.0	353009.7	471396.5	468620.7	1582177.0
Per cent of GDP	4.4	5.4	6.8	6.5	5.8
Loans/Borrowings					
1. Financial Corporations (a+b)	289141.6	353001.2	471388.1	468612.3	1582143.3
(a) Banking Sector	234845.3	263782.5	368167.4	349555.0	1216350.1
of which:					
i. Commercial Banks	230283.8	261265.3	365304.6	331292.5	1188146.3
(b) Other Financial Institutions	54296.3	89218.8	103220.8	119057.3	365793.1
i. Non-Banking Financial Companies	29281.6	54439.6	75878.8	80295.9	239895.9
ii. Housing Finance Companies	22336.7	33031.2	24903.3	36745.8	117017.0
iii. Insurance Corporations	2678.0	1747.9	2438.7	2015.6	8880.3
2. Non-Financial Corporations (Private Corporate Business)	33.7	33.7	33.7	33.7	135.0
3. General Government	-25.3	-25.3	-25.3	-25.3	-101.3

Notes :1. Net Financial Savings of households refer to the net financial assets, which are measured as difference of financial asset and liabilities flows.

2. Preliminary estimates for 2022-23 and revised estimates for 2020-21 and 2021-22.

3. The preliminary estimates for 2022-23 will undergo revision with the release of first revised estimates of national income, consumption expenditure, savings, and capital formation, 2022-23 by the NSO.

4. Non-bank deposits apart from other financial institutions, comprises state power utilities, co-operative non credit societies etc.

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

Item	Jun-2020	Sep-2020	Dec-2020	Mar-2021
Financial Assets (a+b+c+d+e+f+g+h)	20405824.2	21066027.8	21906338.5	22874301.5
<i>Per cent of GDP</i>	107.2	111.5	114.0	115.4
(a) Bank Deposits (i+ii)	9977865.6	10242430.9	10389526.9	10897246.1
i. Commercial Banks	9192702.5	9454736.2	9598294.8	10060984.6
ii. Co-operative Banks	785163.1	787694.7	791232.1	836261.6
(b) Non-Bank Deposits				
<i>of which:</i>				
Other Financial Institutions	180857.4	189743.6	195639.6	188953.5
i. Non-Banking Financial Companies	51463.0	55226.1	58740.8	62262.0
ii. Housing Finance Companies	129394.4	134517.6	136898.8	126691.5
(c) Life Insurance Funds	4102000.7	4274424.9	4551882.0	4752932.3
(d) Currency	2434693.7	2455980.6	2547436.6	2614237.0
(e) Mutual funds	1343752.0	1443784.4	1648999.0	1730461.0
(f) Public Provident Fund (PPF)	663478.0	671884.3	678997.2	742189.5
(g) Pension Funds	464705.0	494930.0	548913.0	578025.0
(h) Small Savings (excluding PPF)	1238471.7	1292849.1	1344944.2	1370257.1
Financial Liabilities (a+b)	7190710.8	7229335.1	7399186.1	7767405.3
<i>Per cent of GDP</i>	37.8	38.3	38.5	39.2
Loans/Borrowings				
(a) Banking Sector	5728735.3	5741948.3	5881570.2	6158150.0
<i>of which:</i>				
i. Commercial Banks	5226482.2	5239696.0	5380210.4	5620260.7
ii. Co-operative Banks	500870.2	500865.3	499968.8	536494.1
(b) Other Financial Institutions	1461975.5	1487386.9	1517615.9	1609255.3
<i>of which:</i>				
i. Non-Banking Financial Companies	687643.6	709270.7	725191.9	790073.0
ii. Housing Finance Companies	673118.3	675993.4	689041.8	714377.9
iii. Insurance Corporations	101213.7	102122.8	103382.2	104804.4

No. 50 (b): Stocks of Financial Assets and Liabilities of Households- Select Indicators (Contd.)

(Amount in ₹ Crore)

Item	Jun-2021	Sep-2021	Dec-2021	Mar-2022
Financial Assets (a+b+c+d+e+f+g+h)	23318920.4	23991428.3	24700622.2	25435684.2
<i>Per cent of GDP</i>	<i>110.7</i>	<i>109.3</i>	<i>108.7</i>	<i>108.4</i>
(a) Bank Deposits (i+ii)	10790817.3	10987922.4	11410315.3	11675198.2
i. Commercial Banks	9953043.9	10148485.7	10566752.7	10829078.8
ii. Co-operative Banks	837773.4	839436.7	843562.6	846119.4
(b) Non-Bank Deposits				
<i>of which:</i>				
Other Financial Institutions	205903.4	206074.1	203895.8	209855.7
i. Non-Banking Financial Companies	67234.6	66469.1	66542.3	70754.2
ii. Housing Finance Companies	138668.8	139605.0	137353.4	139101.6
(c) Life Insurance Funds	4929725.2	5142278.8	5213527.2	5357350.2
(d) Currency	2742897.3	2674266.1	2737059.4	2883904.4
(e) Mutual funds	1855000.1	2064363.5	2126112.0	2152140.5
(f) Public Provident Fund (PPF)	757397.8	762264.0	767287.3	834147.6
(g) Pension Funds	616517.0	667379.0	699173.0	736592.0
(h) Small Savings (excluding PPF)	1420662.3	1486880.4	1543252.3	1586495.5
Financial Liabilities (a+b)	7755119.8	7868215.0	8256715.7	8668329.0
<i>Per cent of GDP</i>	<i>36.8</i>	<i>35.9</i>	<i>36.3</i>	<i>36.9</i>
Loans/Borrowings				
(a) Banking Sector	6172863.3	6231128.1	6559106.7	6934620.2
<i>of which:</i>				
i. Commercial Banks	5640516.1	5700327.0	6025626.4	6389789.3
ii. Co-operative Banks	530937.1	529376.2	532040.6	543376.3
(b) Other Financial Institutions	1582256.5	1637086.9	1697609.1	1733708.8
<i>of which:</i>				
i. Non-Banking Financial Companies	755315.1	784191.9	813668.4	811505.2
ii. Housing Finance Companies	721510.0	745913.7	775408.5	812844.7
iii. Insurance Corporations	105431.4	106981.2	108532.1	109358.8

No. 50 (b): Stocks of Financial Assets and Liabilities of Households- Select Indicators (Concl.)

(Amount in ₹ Crore)

Item	Jun-2022	Sep-2022	Dec-2022	Mar-2023
Financial Assets (a+b+c+d+e+f+g+h)	25689017.4	26240728.5	27208717.9	28083947.0
<i>Per cent of GDP</i>	<i>103.2</i>	<i>101.5</i>	<i>102.4</i>	<i>103.1</i>
(a) Bank Deposits (i+ii)	11911196.2	11956360.9	12421907.5	12701761.3
i. Commercial Banks	11060527.2	11106712.0	11564354.7	11821685.0
ii. Co-operative Banks	850669.0	849648.9	857552.8	880076.4
(b) Non-Bank Deposits				
<i>of which:</i>				
Other Financial Institutions	216170.2	218246.9	224882.5	228542.9
i. Non-Banking Financial Companies	74794.4	78061.6	79862.5	85234.7
ii. Housing Finance Companies	141375.8	140185.3	145020.0	143308.2
(c) Life Insurance Funds	5325967.3	5559681.9	5786592.6	6038630.4
(d) Currency	2950343.2	2895763.9	2972524.0	3121514.2
(e) Mutual funds	2048097.3	2260209.7	2355315.8	2367792.5
(f) Public Provident Fund (PPF)	851913.4	858591.1	864730.6	939814.6
(g) Pension Funds	744459.2	799889.0	853412.0	898342.0
(h) Small Savings (excluding PPF)	1640870.6	1691985.1	1729352.9	1787549.1
Financial Liabilities (a+b)	8957470.6	9310471.8	9781859.9	10253472.2
<i>Per cent of GDP</i>	<i>36.0</i>	<i>36.0</i>	<i>36.8</i>	<i>37.6</i>
Loans/Borrowings				
(a) Banking Sector	7169465.5	7433248.0	7801415.3	8153970.3
<i>of which:</i>				
i. Commercial Banks	6620073.1	6881338.5	7246643.0	7580935.6
ii. Co-operative Banks	547894.8	550354.8	553201.4	571339.8
(b) Other Financial Institutions	1788005.1	1877223.8	1980444.6	2099501.9
<i>of which:</i>				
i. Non-Banking Financial Companies	840786.9	895226.5	971105.3	1051401.1
ii. Housing Finance Companies	835181.3	868212.5	893115.8	929861.7
iii. Insurance Corporations	112036.9	113784.8	116223.5	118239.1

- Note : 1. Data as ratios to GDP have been calculated based on the Provisional Estimates of National Income 2022-23, released by NSO on May 31, 2023.
2. Pension funds comprises funds with the National Pension Scheme.
3. Outstanding deposits with Small Savings are sourced from the Controller General of Accounts, Government of India.
4. Non-bank deposits apart from other financial institutions, comprises state power utilities, co-operative non credit societies etc. Data for outstanding deposits are available only for other financial institutions.
5. 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

- NM₂ and NM₃ 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.
L₁ and L₂ are compiled monthly and L₃ 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 and ACU currency swap arrangements. 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 & 1.1.1.1.4: 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 (WLAs). 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.

Data since September 2023 includes the impact of the merger of a non-bank with a bank.

Table No. 46

GDP data is based on 2011-12 base. GDP for 2023-24 is from Union Budget 2023-24.

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**.

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Name of Publication	Price	
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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 2022-23	₹550 (Normal) ₹600 (inclusive of postage)	US\$ 24 (inclusive of air mail courier charges)
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7. Banking Glossary (2012)	₹80 per copy (over the counter) ₹120 per copy (inclusive of postal charges)	
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10. Reserve Bank of India Occasional Papers Vol. 43, No. 2, 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. 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)
12. 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.

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