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SPEECHES

*Transformative Governance through Sound Boards**

Shri Shaktikanta Das

I am delighted to be present here today for this second Conference of Directors of the Private Sector Banks. As many of you would be aware, we had organised the first such Conference last year in the month of May on the theme – "Governance in Banks: Driving Sustainable Growth and Stability". That interaction of the Reserve Bank with the Boards of Directors was very well-received with a strong feedback that such conferences be held on a periodic basis.

To set the tone for today's Conference, let me take a step back and reiterate the expectations from bank Boards which I had shared in the form of a 10-point Charter in the last year's Conference. The Charter essentially covered the tenets of a strong governance framework. What I am going to speak today is essentially built on top of that foundation. The expectations I shared last year were with respect to: (i) Governance and Stability; (ii) Ensuring requisite qualification and expertise in the Board; (iii) Objective and Independent Board; (iv) Role of Chairperson, Board Committees and Managing Director/Chief Executive Officer; (v) Corporate Culture and Value System; (vi) Quality of Information; (vii) Effective oversight of Senior Management; (viii) Business Model and Conduct; (ix) Integrity and Transparency of Financial Statements; and (x) Independence of Assurance Functions. I would like to urge you all to go through my last year's address which is available on the Reserve Bank's website.

Turning to today's Conference, the theme focuses on transformative governance. But what exactly does this entail? While the term may have multiple interpretations, here it signifies creating a governance framework that not only meets current regulatory standards but also proactively addresses emerging risks, opportunities, and changes in the financial landscape. Boards must move beyond traditional oversight roles and embrace agility, foster innovation, and ensure sustainability and adaptability to today's dynamic environment. I would like to share some thoughts on these aspects with you today.

The Indian banking sector is transitioning through a time which is replete with opportunities as well as risks and challenges. The banking sector remains strong and stable[1]. All the financial indicators have improved since we met in May last year, reflecting the efforts of the various participants of the banking sector, including their managements and Boards. I take this opportunity to congratulate the managements and Boards of banks for this achievement. To keep the resilience of the banking system intact, the strong fundamentals that we have today should be leveraged to reinforce and fortify the defences. Good times, after all, are the best times to reinforce resilience and grow sustainably.

The key principle underlying good governance is growth with stability; profitability with sustainability.

Importance of situational awareness for robust governance

In our rapidly evolving and technology-driven environment, organisations face significant challenges and risks. Factors like technological advancements, the rise of new-age fintech entities, third-party dependencies and climate change are reshaping the economic landscape. Amid these shifting tides, Boards should serve as a lighthouse for banks and provide steady guidance to help navigate these challenges

* Keynote Address by Shri Shaktikanta Das, Governor, Reserve Bank of India - November 18, 2024 - at the Conference of Directors of Private Sector Banks, Mumbai

[1] CRAR at 16.7 per cent, Gross NPA at 2.5 per cent, Net NPA at 0.6 per cent and Provision Coverage Ratio at 76.4 per cent at the end of September 2024 (provisional).

and steer towards safe and prosperous shores. In this context, I would like to highlight a few points.

First, the Boards may adopt a proactive approach in identifying and addressing potential challenges. This necessitates clear understanding of both the external conditions as well as the internal currents within the organisation. The Board needs to continuously assess external factors like regulatory changes, shifting market winds, overall macroeconomic changes and advances in technology. Boards should also be fully cognisant of the organisation's internal strengths, vulnerabilities, and operational conditions, so that they have a clear situational awareness. Such an approach would enable the Board of Directors to properly guide the management to be well-prepared to weather unexpected challenges and navigate toward sustainable growth.

Second, Boards must be cognizant of build-up of concentrations in their business model. Excessive reliance on specific sectors, markets, or customer segments can expose the bank to amplified risks, particularly in times of economic stress or industry shifts. For instance, as you would be aware, seeing a build-up of concentration across certain loan segments, the Reserve Bank took a few counter-cyclical measures last year. Similarly, Boards can play a proactive role by regularly monitoring the bank's portfolios, identifying potential areas of over-concentration, and taking pre-emptive steps to maintain a balanced approach.

Third, the Boards must also remain vigilant to operational risks, particularly those arising from IT outsourcing and reliance on third-party vendors. As banks increasingly depend on external service providers for key operations, the potential for disruption grows, especially when coupled with vulnerabilities, if any, in cybersecurity. The CrowdStrike incident earlier this year demonstrated how a faulty patch update could cause millions of computers across countries to crash and create disruptions across several industries. Therefore, it is necessary to ensure that third-party relationships are thoroughly assessed, monitored, and governed with a focus on security and resilience. This includes implementing strong cybersecurity protocols, conducting regular risk assessments, and ensuring that third parties adhere to the same high standards of security expected within the organisation.

Fourth, technology has now facilitated innovative business models in banks, either in competition with or in collaboration with fintech. As digital platforms and financial technologies rapidly evolve, banks find themselves exploring new ways to deliver services, reduce costs, and enhance customer experience. There is, however, a need to balance innovation with security and stability. The key questions Boards should ask the managements include: (i) Does the bank understand the potential negative externalities of technological solutions (e.g., bias in AI models), and are there adequate mitigants in place? (ii) Are current governance structures, policies, and processes sufficient to manage risks related to third-party dependencies, consumer protection, cybersecurity, and data privacy? (iii) Are these innovations compliant with regulations in letter and in spirit? (iv) Is the bank investing adequately in scalable solutions to ensure that downtime is minimised?

Empowering assurance functions for stronger governance

Assurance functions— viz. risk management, internal audit, and compliance—can serve as invaluable resources for Board Directors. They provide critical insights into both the internal health of the organisation and its exposure to external risks. In order to effectively leverage these functions, Boards need to actively safeguard the independence of these functions and ensure that the connected teams are adequately resourced with skilled staff and are given due prominence within the organisation. Recognising

the importance of these functions, the Reserve Bank has been organising conferences of Heads of Assurance functions and is also asking for their presence at the supervisory meetings with banks. I would, therefore, encourage Boards to build further on these initiatives.

Encouraging Diversity of Opinion

Another way for Boards to deepen their understanding of issues is by actively avoiding the pitfalls of groupthink and fostering an environment that encourages and welcomes a diversity of ideas. When Boards create space for varied perspectives, they gain a more comprehensive view of potential challenges and opportunities. Additionally, the Board should ensure that contrarian opinions are examined and decision thereon are recorded. A Board that is not open to review, or diversity of opinions, risks missing crucial insights.

It is also important for Boards to give due consideration to the critical views of senior management, employees, whistle-blowers, and, most importantly, customers. Often, these perspectives contain early warning signals of potential issues that might otherwise go unnoticed. There has to be healthy relationship and mutual respect between the Managements and Boards.

Given the dynamic and evolving landscape of the financial sector, it is crucial for the Directors to stay well-informed. As mentioned in my speech last year, ongoing orientation programmes may be helpful in facilitating this. These programmes should focus not only on business and regulatory updates but also on developments in risk management, technology, and governance practices.

I would also like to urge the MD & CEOs to ensure that the Board is provided with all the requisite information in a timely manner, and that meeting agendas are circulated well in advance with adequate background information.

Customer Centricity

Having spoken about proactive governance, I would now like to address another aspect that is also extremely important in the context of good governance, namely, customer centricity. Trust is the bedrock of banking, and the industry fundamentally relies on the faith of depositors and investors for its stability and growth. Building and maintaining this trust requires banks to place customers at the heart of their operations and ensuring that products, services, and policies genuinely meet customer needs and expectations.

In this context, it is disheartening to see the nature of some of the complaints and the observations in our inspection reports. There are instances where complaints are misclassified as customer queries. We also come across instances of rejected grievances not being escalated to the internal ombudsman of banks. I would like to urge the Boards and their Customer Service Committees to closely look into these aspects to ensure that banks have a genuine commitment to customer centricity.

The flexibility and space available to the banks for formulating their internal Board approved policies in line with the regulatory expectations needs to be used with utmost prudence, especially when it has a bearing on customers. Boards should give a close look at service charges and penalties when they are treated as avenues of profit or when forced bundling of products is done, or when disclosures to customers are non-transparent or selective. Ensuring fair lending practices and implementing robust grievance redress systems are critical to protecting customers' interests.

While progress has been made in enhancing customer awareness, there remains significant potential to improve financial literacy, particularly for the marginalized, less savvy, and rural population. These groups often struggle to navigate the complex financial landscape and are more vulnerable to

usurious interest rates, fraud, and other unfair practices.

Board of Directors should also focus on strengthening the internal governance framework within the bank. Unethical practices, such as mis-selling of products or the opening of accounts without proper KYC verification need to be curbed. Staff incentives should be carefully structured to avoid encouraging mis-selling or unethical practices. While such practices may yield short-term gains, they ultimately expose the bank to significant long-term risks, including reputational damage, supervisory scrutiny, and financial penalties.

As I proceed to conclude, I would like to touch upon our collective aspirations for the future. As India progresses towards becoming a developed and more inclusive economy by 2047, it is imperative that our banking and financial sector—both public and private—align their strategies with the developmental aspirations of our people. I would like to request the Board members to set clear and actionable objectives that support these aspirations. Together, we should foster a financial system that is resilient, inclusive, and sustainable for future generations.

This year also marks the 90th year of the Reserve Bank. We have set ambitious goals for RBI@100, which include deepening financial inclusion, expanding credit availability, globalising India's financial sector, and universalising India's payment systems. Achieving these goals will require active collaboration with the banks. I look forward to your continued support in helping us realise this vision.

Let me now conclude. A well-functioning Board of Directors with proactive oversight of governance, supported by robust assurance functions and policies built around customer centricity, is what sets a resilient and agile bank apart from an ordinary one. Such a Board would ensure that the organisation remains adaptable to change, anticipates emerging risks, and builds a strong foundation for sustainable growth. By maintaining a sharp focus on both internal and external challenges, a Board can drive long-term success and build trust within the financial ecosystem. With this, I wish you an insightful and enriching Conference.

Thank you and Namaskar.

*Sailing Through Turbulence: India's Tryst with Financial Stability**

Shri Shaktikanta Das

I am happy to be here at the Global Leadership Summit which marks the 25th anniversary of CNBC TV18. I would like to congratulate Team CNBC TV18 for its successful journey over the years. It is indeed an honour for me to join this occasion to felicitate three distinguished former Governors of the Reserve Bank of India – Dr. C. Rangarajan, Dr. Bimal Jalan and Dr. Y.V Reddy. With their exceptional performance in economic and financial sector policy making, they occupy the pole position in the art and science of central banking. As stewards of a full-service central bank, they initiated fundamental shifts in monetary frameworks as well as in the financial, exchange rate and external sector policies of the country. I humbly bow to the rich tradition and legacies left behind by Dr Rangarajan, Dr Jalan and Dr Reddy in shaping what the Reserve Bank of India is today. Drawing inspiration from their contributions, I have chosen to speak today on the topic, 'Sailing through Turbulence: India's Tryst with Financial Stability'.

In recent years, the global economy has gone through a period of continual and unprecedented shocks. This was a period of "Great Volatility"[1] as distinct from the earlier era of "Great Moderation".[2] Complex and varied shocks of a global pandemic, supply chain disruptions, wars, geopolitical conflicts and climate change hit the global economy very hard. These were not typical shocks dealt with in textbooks or having standard policy responses. Sailing through this turbulent period has, therefore, been a daunting challenge for every country including India.

Current Global Context

After almost a synchronous adoption of expansionary policies following the pandemic, central banks across the world resorted to an equally synchronous monetary policy tightening when high inflation bounced back in the face of supply chain disruptions and the war in Ukraine. Overall, these policies across the globe appear to have worked well.[3] Soft landing has been ensured, but risks of inflation coming back and growth slowing down do remain. The headwinds from geopolitical conflicts, geo-economic fragmentation, commodity price volatility and climate change continue to blow.

During this entire period of great volatility, maintaining price and financial stability have posed difficult trade-offs, as evident – among others – from the banking sector turmoil in certain advanced economies in 2023. The challenge is always between doing too little or too late on the one hand; and doing too much or too early on the other. Reading the interplay between monetary policy actions and the developments in the financial sector as well as the evolving situation correctly, and timing the decisions are always challenging. Central Banks have by and large performed well this time around.

In this challenging global environment, let me highlight certain contradictions globally which we observe at the current juncture. First, government bond yields are rising even as many advanced economies have embarked on an easing path through rate cuts, underscoring the fact that treasury markets are influenced by a host of global and domestic factors that are much beyond mere policy adjustments. Incidentally, even the US dollar is appreciating although the FED is cutting rates. Second, undeterred

* Keynote Address by Shri Shaktikanta Das, Governor, Reserve Bank of India - November 14, 2024 - CNBCTV18 Global Leadership Summit.

1 Governor's Statement: December 8, 2023.

2 The 'Great Moderation' is the name given to the period of decreased macroeconomic volatility experienced in the United States in the mid-1980s,1990s and early 2000s.

3 Chapter 2, World Economic Outlook, IMF, October 2024.

by the strong US dollar and higher bond yields, prices of gold and oil - the two commodities that typically move in tandem - are showing sharp divergence. Third, an interesting contrast is also emerging between rising geopolitical risks and financial market volatility. While geopolitical tensions have escalated steadily in recent years, financial markets have shown considerable resilience in the face of mounting uncertainties. Fourth, global trade is projected to remain higher than the previous year[4] notwithstanding the sanctions, tariffs, import duties, rising cross-border restrictions and supply chain disruptions. Fifth, the emerging market economies (EMEs) have shown greater resilience than advanced economies (AEs) in the current phase.

Indian Context

Amidst these headwinds and contradictions, the Indian economy is sailing through smoothly, powered by buffers like strong macro-economic fundamentals, stable financial system and resilient external sector. Our endeavour has been to seize every opportunity to further strengthen our fundamentals through prudent and proactive policy approach. Our prime focus has been to maintain financial stability, which breeds growth and prosperity.

In 2019, we faced severe stress in the non-banking financial company (NBFC) sector. Liquidity had dried up and there was a crisis of confidence in the financial markets. There were also certain instances of bank stress, both in commercial and cooperative banking sectors, in recent years. In all these exigent situations, the Reserve Bank took effective measures to stem the crisis from snowballing and restore stability and confidence in the markets. In parallel, we strengthened our regulatory architecture and supervisory vigil to proactively identify weaknesses and be future ready. It is, therefore, appropriate to reflect on our experience during this period, not just – if I may say so – as a success story but, more importantly, to draw lessons for the future.

When the COVID-19 pandemic hit us, our response was swift and decisive. We put in place business continuity measures even before the nation-wide lock down was announced. We set up a special quarantine facility, with about 200 officers, staff and service providers, to ensure continuity in financial market operations and payment systems. All regulated entities were advised to take immediate contingency measures to ensure business continuity and manage their risks.

Monetary Policy and Liquidity Operations

Monetary policy has completed a full cycle in the last six years – an easing cycle during 2019-22 and a tightening cycle of equal magnitude thereafter. We have used the flexibility embedded in flexible inflation targeting (FIT) to prioritise growth or inflation depending upon the prevailing conditions and the outlook. For instance, when economic activity came under severe stress during the COVID-19 pandemic, we prioritised growth over inflation and cut policy rates and infused huge liquidity into the system. These measures were nuanced, keeping in mind the price and financial stability challenges that may arise in future. In addition, forward guidance during the easing phase complemented and reinforced monetary policy and liquidity measures. In parallel, appropriate regulatory measures, consisting of moratorium on repayment of loans and resolution frameworks for stressed loans were also announced.

Later, when the Russia-Ukraine war caused massive supply disruptions in key commodities and threatened inflation to get out of control, we shifted our focus from growth to controlling inflation. We frontloaded our monetary policy actions and changed our stance to withdrawal of accommodation.

[4] World merchandise trade volume is projected to grow by 2.7 per cent in 2024 and 3 per cent in 2025 as per Global Trade Outlook and Statistics, WTO, October 2024. The IMF has projected world trade volume to increase by 3.1 and 3.4 per cent in 2024 and 2025 respectively (World Economic Outlook, October 2024).

We remained nimble and agile in our liquidity management operations. Further, fiscal-monetary coordination – Reserve Bank's rate hikes along with proactive supply side measures by the Government – helped in controlling inflation and anchoring inflation expectations.

Coming to a more recent period, the MPC in its meeting on October 7-9, 2024 took note of the prevailing and expected inflation-growth dynamics and decided to change the monetary policy stance from withdrawal of accommodation to 'neutral'. It also decided to remain unambiguously focused on a durable alignment of inflation with the target, while supporting growth. The change in stance provides greater flexibility and optionality to act in sync with the evolving conditions and the outlook.

Overall, while average growth during 2021-24 remained buoyant at above 8.0 per cent, the receding of headline inflation in 2023-24 and 2024-25 (up to September) to within the tolerance band bears testimony to the success of the Reserve Bank's policies. What is equally important is that all these actions did not undermine financial stability. Our rate hikes were preceded or accompanied by prudent risk management practices in the form of greater flexibility to banks in holding government securities under the held to maturity (HTM) category that minimised marked-to-market losses. It is evident that while designing our responses to both the pandemic and the inflation upsurge, our policies were nimble, flexible and balanced. We remained consistent with our mandate of "price stability while keeping in mind the objective of growth". The underlying mandate of maintaining financial stability was also adhered to.

Central Bank Communication

During this entire period, communication became an important tool to complement our policy actions. During the pandemic, our endeavour was to give confidence to the wider economy, financial markets and the public at large. In the monetary policy statement on April 17, 2020 in the early part of the lockdown, I had said *"Although social distancing separates us, we stand united and resolute. Eventually, we shall cure; and we shall endure"*. We began using quotes from Mahatma Gandhi like "….in the midst of death life persists….in the midst of darkness light persists" (April 17, 2020); *"It is when the horizon is the darkest and human reason is beaten down to the ground that faith shines brightest and comes to our rescue"* (May 22, 2020) ; and similar other quotes.

In particular, I would like to refer to my December 2023 statement following the macro prudential measures undertaken on November 16, 2023: *"Financial stability is a public good*[5]*…….we do not wait for the house to catch fire and then act. Prudence at all times is our guiding philosophy."* The spirit behind these statements are key to withstanding a period of multiple crises. Our communication was backed up by appropriate policy actions. Evidently, communication played a critical role in maintaining stability in the turbulent times of recent past.

Robust Regulation and Supervision for Stability

It goes without saying that a sound regulatory framework for the regulated entities (REs), together with a robust supervisory and monitoring mechanism, are key enablers for ensuring financial stability. From a prudential perspective, so far as the Reserve Bank is concerned, measures like the revised norms on classification and valuation of investments; the scale-based regulation for NBFCs; revised regulations for micro finance loans; four-tiered regulatory approach for urban cooperative banks (UCBs); and steps to contain potential credit exuberance in unsecured loans are some illustrations of prudential design of regulations in the interest of maintaining financial stability.

[5] Financial stability was also described as a public good in Nani Palkhivala Memorial Lecture (Das, Shaktikanta), January 16, 2021

Looking ahead, the financial system will continue to face newer challenges. There is a continuing need for financial sector entities to strengthen their levels and quality of capital, while further sharpening the risk management standards. The Reserve Bank is now working on issues like adoption of revised Basel III standards in a phased manner; issuance of guidelines for Expected Credit Loss (ECL); liquidity coverage ratio (LCR); and prudential framework for financing of project loans. Our overall approach is consultative. For instance, with regard to the ECL framework, even after issuing a discussion paper and receiving stakeholder comments which we got examined by an external working group, we now propose to issue a draft circular for implementation of ECL. The idea is to get stakeholder comments on certain specifics of the framework considering its significance for the banking sector. Our endeavour is to maintain a balance between banking sector stability and economic growth, both of which are necessary and are complementary to each other. We are also working on climate risks and their impact on the financial sector. The final guidelines for Disclosure Framework on Climate related Financial Risks will be issued shortly.

The process of supervision of banks, NBFCs and other financial entities has also been unified and substantially strengthened with pro-active on-site and off-site supervisory mechanisms. The focus is now on early detection and pre-emptive correction. The enhanced off-site assessment framework is more analytical and forward looking with introduction of macro-stress tests, early warning indicators (EWIs), fraud vulnerability index (FVI), micro-data analysis (MDA), and use of artificial intelligence and machine learning techniques. The onsite supervision now goes into greater depths. Direct engagement with the Supervised entities is enabled through discussions and also through the Daksh portal – a SupTech initiative with end-to-end workflow solution to streamline and strengthen various supervisory processes.[6] The College of Supervisors, which was set up by the Reserve Bank in May 2020, is now helping our supervisors to sharpen their skills and remain up to date with the new and complex developments in the financial sector.

The financial sector has indeed become more complex, with the development of multiple digital products, common market infrastructure and common service providers for IT services. These developments have elevated both the micro-prudential and macro-prudential risks. The Reserve Bank has been proactive in addressing the growing cybersecurity challenges in the financial sector by issuing regulations related to basic Cyber hygiene in Regulated Entities, Digital Payments Security Controls, IT Outsourcing and IT Governance. Recognising the critical importance of data and its future potential, an Enterprise Computing and Cybersecurity Training Institute is being set up in Bhubaneshwar. Along with this, a Data Centre is also being set up. Work on setting up the financial sector cloud facility by the Reserve Bank is also gathering pace.

Overall, the financial sector in India is now more robust and resilient than at the beginning of the recent period of turmoil. There is, however, no room for complacency. The Regulator and the Regulated Entities must remain alert and future ready for the emerging challenges.

External Sector Stability

India's external sector has also exhibited strength and stability in the recent period. The current account deficit (CAD) has remained within the manageable limit and stood at 1.1 per cent of GDP in Q1:2024-25 (0.7 per cent in FY 2023-24 and 2.0 per cent in FY 2022-23).

[6] Daksh provides secured, anytime-anywhere role-based access to the users. It is envisioned as the single interface for all the supervisory functions. The supervisory processes covered in Daksh include inspection planning and execution, scoping and resource allocation, report finalisation and availability of inspection reports to the entities.

During the first half of 2024-25, India's merchandise exports recovered from a contractionary zone in 2023-24. Services exports have remained buoyant and rose by 11.0 per cent during H1:2024-25 (4.8 per cent in FY 2023-24). The robust growth in services exports, coupled with buoyant private remittances, are helping to contain the current account deficit.

On the financing side, net capital inflows have been generally exceeding the CAD and contributing to accretion in foreign exchange reserves. India has the fourth largest foreign exchange reserves in the world at US$ 682 billion as on October 31, 2024, sufficient to cover the entire external debt[7] and about 12 months of merchandise imports.[8] In terms of other key external sector indicators such as external debt to GDP, net international investment position (IIP) and short-term debt to external debt, India's position remains resilient.

Our exchange rate policy is well-articulated and has remained consistent over the years. India's exchange rate regime is market-determined, and the Reserve Bank does not target a level or band of the exchange rate. The forex interventions are carried out to ensure an orderly movement of the exchange rate and to curb undue volatility, anchor market expectations and ensure overall financial stability.

It is important to note that the exchange rate is also a barometer of an economy's inherent strength. If the Indian Rupee (INR) has remained relatively stable despite severe external shocks including the largest and steepest tightening by the Fed in 2022 and 2023, it speaks volumes about the sea change in our macro fundamentals from the Taper Tantrum days.

In fact, if we look at the other major segments of the financial markets regulated by the Reserve Bank – money market and government securities market – they have also remained stable despite large swings and spillovers from global markets. The weighted average call money rate has remained rangebound within the liquidity adjustment facility (LAF) corridor and closely aligned to the policy repo rate. The 10-year G-sec yield has also moved in a narrow range of 6.72 to 7.61 per cent[9] during the tightening cycle amidst global policy pivot, fluctuations in US treasury yields and global crude prices. The Reserve Bank has undertaken several regulatory measures in recent years to ensure resilience and stability of the financial markets. These include: putting in place regulatory frameworks for benchmark administrators and electronic trading platforms; robust governance requirements for market makers in OTC derivative markets; and margin requirements for non-centrally cleared derivative reforms.

As I proceed to conclude, let me add that the Reserve Bank has played a crucial role in creating an enabling eco-system for innovations in the payment systems. This has enhanced the efficiency and stability of the Indian financial system. Introduction of 24x7 NEFT and RTGS;[10] the success of the Unified Payments Interface (UPI); and implementation of the central bank digital currency (CBDC) pilot project (e₹) are transforming the wider financial system. Digitalisation of banking services has received a further boost from Reserve Bank's pilot, the Unified Lending Interface (ULI), which has been designed and developed by the Reserve Bank innovation Hub (RBIH), Bengaluru. A few other initiatives of RBIH are also in the pipeline.

Concluding Observations

The Reserve Bank's mandate spans multiple dimensions. Our consistent effort is to take a holistic

[7] At end-June 2024.

[8] Annualised merchandise imports on Balance of Payments basis.

[9] As on June 16, 2022, the 10-year G-sec yield touched 7.61 per cent. The 10-year G-sec yield softened to a minimum of 6.72 per cent as on September 26, 2024.

[10] National Electronic Funds Transfer (NEFT) was made round the clock 24/7 including weekends and holidays from December 16, 2019. The Real Time Gross Settlement (RTGS) was made round the clock 24/7 including weekends and holidays from December 14, 2020.

view of stability which encompasses price stability, financial stability and sustained growth. We deploy multiple policy instruments to serve these multiple objectives.

Today, India's economic growth remains resilient; inflation is expected to moderate despite periodic humps; and the external sector is robust. Without being complacent, let me end by saying that the Indian economy has sailed well through the prolonged period of turbulence and exhibits resilience in the face of constantly emerging new challenges.

Thank you. Namaskar.

*Remarks at the Macro Week, 2024**

Shri Shaktikanta Das

I am happy to be here today at the Macro Week 2024 organised by the Peterson Institute for International Economics (PIIE). The Institute has established itself as a leading forum, bringing together public policy practitioners, central bankers, industry leaders, research professionals and scholars to brainstorm on emerging macroeconomic issues. Such discussions, especially on the sidelines of the International Monetary Fund and World Bank meetings, provide fertile ground for rigorous and meaningful interactions on matters of contemporary policy relevance.

In my remarks today, I propose to share some of my thoughts on the international monetary agenda and its relevance in a world confronted with economic and financial fragmentation. I shall also touch upon why and how climate change needs to be part of central bank narratives.

I. International Monetary Agenda

Global economic dynamics is shifting rapidly, driven by forces such as technological transformation, geoeconomic realignments, environmental challenges, and the ongoing global geopolitical disruptions. In this rapidly changing context, it is incumbent upon the G20 and international monetary institutions to adapt swiftly and act decisively to foster global stability and sustainable growth. I would like to highlight six areas of priority in this context, not in any order of importance.

The first and foremost priority should be accorded to **reforming the international financial architecture**. This involves prioritising inclusive global governance frameworks that better reflect the realities of today's global economy. The current system, while foundational, needs to reform itself to ensure equitable voice and representation for the emerging economies. Enhanced access to resources and a stronger role in the governance of institutions such as the International Monetary Fund (IMF) and the World Bank will not only enhance the legitimacy of these institutions but also foster more serious global cooperation in addressing macro-financial challenges.

Second, on the agenda should be the **debt restructuring mechanisms**. While the G20's Debt Service Suspension Initiative (DSSI) and the Common Framework for Debt Treatments were commendable measures, the scale of the problem is much larger. Debt restructuring processes remain *ad hoc*, slow, and – on several occasions – not sufficiently transparent. This results in protracted crises, causing unnecessary economic suffering for the debtor countries. We need an overhaul of the debt resolution architecture and its refashioning into one that involves both public and private creditors, ensures timely debt restructuring, and links debt relief with sustainable development objectives. Without such reform, the vulnerable countries will continue to face unsustainable debt burdens which will have repercussions for global financial stability.

Third, we must recognise the fragility and fault-lines of the global monetary and financial system, both institutions and markets. Recent years have highlighted the risks posed by financial instability, in both advanced and emerging markets. There indeed is a pressing need to **improve global financial regulation** to manage systemic risks posed by private capital and non-bank financial intermediaries, which now hold significant portions of global assets. The rise of shadow banking and fintech, and the growing footprint of decentralised finance, require more robust regulatory oversight to prevent contagion effects and ensure financial stability as a global public good.

* Remarks by Shri Shaktikanta Das, Governor, Reserve Bank of India At the Macro Week 2024 organised by the Peterson Institute for International Economics (PIIE), October 25, 2024, Washington DC.

The fourth area of concern is the **digital divide**. As the global economy becomes more digitalized, countries that lack the infrastructure, skills, and regulatory frameworks for digital inclusion risk falling further behind. The G20 and the international monetary and financial institutions should work towards nurturing an ecosystem that promotes investment in digital public infrastructure, and widespread adoption of digital technologies while ensuring cybersecurity and privacy safeguards.

Fifth, geopolitical tensions are increasingly affecting economic policies, leading to sanctions, weaponisation of finance, trade restrictions and supply chain disruptions. This is causing **economic fragmentation**, as countries aim for strategic independence in key areas like energy, technology and strategic materials like semiconductors and critical minerals. The G20 must play a key role in preventing further economic fracturing by promoting open and rules-based trade systems. While recognising the need for countries to secure their supply chains in tactically important sectors, the G20 should foster cooperation in areas such as technology transfer, investment in global public goods, and green transition.

Sixth, perhaps and above all, **climate finance** must be at the forefront of the G20's priorities and the international monetary and financial agenda. The international financial system must mobilise significantly greater resources to fund the transition to a low-carbon economy. The G20 must also coordinate national efforts to ensure that climate policies do not lead to protectionism, unilateral trade barriers or trade conflicts. The rise of border carbon adjustments (BCAs) and similar measures must be managed through cooperative frameworks to avoid unnecessary economic fragmentation. Additionally, there is an urgent need for innovative financial instruments that can incentivise private capital to flow into climate related efforts. Without a fundamental shift in the way the international monetary and financial systems address climate finance, we risk exacerbating environmental degradation and global inequality.

We live in an era of high uncertainty and turmoil, where the job of policy makers is something like steering a vast, interconnected fleet through turbulent seas, where the old maps no longer suffice. The time for incremental changes has gone. What is needed now is a transformative action agenda which would ensure that the global economic and financial architecture serves all nations and peoples and not just a select few. With collective action and renewed commitment to multilateralism, we can build an international monetary and financial system that is truly fit for the 21st century.

II. Economic and Financial Fragmentation

Global co-operation and the integration of global markets, in particular, were instrumental in driving decades of world growth. For many low-income countries and emerging markets, this integration into the global economy was a crucial contributor to their development. It provided them access to affordable imports, extensive export markets, and foreign technology. Now, however, geo-economic fragmentation is weighing on the outlook for global growth.[1] The geopolitical risk index[2] has spiked sharply in 2024 amidst increases in trade restrictions and financial sanctions. This has reversed the substantial benefits from global economic integration[3]. There are now fears of de-globalization and increasing regionalization. This could dampen the convergence of emerging and developing economies to better living standards. Geopolitical risks are also imparting heightened volatility to capital flows and asset prices. They are also undermining the efficiency of the global payments systems.

Cross-border flows of goods, services, and capital have levelled off since the global financial

[1] A study by IMF staff in August 2023 suggested that greater international trade restrictions could reduce global economic output by as much as 7 percent over the long term, or about USD 7.4 trillion in today's dollars. That is equivalent to the combined size of the French and German economies, and three times sub-Saharan Africa's annual output (The High Cost of Global Economic Fragmentation, IMF Blog, August 2023).

[2] Caldara, Dario. and Iacoviello, Matteo (2022), "Measuring Geopolitical Risk", American Economic Review, Vol. 112, No 4, April, pp. 1194 1225.

[3] Financial Stability Report, RBI; June 2024.

crisis. Recent geopolitical events have further fuelled protectionism alongside an increase in trade and logistics disruptions[4]. For many low-income countries and emerging markets, potential losses due to de-globalization could be much greater. Despite these downside risks, it is heartening to see recent projections which suggest global goods trade will post an increase of 2.7 to 3.1 per cent increase this year[5]. Even as this near term resilience gives hope, remaining alert to the changing winds is important while preparing for an increasingly uncertain outlook.

Recently, global value chains (GVCs) have also seen significant disruptions due to both geo-political events and overarching issues like the pandemic and climate crisis. This has raised concerns regarding the reliability of the GVCs as engines of growth. Discussions regarding 'friend-shoring' and 'reshoring' are spreading dissonance and fears of discriminatory measures against foreign competitors. In such a trade environment, it is the 'bystanders' that would be disproportionally affected.

Other forms of fragmentation — like technological decoupling and disrupted capital flows — would also have their adverse effects and raise costs. They can also impact funding costs of banks and domestic financial institutions, reduce their profitability, and prompt them to contract lending, with potentially adverse effects on economic activity. Building up adequate international reserves as well as capital and liquidity buffers within the national financial systems would be vital to reduce the vulnerability of emerging economies to such adverse external shocks.

Finally, there is the apprehension that if geo-economic fragmentation continues unabated, countries may seek to become less reliant on the international financial infrastructure and global standards. Fragmentation of the international monetary system could have serious implications for markets. New parallel systems that lack inter-operability may emerge, which means higher transaction costs and other inefficiencies. Strengthening crisis preparedness to deal with the fallout from these tensions, including unanticipated ones, should be a policy priority for emerging market economies. The global financial safety net must be reinforced through mutual agreements between countries. This may include regional safety nets, currency swaps, fiscal mechanisms, and precautionary credit lines from international financial institutions. If these things do not happen, emerging economies will have to substantially augment their own safety nets and buffers.

III. Central Banking and Climate Change

Traditional views on climate change policy have given way to a more updated multi-regulator approach to tackle the unfolding repercussions of extreme climate events. Manifestation of these risks through demand-supply shocks, productivity losses, asset revaluations and transition to a low-carbon ecosystem at high cost can impair financial, monetary and price stability[6]. To my mind, the question, therefore, is not whether central banks should take into account climate change but how should this consideration be integrated to their central mandates. This involves, first, understanding the impact on price stability, given the high costs and other transition risks involved in progressing towards a low-carbon economy[7]. Second, it is important to assess the impact on financial stability in all its ramifications[8]. Third, it is necessary to balance micro prudential responsibilities[9] to

[4] Chapter 1, Geoeconomic Fragmentation: The Economic Risks from a Fractured World Economy. CEPR and IMF, 2023.

[5] Global Trade Outlook and Statistics, WTO, October 2024 & World Economic Outlook, IMF, October 2024.

[6] Climate change now holds prominence in the work programmes of the Financial Stability Board (FSB) and the Basel Committee on Banking Supervision. The Network for Greening the Financial System (NGFS), which was set up in 2017 at the initiative of eight central banks, now includes 141 members and 21 observers, comprising central banks or prudential authority.

[7] Monetary Policy and climate change- Key takeaways from the membership survey and areas for further analysis, July 2023 – NGFS.

[8] The Implications of Climate Change for Financial Stability, Financial Stability Board, 2020.

[9] Principles for the effective management and supervision of climate-related financial risks, Basel Committee on Banking Supervision (BCBS), 2022.

help financial institutions to manage material risks associated with climate change. Fourth, robust analysis and research are needed to enable advocacy and thought leadership[10] in this space[11].

The Reserve Bank of India does not have an explicit remit for dealing with climate related risks. It is an inferred responsibility derived from its macroeconomic and financial stability mandates. This has encouraged the quest for suitable instruments and actionable frameworks. The Reserve Bank of India has set up a sustainable finance group (SFG) within the Bank and has also joined the Network for Greening the Financial System (NGFS) in 2021. Some of the steps already taken by the Reserve Bank include promoting green finance initiatives such as inclusion of finance to renewable energy projects in directed lending (Priority Sector Lending) by banks; issuance of sovereign green bonds (SGrBs); establishing a framework for acceptance of 'Green Deposits'; and developing a Disclosure Framework on climate-related financial risks and Guidance on climate scenario analysis and stress testing.

At the cross-country level, I believe it is important to give due acknowledgement to the sharp trade-offs central banks face when dealing with climate-related risks. On the one hand, central banks have to operate within the confines of their specific legal frameworks and, as publicly accountable institutions, they have to provide rigorous evidence in support of all their actions. On the other hand, central bank balance sheets might already be exposed to climate-related risks and they may be forced to respond to them from behind the curve.

While recognising that the government is the most appropriate and effective authority to spearhead climate action, each country – based on its domestic conditions – has to decide between having explicit climate mandate for the central bank or subsuming it into its price and financial stability mandate.

IV. Conclusion

As I conclude, let me briefly speak on the Indian macroeconomic experience. The Indian economy rebounded from the severe contraction imposed by the COVID-19 pandemic and averaged a real GDP growth of above 8 per cent during the last three financial years. For the current year (2024-25), the Reserve Bank of India has projected real GDP growth of 7.2 per cent, with risks evenly balanced around this forecast. Improving domestic demand, lower input costs and a supportive policy environment[12], are spurring manufacturing activity. The services sector has been displaying strong growth. The growth outlook reflects the underlying strength of India's macro-fundamentals, with domestic drivers – private consumption and investment – playing a major role. The government's thrust on capex and healthy balance sheets of banks and corporates are expected to support private investment. Private consumption, the mainstay of aggregate demand, appears to be on track for a strong improvement due to the favourable agricultural outlook and the pickup in rural demand. Sustained buoyancy in services would also support urban demand.

Resilient growth has given us the space to focus on inflation so as to ensure its durable descent to the 4 per cent target. The headline inflation trajectory is projected to sequentially moderate from the last quarter of this financial year. Unexpected weather events and worsening of geopolitical conflicts constitute major upside risks to the inflation outlook.

[10] Central Banks of Australia, Brazil, France, Germany. Japan, Malaysia and the European Central Banks have dedicated central bank units working on climate-related tasks.

[11] In May 2021, Reserve Bank set up a Sustainable Finance Group (SFG) within the Bank to effectively counter climate change-related financial risks, and for leading regulatory initiatives in areas of sustainable finance and climate risk.

[12] Government schemes such as Production Linked Incentive (PLI) scheme, Pradhan Mantri Awas Yojana (PMAY) [expanded to construct 3 crore additional houses], Pradhan Mantri Gram Sadak Yojana (PMGSY) [launching of phase IV], National Infrastructure Pipeline (NIP) and viability gap funding would provide impetus to capital formation.

A continuing priority for the Reserve Bank has been to strengthen the financial sector. The health parameters of banks and non-bank financial companies (NBFCs) are now very robust. This has resulted in sustained credit flows, especially to the remote and underserved segments, bolstering financial inclusion.

As I said in my last monetary policy statement, today, the Indian economy presents a picture of stability and strength. The balance between inflation and growth is well-poised. The external sector demonstrates the strength of the economy. Forex reserves are scaling new peaks. Fiscal consolidation is underway. The financial sector remains sound and resilient. Global investor optimism in India's prospects is perhaps at its highest ever. We are, however, not complacent, especially amidst the rapidly evolving global conditions.

Thank you.

*Recalibrating from Divergence to Convergence: The Indian Experience**

Michael Debabrata Patra

Good morning to you all!

In the Indian tradition, *Namaskar*, which means I salute the divinity in you.

It is always fulfilling to be here at the Annual Central Banking Seminar of the Federal Reserve Bank of New York. Over the years the seminar has become a landmark forum for the intermingling and cross-fertilisation of ideas and experiences among central bankers from all over the world. It is no wonder, therefore, that it has come to be regarded as a favoured stamping ground where practitioners of the profession rub shoulders and learn from each other about the 'soiling of the hands' in topically relevant issues in central banking.

I am grateful to Dr. Narahari Phatak, Head of International Policy and Strategy at the New York Fed – Hari – for inviting me to this year's seminar. When Hari reached out to me in July, the world was characterised by considerable differentiation in the macroeconomic pathways being charted in different jurisdictions. Hence the defining feature of the conduct of monetary policy by central banks at that time was divergence, motivating the choice of the theme of this year's seminar. Since then, however, much water has flown underneath the bridge and the world has changed in fundamental ways. After the US Federal Open Market Committee (FOMC) began its rate cutting cycle aggressively on September 18th this year, preceded by the second rate cut of the year by the European Central Bank (ECB) and followed by a fusillade of stimulus measures by China, convergence has become the dominant theme, barring some holdouts as in Japan, Brazil and Russia. Hence, I chose "Recalibrating from Divergence to Convergence" as the theme of my address under which I propose to share with you some aspects of the Indian experience (please see the Annex for relevant charts and tables).

II. Shock and Awe

The world is awash in an ocean of uncertainty, whipped up by hurricanes in the form of geopolitical conflict, geoeconomic fragmentation, financial market volatility, and overall policy uncertainty, including political spillovers during the Great Election year when more than half of the world's population faces the ballot box. Financial markets continue to front run and second guess central banks on the size and timing of policy pivots and their consequences.

Frenzy rose to a flash point on August 5th following the rate hike by the Bank of Japan on July 31st and the release of US non-farm payrolls data on August 2nd. A blood bath reminiscent of Black Monday of 1987 was unleashed across financial markets worldwide as Yen carry trade unwound. The fear gauge – the CBOE[1] Volatility Index or VIX – jumped more than 50 per cent, to its highest level since 2020.

Once again, on a single data release on September 3rd – the US Institute of Supply Management (US ISM) manufacturing index – recessionary fears resurfaced, setting off a rout in US equity markets that quickly spread to Asia and Europe. Thus, markets are recalibrating – albeit in a disorderly manner – from divergence to convergence. Every incoming data seems to be dispelling the gathering good feeling of soft landing and sparking fears of a jarring end to disinflationary monetary policy. Overall, however, markets have demonstrated substantial resilience. The speed of recovery from the shocks I described

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[1] The Chicago Board of Options Exchange.

has been remarkable. Magnitudes of exchange rate changes were not outsized compared to past episodes. It is estimated that about half or US$ 250 billion of Yen carry trade was unwound[2]. Leveraged positions have been rebuilt. Risk taking has resumed, although the widening of the conflict in the Middle East in October has depressed equity market sentiment and pushed up commodity prices, especially of gold and crude oil.

III. Assessing Global Risks:

III.1. Geopolitical Stress, Trade and Overall Policy Uncertainty

In the Reserve Bank of India, we closely monitor global risks through: (1) the Geopolitical Risk (GPR) Index[3], which tracks adverse geopolitical events through newspaper articles; (2) the Trade Policy Uncertainty (TPU) Index[4], which covers the frequency of articles mentioning trade policy uncertainty and heightened trade tensions; and (3) the Global Economic Policy Uncertainty (GEPU) Index, which is a GDP-weighted average of national EPU indices for 21 countries representing about 71 per cent of global output on a PPP-adjusted basis and roughly 80 per cent at market exchange rates[5]. The GEPU Index gauges the impact of policy-related uncertainty on global economic activity.

These indices[6] collectively provide insights into how uncertainty stemming from trade, geopolitical events and economic policy measures can influence economic conditions globally which can potentially spillover to influence macroeconomic and financial conditions in India.

As of mid-2024, the GEPU Index remains elevated, reflecting ongoing concerns about economic policies worldwide. The TPU Index has also been rising since November 2023, particularly influenced by trade tensions and policy changes among major economies. Meanwhile, the GPR Index points to significant global risks, with recent increases driven by ongoing conflicts.

Tensions in the Middle East have disrupted trade through one of the critical shipping routes – the Suez Canal (shortest shipping route between Europe and Asia). About 15 per cent of global maritime trade volume normally passes through the Suez Canal. Instead, several shipping companies have diverted their ships around the Cape of Good Hope, which has increased delivery times by 10 days or more, on average. These disruptions have also led to higher freight rates across major shipping routes, such as the China-Europe and China-US West Coast, which have gone up by 3 times over their pre-pandemic levels.

III.2. Global Financial Conditions

The global financial conditions index (GFCI) represents the cost and availability of credit in the global financial system[7]. The GFCI captures the co-movement of common latent factors in credit spreads, asset prices and volatility across money, bond, and equity markets – they tend to move in tandem during stress periods.

The GFCI vividly captures the tight financial conditions witnessed during the global financial crisis of 2008-09, the Eurozone debt crisis during 2011-12 and the recent experience during the COVID-19 pandemic. Interestingly, unlike previous episodes, tighter financial conditions during the COVID-19 Pandemic and the Russia-Ukraine War were reversed quickly, reflecting synchronous monetary policy actions.

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2 https://www.ft.com/content/c6596fdd-d184-4dee-b6ff-f70c7081003a

3 Caldara, D., and Lacoviello, M. (2022). Measuring Geopolitical Risk. American Economic Review, 112(4), 1194-1225.

4 Caldara, D., Lacoviello, M., Molligo, P., Prestipino, A., and Raffo, A. (2020). The Economic Effects of Trade Policy Uncertainty. Journal of Monetary Economics, 109, 38-59.

5 Each national EPU index measures the frequency of newspaper articles discussing economic policy uncertainty, normalized to a mean of 100 from 1997 to 2015. Please see Baker, S. R., Bloom, N., and Davis, S. J. (2016). Measuring Economic Policy Uncertainty. The Quarterly Journal of Economics, 131(4), 1593-1636.

6 All these indices are hosted by https://www.policyuncertainty.com/

7 The index is constructed as a Z-score, such that a positive value represents tranquil times underlined by easy financial conditions i.e., low cost and easy availability of funding, while a negative value indicates tight financial conditions.

III.3. Financial Market Spillovers

Global spillovers are typically transmitted to India through the financial market channel, mainly in equity and currency segments. Hence, volatility spillovers in these market segments are tracked through time-varying indices constructed by using high-frequency data on 21 major equity markets and 22 major currencies (measured against the US dollar), based on the Diebold-Yilmaz connectedness approach (2009; 2012)[8]. The path of the indices is shown by the thick lines (i.e., median) while the shaded region around the indices represents the range of spillovers across markets. For instance, global volatility spillovers across both equity and currency market segments reached unprecedented highs during 2020 as the COVID-19 pandemic unfolded across the world; and again from 2022 with the Russia-Ukraine war.

IV. Implications for India

IV.1. Economic Policy Uncertainty

Drawing on these global indices, a novel text mining-based policy uncertainty index for India has been constructed and updated by economists in the Reserve Bank of India. The index uses internet search data from Google Trends to construct a measure of policy uncertainty due to both domestic and global events. The index is updated in real time[9].

Applying a one standard deviation shock to the index in a structural vector autoregression (SVAR) framework on quarterly data for India produces an interesting result. In the case of advanced economies such as the US, research suggests that uncertainty shocks lead to lower output and lower prices[10]. In the Indian context, however, uncertainty shocks tend to mimic aggregate supply shocks such that heightened uncertainty leads to slower growth but higher inflation. These results have been confirmed by multiple studies using different measures and identification approaches[11]. This presents a dilemma for monetary policy: tighten to control high inflation or ease to respond to lower growth!

IV.2. Supply Chain Pressures

The Global Supply Chain Pressure Index (GSCPI), developed by the Federal Reserve Bank of New York integrating over 27 variables, has also been found relevant for Indian conditions. We have developed an Index of Supply Chain Pressures for India (ISPI) - based on the methodology used in the GSCPI - to track supply chain pressures impacting India by extracting common factors from 19 domestic and global variables. The ISPI efficiently predicts industrial production and GDP and serves as a lead indicator for export volumes and inflation – Supply chain pressures impact growth in industrial production and core inflation with lags.

After witnessing significant spikes in the post-pandemic and post-Ukraine war periods, both global and domestic supply chain pressures have hovered around normal or less than normal levels since early 2023. Their relative softness has played a key role in the ebbing of inflation both globally and in India.

IV.3. Geoeconomic Fragmentation and Trade Flows

Global uncertainty also impinges on world trade volume growth. Growth in India's merchandise exports and imports volume has been negatively impacted during episodes of rising geopolitical risk, especially since the start of the Russia-Ukraine war in February 2022 and the rise of Middle East tensions since October 2023. India's merchandise exports, on

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8 Diebold, F. X., and Yilmaz, K. (2009). Measuring financial asset return and volatility spillovers, with application to global equity markets. The Economic Journal, 119 (534), 158-171.

- Diebold, F. X., and Yilmaz, K. (2012). Better to give than to receive: Predictive directional measurement of volatility spillovers. International Journal of forecasting, 28(1), 57-66.

9 When faced with heightened uncertainty, it is typical of economic agents to 'search' for more information. The Google Trends-based uncertainty index (India-GUI) leverages this behaviour to measure overall uncertainty by using internet search volumes for a list of keywords pertaining to fiscal, monetary and trade policy in India. The policy-related keywords are curated, based on mentions in central bank policy statements as well as coverage in the financial press. For more details, please see Pratap, B., and Priyaranjan, N. (2023). Macroeconomic Effects of Uncertainty: a Google trends-based Analysis for India. Empirical Economics, 65(4), 1599-1625.

10 Leduc, S., and Liu, Z. (2016). Uncertainty Shocks are Aggregate Demand Shocks. Journal of Monetary Economics, 82, 20-35; Kumar, A., Mallick, S., and Sinha, A. (2021). Is Uncertainty the Same Everywhere? Advanced versus Emerging Economies. Economic Modelling, 101, 105524.

11 Pratap, B., and Priyaranjan, N. (2023), op cit.

an average, recorded a negative growth of 1.4 per cent during 2023-25 (up to September 2024).

IV.4. Capital Flows at Risk Analysis

Amidst global uncertainties, capital flows to India have been relatively robust, driven by equity flows. With the inclusion of Indian government bonds in global bond indices, debt flows have also improved.

The capital flows at risk (CaR) approach is a useful indicator to gauge the magnitude of expected capital outflows in response to specific shocks[12]. The kernel density function or distribution of capital flows over time in response to push and pull factors shows that in normal times, the chances of capital flight from India are negligible in view of strong pull factors. A shock to the US CBOE VIX mimicing the global financial crises makes the distribution of capital flows flatter and increases the tails of the distribution. This indicates higher probability of capital outflows in the occurrence of high intensity tail risk events such as the GFC.

The estimated tail risks (CaR at 5 per cent) to capital flows in case of India are found to be high and they match with the actual capital outflows during the GFC and the taper tantrum periods. This analysis helps us to make a realistic assessment of the adequacy of reserves.

IV.5. Financial Market Volatility Spillovers and Spillbacks

Time-varying measures of net volatility spillovers to Indian equity and currency markets from the rest of the world show that on a net basis, as with any other emerging market economy, India tends to be at the receiving end of global risk externalities[13]. These spillovers became heightened in the aftermath of the COVID-19 pandemic and the breakout of the Russia-Ukraine war. More recently, divergent monetary policies have produced less severe spillovers to equity markets, but they remained significant in the currency market. Instances of "spillbacks" - India transmitting volatility to the rest of the world – remain rare.

IV.6. Global Events and Financial System Stress

We also compile a financial system stress indicator (FSSI) to monitor the aggregate stress level in the Indian financial system. The FSSI features risk factors pertaining to five financial market segments – equity; foreign exchange; money; government debt; and corporate debt markets – and three groups of financial intermediary segments – banks; non-bank financial companies (NBFCs); and mutual funds[14]. It also features a real sector component encompassing real variables that have a bearing on financial stability due to their strong interlinkages with the financial sector. In all, 39 risk factors spread across nine markets/sectors are considered. The FSSI aims to (a) identify periods of stress; (b) assess the intensity and duration of stress in the financial system; and (c) gauge the ability of financial markets and intermediaries to withstand shocks and imbalances. The FSSI has tracked major stress events in the past. As per the

[12] In this framework, first, a link between different quantiles of capital flows and their drivers is established by using a quantile regression to predict capital flows for various quantiles. In the second step, the predicted capital flows are used to obtain the empirical distribution of future capital flows. The risks to capital flows are then quantified by estimating the size of outflows for a given probability (i.e., usually at 5 per cent) from the empirical distribution. The predicted capital flows of lower and higher quantiles show the dynamics of CaR over time. For details, please refer to Patra, M.D., Behera, H., and Muduli, S. (2022). Capital Flows at Risk: India's Experience. RBI Bulletin, June.

[13] While negative values of the measure indicate that India "receives" spillovers from the rest of the world; positive values highlight that India "transmits" volatility to the rest of the world. Please refer to Gupta, R. K., Pratap B., Raut S., and Sonna, T. (2024). Measuring Inter-Connectedness between Global Financial Markets: A Study for India. RBI Monthly Bulletin, Reserve Bank of India (forthcoming).

[14] Risk factors are normalised by the min-max method by converting into variables which are unit free AND measured on an ordinal scale between zero and unity. The transformed risk factors for each market/sector are aggregated BY using equal weights into a sub-indicator 'y_i' representing the ith market/ sector. The composite FSSI is computed by aggregating the sub-indicators, again based on the equal variance weighted average method, where the weight 'w_i' of each sub-indicator 'y_i' is inversely proportional to its sample standard deviation '*si*' and is determined as $w_i = \frac{\frac{1}{si}}{\sum_{i=1}^{9}(\frac{1}{si})}$. The composite FSSI is obtained as $FSSI_t = \sum_{i=1}^{9} w_i y_{it}$. Higher valueS of FSSI indicates more stress [See Box 1.1: Financial System Stress Indicator, Financial Stability Report, December 2022, RBI for details].

latest FSSI update, India has witnessed a consistent decline in financial system stress since the Russia-Ukraine conflict.

V. Outlook for India

V.1. Growth

Against this backdrop, let me turn to the outlook for the Indian economy. We believe that the best defence against global risks is to strengthen the macroeconomic fundamentals and build adequate buffers, supported by prudent macroeconomic policies.

As Victor Hugo, the celebrated French writer, famously said: there is nothing more powerful than an idea whose time has come. Taking a cue from that influential remark, I do believe with all the strength of my conviction that India's time has come. India heads into its future with the youngest population in the world with a median age of 28 years. Unlike in many parts of the world, the working age population is growing – every sixth working age person is an Indian. Since independence in 1947, India's growth path has undergone three structural shifts with trend growth, having risen to 7 per cent during 2002-2019. After the severe contraction in the pandemic, a new growth trajectory averaging 8 per cent seems to be forming during 2021-24. India is now regarded as the fastest growing major economy in the world. Already the fifth largest economy in terms of market exchange rates, it is poised to become the third largest economy by 2030.

It is already the third largest economy in terms of purchasing power parity. Our projections show that India's real GDP growth will be 7.2 per cent in 2024-25 and around 7.0 per cent in 2025-26 in a cyclical correction to the rebound from the pandemic. Thereafter, there is a strong likelihood that India's growth will revert to the 8 per cent trend.

V.2. Inflation

Since 2016, India has adopted flexible inflation targeting (FIT) as its monetary policy framework. The inflation target is set at 4 per cent in terms of consumer price index (CPI) headline inflation with a tolerance band of +/- 2 per cent around it. In the aftermath of the war in Ukraine, inflation rose to a peak of 7.8 per cent in April 2022. Frontloaded monetary policy tightening with a cumulative 250 bps increase in the policy rate and a stance of withdrawal of accommodation guided inflation down to an average of 5.4 per cent in 2023-24, i.e., back into the tolerance band. It is projected to average 4.5 per cent in 2024-25 and 4.1 per cent in 2025-26. Inflation fell below target during July-August but rose to 5.5 per cent in September on the back of a pickup in price momentum in some food items and adverse base effects inherent in year-on-year measurement. Our projection indicates that these price pressures will persist in October and November before headline inflation realigns with the target from December 2024 and remains aligned in 2025-26.

V.3. Improving Financial Soundness and Buffers

Since 2018, India has engaged intensely in fortifying the soundness of financial institutions and building up adequate capital and liquidity buffers. Through a variety of processes including recognition, restructuring, resolution and write-offs, impairment in banks' balance sheets has been brought down. Gross non-performing assets were just 2.7 per cent of total assets at the end of June 2024. Adjusted for provisions, the net non-performing asset ratio was only 0.6 per cent. As against the Basel minimum capital adequacy ratio of 8 per cent, India applies a minimum ratio of 9 per cent with a minimum of 7 per cent for Tier I capital. A capital conservation buffer of 2.5 per cent has to be maintained in addition to the minimum capital requirement, taking the overall regulatory capital requirement to 11.5 per cent of total risk weighted assets. At the end of June 2024, banks in India maintained a capital ratio of 16.7 per cent with Tier I capital of 13.9 per cent. Other buffers include the liquidity coverage ratio, which is well above 100 per cent, and the provision coverage ratio which is close to 80 per cent. Macro stress test reveals that no

bank in India will fall below the regulatory minimum capital even under a severe stress scenario.

V.4 External Sector Indicators

Since the external sector receives the first blow from global spillovers, the policy endeavour has been to build up external sector soundness. The current account deficit (CAD) is modest at around 1 per cent of GDP. India has been a recipient of capital inflows, drawn by its robust macroeconomic fundamentals and stability. Hence external financing requirements are comfortably met. India has utilised the opportunity provided by strong international investors' interest to build up foreign exchange reserves. Currently, as the fourth largest reserve holding country in the world, India's reserves cover entirely the level of external debt, comfortably cover all debt servicing requirements and are equivalent or close to 12 months of imports. India's exchange rate is among the least volatile in the world. We intervene in the foreign exchange market on both sides – sell and buy – to ensure adequate liquidity and minimise volatility so as to preserve financial stability, but without any view on the level of the exchange rate.

VI. Conclusion

In conclusion, I will briefly address some recent opportunities that have opened in the Indian context. India is emerging as a world leader in leveraging digital technologies for transformative change. The trinity of JAM – Jan Dhan (basic no-frills accounts); Aadhaar (universal unique identification); and mobile phone connections – is expanding the ambit of formal finance, boosting tech start-ups and enabling the targeting of direct benefit transfers. India's Unified Payment Interface (UPI), an open-ended system that powers multiple bank accounts into a single mobile application of any participating bank, is propelling inter-bank peer-to-peer and person-to-merchant transactions seamlessly. Payment systems in India operate on a 24 by 7 by 365 basis. Functionalities like offline payments, payments through feature phones and conversational payments have been incorporated. The internationalisation of the UPI is progressing rapidly.

Taking these developments into account, a summary measure of digitalisation for India has been constructed by using a dynamic factor model (DFM)[15]. The index has been rising, reflecting the ongoing digital revolution.

The spread of digitalisation has spurred research on assessing the effects of digitalisation on the economy and the transmission of monetary policy. Early results for India suggest steepening of the Phillips curve and improvement in factor productivity, indicating improvement in the effectiveness of monetary policy transmission.

India is on the move and transforming rapidly in the quest of its aspirations. As various forces I have described coalesce and fall in place, this century could well mark the ascent of India on the world stage.

Thank you.

[15] The index is based on digital payments, number of internet users, number of mobile phone subscriptions, number of QR codes generated per 100 persons, credit to the software industry, investment in ICT (information and communication technology) and people employed in the ICT sector.

*Unlocking New Growth Frontiers in the Digital Age**

Michael Debabrata Patra

I. Introduction

This year's Nobel Prize in physics celebrated the role of artificial intelligence (AI) in revolutionising the way we work and live. It is widely believed that AI and robotics will usher in a new wave of secular innovation, much like past breakthroughs in steam power and personal computers.[1] Silently, new technologies are offering a way out of the cross currents of diverging macroeconomic and policy pathways, geopolitical tensions, geoeconomic fragmentation and climate change in which the global economy is transfixed. Accordingly, these technologies are heralding a brighter future, arguably holding the key for many emerging and developing economies to escape the middle-income trap.[2] It is estimated that generative AI itself could increase global GDP by $7-10 trillion over the next three years.[3] Large language models are estimated to increase the productivity levels of workers by 8 to 36 per cent.[4]

Over the past three decades, the digital revolution has been transforming the world, eclipsing all past revolutions. It is estimated that the global digital economy accounts for more than 15 per cent of global GDP.[5] Digital technologies are reshaping our lives through their impact on economic growth, employment, consumer welfare and living standards. These technologies are democratising innovation and entrepreneurship, being less costly than conventional technologies to scale up and are seen as transfiguring innovators into entrepreneurs.[6]

India is at the forefront of the digital revolution. Financial technology (FinTech) is speeding up digital payments. The India Stack is expanding financial inclusion, galvanising banking infrastructure and public finance management systems covering both direct benefit transfers and tax collections. Vibrant e-markets are springing up and expanding their reach. It is estimated that the digital economy currently accounts for a tenth of India's GDP; going by growth rates observed over the past decade, it is poised to constitute a fifth of GDP by 2026.[7]

India is uniquely positioned to unlock new growth avenues and optimise existing ones with its digital public infrastructure (DPI), a vibrant information technology (IT) sector and a burgeoning youth population, including one of the largest AI talent bases. Forecasts suggest that Generative AI will contribute $359-438 billion to India's GDP by 2029-30.[8] Indian firms' integration of AI into production processes has increased from 8 percent in 2023 to 25 percent in 2024.[9] India has also committed Rs. 1.25 trillion towards its semiconductor industry development.[10]

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* Inaugural address delivered by Michael Debabrata Patra, Deputy Governor, Reserve Bank of India (RBI) at the DEPR Conference on 'Digital Technology, Productivity and Economic Growth in India' on November 13, 2024 at Jaipur. Valuable comments received from Sakshi Awasthy, Sreerupa Sengupta, Ashish Khobragade, Himani Sekhar, Akshara Awasthi, Swastik Yadav, Rajib Das and editorial help from Vineet Kumar Srivastava are gratefully acknowledged.

1 Brynjolfsson, E., and McAfee, A. (2014). The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies. *WW Norton & Company*; Haldane, A. (2017). Productivity Puzzles. Speech at the London School of Economics.

2 World Bank. (2024). The Middle-Income Trap. World Development Report.

3 JP Morgan. (2024). *Is Generative AI a Game Changer?*

4 Kalyani and Hogan. (2024). AI and Productivity Growth: Evidence from Historical Developments in Other Technologies. Federal Reserve Bank of St. Louis.

5 United Nations. (2023). Opening Session of Global Development Initiative Digital Cooperation Forum.

6 Panagariya, A. (2022). Digital Revolution, Financial Infrastructure and Entrepreneurship: The Case of India. Asia and the Global Economy, 2(2), 100027.

7 Chandrasekhar, R. (2023). Address by Minister of State for Electronics and Information Technology and Skill Development and Entrepreneurship. GPI Global Summit in Pune, June 12.

8 Ernst and Young. (2023). *Is Generative AI beginning to deliver on its Promise in India? AIdea of India Update.*

9 Business Standard. (2024). *AI-led Firms report Higher Growth, Outpace Peers in Revenue, Productivity. October 15.*

10 Press Information Bureau. (2024). PM participates in 'India's Techade: Chips for Viksit Bharat' Program.

Yet, new technologies also involve challenges: disruptions in respect of traditional technologies and the labour market; resource-intensity - demanding substantial investment in technology, learning, and infrastructure; potential cyber threats and data breaches; ethical concerns, data privacy and potential malicious use.

It is in this context of these opportunities and challenges that I have chosen 'Unlocking New Growth Frontiers in the Digital Age' as the theme of my address.

II. Digitalisation and Productivity: Navigating the Paradox

The contribution of digitalisation to growth should be reflected through its impact on productivity. This nexus has, however, sparked an animated debate. There is a view that tangible gains from technological innovations remain elusive; as Robert Solow said, "You can see the computer age everywhere but in the productivity statistics."[11] This paradox may not be confined to just measurement issues, but may extend beyond to demographic trends and slower diffusion. The "realist" view acknowledges that technology alone cannot drive productivity and progress; rather, what matters is its integration into the real economy. A heterodox approach with appropriate policies for skilling and job creation, supported by progressive institutions, would probably be the right way to head towards the future.

Productivity patterns are likely to be increasingly shaped by the growing role of digital services and intangible capital. Business spending on digital technologies is surging.[12] Prices of digital assets (including information and communication technology or ICT) have continued to decline rapidly, which has enabled businesses to operate more efficiently, allowing them to offer competitive products and services. Technological innovations are raising productivity through financial intermediation in terms of expanding financial products and services, efficiency gains in service delivery, and using digital innovations to mitigate risks. Digitalisation also has the potential to improve cross-border financial flows by reducing the cost of sending remittances while enhancing speed and transparency.

The KLEMS framework would help capturing the effects of digitalisation by measuring its contribution to improvements in the quality of labour and capital, in addition to its direct contribution to value added and total factor productivity. Aggregated capital and labour will have to be disaggregated into ICT capital, human capital, and other complementary investments in which digitally enabled investments and services form inputs of production. This disentanglement can prove to be challenging, including due to the non-availability of comprehensive information.

Applying the KLEMS growth accounting decomposition, the share of the ICT sector in India's total gross value added (GVA) has increased over time, especially for ICT-using services. The contribution of ICT capital to output growth, which was 5.0 per cent during 1981-91, registered a sharp increase to about 16.0 per cent during 1992-2000. ICT capital's contribution to GVA moderated to 14.3 per cent during 2001-2010 and further to 10.3 per cent during 2011-2023. New digital technologies also influence labour productivity growth within the KLEMS framework. The share of ICT investment per person in labour productivity growth in India was 8.4 per cent in 1981-90, which increased to 20.8 per cent during 1992-2000 but moderated to 17.4 per cent during 2001-2010 and 11.3 per cent during 2011-23[13] indicating some evidence of Solow's productivity paradox for the post-GFC period, which is broadly consistent with similar trends globally.

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

[12] Van Ark, B. (2016). The Productivity Paradox of the New Digital Economy. *International Productivity Monitor*, 31, 3-18.

[13] Chattopadhyay, S. Sengupta, S and Joshi, S. (2024): New Digital Economy and the Productivity Paradox, RBI Bulletin October 2024.

Since the end of the technology boom period of the early 2000s, global total factor productivity (TFP) growth has remained relatively modest, averaging around 0.2 per cent per annum during 2010-2024.[14] The weakness in global productivity growth is mostly confined to mature economies, mainly Europe, whereas emerging economies have fared better, particularly in Asia. Multiple interlinked factors have accentuated the productivity slowdown ranging from ageing societies, all-time-high debt levels, decline in business dynamism especially among smaller firms and the scarring effects of the COVID-19 pandemic.[15] New headwinds – weak investment; supply chain and logistics disruptions; trade and investment fragmentation – may also act against gains in allocative efficiency, constituting risks to the global productivity outlook.

For India, average labour productivity growth from 2021 to 2024 is estimated at 5.2 per cent as against 2.1 per cent among emerging markets and developing peers and 0.6 per cent among mature economies.[16] India has witnessed rapid progress in digitalisation, drawing on its foundational strength in ICT services. What began as streams of IT services has now swelled into powerful currents, with model enablers like the Digital Public Infrastructure (DPI) and digital platforms like the Unified Payments Interface (UPI) acting as bridges. Global Capability Centers (GCCs) are already exploiting India's technological progress and expanding India's footprint in global trade in services. The productivity growth of the ICT sector, both ICT-producing and ICT-using industries, consistently outperformed the non-ICT sector during 1980 to 2020. The influence of ICT on productivity, however, was most significant from 1980 to 2010.[17] In the following decade, *i.e.*, from 2010 to 2020, the productivity gap between ICT and non-ICT sectors narrowed considerably, mirroring the widespread productivity slowdown across the globe after the global financial crisis (GFC). These findings require deeper investigation, but they do underscore the changing dynamics of digital technologies and raise important questions about how we might renew productivity growth in an increasingly digital world.

III. Digitalisation of Indian Finance

Micro-level evidence from surveys of Indian banks shows that while all of them have implemented mobile and internet banking, 75 per cent offer online account opening, digital KYC, and digitally enabled doorstep banking. Additionally, 60 per cent provide digital lending, 50 per cent offer payment aggregator services, 41 per cent use chatbots, 24 per cent have adopted open banking, and 10 per cent have integrated Internet of Things (IoT) technology.[18] Private sector banks are leading this technology adoption.

An AI-assisted review of the latest annual reports of Indian banks reveals various instances of productivity gains by SCBs from digitalisation. Examples include monthly savings of 14,500 person-days, 25-30 per cent decline in customer acquisition costs, reduction of the use of 84 tons of paper, saving of four lakh litres of fuel in commutes to banks by customers, 40 per cent reduction in customer wait times at branches, 50 per cent reduction in the compliance monitoring time and shortening account opening time to less than a day.[19] Aadhaar – India's unique identification number – has halved the cost of conducting the Know Your Customer process in India.[20]

[14] Total Economy Database (2024), The Conference Board, accessed through https://data-central.conference-board.org/

[15] Dieppe, A. (Ed.). (2021). *Global productivity: Trends, drivers, and policies. World Bank Publications.*

[16] Total Economy Database (2024), The Conference Board, accessed through https://data-central.conference-board.org/

[17] Chattopadhyay, S. Sengupta, S and Joshi, S. (2024): New Digital Economy and the Productivity Paradox, RBI Bulletin October 2024.

[18] Reserve Bank of India. (2024). Report on Currency and Finance 2023-24: India's Digital Revolution.

[19] Sourced from annual reports (2023-24) of select scheduled commercial banks.

[20] Government of India, 2024. Economic Survey 2023-24.

The Unified Payments Interface (UPI) hit a milestone of 16.6 billion transactions in a month in October 2024, with improvements in its capabilities like successful instant debit reversals at 86 per cent (77 per cent in the same month last year). Innovations in the digital credit landscape such as Account Aggregators, OCEN,[21] and financial services on ONDC[22] have also contributed to productivity gains. As of March 2024, ONDC operates in over 720 cities, with orders at 49.72 million.[23] The Trade Receivables Discounting System (TReDS) addresses the credit gap of MSMEs estimated at around ₹52.2 trillion by connecting them with banks, and clients, with a reduction in funding costs up to 2.5 percentage points.[24] The value of invoices financed through TReDS have surged more than 23 times. As of October 2024, around 5,000 active FinTechs are involved in providing various financial and technical solutions to businesses, including MSMEs, helping businesses better manage their operations and improve supply chain finance.[25]

Around 40 per cent of the rural population and 78 per cent in the 20-30 years age group in the overall population use internet in India, with approximately one-third of households engaging in online purchases of consumables and services, one-fourth in buying of consumer durables, and nearly one-tenth in food purchases.[26] The rising importance of embedded financing is reflected in its share in FinTech funding, which has grown from two per cent in 2020 to nine per cent in 2024.[27] The global market for embedded finance is estimated at USD 66.8 billion in 2022 and is projected to experience a CAGR of 25.4 per cent from 2023 to 2032.[28]

Digitalisation is transforming the efficiency of public services. In 2024, the average number of daily e-transactions to access public services has increased by 56 per cent (y-o-y).[29] During 2023-24, ₹6.9 lakh crore has been transferred through the digitally powered Direct Benefit Transfers (DBT) under 314 schemes benefiting 176 crore beneficiaries. Over the years, these DBTs have resulted in estimated cumulative cost savings of ₹3.5 lakh crore up to March 2023.[30]

IV. Digitalisation and the Reserve Bank of India (RBI)

The Reserve Bank of India (RBI) has been at the forefront of digitalisation, aiming to leverage technology for productivity and efficiency gains across the financial ecosystem. Some of the critical milestones in digital payments are the introduction of Real Time Gross Settlement (RTGS) and National Electronic Funds Transfer (NEFT) in 2004 and 2005, respectively – which now operate 365*24*7 – followed by the establishment of the National Payments Corporation of India (NPCI) in 2008.

The launch of the UPI in 2016 is a significant milestone with positive externalities that are transcending our national borders. In recent years, the Reserve Bank has continued to foster financial innovation by introducing Central Bank Digital Currency (CBDC) pilots and setting up the Reserve Bank Innovation Hub (RBIH). The Reserve Bank has also announced a new technology platform called the Unified Lending Interface (ULI) which is set to transform the lending landscape in India by making credit more accessible to underserved populations

[21] Open Credit Enablement Network.

[22] Open Network for Digital Commerce.

[23] Department for Promotion of Industry and Internal Trade (DPIIT), Annual Report 2023-24.

[24] Business Standard, 2024. RBI's 'TReDS' platform bridging $600 bn funding gap for smaller firms. October 22.

[25] Based on Tracxn Database, accessed as on October 17, 2024.

[26] RBI Staff Estimates based on Household Consumption Expenditure Survey 2022-23 Unit level data.

[27] Based on Tracxn Database, accessed as on October 22, 2024.

[28] PwC, 2024. Embedded Finance: A Strategic Outlook.

[29] RBI staff estimates based on data available on etaal (Electronic Transaction Aggregation and Analysis Layer) portal for the year 2024 against 2023.

[30] Direct Benefit Transfer (DBT). 2024. Homepage. Retrieved from: https://dbtbharat.gov.in

such as small businesses and rural borrowers through reducing documentation requirements and simplifying the loan application process.

India is also closely involved with international organisations that are exploring the linkage of open finance API-based frameworks of different countries in a multilateral construct through initiatives like Project Nexus and mBridge. Under India's G20 Presidency, the Global Digital Public Infrastructure Repository has been mooted as a resource base for key lessons and knowledge available from the actual experiences of G20 members and guest countries.

The overall approach has been to balance risk mitigation and financial innovation, maintaining clear communication with stakeholders, and adapting supervisory processes.[31] Five policy priorities drive the Reserve Bank's engagement: digital financial inclusion; digital public infrastructure (DPI); customer protection and cyber security; sustainable finance; and global integration and cooperation.[32]

V. Conclusion

The interaction of digitalisation with economic growth and productivity is a complex one, yet to be unravelled fully. There is no doubt, however, that digital technologies can generate TFP gains by streamlining processes, enhancing the synergy between workers and capital, and driving automation. The potential for digital technology to drive productivity gains could be far greater if supported by robust institutions, policies, and skills that support innovation and facilitate technology adoption. Exploiting the growth-enhancing potential of digitalisation and new technologies will involve judiciousness and a skilful balancing of risks and rewards so as to enhance the gains while minimising disruptions.

Complementary policies will play a key role in unlocking new growth energies by reaping the productivity gains offered by digital technologies. They will involve setting priorities like (i) expanding the knowledge frontier by improving within firm technical and managerial capabilities; (ii) promoting competition to reduce market concentration; and (iii) efficient resource reallocation.[33] As Paul Krugman aptly noted, *"Productivity isn't everything, but in the long run it is almost everything."*[34]

Thank you.

[31] Reserve Bank of India (2024). Report on Currency and Finance 2023-24: India's Digital Revolution.

[32] Das, S. (2024). FinTech Innovations for India @100: Shaping the Future of India's Financial Landscape. RBI Speeches. August 28, 2024.

[33] OECD, E. (2019). Digitalisation and Productivity: A Story of Complementarities.

[34] Krugman, P. R. (1997). The Age of Diminished Expectations: US Economic Policy in the 1990s. MIT Press.

ARTICLES

*State of the Economy**

Global economic activity remained resilient during Q4:2024 amidst fragile confidence and rising protectionism. In India, the slack in speed observed in the second quarter of 2024-25 is behind us as private consumption is back to being the driver of domestic demand with festival spending lighting up real activity in Q3. Domestic financial markets are seeing corrections with relentless hardening of the US dollar and equities being under pressure from persistent portfolio outflows. The medium-term outlook remains bullish as the innate strength of the macro-fundamentals reasserts itself. Headline consumer price index (CPI) inflation rose above the upper tolerance band in October 2024 with a sharp surge in the momentum of food prices along with an increase in core inflation.

Introduction

As the world's finance ministers and central bank governors converged to Washington D.C. for the annual meeting of the International Monetary Fund (IMF) and the World Bank in late October 2024, slowing inflation and the easing of cyclical imbalances have been clearing the path for a soft landing of the global economy. Economists believe that a steepening of the Phillips curve has allowed inflation to fall faster than expected while enabling the surprisingly strong performance of output.

Recent high frequency indicators suggest that global economic activity moderated a little during the fourth quarter of 2024 so far within a broadly unchanged outlook. Purchasing managers' indices (PMIs) of manufacturing activity contracted in several advanced economies (AEs), while services remained on a firmer footing. Among emerging market economies, PMIs are emitting mixed signals. For Asia, growth has gained strength relative to expectations, with a tech-driven uptick in exports. Despite this robust performance, the IMF assesses that risks to the Asian outlook have increased, mainly due to the weaker external environment and adverse demographics. Inflation has continued to decline and is projected to reach targets by 2025 in many jurisdictions. Headline inflation in EMEs has been broadly steady or retreating in Asia, but it remains above target in Latin America as services price increases have been persistently stronger than their pre-pandemic averages.

Yet, soaring debt levels – public debt is set to reach US$ 100 trillion this year, driven by the two largest economies of the world – darken the outlook. The IMF expects that future debt levels could be higher than currently projected. In its view, the political discourse on fiscal issues has increasingly tilted toward higher government spending in recent decades. Fiscal policy uncertainty has increased, and political redlines on taxation have become more entrenched. Spending pressures to address green transitions, population aging, security concerns, and long-standing development challenges are mounting. Alongside the ticking time bomb of indebtedness, potential spillovers and widening wars are shifting the fault lines of the global economy.

As a consequence, the level of uncertainty surrounding the outlook is elevated. Anxieties run high about the possibility of adverse swings in trade and fiscal policies. The return of financial market volatility has stirred up old fears about hidden vulnerabilities and widened sovereign borrowing spreads for some emerging market and developing economies. As discussed in Section II, global growth is expected to be stable but below par despite its resilience, with still high borrowing costs holding back private credit and investment. Fiscal consolidation, if embarked upon, will likely slow down growth in the initial years, but yield long term positive outcomes.

* This article has been prepared by Michael Debabrata Patra, G. V. Nadhanael, Shahbaaz Khan, Biswajeet Mohanty, Bajrangi Lal Gupta, Ramesh Kumar Gupta, Harendra Behera, K M Neelima, Rigzen Yangdol, Rishabh Kumar, Rashika Arora, Madhuresh Kumar, Ettem Abhignu Yadav, Harshita Yadav, Shelja Bhatia, Shivam, Anjaly Maria Jose, Sukti Khandekar, Subhradip Paul, Shreya Gupta, Abhinandan Borad, Sunil Kumar, Dhirendra Gajbhiye, Khushi Sinha, Yuvraj Kashyap, Sonal Yadav, Kartikey Bhargav, Akshara Awasthi, Asish Thomas George, Samir Ranjan Behera, Vineet Kumar Srivastava, and Rekha Misra. Views expressed in this article are those of the authors and do not represent the views of the Reserve Bank of India.

Although world trade has remained steady so far and stability in freight markets is reviving logistics deal making, a more fragmented global trade landscape could reduce the resilience of global supply chains that have so far held up in the face of geopolitical tensions. Moreover, as protectionism grows, the flows of capital are stymied. Accordingly, an outlook of weak global growth extends into the medium-term, suggesting that potential output has been durably affected. Emerging and developing economies are showing more permanent scars. "The global economy is in danger of getting stuck on a low growth, high debt path. That means lower income and fewer jobs."[1]

Near-term financial stability risks remain contained and global financial conditions are accommodative. Long-term government yields increased on stronger US economic data and the US dollar has appreciated from its recent low in September. Alongside buoyant equity markets barring pre-US election volatility, credit market conditions remain benign, and spreads have narrowed further to be very tight relative to pre-pandemic averages. Valuations are, however, elevated relative to earnings performance and the use of leverage, especially among nonbank financial intermediaries, has increased with the rising probability of volatility catching up with uncertainty.

As the US elections moved to a clear outcome, major stock markets rallied around the world, US bond yields jumped, and the US dollar recorded its biggest one-day jump since 2020, going even higher in subsequent days of trading. Fears of fiercer trade wars hung over the outlook on tariff proposals and potential retaliation – the IMF cautioned in its World Economic Outlook that higher tariffs could wipe out 0.8 per cent of output in 2025 and 1.3 per cent in 2026. Wilting in the face of the surging US dollar, emerging market currencies from Asia to Latin America weakened to new lows, and they braced for a fresh round of stimulus from China after the US election results, but the announcements turned out to be underwhelming and hence more is being expected. After hitting record highs recently, including on account of pre-election sell-offs in US Treasuries, gold prices plunged under the pressure of a surging US dollar while copper prices yielded to steep losses in the Chinese yuan. The record-breaking rally in Bitcoin hinted at an imminent risk-on rotation across derivatives going forward. Will the euphoria outlive the Trump trade that has sent traders scrambling to redraw their expectations of the path of interest rates? The Fed's second interest rate cut of the year was largely priced in – equities and the US dollar eased a bit, and bonds rose. Swap markets indicate that there is a significant possibility of the Fed holding rates unchanged in the remaining part of the year, especially with October's US inflation print ticking up. Ahead of all these events, crude prices gained after OPEC plus pushed back the planned increase in production by a month, signalling caution amidst widespread concerns over weaker global demand even though the geopolitical risk premium has recently softened. Overall, a fragile confidence, and a possible lurch towards protectionism hinders a full-on global recovery.

In India, it appears that the slack in speed observed in the second quarter of 2024-25 is behind us. Private investment is lacklustre as reflected in sequentially lower investment in fixed and non-current assets during July-September 2024 on account of subdued corporate earnings. Yet moderation in staff cost growth and rise in non-operating income boosted net profits even after excluding the moribund oil and gas sector and the high performing financial services sector. Private consumption is back to being the driver of domestic demand, although with mixed fortunes. Festival spending has lighted up real activity in the third quarter, as pointed out in Section III which tracks high-frequency indicators to generate nowcasts of real gross domestic product (GDP). Footfalls in malls may be low but e-commerce

[1] Global Policy Agenda October 2024 Press Briefing IMF, October 24, 2024.

is burgeoning with a variety of marketing strategies and brand recall initiatives to catch the attention of generation Z. FMCG and auto companies have been stepping up ad spends to revive demand. Rural India is emerging as a gold mine for e-commerce companies in this festival season; this is expected to gather further momentum with the sharp increase in *kharif* output and optimism around *rabi* production emboldening a record foodgrains target for 2024-25. Direct-to-consumer (D2C) brands are scrambling for funds to expand their presence and increase sales through quick-commerce (q-com) platforms – an eco-system valued at over US$ 5 billion and projected to reach US$ 30 billion by 2029-30.[2] Retailers are reporting a pick-up in sales growth relative to the second quarter. E-two wheelers sparkled this Diwali, although there is a distinct premiumisation that has gained further ground, as vividly evident in the luxury car segment. New cities are rising across the country with the urban population surging fourfold – by 2025, half of India's population is expected to live in cities, boosting urban demand. All that is needed is get inflation down so that India reconnects with its potential.[3]

The October CPI inflation reading turned out to be a sticker shock after the wake-up call of September's spike, reinforcing the RBI's warnings on complacency due to sub-target outcomes for July and August. What is worrying is that apart from the sharp surge in the momentum of food prices, core inflation has edged up. There are early signs of second order effects or spill overs of high primary food prices - following the surge in prices of edible oils, inflation in respect of processed food prices is starting to see an uptick. The pick-up in price rises of household services like those of domestic helps/cooks also reflects higher cost of living pressures due to elevated food prices beginning to transmit to these specific wages.[4] In this environment, the hardening of input costs across goods and services and their flow into selling prices needs to be watched carefully, as analysed in Section III. Inflation is already biting into urban consumption demand and corporates' earnings and capex. If allowed to run unchecked, it can undermine the prospects of the real economy, especially industry and exports.

The outlook for India's exports is brightening, as Section III elaborates. Underneath the subdued growth profile of the past few months, India has been gaining share in global trade of key manufacturing items. In fact, India currently holds 13 per cent or a sixth of the global market share in petroleum products, attesting to rising refining capabilities and ability to meet international standards. It is the largest exporter of precious and semi-precious stones, the third largest exporter of insecticides, the eighth largest in rubber pneumatic tyres, and ninth in semiconductors. In the first half of 2024-25, Apple exported close to US $6 billion of India-made iPhones, while automobile exports expanded by 14.3 per cent, led by passenger vehicles and two-wheelers. Export restrictions on several items have been lifted. Efforts are being intensified to expand the number of geographical indication (GI) products to scale up overall exports and secure premium pricing in global markets. Already, more than 1100 GI products are registered under the one-district-one-product (ODOP) scheme, with 640 of them being exported out of a global total of close to 70,000 GI products.[5]

There is some urgency gathering around evolving a standardised approach to negotiating free trade agreements (FTAs) to address rules of origin and non-tariff barriers. A panoply of bilateral agreements will enable India to capitalise on the 'China plus one' trend in global manufacturing. The key is to improve market access – over the last five years, it is estimated that India's total imports from FTA partners (ASEAN, the UAE, SAFTA, Australia, South Korea, Japan, Mauritius)

[2] Business Standard, "D2C brands raise funds to boost sales through quick-commerce platforms", October 23, 2024.
[3] IMF, World Economic Outlook, October 2024.
[4] CPI (2012=100) All India Item Index, https://cpi.mospi.gov.in
[5] "With an eye on China, India to expand GI listings", Mint, October 20, 2024.

increased by 37.9 per cent while exports grew only 14.5 per cent.[6]

India is undergoing a quiet transformation in its logistics for maritime trade which accounts for 95 per cent of India's trade by volume and 65 per cent by value. Port capacity has more than doubled over the past ten years from 745 million tonnes to over 1,600 million tonnes. Traffic at major ports has jumped by close to 50 per cent. Turnaround time has fallen from 127 hours in 2010 to 53 hours more recently, with only 21 hours in Jawaharlal Nehru Port Trust (JNPT) at Nhava Sheva. Over this period, India's position in the World Bank's logistics performance index has risen from 54th to 38th. India is planning a major transhipment hub at Galathea Bay in the Nicobar Islands which is located on one of the most important shipping routes. A new mega port is also planned at Vadhvan.[7] Alongside quadrupling port capacity, India needs to aim at becoming a leading ship builder, develop world class connectivity with the hinterland and rationalise processes so that imports and exports sit less at docks. A step-up in air cargo is also warranted to take advantage of the surge amidst the Red Sea crisis.

Domestic financial markets are seeing corrections. The relentless hardening of the US dollar has imposed downward pressures on all other currencies, with the Indian rupee also reflecting downside from both political and geopolitical developments, but the medium-term outlook remains bullish as global turbulence subsides and the innate strength of the macro-fundamentals reasserts itself. In the recent period, there has been some discussion on the exchange rate of the INR, especially some discontent on its relative stability historically and in relation to peers. As Box 2 explains, the level of the INR is determined by market forces of demand and supply which, in the ultimate analysis, reflect the state of the underlying macro-fundamentals of the Indian economy. Interventions in the forex market smooth undue volatility so that the market clears in an orderly manner. This is important in a time when global economic uncertainty is unprecedentedly high amidst persisting geopolitical tensions, divergent monetary policy pathways, geoeconomic fragmentation, and political spillovers, among other overlapping crises. Currency markets worldwide have become conduits for the propagation of these global shocks to domestic economic activity. By imparting stability to the INR, the economy remains relatively insulated from multiple global spillovers and attendant financial stability risks. Box 2 also describes how this approach of buffering the economy has enabled the innate strength of India's fundamentals to be built up in a hostile and highly uncertain international environment.

In the credit market, non-banking financial companies, including microfinance institutions have drawn regulatory attention on account of exorbitant interest rates charged on loans. Several private banks are reported to be experiencing stress in small ticket advances, credit cards and personal loans, with a rise in over-leveraged clients as well as in provisioning. More generally, banks have circumspectly reined in lending to retail and services. On the other hand, they have grown credit to industry – small, medium and large – strongly, reflecting the buoyancy in the underlying growth momentum of Indian industry. Overall, a better balance is emerging between deposit and credit growth, with the incremental credit-deposit ratio falling to more normal levels from stratospheric heights earlier.

In spite of sustained selling by foreign institutional investors, equity markets are gearing up for a fresh rally on domestic support, especially for key mutual fund equity schemes. The rally in Indian mid-cap and small-cap indices thus far in 2024 is the best in the world, despite some corrections triggered by valuation concerns. Funding by private equity and venture capital has been picking up on a few large ticket deals, undeterred by the sell-off by foreign institutional investors.

This October and the first half of November registered as the warmest on record in India,

[6] Five-Year Review of Indias Merchandise Trade Report, Global Trade Research Initiative, May 2024.

[7] "India has quietly transformed its ports", The Economist, May 09, 2024.

according to the India Meteorological Department. The likelihood of *La Nina* and the periodic cooling of sea surface temperature is now pushed out to the end of December, indicating a cooler winter. Nevertheless, efforts towards arresting climate change are showing up. There has been an ebullient growth in rooftop solar capacity, with the target of adding 30 giga watts by 2027, supported by the *PM-Surya Ghar Muft Bijli Yojana.* India has been re-elected as president of the International Solar Alliance in recognition of the progress made towards a cleaner and more sustainable path of growth. Despite challenges, India's wind energy sector is expected to add 4.5-5.0 giga watts this year, with potential annual installations reaching 10 GW in 2026. 70-80 per cent of installed wind capacity is localised. Long-term power purchase contracts by discoms have de-risked investments by private developers in renewables. The need of the hour is to invest in storage.

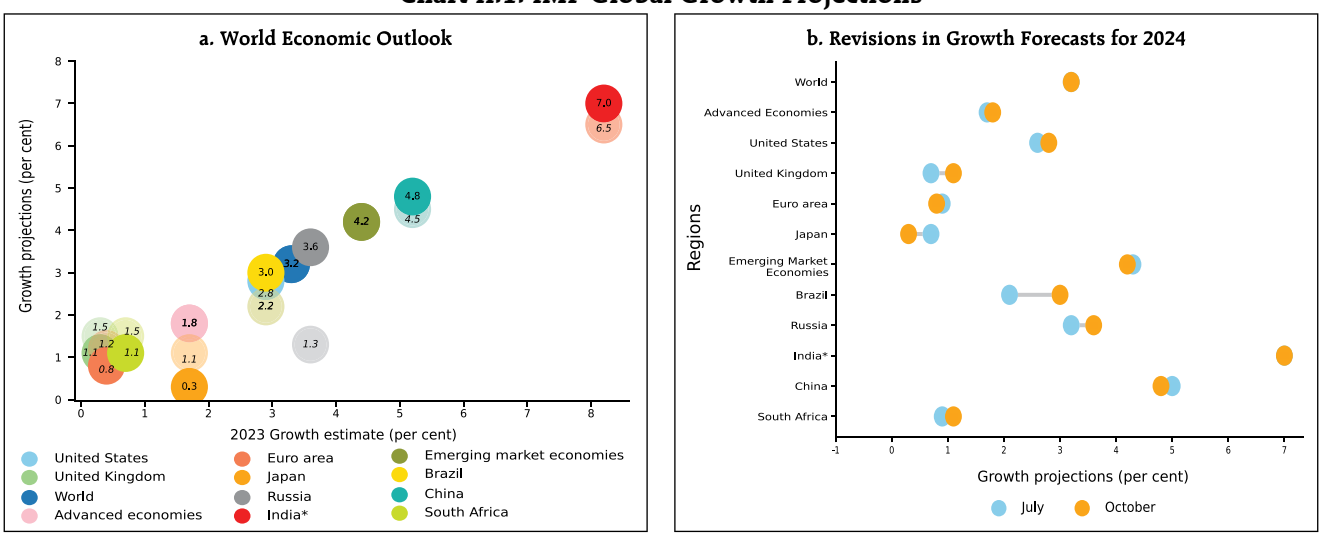
Set against this backdrop, the remainder of the article is structured into four sections. Section II covers the rapidly evolving developments in the global economy. An assessment of domestic macroeconomic conditions is set out in Section III. Section IV encapsulates financial conditions in India, while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

II. Global Setting

The global economy remains resilient despite ongoing geopolitical uncertainty, *albeit* with a diverging growth outlook across geographies. Monetary policy normalisation is driving policy action in AEs even though the pace of disinflation remains uneven in many countries. In its October 2024 World Economic Outlook update, the IMF maintained its projection of global growth at 3.2 per cent for 2024, the same as in July (Chart II.1). The growth projection for 2025, however, was reduced by 10 basis points (bps) to 3.2 per cent due to downward revision in the outlook for emerging market and developing economies (EMDEs) as extreme weather events and supply disruptions are likely to take a toll on their output. Global headline inflation is projected to decline from an annual average of 6.7 per cent in 2023 to 5.8 per cent in 2024 and further to 4.3 per cent in 2025, with AEs expected to return inflation to targets sooner than EMDEs.

Our model-based nowcast of global GDP indicates some slackening of momentum in Q3:2024 and Q4:2024, weighed down by heightened geopolitical risks (Chart II.2).

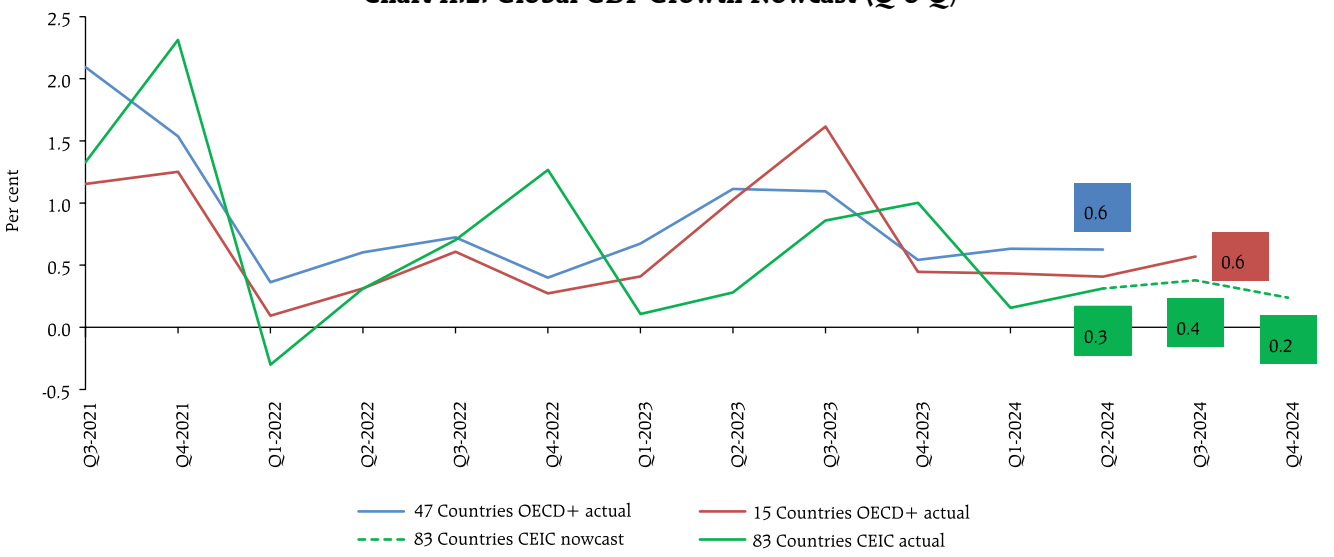
Chart II.1: IMF Global Growth Projections



Notes: 1. *: India's data is on a fiscal year basis.
2. Darker (lighter) shaded circles pertain to 2024 (2025) forecasts in Chart II.1a.

Source: IMF.

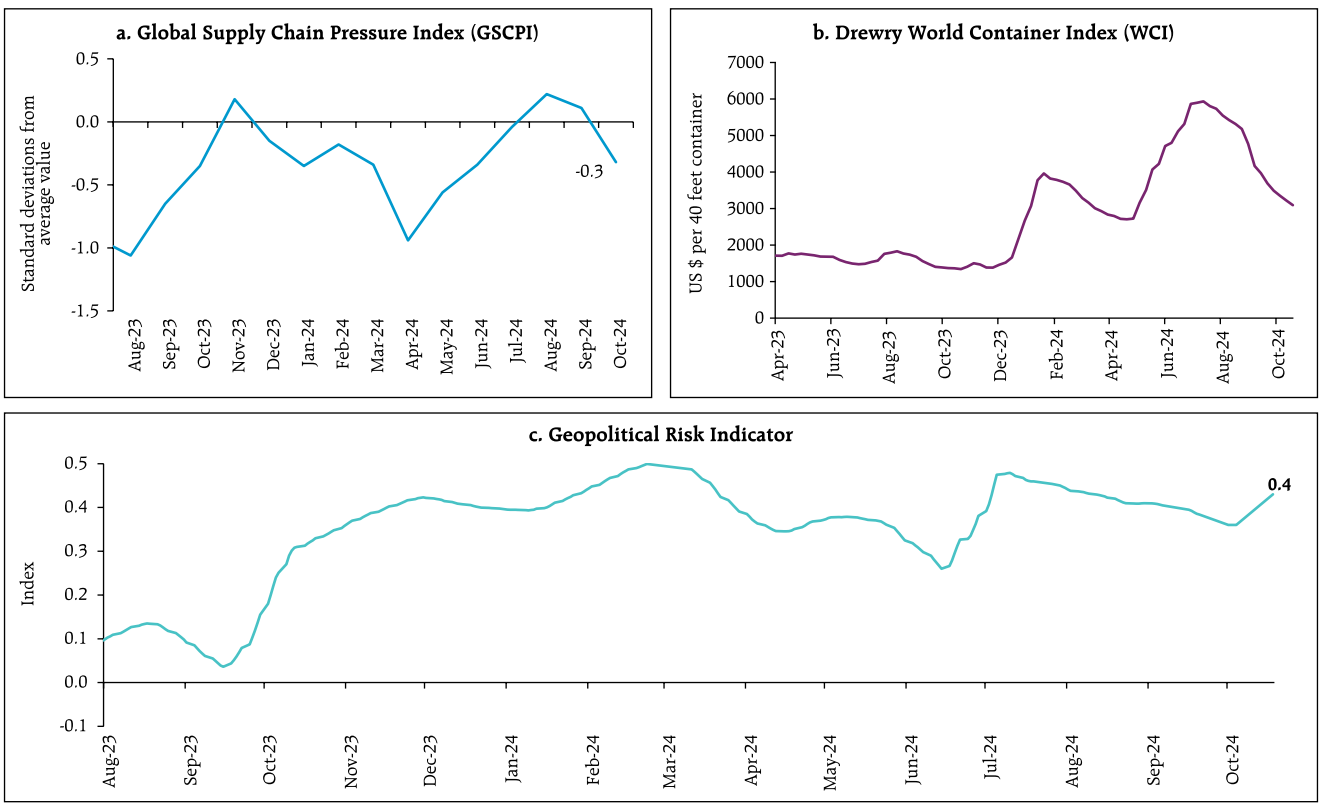
Chart II.2: Global GDP Growth Nowcast (Q-o-Q)



Sources: CEIC; OECD; and RBI staff estimates.

The global supply chain pressures index (GSCPI) eased for the second month in a row in October 2024, and dropped below its historical average (Chart II.3a). Supply disruptions have kept

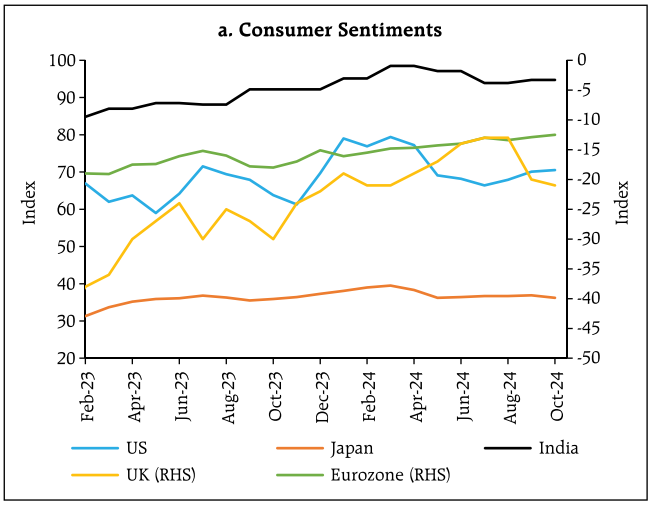
Chart II.3: Trends in Global Supply Chain Pressures and Geopolitical Risks

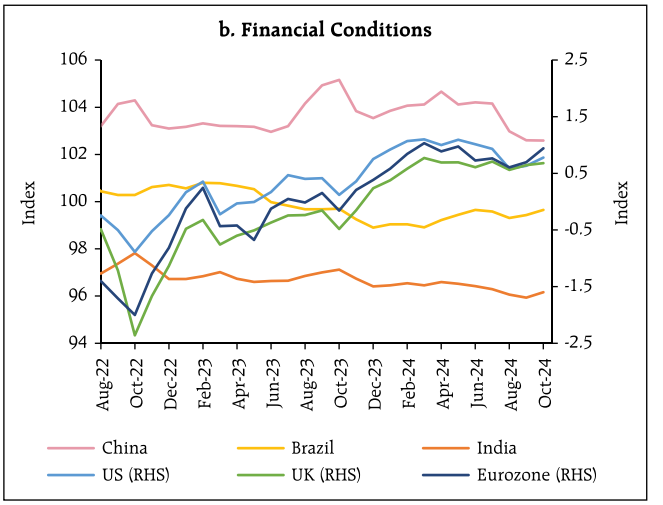


Notes: 1. GSCPI reflects data on transportation costs and manufacturing indicators.
2. The WCI assessed weekly by Drewry reports actual spot container freight rates for major east west trade routes. The composite represents a weighted average of the 8 shipping routes by volume and is reported in USD per 40-foot container.

Source: Federal Reserve Bank of New York; BlackRock Investment Institute, October 2024; and Bloomberg.

Chart II.4: Consumer 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 indicate extreme lack of confidence, 0 denotes neutrality while 100 indicates extreme confidence.
3. India and US: Higher the index value, higher is the consumer confidence.
Source: Bloomberg.

container shipping costs elevated, although they recorded some moderation during September-October 2024 (Chart II.3b). Geopolitical risks rose in October due to escalation of tensions in the Middle East, reversing the moderation observed since mid-July (Chart II.3c).

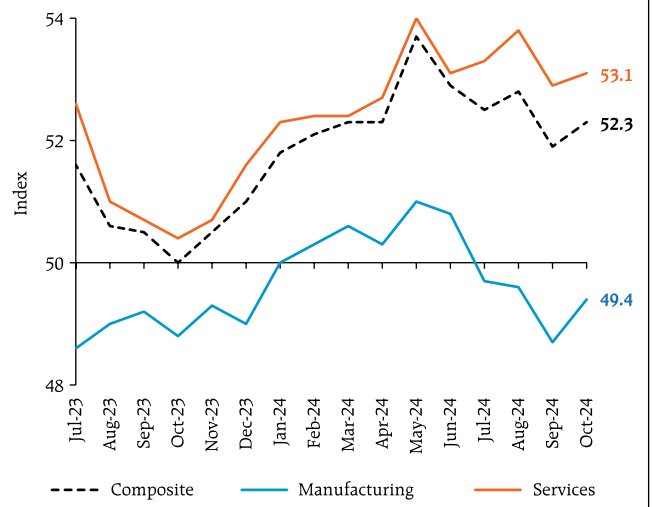
In October 2024, consumer confidence improved in the US, Euro area and India but worsened in the UK (Chart II.4a). Financial conditions eased in major AEs and EMEs (Chart II.4b).

The global composite purchasing managers' index (PMI) increased in October from an eight-month low recorded in September and remained in the expansionary zone for the twelfth consecutive month (Chart II.5). A robust revival in services acitivity with expansion in output across business, consumer and financial services offset the sluggish performance in manufacturing. The global manufacturing PMI remained below the neutral mark in October for the fourth month in a row due to contraction in new orders, employment growth and stocks of purchases.

The composite PMI for export orders rose in October, but it has remained in contractionary zone since June 2024 as the decline in manufacturing exports more than offset the increase in services exports. On a sequential basis, however, manufacturing export orders witnssed a lower magnitude of contraction while services export orders decelerated (Chart II.6).

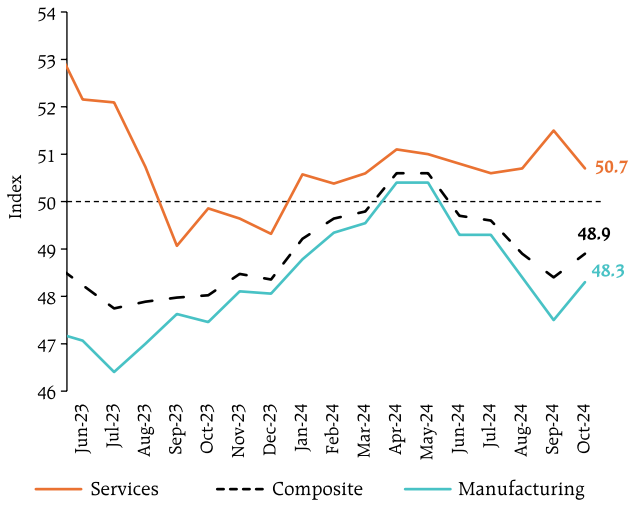
Global commodity prices softened in October as the gains in energy prices were offset by declines in

Chart II.5: Global PMI



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

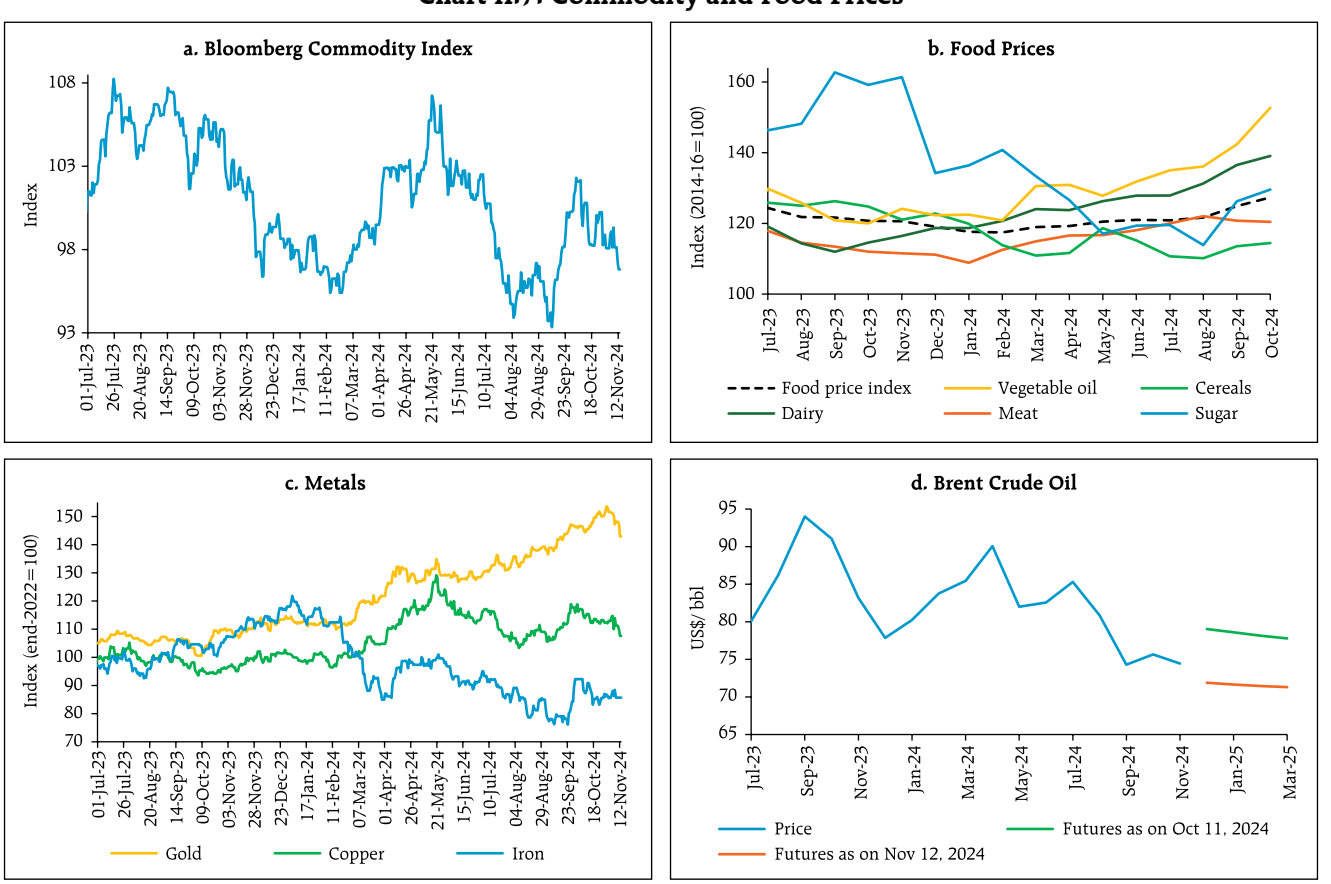
Chart II.6: Global PMI: Export Orders



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

metal prices. The Bloomberg commodity index fell by 2.2 per cent (m-o-m) in October (Chart II.7a). The Food and Agriculture Organization's (FAO's) food price index recorded a 2.0 per cent (m-o-m) increase in October, with prices rising across all categories except meat; a particularly sharp uptick was observed in vegetable prices (Chart II.7b). Metal prices declined in October and early November as demand from China, the world's largest consumer of base metals, decreased in response to stimulus measures failing to meet expectations. Gold prices increased by 4.6 per cent (m-o-m) in October, surpassing the US$ 2700 mark for the first time on account of safe-haven demand amidst uncertainties surrounding the US elections and conflicts in the Middle East. In the first fortnight of November, however, gold prices declined as rising yields and a strengthening US dollar increased the opportunity cost of holding gold (Chart II.7c). Brent crude oil prices increased

Chart II.7: Commodity and Food Prices



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

in early October as markets were on edge following escalation of geopolitical tensions in the Middle East. Oil prices, however, declined towards the latter half of the month, tracking increased supply prospects in 2025 and partial easing of geopolitical tensions. Overall, prices increased by 2.3 per cent (m-o-m) in October. In the first half of November, crude oil prices declined due to a weaker demand outlook (Chart II.7d).

Headline inflation continued to decelerate across major economies, *albeit* unevenly, even though services inflation continue to remain elevated, especially in AEs. In the US, CPI inflation increased to 2.6 per cent year-on-year (y-o-y) in October 2024 from 2.4 per cent in September. Inflation in terms of the personal consumption expenditure (PCE) deflator softened to 2.1 per cent in September from 2.3 per cent in August. Headline inflation in the Euro area edged up to 2.0 per cent in October from 1.7 per cent in September (Chart II.8a). Among EMEs, inflation increased in Brazil and Russia, but softened in China in October (Chart II.8b). Core and services inflation remained higher than the headline in most AEs (Chart II.8c and 8d).

Global equity markets declined in October, tracking geopolitical uncertainties as well as election outcomes in the US and Japan. The Morgan Stanley Capital International (MSCI) world index recorded a 2.3 per cent (m-o-m) decline in October, with the emerging markets index declining by 4.4 per cent (Chart II.9a). The decline in EME equity markets was

Chart II.8: Inflation - AEs and EMEs

Sources: Bloomberg; and OECD.

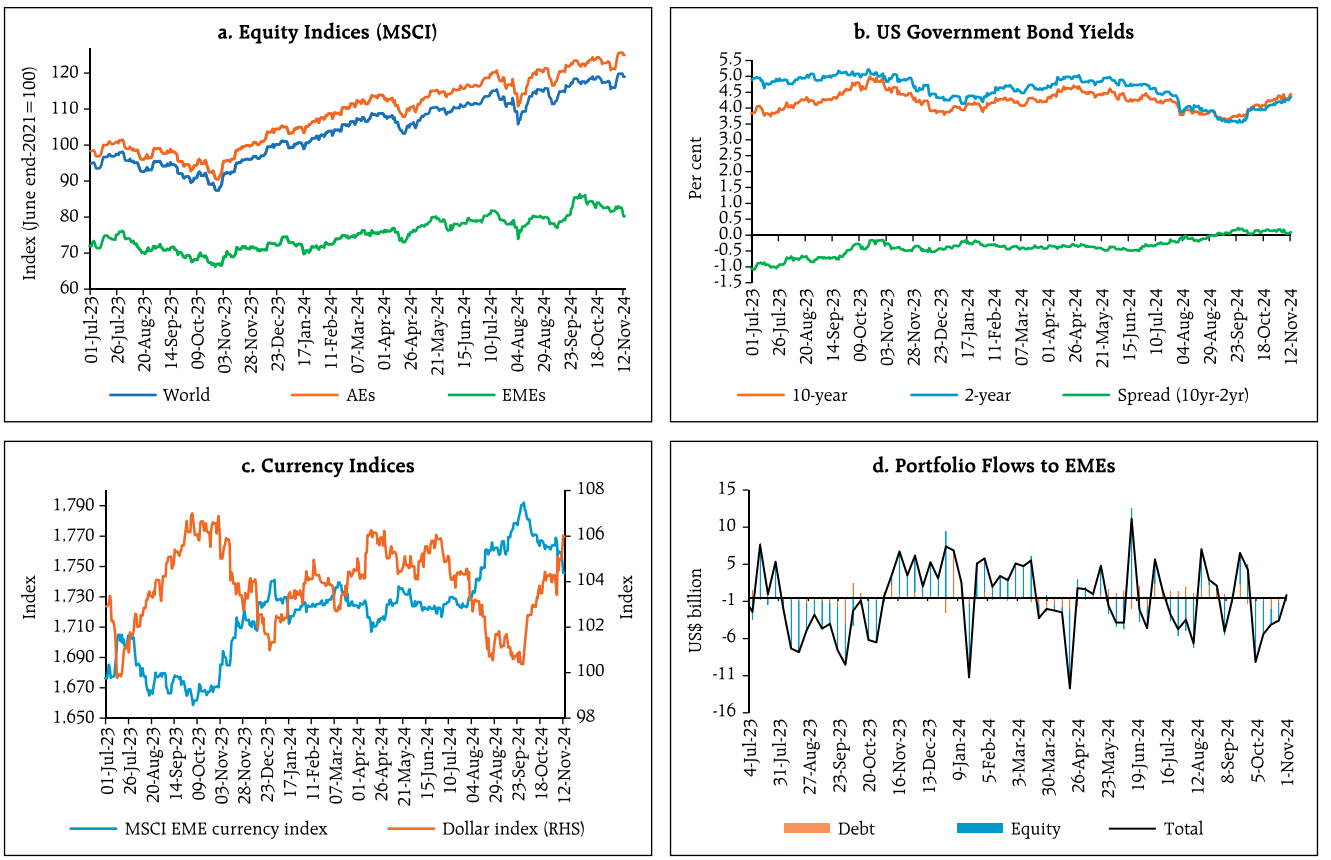
led by a retraction in China as markets pulled back from the sharp rise following the stimulus measures announced in September. Following the US election results (between November 5 and 12), equity markets rallied substantially, led by gains in advanced economies, with the MSCI world index rising by 1.6 per cent.

The US government securities yields on both 10-year and 2-year bonds hardened by 50 bps and 53 bps, respectively, in October as hopes of major rate cuts receded amidst various data releases, including US GDP indicating the underlying strength in the economy (Chart II.9b). Yields further strengthened in November as markets started to factor in higher budget deficits in the US following the election results. Both 10-year and 2-year yields increased by 16 bps and 17 bps, respectively since November 05 (up to November 12).

In the currency markets, the US dollar strengthened by 3.2 per cent (m-o-m) in October, while the MSCI currency index for EMEs decreased by 1.6 per cent in October, mainly due to capital outflows in the equity segment. After the results, the US dollar index further strengthened by 2.5 per cent (Chart II.9c and II.9d).

Among AE central banks, the US Federal Reserve Open Markets Committee (FOMC) decided to lower the target range for the federal funds rate by 25 basis points on November 07, 2024 and indicated that "inflation has made progress toward the Committee's 2 per cent objective but remains somewhat elevated".[8]

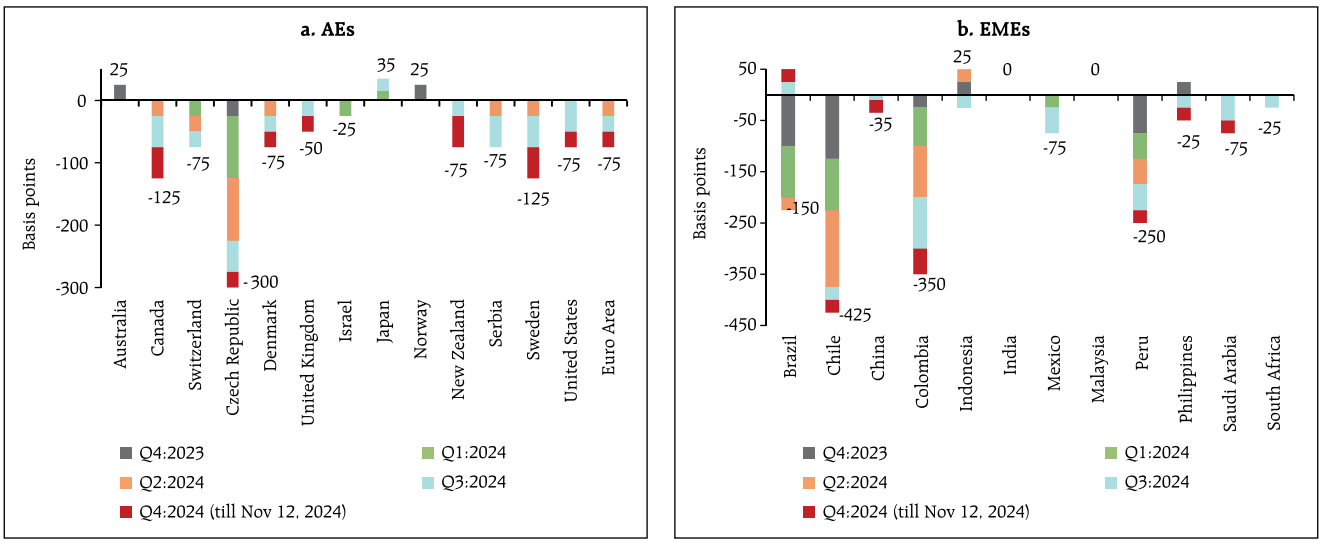
Chart II.9: Global Financial Markets



Sources: Bloomberg; and IIF.

[8] https://www.federalreserve.gov/newsevents/pressreleases/monetary20241107a.htm

Chart 10: Changes in Policy Rates



Source: Bloomberg.

The United Kingdom cut its policy rates by 25 bps in November while Sweden and Canada cut their benchmark rates by 50 bps in November and October, respectively. Japan, Norway and Australia continued with a pause (Chart II.10a). Among EME central banks, Peru and Mexico have reduced their policy rates by 25 bps in November (Chart II.10b). As part of ongoing stimulus measures, China cut its one-year Loan Prime Rate (LPR) and five-year LPR by 25 bps to 3.10 per cent and 3.60 per cent, respectively. In contrast, Russia in October raised its policy rate by 200 bps to 21.0 per cent and and Brazil raised its rate by 50 bps in November to 11.25 per cent to combat inflationary pressures.

III. Domestic Developments

Despite heightened geopolitical risks, supply chain pressures facing India eased in October, falling below historical average levels (Chart III.1a). Our economic activity index (EAI)[9], based on a range of high frequency indicators, projects real GDP growth at 6.7 per cent and 7.6 per cent in Q2 and Q3:2024-25, respectively. (Charts III.1b and III.1c).

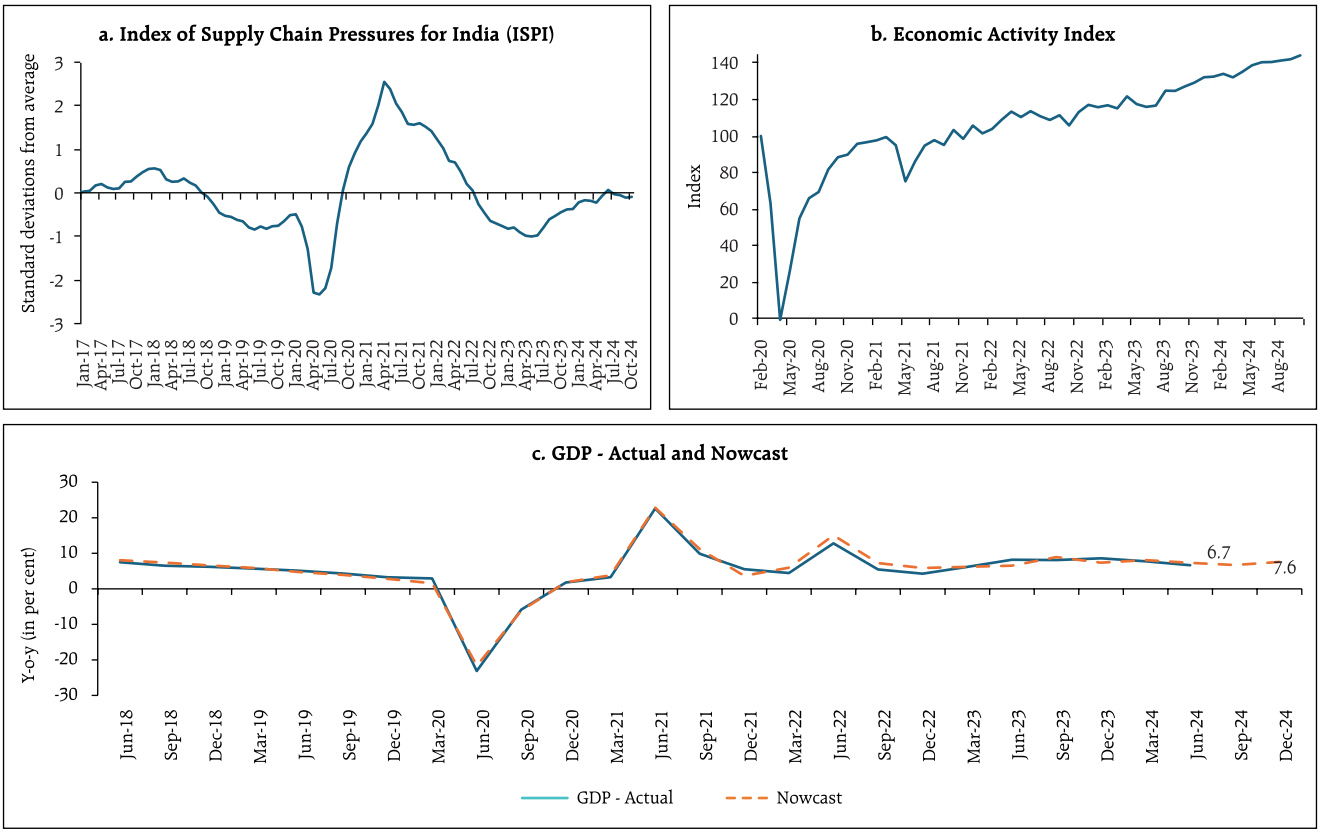
Aggregate Demand

High-frequency indicators suggest that aggregate demand regained strength in October 2024, buoyed by festival season demand. E-way bills increased by 16.9 per cent y-o-y, reflecting higher supply chain activity (Chart III.2a). Toll collections increased by 10.4 per cent (y-o-y) in value terms and 7.9 per cent (y-o-y) in volume terms (Chart III.2b).

Automobile sales increased by 11.7 per cent (y-o-y) as the festival season spending and discounts from automakers boosted demand (Chart III.3a). In particular, sales in the passenger vehicles segment and in two-wheelers drove overall growth. Domestic tractor sales also increased by 22.4 per cent, recording the highest sales since May 2011. (Chart III.3b). Vehicle registrations surged across both transport and non-transport segments (Chart III.3c). Petroleum consumption rebounded after two consecutive months of contraction, driven by increase in demand for aviation turbine fuel and motor spirit (petrol)

[9] The index extracts the dynamic common factor underlying 27 monthly indicators representing industry, services, global and miscellaneous activities.

Chart III.1: Economic Activity and GDP Growth Nowcast

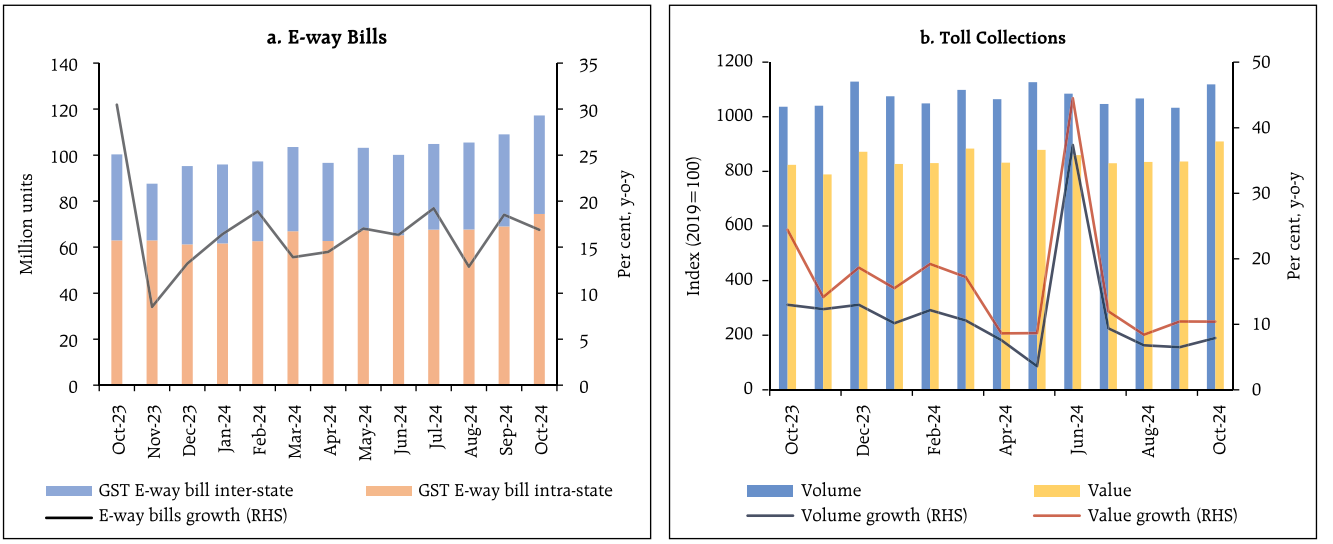


Note: The economic activity index (EAI) is constructed by extracting the common trend underlying twenty-seven high frequency indicators of economic activity using a Dynamic Factor Model. EAI is scaled to 100 in February 2020 and 0 in April 2020, the worst affected month due to mobility restrictions.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

[Chart III.3d].

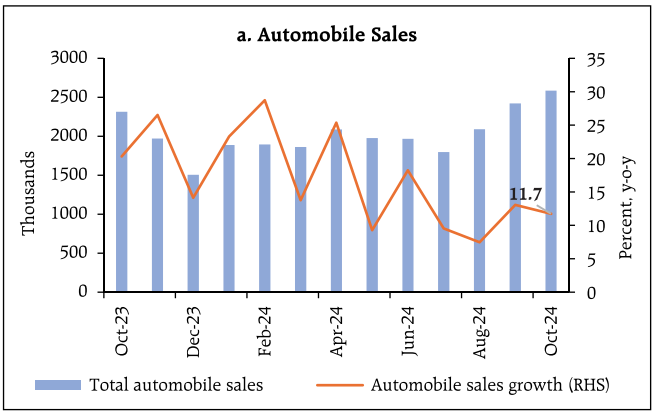
October 2024 also witnessed the highest-ever sales of electric vehicles (EVs) with a y-o-y growth of

Chart III.2: E-way Bills and Toll Collections

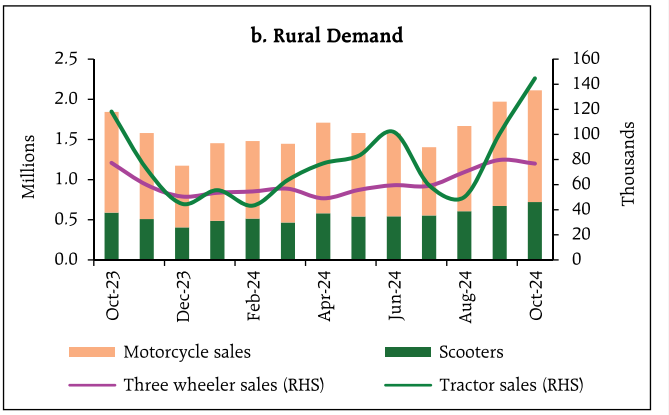


Sources: GSTN; and RBI.

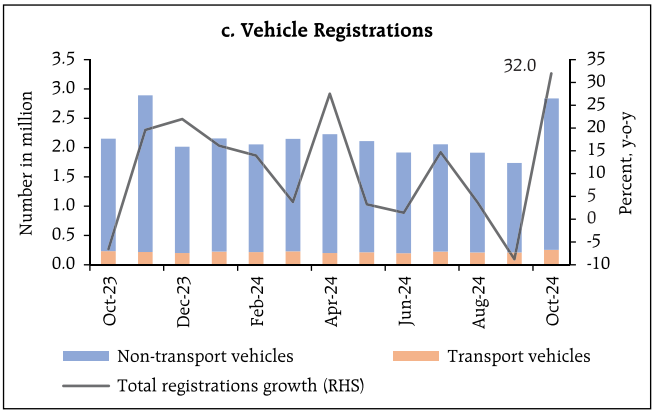
Chart III.3: Automobile Sector Indicators



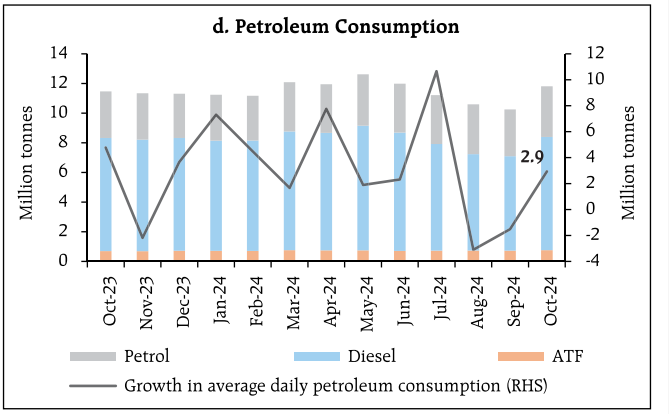
Source: Society of Indian Automobile Manufacturers (SIAM).



Sources: SIAM; and Tractor and Mechanization Association (TMA).



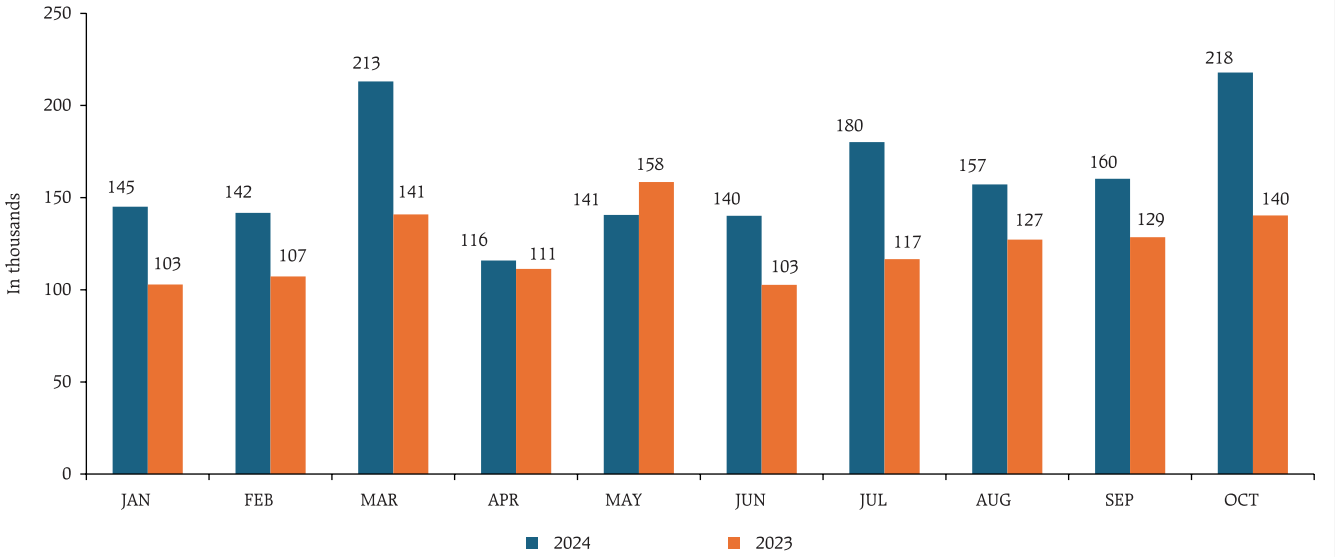
Source: Ministry of Road Transport and Highways.



Source: Petroleum Planning and Analysis Cell.

55.7 per cent (Chart III.4). The total EV sales during January-October 2024 have already surpassed the total EV sales in 2023. EV adoption is increasing strongly with policy support initiatives (Box 1).

Chart III.4: Electric Vehicle Sales



Source: Vaahan Portal.

Box 1: Assessing the Impact of State-Level Policies on 2W-EV Adoption in India

The evolution of the EV policy in India has been marked by a series of initiatives (incentives, subsidies, and infrastructure development plans) aimed at promoting electric mobility and reducing dependence on fossil fuels (Table 1A). Building on the Union government's initiatives, most states have introduced their own EV policies.[10] The recently announced electric drive revolution in innovative vehicle enhancement (PM E-DRIVE) scheme by the centre aims to further accelerate the adoption of EVs across India.[11]

Given high upfront costs, studies have shown that monetary incentives such as rebates, tax credits, and reduced registration fees enhance EV adoption by lowering the initial purchase cost for consumers (Jenn *et al.*, 2018; and Sierzchula *et al.*, 2014).

To study the impact of state-level EV policies on the adoption of 2-wheeler EVs (2W-EVs), an adoption ratio (AR) was constructed as follows:

$$AR = \frac{\text{2W-EVs registered during a period}}{\text{Total non-electric 2Ws registered during a period}} * 100$$

A higher AR signifies a greater share of EV sales relative to non-EVs and hence a deeper market penetration. The implementation of supportive EV policies has positively impacted EV adoption, as evident from a significant increase in AR (Chart 1A).

Quarterly data of 23 Indian states from March 2021 to December 2023 were considered. A variable for policy incentives was created for each state which takes a value of 1 for periods after the policy came into effect and 0 otherwise. The binary-level policy indicator encapsulates the diverse set of policy measures, including demand incentives, charging infrastructure development, R&D, and related aspects that indicate the impact of EV policy as a whole. Thereafter, the following regression equation was estimated:

$$AR_{\{it\}} = \beta_0 + \beta_1 \text{ Policy.Indicator}_{\{it\}} + \alpha_i + \epsilon_{\{it\}}$$

Table 1A: Evolution of EV Policy in India

Policy	Goals	Incentives
Alternate fuels for surface transportation (AFST) (2011)	Developing indigenous technology and encouraging domestic manufacturing.	Central Financial Assistance as a subsidy to direct end-users; Incentives for R&D and domestic manufacturing.
National electric mobility mission plan (NEMMP) 2020 (Launched in 2013)	Achieve 6-7 million sales of electric and hybrid vehicles year on year from year 2020 onwards.	Tax incentives; support for charging infrastructure; Pilot projects; Market creation; and R&D support.
Faster Adoption and Manufacturing of (Hybrid and) Electric Vehicles in India (FAME India) Scheme Phase I (2015) (Launched as part of NEMMP)	Four focus areas: • Demand creation • Technology platform • Pilot projects • Charging infrastructure.	Demand incentives for buyers of EVs in the form of an upfront-reduced purchase price, grants for specific projects under pilot projects, R&D/technology development, and public charging infrastructure.
FAME India Scheme Phase-II (2019) (Extension of FAME India Scheme Phase-I)	Encourage faster adoption of EVs; Establishing necessary charging infrastructure for EVs; Carrying out various awareness activities.	Financial subsidies to buyers by offering upfront incentives on purchase; State-level incentives in addition to central subsidies; and R&D support.
Electric drive revolution in innovative vehicle enhancement (PM E-DRIVE) [2024]	Promote electric mobility, reduce the environmental impact of transportation and improve air quality; Expedite adoption of EVs; Efficient, competitive, and resilient EV manufacturing.	Subsidies/Demand incentives for 2W-EVs, 3W-EVs, e-ambulances, e-trucks and other emerging EVs; Installation of EV public charging stations in selected cities with high EV penetration and highways.

Sources: PIB; BEE[12]; and Authors' compilation.

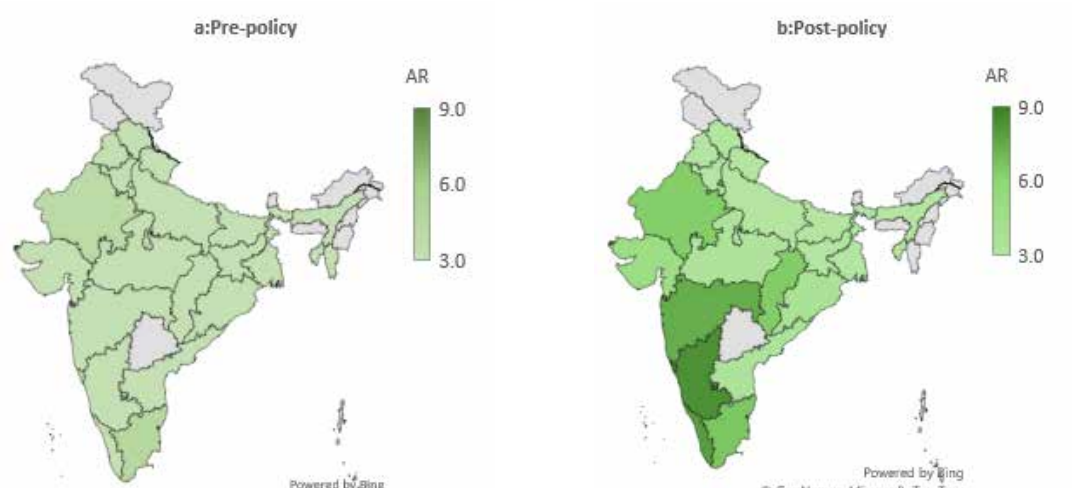
(Contd.)

[10] https://evyatra.beeindia.gov.in/state-govt/

[11] https://pmedrive.heavyindustries.gov.in/docs/policy_document/257594.pdf

[12] https://evyatra.beeindia.gov.in/central-govt-initiatives/

Chart 1A: 2W-EV Adoption in India (before and after State EV Policy Introduction)



Notes: 1. The pre-policy adoption ratios for each state are calculated as the average adoption ratio for five quarters preceding the EV policy notification quarter.
2. Similarly, the post-policy adoption ratios for each state are determined by averaging the adoption ratios for the quarters following the EV policy announcement quarter.
3. For states where the EV policy was implemented before the study period, the post-policy adoption ratio is computed as the average of adoption ratios starting from the March 2021 quarter onwards.

Sources: Society of Indian Automobile Manufacturers (SIAM), Bureau of Energy Efficiency; and Authors' calculations.

Where β_1 measures the change in adoption ratio post policy adoption.

A positive and significant value for the policy indicator indicates that the adoption of 2W-EVs in India accelerated in a supportive EV policy regime (Table 1B).[13]

Table 1B: Panel Regression Results

Dependent Variable: Adoption Ratio (state-wise for 23 States)	
	Period (March 2021- December 2023) Sample Size = 276
Explanatory Variables	
Policy Indicator	3.1***(0.52)

Note: *, ** and *** indicate significance at 10, 5 and 1 per cent level. Figures in parentheses are standard errors.
Source: Authors' estimates.

References:

Jenn, A., Springel, K., and Gopal, A. R. (2018). Effectiveness of electric vehicle incentives in the United States. *Energy Policy, 119*, 349-356.

Sierzchula, W., Bakker, S., Maat, K., and Van Wee, B. (2014). The influence of financial incentives and other socio-economic factors on electric vehicle adoption. *Energy Policy, 68*, 183-194.

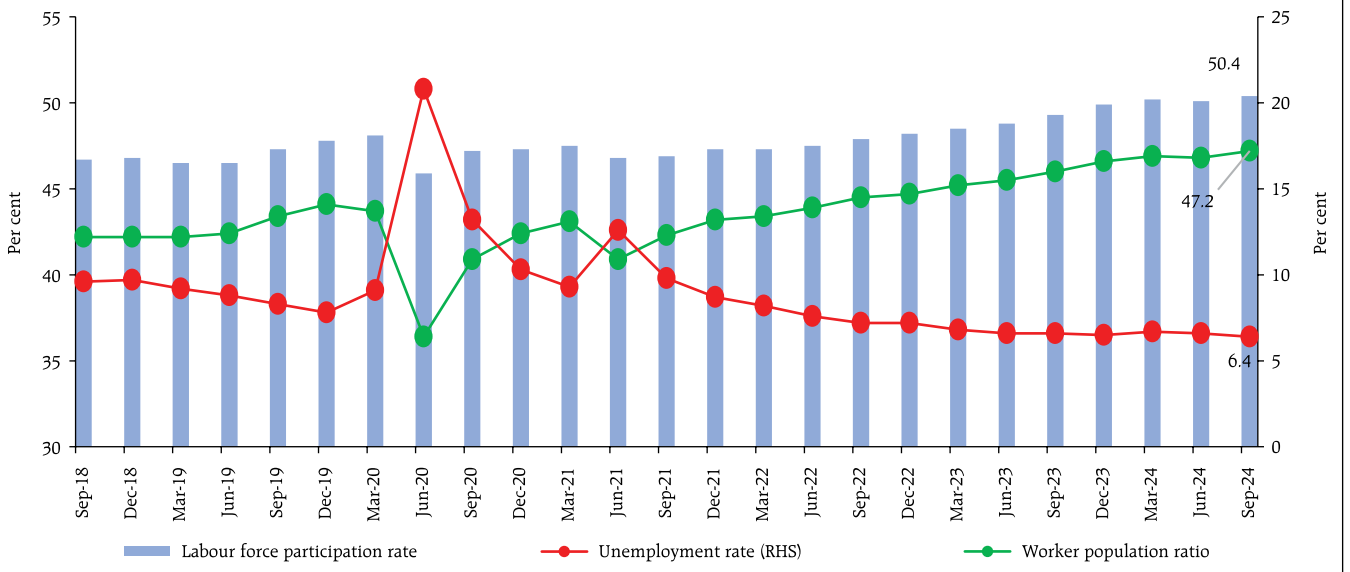
Atal Singh, Satyam Kumar, Abhyuday Harsh and Tista Tiwari (2024). Impact of State-Level Policies on 2W-EV Adoption in India, *Mimeo.*

As per the latest Quarterly Urban Periodic Labour Force Survey (PLFS) report[14], the unemployment rate (UR) in urban areas in India declined to 6.4 per cent in July-September 2024 quarter – the lowest in the PLFS series since its inception in June 2018 – from 6.6 per cent in the previous quarter (Chart III.5). There was a decline in UR for both male and female workers along with increases in both the labour force participation rate (LFPR) and the worker population ratio (WPR). The share of regular salaried workers in overall

[13] It may, however, be noted that a host of other factors could have played a role in the differences in adoption rate between pre and post policy adoption, which provides scope for further study.

[14] QuarterlyBulletinPLFS_July_September_2024.pdf.

Chart III.5: PLFS Quarterly (Age 15 and above)



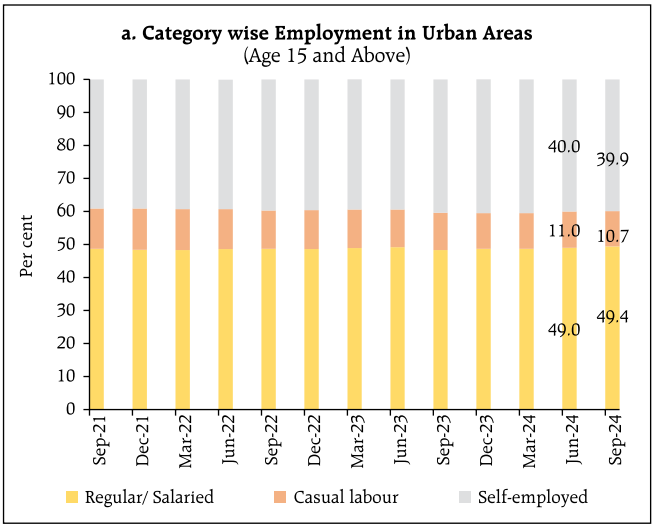
Source: MoS&PI.

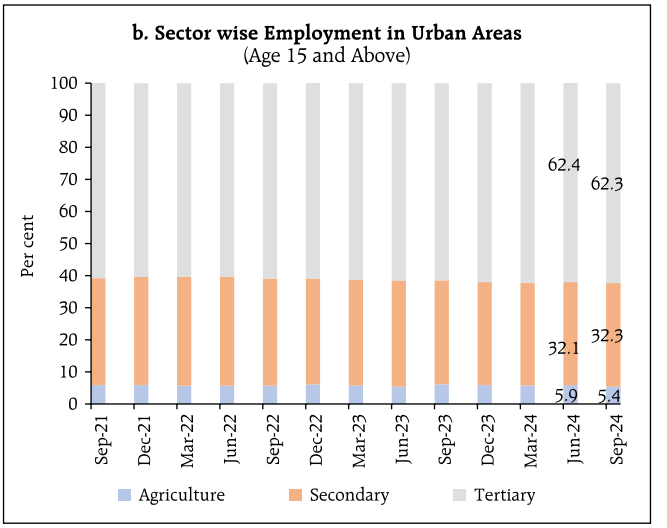
employment increased in the quarter while the share of self-employed workers and casual labour registered a decline from the previous quarter (Chart III.6a). Almost two thirds of the workers in urban areas in India are employed in services sector activities (Chart III.6b).

As per PMI employment indices, organised manufacturing employment recorded an acceleration in October and remained in the expansionary zone for the eighth consecutive month (Chart III.7). The rate of job creation in the services sector recorded the strongest growth in over two years.

During 2024-25 so far, households' demand for work under the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) has generally remained lower than most of the post-pandemic

Chart III.6: PLFS Quarterly (Employment by Category and Sector)



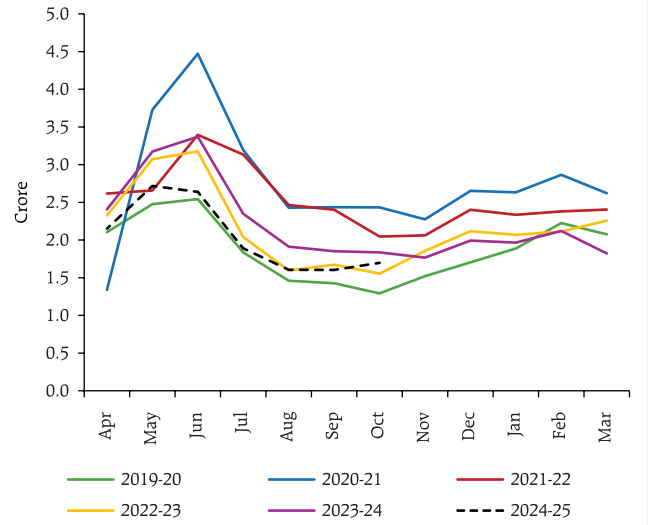


Note: Construction sector is included in secondary sector in Chart III.6b.
Source: MoS&PI.

Chart III.7: PMI Employment Indices

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

Chart III.8: Households Demand for Work under MGNREGA



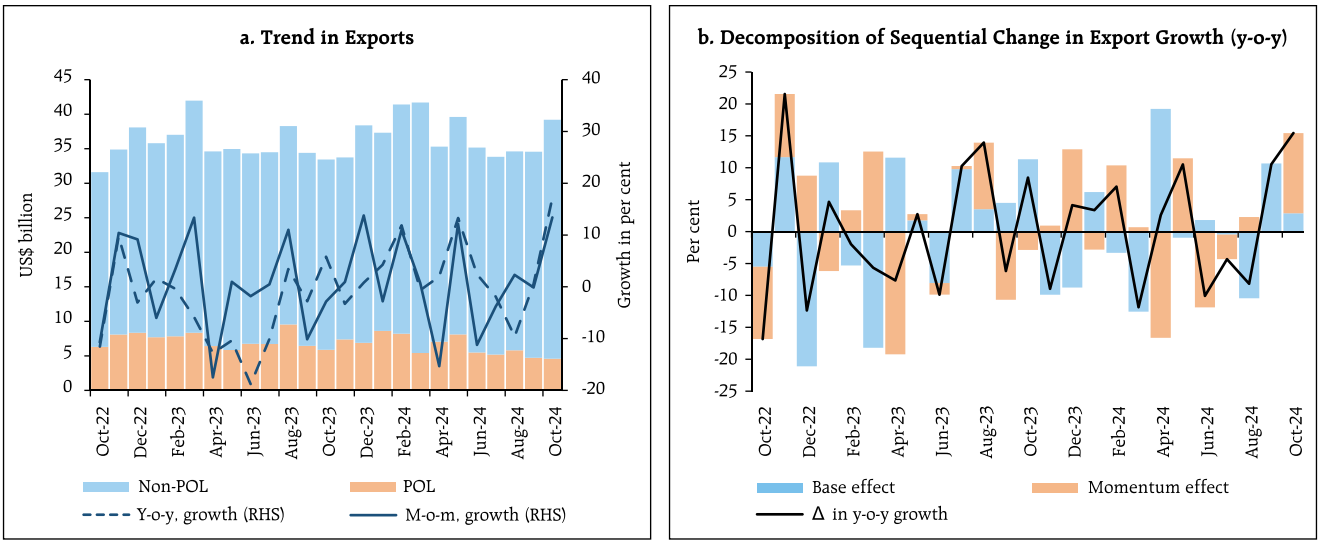
Source: Ministry of Rural Development.

years (Chart III.8). Although a sequential uptick was observed in October, it has remained lower than the levels recorded a year ago, indicating increased availability of alternative employment opportunities.

India's merchandise exports at US$ 39.2 billion grew by 17.2 per cent (y-o-y) in October 2024, driven by both a strong momentum and a favourable base effect (Chart III.9).

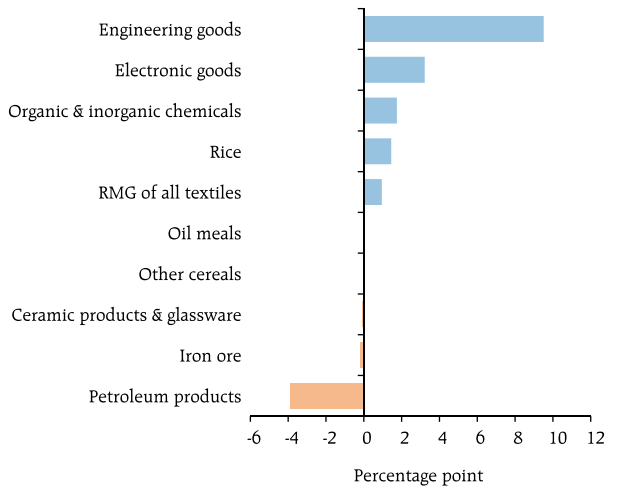
Exports of 25 out of 30 major commodities (accounting for 72.8 per cent of the export basket) expanded on a y-o-y basis in October. Engineering goods, electronic goods, organic and inorganic chemicals, rice, and ready-made garments (RMG) of all textiles were the top drivers of export growth, while petroleum products, iron ore, and ceramic products and glassware contributed negatively

Chart III.9: India's Merchandise Exports



Note: POL: Petroleum, oil and lubricants.
Sources: Press Information Bureau (PIB); DGCI&S; and RBI staff estimates.

Chart III.10: India's Merchandise Exports – Relative Contribution (October 2024 over October 2023)



Sources: PIB; and RBI staff estimates.

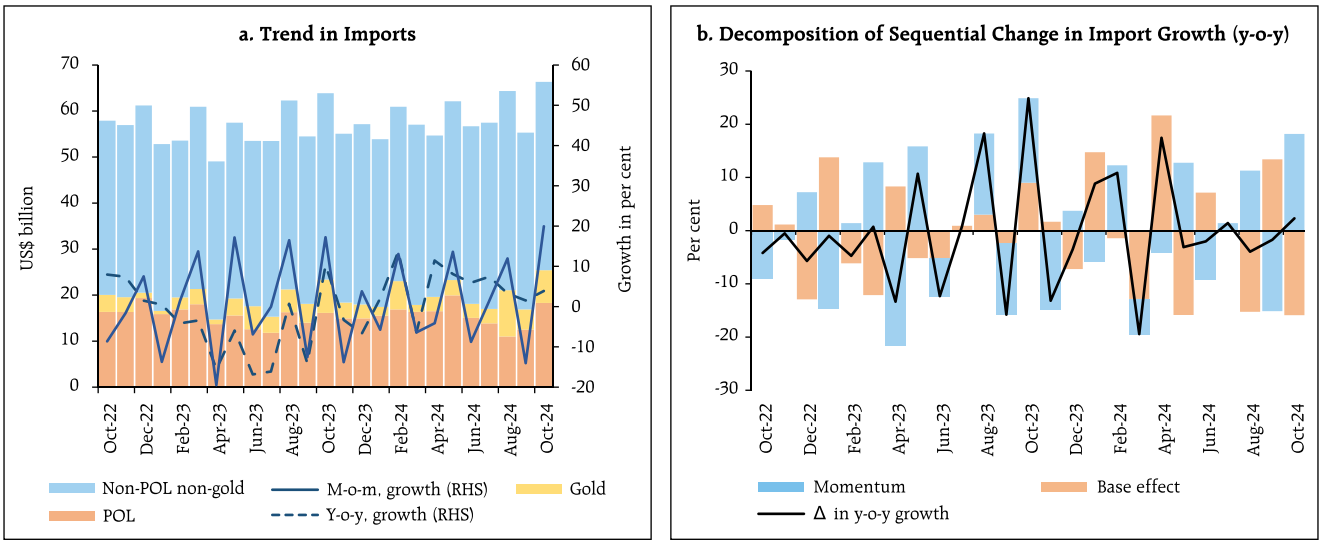
(Chart III.10). During April-October 2024, India's merchandise exports expanded by 3.2 per cent to US$ 252.3 billion, primarily led by engineering goods, electronic goods, drugs and pharmaceuticals, chemicals and RMG of all textiles, while petroleum products, gems and jewellery, iron ore, and marine products dragged down export growth.

Exports to 17 out of 20 major destinations grew in October on a y-o-y basis. During April-October 2024, exports to 13 out of 20 major destinations witnessed an expansion, with the US, the UAE and the Netherlands being the top three export destinations.

Merchandise imports expanded for the seventh consecutive month in October and reached an all-time monthly high of US$ 66.3 billion, with a growth of 3.9 per cent (y-o-y) on account of a positive momentum which more than offset a negative base effect (Chart III.11). Out of 30 major commodities, 20 commodities (accounting for 68.4 per cent of import basket) registered an expansion on a y-o-y basis.

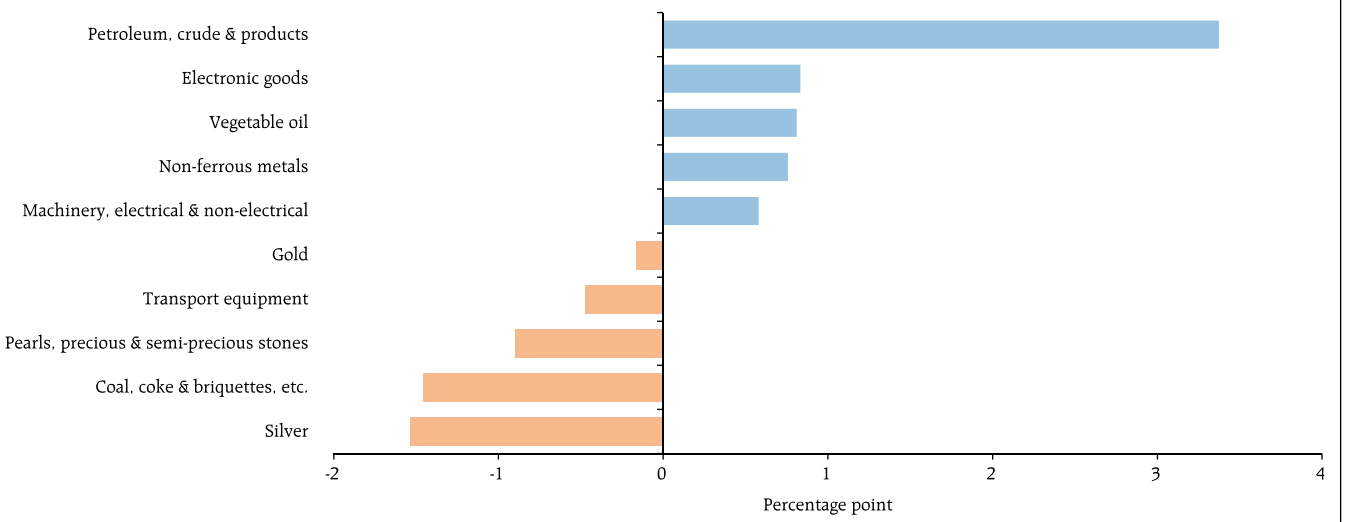
Petroleum, crude and products, electronic goods, vegetable oil, non-ferrous metals, and machinery contributed positively, while silver, coal, coke and briquettes, pearl, precious and semi-precious stones, transport equipment, and gold contributed negatively to import growth in October (Chart III.12). During April-October 2024, India's merchandise imports at US$ 416.9 billion increased by 5.8 per cent (y-o-y), mainly led by POL, electronic goods, gold, non-ferrous metals, and machinery. Pearls, precious and semi-precious stones, coal, coke and briquettes, chemical

Chart III.11: India's Merchandise Imports



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

Chart III.12: India's Merchandise Imports – Relative Contribution (October 2024 over October 2023)



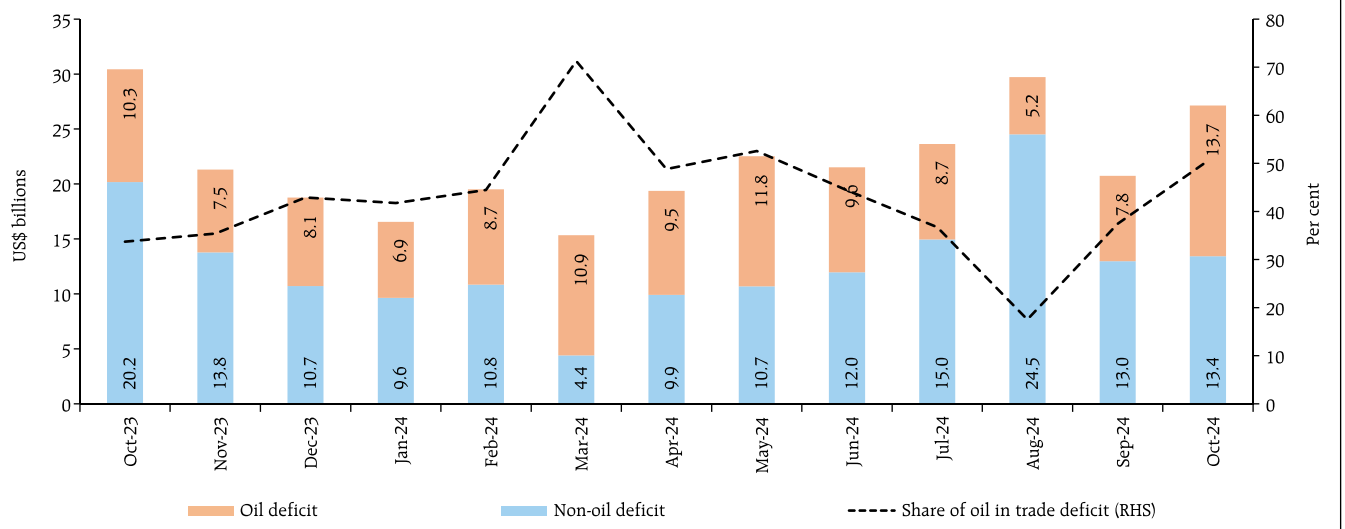
Sources: PIB; and RBI staff estimates.

material and products, fertilisers, and dyeing, tanning and colouring materials contributed negatively.

Imports from 11 out of 20 major source countries expanded in October, while imports from 13 out of 20 major source countries increased during April-October 2024.

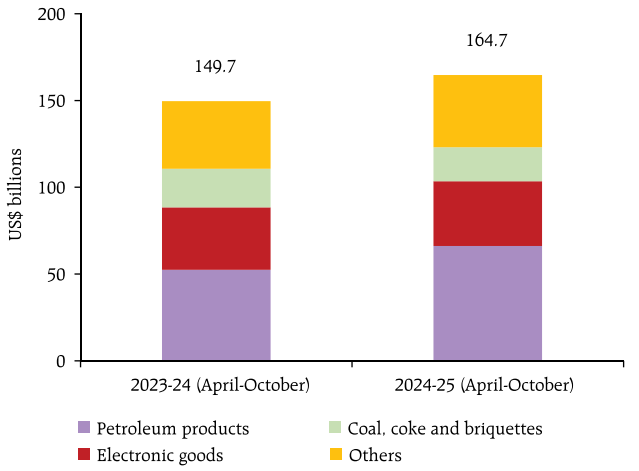
The merchandise trade deficit at US$ 27.1 billion in October 2024 was lower than US$ 30.4 billion in October 2023, despite a sequential pick-up from the previous month. The oil deficit rose to US$ 13.7 billion in October from US$ 10.3 billion a year ago. Consequently, the share of the oil deficit in the merchandise trade deficit rose to 50.5 per cent in October from 33.7 per cent a year ago. The non-oil deficit contracted to US$ 13.4 billion in October from US$ 20.2 billion a year ago (Chart III.13).

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



Sources: PIB; and DGCI&S.

Chart III.14: Commodity-wise Merchandise Trade Deficit



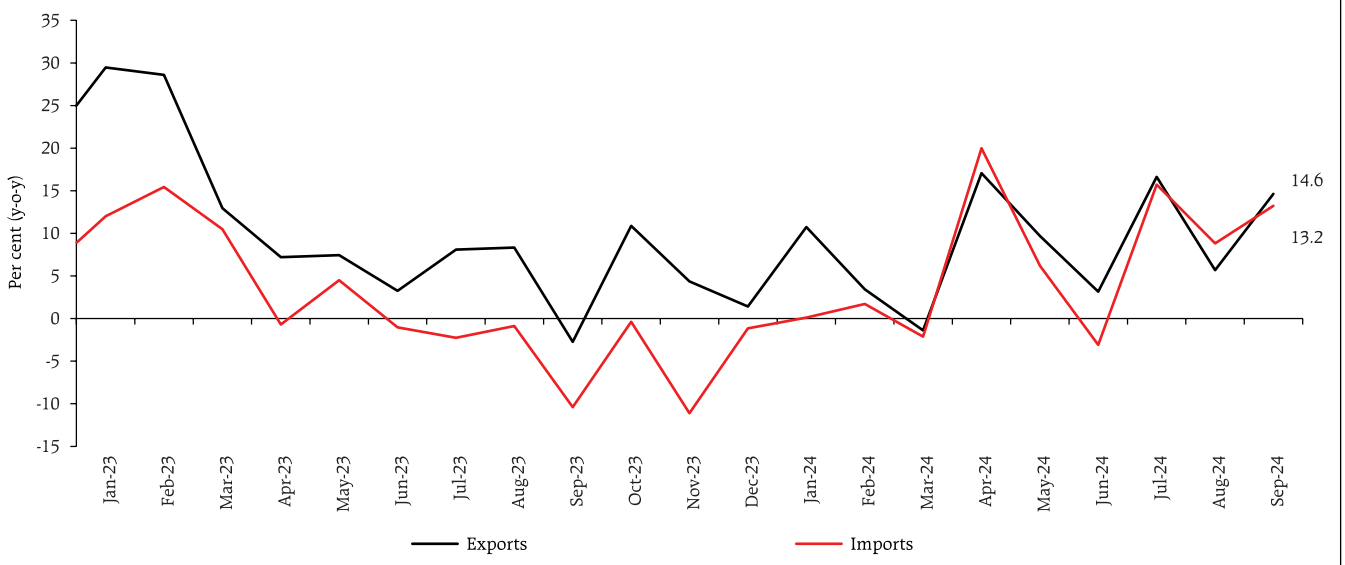
Note: Coal, coke and briquettes exports in October 2024 are assumed to be at the same level as in September 2024.
Sources: PIB; DGCI&S; and RBI staff estimates.

During April-October 2024, India's merchandise trade deficit widened to 164.7 billion from US$ 149.7 billion a year ago. Petroleum products were the largest source of the deficit, followed by electronic goods (Chart III.14).

Services exports rose by 14.6 per cent (y-o-y) to US$ 32.6 billion while services imports grew by 13.2 per cent (y-o-y) to US$ 16.5 billion during September 2024 (Chart III.15). This led to an increase of 16.1 per cent (y-o-y) in net services export earnings to an eight-month high of US$ 16.1 billion during the month. During April-September 2024, India's net services export earnings increased to US$ 84.4 billion from US$ 75.1 billion during the corresponding period a year ago.

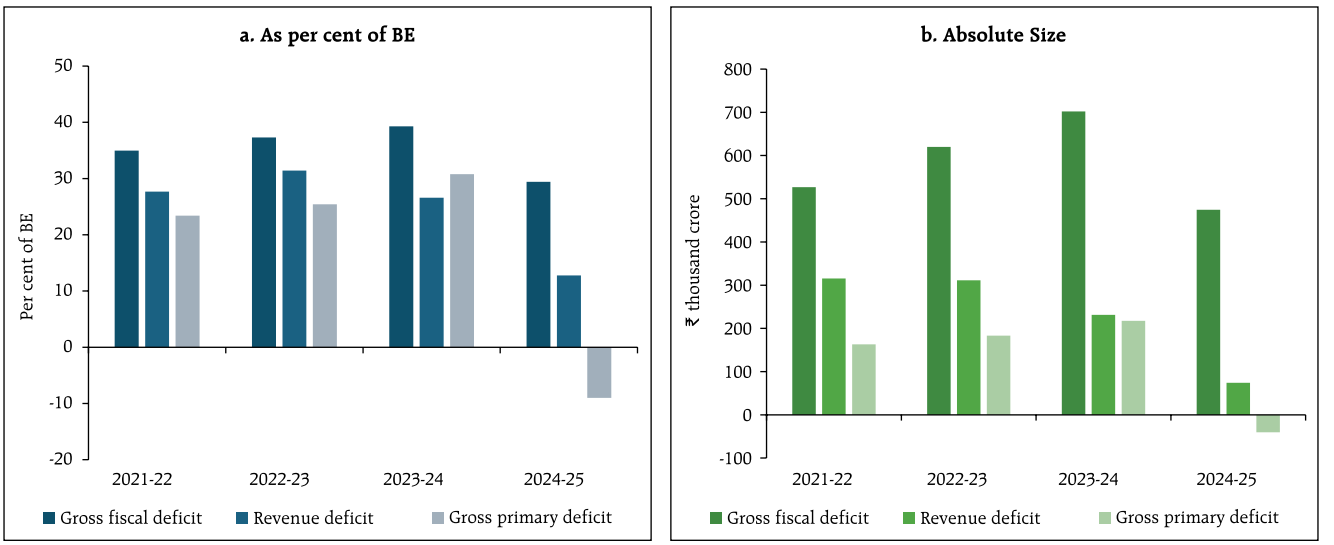
All major key deficit indicators of the Union government, *viz.*, the gross fiscal deficit (GFD), the revenue deficit (RD), and the primary deficit (PD) recorded an improvement during H1: 2024-25 [both in absolute terms as well as per cent of budget estimates (BE)] relative to the corresponding period of the previous year (*i.e.*, H1: 2023-24). The GFD stood at 29.4 per cent of BE in H1: 2024-25 as against 39.3 per cent in the corresponding period of the previous year (Chart III.16a and 16b). This improvement during H1: 2024-25 was registered on the back of a robust growth in revenue receipts. On the other hand, the total expenditure of the Union government (around ₹21.1 lakh crore) remained flat relative to the corresponding period of the previous year.

Chart III.15: Services Exports and Imports: Growth Rates



Source: RBI.

Chart III.16: Budgetary Deficits (April-September)



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

Revenue expenditure growth moderated to 4.2 per cent during H1: 2024-25, from a growth of 10.0 per cent recorded in H1: 2023-24 while capital expenditure contracted by 15.4 per cent on a y-o-y basis. The contraction in capital expenditure can be partly attributed to the imposition of the model code of conduct in the run up to the general elections during Q1: 2024-25 as well as due to the impact of heavy monsoon rains during the months of July and August. During Q2: 2024-25, however, capital expenditure rebounded, with a y-o-y growth of 10.3 per cent. The outgo on major subsidies (food, fertiliser and petroleum) increased by 4.0 per cent in H1: 2024-25 on a y-o-y basis, driven by 27.6 per cent growth in food subsidy outgo while fertiliser subsidy contracted by 18.8 per cent, partly owing to decline in international fertiliser prices.

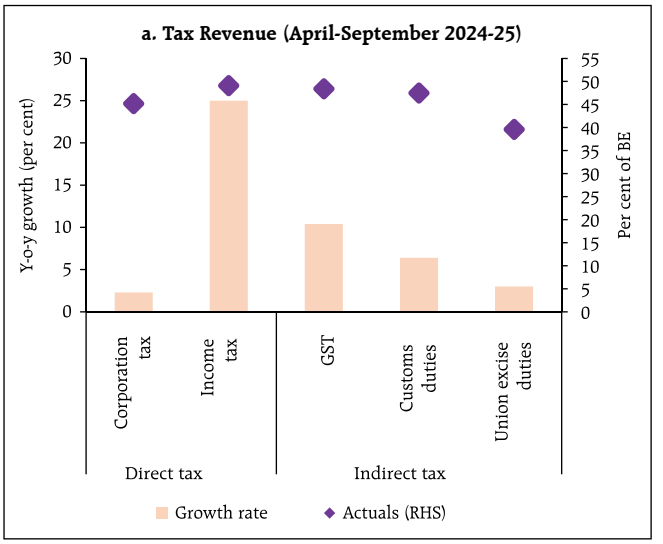
On the receipts side, gross tax revenues recorded a growth of 12.0 per cent during H1: 2024-25 *vis-à-vis* a growth of 16.3 per cent in the corresponding period of the previous year. This was primarily driven by robust growth in income tax (25.0 per cent) and goods and service tax (GST) [10.4 per cent]. Similarly, indirect taxes such as custom duties and excise collections also witnessed higher growth (Chart III.17a). Non-tax revenues posted a strong growth of 50.9 per cent on account of high surplus transfer of ₹2.1 lakh crore by the Reserve Bank (Chart III.17b). Non-debt capital receipts underwent a y-o-y contraction of 27.6 per cent owing to a decline in disinvestment receipts and recovery of loans. Overall, total receipts posted a growth of 15.5 per cent in H1: 2024-25 over the corresponding period of the previous year.

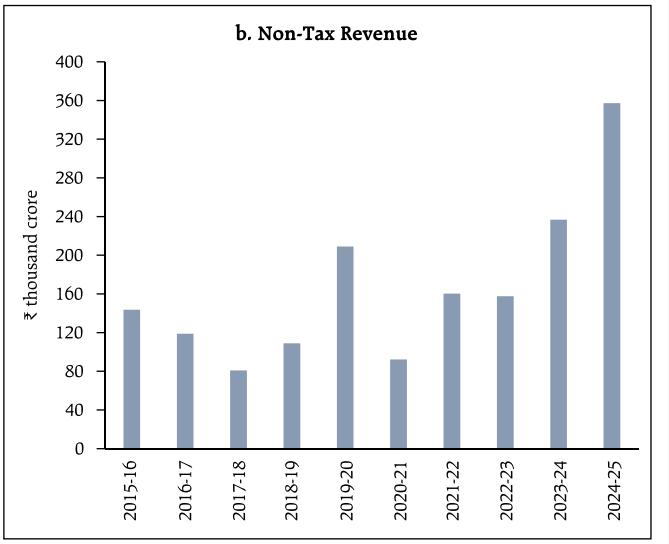
Gross GST collections (Centre *plus* States) for the month of October 2024 amounted to ₹1.87 lakh crore (the second highest monthly collection after April 2024), registering a growth of 8.9 per cent on a y-o-y basis (Chart III.18). After accounting for refunds, net GST collections for September 2024 stood at ₹1.68 lakh crore, growing at 7.9 per cent on y-o-y basis. The cumulative gross GST collections for April-October 2024 stood at ₹12.7 lakh crore (with a growth of 9.4 per cent over April-October 2023).

States' GFD stood at 43.9 per cent of the budget estimates during H1: 2024-25, lower than last year's level (Chart III.19).[15]

[15] Data pertains to 22 States.

Chart III.17: Revenue Receipts of the Union Government (April-September)





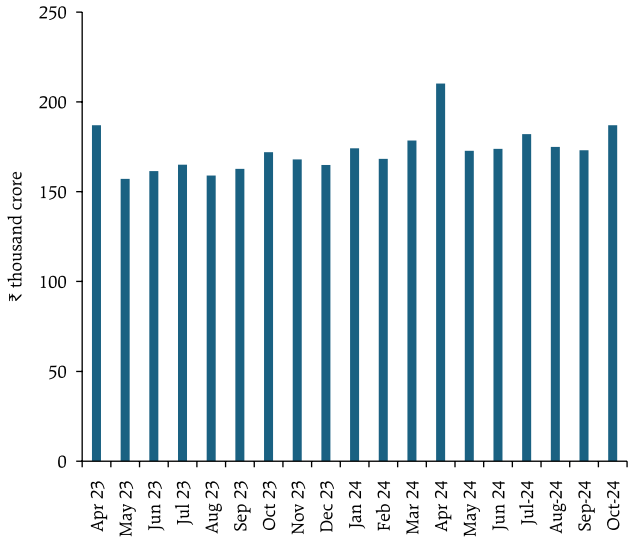
Sources: CGA; and Union Budget Documents.

Revenue receipts increased by 7.5 per cent, driven by double digit growth in tax revenues, while non-tax revenues and grants from the Union government contracted (Chart III.20a). States' revenue expenditure growth accelerated, while capital expenditure declined during this period (Chart III.20b). Capital expenditure, however, showed signs of recovery during Q2: 2024-25.

Aggregate Supply

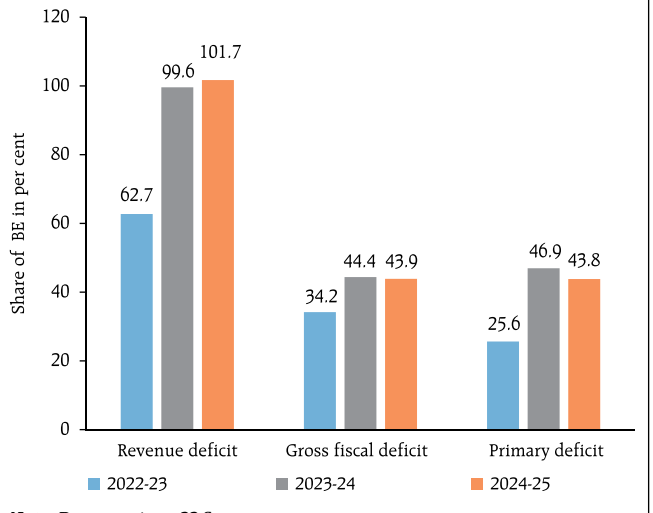
As per the first advance estimates (AE) for 2024-25, the production of *kharif* foodgrains (rice, coarse cereals and pulses) is estimated at a record 164.7 million tonnes, 5.7 per cent higher than the final estimates of 2023-24, reflecting the positive impact of above normal rainfall activity during the southwest

Chart III.18: Monthly GST Revenue



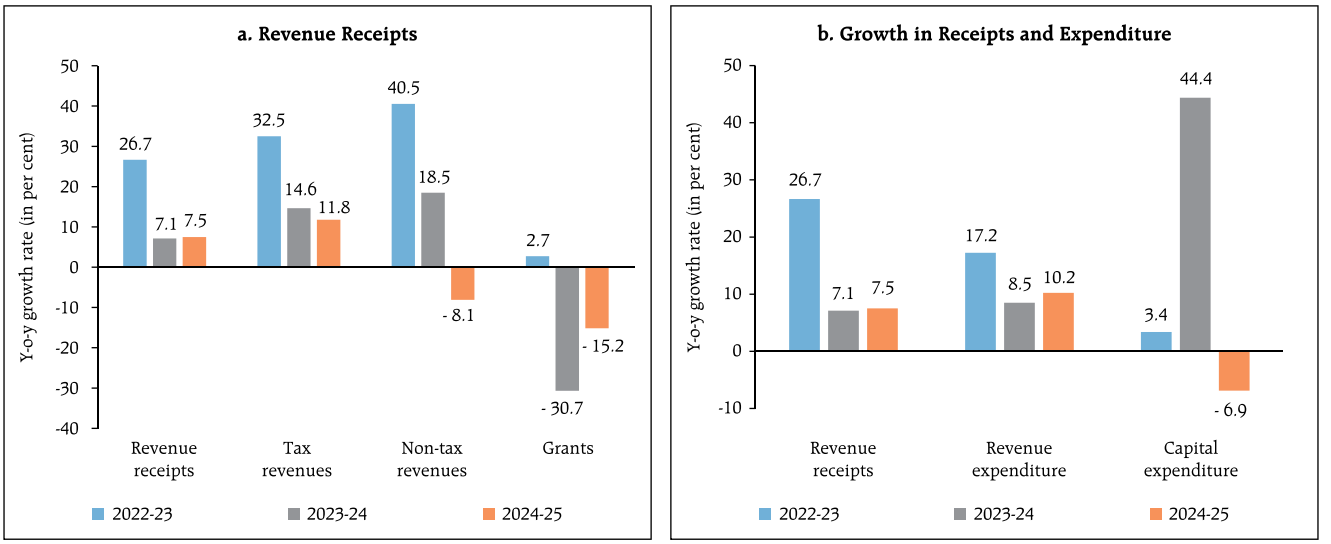
Sources: PIB; and GST Portal.

Chart III.19: States' Fiscal Indicators (April-September)



Note: Data pertain to 22 States.
Source: Comptroller and Auditor General of India.

Chart III.20: Key Fiscal Performance Indicators (April-September)

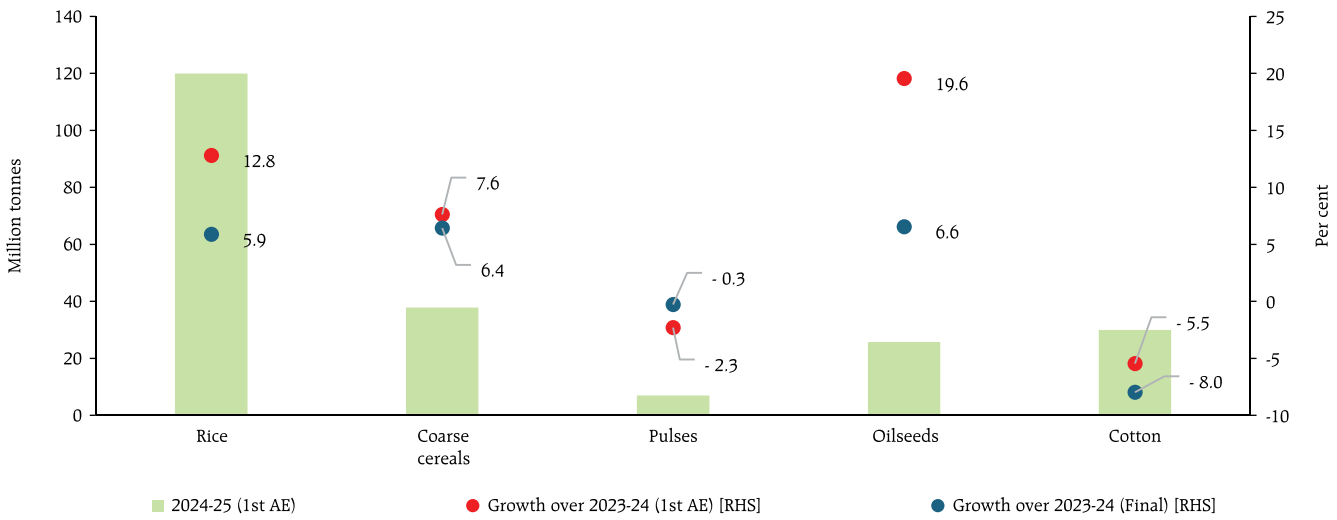


Note: Data pertains to 22 States.
Source: Comptroller and Auditor General of India.

monsoon (SWM) season this year (Chart III.21). Among major *kharif* crops, the production of rice, maize and groundnut have also been estimated at record levels.

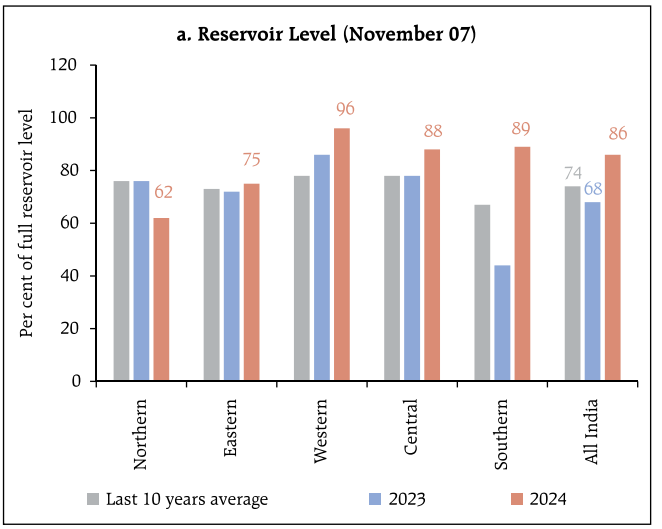
The SWM withdrew from the entire country on October 15, 2024 which also marked the simultaneous commencement of northeast monsoon (NEM) rainfall activity in the southeast peninsular region. During October 01-November 17, the cumulative NEM rainfall was 10 per cent below its long period average (LPA) as compared with 27 per cent below LPA last year. As of November 07, 2024, the all-India average water storage (based on 155 major reservoirs) was at 86 per cent of the total capacity, which is 25.2 per cent and 16.0 per cent higher than last year and the decadal average, respectively (Chart III.22a). The

Chart III.21: *Kharif* Production

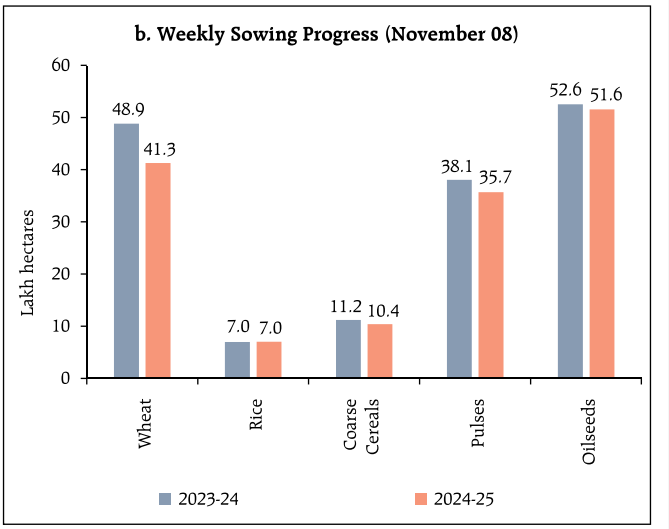


Note: Cotton is measured as million bales of 170 kgs each.
Source: Ministry of Agriculture and Farmers' Welfare.

Chart III.22: Outlook for *Rabi* Season



Source: Central Water Commission.



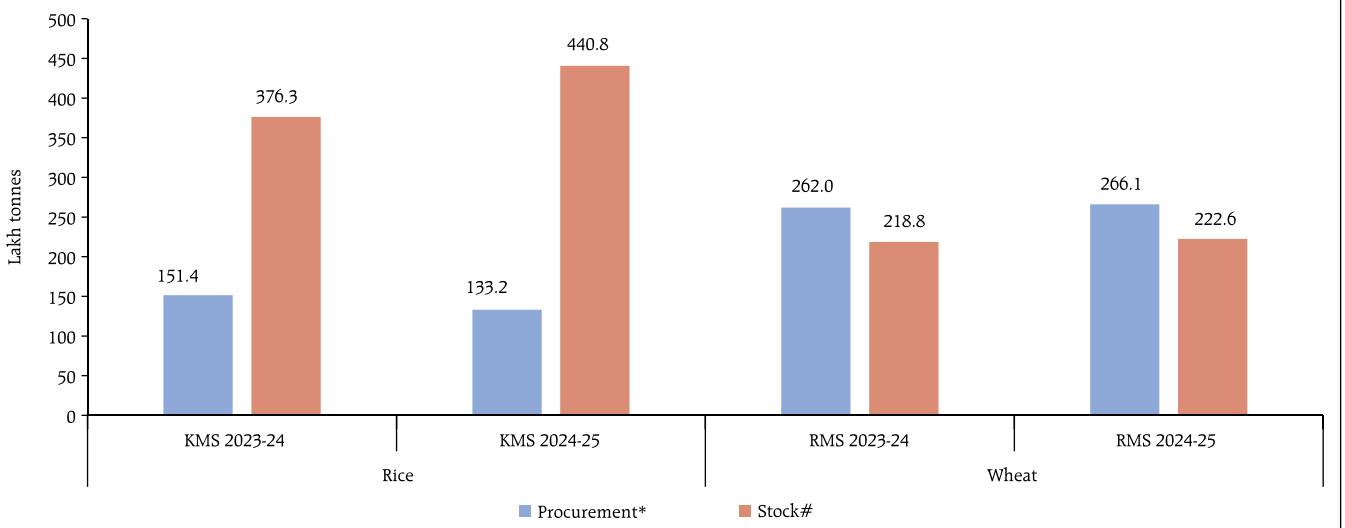
Source: https://agriwelfare.gov.in/Documents/CWWGDATA/mom21_0.doc

prospects of *rabi* production appear to be bolstered by adequate rains and reservoir levels.

As on November 08, 2024 the total *rabi* sown area stood at 146.1 lakh hectares (23.0 per cent of full season normal area), lower than 157.7 lakh hectares sown during the corresponding week of the previous year (Chart III.22b).

The rice procurement for the *kharif* marketing season (KMS) 2024-25 started on September 30, 2024. As of November 12, it stood at 133.2 lakh tonnes as compared with 151.4 lakh tonne during the corresponding period of the previous year (Chart III.23). The buffer stock of rice[16] stood at 440.8 lakh tonnes (4.3 times the norm) as of November 01,

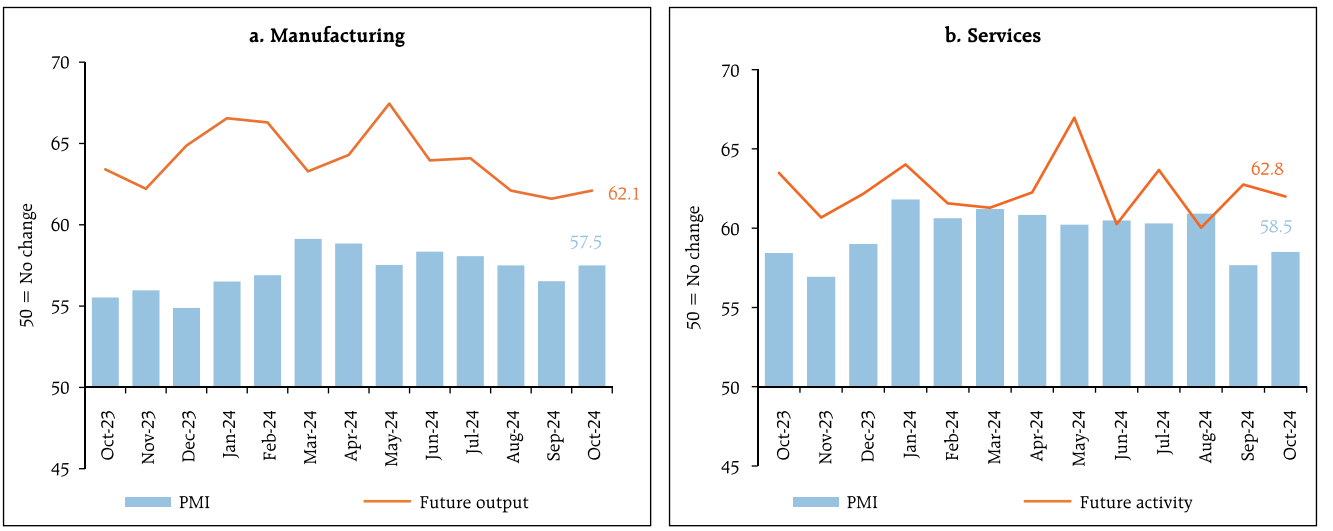
Chart III.23: Central Public Distribution System: Procurement and Stocks



Note: *: As on November 12; #: As on November 01.
Source: Food Corporation of India.

[16] Including unmilled paddy equivalent.

Chart III.24: Purchasing Managers' Index (PMI)



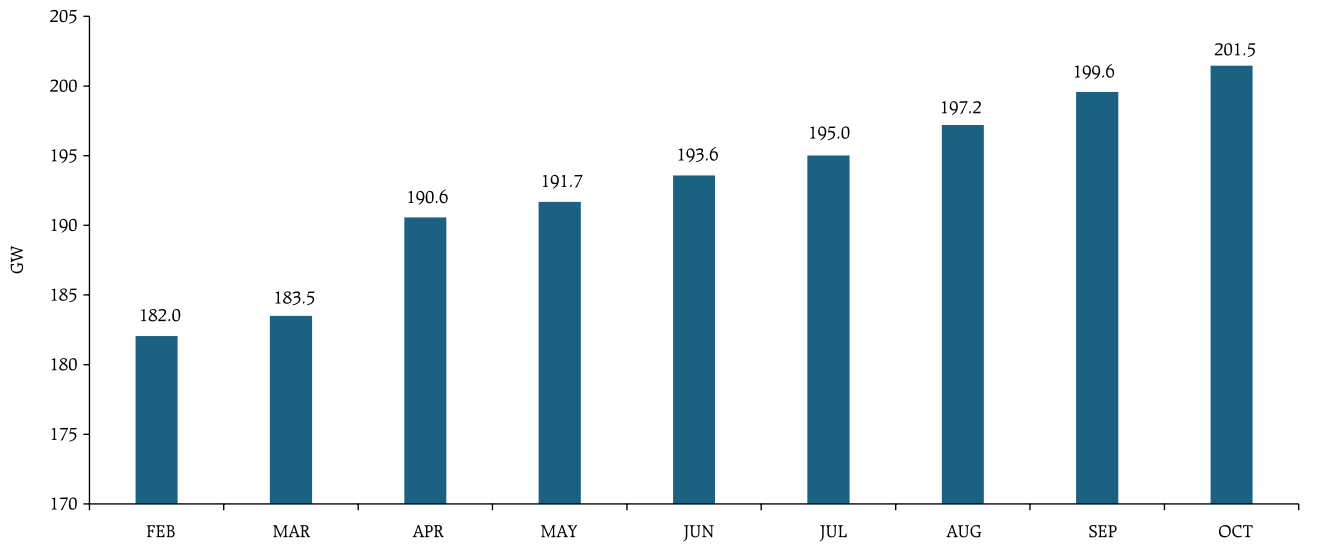
Note: A level of 50 corresponds to no change in activity and a reading above 50 denotes expansion and *vice versa*.
Source: S&P Global.

2024 whereas the wheat stock stood at 222.6 lakh tonne (1.1 times the norm).

India's manufacturing PMI accelerated in October 2024 led by increase in orders, employment, and new output (Chart III.24a). The services PMI also moved to 58.5 in October 2024 from a 10-month low of 57.7 in September, driven by strong demand conditions (Chart III.24b). Business expectations in the manufacturing sector exhibited improvement, while future business activity moderated in services.

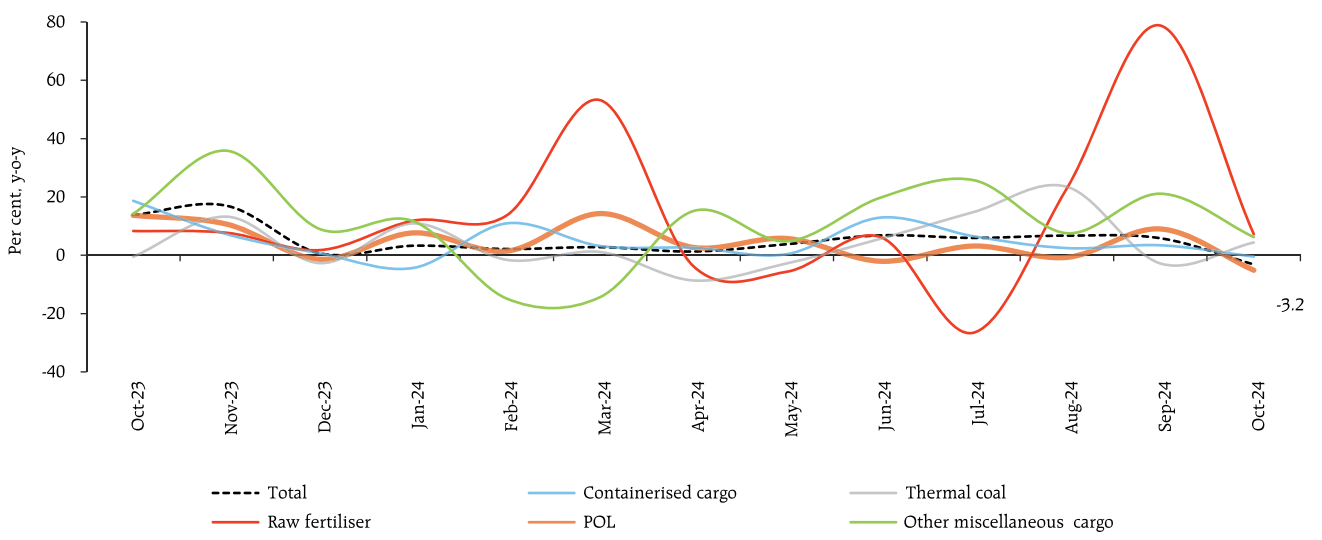
India's progress towards clean energy transition achieved a milestone in October 2024 with renewable generation capacity crossing 200 giga watts (GW), making up 46.3 per cent of total installed capacity (Chart III.25). As described in

Chart III.25: Renewables Installed Capacity



Source: NITI Aayog Dashboard.

Chart III.26: Port Cargo



Sources: Indian Ports Association and Centre for Monitoring Indian Economy.

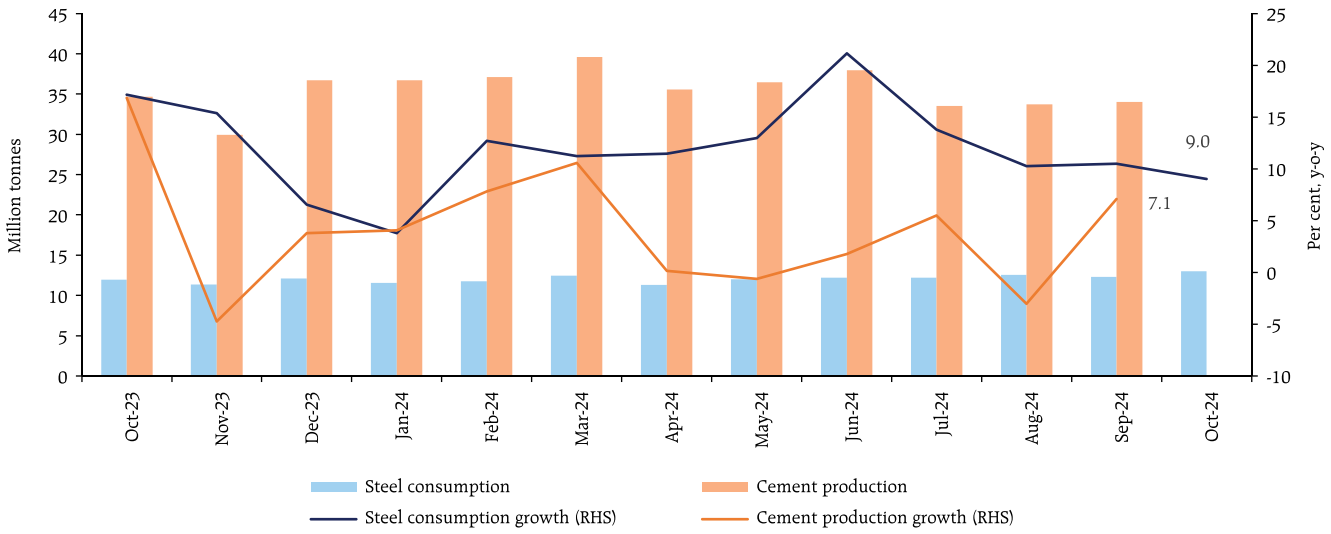
the Introductory section, led by the solar and wind capacity additions in the recent years, India stands fourth globally in renewable capacity. Four states, *viz.*, Rajasthan, Gujarat, Tamil Nadu and Karnataka accounted for around half of the renewable capacity in India.

Port traffic contracted in October 2024, driven by petroleum, oil and, lubricants (Chart III.26).

The construction sector picked up pace, with steel consumption expanding by 9 per cent (y-o-y) in October, and cement production increasing by 7.1 per cent in September 2024 (Chart III.27).

Available high frequency indicators for the services sector reflect traction in economic activity in September/October 2024. Supported by the festive season and recession of SWM, logistics activity

Chart III.27: Steel Consumption and Cement Production



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

Table III.1: High Frequency Indicators- Services

(y-o-y, per cent)

Sector	Indicator	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24
Urban demand	Passenger Vehicles Sales	33.9	21.0	21.7	31.9	27.0	26.0	1.3	4.0	3.1	-2.5	-1.8	-1.4	0.9
Rural demand	Two-Wheeler Sales	20.1	31.3	16.0	26.2	34.6	15.3	30.8	10.1	21.3	12.5	9.3	15.8	14.2
	Three-Wheeler Sales	42.1	30.8	30.6	9.5	8.3	4.3	14.5	14.4	12.3	5.1	8.0	7.1	-0.2
	Tractor Sales	-4.3	6.4	-19.8	-15.3	-30.6	-23.1	-3.0	0.0	3.6	1.6	-5.8	3.7	22.4
Trade, hotels, transport, communication	Commercial Vehicles Sales	3.2			-3.8			3.5			-11.0			
	Railway Freight Traffic	8.5	4.3	6.4	6.4	10.1	8.6	1.4	3.7	10.1	4.5	0.0		
	Port Cargo Traffic	13.8	16.9	0.6	3.2	2.1	2.7	1.3	3.8	6.8	5.9	6.7	5.8	-3.2
	Domestic Air Cargo Traffic*	10.6	9.0	8.7	10.0	11.5	8.7	0.3	10.3	10.3	8.8	0.6	14.0	-13.7
	International Air Cargo Traffic*	15.0	4.9	12.2	19.3	30.2	22.5	16.2	19.2	19.6	24.4	20.7	20.5	-0.2
	Domestic Air Passenger Traffic *	10.7	8.7	8.1	5.0	5.8	4.7	3.8	5.9	6.9	7.6	6.7	7.4	10.0
	International Air Passenger Traffic *	17.5	19.8	18.1	17.0	19.3	15.0	16.8	19.6	11.3	8.8	11.1	11.2	9.3
	GST E-way Bills (Total)	30.5	8.5	13.2	16.4	18.9	13.9	14.5	17.0	16.3	19.2	12.9	18.5	16.9
	GST E-way Bills (Intra State)	30.0	22.7	14.2	17.9	21.1	15.8	17.3	18.9	16.4	19.0	13.1	19.0	18.3
	GST E-way Bills (Inter State)	31.2	-16.2	11.4	13.8	15.0	10.7	9.6	13.6	16.3	19.6	12.5	17.7	14.4
	Hotel occupancy	9.3	-8.6	1.6	2.6	1.8	2.7	-1.4	-2.6	-3.1	3.6	0.7		
	Average revenue per room	14.8	15.9	12.8	11.0	4.1	6.7	4.8	1.8	2.8	7.6	5.2		
	Tourist Arrivals	19.8	16.8	7.8	10.4	15.8	8.0	7.7	0.3	9.0	-1.3			
Construction	Steel Consumption	15.3	14.5	13.7	12.3	7.0	12.5	11.5	13.0	21.1	13.8	10.3	10.5	9.0
	Cement Production	17.0	-4.8	3.8	4.0	7.8	10.6	0.2	-0.6	1.9	5.5	-3.0	7.1	
PMI Index#	Services	58.4	56.9	59.0	61.8	60.6	61.2	60.8	60.2	60.5	60.3	60.9	57.7	58.5

<< Contraction ---------- Expansion >>

Note: #: Data in levels. *: October 2024 data are based on the monthly average of daily figures. The heat-map is constructed for each indicator for the period July-2021 till date.

Sources: SIAM; Ministry of Railways; Tractor and Mechanisation Association; Indian Ports Association; Office of Economic Adviser; GSTN; Airports Authority of India; HVS Anarock; Ministry of Tourism; Joint Plant Committee; and IHS Markit.

increased as reflected in e-way bills and toll collection. Construction also picked up pace as seen in steel consumption and cement demand (Table III.1)

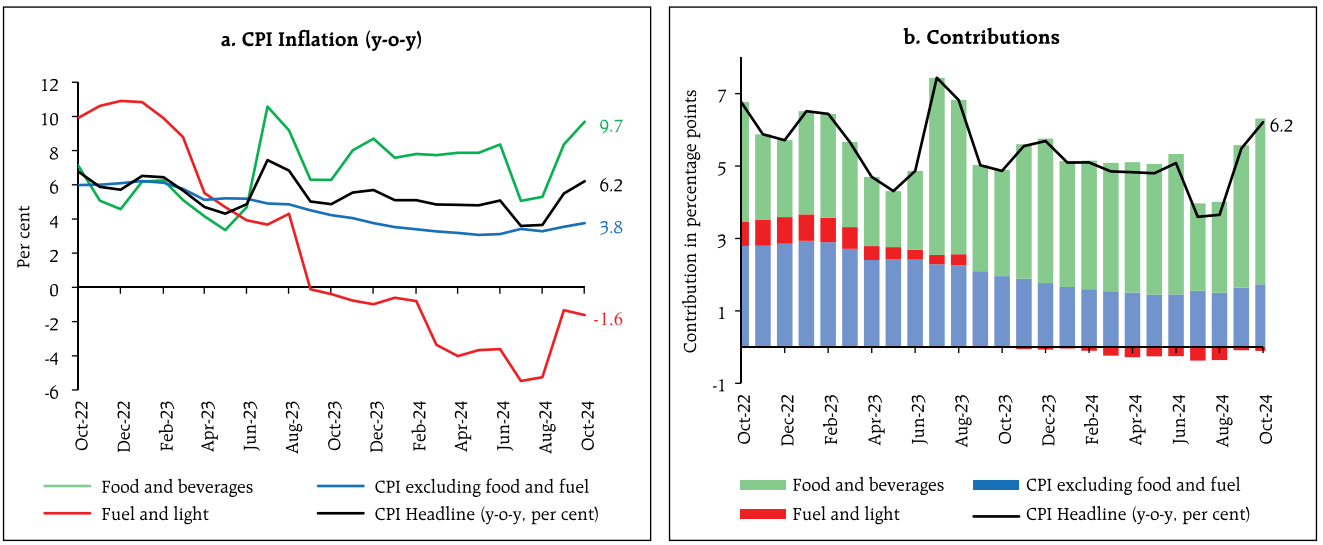
Inflation

Headline inflation, as measured by y-o-y changes in the all-India CPI[17], increased to 6.2 per cent in October 2024 from 5.5 per cent in September 2024 (Chart III.28). The increase in inflation of around 70 basis points (bps) came from a positive momentum of around 135 bps, which was partially offset by a favourable base effect of 65 bps. CPI food and CPI core (*i.e.*, CPI excluding food and fuel) groups recorded m-o-m increases of 2.2 per cent and 0.6 per cent, respectively, while the CPI fuel index remained unchanged.

Food inflation increased y-o-y to 9.7 per cent in October from 8.4 per cent in September. In terms of sub-groups, vegetables and edible oils recorded significant increases, both on m-o-m and y-o-y basis (Chart III.29). Prices rises in respect of fruits, cereals and products, meat and fish, non-alcoholic beverages,

[17] As per the provisional data released by the NSO on November 12, 2024.

Chart III.28: Trends and Drivers of CPI Inflation

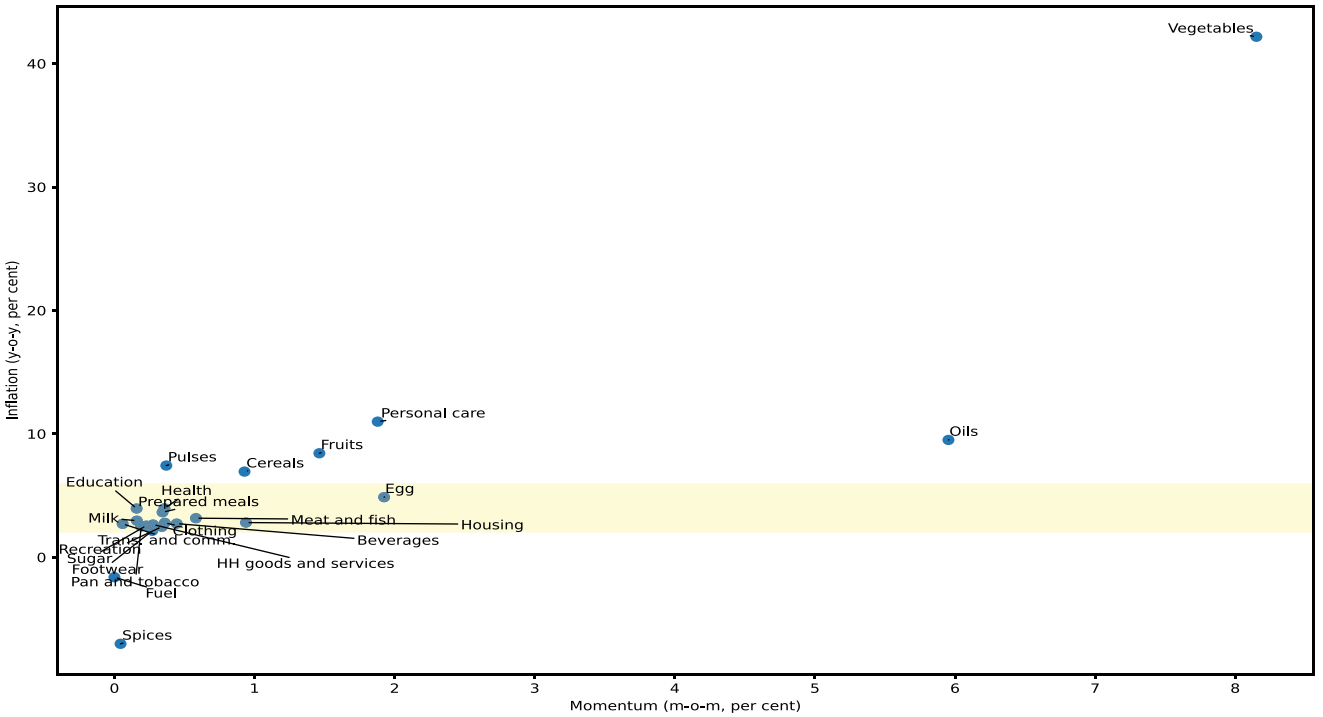


Sources: National Statistical Office (NSO); and RBI staff estimates.

and prepared meals increased while they moderated in pulses and products, eggs and sugar (Chart III.30). Inflation in milk and products remained unchanged, while deflation in spices deepened.

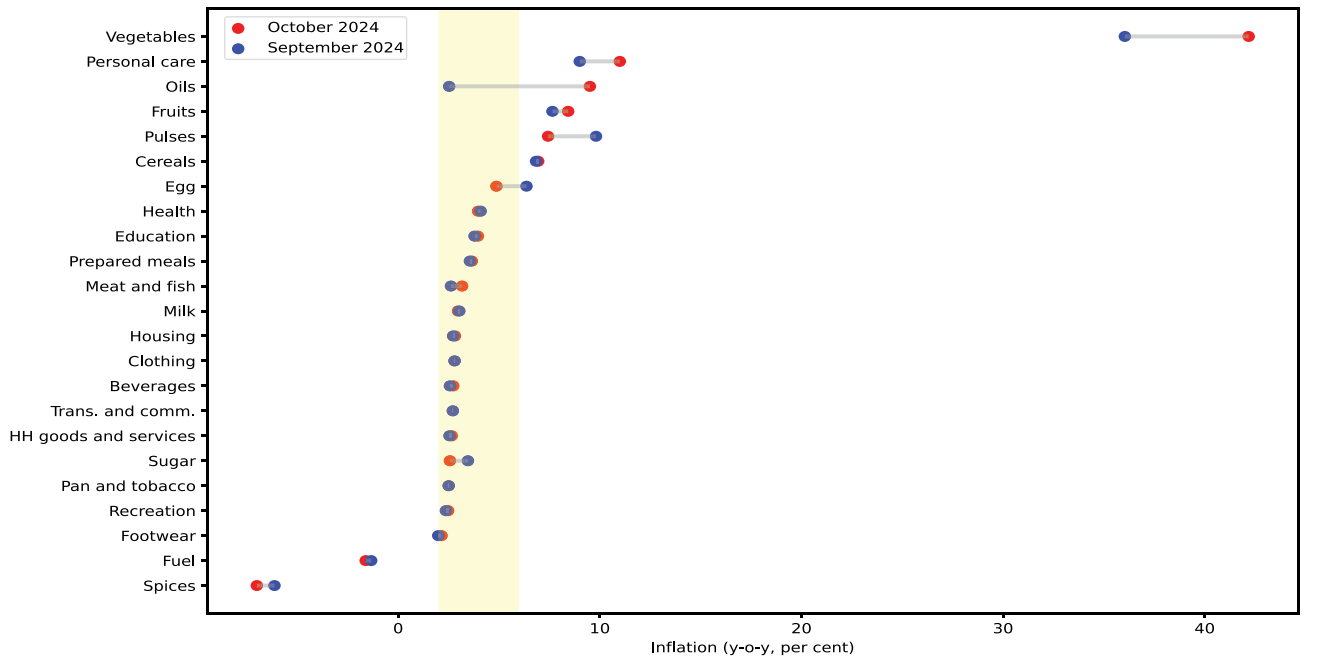
Fuel and light deflation deepened to (-)1.6 per cent in October from (-)1.4 per cent in September, on higher rates of deflation in kerosene. Inflation in electricity, and firewood and chips prices, on the

Chart III.29: Annual Inflation (y-o-y) and Momentum (m-o-m) across Sub-groups



Source: NSO; and RBI staff estimates.

Chart III.30: Annual Inflation across Sub-groups (October 2024 *versus* September 2024)



Sources: NSO; and RBI staff estimates.

other hand, recorded an increase. LPG price inflation remained steady.

Core inflation increased to 3.8 per cent in October from 3.6 per cent in September. While inflation remained steady for sub-groups such as clothing and footwear, pan, tobacco and intoxicants, and transport and communication, it increased in respect of recreation and amusement, housing, household goods and services, education and personal care and effects. Inflation in the prices of the health sub-group recorded a moderation.

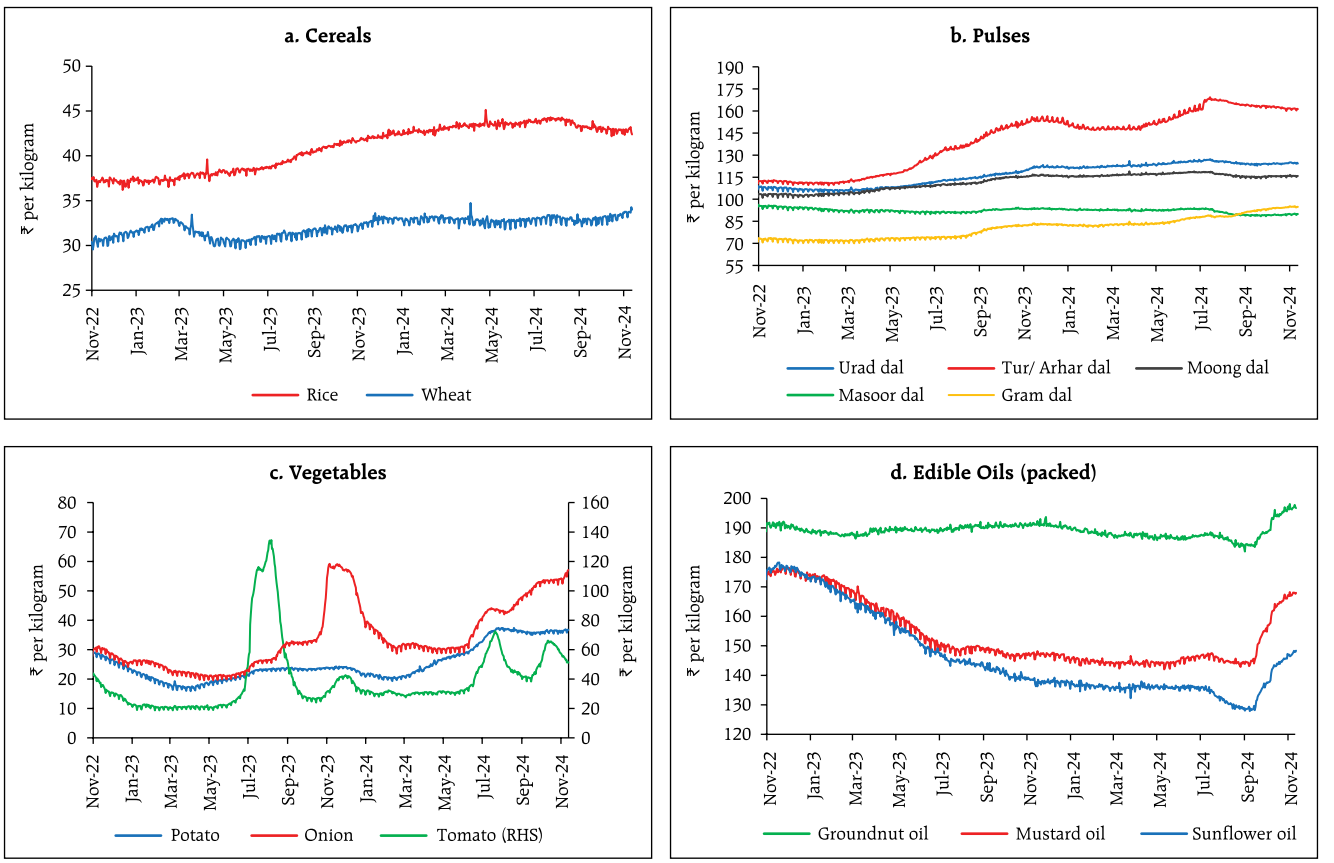
In terms of regional distribution, inflation hardened in both rural and urban areas in October, with rural inflation at 6.7 per cent being higher than urban inflation at 5.6 per cent. Majority of the states registered inflation below 6 per cent (Chart III.31).

High frequency food price data for November so far (up to 12th) show an increase in cereals (mainly driven by wheat and *atta*) and broad-based pressures in edible oil prices. Pulses prices also witnessed hardening (except *tur*). Among key vegetables, potato and onion prices increased, while tomato prices recorded a sharp moderation (Chart III.32).

Chart III.31: Spatial Distribution of Inflation: October 2024 (CPI-Combined, y-o-y, per cent)

Note: Map is for illustrative purposes only.
Sources: NSO; and RBI Staff estimates.

Chart III.32: DCA Essential Commodity Prices



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

Retail selling prices of petrol and diesel remained broadly unchanged in November thus far (up to 12th). While kerosene prices edged up after two months of softening, LPG prices were kept unchanged (Table III.2).

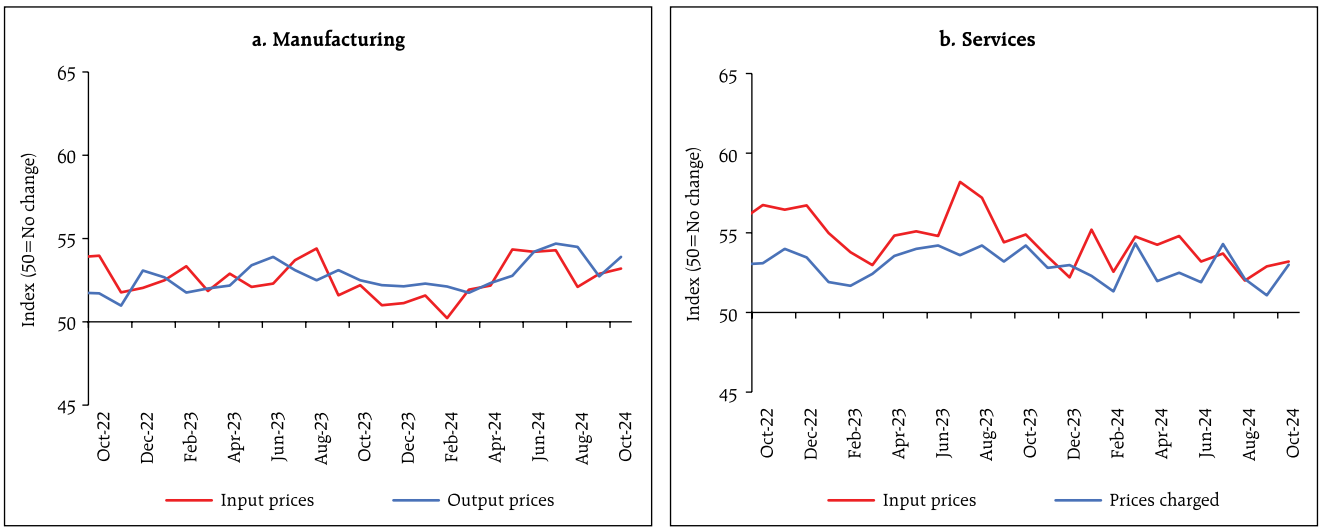
The PMIs for October 2024 indicated a further increase in the rate of expansion in input costs across manufacturing and services firms. Selling price pressures also increased across manufacturing and services firms, following a slowdown in the rate of expansion over the previous two months (Chart III.33).

Table III.2: Petroleum Products Prices

Item	Unit	Domestic Prices			Month-over-month (per cent)	
		Nov-23	Oct-24	Nov-24^	Oct-24	Nov-24^
Petrol	₹/litre	102.92	100.97	100.99	0.0	0.0
Diesel	₹/litre	92.72	90.42	90.45	0.0	0.0
Kerosene (subsidised)	₹/litre	55.21	42.93	43.95	-6.2	2.4
LPG (non-subsidised)	₹/cylinder	913.25	813.25	813.25	0.0	0.0

^: For the period November 1-12, 2024.
Note: Other than kerosene, prices represent the average Indian Oil Corporation Limited (IOCL) prices in four major metros (Delhi, Kolkata, Mumbai and Chennai). For kerosene, prices denote the average of the subsidised prices in Kolkata, Mumbai and Chennai.
Sources: IOCL; Petroleum Planning and Analysis Cell (PPAC); and RBI staff estimates.

Chart III.33: PMI: Input and Output Prices

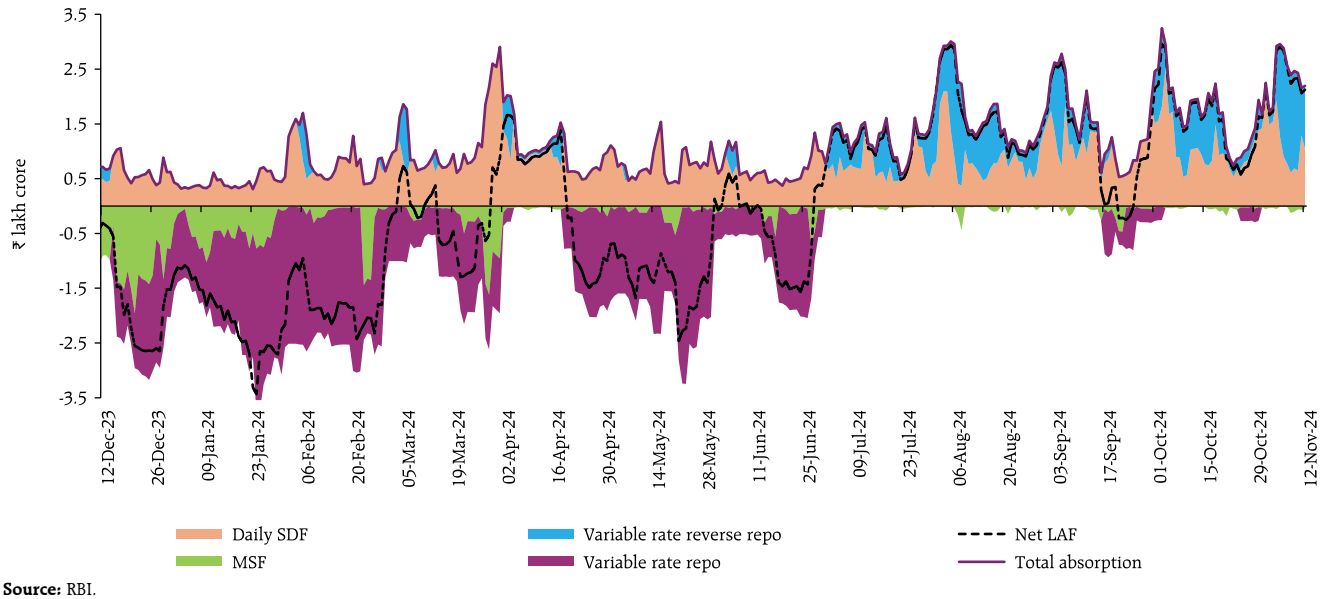


Note: A level of 50 corresponds to no change in activity and a reading above 50 denotes expansion and *vice versa*.
Source: S&P Global.

IV. Financial Conditions

System liqudity moderated in the latter half of October with the build-up in government cash balances on account of higher GST collections[18] and festival related expansion in currency in circulation. Government spending eased liquidity conditions in early November. Overall, system liquidity remained in surplus during the second half of October and early November, with the average daily net absorption under the liquidity adjustment facility (LAF) increasing to ₹1.72 lakh crore during October 16 to November 18, 2024 from ₹1.14 lakh crore during September 16 to October 15, 2024 (Chart IV.1). The Reserve Bank conducted three main and

Chart IV.1: Liquidity Operations



Source: RBI.

[18] GST collection for October 2024 was at ₹1.87 lakh crore, the second highest level since the introduction of GST in 2017.

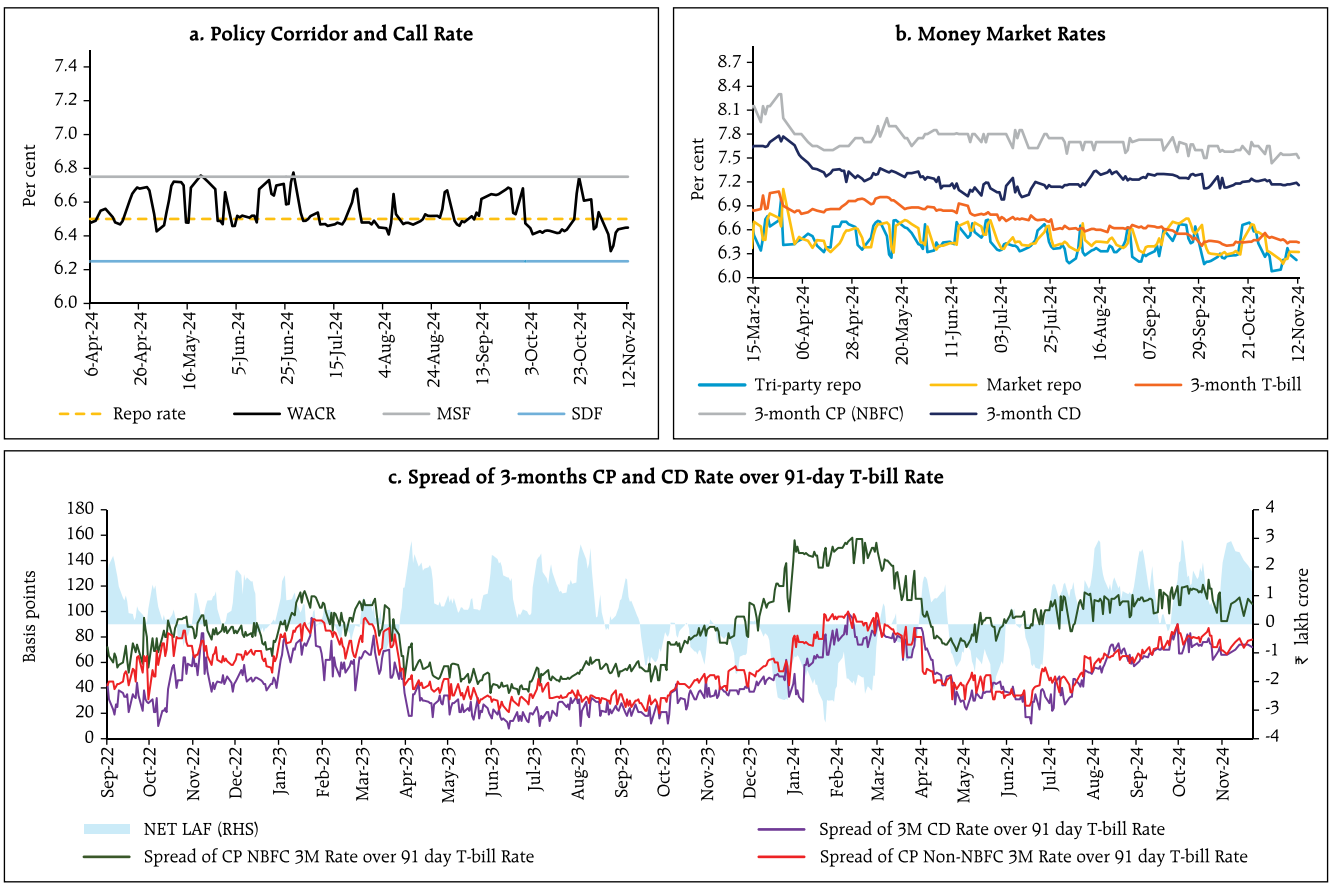
sixteen fine-tuning variable rate reverse repo (VRRR) operations during October 16 to November 19, 2024, with maturities ranging from overnight to 4-days, cumulatively absorbing ₹8.38 lakh crore from the banking system. To alleviate month-end liquidity tightness, however, a fine-tuning variable rate repo (VRR) operation of 6 days maturity was conducted on October 25.

Of the average total absoption during October 16 to November 18, 2024, placement of funds under the standing deposit facility (SDF) accounted for about 61 per cent. As liquidity conditions eased, average daily borrowings under the marginal standing facility (MSF) fell to ₹0.05 lakh crore during October 16 to November 18, 2024 from ₹0.08 lakh crore during September 16 and October 15, 2024.

In the overnight money market, the weighted average call rate (WACR) remained within the LAF corridor, averaging 6.48 per cent during October 16 and November 18, 2024, almost the same as during September 16 to October 15, 2024 (Chart IV.2a). The WACR, however, firmed up for a brief period (October 22-28) on account of relatively tight liquidity conditions, although it remained within the policy corridor. In the collateralised segment, the tri-party repo and the market repo rates averaged 15 bps and 13 bps, respectively, below the policy repo rate during the same period (Chart IV.2b).

In the short-term money market segment, yields on 3-month treasury bills (T-bills) remained broadly stable during October 16 and November 18. Rates on 3-month certificates of deposit (CDs) and 3-month

Chart IV.2: Policy Corridor and Money Market Rates



Sources: RBI; CCIL; and Bloomberg.

commercial paper (CP) issued by non-banking financial companies (NBFCs) eased (Chart IV.2b). The average risk premium in the money market (spread between 3-month CP and 91-day T-bill rates) declined by 4 bps.

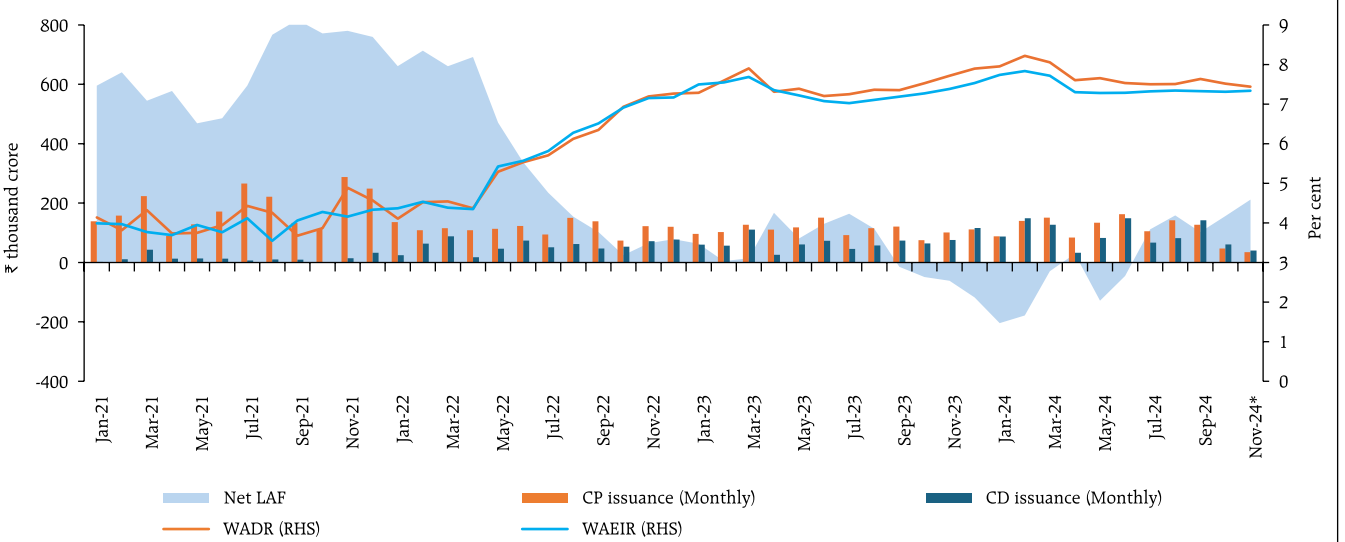
In the secondary market, the spread of 3-month CP (NBFC) and CD rates over the 91-day T-bill rate stood at 103 bps and 71 bps, respectively, during November 2024 (up to November 12) – higher than 85 bps and 36 bps a year ago (Chart IV.2c). Although the spreads tend to ease during periods of surplus liquidity, they have increased in recent months mainly due to a decline in 91-day T-Bill rates.

The weighted average discount rate (WADR) of CPs stood at 7.44 per cent in November 2024 (up to November 12), lower than 7.70 per cent during the corresponding period of the previous year as NBFCs reduced issuances due to concerns on sustainability of high growth in their loan portfoilio and expectations of lower interest rates going forward (Chart IV.3). The weighted average effective interest rate (WAEIR) of CDs softened to 7.34 per cent (up to November 12) from 7.39 per cent a year ago as the gap between credit and deposit growth narrowed.

In the primary market, CD issuances grew by 57 per cent (y-o-y) to ₹6.01 lakh crore during 2024-25 (up to November 1), significantly higher than ₹3.91 lakh crore in the corresponding period of the previous year to meet funding needs (Chart IV.4). CP issuances stood at ₹8.70 lakh crore during 2024-25 (up to October 31), higher than ₹7.84 lakh crore in the corresponding period of the previous year. With the Reserve Bank increasing the risk weight on bank loans to NBFCs, these entities have been relying on alternative market instruments to diversify funding.

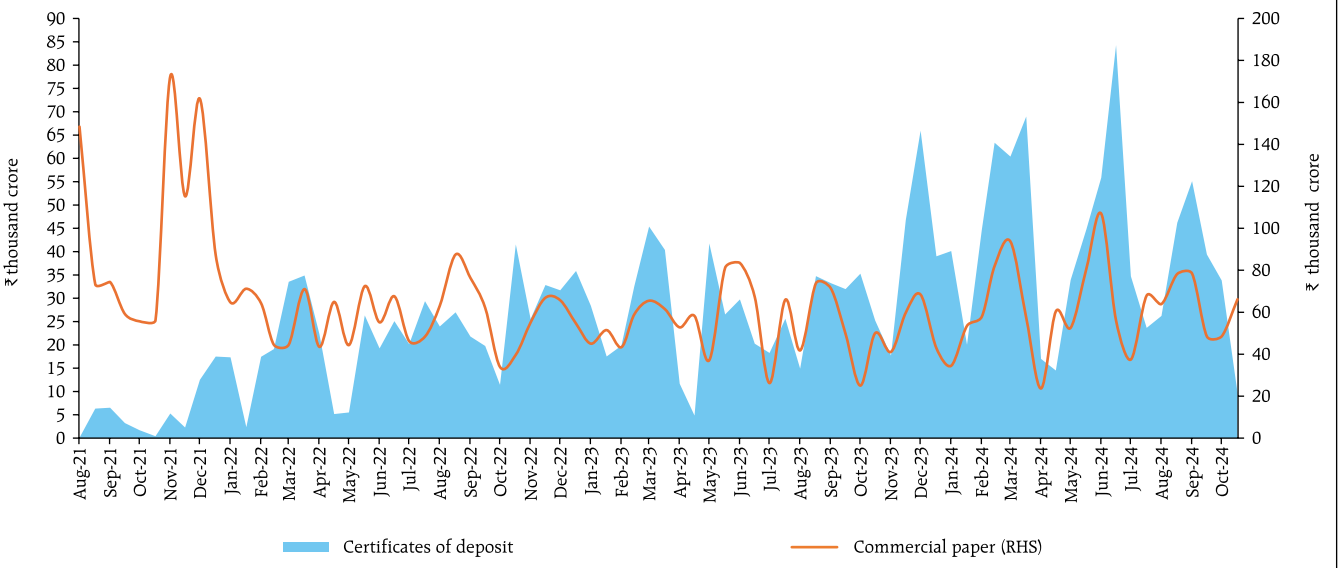
The 10-year G-sec yield hardened, tracking movements in US treasury yields and higher headline inflation prints (Chart IV.5a). During October 16 - November 18, the average term spread (10-year minus 91-day T-bills) rose to 36 bps from 29 bps during September 16 - October 15. The G-sec yield curve shifted upward in the short to middle tenor of the term structure, although it remained broadly stable at the very long end (Chart IV.5b).

Chart IV.3: WADR and WAEIR



Note: *: up to November 12, 2024.
Sources: RBI; and CCIL-FTRAC.

Chart IV.4: Certificates of Deposit (CDs) and Commercial Paper (CP) - Fortnightly Issuances



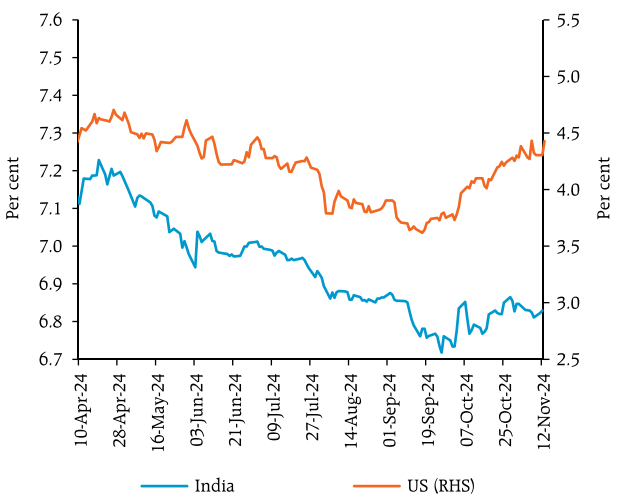
Source: RBI.

The spread of 10-year Indian G-sec yield over 10-year US bonds fell to 240 bps as on November 12, 2024 from 310 bps in mid-September and 264 bps a year ago. The pick-up in US bond yields have been much sharper than Indian G-Sec yields. The volatility of yields in the Indian bond market has also been low relative to US treasuries (Chart IV.6).

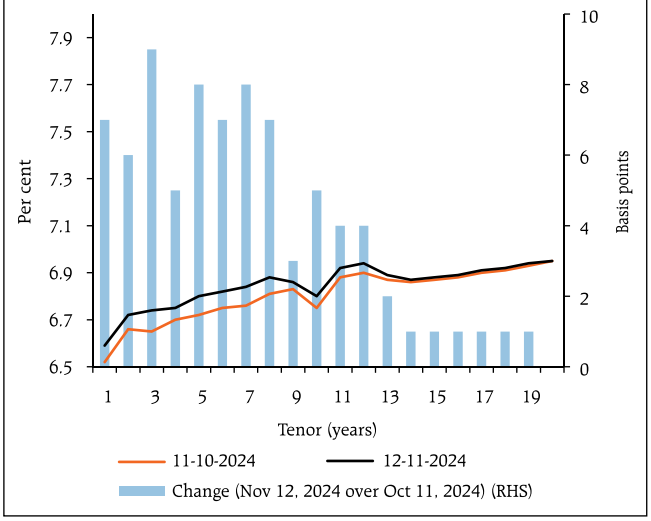
Corporate bond issuances rose to ₹1.30 lakh crore during September 2024 (the highest so far in the current financial year) as corporates took advantage of lower yields to diversify funding sources. Overall, corporate bond issuances during 2024-25 (up to September) were higher at ₹4.62 lakh crore compared to ₹3.92 lakh crore during the same

Chart IV.5: Developments in the G-sec Market

a. Movement in 10-year G-sec Yield

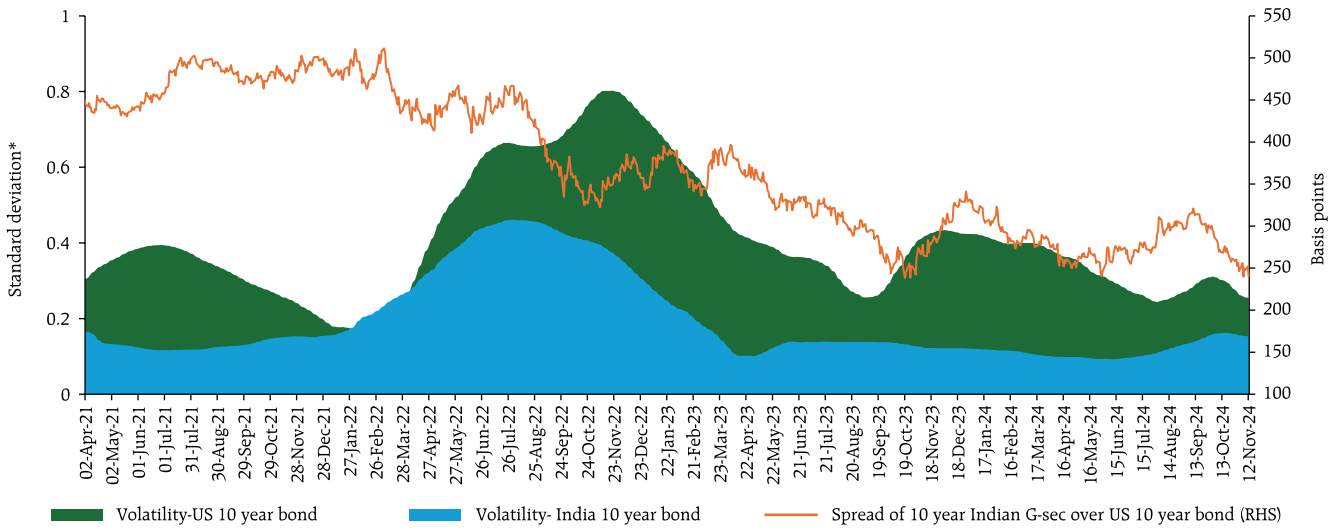


b. G-sec Yield Curve



Sources: Bloomberg; CCIL; and RBI staff estimates.

Chart IV.6 : Volatility and Spread - Bond Market



Note: *: 12-months rolling standard deviation.
Sources: Bloomberg; and RBI staff estimates.

period of the previous year. Corporate bond yields across the ratings and tenor spectrum exhibited mixed movement while the associated risk premia generally decreased (except for the 3-year BBB-category) during the second half of October to early November 2024 (Table IV.1).

Reserve money (RM), excluding the first-round impact of change in the cash reserve ratio (CRR) recorded a growth of 6.6 per cent (y-o-y) as on November 8, 2024 (7.0 per cent a year ago) [Chart IV.7]. The growth in currency in circulation (CiC), the largest component of RM was 6.1 per cent (y-o-y) as on November 8, 2024 up from 5.9 per cent as at end-September 2024, reflecting seasonal festival-related pickup in demand.

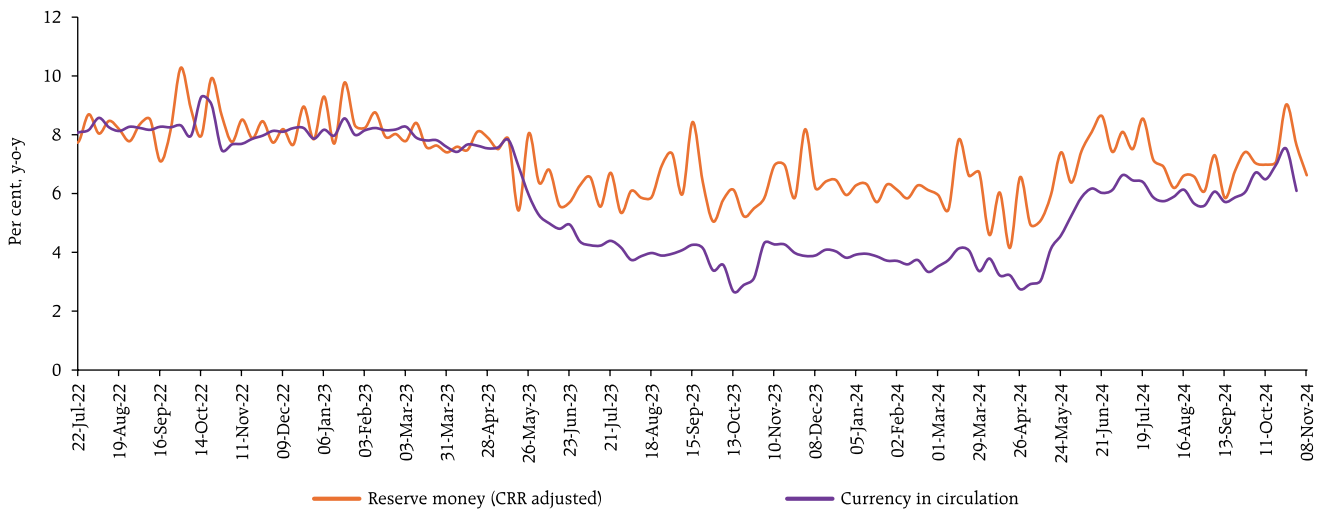
On the sources side (assets), RM comprises net domestic assets (NDA) and net foreign assets (NFA) of the Reserve Bank. Foreign currency assets increased by 13.1 per cent (y-o-y) as on November 8, 2024 (Chart IV.8). Gold – a major component of NFA – grew

Table IV.1: Financial Markets - Rates and Spread

Instrument	Interest Rates (per cent)			Spread (bps) (Over Corresponding Risk-free Rate)		
	Sep 16, 2024 – Oct 15, 2024	Oct 16, 2024 – Nov 18, 2024	Variation	Sep 16, 2024 – Oct 15, 2024	Oct 16, 2024 – Nov 18, 2024	Variation
1	2	3	(4 = 3-2)	5	6	(7 = 6-5)
Corporate Bonds						
(i) AAA (1-year)	7.83	7.82	-1	117	113	-4
(ii) AAA (3-year)	7.74	7.77	3	95	93	-2
(iii) AAA (5-year)	7.65	7.63	-2	83	75	-8
(iv) AA (3-year)	8.49	8.52	3	170	169	-3
(v) BBB- (3-year)	12.07	12.17	10	528	533	5

Note: Yields and spreads are computed as averages for the respective periods.
Sources: FIMMDA; and Bloomberg.

Chart IV.7: Reserve Money and Currency in Circulation



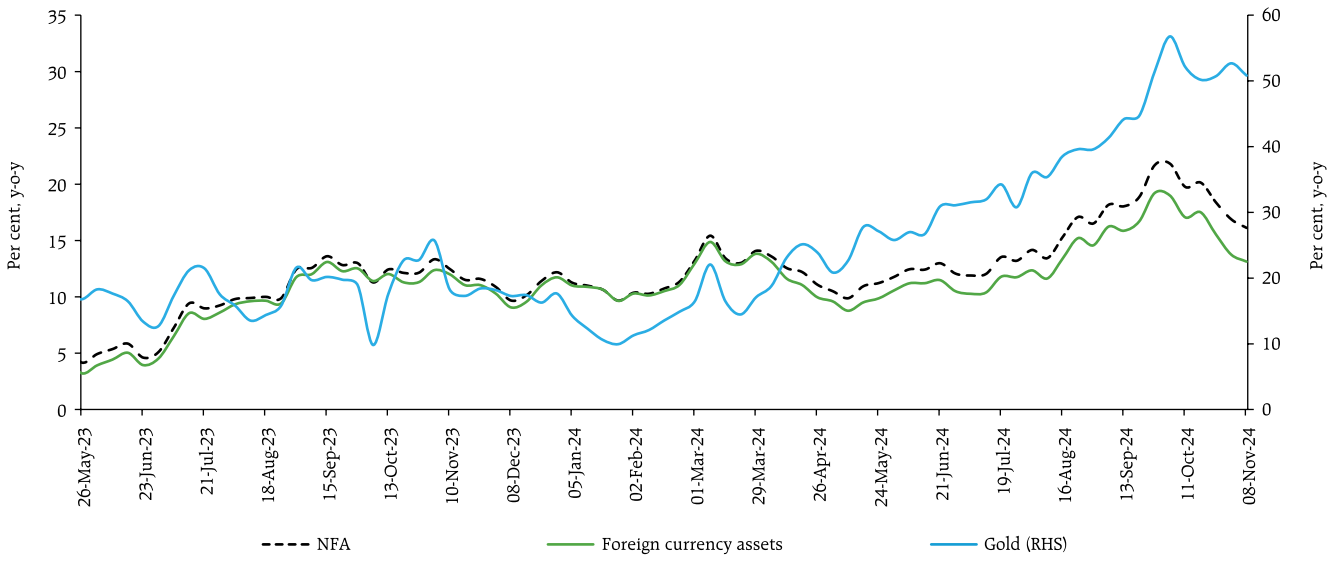
Note: Latest data for reserve money pertain to November 8, 2024.
Source: RBI.

by 50.8 per cent, mainly due to revaluation gains on gold prices, leading to steady rise in its share in NFA from 8.1 per cent as at end-October 2023 to 10.3 per cent as on November 8, 2024.

Money supply (M_3) rose by 11.2 per cent (y-o-y) as on November 1, 2024 (11.0 per cent a year ago).[19] Aggregate deposits with banks, accounting for around 86 per cent of M_3, increased by 11.6 per cent (12.2 per cent a year ago). Scheduled commercial banks' (SCBs') credit growth moderated to 13.2 per cent as on November 01, 2024 (16.0 per cent a year ago) due to an unfavourable base effect (Chart IV.9).

SCBs' deposit growth (excluding the impact of the merger) increased from 11.3 per cent at end

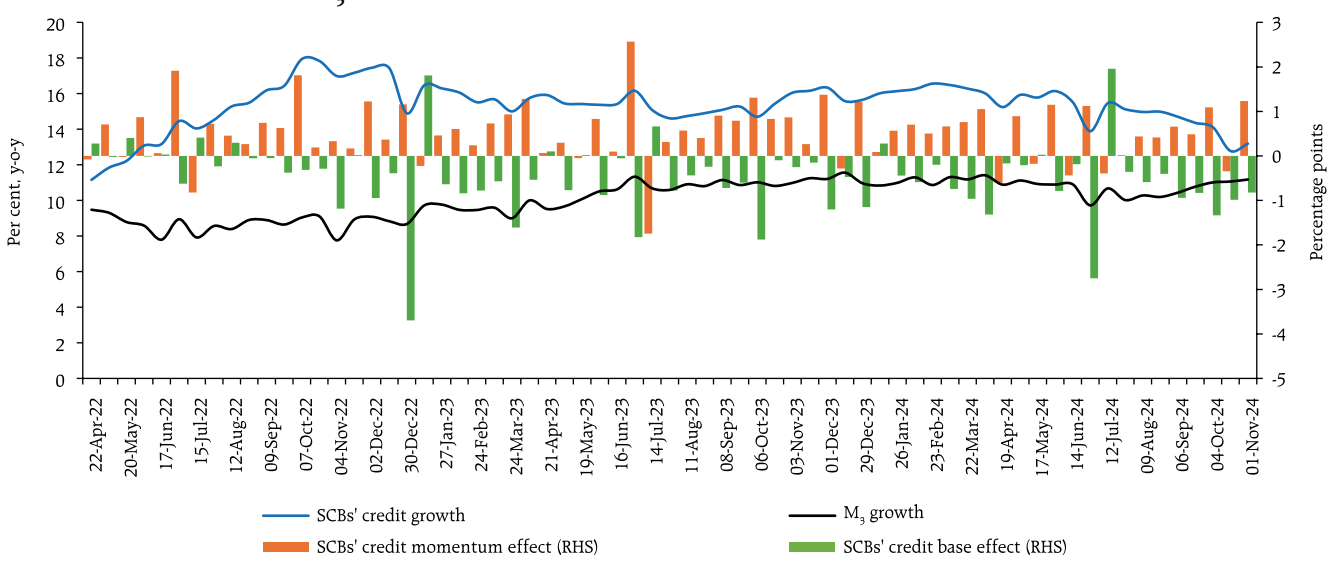
Chart IV.8: RBI's Net Foreign Exchange Assets (NFA) - Growth



Source: RBI.

[19] Excluding the impact of the merger of a non-bank with a bank (with effect from July 1, 2023).

Chart IV.9: M_3 Growth and Credit Growth of SCBs - Base Effect and Momentum



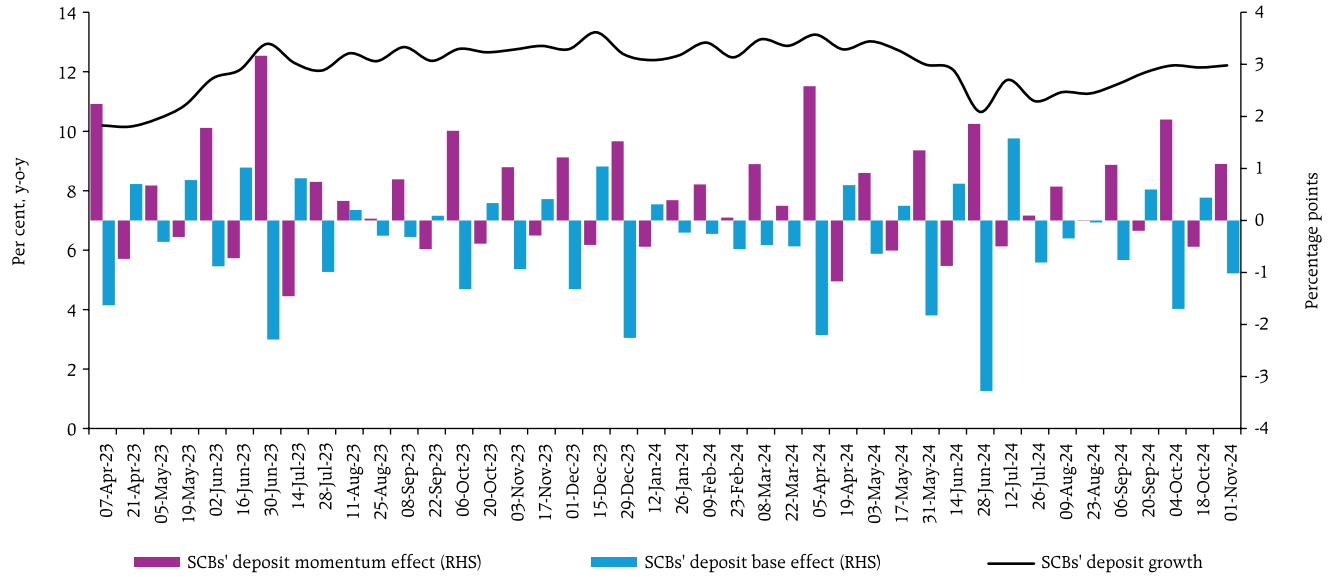
Source: RBI.

August 2024 to 12.2 per cent as on November 01, 2024, supported by robust momentum and a lower base effect (Chart IV.10).

SCBs' incremental credit-deposit ratio declined from 95.8 as at end-March 2024 to 82.7 as on November 01, 2024 with incremental deposit outpacing incremental credit during August – October 2024 (Chart IV.11). With the statutory requirements for CRR and SLR at 4.5 per cent and 18 per cent, respectively, around 77 per cent of deposits were available to the banking system for credit expansion as on November 01, 2024.

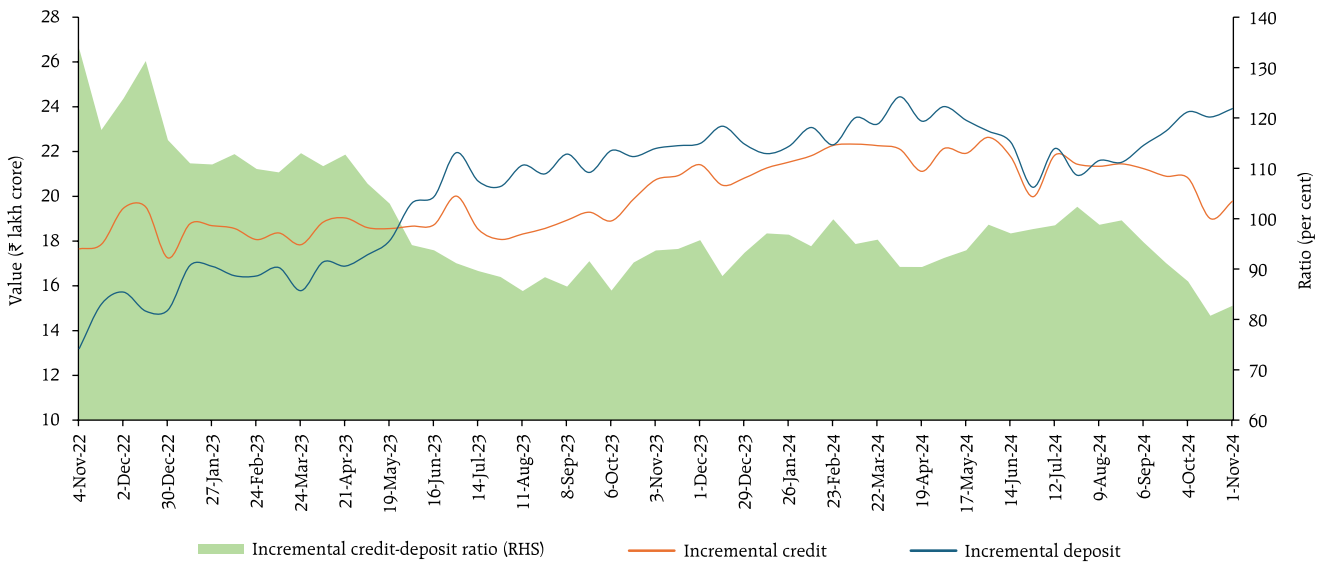
In response to the 250 basis points (bps) hike in the policy repo rate since May 2022, banks have revised upwards their repo-linked external

Chart IV.10: SCBs' Deposit Growth – Base Effect and Momentum



Source: RBI.

Chart IV.11: Incremental Credit-Deposit Ratio



Source: RBI.

benchmark-based lending rates (EBLRs) by a similar magnitude. The median 1-year marginal cost of funds-based lending rate (MCLR) of SCBs has increased by 170 bps during May 2022 to October 2024. Consequently, the weighted average lending rates (WALRs) on fresh and outstanding rupee loans have increased by 186 bps and 118 bps, respectively, during May 2022 to September 2024. On the deposit rates side, the weighted average domestic term deposit rates (WADTDRs) on fresh and outstanding rupee term deposits of SCBs increased by 251 bps and 192 bps, respectively, during the same period (Table IV.2).

Across bank groups, the increase in deposit rates was higher in the case of public sector banks *vis-à-vis* private banks; however, in case of outstanding rupee loans, transmission of policy rate increases was higher for private banks during the same period (Chart IV.12).

The non-financial private corporates' sales growth (y-o-y), *i.e.*, of the early reporting listed non-government non-financial companies moderated to 5.2 per cent during Q2:2024-25 from 7.1 per cent in the previous quarter. Among major sectors, manufacturing companies' sales growth decelerated to 3.3 per cent (6.3 per cent in the previous quarter)

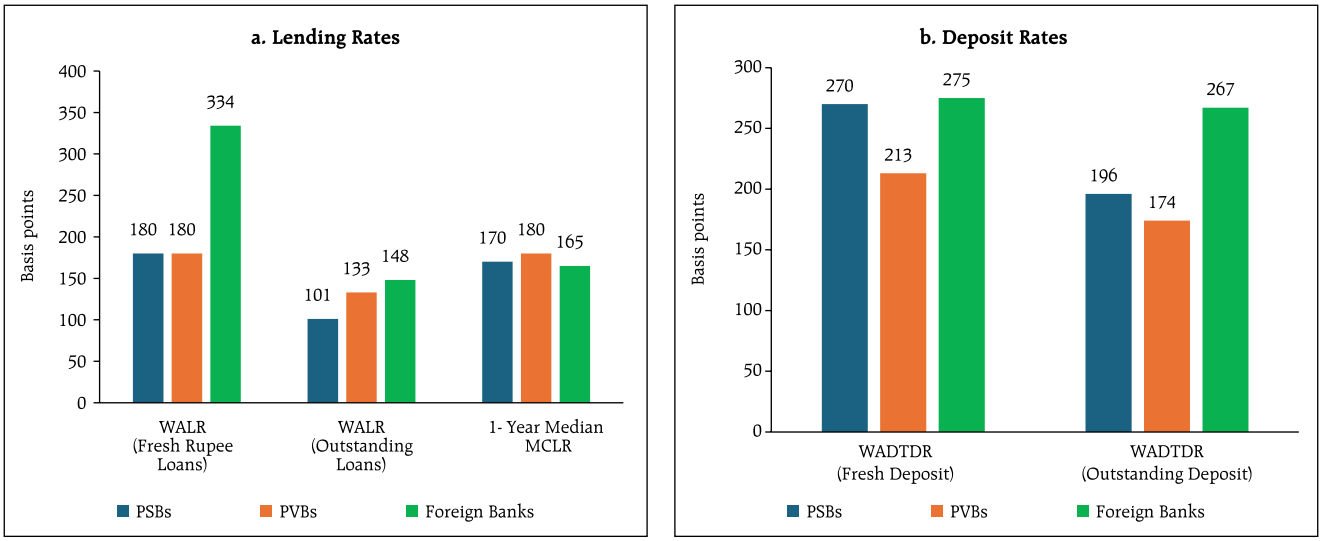
Table IV.2: Transmission to Banks' Deposit and Lending Rates

(Variation in basis points)

		Term Deposit Rates		Lending Rates			
Period	**Repo Rate**	**WADTDR – Fresh Deposits**	**WADTDR- Outstanding Deposits**	**EBLR**	**1-Yr. MCLR (Median)**	**WALR - Fresh Rupee Loans**	**WALR- Outstanding Rupee Loans**
Easing Phase Feb 2019 to Mar 2022	-250	-259	-188	-250	-155	-232	-150
Tightening Period May 2022 to Sep* 2024	+250	251	192	250	170	186	118

Notes: Data on EBLR pertain to 32 domestic banks.
*: Data on EBLR and MCLR pertain to October 2024.
WALR: Weighted Average Lending Rate; **WADTDR**: Weighted Average Domestic Term Deposit Rate;
MCLR: Marginal Cost of Funds-based Lending Rate; **EBLR**: External Benchmark based Lending Rate.
Source: RBI.

Chart IV.12: Transmission across Bank-groups (May 2022 to September 2024)



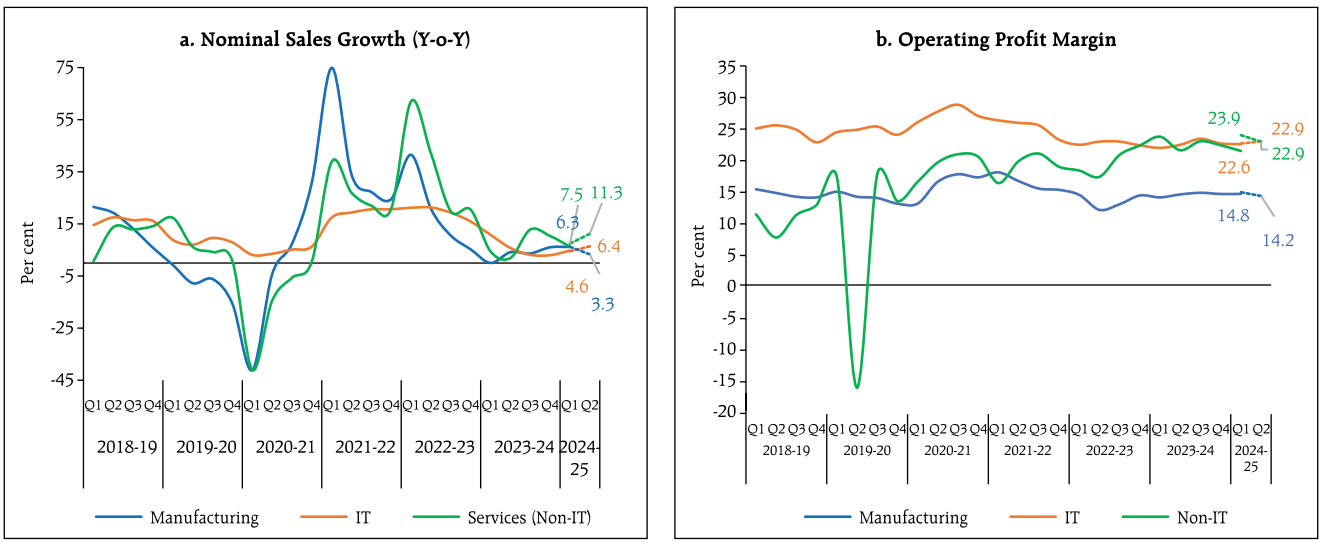
Note: Data on 1-year median MCLR pertain to May 2022 to October 2024.
Source: RBI.

whereas it stood at 6.4 per cent and 11.3 per cent for IT and non-IT service companies, respectively (Chart IV.13a).

The profit margin of manufacturing companies moderated on both annual as well as sequential basis. Non-IT service companies also recorded lower profit margins but cost rationalisation helped IT companies in maintaining their operating profit margins (Chart IV.13b).

Listed banks, NBFCs and other financial sector companies[20] reported stable and healthy earnings despite some company-specific idiosyncrasies.

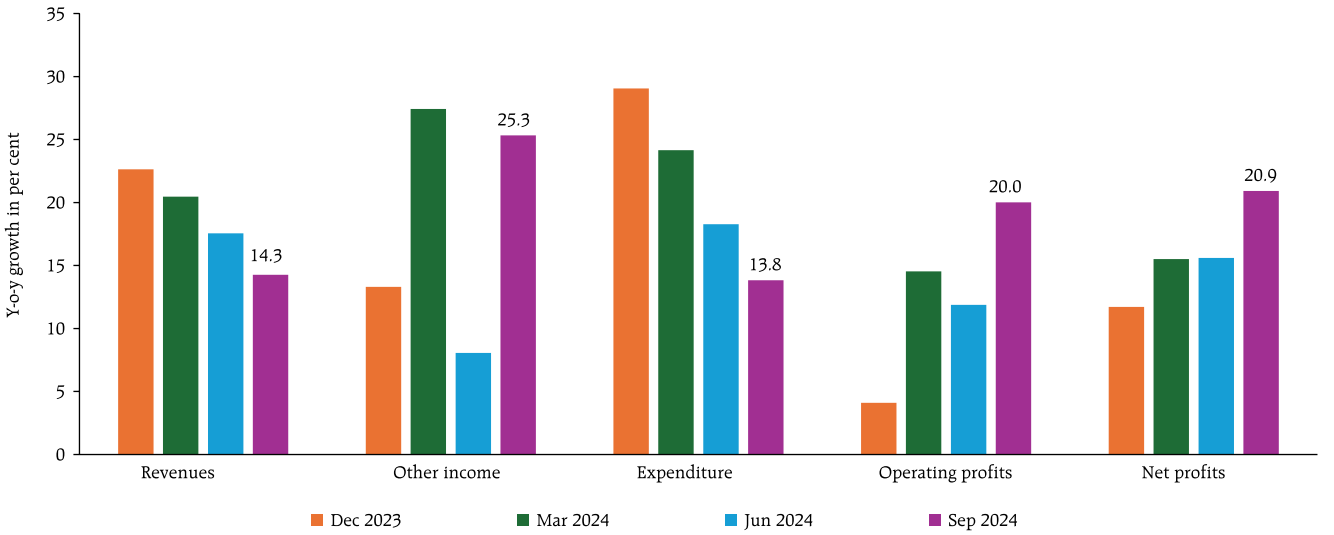
Chart IV.13: Corporate Performance



Note: Based on early results of 2014 listed private non-financial companies.
Sources: Quarterly financial results of listed non-government non-financial companies; Capitaline database; and RBI staff estimates.

[20] Based on the results of 329 banking and other financial sector companies for Q2: 2024-25, constituting around 79.1 per cent of the total market capitalisation of the sector.

Chart IV.14: Performance of Listed Financial Companies



Note: It does not include the data pertaining to a major private sector bank for the quarter ended June 2024.
Sources: CMIE Prowess; and RBI staff estimates.

Revenues, which primarily include interest income in the case of banks, recorded double digit growth, despite witnessing some sequential moderation. Other income, which includes income from fees/ commissions, profit and loss from sale of investments also registered double digit growth, pushing up total income. The growth in expenditure was slightly slower, resulting in an improved operating profits growth for the quarter. Provisioning costs increased sharply during the quarter; however, tax outgo increased moderately, resulting in strong double digit growth in net profits (after tax) of listed financial companies during the quarter (Chart IV.14).

The leverage of listed non-financial manufacturing companies, as reflected in their debt-to-equity ratio, continued to moderate[21] during H1:2024-25, largely on account of higher capitalisation of profits. Petroleum, iron and steel, and cement industries led the rise in fixed assets of manufacturing companies, which rose by 7.8 per cent (y-o-y) with a share of about 47 per cent in total fixed assets(Chart IV.15).

Retained earnings remained the major source of funds. Funds mobilised during the first half were mainly utilised in building up non-current investments[22], fixed assets and trade recievables (Chart IV.16a and 16b).

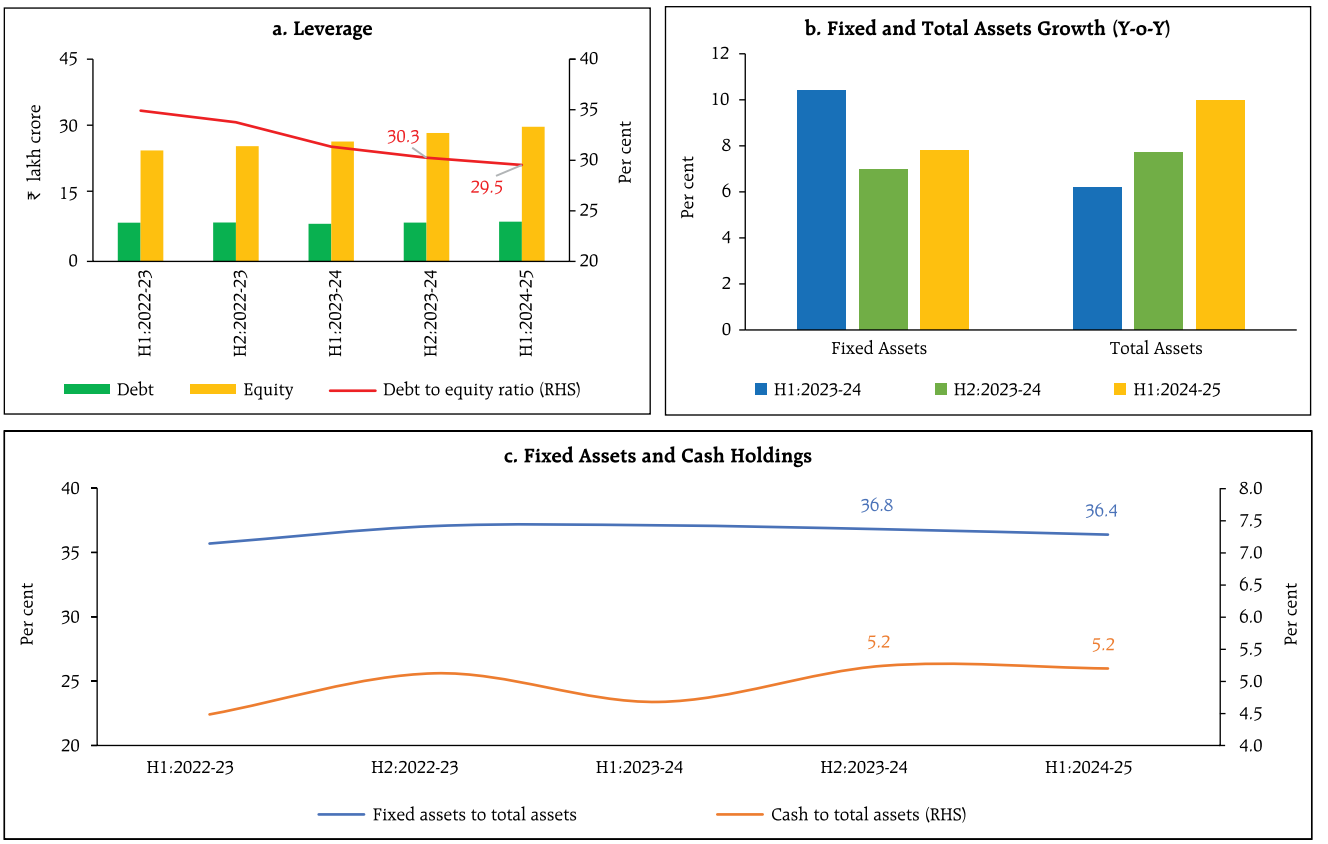
The Indian equity market continued to register losses in the second half of October 2024 and early November, amidst sustained FPI sell-offs (Chart IV.17). Geo-political uncertainty, high valuations and weaker than expected Q2:2024-25 earnings results dampened investors' sentiments. Higher than expected domestic CPI inflation print for October 2024 also weighed on the sentiment. Overall, the BSE Sensex declined by 8 per cent since end-September to close at 77,580 on November 14, 2024.

The recent equity market correction was an outcome of cumulative net outflows of around ₹1.2

[21] Based on abridged balance sheet of 1689 listed private manufacturing companies.

[22] Non-current investments are long term assets which include investment property; investments in - equity instruments, preference shares, Government or trust securities, debentures or bonds, mutual funds, partnership firms; investment in subsidiary companies, *etc.*

Chart IV.15: Manufacturing



Note: Early results are based on 1689 listed private manufacturing companies.
Sources: Half-yearly balance sheets of listed non-government non-financial companies; Capitaline database; and RBI staff estimates.

lakh crore by FPIs from equities since late September till November 14, 2024 – the highest ever in absolute terms. On a relative basis, *i.e.*, when FPI outflows are measured in relation to total market capitalisation,

Chart IV.16a: Sources of Funds (Half-yearly Changes)

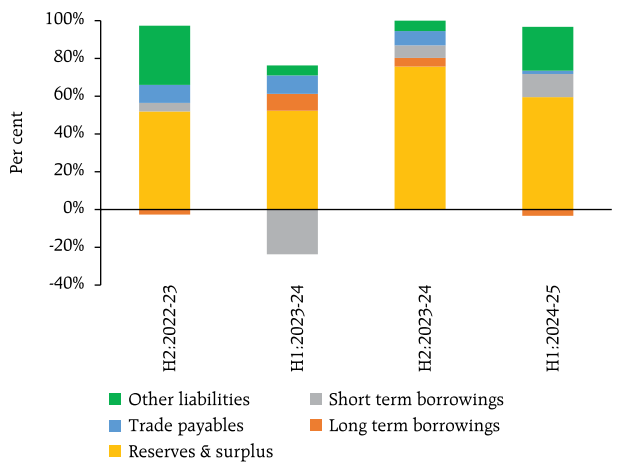
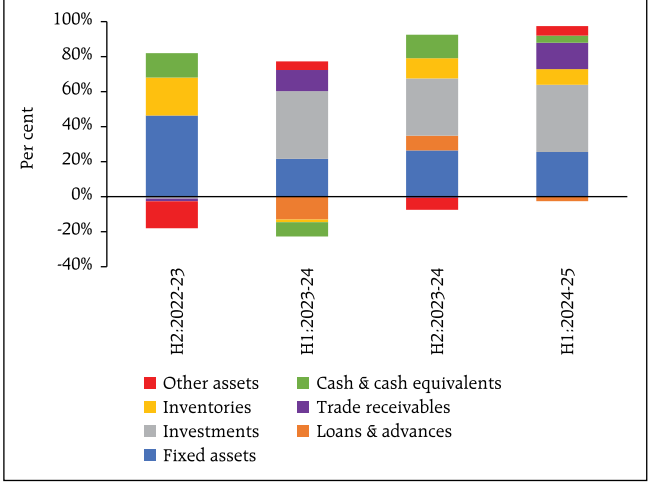
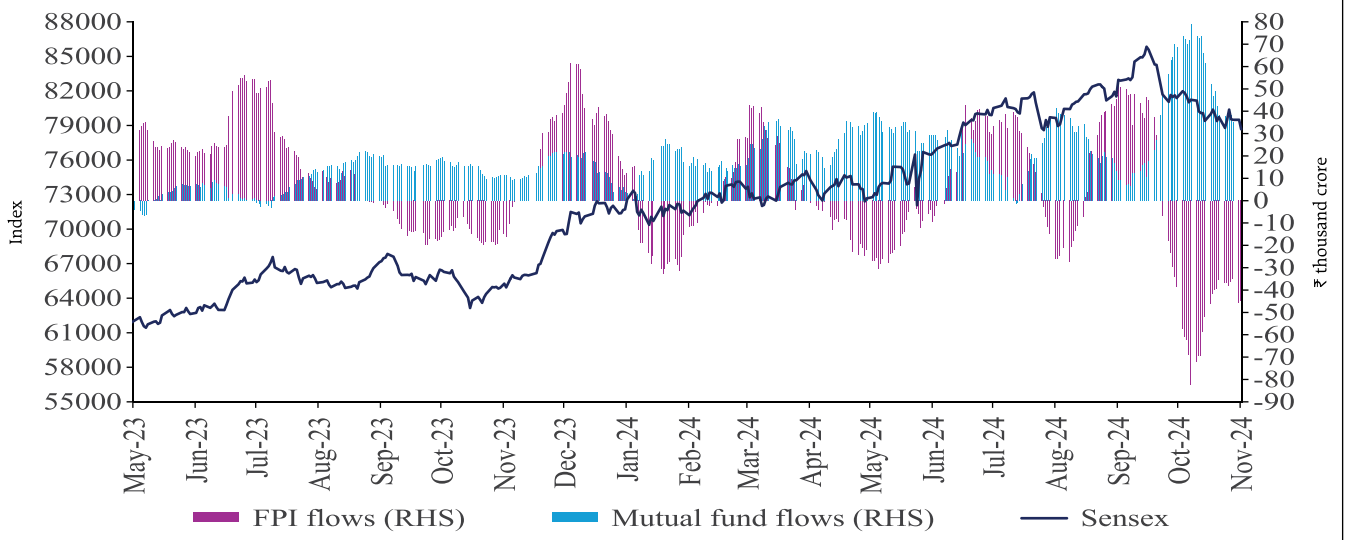


Chart IV.16b: Uses of Funds (Half-yearly Changes)



Sources: Half-yearly balance sheets of listed private manufacturing companies; Capitaline database; and RBI staff estimates.

Chart IV.17: BSE Sensex and Institutional Flows

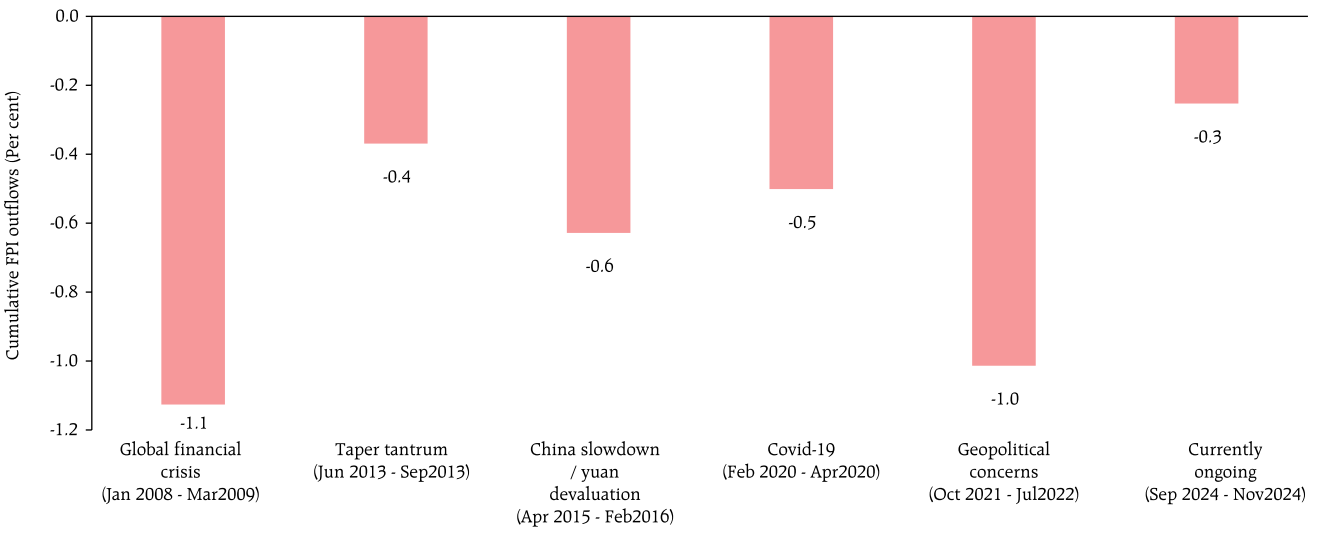


Note: FPI and MF flows are represented on 15-days rolling sum basis.
Sources: NSDL; and BSE.

however, this episode of outflows remains modest so far in comparison with the sell-offs in previous episodes (Chart IV.18). Amidst the market correction, equity-oriented mutual funds witnessed the highest ever net inflows to the tune of ₹41,865 crore in the month of October 2024 as domestic investors sought to capitalise on market dips.

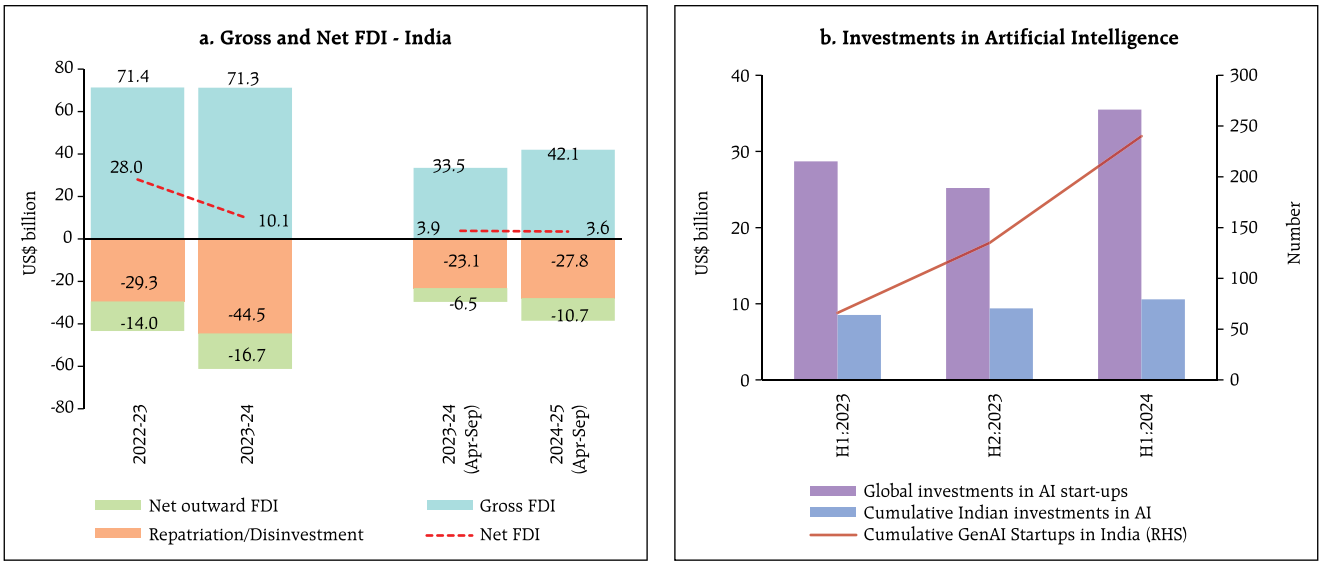
Gross inward foreign direct investment (FDI) witnessed robust growth on a y-o-y basis as it increased to US$ 42.1 billion during April-September 2024 from US$ 33.5 billion a year ago. Net FDI moderated to US$ 3.6 billion during April-September 2024 from US$ 3.9 billion a year ago, primarily due to an increase in repatriation and

Chart IV.18: Episodes of FPI Outflows from Indian Equity Markets



Note: FPI outflows are represented as the per cent of total market capitalisation of companies listed on the BSE.
Sources: NSDL; BSE; and RBI staff estimates.

Chart IV.19: Foreign Direct Investment Flows



Sources: RBI; Nasscom; and Crunchbase.

outward FDI (Chart IV.19a). Manufacturing, financial services, electricity and other energy sectors, and communication services contributed for around two-thirds of the gross FDI inflows. Singapore, Mauritius, the Netherlands, the UAE, and the US were sources for about three-fourths of the flows.

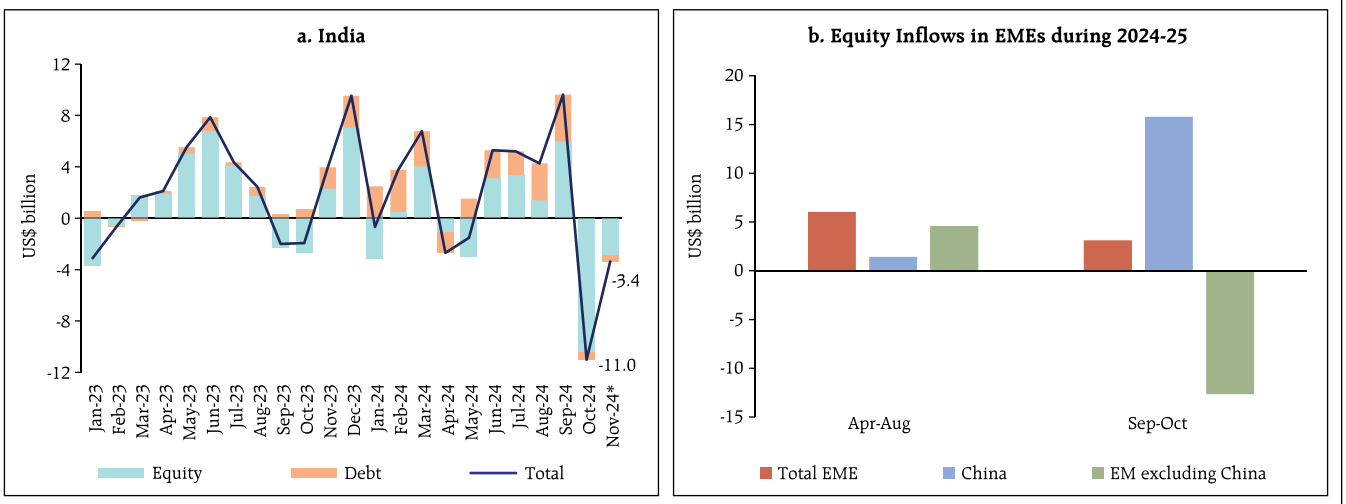
With rising investments in AI start-ups worldwide, India is well-positioned to leverage its rapidly growing AI ecosystem to attract further investments and stimulate innovation (Chart IV.19b). Since 2023 (till H1:2024), India has positioned itself among the top six economies in the world in terms of investments in Generative AI startups.[23] India has also ranked among the top ten nations in cumulative private AI investments during 2013-2023.[24]

Net foreign portfolio investment (FPI) flows turned negative in Indian capital markets in October 2024 after four months, impacted by escalating global uncertainty from geopolitical tensions and rebalancing by global portfolio managers in the wake of recent Chinese stimulus measures and election outcomes in the US. Net FPI outflows to the tune of US$ 11.0 billion in October 2024 rose to their highest level since the Covid-19 pandemic, primarily driven by substantial outflows in the equity segment (Chart IV.20a). The equity sell-offs appear widespread among emerging market economies (EMEs) as foreign investors shifted capital towards Chinese equities and away from other EMEs (Chart IV.18b). The debt segment witnessed a break in its five-month inflow streak during October 2024 although net outflows remained relatively contained. Among sectors, financial services, oil, gas and consumable fuels, and fast-moving consumer goods recorded the highest outflows during October. In November 2024 (up to November 14), net FPI outflows were to the tune of US$ 3.4 billion.

Net inflows into non-resident deposits amounted to US$ 10.2 billion during April-September 2024, up from US$ 5.4 billion a year ago. Higher inflows were recorded in all three accounts, namely, Non-Resident (External) Rupee Accounts [NR(E)RA], Non-Resident Ordinary (NRO) and Foreign Currency Non-Resident [FCNR(B)] accounts.

[23] Nasscom- India's Generative AI Startup Landscape 2024.
[24] Artificial Intelligence Index Report 2024.

Chart IV.20: Net Portfolio Investments

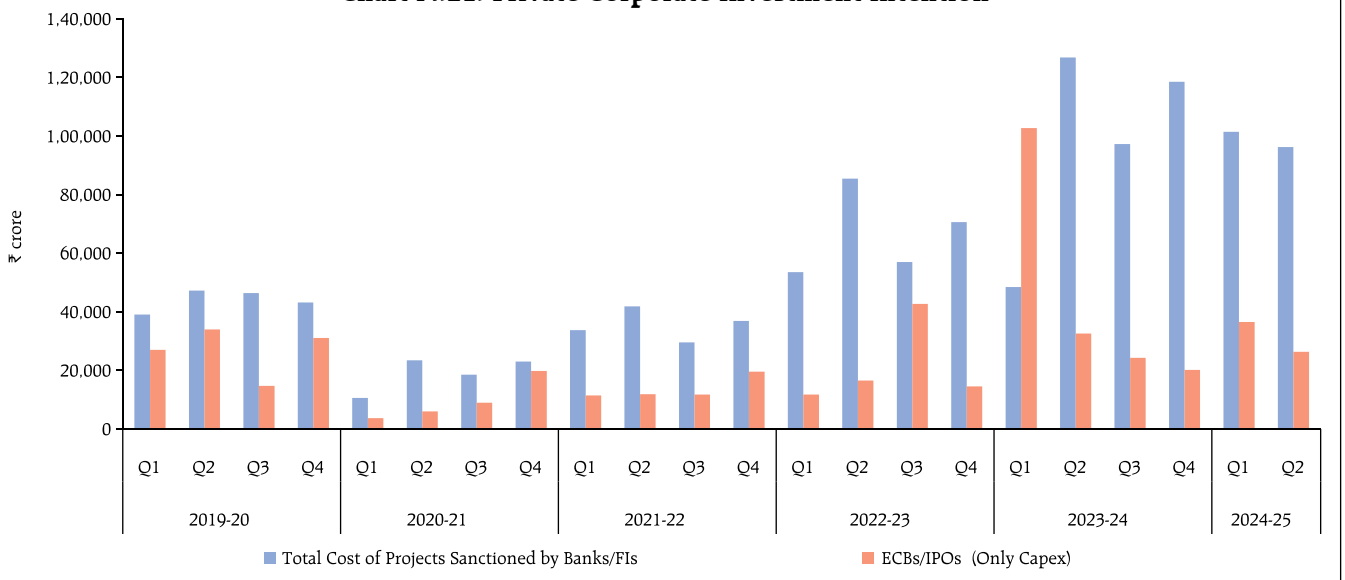


Notes: 1. Debt includes investments under the voluntary retention route and hybrid instruments.
2. *: Data up to November 14, 2024.
Sources: National Securities Depository Limited (NSDL); and Institute of International Finance.

The total cost of projects sanctioned by banks and financial institutions (FIs) stood at ₹1,97,659 crore during H1:2024-25, signficantly higher than ₹1,75,217 crore in the previous year. Over 60 per cent of these investment are intended for the 'power' and 'road and bridges' sectors. Funds raised through external commercial borrowings (ECBs) and initial public offerings (IPOs) for capex stood at ₹26,308 crore during Q2:2024-25 over and above ₹36,489 crore in the previous quarter (Chart IV.21).

New ECB loan registrations (US$ 14.3 billion) and disbursements (US$ 12.8 billion) were higher during Q2:2024-25 than in the previous quarter as well as

Chart IV.21: Private Corporate Investment Intention



Sources: RBI; data on project finance gathered from banks/FIs; and RBI Staff calculations.

Chart IV.22: External Commercial Borrowings

Sources: Form ECB, RBI; and RBI staff estimates.

in the corresponding period a year ago. Net inflows (US$ 7.9 billion) during H1:2024-25 stood higher *vis-s-vis* at US$ 6.8 billion than in the corresponding period last year (Chart IV.22a). Nearly half of the new ECBs registered during H1:2024-25 were intended for capex (including on-lending and sub-lending for capex) [Chart IV.22b].

The recent easing of global benchmark interest rates such as the secured overnight financing rate (SOFR) resulted in a decline in the overall cost of ECBs raised during September 2024. The weighted average interest margin (WAIM) over the benchmark rates during H1:2024-25 was 5 bps higher than during H1:2023-24 (Chart IV.22c).

Over three-fourths of registered ECBs during H1:2024-25 were effectively hedged in terms of explicit hedging, rupee-denominated loans and loans from foreign parents, which considerably offset the interest and exchange rate sensitivity of such exposures (Chart IV.23).

The Indian rupee (INR) depreciated by 0.3 per cent (m-o-m) in October 2024 as most EMEs faced depreciating pressures due to a stronger US dollar. However, the INR held its position as the least volatile among major currencies during the month (Chart IV.24, Box 2).

The INR appreciated by 1.8 per cent (m-o-m) in October 2024 in terms of the 40-currency real effective exchange rate (REER) due to the appreciation of INR in nominal effective terms alongside positive inflation differentials (Chart IV.25).

Box 2: India's Exchange Rate Regime

Since March 1993, the exchange rate of the Indian rupee (INR) is market determined. The Reserve Bank of India (RBI) undertakes two-sided forex interventions (FXI) to contain excessive volatility and maintain orderly conditions in the foreign exchange market, without targeting any specific level of the exchange rate. This policy objective has remained unchanged since 1993. This approach has resulted in smoothening the effects of volatile capital flows, maintaining financial stability, and minimising spillovers to the real sector.

In its Annual Report on Exchange Arrangements and Exchange Restrictions (AREAR) for the year 2023, the International Monetary Fund (IMF) has termed India's exchange rate policy as a *de facto* 'stabilized arrangement' for the period December 2022-October 2023, while the *de jure* classification remains 'floating'. By the IMF's own admission, the reclassification methodology follows a backward-looking statistical approach and draws an inference based on a very short time horizon[25]. The IMF's +/- 2 per cent fluctuation range to *de facto* classify an exchange rate regime as a stabilized arrangement is *ad hoc*, subjective, an overreach of its central purpose of surveillance of member countries' policies and tantamount to labeling. Furthermore, the selection of the period (December 2022-October 2023) is discretionary and thus, not appropriate to make a judgement on reclassification. In fact, the IMF's recent research paper on forex market intervention (FXI) concludes that the RBI has been intervening to cushion the impact of external shocks, smooth market volatility, preclude the emergence of disorderly market conditions, and opportunistically replenish its FX reserves[26].

In the recent period, there has been some commentary in the media on the INR's exchange rate policy. It is worthwhile to address the issue brought out therein, but free of emotion, discontent or pre-committed theoretical positions that remain untested with actual facts.

Since 2020, the world economy, including India, is grappling with a prolonged period of heightened uncertainty unlike previous crises, *viz.*, the global financial crisis (2008) and the taper tantrum (2013) in which India was either a bystander or there was only 'talk'. Notwithstanding the overlapping polycrises being experienced since 2020, reserve depletions, net of valuation losses, are actually comparable across all these events. Furthermore, forex market interventions (FXI) need to be adjusted for the economy's size to draw a fair conclusion[27]. Following this principle, it is found that RBI's net interventions to GDP averaged 1.6 per cent during February to October 2022, as against 1.5 per cent during the earlier crises, which were of much lower magnitude.

The RBI's interventions are intended to ensure that the market is liquid and deep, and functioning in an orderly manner. As a result, volatility of the INR – as extracted from options prices as well as GARCH[28] estimates and 30 days rolling standard deviations – has been steadily declining (Chart 2A). This has had beneficial effects in terms of anchoring financial stability.

It is worth noting that the INR depreciated by 7.8 per cent during 2022-23 and by 1.4 per cent for 2023-24. The INR's lower order of depreciation in 2023-24 reflected the strengthening of India's macro-fundamentals[29].

(Contd.)

[25] IMF Article IV Consultation – India (2023).

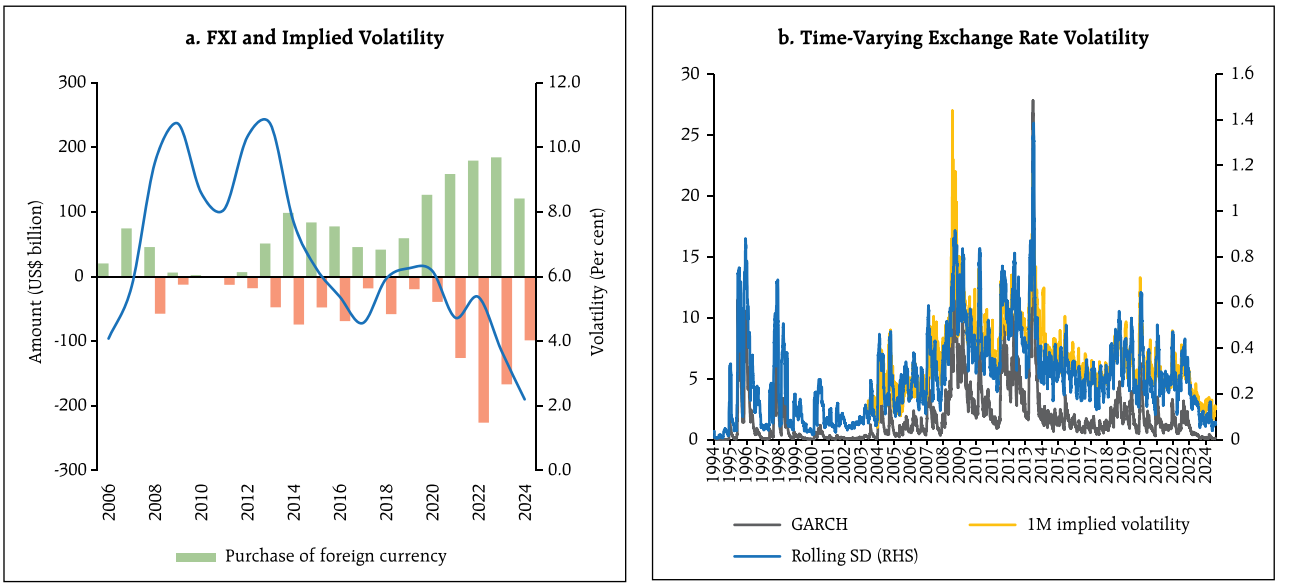
[26] Linde, Jesper, et al. (2024), "Foreign Exchange Intervention Under the Integrated Policy Framework: The Case of India", IMF, Working Paper, 24/236.

[27] India's GDP in US$ terms averaged US$ 1,186 billion during 1994-2018 and US$ 3,248 billion during 2019-2024.

[28] Generalized autoregressive conditional heteroscedasticity (GARCH).

[29] (i) CPI inflation differential between the US and India was modest at only 1.6 percentage points in 2023; (ii) India's current account deficit (CAD) was just 0.7 per cent of GDP in 2023-24); (iii) net capital inflows were of the order of US$ 89.9 billion in 2023-24 reflecting buoyant investor confidence as against US$57.9 billion in 2022-23; and (iv) with real GDP growth at 8.2 per cent (up from 7.0 per cent in 2022-23), India became the fastest growing large economy.

Chart 2A: INR Market Determined: FXI Smoothening Volatility



The inference by some commentators that the exchange rate policy stance has significantly impacted India's export competitiveness is not substantiated by evidence. Export performance has to be adjusted for scale - between 2018-19 and 2023-24, world merchandise exports recorded a compound annual average growth rate (CAGR) of 4.0 per cent while India's merchandise exports posted a higher CAGR of 5.8 per cent. Over this period, India's merchandise export growth was more than that of several regional peers.[30] Moreover, India's export composition has undergone a significant shift - services exports recorded a robust CAGR of 10.4 per cent during 2018-19 to 2023-24, signifying their improving global competitiveness. Currently, India is the seventh largest exporter of services in the world with a share of 4.4 per cent, as against a share of only 1.8 per cent in global exports of merchandise in which it is ranked eighteenth. During 1994-2018, India's merchandise exports expanded by a CAGR of 11.1 per cent but world merchandise export growth had also been higher with a CAGR of 6.3 per cent.

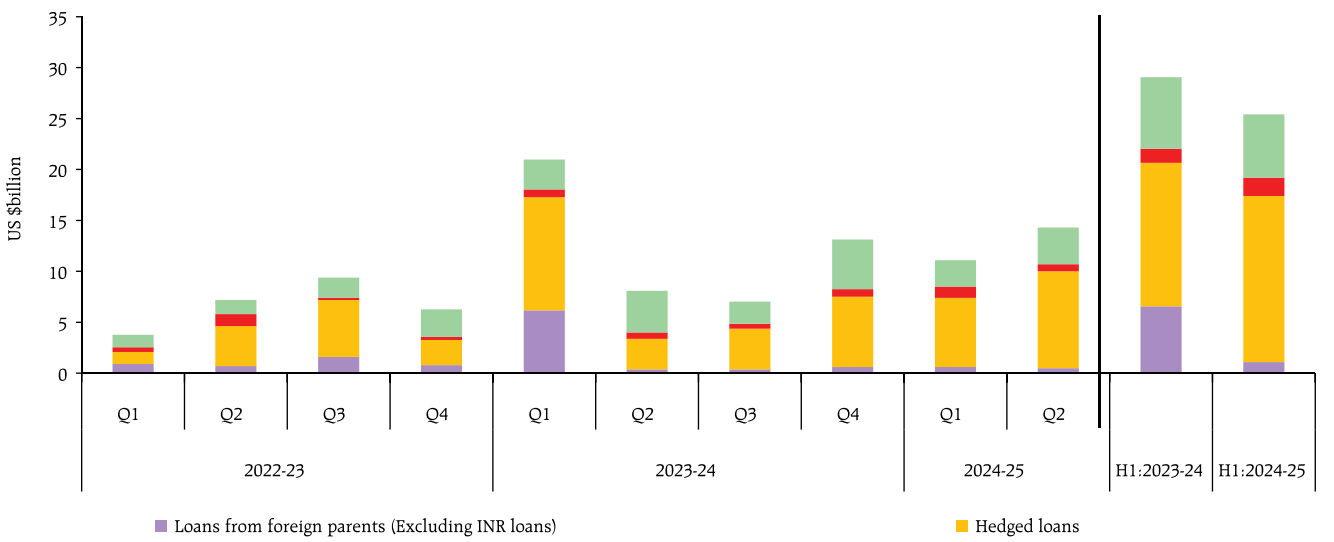
Moreover, the sensitivity of India's merchandise exports to real exchange rate changes seems to have come down over the years, reflecting diversification across markets and export items, rising technology intensity and higher value addition in manufacturing exports, increasing participation in global supply chains, and improving productivity and competitiveness.[31] Thus, the emphasis in India's export effort is shifting towards expanding market share on the basis of improvements in quality and cutting edge technology without the need for artificial props such as from an undervalued exchange rate.

India's foreign exchange reserves are built after meeting all current and capital financing needs to act as an umbrella for rainy days. Thus, the forex reserves are used to shore up investors' confidence, ensure that the forex market remains liquid and deep, especially when there are large capital outflows, and to mitigate financial stability risks all of which can have real sector implications.

[30] Thailand (2.5 per cent), Malaysia (4.6 per cent), South Africa (3.2 per cent) and comparable to that of China (6.3 per cent).

[31] The exchange rate elasticity of exports measures how sensitive a country's exports are to changes in its exchange rate. The decline in exchange rate elasticity means that currency depreciation no longer leads to a proportionate increase in export volumes.

Chart IV.23: ECB Agreements - Hedging Position



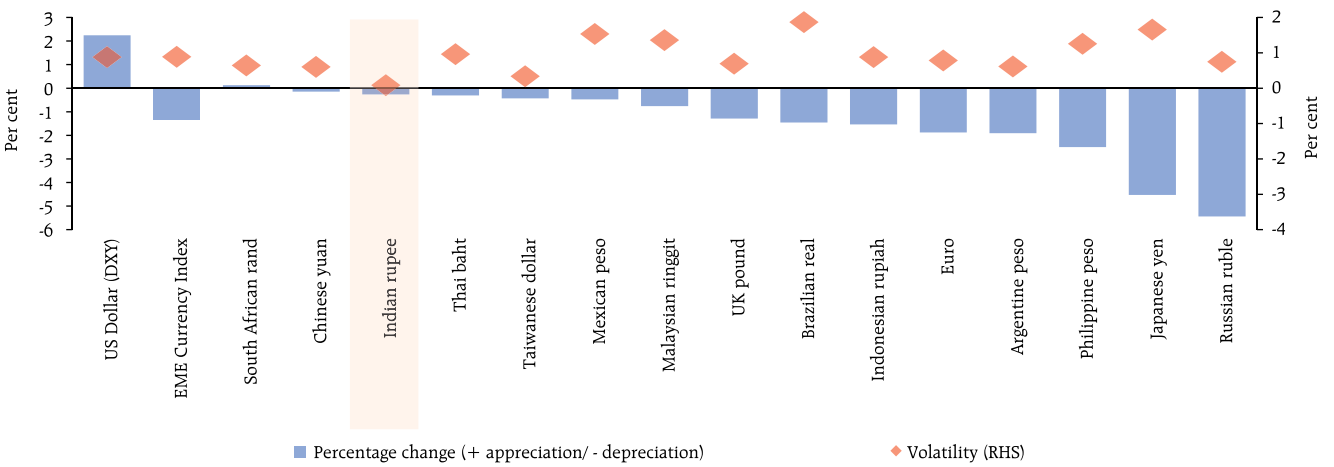
Source: Form ECB, RBI.

The foreign exchange reserves were at US$ 675.7 billion on November 8, 2024, retracting from the historical high of US$ 705.8 billion recorded at end-September 2024. At the current level, reserves cover more than 11 months of imports and more than 99 per cent of external debt outstanding at end-June 2024 (Chart IV.26a). India added US$ 53.2 billion to its reserves during 2024 so far (as on November 8), the second highest among Asian economies (Chart IV.26b). Asia dominates global foreign exchange reserves in 2024, with seven out of the world's top ten reserve holding economies located in the region.

Payments Systems

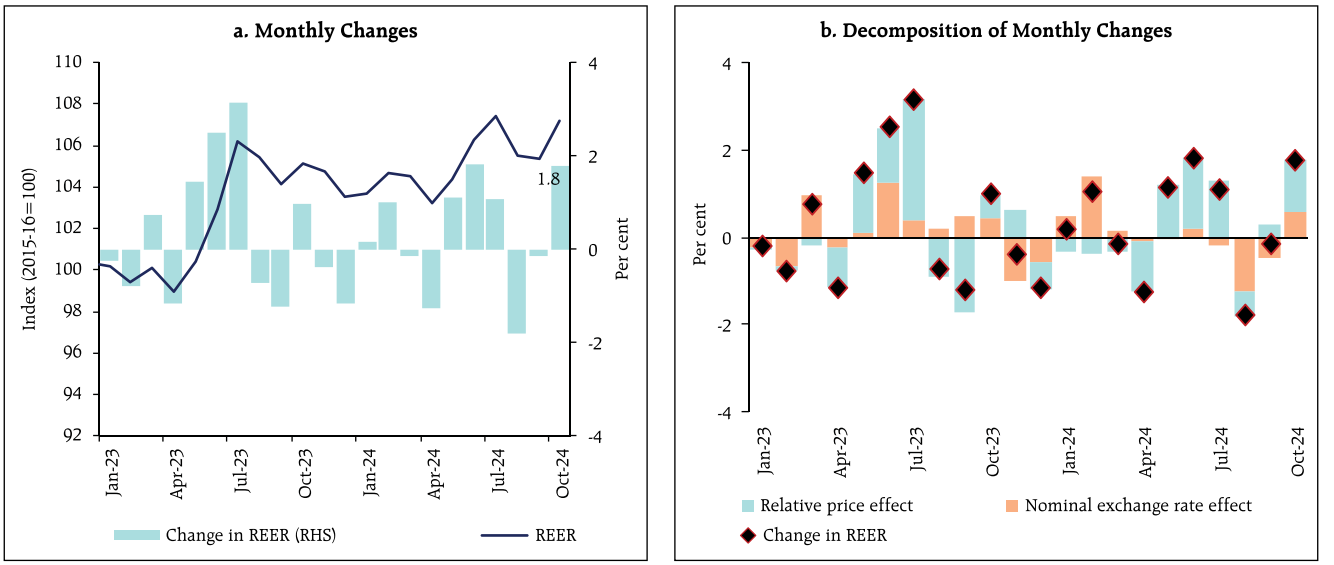
Digital transactions across the payment modes remained buoyant amidst the festival season (Table IV.3). Real Time Gross Settlement (RTGS) has been

Chart IV.24: Movements of the Indian Rupee and Major Currencies against the US Dollar (October 2024 over September 2024)



Note: 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.

Chart IV.25: Movements in the 40-Currency Real Effective Exchange Rate

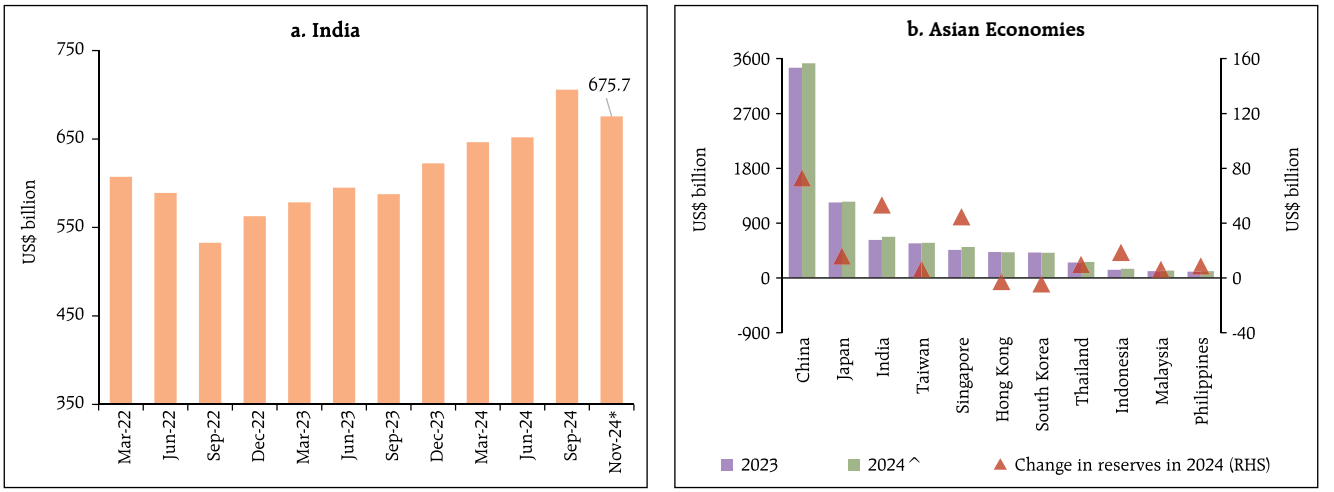


Source: RBI.

witnessing a turnaround in growth, with an annual rise in transaction volume and value at 19 per cent and 26 per cent, respectively, as of October 2024. Retail payments through the Unified Payments Interface (UPI) reached a record volume of 16.6 billion transactions in October 2024. The number of UPI Quick Response (QR) codes more than doubled from a year ago, with approximately 61 crore active UPI QRs as of September 2024. Alongside this significant increase in scale, the system's functionality has also improved, demonstrated by a rise in successful instant debit reversals to 86 per cent, up from 77 per cent in September 2023.

The Bharat Bill Payment System (BBPS) achieved triple digit growth in 2024-25 so far, influenced by the Reserve Bank's guidelines allowing non-bank

Chart IV.26: Foreign Exchange Reserves



Notes: 1. *: Data for November 8.
2. ^: Countries are arranged in the decreasing order of change in reserves in 2024. Latest data for India are for November 8, 2024, end-September for Hong Kong, and Malaysia, and end-October for other countries.

Sources: RBI; and respective central bank websites.

Table IV.3: Growth in Select Payment Systems

(y-o-y in per cent)

Payment System Indicators	Transaction Volume				Transaction Value			
	Sep-23	Sep-24	Oct-23	Oct-24	Sep-23	Sep-24	Oct-23	Oct-24
RTGS	7.9	9.1	18.0	19.3	5.5	22.3	16.6	26.8
NEFT	29.2	41.3	38.2	45.4	7.0	15.1	19.6	27.3
UPI	55.7	42.5	56.2	45.4	41.4	30.7	41.6	37.0
IMPS	2.3	-9.1	2.2	-5.3	11.7	11.4	15.5	16.9
NACH	20.1	20.2	-1.5	64.5	14.0	27.1	11.9	43.5
NETC	15.4	6.5	13.0	7.9	19.9	10.4	24.4	10.4
BBPS	20.2	106.6	26.6	101.0	43.8	268.5	59.2	299.2

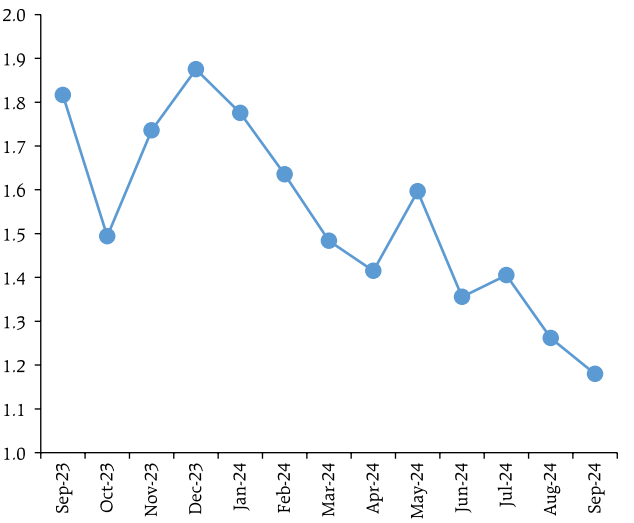
Note: **RTGS**: Real Time Gross Settlement, **NEFT**: National Electronic Funds Transfer, **UPI**: Unified Payments Interface, **IMPS**: Immediate Payment Service, **NACH**: National Automated Clearing House, **NETC**: National Electronic Toll Collection, **BBPS**: Bharat Bill Payment System.
Source: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

payment aggregators into the system from April 2024.[32] To centralise bill payments and strengthen security, the BBPS processes all credit card repayments, with major issuers supporting third party transactions.[33] Additionally, a partnership between National Payments Corporation of India (NPCI) Bharat BillPay Limited and the Pension Fund Regulatory and Development Authority (PFRDA) added National Pension System (NPS) payments to the Bharat Connect platform, further boosting BBPS adoption.[34]

Since December 2023, the number of fraud incidents per 1 lakh digital transactions has been on a decline, reflecting notable improvements in the safety and security of the digital payments ecosystem (Chart IV.27). The RBI Innovation Hub (RBIH) developed MuleHunter, an advanced AI tool, in August 2024 to detect mule accounts.[35] Additionally, the National Payments Corporation of India (NPCI) partnered with The Times of India to launch a campaign for educating the public on digital frauds, focusing on risks such as phishing and OTP scams.[36] Furthermore, the NPCI has launched a UPI Safety Awareness Campaign to proactively reinforce UPI's security and robustness in users.[37]

On October 28, 2024, the Reserve Bank issued new guidelines for central counterparties (CCPs) authorised for clearing and settlement in India, superseding the directions from June 2019.[38] These new rules aim to enhance CCPs' operational safety, financial resilience and promote alignment with global standards. The key objectives include strengthening CCP governance, financial soundness, transparency,

Chart IV.27: Number of Frauds per 1 lakh Digital Transactions



Note: Data do not include attempt to perpetrate frauds.
Source: RBI.

[32] RBI Master Directions, February 29, 2024.
[33] Bharat Connect Press Release, July 9, 2024.
[34] NPS Press Release, August 28, 2024.
[35] https://rbihub.in/mule-hunter-ai/
[36] NPCI Circular, October 17, 2024.
[37] NPCI Circular, November 6, 2024.
[38] RBI Press Release, October 28, 2024.

and accountability, ultimately supporting the resilience of India's financial system and international cooperation in clearing and settlement.

Conclusion

Global growth is expected to sustain its momentum in the near-term as declining inflation and easing of financial conditions across major economies boosts consumer spending. Labour market conditions remain supportive with a decline in job vacancy rates and low unemployment rates. The global trade outlook is positive, although fears of protectionist trade policies loom over the nascent resilience. Despite a significant fall in inflation, consumer confidence in most economies is yet to recover, which could act as a drag going forward. Although fiscal policies in AEs including targeted infrastructure investments and social spending programs are expected to support growth, concerns over high debt levels remain significant, pushing up yields in recent months. Even as space for monetary easing has opened up in the AEs, EME central banks face challenges from external headwinds, leading to differences in policy responses.

The Indian economy is exhibiting resilience, underpinned by festival-related consumption, and a recovering agriculture sector. Record production estimates for *kharif* foodgrains as well as promising *rabi* crop prospects augur well for farm income and rural demand, going forward. In terms of institutional infrastructure, the adoption of digital crop surveys for accurate production estimation and the introduction of drones are set to bring long-term efficiencies and productivity gains to the sector by enabling the assessment of production conditions on a real time basis and possibly in proactive supply management.

On the industrial front, manufacturing and construction are expected to sustain dynamism. EV adoption, favorable policies, subsidies, and growing infrastructure are positioning India as a leader in sustainable transportation and fostering job creation in emerging clean energy sectors. India's services sector is expected to sustain its growth momentum, robust job creation, and high consumer and business confidence.

Despite pressures in the bond and equity markets from global uncertainty and fluctuating foreign portfolio investments, financial conditions are likely to remain accommodative as reflected in corporate bond issuances and FDI inflows. The digital payments ecosystem is also expected to sustain its growth momentum.

A Suite of Approaches for Estimating Equilibrium Exchange Rates for India

by Michael Debabrata Patra, Harendra Behera, Dhirendra Gajbhiye, Sujata Kundu and Rajas Saroy ^

A comprehensive examination of India's equilibrium exchange rate through various approaches, namely the BEER, PEER and FEER, highlights the role of relative productivity differentials, net terms of trade, net foreign assets position and the fiscal balance in determining the Indian rupee's equilibrium value. The suite of models offers policymakers a guiding framework to assess exchange rate movements while being cognisant of model limitations and country-specific circumstances.

Introduction

What is the appropriate level of the nominal exchange rate is a central policy question, irrespective of the type of exchange rate regime. It can be argued that it is the actual market rate as long as the foreign market is continuously clearing. Yet, policymakers are acutely sensitive to the fact that a variety of factors impinge on market behaviour to often produce idiosyncratic outcomes. Besides the high noise-to-signal ratios embedded in the market's pricing in of news in real time, other factors that can generate destabilising movements are real shocks such as commodity price fluctuations, shifts in capital flows, and nominal shocks such as changes in monetary policy (Krugman, 1990). As a result, the foreign exchange market may initially overreact, and the dissipation of this overreaction can take long – the seminal overshooting hypothesis (Dornbusch, 1976). Accordingly, if policymakers have some sense of "equilibrium", they can facilitate adjustment by allowing or inducing nominal rates to move in that direction since getting nominal rates wrong can be costly in terms of real economy effects like loss of export competitiveness, misallocation of resources or even asset price fluctuations, and surges, sudden stops and withdrawals of capital.

The equilibrium exchange rate is a concept that has generated a proliferation of theoretical and empirical research. It has its roots in seminal work that defines it as the exchange rate that is consistent with the simultaneous achievement of internal and external balance (Artus, 1977; Williamson, 1985). Internal balance is that level of economic activity that keeps inflation low and stable or at target. External balance is related to a sustainable[1] level of the current account balance that reflects a desired level of saving and investment. Both involve normative choices and hence methodological and measurement issues emerge. For the opportunistic policymaker, therefore, the equilibrium exchange rate is an empirical issue and it has to be estimated under heroic assumptions about these underlying fundamentals.

Surveys of the literature reveal a number of approaches to modelling the equilibrium exchange rate (Driver and Westaway, 2004; IMF 2007; Bussière *et al.* (2010). In view of the absence of any consensus on the correct approach to estimating equilibrium exchange rate, the pragmatic approach has been to estimate a suite of available models that take into account a broad range of indicators and other analytical tools to make a forthright assessment of the exchange rate level (IMF, 2005).

In this article, we adopt the pragmatic approach and attempt to empirically estimate equilibrium exchange rate models for India as guideposts for assessing the appropriate levels of the exchange rate of the Indian rupee (INR) that are consistent with the

^ The authors are from 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.

[1] Consistent with a country's intertemporal budget constraint.

attainment of internal and external balance[2]. In this category are the fundamental equilibrium exchange rate (FEER) model (Williamson, 1994) and the desired equilibrium exchange rate (DEER) model (Bayoumi, *et al*, 1994). We also estimate equilibrium exchange rate models by applying to Indian data an exogenous set of factors that are identified that capture the policy preference for the representation of internal and external balance. A reduced form is then constructed that links the exchange rate to these fundamental factors (Edwards, 1994). Thus, there is no need to determine what the sustainable level of the current account balance should be as it becomes endogenous to the system (Feyzioglu, 1997). In this class of models belong the behavioural equilibrium exchange rate (BEER) model (MacDonald and Clark, 1998), the permanent equilibrium exchange rate (PEER) model (Maeso-Fernandes, *et al*, 2001) and the natural real equilibrium exchange rate (NATREX) model (Allen, 1995). Underlying this approach is the view that each model attempts to respond to one particular policy question and all of them taken together provide a range with which to assess the equilibrium exchange rate for India.

In this article, we begin this quest by estimating purchasing power parity (PPP) as the most basic principle underlying equilibrium exchange rates in terms of a common basket of goods and services valued in the currency of each country; the fundamental equilibrium exchange rate (FEER), which embodies consistency with macroeconomic balances; the behavioural equilibrium exchange rate (BEER), which considers long-term macro-fundamentals and short-term cyclical influences; and the permanent equilibrium exchange rate (PEER) which considers long run fundamentals only and is an extension of the BEER.

In the next section, we describe the underlying factors that have a bearing on the behaviour of the exchange rate of the Indian rupee (INR) in order to draw out the rationale for the selection of variables. Section III lays out the distinctive features for each of the models and their shortcomings. Section IV presents the results and inferences therefrom. Section V concludes the article with some policy perspectives.

[2] A few studies available in the Indian context have focused mainly on PPP or BEER approach (Annex Table A3).

II. Stylised Facts

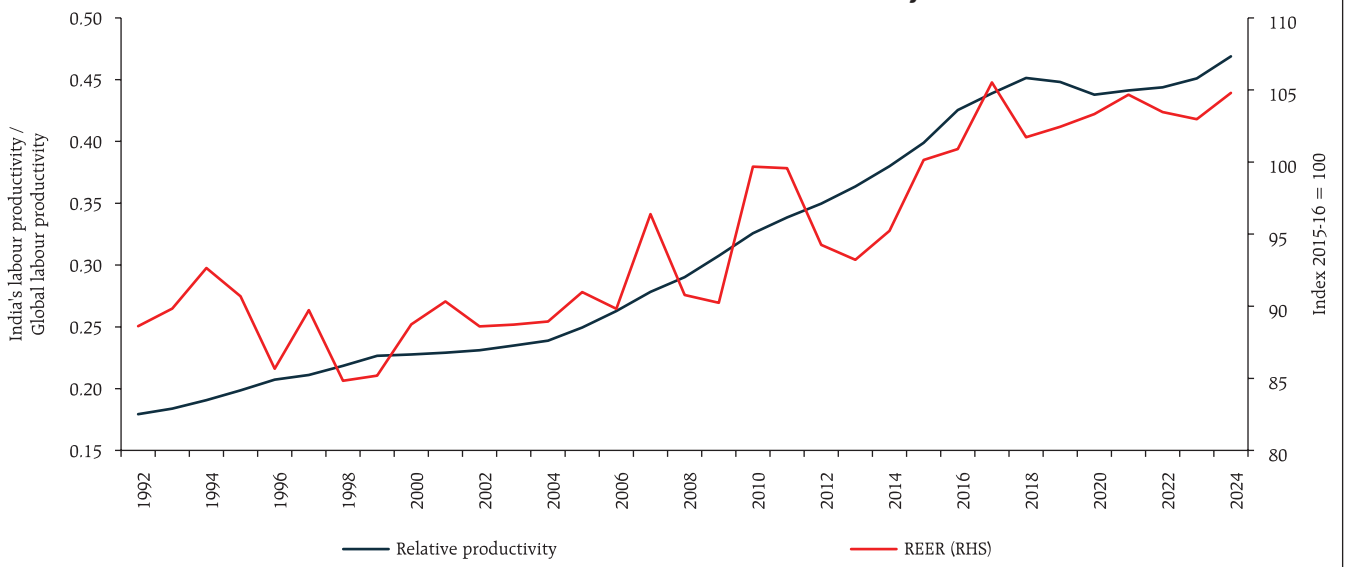
India's exchange rate has evolved across several regimes spanning over 130 years. These regimes, *i.e.*, formal frameworks with objectives and instruments mapped to them cover the gold exchange standard (1893-1946), the Bretton Woods par value system (1947-1971), the pegged basket-of-currencies regime (1975-1990), a transitional dual exchange rate regime (1991-1992) and finally a market-driven exchange rate system from March 1993.

Since the early 2000s, India's 40-currency trade-weighted real effective exchange rate (REER) has appreciated on average by 1 per cent on an annual basis, while the nominal effective exchange rate (NEER) has depreciated by around 2 per cent per year, the wedge constituting inflation differentials between India and its trading partners. Since the REER is calculated with a broad basket of currencies and adjusted for price levels, it tends to show a steadier trend than bilateral nominal exchange rates. Both real and nominal shocks impinge on the evolution of the REER, with its long-term trends adjusted for cyclical forces reflecting deep, structural changes within the economy.

A shift in the REER's trend can occur due to technological changes, shifts in the composition of trade, productivity dynamics, net foreign asset positions and long-term interest rate differentials, terms of trade changes and the current account balance to GDP ratio. In India, rising productivity in the tradable goods sector has contributed to a sustained trend of REER appreciation, consistent with the Balassa-Samuelson effect[3] (Chart 1).

[3] The Balassa-Samuelson effect explains how higher productivity growth in the tradable sector, relative to the non-tradable sector, leads to rising wages across both sectors, increasing the relative price of non-tradables. This results in an appreciation of the real exchange rate in economies with faster-growing tradable sectors (Balassa,1964; Samuelson, 1964).

Chart 1: Movement of Relative Labour Productivity and REER



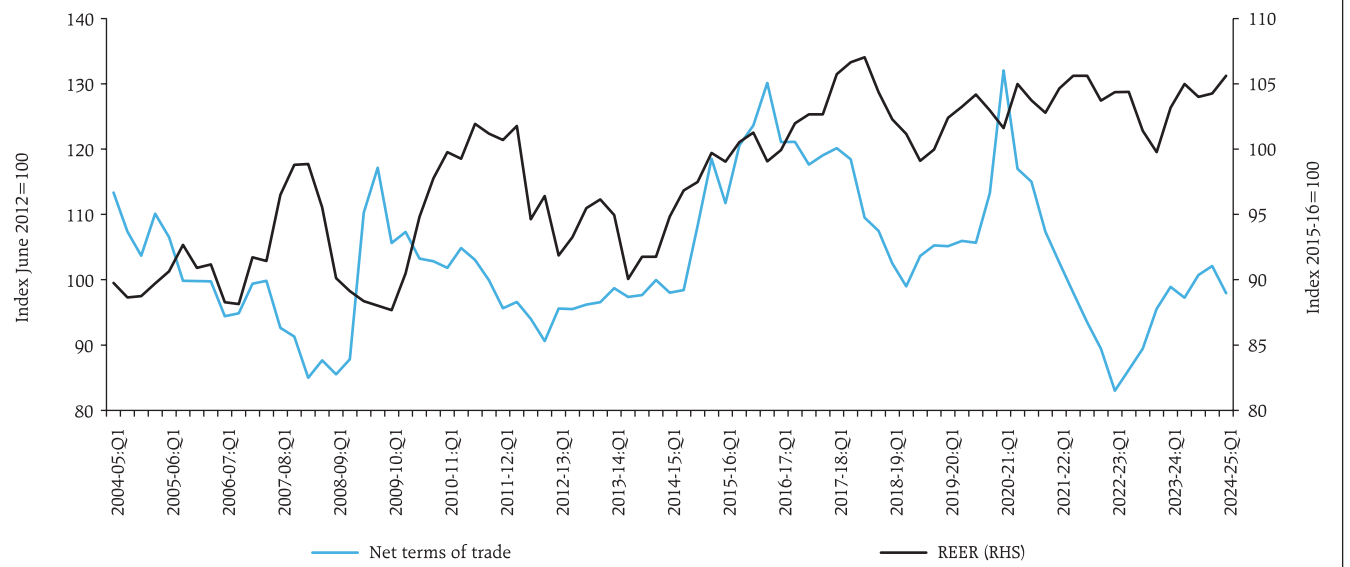
Sources: The Conference Board; and Authors' Calculations.

In the short run, the REER can be affected by commodity price shocks – for instance, prices of crude oil in the case of India – imparting terms of trade changes. In the Indian experience, an improvement in net terms of trade (ToT) is generally found to be positively associated with REER appreciation with a lag of one quarter (Chart 2).

Higher current account deficits entail depreciation of the INR, while a rise in India's net foreign assets appreciates the REER (Chart 3).[4]

Real interest rate differentials are a crucial determinant of the REER through the uncovered interest rate parity (UIP) condition – when India's long-term interest rate exceeds those of its trading

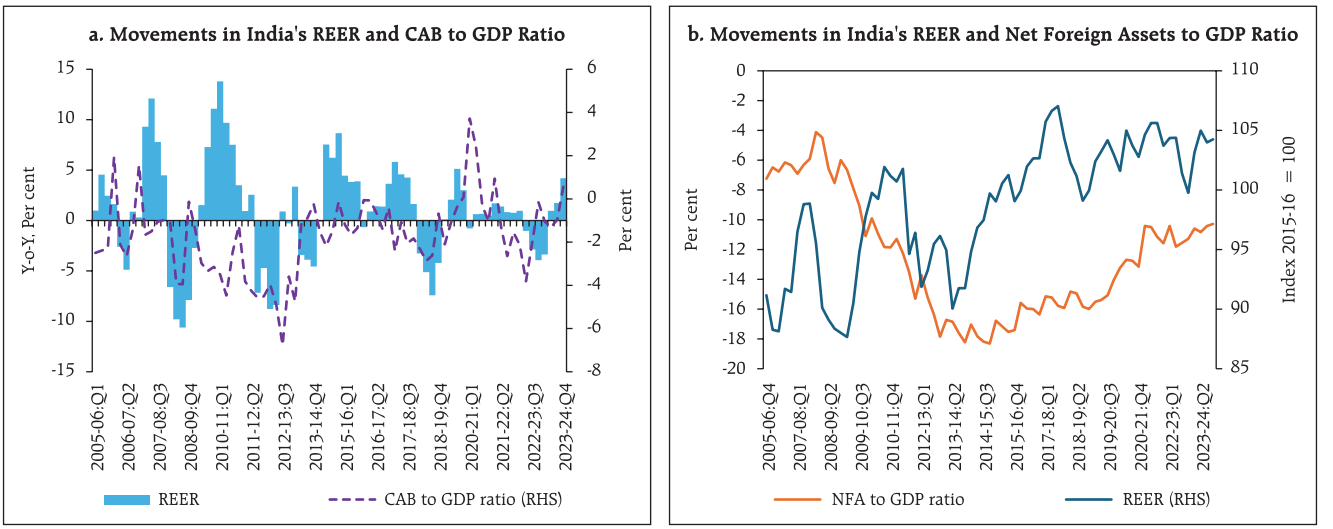
Chart 2: REER and Terms of Trade



Sources: IMF; and RBI.

[4] The other alternate variables that were considered in our analysis are net capital flows to GDP ratio and current account balance (CAB) to GDP ratio.

Chart 3: Movements in REER, Current Account Balance and Net Foreign Assets

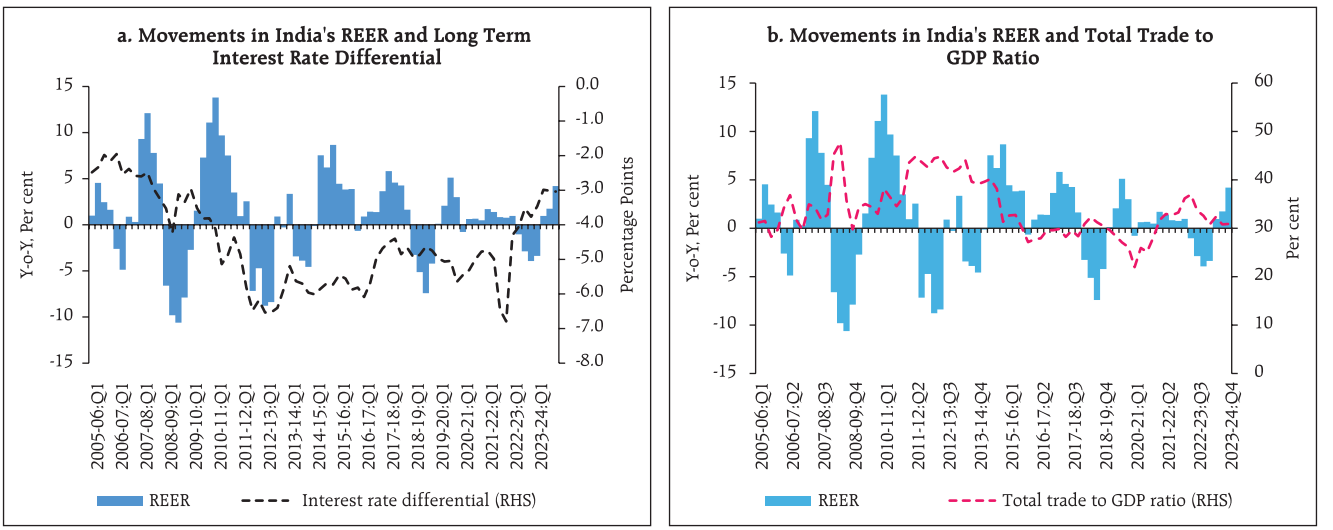


Sources: RBI; and Authors' Calculations.

partners, it attracts foreign capital, driving up demand for the local currency and pushing up the REER (Chart 4a). This relationship serves as a bridge between short-term and medium-term exchange rate dynamics. Actual experience negates the theoretical proposition that interest rate differentials should converge across countries in the long run.

Trade openness leads to an increase in the overall volume of trade. If the current account deteriorates as a result, the REER typically depreciates to restore balance. Conversely, if the current account improves, the REER appreciates in response (Chart 4b).

Chart 4: Movements in REER, Long-term Interest Rate Differentials and Total Trade



Note: Long term interest rate differential is US 10-year treasury yield minus India 10-year government bond yield; Total trade to GDP ratio represents merchandise exports and imports as a percentage of GDP.
Sources: RBI; IMF; Reuters; FRED; and Authors' Calculations.

III. Model Descriptions

The PPP framework (Rogoff, 1996; De Broeck and Sløk, 2001) consists of a cross-sectional regression of relative price levels on the ratio of PPP-adjusted per capita GDPs of trading partners – a proxy for relative productivity differentials. The slope of the regression line indicates the expected real exchange rate appreciation associated with a 1 per cent increase in GDP per capita relative to that of the United States (Chart 5).

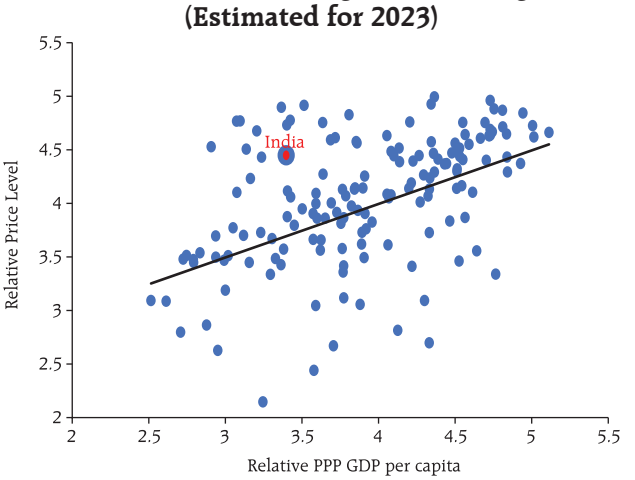
The regression results obtained are as follows:

$$\log\left(\frac{P}{P^{US}}\right) = 0.50 \log\left(\frac{GDP}{GDP^{US}}\right) + 2.0$$

where P represents the domestic price level, P^{US} denotes the foreign price level proxied by US prices, and GDP and GDP^{US} are the GDP per capita on PPP basis of various countries and the US, respectively[5].

In this simplistic framework, the predicted values from the regression serve as a reference exchange rate that accounts for the Balassa-Samuelson effect. Countries positioned above the regression line such as India have higher price levels relative to their standards of living, indicating that exchange rates are higher than equilibrium levels. Conversely, countries that are below the line exhibit relatively lower price levels, implying an undervalued exchange rate.

Chart 5: PPP Based Exchange Rate Misalignment (Estimated for 2023)



Note: Relative price levels of different countries are calculated by dividing GDP in US dollars by GDP in PPP terms. and then by the price level of the United States. These relative price levels can thus be interpreted as deviations from PPP exchange rates.
Sources: IMF; and Authors' Calculations.

The BEER approach is an extension of the real UIP and can be identified through historical data (Macdonald, 1997; 1999). Using cointegration methods, BEER considers short-term deviations in the real exchange rate as misalignments due to speculative pressures, temporary shocks or policy interventions. This approach aligns the equilibrium exchange rate with current economic fundamentals, offering flexibility. BEER's reliability depends, however, on stable data and variables approaching steady state, making it more suitable for mature economies.

The PEER represents the exchange rate that would prevail when all economic variables are at their steady state values, unaffected by temporary shocks or cyclical fluctuations. The PEER approach aims to isolate the underlying stable component of the real exchange rate by filtering out short-term factors such as speculative activity and policy-driven influences (Gonzalo and Granger, 1995; Clark and MacDonald, 2000). The PEER can be computed by replacing actual levels of fundamentals with their estimated trend levels in the BEER model (Égert, 2003). This extension of the BEER model provides an estimate of the equilibrium REER closer to the FEER.

The FEER approach seeks to estimate an exchange rate level that would bring the economy's current account to a sustainable balance corresponding to the full employment or equilibrium level of output. It is normative as it requires determining the exchange rate consistent with a targeted balance of payments outcome over the medium term (often reflecting structural adjustments in the current account). This approach yields an equilibrium REER that is consistent with the economy's macroeconomic

[5] Both coefficients are statistically significant at the 1 per cent level; R2=0.16; Number of observations (countries) = 161.

balance (Williamson, 1994), as interpreted earlier. Estimating the equilibrium REER by this approach requires assumptions about the sustainable current account balance, making it less data-driven and more theoretical than the BEER. While BEER would provide the estimated equilibrium REER both in the short run and long run, PEER and FEER would provide the equilibrium REER that should prevail in the medium to long run.

PPP, FEER and BEER can be grouped together as they focus on observable economic fundamentals, which is of practical utility for short- to medium-term exchange rate assessments. These models rely on straightforward assumptions such as price levels (PPP), balance of payments sustainability (FEER), and the UPI condition (BEER). Compared to models like DEER, PEER and NATREX, which emphasise longer-term equilibrium or policy-driven targets, PPP, FEER and BEER are easier to operationalise. This grouping offers a cohesive framework for understanding exchange rate dynamics, complementing the strategic, long-term perspectives of alternative models.

IV. Empirical Methodology and Results

The following equation is used to estimate the equilibrium REER through the BEER approach:

$$REER = f(RELGDPPC, TOT, NFA\_GDP) \quad \ldots(1)$$

While the NFA to GDP ratio (*NFA_GDP*) is expressed in per cent, relative GDP per capita (*RELGDPPC*)[6] and net TOT (*TOT*)[7] are transformed into their logarithmic forms to stabilise variances (Annex Table A1). All variables are de-seasonalised using the standard X-13 ARIMA procedure.

Based on equation (1), the equilibrium REER can be estimated in (2), with the hat symbol signifying the fitted series:

$$BEER_t = \beta_0 + \beta_1 \widehat{RELGDPPC_t} + \beta_2 \widehat{TOT_t} + \beta_3 \widehat{NFA\_GDP_t} \quad \ldots(2)$$

The fundamental determinants of BEER are then decomposed into permanent and transitory components by using the HP filter technique (Hodrick and Prescott, 1997) to obtain the PEER. The superscript p indicates permanent or long-term trends of the series.

$$PEER_t = \beta_0 + \beta_1 RELGDPPC_t^p + \beta_2 TOT_t^p + \beta_3 NFA\_GDP_t^p + \mu_t \quad \ldots(3)$$

For the FEER approach, a target current account balance/GDP ratio is assumed (CAB). This target should be consistent with a level that India can sustain over the long-term, avoiding excessive external imbalances or excessive foreign debt accumulation. CAB is expressed as a function of REER and key fundamentals.

$$CAB_t = \beta REER_t + \gamma_1 RGDPPC_t + \gamma_2 TOT_t + \gamma_3 NFA\_GDP_t + \gamma_4 FISC_t + \epsilon_t \quad \ldots(4)$$

where β captures the sensitivity of the current account to changes in the REER (in log form), γ_i are coefficients representing the relationship between the current account and other economic fundamentals (productivity differentials; terms of trade; net foreign assets; fiscal balance ($FISC_t$) and ϵ_t is an error term.

In order to estimate the equilibrium REER under the FEER approach, the REER should achieve a current account level equal to the target (CAB*).

This yields the following equilibrium condition:

$$FEER_t = \frac{CAB* - \gamma_1 RGDPPC_t - \gamma_2 TOT_t - \gamma_3 NFA\_GDP_t - \gamma_4 FISC_t}{\beta} \quad \ldots(5)$$

A suite of cointegrating regressions are used on quarterly data from 2004-05:Q1 to 2023-24:Q4 (Annex table A1 provides details of the variables/indicators that have been used for the empirical analysis). In order to check the time series properties of the variables, standard unit root tests are conducted. While the REER is found to be integrated of order 1,

[6] Weighted sum of per capita GDP (constant prices) of 22 major trading partners, with weights same as the trade weights used in calculating the 40-country REER published by the RBI.

[7] Weighted by net exports.

the net terms of trade is stationary (Annex Table A2). Therefore, an autoregressive distributed lag model (ARDL) is used to estimate the equilibrium REER under the BEER approach. Fully modified ordinary least squares (FMOLS) and dynamic ordinary least squares (DOLS) methodologies are also used in order to check the robustness of the results.

The regression coefficients corresponding to the fundamental determinants of REER turn out to be statistically significant with the expected signs (Table 1). The results indicate that in the long run, productivity proxied by relative GDP per capita is a key determining factor of the equilibrium REER, followed by net terms of trade and net foreign assets to GDP ratio. The bounds test confirms the existence of a long-term relationship between the variables. The long-run coefficients obtained can hence be used to estimate the equilibrium REER.

Table 1: Results from the ARDL Model for BEER Approach

Explanatory Variables	Long Run Coefficients
$Constant_t$	4.71*** [16.81]
$Ln(Relative\ GDP\ Per\ Capita)_{t-1}$	0.21*** [5.88]
$Net\ Foreign\ Assets\ to\ GDP\ Ratio_{t-1}$	0.01*** [3.96]
$Ln(Net\ Terms\ of\ Trade)_{t-1}$	0.12** [2.01]
ECM_t	-0.40*** [-6.81]
Post Estimation Results	
Adj. R-squared	0.91
F-Statistic	53.88
D-W Statistic	2.01
Breusch-Godfrey Serial Correlation LM Test[8]	Prob. F(2,55) = 0.99
Breusch-Pagan-Godfrey Heteroskedasticity Test[9]	Prob. F(13,57) = 0.77
Bounds Test Result	
F-statistic = 8.66; 5 per cent Lower Bound = 2.8; Upper Bound = 3.7.	

Note: ***;**;*: Significant at less than 1 per cent, 5 per cent and 10 per cent level, Figures in brackets are t-statistics.
Source: Authors' estimates.

8 Null hypothesis: No serial correlation at up to 2 lags.

9 Null hypothesis: Homoskedasticity.

Table 2: Results from the Alternate Model Specifications for the BEER Approach

Explanatory Variables	FMOLS	DOLS
$Ln(Relative\ GDP\ Per\ Capita)_t$	0.23*** [5.70]	0.23*** [12.22]
$Ln(Net\ Terms\ of\ Trade)_t$	-0.11 [-1.05]	-0.11* [-1.75]
$Ln(Net\ Terms\ of\ Trade)_{t-1}$	0.16 [1.50]	0.16*** [2.55]
$Net\ Foreign\ Assets\ to\ GDP\ Ratio_t$	0.01** [2.40]	0.01*** [3.85]
$Constant_t$	5.05*** (17.60)	5.05*** (30.26)
Adj. R-squared	0.60	0.60

Note: ***;**;*: Significant at less than 1 per cent, 5 per cent and 10 per cent level, Figures in brackets are t-statistics.
Source: Authors' estimates.

In the short run, however, own lags of REER turn out to be statistically significant.[10] The error correction coefficient (ECM) is also found to be statistically significant with a magnitude of (-)0.4. The model satisfies post-estimation diagnostics and stability tests. The long-run coefficients obtained from the ARDL model are in line with the results obtained from the alternate FMOLS and DOLS models (Table 2). The fitted values of REER obtained from the model provide the short-run equilibrium REER based on the BEER approach, while the estimated long-run coefficients are used to derive the long-run equilibrium REER under this approach. Further, the long run coefficients from the BEER model, combined with the trends obtained from the underlying variables, are used to derive the equilibrium REER under the PEER approach.

In order to compute the equilibrium REER using the FEER approach, equation (4) is estimated by using an ARDL model. The results indicate that the current account deficit reduces with an improvement in net terms of trade, depreciation of the REER and reduction in the fiscal deficit. A rise in productivity differentials, however, could increase the current account deficit as productivity-led rise in income may raise the demand for imports (Table 3). Based on the estimated model

10 For brevity, results of the short-term representation of the model are not presented.

Table 3: Parameter Estimates for FEER Model

Explanatory Variables	Long Run Coefficients
$Ln(REER)_t$	-13.62** [-7.40]
$Ln(Relative\ GDP\ Per\ Capita)_t$	-6.48** [-3.49]
$Net\ Foreign\ Assets\ to\ GDP\ Ratio_t$	-0.01 [-0.15]
$Ln(Net\ Terms\ of\ Trade)_t$	6.80** [2.28]
$Fiscal\ deficit_t$	-0.17*** [-2.64]
Trend	0.11*** [-6.81]
Adj. R-squared	0.49

Note: ***;**;*: Significant at less than 1 per cent and 5 per cent level. Figures in brackets are t-statistics..
Source: Authors' estimates.

parameters, we calculate the FEER as specified in equation (5).

As expected, the short-run BEER moves closely with the actual REER. The PEER is less volatile than the BEER. The FEER is found to be the most volatile estimate of the equilibrium REER. Both BEER and PEER approaches suggest that the REER is marginally below the level consistent with long-term fundamentals.

Table 4: Degree of REER Misalignment based on the Various Approaches

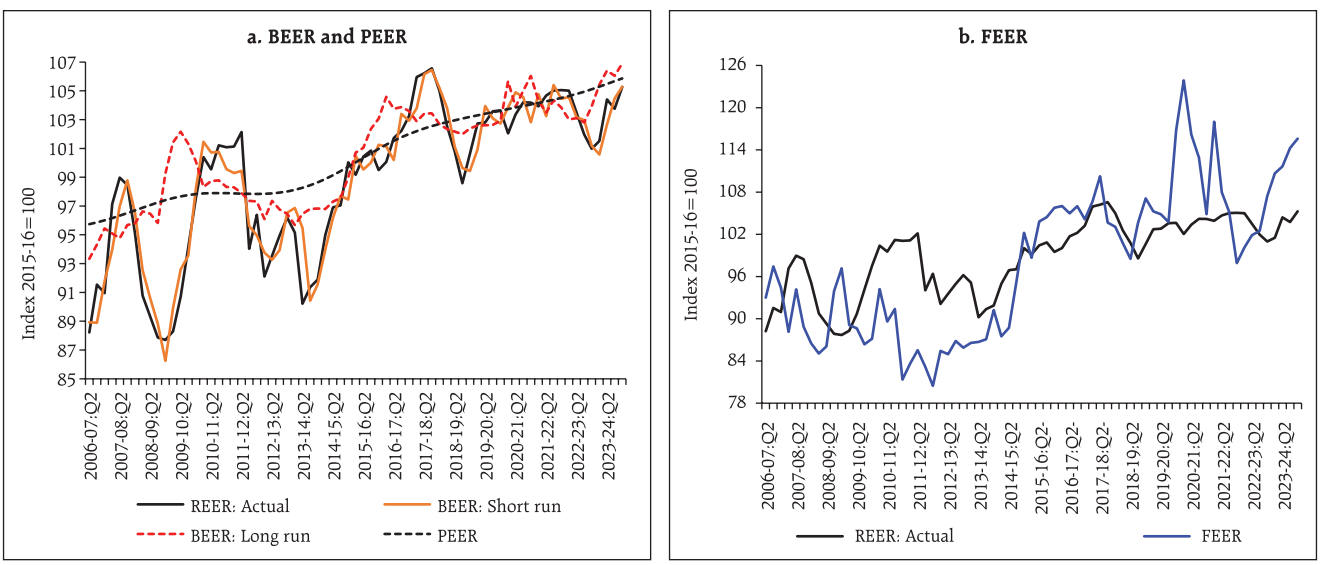
FY: 2023-24	BEER: Short Run	BEER: Long Run	PEER	FEER
Q1	-0.9	3.9	3.8	9.2
Q2	-1.8	2.0	1.1	7.2
Q3	0.7	2.3	1.9	10.5
Q4	0.01	1.6	0.6	10.3

Note: REER Misalignment = Equilibrium REER - Actual REER.
Source: Authors' estimates.

On the other hand, the difference between the actual REER and the FEER is higher (Chart 6).

Overall, the results indicate that in 2023-24, India's REER was somewhat below the level consistent with its long run fundamentals (Table 4). This is in contrast to the assessment in terms of short run approaches, including under the PPP approach – that is adjusted for Balassa-Samuelson effects – which suggests that the REER was above its equilibrium level during the same period, largely reflecting improvement in net terms of trade. This highlights the need to qualify short-term assessments of the level of the exchange rate

Chart 6: Actual *versus* Equilibrium REER as estimated from BEER, PEER and FEER Approaches



Sources: Authors' estimates; and RBI.

with an evaluation that is consistent with long run fundamentals.

V. Concluding Remarks

The findings of this study underscore the relevance of a range of estimates of the equilibrium exchange rate, which is not observable. The alternative approaches estimated here are preferable to static indicators such as the REER or others that belong in the genre of the simple PPP framework. By allowing the equilibrium exchange rate to respond to changes in the underlying fundamentals, they allow policy makers to assess the level of the exchange rate in terms of misalignment or otherwise with respect to specific policy objectives. It is in this spirit that the sequel to this article will attempt to estimate the CHEER, DEER, and NATREX to complete a full suite of approaches for evaluating the equilibrium exchange rate of the INR.

While using these estimates for policy purposes, it is useful to be cognisant of their limitations. The FEER does not specify how the exchange rate will move to equilibrium or how to deal with hysteresis that typically effects exchange rate behaviour. The BEER assumes that stable long-run relationships can be estimated from historical data, which may be distorted by structural changes.

Accordingly, the pragmatic approach is to use multiple methods and to interpret each carefully by taking into account both underlying assumptions and their applicability to country-specific circumstances.

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Annex

Annex Table A1: Variable Description and Data Source

Sl. No.	Variable	Indicator	Description	Data Source
1.	REER	40 currency trade based REER	40-currency trade-weighted REER	RBI
2.	Relative GDP Per Capita	Relative Real GDP Per Capita	Ratio of domestic to world real GDP, where world GDP is expressed as weighted sum of per capita GDP (constant prices) of 22 major trade partners, with weights same as the trade weights used in calculating the 40-country REER.	Oxford Economics, United Nations Department of Economic and Social Affairs, World Population Prospects 2024, and Authors' calculations
3.	Net Terms of Trade	Net Terms of Trade	Terms of trade defined as the sum of real commodity prices weighted by the share of net exports of each commodity in overall net exports. Real prices are constructed as the commodity price in US dollars divided by the IMF's unit value index for manufactured exports.	IMF
4.	Net Foreign Assets to GDP Ratio	Net Foreign Assets to GDP Ratio	Ratio of net foreign assets (foreign assets - foreign liabilities) to nominal GDP.	RBI, National Statistical Office (NSO) and Authors' Calculations
5.	Fiscal Deficit	Central Government Fiscal Deficit to GDP Ratio	Difference between government expenditure and revenue to nominal GDP ratio.	Controller General of Accounts, NSO and Authors' Calculations

Source: Authors' compilation.

Annex Table A2: Results of the Unit Root Tests

Variables	Augmented Dickey Fuller (ADF) Test Statistic		Phillips–Perron Unit-Root Test Statistic Z(rho)	
	X	ΔX	X	ΔX
$Ln(REER)_t$	-1.475	-6.557***	-1.963	-7.865***
$Ln(Relative\ GDP\ Per\ Capita)_t$	-2.854*	-10.227***	-2.963**	-10.256***
$Ln(Net\ Terms\ of\ Trade)_t$	-3.259**	-6.886***	-2.715**	-6.711***
$Net\ Foreign\ Assets\ to\ GDP\ Ratio_t$	-1.101	-3.595***	-1.224	-7.082***

Note: ***, **, and * indicate significance at 1 per cent, 5 per cent, and 10 per cent levels, respectively.
Source: Authors' estimates.

Annex Table A3: Results From the Literature

Author	Method	Type of Equilibrium Exchange Rate	Period	Results
Pattanaik, S. (1999)	Unit root tests, Engle-Granger and Johansen cointegration techniques	PPP	1970-1999	PPP does not hold for India according to ADF tests but is validated based on Engle-Granger and Johansen techniques. REER misalignments in India get corrected by 7.7 per cent and 6.0 per cent per quarter through nominal exchange rate adjustments and domestic price movements, respectively.
Joshi, H. (2006)	Structural VAR interpreted with three fundamental structural shocks- real demand, relative supply and relative nominal shocks	FEER	1996-2005	Variability in the real exchange rate in India is explained predominantly by permanent real demand shocks (accounting for 63.12 per cent of forecast error variance), followed by nominal (30.57 per cent) and supply (7.29 per cent) shocks. Since the aggregate nominal shocks explain just about 30 per cent of the forecast error variance of the real effective exchange rate, it is appropriate that under or overvaluation may not be judged solely based on the relative PPP condition.
Kumar (2010)	ARDL	Balassa-Samuelson hypothesis	1997-2009	Rise in the productivity differential, terms of trade and net foreign assets lead to an appreciation of the REER, while higher external openness leads to a depreciation. Productivity differential exerts largest influence on the real exchange rate.
Banerjee and Goyal (2021)	DOLS and FMOLS with panel data on 8 EMEs	BEER	1995-2017	Among factors influencing equilibrium REER, the Balassa productivity effect dominates. China, India and Mexico had higher equilibrium exchange rate in the pre-GFC period, than the post-GFC period. Real exchange rate misalignments are seen to follow a cyclical pattern linked closely to global events like the Asian or Global Financial Crisis.
Raut (2022)	DOLS and FMOLS with panel data on 10 EMEs	BEER	1994-2020	REER in EMEs is driven by its fundamental determinants such as the Balassa-Samuelson effect. Improvement in relative per capita GDP, terms of trade, net foreign assets position and an increase in interest rate differentials *vis-à-vis* the US appreciate the REER, while an increase in government debt depreciates it.

Source: Authors' compilation.

Dynamic Landscape of Monetary Policy Communication in India

by Shweta Kumari and Sandhya Kuruganti ^

Communication has evolved as an effective monetary policy tool for reducing surprise elements and anchoring expectations of economic agents. This article explores the dynamic landscape of monetary policy communication in India, encompassing two recent crisis events, viz., the Covid-19 pandemic and geopolitical conflict in Ukraine. The relative emphasis on specific topics in monetary policy meetings varied in response to changing economic conditions. The tone of communication on inflation, derived using a customised dictionary, is found to be significant in shaping the market expectations. This impact is particularly evident for medium-term overnight indexed swap (OIS) rates. The influence of communication is also observed to be higher during tightening phase.

Introduction

In an era marked by dynamic shifts in monetary policy frameworks, the communication landscape of central banks has seen a noticeable change in recent years. Acknowledging the crucial role of communication in complementing policy decisions, it is now considered as a fundamental pillar of modern day policymaking, enhancing overall policy efficacy. As Blinder (2018) aptly puts it, "*communication has morphed from a facilitator of monetary policy to a new policy instrument in its own right*". This shift reflects a more transparent and forward-looking approach, a departure from the opacity that characterised policymaking in earlier times.

Central bank communication is guided by three primary objectives *viz.,* inform, explain and influence (Benchimol *et al.,* 2021). By explicitly stating the policy objectives and rationale behind decisions along with near and medium-term outlook, central banks foster transparency. Clear communication enables policymakers to convey more effectively the changing circumstances, challenges and risks, and policy intentions. Through carefully crafted messages, central banks aim at reducing uncertainty and surprise elements, keeping markets well-informed and anchor their expectations. The effectiveness of such measures is contingent upon credibility of central banks, earned through prudent actions and subtle communication over a period of time. In modern day policymaking, it is important that along with decisions, the context of decision making (including the underlying conditions and uncertainty) is also shared with wider audience for their understanding (Rao 2024; and Lagarde 2023).

Addressing a wide spectrum of audience in today's dynamic world requires a nuanced approach to communication that can adapt and reflect changing circumstances. Its relevance becomes more pertinent during crisis episodes, when traditional policy scope may be constrained and unconventional measures are undertaken. Effectively explaining policy measures and setting the right expectations during such uncertain times requires careful deliberation, precision and expertise.

Communication by policymakers provides signals on emerging economic and financial conditions and studies suggest that such information can influence public, economic agents, financial markets and macroeconomic aggregates (Goyal and Parab 2021; Hansen *et al.,* 2019; and Blinder *et al.,* 2008).

Communication has been well integrated into Reserve Bank's policy framework and follows a holistic approach.[1] In addition to promoting transparency, it also lays emphasis on the elements of guidance, learning and listening (Subbarao 2011). The monetary policy framework in India has evolved in tune with the changing requirements of economic and financial

^ The authors are from the Department of Statistics and Information Management, Reserve Bank of India (RBI). Views expressed in this article are those of the authors and do not represent the views of RBI.

[1] RBI follows two-way communication, (i) from RBI to public, markets and media, and (ii) regular consultation with analysts, economists, bankers, academicians, industry representatives *etc.*

development of the country. Adoption of flexible inflation targeting (FIT) framework and constitution of monetary policy committee (MPC) in 2016 has marked a new regime of monetary policymaking. Along with this, emphasis on communication has increased further in order to enhance transparency and conditioning the expectations (Das 2022a).

Monetary policy communication by RBI includes a variety of tools and communication channels, *viz.,* MPC resolutions and minutes, Governor's statements, press conferences, Monetary Policy Report, speeches and media interactions. These endeavours indicate dedicated efforts in strengthening communication, so as to guide and steer the expectations of households and financial markets, and align them with broader policy objectives.

In the recent period, Covid-19 pandemic caused unprecedented shocks to the Indian economy. These got further aggravated due to transmission of global price pressures to domestic inflation, as a result of Russia-Ukraine conflict in 2022. Providing confidence to the public and markets during such periods of heightened uncertainties and turbulence became more challenging, necessitating a well-balanced approach of communication. As outlined by RBI Governor Shri Shaktikanta Das, "*Monetary policy is not merely a science where we tweak some instrument to achieve an objective. It is also an art of creating new instruments and taking policy calls in response to anticipated and evolving challenges and communicating them with prescience and clarity, especially during crisis times. Decisiveness, timing and communication are key to effective monetary policy*" (Das 2022a).

As communication strategy continues to evolve, assessment of its effectiveness becomes much desirable and highly valuable. Policy communication is complex and its evaluation is an inherently challenging task. Despite this, it has gained traction in the recent period, as indicated by the increasing empirical literature in this domain. While a significant portion of studies relates to advanced economies, research on emerging market economies has also been increasing (Ahokpossi *et al.,* 2020; and Luangaram and Wongwachara 2017). Multiple dimensions of communication are being examined, including linguistic complexity, sentiment analysis, and its impact on markets and economic agents.

This study contributes to this fast-growing domain, focussing on monetary policy communication in India, where a few empirical studies have been published till date. The period beginning with the new regime of monetary policy making (FIT), starting with the first meeting of MPC in October 2016 is considered in the study. Taking a holistic approach, two key aspects are analysed. The first aspect relates to how the contours of communication have shifted with evolving economic conditions. This is carried out in terms of topics discussed in MPC meetings and their prevalence over time. The second aspect focuses on sentiment or tone expressed in MPC resolutions, tracking its evolution, and assessing its influence on the movement of interest rates in financial markets.

The rest of the article is structured as follows. Section II presents a brief review of the relevant literature, focussing more on the Indian context. In Section III, approach of topic modelling and empirical results are presented. Section IV discusses the methodology of quantification of communication tone and modelling framework for analysing communication impact on financial markets, along with empirical results. Section V presents concluding remarks.

II. Review of Literature

Central bank communication and its empirical examination has received significant attention in recent times, likely attributed to two major factors, *viz.,* growing recognition of communication as a monetary policy tool in its own capacity and increased accessibility of textual analytical methods. This study

contributes to the growing literature in the Indian context and examines two aspects, (i) focus of MPC deliberations on multiple topics and their evolution, and (ii) role of communication in influencing market behaviour. A concise review of existing studies related to these aspects is provided in following paragraphs.

The first aspect has been examined in detail using computational linguistic methods, particularly through topic modelling. The studies find that monetary policy deliberations are primarily centred on core topics such as inflation, economic growth, policy decisions, market dynamics and global developments. The relative emphasis on these topics varies and evolves in response to emerging conditions (Benchimol *et al.*, 2021; Luangaram and Wongwachara 2017; and Hansen and McMahon 2016).

The second aspect, which explores the impact of communication on movements in key interest rates of financial markets, has been studied extensively. Initially, the raw textual communication is processed and transformed into quantifiable terms, which is then utilised as an indicator in the modelling framework to examine the impact on markets. Research findings suggest that sentiment or tone of narrative communication plays a crucial role in guiding the markets and anchoring their expectations (Bouscasse *et al.*, 2023; Hansen *et al.*, 2019; Hubert and Labondance 2019; and Blinder *et al.*, 2008).

Empirical studies on central bank communication in the Indian context are gaining traction in the recent period. Mathur and Sengupta (2019) find that even though monetary policy communication is linguistically complex, the length of policy statements has decreased and readability has improved over time. Samanta and Kumari (2021) quantify the degree of monetary policy transparency in India and find that transparency has enhanced progressively in multiple aspects. It increased substantially after adoption of FIT, enabling the anchoring of inflation expectations. Patra *et al.* (2023) examines the role of forward guidance and finds that it has significant impact on long term interest rate expectations, although its effectiveness diminishes during tightening phase.

Market reaction to monetary policy is examined in detail in Ahmed *et al.* (2022) and they find that communication by the Reserve Bank of India, especially the forward guidance element was instrumental in reducing uncertainty and guiding financial markets during the pandemic. John *et al.* (2023) also observe that monetary policy surprises have been rare in the recent period and communication has been effective in anchoring market expectations.

The aforesaid studies are significant as they critically evaluate the role of communication on financial markets; however, they concentrate on quantitative policy rate decisions. The approach in the current study differs slightly by quantifying the tone of narrative communication in bi-monthly MPC resolutions and subsequently analysing its influence on market behaviour, in addition to examining the impact of rate decisions.

Two studies that are closely related to current research are Goyal and Parab (2021) and Mahambre and Pathak (2021). Goyal and Parab (2021) examine the influence of quantitative and qualitative communication on inflation expectations of professional forecasters. Using a sentiment dictionary, they quantify the qualitative communication and observe that its impact has increased since October 2016, following the adoption of FIT and constitution of MPC. Mahambre and Pathak (2021) analyse the minutes of MPC meetings and identify differences in communication between internal and external members, in terms of their emphasis on inflation and growth topics and sentiments. Mishra and Aastha (2023) analyse Monetary Policy Report (MPR) published by RBI on half-yearly basis in terms of readability and polarity.

Patra (2022 and 2023) highlights how monetary policy communication is being assessed internally within RBI, across multiple dimensions including

length and readability of monetary policy statements, sentiment analysis of statements of individual MPC members and their overall synergy, and media reception of speeches delivered on multiple occasions.

Taking motivation from international and India-specific studies, this paper attempts to analyse the MPC resolutions of the Reserve Bank. It examines shifts in monetary policy communication landscape, encompassing two significant crisis events *viz.*, the Covid pandemic and geopolitical conflict in Ukraine. Advanced natural language processing (NLP) methods are used to carry out topic modelling and communication tone extraction, details of which are presented in the subsequent sections.

III. Topic Modelling and Topic Evolution

In the monetary policy space in India, the deliberations in MPC meetings primarily focus on key topics including inflation, economic activity, policy decisions. It would be interesting to examine how the focus on these topics shifted during the last couple of years, and if any new topics emerged as the economic and financial conditions evolved and new risk factors come to the shore. Bi-monthly MPC resolutions have been considered for the analysis.

Topic modelling technique is used for identifying the topics and their respective proportions during the study period. Since the text is raw and unstructured, it needs to be pre-processed suitably before topic modelling. Latent dirichlet allocation (LDA) is an unsupervised machine learning algorithm and well established method for topic modelling in empirical studies (Benchimol *et al.*, 2021; and Hansen and McMahon 2016).

Underlying concept of LDA is intuitive *i.e.*, each document is a mixture of various topics and each topic is a mixture of various words/ terms. The advantage of this method is that model output is based entirely on the textual content and word frequency and co-occurrence in the documents. It creates groups of words, which are then labelled as a particular topic based on the primary theme represented by the frequently occurring words.

Subsequently, topic prevalence is derived in multiple steps as follows. It can provide information on how the focus on a topic changes, compared to other topics during the same time period and across different time periods as well. Individual paragraph of MPC resolutions is considered as a document for topic modelling.

Share of topic i in paragraph j of period t = $TS_{i,j|t}$ … (1)

A topic which has highest share, is assigned as the final topic for the specific paragraph, as below. This step is crucial as each topic gets a non-zero value of probability in each document.

$FT_{j|t} = i$, for which $TS_{i,j|t} = \max_i (TS_{i,j|t})$ … (2)

All paragraphs with same final topic are counted and the proportion during a particular period is derived, as below:

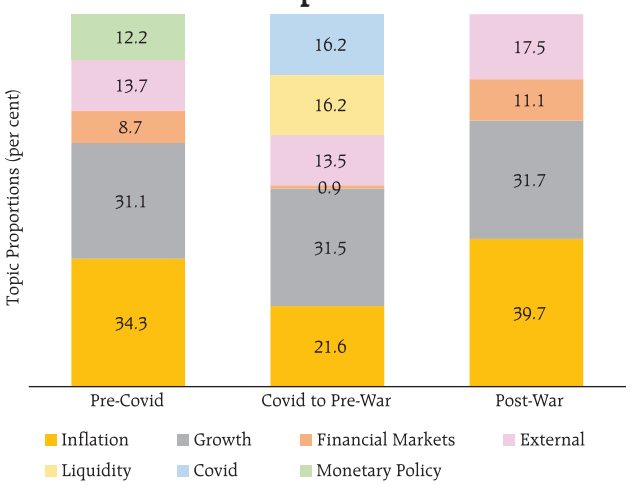
$$TP_{i|t} = \frac{\sum_{j=1}^{n} FT_{j|t}}{n} * 100 \quad \ldots (3)$$

The study period was categorised into three sub-periods and topic modelling was carried out separately for each sub-period to capture the detailed topics, some of which may be lost if the entire study period is used together. October 2016 to February 2020 has been defined as pre-Covid period, while March 2020 to February 2022 has been defined as Covid and pre-war period and March 2022 to August 2024 as post-war period.

Many key topics emerged, which were grouped into seven main topics to facilitate comparison across time periods, *viz.*, inflation, growth, monetary policy, financial markets, external sector, liquidity and Covid. An illustration of topics in terms of word clouds is provided in Annex I. The interplay of words even for the same topic shows how the different dimensions were discussed.

Topic modelling results show that emphasis of communication varied and evolved in line with the

Chart 1: Topic Evolution



Note: For the Covid to Pre-War period, monetary policy and growth topics have been combined, as they were discussed together. For the Post-War period, monetary policy and inflation topics have been combined.
Sources: RBI; and Authors' estimate.

prevailing conditions, as reflected in the relative share of each topic for each period (as per methodology outlined earlier in equations 1 to 3). During pre-Covid period, inflation remained the central topic of discussion, followed by growth (Chart 1).

The Covid phase during 2020 and 2021 impacted the economy adversely and MPC deliberations focussed on growth over inflation, as reflected in higher topic proportions. During this period, Covid related concerns and liquidity topics also received attention. Several liquidity augmenting measures, including conventional and unconventional, were taken by RBI during this period, to provide necessary stimulus to bring the economy back on track. However, most of the measures were rolled out with defined terminal dates, instead of being open ended. Such prudent and calibrated approach helped to anchor market expectations and restoring confidence (Das 2022b).

As the pandemic started to slowly wean off and the economy was seemingly on recovery path, the beginning of Russia-Ukraine war in 2022 posed another major challenge for the world. The global shocks, emanating from food, energy and other commodity prices, aggravated by supply disruptions, transmitted to the domestic economy and inflationary pressures in India started to build-up. Local factors such as weather shocks and recovery of domestic demand put further pressures and inflation became elevated (Das 2023a). The resultant price pressures shaped the deliberations in the subsequent MPC meetings, and inflation returned as the core topic. Focus on external linkages was also noticeably higher during this period. Repo rate tightening began in May 2022. Policy stance also shifted from being accommodative to withdrawal of accommodation[2].

In recent times, economic growth is showing resilience on account of domestic demand and consumption. Overall headline inflation has moderated; however, risks continue to linger due to elevated and volatile food prices. In such a scenario, prioritising inflation and aligning it to the defined target on a durable basis remains of utmost priority for monetary policy. Such statements convey a clear and significant message to stakeholders.

IV. Narrative Communication and its Impact on Financial Markets

The approach of quantification of communication tone and modelling framework for analysing its impact on financial markets is described below, followed by empirical results subsequently.

IV.1 Quantification of Communication Tone

Considering the specific nature and complexity of monetary policy, extraction of communication sentiment or tone is a specific task. Quantification of communication tone from textual policy documents is generally based on a customised dictionary, with words representing semantic orientation or polarity. The crucial aspect is that the dictionary should be able to capture the subtle nuances of policy communication.

Taking inspiration from relevant literature studies in monetary policy context, particularly the widely

[2] The stance shifted to neutral in October 2024.

used Apel and Blix Grimaldi (2012), a customised dictionary suitable for Indian context is developed. As communication style and choice of words may vary for different central banks, using a tailor-made dictionary for India may be useful in capturing the nuances and dynamics of communication. The dictionary of words is based on the corpus of MPC resolution documents collected for the study period and domain understanding of working at the central bank.

Delving deeper, tone of communication on inflation and growth is extracted separately, which is not usually seen in extant literature except for a few recent studies (Bouscasse *et al.*, 2023; and Gardener *et al.*, 2022). Detangling the sentiment holds significance and it can improve the understanding of how the markets perceive and react differently to communication on inflation and growth. The customised dictionary contains hawkish and dovish terms for inflation, and expansionary and contractionary terms for growth.[3] However, discussion in the subsequent paragraphs is in terms of optimistic/positive and pessimistic/negative tone. Accordingly, for each MPC resolution, the communication tone is derived in a manner that it represents the net optimism on inflation and growth, as below:

$$\text{MPC\_INF}_t = \frac{1}{N}\sum_{i=1}^{N}\left(\frac{D_{it}-H_{it}}{D_{it}+H_{it}}\right) \quad \ldots (4)$$

$$\text{MPC\_GR}_t = \frac{1}{K}\sum_{j=1}^{K}\left(\frac{E_{jt}-C_{jt}}{E_{jt}+C_{jt}}\right) \quad \ldots (5)$$

where,

D_{it} is number of dovish words in i^{th} sentence in t^{th} period

H_{it} is number of hawkish words in i^{th} sentence in t^{th} period

E_{jt} is number of expansionary words in j^{th} sentence in t^{th} period

C_{jt} is number of contractionary words in j^{th} sentence in t^{th} period

i / j is identified as a sentence related primarily to inflation / growth, respectively.

Communication tone on inflation (MPC_INF_t) indicates net optimism and may become positive when inflation is perceived to be low and/or within target, and negative during high inflation scenario. On the contrary, communication tone on growth (MPC_GR_t) may become positive when economic growth is perceived to be robust, and negative otherwise. An overall tone ($MPC\_OVERALL_t$) is also derived using the average of tone on inflation and growth.

IV.2 Methodology – Impact of Communication on Financial Markets

Change in market interest rates may arise on account of change in policy repo rate, the change in stance and other communication by policymakers. Among the various interest rates prevailing in financial markets, OIS rates are used widely in international empirical literature to measure policy expectations of market participants. In the Indian context, a detailed discussion on OIS rate and its linkages with monetary policy can be found in Patra *et al.*, 2023 and John *et al.*, 2023. Accordingly, MIBOR-based OIS rates at different tenors are examined in the current study.

As the objective is to empirically assess the role of monetary policy communication and policy rate decisions, communication tone on inflation and growth, and the overall tone are taken as explanatory variables. The weighted average call money rate (WACR), the operating target of monetary policy, is also included in the analysis as it influences market rates.

Using an event study approach, where each monetary policy announcement day is considered as an event, the average of WACR and OIS rates have been computed for pre and post policy and their difference have been used for the analysis. A window

[3] The dictionary consists of approximately 600 words in original form (without stemming) and tone is defined in a contextual manner. Some words which may be optimistic in context of growth may be negative in case of inflation, *e.g.*, increase in manufacturing activity is considered expansionary / positive / optimistic, while increase in inflation is considered hawkish / negative / pessimistic sentiment.

of five days pre and post policy is considered to capture the impact of policy communication on OIS rates adequately[4]. Such event study based approach is essential to segregate the influence of monetary policy from other events which may influence markets (John *et al.*, 2023; Ahmed *et al.*, 2022; and Hubert and Labondance, 2019).

The modelling framework is described as below, using alternate specifications. OIS rate at different tenors are analysed, in order to examine the differential impact of change in *WACR* and communication tone at shorter to medium horizons.

$$\Delta OIS\_f_t = \alpha + \beta\, \Delta WACR_t + \varepsilon_t \quad \ldots (6)$$

$$\Delta OIS\_f_t = \alpha + \beta\, \Delta WACR_t + \gamma\, MPC\_OVERALL_t + \varepsilon_t \quad \ldots (7)$$

$$\Delta OIS\_f_t = \alpha + \beta\, \Delta WACR_t + \gamma\, MPC\_INF_t + \varepsilon_t \quad \ldots (8)$$

$$\Delta OIS\_f_t = \alpha + \beta\, \Delta WACR_t + \lambda\, MPC\_GR_t + \varepsilon_t \quad \ldots (9)$$

$$\Delta OIS\_f_t = \alpha + \beta\, \Delta WACR_t + \gamma\, MPC\_INF_t + \lambda\, MPC\_GR_t + \varepsilon_t \quad \ldots (10)$$

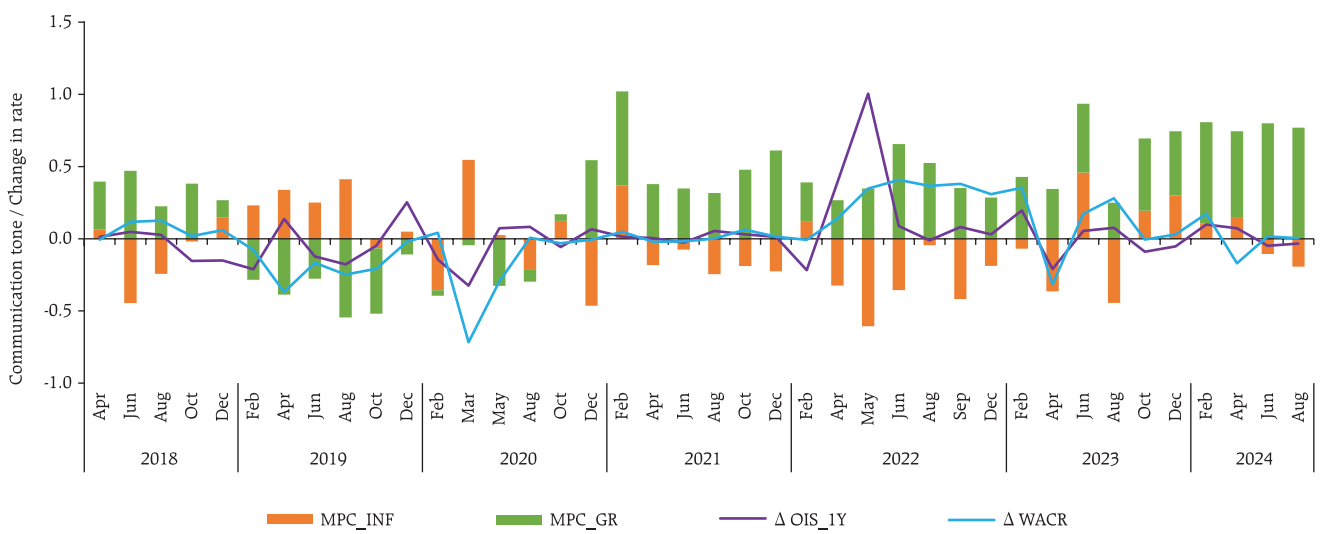
where, ΔOIS_f_t represents change in OIS rate pre and post policy in period t, with f indicating tenor of OIS rate (one month to one year), $\Delta WACR_t$ indicates change in *WACR* and MPC_INF_t and MPC_GR_t and $MPC\_OVERALL_t$ indicate communication tone on inflation, growth and overall tone, respectively.

IV.3 Empirical Results

Monetary policy communication tone on inflation (*MPC_INF*) evolved with time and resonated well with the policy cycle during the period April 2018 to August 2024. The tone was generally negative during the tightening period, and positive during the easing period. It turned increasingly negative during April-June 2022, as Ukraine crisis began to unfold and price pressures intensified (Chart 2).

The communication tone on growth (*MPC_GR*) moved in tandem with prevailing and emerging economic conditions. During the second half of 2019, when growth slowdown was observed, the outlook on growth turned negative. Further, when the Covid pandemic adversely affected the Indian economy, the tone became pessimistic. However, the tone became positive with the recovery and remained in the positive territory with minor fluctuations.

Chart 2: Communication and Interest Rate Movement



Sources: RBI; Financial Benchmarks India Pvt. Ltd. (FBIL); and Authors' estimate.

[4] While a quantitative change in repo rate may influence market rates immediately or next day, narrative communication by the RBI is discussed for longer duration and therefore it is considered appropriate to take a window of five days.

Table 1: Correlation

	ΔOIS_1M	ΔOIS_2M	ΔOIS_3M	ΔOIS_6M	ΔOIS_9M	ΔOIS_1Y
ΔWACR	0.74***	0.66***	0.61***	0.50***	0.49***	0.48***
MPC_INF	-0.50***	-0.49***	-0.50***	-0.47***	-0.46***	-0.46***
MPC_GR	0.27	0.20	0.19	0.16	0.15	0.16
MPC_Overall	-0.13	-0.19	-0.20	-0.21	-0.21	-0.20

Note: *** indicates statistical significance at 1 per cent level.
Sources: RBI; FBIL; and Authors' estimate.

During a period marked by high inflationary concerns, the likelihood of repo rate increase may result in an increase in the OIS rates. During such times, the inflationary concerns would be reflected in the negative tone in communication on inflation. Such underpinnings may result in an overall inverse relationship between OIS and communication tone on inflation.

It is observed that OIS rates tend to follow changes in repo rate in similar direction. However, OIS rates may not alter much if market has anticipated the increase or decrease in the policy rate in advance, reflecting alignment of expectations. Such changes may be significant in situations when repo rate changes are sharp and indicative of beginning of easing or tightening phase.[5]

Correlation analysis reaffirms the aforesaid theoretical underpinnings. It is observed that WACR and short-term OIS rates share a high positive correlation, while the correlation declines for longer tenor of OIS rates. The OIS rates are negatively correlated with communication tone on inflation, which is consistent throughout. On the contrary, the OIS rate is found to be weakly related to communication tone on growth, which is statistically insignificant. Further, the combined tone also does not show any significant correlation with change in OIS rate at any tenor. This also strengthens the idea that markets react to communication on inflation and growth in a different way, and a combined tone may not reveal the actual influence (Table 1).

Next, the relationship between OIS and WACR and communication tone is estimated by using the modelling framework described earlier. As the growth tone and overall tone were not significantly correlated with change in OIS rates, the regression model also did not yield any significant result (model results are not shown for brevity).

The empirical results of the model which uses change in WACR and communication tone on inflation (equation 8) is presented in Table 2. It is observed that change in WACR emanated as a major factor for change

Table 2: Impact of Communication on OIS Rates

	ΔOIS_1M	ΔOIS_2M	ΔOIS_3M	ΔOIS_6M	ΔOIS_9M	ΔOIS_1Y
ΔWACR	0.483***	0.372***	0.328***	0.287**	0.300**	0.302*
MPC_INF	-0.091	-0.103	-0.129	-0.178*	-0.194*	-0.211*
Constant	-0.026	-0.012	-0.008	-0.002	0.001	0.005
Observations	40	40	40	40	40	40
Adjusted R^2	0.54	0.44	0.39	0.27	0.26	0.25

Note: ***, ** and * indicates statistical significance at 1 per cent, 5 per cent and 10 per cent respectively. Serial correlation and heteroscedasticity was not observed in residuals of OLS regression model as per usual diagnostic tests (results not presented for brevity). Volatility clustering is generally observed in daily financial market data; however, no such clustering was detected in current study (data is transformed as per event study design).
Sources: RBI; FBIL; and Authors' estimate.

[5] For example, 40 bps increase in repo rate in May 2022 after a long pause triggered hardening of OIS rates (100 bps increase in 1-year OIS rate), while inflation tone became substantially negative.

Table 3: Impact of Communication on OIS Rates – Different Policy Cycles

	ΔOIS_1M	ΔOIS_2M	ΔOIS_3M	ΔOIS_6M	ΔOIS_9M	ΔOIS_1Y
ΔWACR	0.384***	0.252**	0.201	0.127	0.154	0.139
MPC_INF_Easing	-0.235	-0.253	-0.246	-0.207	-0.187	-0.225
MPC_INF_Tightening	-0.230	-0.301**	-0.385**	-0.625***	-0.639***	-0.684***
MPC_INF_Neutral	-0.026	-0.020	-0.038	-0.054	-0.077	-0.083
Constant	-0.024	-0.012	-0.012	-0.020	-0.019	-0.015
Observations	40	40	40	40	40	40
Adjusted R^2	0.54	0.45	0.42	0.36	0.33	0.32

Note: ***, ** and * indicates statistical significance at 1 per cent, 5 per cent and 10 per cent respectively.
Sources: RBI; FBIL; and Authors' estimate.

in short-tenor OIS rate (1-3 month), with a significant and positive impact, though the impact progressively declines for longer tenor OIS rates[6].

As expected, the coefficient of communication tone on inflation is negative. Interestingly, the communication impact matters for the longer-tenor rates, as reflected in the statistically significant coefficient values. In addition, progressively higher impact is seen for higher tenors (6 months or more). It shows that policy communication matters more for medium-term OIS rates, which are significant from market expectation dimension.

In policy paradigm, the communication impact may not be symmetric, in the sense that market expectations may be conditioned differently during different policy cycles, depending on changing communication dynamics. The above model is re-estimated to examine the differential impact of monetary policy communication during the period April 2018 to August 2024. Inflation tone dummies are created depending on the policy regimes *viz.*, easing, tightening and status-quo.

Various insightful results emerge. First, the impact of WACR weakens substantially when inflation tone dummies are introduced, as compared to the model shown in Table 2. Second, the impact of policy communication on inflation is found to be statistically significant and substantially higher during the policy tightening phase, as compared to other phases. Further, the communication during the tightening phase matters for all tenors of OIS, except 1-month (Table 3).

V. Conclusion

The adoption of FIT framework and constitution of MPC in 2016 has marked a new regime of monetary policymaking in India. Along with this, emphasis on communication has increased further in order to enhance transparency and anchor expectations. Clear communication enables policymakers to convey more effectively the changing circumstances, risks and policy intentions. Providing confidence to the public and markets during uncertain periods poses challenges, necessitating a balanced and prudent approach of communication. An evaluation of communication effectiveness in supporting the policy goals has emerged as a key research topic, supported by emerging NLP techniques.

This article contributes to the fast-growing domain focussing on monetary policy communication in India and examines two key aspects - first, how the contours of communication have shifted in response to the evolving economic conditions and second, the evolution of sentiment or tone expressed in MPC resolution documents, and its influence on financial markets. Communication tone is based on a customised dictionary that can capture the nuances of policy communication in India.

[6] The results of the benchmark model with only WACR (equation 6) indicated that the coefficient of WACR follows similar progressively declining pattern, however, adjusted R-square was lower than combined model presented in Table 2 (results not presented for brevity).

The analysis shows that content and emphasis on topics varied in MPC deliberations, depending on emerging conditions and uncertainties due to unprecedented crisis episodes. Inflation remained as the central topic of discussion, followed by growth during the pre-pandemic period. This sequence reversed during the pandemic episodes, and liquidity and Covid topics also received attention. The geopolitical crisis in 2022 and the resultant inflationary pressures shaped subsequent MPC discussions with inflation returning as the core topic, while focus on external linkages also increased. The communication tone on inflation is found to play a significant role in shaping up market expectations, especially for medium-horizon OIS rates. The impact of communication is observed to be higher during the tightening phase.

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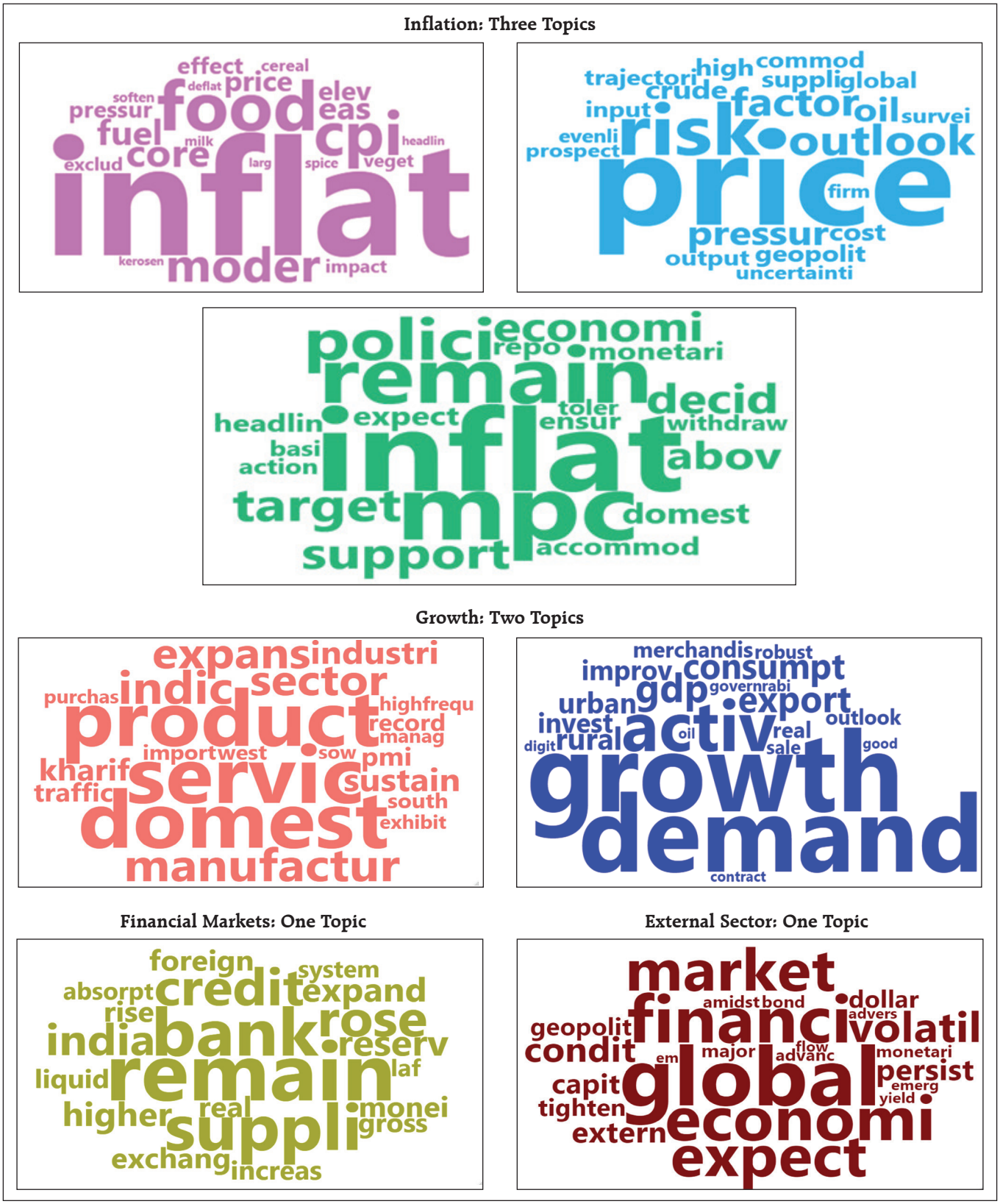
Annex I: Major Topics during Post-War Period[7]



[7] Word clouds are based on stemmed words, which present root form of a word.

Agri-Tech Startups and Innovations in Indian Agriculture

by D. Suganthi, Jobin Sebastian and Monika Sethi

This article examines the evolution of Indian agri-tech landscape, which has significant growth potential to emerge as an institutional innovation for bridging the technological gap. Advanced technologies, access to accelerators and incubators, founders' education and past experience, funding status and access to both domestic and foreign institutional investors positively influence the likelihood for a startup to develop innovative on-farm technologies. A survey of agri-tech startups shows that they benefit from government's funding support, research and development and state support in the form of digital infrastructure, while lack of adequate funding, fragmented land holdings and longer time to revenue matrix are the major factors hindering their growth prospects.

Introduction

The agriculture sector contributes around 15 per cent to the Gross Value Added (GVA) and employs 46 per cent of the total workforce in India. Technology adoption can successfully address impediments that the sector faces, such as low productivity, escalating input costs, climate change-related threats, price volatility, value chain inefficiencies, fragmented landholdings, and resource depletion. In recent years, agri-tech startups in India have evolved as an institutional innovation for bridging the technological gap and for enhancing farm incomes. Despite being in its nascent stage, the agri-tech startup ecosystem is accelerating and has been attracting private corporate funds.

Emerging technologies such as the Internet of Things (IoT), big data analytics, artificial intelligence (AI), blockchain, remote sensing, biotechnology, drones, robotics and automation are being employed by several startups (Agarwal *et al.*, 2022). The policy support rendered by the government in the form of 'Digital India', 'Make in India', startup funds and accelerator and incubator[1] support initiatives, further accentuated by opportunities generated during the pandemic, have been essential facilitators of agri-tech startups' growth.

The early focus of Indian agri-techs was on developing innovative business models for disintermediation in the fragmented supply chain in the agriculture sector. Now, they are in many sectors like input and advisory platforms, in-farm traceability solutions and farm management solution providers to enable seed-to-fork traceability (Agarwal *et al.*, 2022; Adhya and Sahoo, 2022). Several startups are currently adopting the 'phygital' model, which blends a digital and physical strategy to foster trust among farmers.

The existing literature on agri-techs in India is generally limited to providing an overview of the sector, nature of innovations and technologies, diversity in the startup ecosystem, stages of evolution of the startups and policy thrusts provided by both state and central governments (Nuthalapati and Nuthalapati, 2021; Adhya and Sahoo, 2022). There is, however, limited focus on the factors that drive agri-techs' developing innovative on-farm technologies and fundraising. To bridge this gap in the literature, the present study attempts to analyse the existing startup environment in India with special reference to its drivers, diversity, impediments, and policy alternatives. The article also discusses the agri-tech startups' perspectives on fundraising, growth and scalability impediments using data from a primary survey on agri-tech startups in India.[2]

^ The authors are from the Department of Economic and Policy Research (DEPR), Reserve Bank of India (RBI). The authors are grateful to Shri. Rajib Das, Smt. Rekha Misra and editorial committee for their valuable inputs. The authors are thankful to respondents of online Agri-tech Startups Survey. The views expressed in the article are those of the authors and do not represent the views of the RBI.

[1] An incubator is a programme that provides access to mentorship, investors, and other forms of assistance to help establish very early-stage startup. An accelerator is an initiative that provides developing startups access to mentorship, investment capital and additional resources to assist them in establishing themselves as self-sufficient stable firms.

[2] An online primary survey was conducted using a pre-structured questionnaire to get the perspectives of agri-tech startups in India regarding the nature of difficulties they face.

The analysis in this article suggests that employing advanced technologies (AI or blockchain), access to accelerators and incubators, founders' past experience in the area of agriculture, founder's education, funding status and access to both domestic and foreign institutional investors positively and significantly influence the likelihood for a startup to develop innovative on-farm technologies. Furthermore, the age of the firm, support rendered by accelerators and incubators, founders' association with premier institutions and their experience positively influence the probability of funding, and hence act as drivers of agri-tech startup funding.

The remainder of the article is organised into five sections. Section II presents a review of the literature; Section III provides an overview of the agri-tech startup ecosystem; Section IV undertakes an empirical exploration of factors influencing the development of on-farm technologies; Startups' perspectives through a primary survey on impediments to their growth and scalability are discussed in Section V with concluding remarks in Section VI.

II. Review of Literature

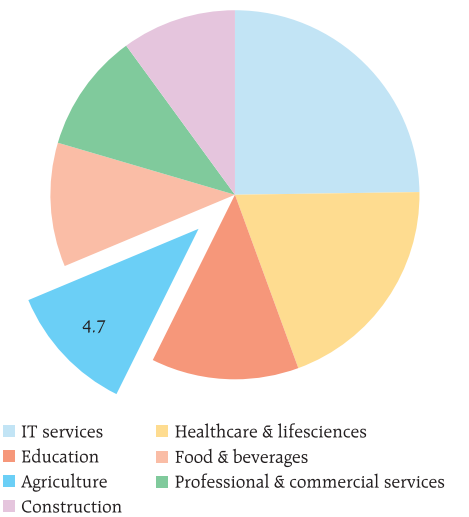
Innovation enables the success of organisations, irrespective of their size and sector. Creative destruction, put forth by Joseph Schumpeter[3], postulates innovation as the driving force of market economies. According to open innovation theory (Chesbrough, 2003), inter-firm collaboration and knowledge spillovers are facilitated by the proliferation of new digital technologies, globalisation and advancement of engineering technology innovation (Tambe *et al.*, 2012; Roper *et al.*, 2017; Knoben and Bakker, 2019).

The idea of open innovation is acquiring traction among agri-techs in India, especially in the food value chain sector (Nuthalapati and Nuthalapati, 2021; Nuthalapati *et al.*, 2020). Open innovation has led to an intricate web of interdependence among startups and their business partnerships with input companies, processors, e-commerce companies, research organisations, universities, incubators, accelerators and state and central governments. These rapidly expanding knowledge transfers have spawned several cutting-edge innovations in the agricultural sector. Rising innovation costs and resource scarcity also force startups to look outside for strategic partnerships to jointly produce knowledge (Korreck, 2019).

III. Startups in India -An overview

According to the Department of Promotion of Industry and Internal Trade (DPIIT), an Indian startup is defined based on criteria such as the company's age, type, annual turnover, original entity innovation and scalability[4]. Around 1.3 lakh startups have been recognised by DPIIT; within that, the agricultural sector constitutes around 4.7 per cent of the startups (as on May 27, 2024) [Chart 1]. Within the agricultural sector, tech startups primarily include crop-tech, followed by livestock-tech and others (Chart 2).

Chart 1: Major Industry-wise Breakup of Startups (Per cent)

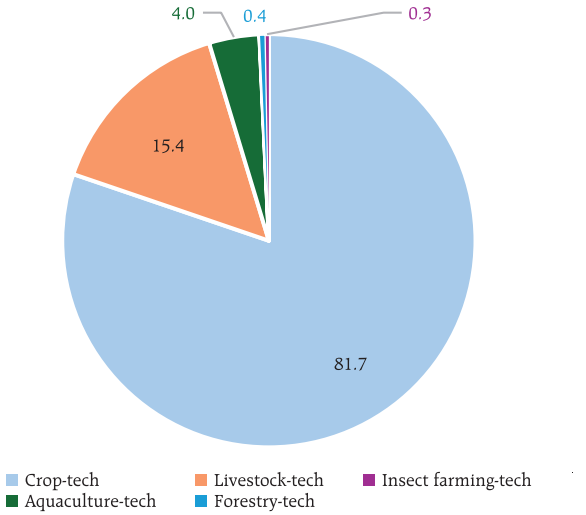


Source: DPIIT.

[3] Schumpeter, J. A. (1942). Capitalism, Socialism and Democracy, Harper & Brothers, United States of America.

[4] https://www.startupindia.gov.in/, The Gazette of India No. 111, February 19, 2019.

Chart 2: Taxonomy of Agri-tech Startups (Per cent)



Source: Tracxn.

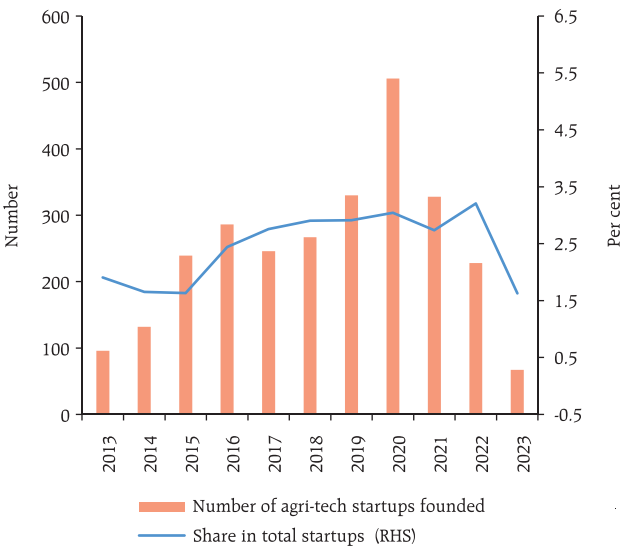
The number of agri-techs founded peaked in 2020 (Chart 3). Location-wise, six major cities account for half of the agri-tech startups (Chart 4).

a. Startup Lifecycle and Funding

The lifecycle of a startup comprises five stages - ideation, validation, early traction, scaling and exit options. The ideation stage is the starting point where ideas are converted into a business opportunity. The validation stage focuses on orienting the company to broader customers. The early traction stage involves crafting a minimum viable product and refining the same to gain traction. The subsequent growth stages are the scaling and exit stages that involve scaling to the bigger market, generating long-term profitability and expanding to other market segments. The exit stage options include getting acquired or becoming publicly listed companies.

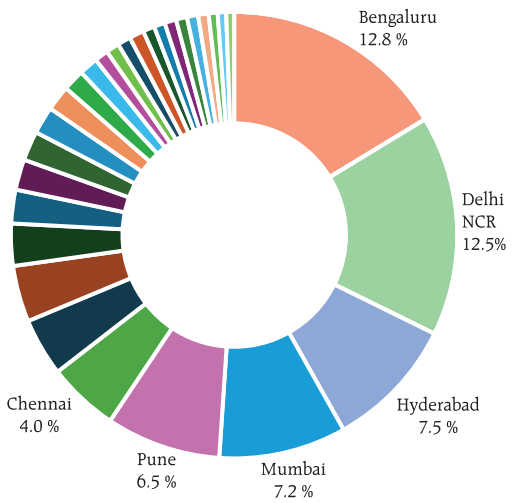
Similarly, the funding stages of startups involve five stages - pre-seed/bootstrapping, seed, early stage, late stage and fundraising through initial public offers (IPO) [Salamzadeh and Kesim, 2015]. The bootstrapping stage is characterised by self-financing or through family and friends or angel investors. At the seed stage, funding comes from family and friends, incubators, angel investors and crowdfunding. This is followed by the early stage, involving funding from venture capitalists, institutional investors, and accelerators. In the late stage, funding is obtained from private equity firms and institutional investors.

Chart 3: Number of Agri-tech Startups Founded



Source: Tracxn (Data as on May 27, 2024).

Chart 4: City-wise Distribution of Agri-tech Startups in India



Source: Tracxn (Data as on May 27, 2024).

b. Global Funding to Agri-techs

Global funding to agri-techs reached a peak of US$ 10.9 billion in 2021 and 2022, thereafter moderated sharply to US$ 5.2 billion in 2023 (Chart 5). In the global farm-tech space, biotechnology (sustainable inputs), novel farming system and farm management software are the key sectors (Chart 6). The investments in novel farming solutions and sustainable inputs have prioritised enhancement in crop productivity and bolstering disease resistance and climate shocks (Goh, 2022).

Similarly, in the in-farm category, technology advancements (robotics, AI, IoT, and data analytics) have facilitated the automation of farms, precision agriculture, remote sensing, advisory services, and farm management. Traceability and agri-carbon are emerging areas in the agri-tech space worldwide (Goh, 2022). As regards the share of agri-tech companies by funding, the US holds the highest share (43.2 per cent), followed by China (14.4 per cent), Canada (12 per cent) and India (8.5 per cent) [Chart 7]. The Indian agri-tech ecosystem has thus garnered a significant share of global funding.

c. Growth of India's Agri-tech Ecosystem and Government's Support to Agri-techs

India's agri-tech ecosystem witnessed a huge surge in investor interest. With investments increasing from US$ 370 million in 2019 to US$ 1.25 billion in 2021; the investor interest moderated thereafter, mirroring global trends (Chart 8). Although only a single unicorn is identified in the Indian agri-tech landscape, the total number of agri-tech soonicorns[5] and minicorns[6] is estimated at 19 and 40, respectively.

Chart 5: Global Investment Trend among Farm-techs

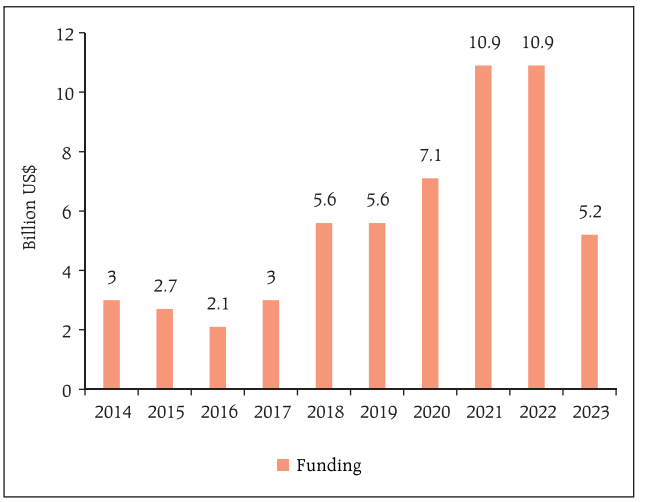
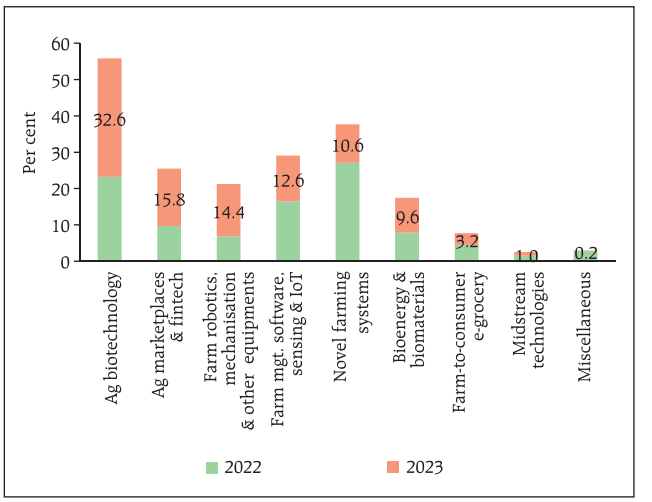


Chart 6: Global Investment in Key Farm-tech Sectors



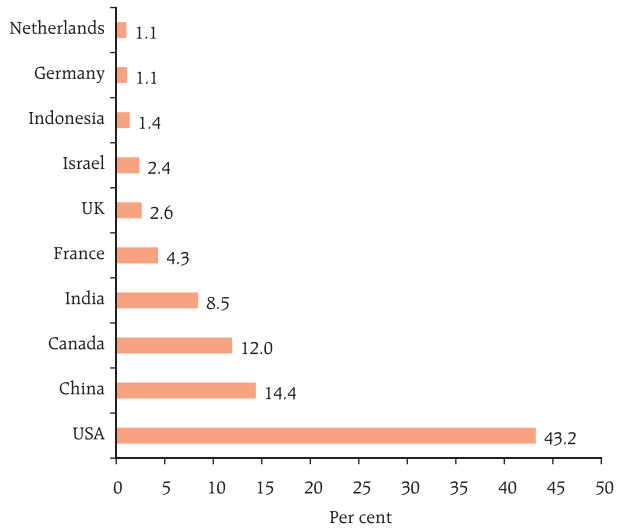
Notes: 1. Ag refers to Agriculture.
2. Ag biotechnology: On-farm inputs for crop and animal agriculture, including genetics, microbiome, breeding, and animal health.
3. Ag Marketplace & Fintech: Commodities trading platforms, farmer fintech, online input procurement, equipment leasing.
4. Farm robotics, mechanisation and equipment: On-farm machinery, automation, drone manufacturers, grow equipment.
5. Farm management software, sensing and IoT: Ag data capturing devices, decision support software, big data analytics.
6. Novel farming systems: Indoor farms, aquaculture, insect, and algae production.
7. Bioenergy & Biomaterials: Non-food extraction and processing, feedstock technology, cannabis pharmaceuticals.
8. Farm-to-consumer e-grocery: Online platforms for farmers to market for direct delivery of their produce to consumers.
9. Midstream technologies: Food safety and traceability tech, logistics and transport, processing tech.
10. Miscellaneous: All other agrifood-related tech.

Source: AgFunder.

[5] Startup having growth potential and the possibility of joining a unicorn club is called Soonicorn.

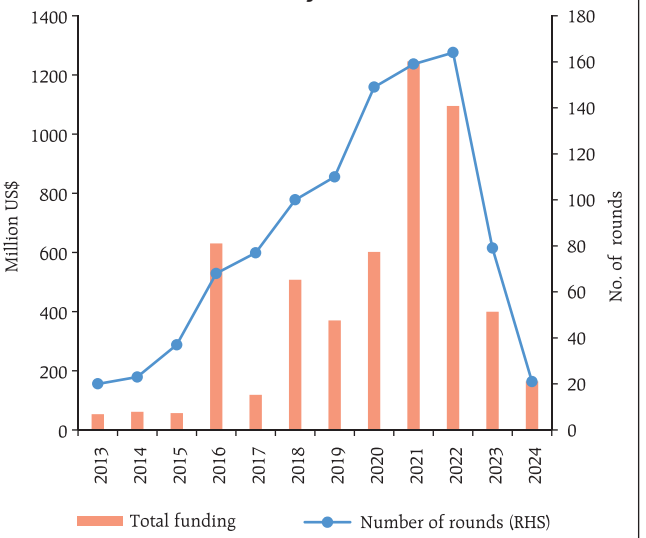
[6] Minicorn startups are companies with valuations of more than US$ 1 million, and they are still on the rise to become a unicorn business.

Chart 7: Distribution of Agri-techs Across the Globe by Funding (Per cent)



Source: Tracxn (Data as on May 27, 2024).

Chart 8: Investment Trends in Indian Agri-tech (as on May 27, 2024)



Source: Tracxn.

The development of innovative agri-tech products and the pace of technology commercialisation and farmer adoption benefit from the support of the government (Newell *et al.*, 2021; Saroy *et al.*, 2023). The central government promotes agri-preneurship and innovation through initiatives that reduce regulatory barriers, develop innovation-driven infrastructure facilities, and promote active collaboration among entrepreneurs (Anand and Raj, 2019). It plays a significant role in building a robust ecosystem for nurturing innovation and facilitating agri-tech mainstreaming by developing agri-stack.[7]

National Strategy on AI recognises agriculture as one of the priority sectors for implementing AI-driven solutions (Mahindru, 2019). The inception of Agribusiness Incubator Centres (ABIs)[8], establishing investor networks, accelerators, and Agri India Hackathons[9] support the growth of the agri-tech ecosystem. Furthermore, a special fund for agri-techs, reducing the barriers to the use of drones for agricultural activities and several state government initiatives (such as Telangana's Agri-hub sandbox, Karnataka's E-*Sahamathi* and Maharashtra's *Maha*-Agri-tech project) are encouraging agri-preneurship.

d. Funded Agri-tech Startups across Sectors

Venture capital firms are the primary source of funding available for startups at all stages, alongside private equity firms and individual investors known as angels (Saroy *et al.*, 2023).[10] Among agri-techs, the share of e-commerce startups founded and funded is substantially higher than others (Charts 9a and 9b). Nevertheless, the share of startups that have not raised funds stands at 66 per cent (Chart 9c). The inability to raise sufficient funds is found to be the major reason behind failure of start-ups (Anand and Raj, 2019). Also, not all startups reach the scaling-up stage; while some get acquired, others end up in the deadpool (18 per cent).

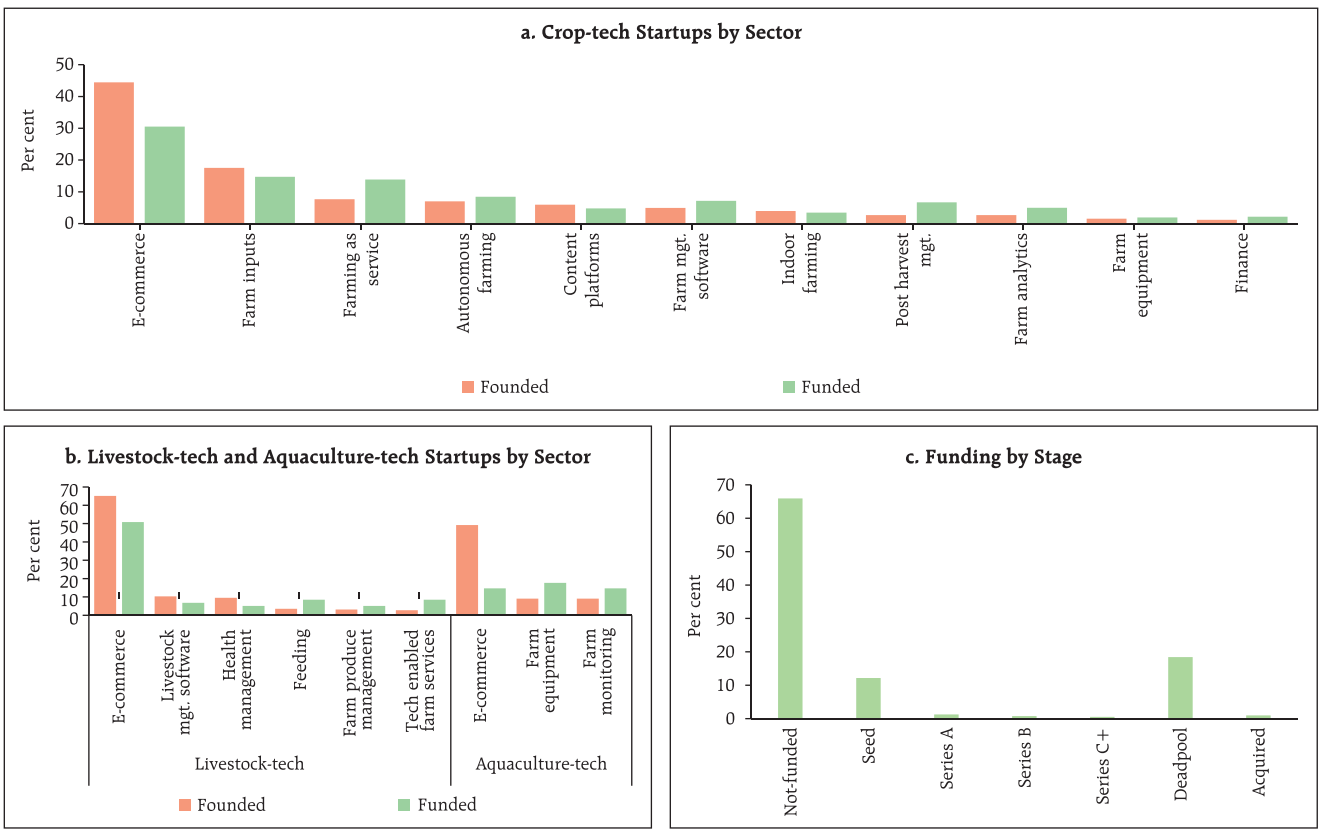
[7] Agri-stack is a government's initiative to establish an ecosystem that streamlines the provision of digital agriculture services, such as access to high-quality inputs and responsible advisories. It is also a collection of databases, registries, data standards, application programming interfaces (APIs), and policies.

[8] https://www.manage.gov.in/managecia/ViewAgriResources.aspx

[9] The Agri India Hackathon is the preeminent virtual programme dedicated to fostering discourse and expediting agricultural innovation.

[10] Saroy *et al.* (2023) provides detailed discussion of the mechanisms through which venture capitalists invest in startups and the advantages of their association with firms.

Chart 9: Sectors Within Agri-tech Startups: Founded and Funded



Note: Seed, Series A, B, and C+ represent successive rounds through which agri-techs raise money from funds, high net-worth individuals and other businesses. Deadpool represents defunct agri-techs.
Sources: Tracxn; and Authors' calculations.

IV. Factors Driving Development of On-farm Productivity Enhancing Technologies by Agri-techs

The drivers of the development of innovative productivity-enhancing on-farm technologies are examined in this section using cross-sectional data on 780 firms.[11] The underlying factors driving the development of on-farm technology startups are very different from those driving e-commerce startups. Some of these are unobservable factors (entrepreneur abilities or network effects of founders) that lead to a non-random selection of startups developing on-farm technologies. These unobservable factors could also be correlated with other observable characteristics, such as funds raised or employing advanced technologies like AI or blockchain.

So, an instrument that is highly correlated with funding or use of advanced technologies is required and should affect firms' decision to develop on-farm technology only indirectly through these variables. The variables, such as the founder's past experience in a similar field as that of the current startup and their agricultural experience, are possible instruments. The founder's experience, however, influences both firms' fundraising capabilities as well as their investment decisions directly. Hence, it is not easy to disentangle the effect of experience on the decision to develop on-farm technology and fundraising capabilities. The estimation is based on logistic regression and the results of determinants of firms' decision to develop

[11] The data was accessed from Tracxn database on June 26, 2023. Although 3,111 companies are covered in the research, a sub-sample was selected to ensure data completeness. In the resulting sample, the share of Early (seed stage), Mid (series A and B) and Late-stage (series C+) startups was 29 per cent, 10.4 per cent and 5 per cent, respectively. The share of unfunded startups was 56 per cent from a variety of sectors within agri-tech startups. This is a fairly representative sample.

on-farm technologies should, therefore be interpreted as correlation rather than causation.

The following multivariate regression equation was estimated using logistic regression to identify drivers of on-farm technologies:

$$I_i = \begin{cases} 1 \; if \; I_i^* > 0, \\ 0 \; if \; I_i^* \leq 0, \end{cases}$$

$$I_i^* = \alpha + \beta_1 \boldsymbol{X_i} + \beta_2 \boldsymbol{Z_i} + \varepsilon_i$$

where *i* represent the firm.

Where I_i denote the dichotomous indicator for a firm *i*'s status of investment and I_i^* is a continuous latent variable to determine the status. The dependent variable is binary, taking value 1 if the startup operates in innovative productivity enhancing on-farm technologies (non-e-commerce) and 0 if the firm is an exclusive online marketplace for output and/or input. $\boldsymbol{X}_i$ represents a vector of founder-specific characteristics such as their human capital (including Ph.D. degree of the founders), their association with premier institutions (IITs and IIMs or studied overseas), and previous work experience similar to the present startup operations - at least one of the founders has worked or founded a firm similar in nature of the present startup (e-commerce or non-e-commerce) and their experience in the agriculture sector. These variables are in line with the previous empirical work undertaken by Honjo *et al.* (2022). $\boldsymbol{Z_i}$ represents a vector of a firm *i*'s characteristics including age of the firm, location and multiple indicators of funding status. These include whether a firm is funded or not, the stage of funding and the type of institutional investors (domestic or foreign). The funding stage categories are: early (Seed), mid (Series A and B), and late (Series C and above) companies. To account for the use of advanced technologies by the firms, a dummy variable was created. It takes value 1 if the companies use technologies such as AI, blockchain, genomics, software for operating precision technology, drones, sensors, and weather forecasts and 0 otherwise. To gauge the central or state government's policy support, another dummy variable capturing access to accelerators and incubators was employed and ε_i is an error term.

The results show that the age of the firm employing advanced technologies and access to accelerators and incubators positively influence the likelihood of developing innovative productivity-enhancing on-farm technologies (Table 1). Founders' experience increases the probability of investment in on-farm technologies; however, experience in agriculture has no significant influence. Founders with both management and engineering degrees are positively associated with investment in e-commerce, while founders with Ph.D are positively associated with the likelihood of developing on-farm technologies. Having funding and access to both domestic and foreign institutional investors is positively and significantly associated with the likelihood of developing on-farm technologies. At the same time, startups in the seed stage of funding or new startups are positively associated with developing on-farm technologies, indicating growth momentum.

Given the fact that only 34 per cent of agri-techs are funded, understanding the characteristics of the firms and founders that attract funding assumes significance from a public policy perspective. The analysis shows that the age of the firm, support rendered by accelerators and incubators, founders' association with premier institutions and their experience are positively associated with the probability of funding (Table A1).

V. Identifying Challenges: Perspective from Agri-tech Startups Survey

Despite the progress made so far, agri-techs in India face challenges in scaling up their operations. The sustainability of agri-techs is directly proportional to the adoption of modern technologies by the farmers. The impediments to scaling up their

Table 1: Drivers of Agri-tech Startups Developing Innovative Productivity Enhancing Technologies

	Model 1		Model 2		Model 3	
	Tech based#	Marginal effects	Tech based	Marginal effects	Tech based	Marginal effects
Age of the firm	0.141*** (0.02)	0.028*** (0.004)	0.154*** (0.03)	0.028*** (0.005)	0.135*** (0.02)	0.027*** (0.004)
AI and blockchain technology application	2.316*** (0.44)	0.364*** (0.039)	2.961*** (0.65)	0.379*** (0.035)	2.213*** (0.45)	0.351*** (0.042)
Incubator/Accelerator access	0.378 (0.29)	0.074 (0.056)	0.714* (0.43)	0.127* (0.072)	0.319 (0.27)	0.062 (0.060)
Education of the founder: Engineering (base)						
MBA	-0.406 (0.27)	-0.082* (0.042)	-0.107 (0.33)	-0.020 (0.047)	-0.369 (0.21)	-0.074* (0.055)
MBA and Engineering	-0.652*** (0.24)	-0.133*** (0.049)	-0.451 (0.29)	-0.085 (0.054)	-0.658*** (0.25)	-0.134*** (0.049)
Science	-0.389* (0.20)	-0.079* (0.054)	-0.411 (0.26)	-0.078 (0.048)	-0.346 (0.21)	-0.069 (0.042)
Ph.D.	1.500*** (0.57)	0.240*** (0.067)	1.201** (0.60)	0.189** (0.078)	1.466** (0.57)	0.236** (0.069)
Founders' past experience	0.381** (0.18)	0.076** (0.037)	0.550** (0.22)	0.104** (0.042)	0.341* (0.19)	0.067* (0.038)
Founders' agricultural experience	0.255 (0.21)	0.041 (0.041)	0.224 (0.26)	0.041 (0.048)	0.326 (0.22)	0.064 (0.042)
Funded	0.494** (0.21)	0.098** (0.041)				
Funding stage: not funded (base)						
Seed-stage			0.612** (0.27)	0.112** (0.047)		
Mid-stage			-0.003 (0.37)	-0.001 (0.071)		
Late-stage			0.057 (0.49)	0.010 (0.092)		
Type of institutional investor						
Domestic					0.512* (0.29)	0.102* (0.057)
Foreign					0.696*** (0.24)	0.137*** (0.047)
Founded during COVID-19	0.401 (0.30)	0.077 (0.057)	0.338 (0.33)	0.061 (0.058)	0.459 (0.310)	0.088 (0.058)
Location	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-1.268*		-1.244		-1.245*	
	(0.73)		(0.78)		(0.72)	
No. of observations	778		551		751	
R-square	0.159		0.188		0.159	

Notes: 1. #The tech-based agri-tech startup include non-ecommerce firms (farming as a service, farm management, autonomous farming, farm analytics, post-harvest management, farm equipment, livestock management software, livestock farm intelligence, end-to-end livestock farm automation, finance and hygiene and waste management). The e-commerce startups are into marketing of output and inputs on online market place.

2. ***, **, * represents 1 per cent, 5 per cent and 10 per cent levels of significance, respectively. The standard errors reported in the parentheses are robust standard errors.

Source: Authors' estimates.

operations include fragmentation, lack of standard data architecture and cross-platform interoperability alongside lower revenues, financing issues, regulatory and taxation complexities, lack of skilled workforce and customer awareness (Peram and Koteswari, 2018; David *et al.*, 2020; Fiocco *et al.*, 2023). Farmers are increasingly getting more open to innovation, although the adoption among them is slow (Fiocco *et*

al., 2023). While agri-techs have received high private equity investments in the past few years (GoI, 2023), funding remains a critical challenge for tech startups.

To further explore these aspects, an online primary survey was conducted to get the perspectives of agri-tech startups in India. A questionnaire covering issues related to challenges faced by agri-techs, difficulties in working with the farmers and perspectives on existing and required policy support was sent online to around 300 agri-techs.[12] The responses received from 40 agri-techs are summarised below.

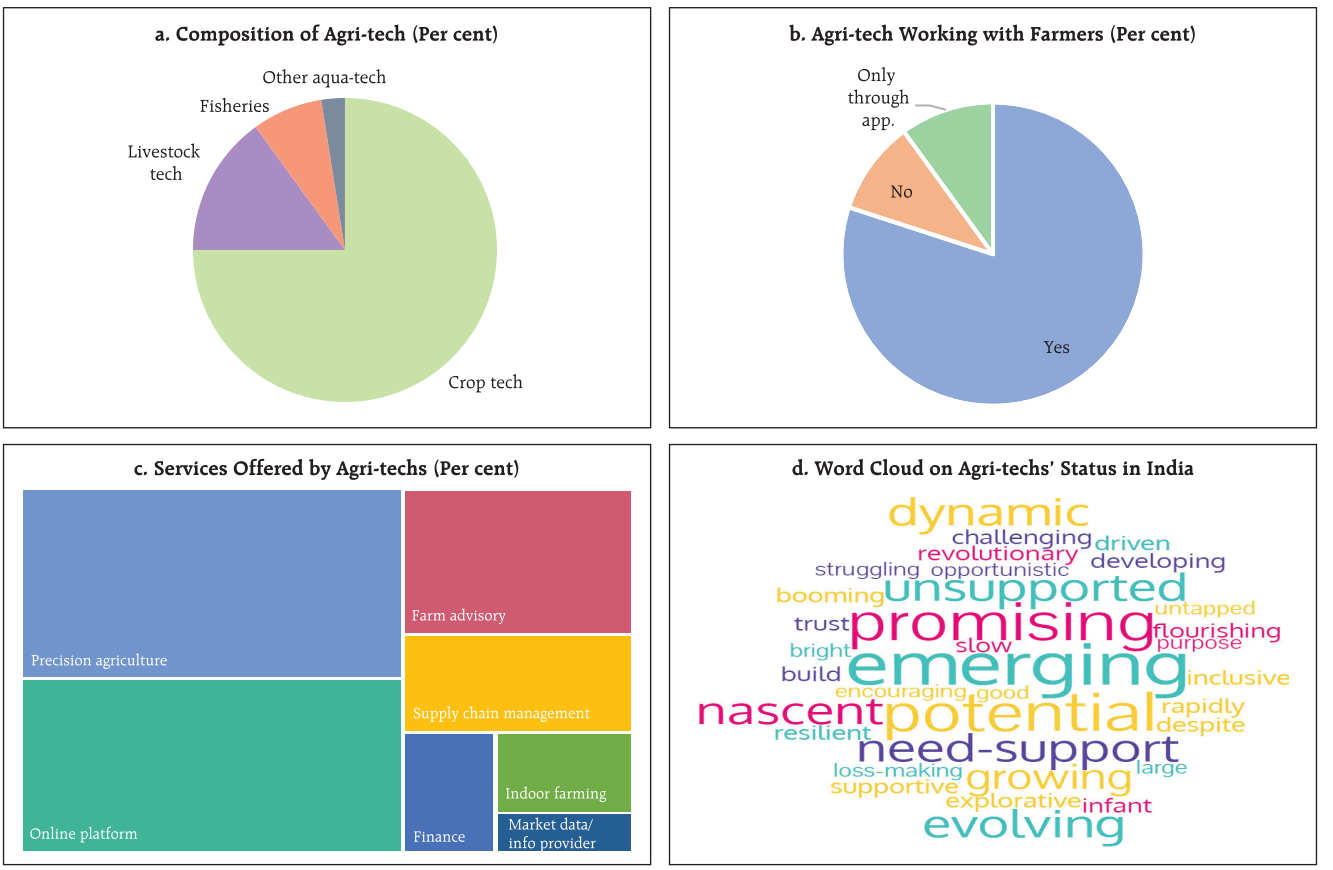
Brief Overview of Respondents

Around 75 per cent of the respondents were working in crop-tech, followed by livestock-tech, fisheries and other aqua-tech (Chart 10a). Further, around 80 per cent of them were working with the farmers directly and another 10 per cent through mobile applications (Chart 10b). Regarding the type of services provided, around 32 per cent were providing precision agriculture services, followed by online platforms, farm advisory and supply chain management (Chart 10c). The word cloud highlights that the sector is promising and dynamic, although still nascent and requires support (Chart 10d).

Survey Findings

According to the survey, the major challenges that the Indian agri-techs face while working with the farmers include small landholdings of farmers and

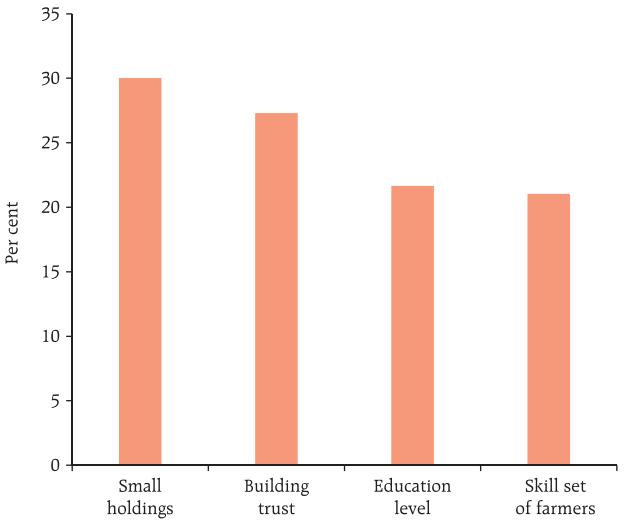
Chart 10: Agri-tech Respondent Startups



Sources: Agri-tech Startups Survey and Authors' calculations.

[12] Using Tracxn data, the companies were chosen based on ranking funds raised and a questionnaire was shared with them over founders' or generic email ids. Based on the total fund raised by the sector, the share of the sample agri-tech startups is 38 per cent, therefore, the sample is representative.

Chart 11: Challenges for Agri-techs while Working with Farmers



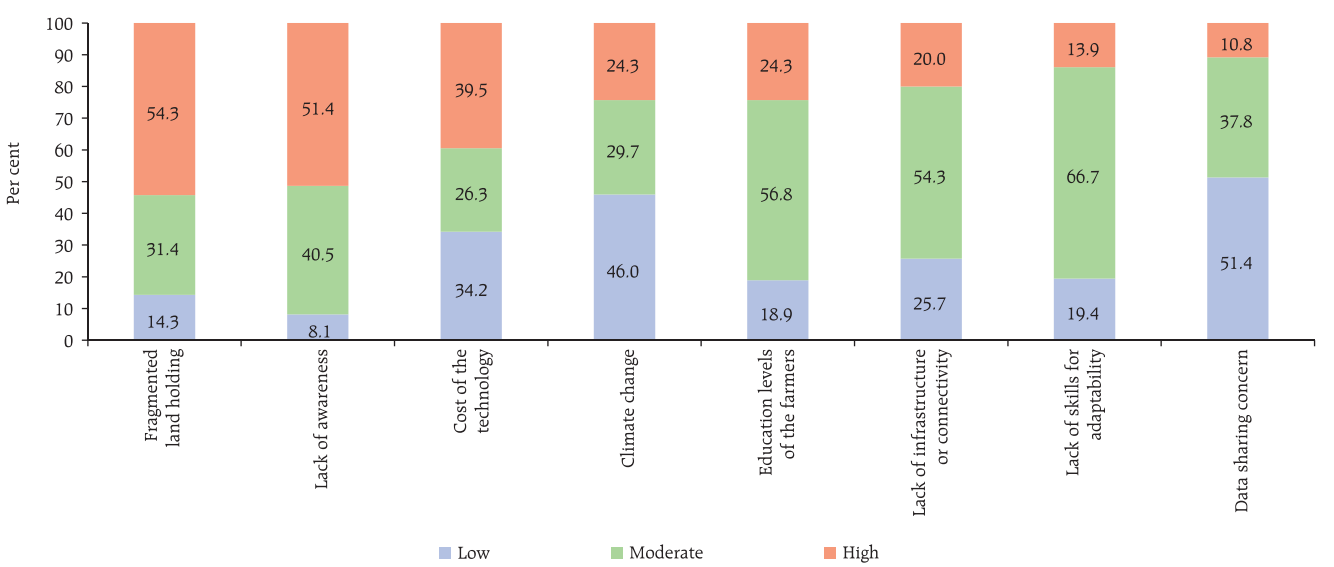
Sources: Agri-tech Startups Survey; and Authors' calculations.

difficulties in building trust with them (Chart 11). Fragmented land holdings, lack of awareness about the technology and cost of technology were seen as major impediments to technology adoption by the farmers in India (Chart 12). This is consistent with the findings of Fiocco *et al.* (2023) that technology adoption was higher only among large farms, even in developed countries. Furthermore, the article highlights that the high one-time cost of technology and uncertain rate of return due to weather and climate uncertainties discourage technology adoption. To address the same, agri-techs are encouraging flat-fee annual renewals and leasing or renting instead of upfront one-time purchases.

Around 63 per cent of the respondent agri-techs noted that farmers are willing to adopt new technology. Affordable smartphones, robust public agriculture extension system and the availability of internet connectivity at affordable prices encourage technology adoption by farmers (Chart 13).[13] Agri-techs can exploit the public agricultural extension system to facilitate ease of access to timely information, provision of innovative technologies blended with local knowledge and tailored recommendations for farmers (Fiocco *et al.*, 2023).

Most survey respondents highlighted access to funds/investments, fragmented agricultural systems and longer time to revenue matrix as major challenges

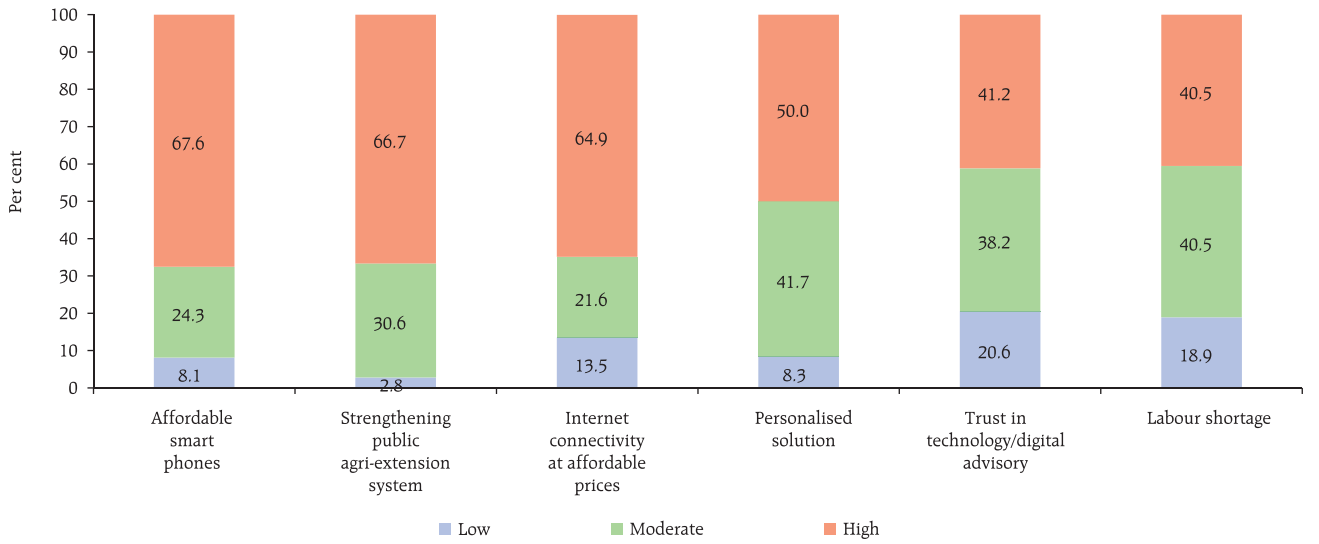
Chart 12: Tech-adoption Impediments for Farmers



Sources: Agri-tech Startups Survey; and Authors' calculations.

[13] It may be mentioned here that data charges in India are one of the lowest.

Chart 13: Factors to Encourage Farmers for Technology Adoption

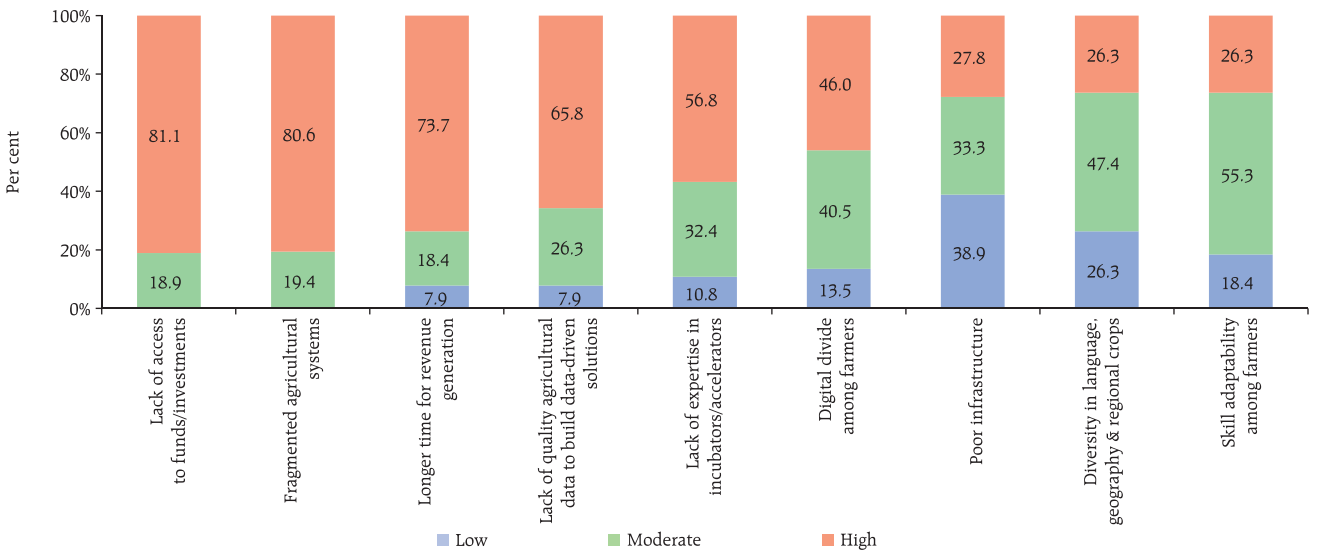


Sources: Agri-tech Startups Survey; and Authors' calculations.

in scaling up their operations (Chart 14). One-month waiting period for compliance between valuation (agreed by the investors and directors) and fundraising from investors was also a challenge, according to a few respondents.

In terms of the support from the existing policy structure, around three-fifth of the respondents identified the Incubation and Accelerator scheme as highly or moderately supportive, followed by startup funding schemes (Chart 15). Further, they regarded financial support at the early and scaling-up stage, incentivising research and development and state support in the form of tax incentives and concessions as relevant policy support for increasing their operations (Chart 16). The findings are consistent with the earlier evidence that government support

Chart 14: Challenges for Agri-tech Startups in Scaling-up Operations

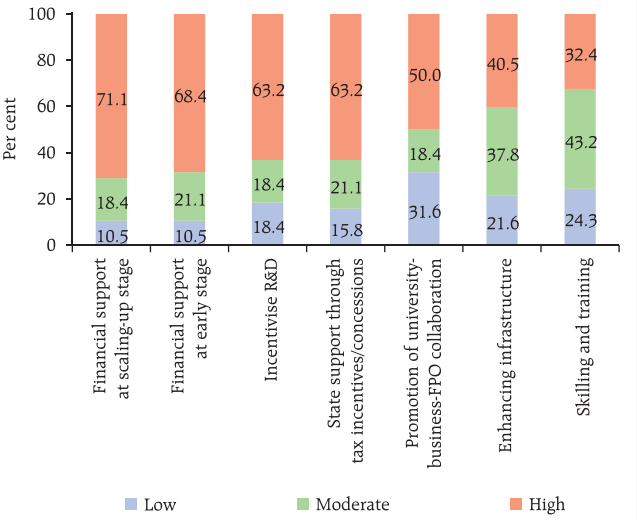


Sources: Agri-tech Startups Survey; and Authors' calculations.

Chart 15: Relevance of Existing Policy Support for Agri-startups

Sources: Agri-tech Startups Survey; and Authors' calculations.

Chart 16: Desired Policy Support for Agri-startups



Sources: Agri-tech Startups Survey; and Authors' calculations.

during the initial stages of startups is important for enhancing their longer-term viability, equipping them for expansion and enticing investor capital in the future (Bhooshan and Kumar, 2020).

VI. Conclusion

While the agri-tech ecosystem in India is at a nascent stage, it shows significant dynamism and potential in addressing conventional agricultural obstacles. Indian agri-tech startups witnessed a funding spurt during the COVID-19 period, but it has ebbed thereafter. Most agri-techs are unfunded, and the share of mid-to late-stage startups raising funds is lower compared to the seed stage, which holds back their expansion and scaling up. At the same time, there is a marked shift in the focus of agri-techs from innovative disintermediation business models to productivity improving business models such as traceability, agri-carbon harvesting, and scientific storage solutions having transformative potential. There is a notable increase in the number of agri-techs engaging directly with farmers.

The empirical analysis suggests that employing advanced technologies (AI or blockchain), access to accelerators and incubators, founders' past experience and education, funding status and access to both domestic and foreign institutional investors are associated with a higher likelihood for a startup to develop innovative on-farm technologies. Furthermore, the probability of fundraising increases with the age of the firm, support rendered by accelerators and incubators, founders' association with premier institutions and their experience.

The survey of agri-tech startups highlighted that the agri-techs benefit from governments' funding support, research and development and state support in the form of digital infrastructure, while lack of access to funds/investments, fragmented agricultural systems and long gestation periods to realise profits are seen as impediments. The survey respondents also noted that encouraging agri-techs to identify niche and underleveraged sectors for providing real-time tailored solutions based on advanced technologies and reducing the technology costs can lay the foundation for a more sustainable, and productive agricultural sector.

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Annex

Table A1: Drivers of Funding among the Agri-tech Startups

	Model 1	Marginal effects	Model 2	Marginal effects
Age of the firm	0.033*** (0.015)	0.005** (0.002)	0.031* (0.016)	0.005* (0.002)
Founded during COVID-19	1.349*** (0.330)	0.237*** (0.057)	1.323*** (0.351)	0.223*** (0.059)
Incubator/Accelerator access	4.747*** (0.602)	0.645*** (0.025)	4.878*** (0.588)	0.639*** (0.025)
Founder from premier institution	1.026*** (0.196)	0.174*** (0.033)	1.001*** (0.204)	0.163*** (0.033)
Founder past experience	0.578*** (0.231)	0.090*** (0.035)	0.513** (0.239)	0.077** (0.035)
Founder's agricultural experience	-0.356 (0.237)	-0.055 0.036	-0.339 (0.254)	-0.051 (0.037)
Location	Yes	Yes	Yes	Yes
Types of agri-tech startups			Yes	Yes
Constant	-2.499*** (0.910)		-2.265*** (0.915)	
R-square	0.300		0.325	
Number of observations	690	690	690	690

Note: ***, **, * represents 1 per cent, 5 per cent and 10 per cent levels of significance, respectively. The standard errors reported in the parentheses are robust standard errors.
Source: Authors' estimates.

Seasonality in Key Economic Indicators of India

by Shivangee Misra, Anirban Sanyal and Sanjay Singh ^

This article examines seasonal factors of key economic indicators in India, analysing 78 monthly indicators across six sectors—monetary and banking, payment systems, prices, industrial production, merchandise trade, and services—along with 25 quarterly indicators. There are pronounced seasonal variations in several indicators, including cash balances with the RBI, demand deposits, prices of onions, potatoes, and tomatoes, as well as production in various sectors and merchandise exports. Quarterly data highlight increased seasonal variation in real GDP, especially in government expenditure, with agriculture showing the most significant seasonal effects. Capacity utilisation in manufacturing peaks in the January–March quarter, which also coincides with a rise in services exports.

Introduction

Seasonality in macroeconomic indicators refers to the recurring and predictable patterns that occur within a year. It represents a key component of time series analysis alongside trend, cyclical variation, and random fluctuations. Seasonal changes arise due to factors like weather conditions, production cycles, the nature of economic activities, holidays, and vacation trends. Seasonal adjustment is the process of eliminating these seasonal and calendar influences from time series data to study the underlying long-term trends, cycles, as well as short-term changes, enabling a clearer assessment of economic conditions. Since 1980, the Reserve Bank has been publishing monthly seasonal factors for key macroeconomic variables.[1]

This article provides estimates of seasonal patterns of key economic indicators in India. Economic activity faced significant volatility in 2020 due to disruptions from the COVID-19 pandemic, followed by a gradual normalisation, which was also reflected in key macroeconomic variables. Given this period of extreme volatility, the seasonal factor analysis considers potential changes in the temporal properties of these economic series. Additionally, the stability of the seasonal patterns is cross-validated with pre-pandemic data to ensure the robustness of the seasonal factors.[2]

The rest of the article is organised as follows: Section II describes the data and methodology. Section III illustrates the seasonal factor estimates and discusses the seasonal variations in the selected economic series. The article concludes by summarising the findings in Section IV.

II. Data and Methodology

Historically, previous editions of this article has focused exclusively on monthly economic indicators. In this edition, its coverage is extended to key economic indicators published quarterly for the first time.

The monthly variables cover six major thematic areas - monetary and banking statistics, price indices, industrial production statistics, services sector indicators, merchandise trade and payment system indicators. The complete list of 78 indicators covered under these broad categories is given in Table A1-M1 (Annex I). The seasonal factors are estimated using

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[1] First article in the series was published in December 1956 issue of the Reserve Bank of India Bulletin and annual articles were published since January 1980. The previous article in this series was published in March 2024 issue of the RBI Bulletin.

[2] The forecast of seasonal factors can be derived using the RegARIMA model fitted on the series. However, it may be noted that the possible changes in the data generating process after the COVID-19 pandemic, may influence the model choice and thereby, may impact the forecasts of the seasonal factors.

a multiplicative time series model with the X13-ARIMA-SEATS software of the US Census Bureau[3], which is adapted to fit Indian conditions, including adjustments for *Diwali* and Indian trading day effects.

The quarterly series covers national accounts, capacity utilisation and new orders from order books, inventories and capacity utilisation survey (OBICUS), business assessment and expectation indices, the components series from the industrial outlook survey (IOS) and external trade in services from balance of payment (BoP) statistics.[4] The complete list of 25 quarterly series selected for the analysis of seasonality is provided in Table A2-Q1 (Annex II).

The pandemic-infused volatility in the economic series is adjusted using an automatic outlier detection mechanism through three types of outliers, namely additive outliers (AO), temporary changes (TC) and level shifts (LS), which are checked to justify their economic interpretation. Recognising that the lack of longer time series data for the post-pandemic period may influence outlier detection and, thereby, influence seasonal factor estimates, robustness checks are carried out by comparing the seasonal factor estimates of the pre-COVID sample (Technical Annex).

III. Seasonality in Major Economic Variables in India

III.a. Seasonality in Monthly Series

Most of the economic variables analysed in the study has exhibited seasonal patterns (Tables A1-M2 and A1-M3, Annex I). 10 out of the 14 selected monetary and banking indicators exhibit seasonal peaks either in March or April, whereas five out of 14 indicators have seasonal troughs during August. Seasonal peaks happen in March for reserve money and narrow money, whereas broad money exhibits a seasonal peak during April. Aggregate deposits of the scheduled commercial banks (SCBs) experience a seasonal peak during April, while bank credit increases during March. The seasonal troughs in aggregate deposits and bank credit are recorded during February and August, respectively. Within aggregate deposits, demand deposits record a seasonal increase during March, while time deposits touch a seasonal peak during April. Loans, cash credits, and overdrafts of SCBs hit seasonal highs in March and bottom out in August. A similar seasonal pattern is also observed in the non-food credit. SCBs' investment remains elevated in August and slows down in March. Currency in circulation increases during May and moderates in September due to seasonal variations.

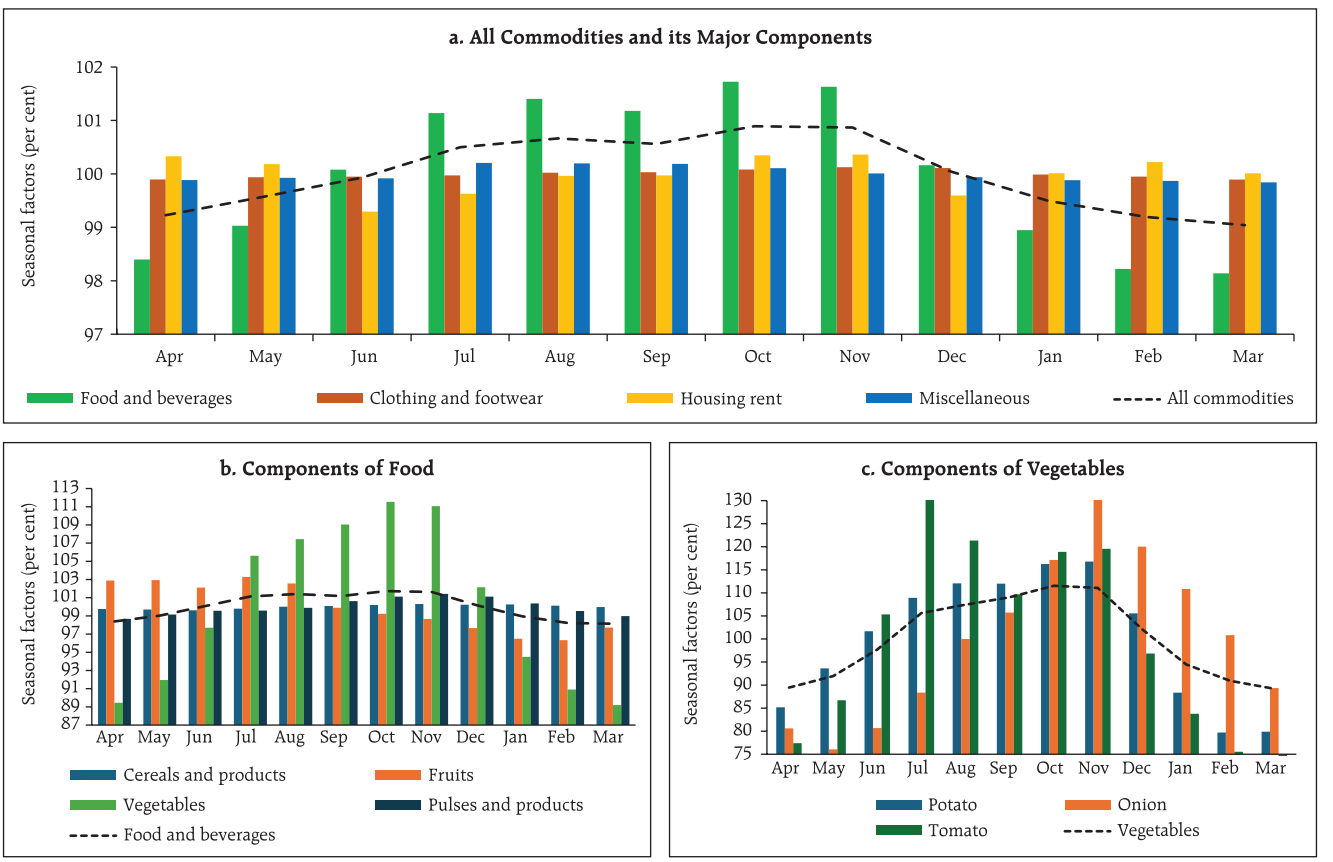
Among the monetary and banking indicators, the seasonal variations are high in demand deposits, SCBs' cash in hand and balances with RBI, and narrow money. The range of the seasonal variations in demand deposits at 7.5 percentage points in 2023-24 is lower than its last ten years average. On the other hand, the range of seasonal variations in the SCBs' cash in hand and balances with RBI gradually increased over time and it stood at 7.7 percentage points during 2023-24. Seasonal variations declined in aggregate deposits, time deposits and bank credit to the commercial sector during 2023-24 (Tables A1-M3, Annex-I).

The seasonal pattern in the consumer price index (CPI) indicates that CPI reaches its seasonal peak in October and eases in March, mainly driven by the seasonal pattern of the food prices. CPI food items experience high seasonal variations driven by vegetables which experience the highest seasonal price variations during a year. Seasonal variations in the prices of TOP (tomato, potato, and onion) are more pronounced. Prices of potatoes and onions increase in November and the seasonal pressures ease in February and May, respectively. Tomato prices increase during July and moderate by March (Chart 1 and Table A1-M2). The other major groups (*viz.*, clothing and footwear, housing, and miscellaneous), on the other hand, experience lower seasonal variations (Table A1-M3).

[3] https://www.census.gov/data/software/x13as.html

[4] Under the quarterly frequency, series *viz.*, Imports of services, Imports in telecommunication, Computer and Information services, New Orders from OBICUS, Employment assessment and expectation and Cost of External Finance assessment and expectation were dropped in the present article due to lack of stable seasonality.

Chart 1: Average[5] Monthly Seasonal Factors of CPI (combined)



Sources: MOSPI; and Authors' calculations.

Among the other major price indices, CPI for industrial workers (CPI-IW) attain a seasonal peak in October, contrary to the consumer prices of agricultural labourers (AL) and rural labourers (RL), which peak in November. All three consumer price indices experience seasonal moderation in March. The seasonal variations in CPI-IW, AL, and RL were approximately at the same level as the CPI headline index during 2023-24 (Chart 2 and Tables A1-M2, A1-M3).

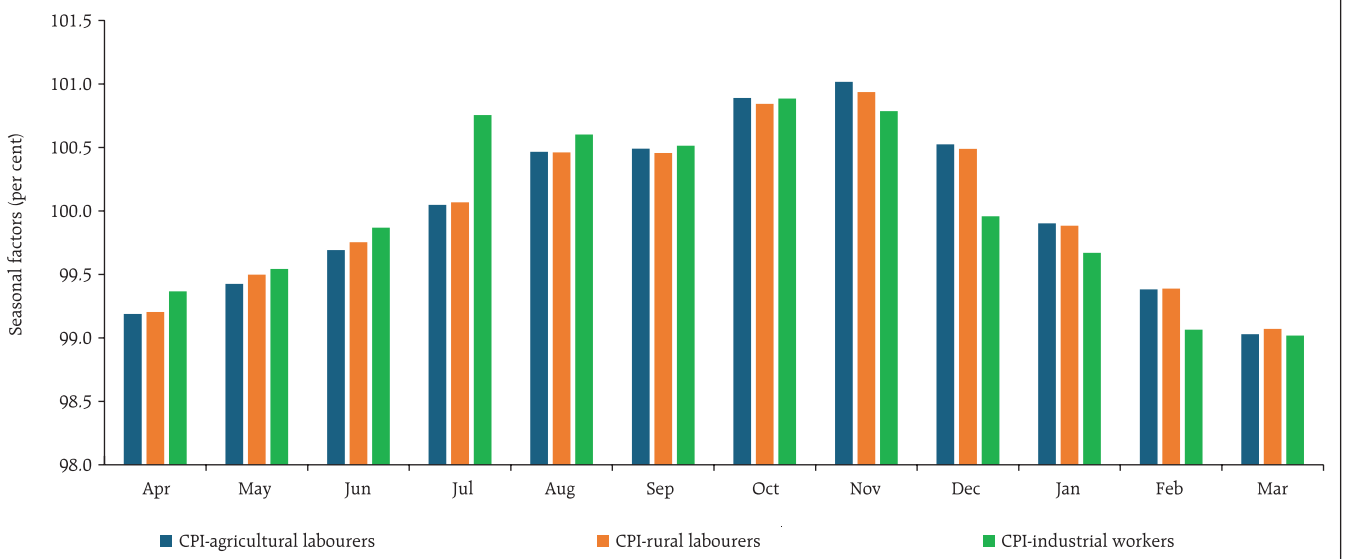
Wholesale prices, in general, reach a seasonal high in November and ease in January and February (Chart 3). WPI for primary articles witnessed a seasonal variation of 3.7 percentage points in 2023-24, primarily led by WPI food articles (SF Range 5.4 percentage points), followed by fuel & power at 1.6 percentage points (Table A1-M3).

Industrial output seasonality, reflected in the index of industrial production (IIP), intensifies during March and moderates in April, mainly reflecting the seasonal pattern of the manufacturing sector. Mining activities peak during March, but the seasonal trough happens in September. Electricity output touches a seasonal peak in May and moderates in February. Within manufacturing, the seasonal peaks and troughs of different sectors happen during different months. Manufacturing of food products intensifies during December, whereas beverage production touches a seasonal high during May. The seasonal troughs in the production of food and beverages happen during June and August, respectively.

Among the use-based classification, the production of consumer durables attains a seasonal peak during October, driven by the major festivals in India, whereas

[5] Average of the seasonal factors of last 10 years.

Chart 2: Average Monthly Seasonal Factors of CPI-IW, AL and RL

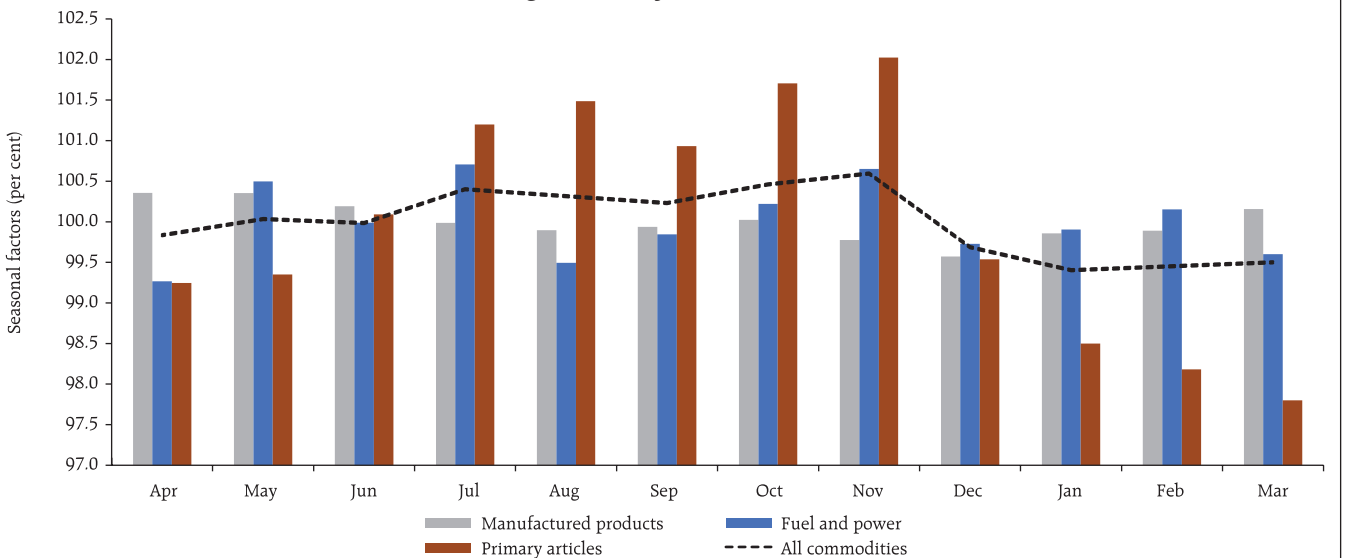


Sources: Labour Bureau; and Authors' calculations.

the peak in non-durable goods production happens during December. The production activity peaks for all the other major categories peak during March. The seasonal trough in capital goods and consumer goods occurs during April. Primary and intermediate good production face seasonal moderation during September and February, respectively. Infrastructure goods production moderates in November. Within the eight core industries, most record seasonal peaks during March except fertilisers and natural gas. Fertiliser and natural gas production touches seasonal highs during October (Chart 4 and Table A1-M2).

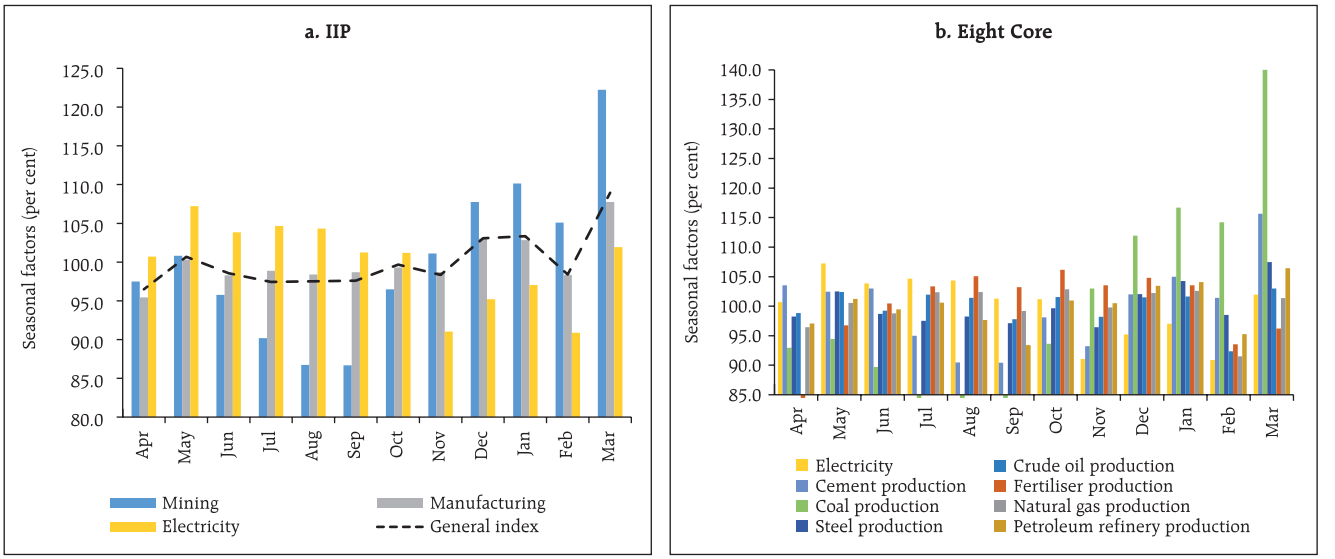
The seasonal variations, measured by the range of seasonal factors, remained high in IIP and its component series. Among the major sectors of IIP, the mining sector demonstrated the highest seasonal

Chart 3:Average Monthly Seasonal Factors of WPI



Sources: Office of the Economic Adviser; and Authors' calculations.

Chart 4: Seasonal Factors for IIP and Eight Core Industries

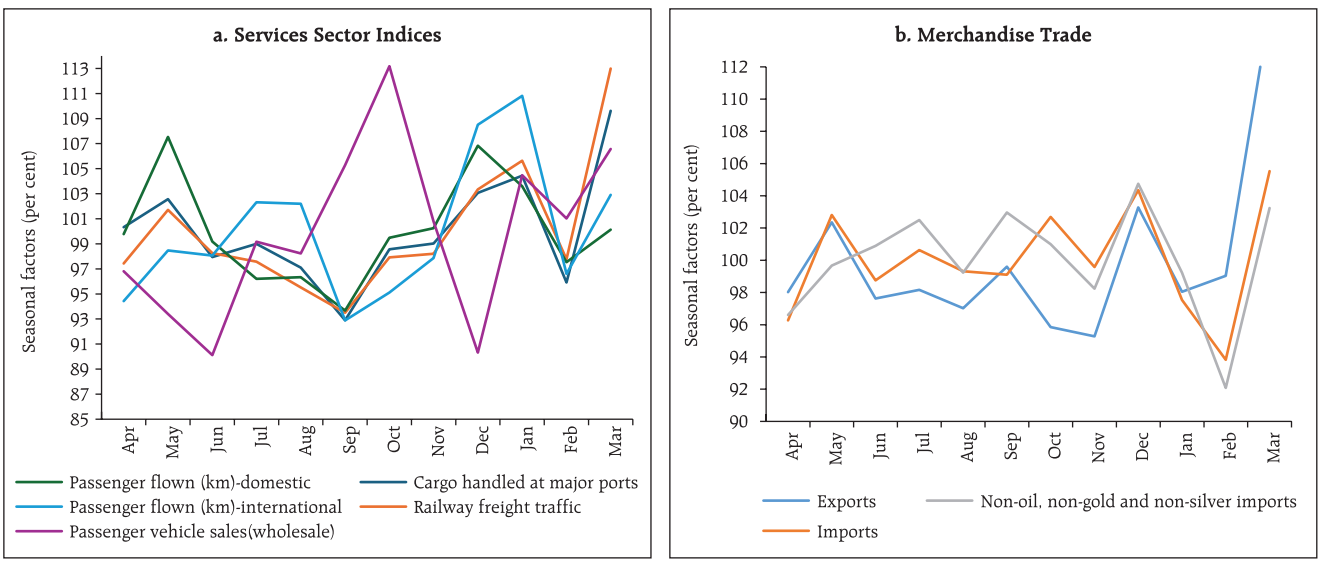


Sources: MOSPI; Office of the Economic Adviser; and Authors' calculations.

variations, followed by electricity. IIP capital goods demonstrated very high seasonal variations among the use-based classification, followed by primary goods. Within the components of the eight core industries, the range of seasonal factors is the highest in coal production, whereas the seasonal variation is lowest in crude oil (Table A1-M3).

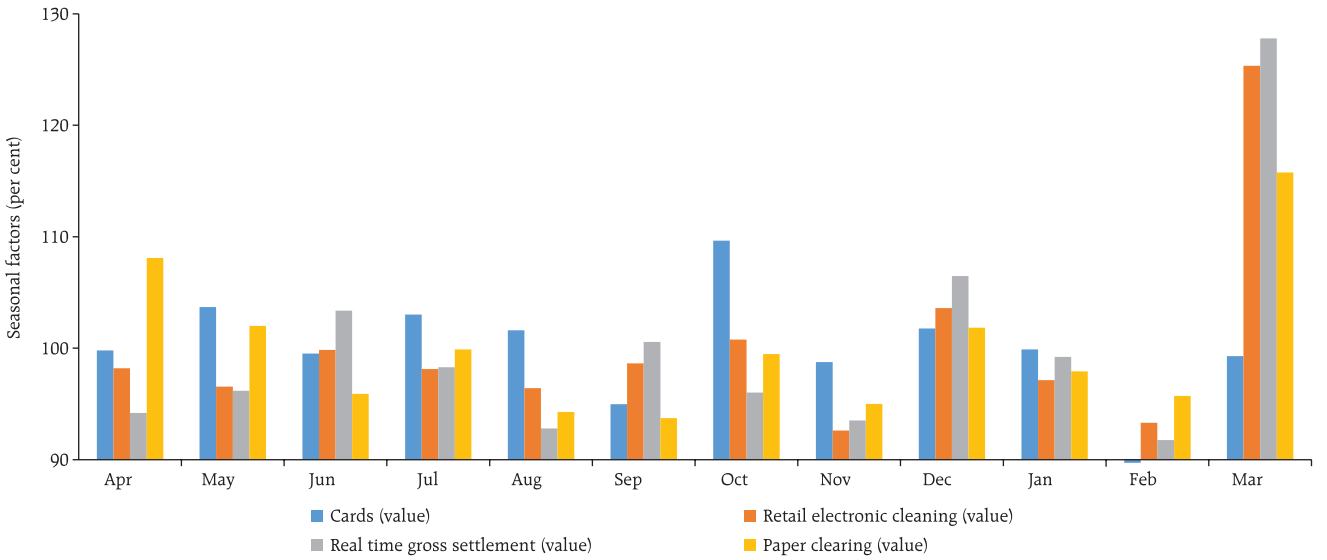
With regard to high-frequency services sector indicators, the seasonal peak in passenger vehicle sales happens during October, mainly reflecting the higher demand during the festival season. Cargo and railway traffic face seasonal increases during March. Domestic air passenger traffic increases during May and international air passenger traffic registers a high seasonal volume in January (Chart 5a and Table A1-

Chart 5: Seasonal Factors for Services Sector and Merchandise Trade



Sources: DGCI&S; DGCA; Ministry of Railway; Indian Port Association; Society of Indian Automobile Manufacturers (SIAM); and Authors' calculations.

Chart 6: Seasonal Factors for Payment System Indicators



Sources: RBI; and Authors' calculations.

M2). Major high-frequency services sector indicators experience seasonal troughs during September, except passenger vehicle sales (wholesale), which have a seasonal trough during June. Regarding the seasonal variations, the seasonal factors varied widely in passenger vehicle sales, having a range of 25.8 percentage points in 2023-24. Railway and cargo traffic also demonstrated higher seasonal variations than air passengers (Table A1-M3).

Merchandise trade peaks during March with both exports and imports recording a seasonal high. Export troughs during November while import moderates seasonally in February. Non-oil, non-gold, and non-silver imports register a seasonal peak during December and a decline during February (Chart 5b and Table A1-M2). The seasonal variations are higher in merchandise exports compared to imports. Non-oil, non-gold and non-silver imports showed relatively higher seasonal variations in comparison with overall imports during 2023-24 (Table A1-M3).

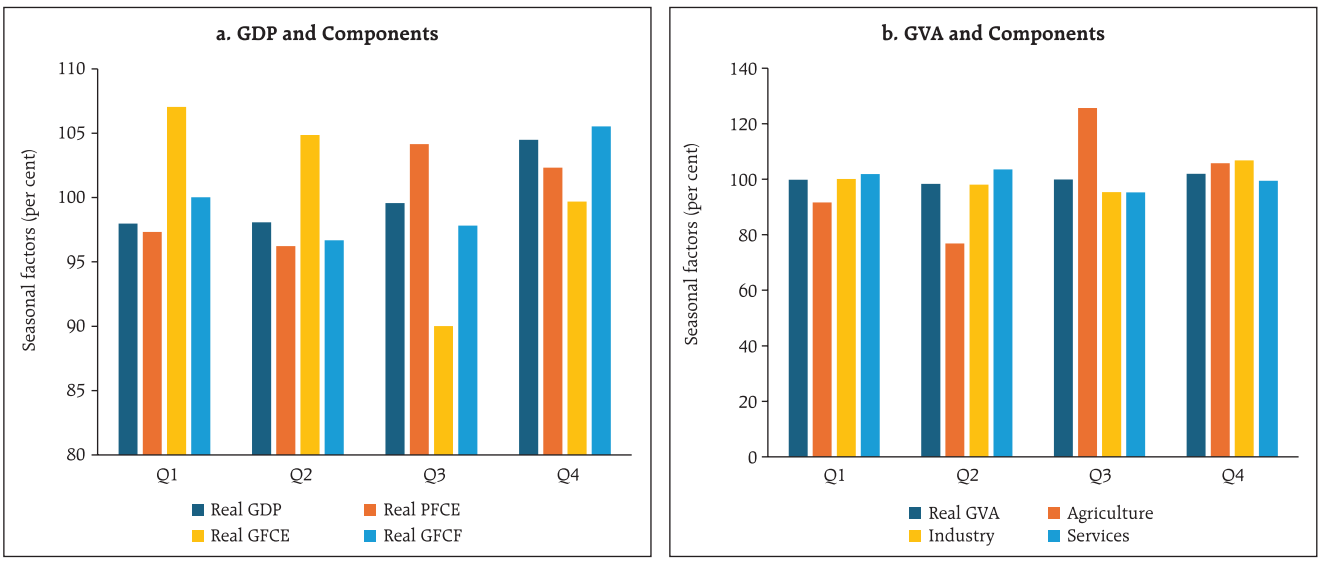
Seasonal peak in the payment system indicators happens during March, except for card payments. Real Time Gross Settlement (RTGS) payments record a seasonal decline in February whereas paper clearing registers seasonal bottoming out in September. Retail electronic payments decrease during November, whereas card payments observe seasonal moderation during February (Chart 6 and Table A1-M2). Among the payment indicators, RTGS transactions and retail electronic payments demonstrate the highest seasonal variations, with seasonal factors varying in the range of 30.8 percentage points and 28.5 percentage points, respectively, in 2023-24 (Table A1-M3).

III.b. Seasonality in Quarterly Series[6]

The quarterly gross domestic product (GDP) and gross value added (GVA) estimates show seasonal peaks during Q4, while seasonal troughs are observed in Q1 and Q2, respectively. Among the components of GDP, the Government final consumption expenditure (GFCE) increases seasonally during Q1 but moderates during Q3. The seasonal peaks of gross fixed capital formation (GFCF) happen during Q4, whereas troughs are observed in Q2, which is the monsoon season. The Private Final Consumption Expenditure (PFCE) remains elevated during Q3 – the major festival season,

[6] In this article, the quarters correspond to the financial years *i.e.*, Q1 corresponds to April to June, Q2 is from July to September, Q3 is October to December and Q4 is January to March.

Chart 7: Seasonal Factors of National Accounts



Sources: MOSPI; and Authors' calculations.

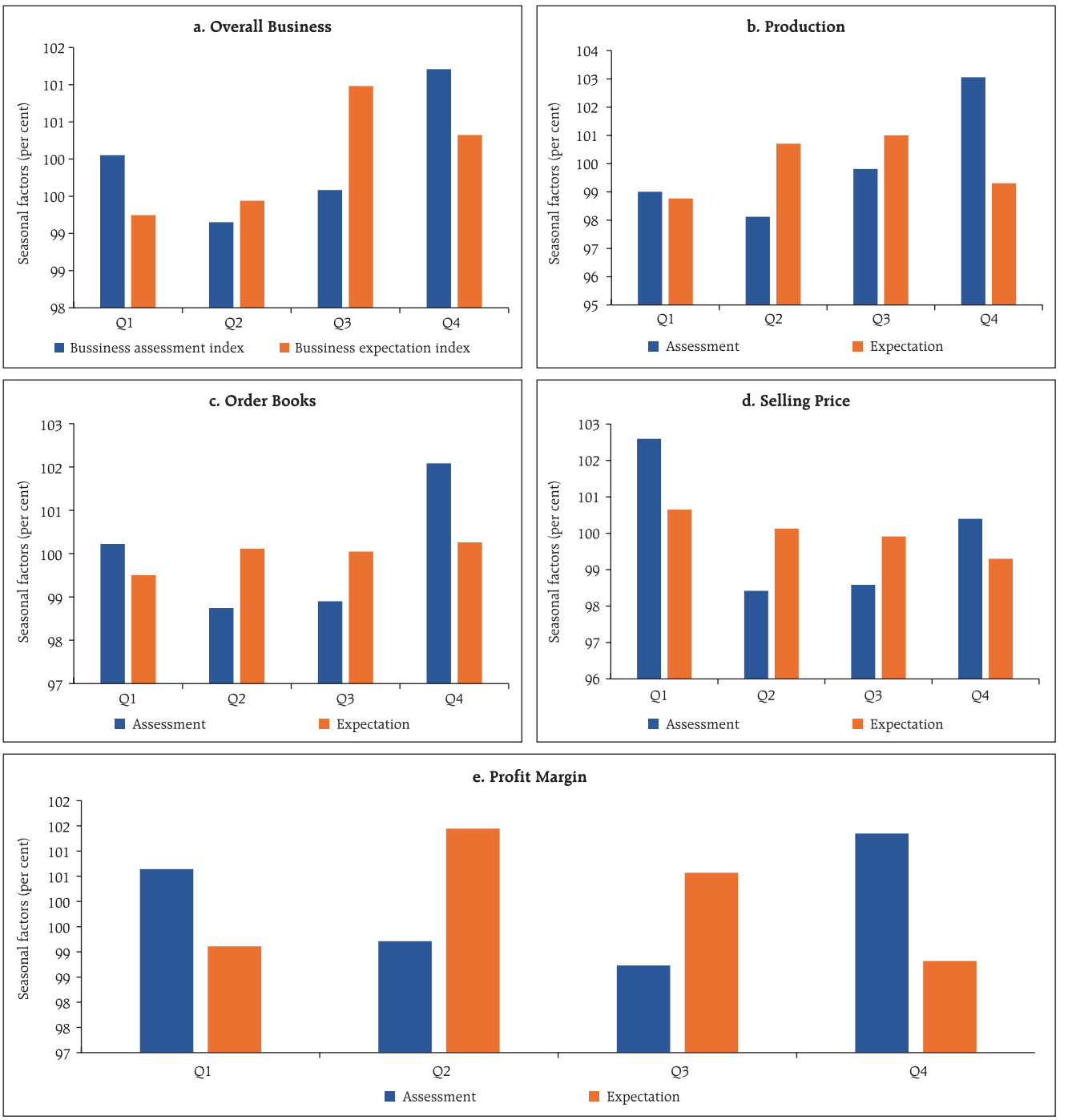
after seasonal moderation during Q2. On the supply side, output (value added) in agriculture registers a seasonal moderation during Q2, which is the major *kharif* sowing period, whereas it records a seasonal peak during Q3 with the harvesting of the *kharif* crops. The seasonal peak and trough in the industrial output occur during Q4 and Q3, respectively, whereas the services activities intensify during Q2 but moderate in Q3 (Chart 7 and Table A2-Q2).

The extent of seasonal variations, measured by the range of seasonal factors, is higher in GDP than GVA, possibly on account of the variations in net taxes, which influence market prices. The seasonal fluctuations in GVA are higher in 2023-24 than the last 10 years' average. GFCE exhibits the highest seasonal variations among the expenditure-side components of GDP. The seasonal fluctuations of GFCF and PFCE are approximately closer to each other (Table A2-Q3).

Manufacturing companies' capacity utilisation (CU) as measured in the order books, inventory and capacity utilisation survey (OBICUS) peaks during Q4 and troughs during Q1. Further, the seasonal variations in capacity utilisation are range-bound, with an average range of 3.7 per cent in the last 10 years. The business assessment and expectation index, derived from the RBI's industrial outlook survey (IOS) inputs, peaked during Q4 and Q3, respectively. The seasonal troughs in these two series happen during Q2 and Q1, respectively. The order book assessment and expectation touch seasonal peaks during Q4. However, the order book assessment troughs during Q2, while the order book expectation is lower during Q1. The manufacturers' assessment of CU peaks in Q4, and the expectation of CU peaks in Q3. On the pricing outlook, the manufacturers' assessment of the selling price is higher during Q1, and it moderates during Q2. The expectation on selling prices increases during Q1 but moderates in Q4. Manufacturers assess their profitability on the higher side in Q4, but their expectations about future profitability peak in Q2 (Chart 8 and Table A2-Q2).

The business assessment and expectation indices show relatively lower seasonal fluctuations, with the seasonal factors hovering within an average range of 1.7 - 2.1 percentage points. However, the assessment and expectations of production and capacity utilisation show higher seasonal variations (Table A2-Q3).

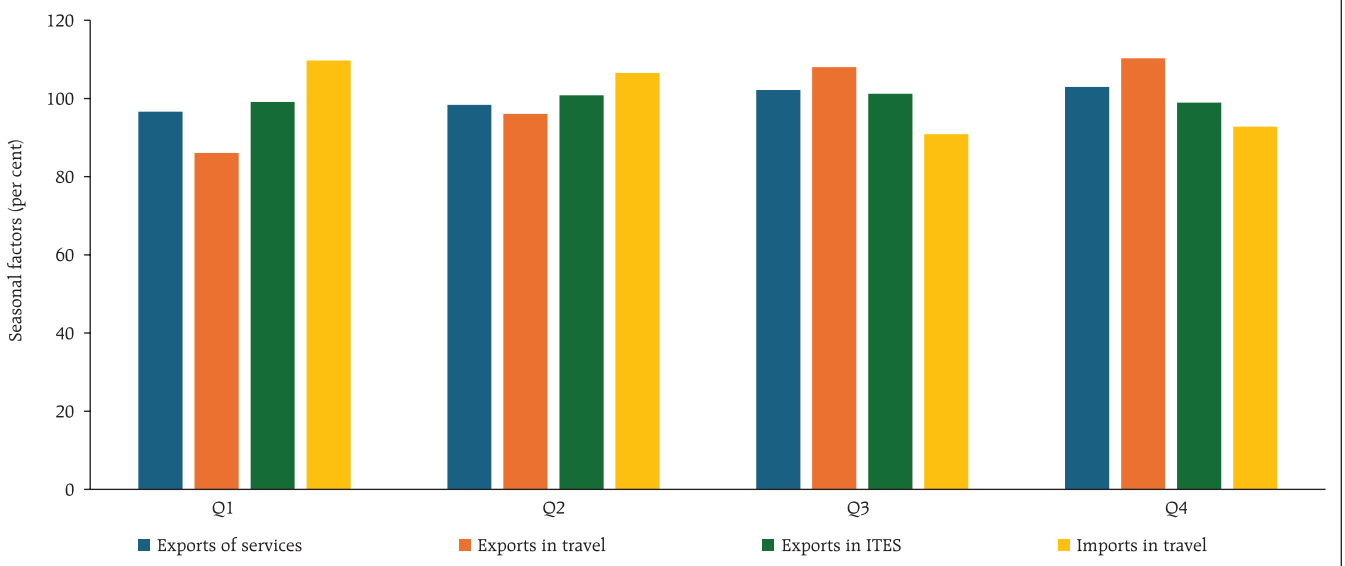
Chart 8: Seasonal Factors of Industrial Outlook Survey and OBICUS



Sources: RBI; and Authors' calculations.

Overall services exports peak in Q4 and trough in Q1. Telecommunications, computer, and information services exports, however, are seasonally high during Q3, and travel services exports are high in Q4. Imports of travel services peak during Q1 (Chart 9 and Table A2-Q2). On a comparative basis, services exports show high seasonal fluctuations with a ten-year average range of 6.3 percentage points. Travel exports and imports show high seasonal fluctuations within services trade (Table A2-Q3).

Chart 9: Seasonal Factor of Trade in Services

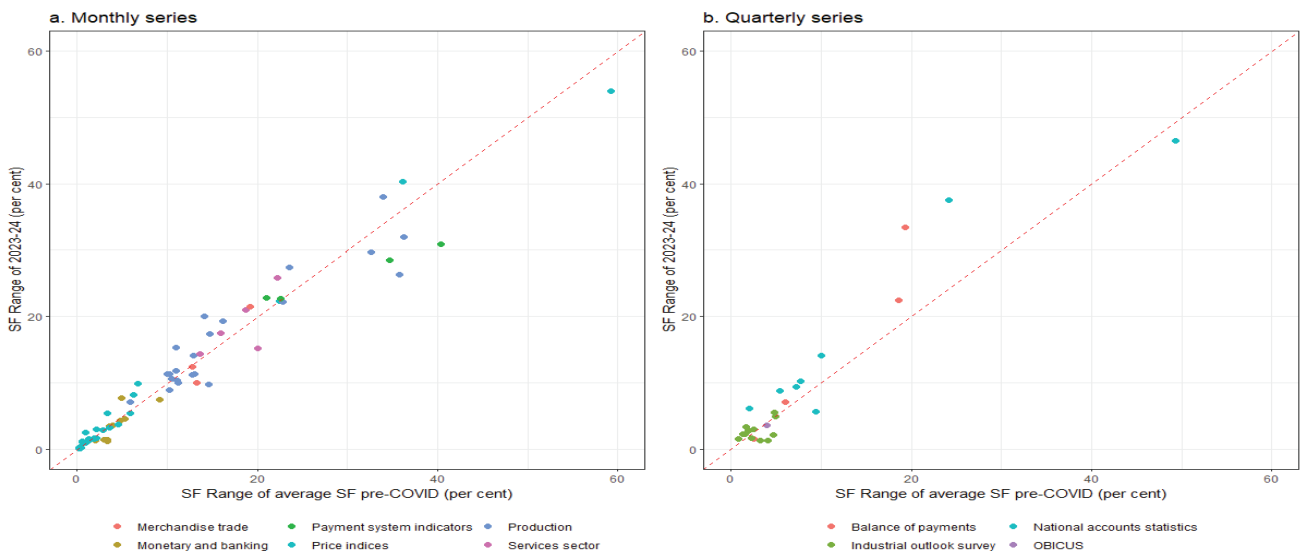


Sources: MOSPI; and Authors' calculations.

III.c. Stability of Seasonality

The stability of the seasonal variations is checked using parametric and non-parametric tests. The diagnostics of the seasonal factor analysis are presented in Table A1-M4 and Table A2-Q4. Further, the stability of the seasonal factor estimates is checked by comparing the range of estimated seasonal factors for FY: 2023-24 with the 5-year average seasonal factor from the pre-COVID period for monthly and quarterly series. The scatter plot of the seasonal factor variations shows that the seasonal variations in FY: 2023-24 are almost similar to the average seasonal variations from the pre-pandemic period across all monthly series. A similar pattern is observed among the quarterly series except for GFCE and exports of travel, where the range of seasonal variations has increased recently (Chart 10 and Tables A1-M5 and A2-Q5).

Chart 10: Range of Seasonal Variations in Monthly and Quarterly Series



Source: Authors' calculations.

IV. Conclusion

This article provides updated estimates of seasonal factors for major economic time series data for India. Overall, seasonal pattern remains mostly stable across the variables although seasonal variations have become more pronounced across several indicators such as cash in hand and balances with the RBI, demand deposits, prices of major vegetables, industrial production, passenger vehicle sales, and merchandise exports. Some of the indices and banking and monetary aggregate also witnessed a shift in their peak and trough months.

Banking indicators such as bank credit, non-food credit, and demand deposits typically record their year-end peak in March. CPI faces seasonal pressure from July to November, mainly driven by rising vegetable prices during the monsoon season, while fruit prices tend to peak in the summer months. In industrial production, most items reach their highest levels in March, whereas consumer durables see a peak in October, coinciding with the festive season. Both exports and imports also peak in March, with exports exhibiting more pronounced seasonal fluctuations compared to imports.

Among the quarterly series, real GDP and GVA continue to record their seasonal peak during Q4. The seasonal variations in the national accounts aggregates have increased since the onset of the pandemic, even after adjusting for the pandemic-induced volatilities as indicated in the technical annex. The seasonal trough of GDP happens in Q1, whereas GVA falls during Q2. Among the national accounts statistics (NAS), most indicators observed a trough in Q2 except for GFCE, GVA industry and services. In most indicators of the industrial outlook survey, manufacturers assess high seasonality in Q3 and Q4 and low in Q1 and Q2, except for the selling price assessment and expectations. Services exports increase during Q4. Exports of telecommunications, computer and information services were high during Q3.

The pandemic caused significant disruptions in economic activity, leading to unusual data patterns. The post-pandemic data span remains limited, which may influence the stochastic seasonality estimates through the seasonal ARIMA model. The changes in the data-generating process cannot be ascertained with the limited availability of data. The seasonal factor estimates this article reports are derived by taking suitable precautions and robustness checks. The seasonal factors, however, can be subject to further changes as more data become available from the post-pandemic period.

References:

Shiskin, J., Young, A. H., and Musgrave, J. C. (1967). *The X-11 variant of the census method II seasonal adjustment program.* U.S. Department of Commerce, Bureau of the Census.

Gómez, Victor and Maravall, Agustin (1996). Programs TRAMO and SEATS, Instruction for User (Beta Version: September 1996). *Working Papers, Banco de España.*

Technical Annex

Seasonal patterns in economic data refer to regular fluctuations that occur at specific times of the year, influenced by factors like weather, holidays, and cultural events. X13-ARIMA-SEATS is a widely used statistical program developed by the U.S. Census Bureau for seasonal adjustment and trend extraction in time series data. It combines two approaches: RegARIMA modelling and SEATS (Signal Extraction in ARIMA Time Series). The RegARIMA component forecasts and models the time series, while SEATS handles the decomposition of the series into seasonal, trend, and irregular components. The decomposition is achieved by repeatedly applying centred moving averages filter and refining the separation of components with each iteration. In this process, different filters and moving averages are used to extract the time series components from the series.

There are now two seasonal adjustment modules contained in the program. One uses the X-11 seasonal adjustment method detailed in Shiskin, Young, and Musgrave (1967). The program has all the seasonal adjustment capabilities of the X-11 and X-11-ARIMA programs. The same seasonal and trend moving averages are available, and the program still offers the X-11 calendar and holiday adjustment routines. The second seasonal adjustment module uses the ARIMA model based seasonal adjustment procedure from the SEATS seasonal adjustment program developed by Victor Gomez and Agustin Maravall at the Bank of Spain. All the capabilities of SEATS are included in this version of X-13 ARIMA-SEATS, which can generate stability and spectral diagnostics for SEATS seasonal adjustments in the same way as X-11 seasonal adjustments. In this article, the first seasonal adjustment module was used to extract seasonal factors.

X-13 ARIMA-SEATS provides four other types of regression variables to deal with abrupt changes in the level of a series of a temporary or permanent nature: *additive outliers (AOs), level shifts (LSs), temporary changes (TCs) and ramps. AOs* affect only one observation in the whole series and hence this effect is removed by a dummy variable, which takes *'0'* at break and *'1'* for other period. *LSs* increases or decreases all observations from a certain time point onward by some constant amount, this *LS* effect is removed by introducing a dummy variable which takes value *'-1'* for all the time point up-to the break point and *'0'* for all the time points afterwards. *TCs* allow for an abrupt increase or decrease in the level of the series that returns to its previous level exponentially, this effect is captured by a variable which takes value *'0'* for all observation before the change point and α_t $(O<\alpha<1)$ thereafter. Ramps allow for a linear increase or decrease in the level of the series over a specified time interval (say $t_0 - t_1$). Ramps are smoothed out by introducing a variable which take, three values *'-1'* for time $t<t_0$, $(t-t_0)/((t_1- t_0)–1)$ for $t_0 < t <t_1$, and *'0'* after the time point $t > t_1$.

X-13 ARIMA uses SARIMA models to determine the seasonal pattern in the economic series. The order of the SARIMA models is determined based on the in-sample goodness of fit of different models and the best model is selected using suitable information criteria. The selected model, therefore, represents the underlying data-generating process through average parameter estimates. The occurrence of COVID-19 pandemic posed a challenge in this process.

The COVID-19 pandemic may have fundamentally altered the economic data-generating process across many sectors. The economic data-generating process now reflects greater uncertainty and variability, requiring more adaptive and flexible approaches to analysis.

The changes brought about during the COVID-19 period and the subsequent post-COVID normalization may have affected the seasonal patterns. However, the

limited data from the past 2-3 years is insufficient to fully capture these shifts through SARIMA models. To account for potential alterations in seasonal patterns since COVID, the stability of seasonal adjustments is ensured through outlier adjustments, comparison with pre-COVID estimates, and yearly updates to seasonal factors for the most recent period.

Outlier adjustments in the X-13 ARIMA model, specifically for the COVID period, are made using three types of outliers—AO, TC and LS. These outliers are automatically detected following guidelines from the US Census Bureau, and their relevance is confirmed by aligning them with economic events in India. To ensure stability, the seasonal patterns are checked by comparing the range of seasonal factors from the latest period with the average range of seasonal factors from the pre-pandemic period.

Annex - I

Table A1-M1: Time Period Used for Estimating Monthly Seasonal Factors

Name of Sectors/Variables	Time Period	Name of Sectors/Variables	Time Period
Monetary and Banking Indicators (14 series)		**Industrial Production (23 series)**	
A.1.1 Broad Money (M3)	April 1994 to March 2024	E. IIP (Base 2011-12 = 100) General Index	April 1994 to March 2024
A.1.1.1 Net Bank Credit to Government		E.1.1 IIP - Primary goods	April 2012 to March 2024
A.1.1.2 Bank Credit to Commercial Sector		E.1.2 IIP - Capital goods	
A.1.2 Narrow Money (M1)		E.1.3 IIP - Intermediate goods	
A.1.3 Reserve Money (RM)		E.1.4 IIP - Infrastructure/ construction goods	
A.1.3.1 Currency in Circulation		E.1.5 IIP - Consumer goods	
A.2.1 Aggregate Deposits (SCBs)		E.1.5.1 IIP - Consumer durables	
A.2.1.1 Demand Deposits (SCBs)		E.1.5.2 IIP - Consumer non-durables	
A.2.1.2 Time Deposits (SCBs)		E.2.1 IIP - Mining	April 1994 to March 2024
A.3.1 Cash in Hand and Balances with RBI (SCBs)		E.2.2 IIP - Manufacturing	
A.3.2 Bank Credit (SCBs)		E.2.2.1 IIP - Manufacture of food products	April 2012 to March 2024
A.3.2.1 Loans, Cash Credits and Overdrafts (SCBs)		E.2.2.2 IIP - Manufacture of beverages	
A.3.2.2 Non-Food Credit (SCBs)		E.2.2.3 IIP - Manufacture of textiles	
A.3.3 Investments (SCBs)		E.2.2.4 IIP - Manufacture of chemicals and chemical products	
Price Indices[CPI: 21 series and WPI: 8 series]		E.2.2.5 IIP - Manufacture of motor vehicles, trailers and semi-trailers	
B. CPI (Base: 2012 = 100) All Commodities	January 2011 to March 2024	E.2.3 IIP - Electricity	April 1994 to March 2024
B.1 CPI - Food and beverages		E.3 Cement Production	April 2004 to March 2024
B.1 .1 CPI - Cereals and products		E.4 Steel Production	
B.1 .2 CPI - Meat and fish		E.5 Coal Production	
B.1 .3 CPI – Egg		E.6 Crude Oil Production	
B.1 .4 CPI - Milk and products		E.7 Petroleum Refinery Production	
B.1 .5 CPI – Fruits		E.8 Fertiliser Production	
B.1 .6 CPI - Vegetables		E.9 Natural Gas Production	
B.1 .6.1 CPI – Potato		**Service Sector Indicators (5 series)**	
B.1 .6.2 CPI – Onion		F.1 Cargo handled at Major Ports	April 1994 to March 2024
B.1 .6.3 CPI – Tomato		F.2 Railway Freight Traffic	
B.1 .7 CPI - Pulses and products		F.3 Passenger flown (Km) - Domestic	
B.1 .8 CPI – Spices		F.4 Passenger flown (Km) - International	
B.1 .9 CPI - Non-alcoholic beverages		F.5 Passenger Vehicle Sales (wholesale)	April 2004 to March 2024
B.1 .10 CPI - Prepared meals, snacks, sweets *etc.*		**Merchandise Trade (3 series)**	
B.2 CPI - Clothing and footwear		G.1 Exports	April 1994 to March 2024
B.3 CPI – Housing		G.2 Imports	
B.4 CPI - Miscellaneous		G.3 Non-Oil Non-Gold and Non-Silver Imports	
C.1 Consumer Price Index for Industrial Workers (Base: 2001=100)		**Payment System Indicators (4 Series)**	
C.2 Consumer Price Index for Agricultural Labourers (Base: 1986-87=100)	January 2000 to March 2024	H.1 Real Time Gross Settlement	April 2004 to March 2024
C.3 Consumer Price Index for Rural Labourers (Base: 1986-87=100)		H.2 Paper Clearing	April 2005 to March 2024
D. WPI (Base: 2011-12=100) All Commodities	April 1994 to March 2024	H.3 Retail Electronic Clearing (REC)	April 2004 to March 2024
D.1 WPI - Primary Articles		H.4 Cards	
D.1.1 WPI - Food Articles			
D.2 WPI – Fuel & Power			
D.3 WPI – Manufactured Products			
D.3.1 WPI - Manufacture of Food Products			
D.3.2 WPI - Manufacture of Chemicals & Chemical Products	April 2012 to March 2024		
D.3.3 WPI - Manufacture of Basic Metals			

Table A1-M2: Average* Monthly Seasonal Factors of Selected Economic Time Series (Per cent)

SERIES NAME	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
1	2	3	4	5	6	7	8	9	10	11	12	13
Monetary and Banking Indicators (14 series)												
A.1.1 Broad Money (M3)	**101.0**	100.6	100.1	100.3	99.9	99.7	99.7	**99.3**	99.5	99.6	99.7	100.6
A.1.1.1 Net Bank Credit to Government	101.1	100.8	100.5	**101.6**	101.3	99.9	99.6	99.9	**97.9**	98.9	99.3	99.3
A.1.1.2 Bank Credit to Commercial Sector	100.6	100.0	99.9	99.7	**99.2**	99.5	99.7	99.3	100.1	100.0	100.1	**101.9**
A.1.2 Narrow Money (M1)	101.8	101.3	100.9	99.7	99.0	99.0	98.6	**98.3**	98.9	99.0	100.2	**103.4**
A.1.3 Reserve Money (RM)	101.4	101.9	101.5	100.3	99.1	98.5	**98.3**	98.8	99.2	99.1	99.0	**102.8**
A.1.3.1 Currency in Circulation	102.5	**102.7**	102.0	100.3	99.2	**98.1**	98.3	98.6	98.7	99.2	99.9	100.5
A.2.1 Aggregate Deposits (SCBs)	**100.7**	100.1	99.9	100.2	99.8	100.3	99.9	99.6	99.8	99.6	**99.5**	100.5
A.2.1.1 Demand Deposits (SCBs)	100.7	98.5	99.4	98.3	**97.8**	103.2	98.8	98.7	100.6	98.5	98.8	**106.8**
A.2.1.2 Time Deposits (SCBs)	**100.6**	100.2	100.0	100.3	100.0	100.1	100.1	99.8	99.7	99.7	**99.6**	99.8
A.3.1 Cash in Hand and Balances with RBI (SCBs)	100.6	100.2	101.8	99.6	101.0	100.9	99.8	100.7	**102.3**	98.5	97.3	**97.1**
A.3.2 Bank Credit (SCBs)	100.6	100.0	99.9	99.4	**99.0**	100.0	99.6	99.5	100.3	100.1	100.1	**101.6**
A.3.2.1 Loans, Cash, Credits and Overdrafts (SCBs)	100.5	100.0	99.9	99.4	**99.0**	100.1	99.6	99.6	100.3	100.1	100.1	**101.4**
A.3.2.2 Non-Food Credit (SCBs)	100.7	99.9	99.9	99.5	**99.1**	100.0	99.7	99.4	100.2	99.9	100.1	**101.6**
A.3.3 Investments (SCBs)	99.5	100.1	100.4	101.3	**101.4**	101.2	100.9	100.1	99.0	98.9	99.1	**98.2**
Price Indices [CPI: 21 series and WPI: 8 series]												
B. CPI (Base: 2012 = 100) All Commodities	99.2	99.6	99.9	100.5	100.7	100.6	**100.9**	100.9	100.0	99.5	99.2	**99.0**
B.1 CPI - Food and beverages	98.4	99.0	100.1	101.1	101.4	101.2	**101.7**	101.6	100.2	98.9	98.2	**98.1**
B.1 .1 CPI - Cereals and products	99.8	99.7	**99.6**	99.8	100.0	100.1	100.2	**100.3**	100.2	100.3	100.1	100.0
B.1 .2 CPI - Meat and fish	99.4	100.8	**102.7**	102.2	100.4	100.1	99.8	99.2	**98.7**	99.0	98.8	98.8
B.1 .3 CPI - Egg	**96.6**	96.7	99.0	100.5	98.8	98.5	99.1	101.6	103.9	**104.3**	102.2	98.9
B.1 .4 CPI - Milk and products	99.8	100.0	100.1	100.1	**100.2**	100.1	100.1	100.1	99.9	99.9	99.9	**99.8**
B.1 .5 CPI - Fruits	102.9	102.9	102.1	**103.3**	102.6	99.9	99.2	98.7	97.7	96.5	**96.3**	97.7
B.1 .6 CPI - Vegetables	89.5	91.9	97.7	105.6	107.4	109.1	**111.5**	111.1	102.1	94.5	90.9	**89.2**
B.1 .6.1 CPI - Potato	85.2	93.6	101.7	108.9	112.1	112.0	116.3	**116.8**	105.6	88.4	**79.7**	79.9
B.1 .6.2 CPI - Onion	80.6	**76.1**	80.7	88.4	100.0	105.7	117.1	**132.2**	120.0	110.8	100.8	89.4
B.1 .6.3 CPI - Tomato	77.4	86.7	105.3	**131.6**	121.4	109.7	118.9	119.6	96.9	83.8	75.5	**74.5**
B.1 .7 CPI - Pulses and products	**98.7**	99.1	99.6	99.6	99.9	100.6	101.1	**101.4**	101.1	100.4	99.5	99.0
B.1 .8 CPI - Spices	**99.5**	99.6	99.5	99.9	100.1	100.3	100.4	**100.5**	100.5	100.3	99.9	99.5
B.1 .9 CPI - Non-alcoholic beverages	**99.9**	99.9	99.9	100.0	100.0	100.1	100.0	100.1	**100.1**	100.1	100.0	99.9
B.1 .10 CPI - Prepared meals, snacks, sweets *etc.*	99.9	**99.9**	99.9	100.0	100.1	100.0	100.0	**100.1**	100.1	100.0	100.0	100.0
B.2 CPI - Clothing and footwear	99.9	99.9	99.9	100.0	100.0	100.0	100.1	**100.1**	100.1	100.0	99.9	**99.9**
B.3 CPI - Housing	100.3	100.2	**99.3**	99.6	100.0	100.0	100.3	**100.4**	99.6	100.0	100.2	100.0
B.4 CPI - Miscellaneous	99.9	99.9	99.9	**100.2**	100.2	100.2	100.1	100.0	99.9	99.9	99.9	**99.8**
C.1 Consumer Price Index for Industrial Workers (Base: 2001=100)	99.4	99.5	99.9	100.8	100.6	100.5	**100.9**	100.8	100.0	99.7	99.1	**99.0**
C.2 Consumer Price Index for Agricultural Labourers (Base: 1986-87=100)	99.2	99.4	99.7	100.0	100.5	100.5	100.9	**101.0**	100.5	99.9	99.4	**99.0**
C.3 Consumer Price Index for Rural Labourers (Base: 1986-87=100)	99.2	99.5	99.8	100.1	100.5	100.5	100.8	**100.9**	100.5	99.9	99.4	**99.1**
D. WPI (Base: 2011-12=100) All Commodities	99.8	100.0	100.0	100.4	100.3	100.2	100.5	**100.6**	99.7	**99.4**	99.4	99.5
D.1 WPI – Primary Articles	99.2	99.4	100.1	101.2	101.5	100.9	101.7	**102.0**	99.5	98.5	98.2	**97.8**
D.1.1 WPI - Food Articles	98.7	98.9	100.3	101.2	101.6	101.5	102.8	**102.8**	99.5	98.4	97.4	**97.0**
D.2 WPI – Fuel & Power	**99.3**	100.5	100.0	**100.7**	99.5	99.8	100.2	100.7	99.7	99.9	100.2	99.6
D.3 WPI – Manufactured Products	**100.4**	100.4	100.2	100.0	99.9	99.9	100.0	99.8	**99.6**	99.9	99.9	100.2
D.3.1 WPI - Manufacture of Food Products	100.2	100.1	100.2	100.1	100.5	**100.5**	100.2	100.0	99.7	99.5	**99.4**	99.5

Table A1-M2: Average* Monthly Seasonal Factors of Selected Economic Time Series (Per cent) *(Contd.)*

SERIES NAME	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
1	2	3	4	5	6	7	8	9	10	11	12	13
D.3.2 WPI - Manufacture of Chemicals & Chemical Products	100.3	**100.6**	100.3	100.2	100.0	99.8	99.9	99.8	99.6	**99.5**	99.8	100.1
D.3.3 WPI - WPI-Manufacture of Basic metals	100.9	**101.4**	100.7	99.5	99.2	99.8	99.7	99.2	**98.9**	100.0	100.1	100.7
Industrial Production (23 series)												
E. IIP (Base 2011-12 =A51:A72 100) General Index	**96.5**	100.7	98.6	97.4	97.4	97.6	99.7	98.3	103.1	103.3	98.4	**108.9**
E.1.1 IIP - Primary goods	97.8	103.1	100.2	98.8	97.0	**94.3**	98.2	97.5	102.3	103.8	96.8	**110.2**
E.1.2 IIP - Capital goods	**89.4**	97.3	99.7	95.4	96.7	102.4	98.1	97.2	100.9	100.3	101.5	**120.6**
E.1.3 IIP - Intermediate goods	97.6	100.3	98.3	101.3	99.8	98.6	99.0	97.8	102.0	101.9	**96.7**	**106.6**
E.1.4 IIP - Infrastructure/ construction goods	98.7	102.2	100.1	97.9	97.5	96.1	99.5	**94.7**	101.9	104.0	99.6	**108.4**
E.1.5 IIP - Consumer goods	**95.3**	97.9	95.7	98.5	97.9	101.5	99.7	101.8	**104.7**	103.2	99.1	104.6
E.1.5.1 IIP - Consumer durables	**95.8**	99.4	97.8	100.8	99.5	105.9	**106.7**	98.6	96.8	98.2	96.1	104.0
E.1.5.2 IIP - Consumer non-durables	**95.0**	97.7	95.3	96.9	95.8	96.7	95.9	103.0	**109.9**	106.5	101.5	105.6
E.2.1 IIP - Mining	97.5	100.8	95.8	90.2	86.7	**86.7**	96.5	101.1	107.7	110.1	105.1	**122.2**
E.2.2 IIP - Manufacturing	**95.5**	100.3	98.3	98.9	98.4	98.7	99.3	98.7	103.0	102.8	98.4	**107.7**
E.2.2.1 IIP - Manufacture of food products	96.0	89.0	**86.3**	90.8	89.5	89.2	93.6	105.8	**121.2**	118.3	110.7	108.7
E.2.2.2 IIP - Manufacture of beverages	112.2	**121.6**	106.8	92.5	**88.7**	91.2	90.2	88.8	93.1	97.8	100.9	117.6
E.2.2.3 IIP - Manufacture of textiles	97.7	98.9	98.3	100.5	101.2	100.9	100.9	99.9	**102.7**	101.2	**96.4**	101.7
E.2.2.4 IIP - Manufacture of chemicals and chemical products	95.0	101.0	100.0	**104.0**	101.7	101.0	100.3	97.7	101.0	101.1	**93.5**	103.4
E.2.2.5 IIP - Manufacture of motor vehicles, trailers and semi-trailers	98.3	100.5	97.1	100.8	98.7	100.4	102.3	99.6	**94.2**	100.7	100.3	**107.3**
E.2.3 IIP - Electricity	100.7	**107.2**	103.9	104.7	104.3	101.3	101.2	91.0	95.2	97.0	**90.9**	101.9
E.3 Cement Production	103.5	102.5	103.0	95.0	90.5	**90.4**	98.1	93.2	102.0	105.0	101.4	**115.6**
E.4 Steel Production	98.2	102.5	98.7	97.5	98.3	97.1	99.6	**96.4**	102.0	104.2	98.5	**107.5**
E.5 Coal Production	93.0	94.4	89.7	82.2	**80.1**	80.2	93.6	103.0	111.9	116.7	114.2	**140.9**
E.6 Crude Oil Production	98.9	102.4	99.2	102.0	101.4	97.8	101.5	98.2	101.5	101.6	**92.4**	**103.0**
E.7 Petroleum Refinery Production	97.1	101.2	99.5	100.6	97.7	**93.4**	100.9	100.5	103.4	104.1	95.3	**106.4**
E.8 Fertiliser Production	**83.0**	96.7	100.5	103.4	105.1	103.2	**106.2**	103.5	104.8	103.5	93.6	96.2
E.9 Natural Gas Production	96.4	100.5	98.8	102.4	102.4	99.2	**102.9**	99.8	102.2	102.6	**91.5**	101.4
Service Sector Indicators (5 series)												
F.1 Cargo handled at Major Ports	100.3	102.6	97.9	99.0	97.1	**92.9**	98.6	99.0	103.1	104.4	95.9	**109.6**
F.2 Railway Freight Traffic	97.4	101.7	98.3	97.6	95.5	**93.5**	97.9	98.2	103.3	105.6	97.8	**113.0**
F.3 Passenger flown (Km) - Domestic	99.8	**107.5**	99.2	96.2	96.3	**93.7**	99.5	100.3	106.8	103.6	97.5	100.1
F.4 Passenger flown (Km) - International	94.4	98.5	98.1	102.3	102.2	**92.9**	95.1	97.9	108.5	**110.8**	96.6	102.9
F.5 Passenger Vehicle Sales (wholesale)	96.8	93.4	**90.1**	99.2	98.2	105.3	**113.2**	100.8	90.3	104.5	101.0	106.6
Merchandise Trade (3 series)												
G.1 Exports	98.0	102.3	97.6	98.2	97.0	99.6	95.8	**95.3**	103.3	98.0	99.0	**115.9**
G.2 Imports	96.3	102.8	98.7	100.6	99.3	99.1	102.7	99.6	104.3	97.5	**93.8**	**105.5**
G.3 Non-Oil Non-Gold and Non-Silver Imports	96.6	99.7	100.9	102.5	99.2	103.0	101.0	98.2	**104.7**	99.2	**92.1**	103.2
Payment System Indicators (4 series)												
H.1 RTGS	94.2	96.2	103.4	98.3	92.8	100.6	96.0	93.5	106.5	99.2	**91.8**	**127.8**
H.2 Paper Clearing	108.1	102.0	95.9	99.9	94.3	**93.7**	99.5	95.0	101.8	97.9	95.7	**115.8**
H.3 REC	98.2	96.6	99.9	98.1	96.4	98.6	100.8	**92.6**	103.6	97.1	93.3	**125.3**
H.4 Cards	99.8	103.7	99.5	103.0	101.6	95.0	**109.7**	98.8	101.8	99.9	**87.9**	99.3

*: Average of last ten years' monthly seasonal factors, in general. Here, the average monthly seasonal factors have been computed on the basis of last 10 years (*i.e.*, April 2014 to March 2024). Numbers marked in 'bold' are peaks and troughs of respective series.

Table A1-M3: Range (Difference Between Peak and Trough) of Monthly Seasonal Factors

(Percentage points)

SERIES \ YEAR	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	Average Range
1	2	3	4	5	6	7	8	9	10	11	12
Monetary and Banking Indicators(14 series)											
A.1.1 Broad Money (M3)	1.8	2.0	2.1	2.1	2.0	1.9	1.7	1.6	1.5	1.4	1.7
A.1.1.1 Net Bank Credit to Government	3.7	3.8	3.9	4.1	4.1	4.1	3.8	3.5	3.4	3.6	3.7
A.1.1.2 Bank Credit to Commercial Sector	3.0	3.2	3.4	3.6	3.5	3.2	2.6	2.0	1.4	1.2	2.7
A.1.2 Narrow Money (M1)	4.1	4.5	5.3	5.9	6.2	6.1	5.6	5.1	4.8	4.6	5.1
A.1.3 Reserve Money (RM)	4.6	4.8	4.8	4.8	4.7	4.6	4.5	4.4	4.3	4.4	4.6
A.1.3.1 Currency in Circulation	5.0	5.0	5.0	4.9	4.7	4.4	4.1	4.1	4.2	4.3	4.5
A.2.1 Aggregate Deposits (SCBs)	1.3	1.1	1.4	1.7	1.7	1.5	1.2	1.1	1.2	1.2	1.2
A.2.1.1 Demand Deposits (SCBs)	5.6	7.4	9.5	11.5	12.2	11.6	10.1	8.8	7.8	7.5	9.1
A.2.1.2 Time Deposits (SCBs)	1.3	1.1	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.2	1.0
A.3.1 Cash in Hand and Balances with RBI (SCBs)	3.6	4.7	5.5	5.5	5.8	6.2	6.7	6.4	7.1	7.7	5.2
A.3.2 Bank Credit (SCBs)	2.6	2.8	3.2	3.4	3.5	3.2	2.6	2.0	1.5	1.4	2.6
A.3.2.1 Loans, Cash, Credits and Overdrafts (SCBs)	2.5	2.7	3.0	3.2	3.2	3.0	2.5	1.9	1.4	1.4	2.4
A.3.2.2 Non-Food Credit (SCBs)	2.5	3.0	3.5	3.8	3.9	3.5	2.8	1.9	1.2	1.4	2.6
A.3.3 Investments (SCBs)	3.9	3.7	3.6	3.5	3.4	3.3	3.3	3.4	3.5	3.4	3.2
Price Indices [CPI: 21 series and WPI: 8 series]											
B. CPI (Base: 2012 = 100) All Commodities	2.1	2.0	1.9	1.8	1.9	1.9	2.0	1.9	1.8	1.6	1.9
B.1 CPI - Food and beverages	4.0	3.8	3.7	3.5	3.6	3.7	3.8	3.6	3.4	3.2	3.6
B.1 .1 CPI - Cereals and products	0.7	0.7	0.7	0.6	0.6	0.6	0.7	0.8	0.9	1.1	0.7
B.1 .2 CPI - Meat and fish	3.2	3.2	3.2	3.4	3.8	4.2	4.6	4.9	5.2	5.4	3.9
B.1 .3 CPI - Egg	7.3	7.0	6.8	6.6	6.7	7.1	7.8	8.5	9.4	9.9	7.7
B.1 .4 CPI - Milk and products	0.7	0.6	0.5	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.3
B.1 .5 CPI - Fruits	6.3	6.2	6.1	6.2	6.5	6.8	7.3	7.7	8.1	8.2	6.9
B.1 .6 CPI - Vegetables	23.7	22.7	22.1	21.7	22.6	23.6	24.5	24.3	23.5	22.4	22.3
B.1 .6.1 CPI - Potato	37.0	36.6	35.5	34.8	35.7	37.6	38.5	39.9	40.3	40.2	37.1
B.1 .6.2 CPI - Onion	43.9	42.4	43.9	48.6	55.8	62.4	66.8	67.9	66.3	63.7	56.2
B.1 .6.3 CPI - Tomato	63.7	62.5	60.9	59.7	57.9	56.4	55.4	54.1	52.2	53.9	57.2
B.1 .7 CPI - Pulses and products	3.2	3.4	3.3	3.1	2.7	2.2	2.0	2.3	2.7	2.9	2.7
B.1 .8 CPI - Spices	1.2	1.1	1.1	1.0	0.9	0.7	0.9	1.4	2.0	2.5	1.1
B.1 .9 CPI - Non-alcoholic beverages	0.4	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3
B.1 .10 CPI - Prepared meals, snacks, sweets *etc.*	0.6	0.5	0.4	0.4	0.3	0.2	0.1	0.1	0.1	0.1	0.2
B.2 CPI - Clothing and footwear	0.5	0.5	0.4	0.3	0.3	0.3	0.2	0.1	0.1	0.1	0.2
B.3 CPI - Housing	1.1	1.1	1.2	1.1	1.1	1.1	1.1	1.1	1.0	1.0	1.1
B.4 CPI - Miscellaneous	0.6	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.4
C.1 Consumer Price Index for Industrial Workers (Base: 2001=100)	2.3	2.2	2.1	1.9	1.8	1.8	1.8	1.7	1.7	1.7	1.9
C.2 Consumer Price Index for Agricultural Labourers (Base: 1986-87=100)	2.5	2.4	2.2	2.0	2.0	1.9	1.8	1.8	1.8	1.7	2.0
C.3 Consumer Price Index for Rural Labourers (Base: 1986-87=100)	2.4	2.2	2.0	1.9	1.8	1.7	1.7	1.7	1.7	1.7	1.9
D. WPI (Base: 2011-12=100) All Commodities	1.6	1.5	1.4	1.2	1.2	1.2	1.3	1.3	1.3	1.3	1.2
D.1 WPI – Primary Articles	4.9	5.0	4.8	4.6	4.8	4.7	4.5	4.1	3.9	3.7	4.2
D.1.1 WPI - Food Articles	5.6	5.5	5.5	5.8	6.3	6.6	6.6	6.2	5.8	5.4	5.8
D.2 WPI – Fuel & Power	2.9	3.0	2.6	2.0	1.6	1.2	1.1	1.3	1.4	1.6	1.4
D.3 WPI – Manufactured Products	0.8	0.7	0.6	0.6	0.6	0.8	1.0	1.1	1.2	1.2	0.8
D.3.1 WPI - Manufacture of Food Products	1.7	1.5	1.3	1.2	1.1	1.1	1.2	1.3	1.5	1.5	1.2

Table A1-M3: Range (Difference Between Peak and Trough) of Monthly Seasonal Factors *(Contd.)*

(Percentage points)

SERIES \ YEAR	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	Average Range
1	2	3	4	5	6	7	8	9	10	11	12
D.3.2 WPI - Manufacture of Chemicals & Chemical Products	1.2	1.0	1.0	0.9	0.8	1.0	1.2	1.4	1.2	1.0	1.0
D.3.3 WPI - Manufacture of Basic Metals	1.6	1.8	2.0	2.2	2.4	2.6	2.9	3.0	3.1	3.0	2.4
Industrial Production (23 series)											
E. IIP (Base 2011-12 = 100) General Index	12.7	12.8	13.0	13.2	13.2	12.9	12.4	11.9	11.4	11.3	12.5
E.1.1 IIP - Primary goods	13.5	13.8	14.2	15.1	16.0	16.7	17.2	17.5	17.6	17.4	15.9
E.1.2 IIP - Capital goods	35.9	34.4	32.3	31.1	30.1	29.7	29.5	29.5	29.7	29.7	31.2
E.1.3 IIP - Intermediate goods	10.4	10.5	10.4	10.3	10.4	10.2	9.9	9.5	9.2	8.9	9.9
E.1.4 IIP - Infrastructure/ construction goods	12.3	12.6	13.2	13.8	14.2	14.2	14.3	14.3	14.3	14.1	13.7
E.1.5 IIP - Consumer goods	10.8	10.3	9.8	9.5	9.5	9.4	10.1	10.7	11.2	11.3	9.5
E.1.5.1 IIP - Consumer durables	13.5	12.9	11.8	11.0	11.0	10.7	10.3	9.9	9.9	10.1	10.8
E.1.5.2 IIP - Consumer non-durables	13.2	13.0	13.5	14.2	14.7	15.3	15.9	16.6	18.5	20.1	14.9
E.2.1 IIP - Mining	31.1	32.0	33.0	34.8	36.4	37.7	38.1	38.2	38.2	38.0	35.5
E.2.2 IIP - Manufacturing	12.3	12.6	12.6	12.8	12.8	12.7	12.4	11.9	11.5	11.2	12.3
E.2.2.1 IIP - Manufacture of food products	36.1	36.1	36.5	36.7	36.4	35.3	34.6	33.3	32.5	32.0	35.0
E.2.2.2 IIP - Manufacture of beverages	51.3	46.0	39.6	34.7	31.2	28.9	28.8	26.9	26.2	26.4	32.9
E.2.2.3 IIP - Manufacture of textiles	7.5	6.6	5.5	5.4	6.0	6.6	7.1	7.2	7.2	7.1	6.3
E.2.2.4 IIP - Manufacture of chemicals and chemical products	10.8	10.9	11.5	11.7	11.5	10.7	10.8	10.7	10.5	10.4	10.5
E.2.2.5 IIP - Manufacture of motor vehicles, trailers and semi-trailers	14.0	14.8	15.2	15.3	14.7	13.7	12.1	11.1	10.2	9.7	13.1
E.2.3 IIP - Electricity	13.5	14.6	15.8	16.8	17.8	18.2	19.3	19.8	19.7	19.3	16.3
E.3 Cement Production	22.5	22.4	22.9	24.3	26.0	27.7	28.7	28.5	28.1	27.4	25.2
E.4 Steel Production	9.8	9.7	10.2	11.0	11.9	12.5	12.4	12.0	11.6	11.3	11.1
E.5 Coal Production	55.1	56.4	58.8	61.9	64.1	64.9	64.1	62.8	61.4	60.1	60.7
E.6 Crude Oil Production	10.3	10.5	10.6	10.7	10.7	10.7	10.7	10.7	10.7	10.6	10.6
E.7 Petroleum Refinery Production	10.4	9.7	10.0	11.0	12.5	14.0	15.3	16.1	15.9	15.4	13.0
E.8 Fertiliser Production	26.4	24.6	22.9	22.0	22.2	22.6	23.0	23.0	22.8	22.2	23.2
E.9 Natural Gas Production	11.0	10.9	10.9	11.0	11.3	11.6	11.9	11.9	12.0	11.9	11.4
Service Sector Indicators (5 series)											
F.1 Cargo handled at Major Ports	14.9	15.4	15.9	16.3	16.9	17.4	17.6	17.6	17.7	17.5	16.7
F.2 Railway Freight Traffic	18.2	18.0	18.2	18.9	19.4	19.8	20.1	20.5	20.7	21.0	19.5
F.3 Passenger flown (Km) - Domestic	19.7	17.3	14.9	12.9	11.8	11.7	12.3	13.0	13.8	14.4	13.9
F.4 Passenger flown (Km) - International	19.4	20.0	20.2	20.6	20.2	19.4	18.4	17.5	16.2	15.2	17.9
F.5 Passenger Vehicle Sales (wholesale)	18.8	19.0	20.3	21.8	24.5	26.4	27.1	26.4	25.4	25.8	23.1
Merchandise Trade (3 series)											
G.1 Exports	19.1	18.4	18.5	20.1	21.5	22.4	22.3	22.2	21.6	21.5	20.6
G.2 Imports	12.8	13.7	13.7	13.5	13.0	13.1	11.5	10.2	9.6	10.0	11.7
G.3 Non-Oil Non-Gold and Non-Silver Imports	12.6	13.1	13.1	12.9	12.6	12.7	12.5	12.4	12.3	12.5	12.7
Payment System Indicators (4 series)											
H.1 RTGS	43.3	42.7	40.6	38.8	37.1	35.3	33.2	32.7	31.8	30.8	36.0
H.2 Paper Clearing	24.3	23.1	22.3	22.3	22.2	21.9	22.2	22.7	22.7	22.7	22.0
H.3 REC	37.5	36.9	35.8	34.3	33.3	32.1	30.6	29.5	29.1	28.5	32.7
H.4 Cards	19.6	20.1	20.5	21.2	21.7	22.5	22.9	23.1	23.0	22.9	21.7

Note: Average seasonal factor range is the range of average seasonal factors for last ten years; range is calculated as the difference between maximum and minimum of monthly seasonal factors.

Table A1 - M4: Major Diagnostics of all the Monthly Indicators

Name of variable	Seasonality in Original Series		Residual Seasonality		Quality Diagnostics	
	F test p-value	KW test p-value	F test p-value	F test 3 yr p-value	M7	Q
A.1.1 Broad Money (M3)	0.00	0.00	1.00	0.73	0.32	0.31
A.1.1.1 Net Bank Credit to Government	0.00	0.00	1.00	0.74	0.39	0.33
A.1.1.2 Bank Credit to Commercial Sector	0.00	0.00	1.00	1.00	0.39	0.30
A.1.2 Narrow Money (M1)	0.00	0.00	0.96	0.02	0.28	0.26
A.1.3 Reserve Money (RM)	0.00	0.00	0.45	0.99	0.28	0.22
A.1.3.1 Currency in Circulation	0.00	0.00	0.58	0.46	0.20	0.16
A.2.1 Aggregate Deposits (SCBs)	0.00	0.00	1.00	1.00	0.55	0.37
A.2.1.1 Demand Deposits (SCBs)	0.00	0.00	0.76	0.36	0.48	0.57
A.2.1.2 Time Deposits (SCBs)	0.00	0.00	1.00	1.00	0.57	0.33
A.3.1 Cash in Hand and Balances with RBI (SCBs)	0.00	0.00	0.86	0.22	1.46	0.93
A.3.2 Bank Credit (SCBs)	0.00	0.00	1.00	1.00	0.44	0.30
A.3.2.1 Loans, Cash, Credits and Overdrafts (SCBs)	0.00	0.00	1.00	1.00	0.43	0.31
A.3.2.2 Non-Food Credit (SCBs)	0.00	0.00	1.00	1.00	0.71	0.46
A.3.3 Investments (SCBs)	0.00	0.00	0.88	1.00	0.43	0.31
B. CPI (Base: 2012 = 100) All Commodities	0.00	0.00	1.00	0.88	0.31	0.33
B.1 CPI - Food and beverages	0.00	0.00	1.00	0.96	0.26	0.35
B.1 .1 CPI - Cereals and products	0.00	0.00	1.00	0.96	0.87	0.50
B.1 .2 CPI - Meat and fish	0.00	0.00	0.97	0.74	0.46	0.48
B.1 .3 CPI - Egg	0.00	0.00	1.00	0.95	0.39	0.31
B.1 .4 CPI - Milk and products	0.00	0.00	0.95	1.00	1.34	0.59
B.1 .5 CPI - Fruits	0.00	0.00	0.99	0.99	0.26	0.27
B.1 .6 CPI - Vegetables	0.00	0.00	0.99	0.87	0.26	0.32
B.1 .6.1 CPI - Potato	0.00	0.00	1.00	0.85	0.23	0.33
B.1 .6.2 CPI - Onion	0.00	0.00	0.85	1.00	0.43	0.36
B.1 .6.3 CPI - Tomato	0.00	0.00	0.76	0.95	0.50	0.83
B.1 .7 CPI - Pulses and products	0.00	0.00	1.00	1.00	0.70	0.53
B.1 .8 CPI - Spices	0.00	0.00	0.99	0.96	1.16	0.71
B.1 .9 CPI - Non-alcoholic beverages	0.00	0.00	1.00	0.04	1.04	0.51
B.1 .10 CPI - Prepared meals, snacks, sweets *etc.*	0.00	0.00	0.95	0.93	1.57	0.73
B.2 CPI - Clothing and footwear	0.00	0.00	0.97	1.00	1.39	0.75
B.3 CPI - Housing	0.00	0.00	0.92	0.98	0.40	0.38
B.4 CPI - Miscellaneous	0.00	0.00	1.00	0.84	1.02	0.49
C.1 Consumer Price Index for Industrial Workers (Base: 2001=100)	0.00	0.00	0.98	0.87	0.23	0.23
C.2 Consumer Price Index for Agricultural Labourers (Base: 1986-87=100)	0.00	0.00	1.00	0.94	0.26	0.31
C.3 Consumer Price Index for Rural Labourers (Base: 1986-87=100)	0.00	0.00	1.00	0.90	0.26	0.28
D. WPI (Base: 2011-12=100) All Commodities	0.00	0.00	1.00	1.00	0.46	0.44
D.1 WPI – Primary Articles	0.00	0.00	0.99	1.00	0.33	0.39
D.1.1 WPI - Food Articles	0.00	0.00	0.77	0.95	0.30	0.34
D.2 WPI – Fuel & Power	0.00	0.00	1.00	1.00	1.49	0.74
D.3 WPI – Manufactured Products	0.00	0.00	1.00	0.96	0.69	0.52
D.3.1 WPI - Manufacture of Food Products	0.00	0.00	1.00	0.94	0.96	0.68
D.3.2 WPI - Manufacture of Chemicals & Chemical Products	0.00	0.00	1.00	1.00	1.16	0.70

Table A1 - M4: Major Diagnostics of all the Monthly Indicators *(Contd.)*

Name of variable	Seasonality in Original Series		Residual Seasonality		Quality Diagnostics	
	F test p-value	KW test p-value	F test p-value	F test 3 yr p-value	M7	Q
D.3.3 WPI - Manufacture of Basic Metals	0.00	0.00	0.99	0.95	0.89	0.57
D.3.4 WPI - Manufacture of Machinery and Equipment	0.07	0.04	1.00	0.97	1.90	0.85
E. IIP (Base 2011-12 = 100) General Index	0.00	0.00	0.22	0.90	0.16	0.24
E.1.1 IIP - Primary goods	0.00	0.00	0.20	0.73	0.27	0.74
E.1.2 IIP - Capital goods	0.00	0.00	0.33	0.66	0.31	0.51
E.1.3 IIP - Intermediate goods	0.00	0.00	0.37	0.50	0.37	0.43
E.1.4 IIP - Infrastructure/ construction goods	0.00	0.00	0.34	0.61	0.47	0.49
E.1.5 IIP - Consumer goods	0.00	0.00	0.43	0.75	0.50	0.59
E.1.5.1 IIP - Consumer durables	0.00	0.00	0.14	0.44	0.41	0.44
E.1.5.2 IIP - Consumer non-durables	0.00	0.00	0.44	0.88	0.40	0.73
E.2.1 IIP - Mining	0.00	0.00	0.80	0.92	0.24	0.36
E.2.2 IIP - Manufacturing	0.00	0.00	0.18	0.83	0.21	0.26
E.2.2.1 IIP - Manufacture of food products	0.00	0.00	1.00	0.32	0.18	0.44
E.2.2.2 IIP - Manufacture of beverages	0.00	0.00	0.52	0.96	0.54	0.46
E.2.2.3 IIP - Manufacture of textiles	0.00	0.00	0.34	0.89	0.60	0.65
E.2.2.4 IIP - Manufacture of chemicals and chemical products	0.00	0.00	0.49	1.00	0.52	0.75
E.2.2.5 IIP - Manufacture of motor vehicles, trailers and semi-trailers	0.00	0.00	0.30	0.76	0.60	0.60
E.2.3 IIP - Electricity	0.00	0.00	0.46	0.64	0.52	0.56
E.3 Cement Production	0.00	0.00	0.42	0.34	0.23	0.34
E.4 Steel Production	0.00	0.00	0.49	0.56	0.47	0.58
E.5 Coal Production	0.00	0.00	0.61	0.90	0.12	0.29
E.6 Crude Oil Production	0.00	0.00	0.88	1.00	0.17	0.28
E.7 Petroleum Refinery Production	0.00	0.00	0.94	0.80	0.46	0.73
E.8 Fertiliser Production	0.00	0.00	0.47	0.74	0.29	0.61
E.9 Natural Gas Production	0.00	0.00	0.92	0.88	0.26	0.39
F.1 Cargo handled at Major Ports	0.00	0.00	0.95	1.00	0.30	0.50
F.2 Railway Freight Traffic	0.00	0.00	0.53	0.98	0.13	0.32
F.3 Passenger flown (Km) - Domestic	0.00	0.00	0.22	0.72	0.30	0.32
F.4 Passenger flown (Km) - International	0.00	0.00	0.64	0.88	0.36	0.53
F.5 Passenger Vehicle Sales (wholesale)	0.00	0.00	0.79	0.34	0.40	0.39
G.1 Exports	0.00	0.00	0.64	0.67	0.37	0.52
G.2 Imports	0.00	0.00	0.99	0.86	0.83	0.80
G.3 Non-Oil Non-Gold and Non-Silver Imports	0.00	0.00	1.00	0.99	0.59	0.71
H.1 RTGS	0.00	0.00	0.56	0.78	0.39	0.37
H.2 Paper Clearing	0.00	0.00	0.12	0.37	0.30	0.76
H.3 REC	0.00	0.00	0.79	0.31	0.41	0.34
H.4 Cards	0.00	0.00	0.04	0.39	0.37	0.43

Notes: 1. Test for seasonality in original series: F-test for the presence of seasonality assuming stability and Kruskall and Wallis test (a nonparametric test for stable seasonality).

2. Test for seasonality in seasonally adjusted series: F-test for the presence of seasonality assuming stability for full sample and for latest 3 years.

3. M7 corresponds to the amount of moving seasonality present relative to the amount of stable seasonality (acceptable range is between 0 and 1). However, M Diagnostics are aggregated in a single quality control indicator - Q, which gives the overall assessment of the adjustment (acceptable range is between 0 and 1).

Table A1-M5: Monthly Seasonal Factors of Selected Economic Time Series for 2023-24 (Per cent)

SERIES NAME	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
1	2	3	4	5	6	7	8	9	10	11	12	13
Monetary and Banking Indicators (14 series)												
A.1.1 Broad Money (M3)	100.7	100.2	99.9	**100.7**	100.0	99.5	99.5	**99.4**	100.2	99.8	99.8	100.3
A.1.1.1 Net Bank Credit to Government	101.6	100.0	100.0	101.2	101.2	99.7	99.1	100.2	98.1	**98.0**	99.4	**101.6**
A.1.1.2 Bank Credit to Commercial Sector	100.1	**99.6**	99.7	100.2	99.6	99.6	100.1	99.7	**100.7**	100.0	99.9	100.6
A.1.2 Narrow Money (M1)	101.4	101.1	101.1	100.1	98.8	98.3	**98.0**	98.4	100.1	99.7	100.3	**102.6**
A.1.3 Reserve Money (RM)	100.6	**102.5**	102.0	100.9	99.3	98.4	**98.1**	98.7	99.1	99.1	99.1	102.2
A.1.3.1 Currency in Circulation	102.4	**102.5**	102.2	100.4	99.5	98.4	**98.2**	98.4	98.4	99.3	99.8	100.7
A.2.1 Aggregate Deposits (SCBs)	**100.6**	99.8	100.0	100.5	99.9	**100.6**	99.9	99.6	100.3	99.5	**99.5**	99.8
A.2.1.1 Demand Deposits (SCBs)	100.9	98.4	98.1	99.2	**97.1**	103.3	99.6	98.4	101.7	99.1	99.3	**104.6**
A.2.1.2 Time Deposits (SCBs)	100.6	99.9	100.1	**100.6**	100.2	100.4	100.0	99.7	100.1	99.5	**99.4**	99.5
A.3.1 Cash in Hand and Balances with RBI (SCBs)	100.6	100.8	100.9	100.8	**103.1**	102.4	100.1	100.2	101.4	98.6	**95.4**	95.6
A.3.2 Bank Credit (SCBs)	100.2	99.5	99.5	99.9	**99.3**	100.4	100.0	100.1	**100.7**	100.0	99.9	100.4
A.3.2.1 Loans, Cash, Credits and Overdrafts (SCBs)	100.2	99.5	99.5	99.8	**99.3**	100.3	100.0	100.1	**100.7**	100.1	99.9	100.4
A.3.2.2 Non-Food Credit (SCBs)	100.1	**99.2**	99.6	100.3	99.7	100.2	100.3	100.3	**100.6**	99.8	99.7	100.0
A.3.3 Investments (SCBs)	99.7	99.9	100.5	101.8	101.4	**101.8**	100.9	99.3	98.7	**98.3**	98.9	98.9
Price Indices [CPI: 21 series and WPI: 8 series]												
B. CPI (Base: 2012 = 100) All Commodities	99.3	99.8	100.1	100.5	100.5	100.4	**100.8**	100.8	100.0	99.5	99.3	**99.1**
B.1 CPI - Food and beverages	98.6	99.2	100.2	100.9	101.2	100.7	101.6	**101.6**	100.2	99.0	98.5	**98.4**
B.1 .1 CPI - Cereals and products	99.7	99.7	**99.4**	99.6	99.9	100.0	100.2	100.4	100.4	**100.4**	100.3	100.1
B.1 .2 CPI - Meat and fish	99.2	101.3	**103.6**	102.3	99.8	100.5	100.6	99.2	**98.1**	98.2	98.3	98.7
B.1 .3 CPI - Egg	**95.6**	96.0	100.1	100.8	97.8	97.8	98.9	101.8	104.6	**105.5**	103.0	98.5
B.1 .4 CPI - Milk and products	100.0	**100.1**	100.0	100.0	100.1	100.0	100.0	100.0	99.9	**99.9**	100.0	100.0
B.1 .5 CPI - Fruits	103.6	103.2	101.8	**104.0**	103.0	100.1	99.5	98.5	97.4	95.8	**95.8**	97.4
B.1 .6 CPI - Vegetables	**89.2**	91.9	98.6	104.1	106.2	107.9	111.5	**111.5**	102.3	94.4	91.4	90.2
B.1 .6.1 CPI - Potato	83.0	94.1	102.5	111.3	114.1	113.4	**117.3**	116.1	104.2	87.4	**77.0**	78.2
B.1 .6.2 CPI - Onion	79.7	**74.9**	79.7	88.9	95.4	100.4	115.3	**138.7**	122.7	110.1	102.6	89.8
B.1 .6.3 CPI - Tomato	**74.3**	82.2	103.3	126.2	120.7	110.9	**128.3**	119.4	98.7	84.2	77.3	74.9
B.1 .7 CPI - Pulses and products	99.0	99.2	99.4	99.3	99.4	100.8	101.4	**101.7**	101.3	100.4	99.4	**98.8**
B.1 .8 CPI - Spices	99.1	99.3	99.1	99.7	100.4	101.0	101.1	**101.2**	100.8	100.4	99.5	**98.6**
B.1 .9 CPI - Non-alcoholic beverages	**99.9**	99.9	100.0	99.9	100.0	100.0	100.0	100.1	**100.1**	100.1	100.0	99.9
B.1 .10 CPI - Prepared meals, snacks, sweets *etc.*	**99.9**	100.0	100.0	100.0	**100.1**	100.1	100.0	100.0	99.9	100.0	100.0	100.0
B.2 CPI - Clothing and footwear	**100.0**	100.0	100.0	100.0	100.0	100.0	100.0	**100.1**	100.0	100.0	100.0	100.0
B.3 CPI - Housing	**100.5**	100.4	**99.4**	99.7	100.1	99.8	100.4	100.4	99.6	99.8	100.2	99.8
B.4 CPI - Miscellaneous	100.0	100.0	100.0	**100.2**	100.2	100.1	100.0	99.9	99.9	99.9	99.9	**99.9**
C.1 Consumer Price Index for Industrial Workers (Base: 2001=100)	99.5	99.5	100.0	**100.6**	100.5	100.4	100.8	100.7	100.0	99.6	99.2	**99.1**
C.2 Consumer Price Index for Agricultural Labourers (Base: 1986-87=100)	99.3	99.5	99.7	**99.9**	100.2	100.2	100.7	101.0	100.6	100.1	99.6	**99.3**
C.3 Consumer Price Index for Rural Labourers (Base: 1986-87=100)	99.3	99.6	99.7	**99.9**	100.2	100.2	100.7	100.9	100.6	100.0	99.6	**99.3**
D. WPI (Base: 2011-12=100) All Commodities	100.3	100.0	100.3	**100.3**	100.2	99.9	100.4	100.6	99.6	99.3	99.3	**99.7**
D.1 WPI – Primary Articles	100.0	99.6	100.2	**100.6**	101.0	100.0	101.5	102.0	99.4	98.7	98.2	**98.7**
D.1.1 WPI - Food Articles	99.4	99.2	100.5	**100.5**	101.0	101.0	103.0	102.8	99.2	98.2	97.6	**97.6**
D.2 WPI – Fuel & Power	100.0	100.1	99.9	**100.3**	99.5	99.5	99.9	101.0	100.1	99.5	100.1	**100.2**

Table A1-M5: Monthly Seasonal Factors of Selected Economic Time Series for 2023-24 (Per cent) *(Contd.)*

SERIES NAME	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
1	2	3	4	5	6	7	8	9	10	11	12	13
D.3 WPI – Manufactured Products	100.7	100.6	100.2	**99.8**	99.9	99.8	99.8	99.7	99.5	99.8	99.9	**100.3**
D.3.1 WPI - Manufacture of Food Products	100.7	100.5	100.5	**100.1**	100.5	100.3	99.8	99.9	99.4	99.4	99.2	**99.8**
D.3.2 WPI - Manufacture of Chemicals & Chemical Products	100.5	100.6	100.2	**100.0**	99.8	99.7	100.0	99.8	99.7	99.6	99.9	**100.2**
D.3.3 WPI - WPI-Manufacture of Basic metals	101.2	101.9	100.3	**99.1**	99.4	99.6	99.5	99.0	98.8	99.8	100.4	**101.0**
Industrial Production (23 series)												
E. IIP (Base 2011-12 =A51:A72 100) General Index	97.1	100.0	99.1	97.9	97.2	**96.9**	98.9	98.3	103.8	104.0	98.2	**108.2**
E.1.1 IIP - Primary goods	98.4	103.9	100.5	99.1	96.7	**93.4**	96.9	96.1	102.0	104.0	98.2	**110.8**
E.1.2 IIP - Capital goods	**89.1**	97.0	100.3	96.8	97.9	103.6	98.9	96.7	98.9	101.4	100.1	**118.9**
E.1.3 IIP - Intermediate goods	97.8	101.0	98.6	101.1	99.8	98.0	99.5	98.0	102.1	102.8	**96.0**	**105.0**
E.1.4 IIP - Infrastructure/ construction goods	98.2	100.2	97.7	97.1	98.5	97.5	100.4	**94.4**	102.7	105.1	99.5	**108.5**
E.1.5 IIP - Consumer goods	96.0	97.1	**95.6**	100.2	98.2	101.0	97.3	103.0	**106.9**	103.4	97.7	103.7
E.1.5.1 IIP - Consumer durables	**95.9**	99.0	99.1	102.2	99.9	**106.0**	105.3	98.2	96.0	97.8	96.3	104.4
E.1.5.2 IIP - Consumer non-durables	97.1	95.5	95.8	98.5	95.5	95.2	**93.9**	105.7	**114.0**	106.7	98.7	103.1
E.2.1 IIP - Mining	97.9	101.3	95.5	89.8	85.7	**84.9**	96.3	100.8	107.6	110.5	106.6	**122.9**
E.2.2 IIP - Manufacturing	**95.7**	99.8	98.5	99.3	98.7	98.2	98.2	98.9	104.0	103.7	97.9	**107.0**
E.2.2.1 IIP - Manufacture of food products	99.5	90.2	**86.9**	90.6	90.7	87.2	91.9	107.5	**118.9**	117.2	110.5	109.0
E.2.2.2 IIP - Manufacture of beverages	105.2	**115.4**	109.4	98.1	91.4	91.6	**89.0**	90.1	92.9	99.5	102.3	114.6
E.2.2.3 IIP - Manufacture of textiles	98.0	98.6	98.4	100.1	99.7	99.9	101.0	100.0	**103.7**	102.0	**96.6**	102.1
E.2.2.4 IIP - Manufacture of chemicals and chemical products	96.1	102.5	102.1	**104.1**	101.6	100.3	99.8	97.0	100.6	100.4	**93.7**	101.3
E.2.2.5 IIP - Manufacture of motor vehicles, trailers and semi-trailers	96.7	99.8	97.8	102.1	98.6	100.5	102.8	99.8	**94.8**	102.1	100.2	**104.5**
E.2.3 IIP - Electricity	101.4	**107.2**	106.2	105.0	105.5	101.4	100.3	**87.9**	93.6	97.3	91.6	102.6
E.3 Cement Production	103.4	101.2	104.2	94.0	90.9	**89.3**	97.7	92.5	102.7	104.5	102.2	**116.7**
E.4 Steel Production	98.4	100.0	96.9	96.4	98.7	98.0	100.2	**96.2**	103.1	106.0	98.7	**107.5**
E.5 Coal Production	94.2	94.8	90.8	83.7	80.5	**79.5**	92.6	101.2	110.9	117.4	114.0	**139.6**
E.6 Crude Oil Production	99.1	102.7	99.3	102.1	101.2	97.7	101.2	98.0	101.3	101.8	**92.5**	**103.1**
E.7 Petroleum Refinery Production	99.4	101.8	98.8	99.5	96.2	**92.3**	97.2	100.5	105.3	104.4	96.7	**107.7**
E.8 Fertiliser Production	**83.6**	98.8	101.0	103.7	104.2	101.6	**105.8**	104.3	105.3	104.3	92.9	94.1
E.9 Natural Gas Production	95.8	100.0	98.7	102.7	103.1	100.0	**103.2**	99.5	101.9	102.4	**91.4**	101.4
Service Sector Indicators (5 series)												
F.1 Cargo handled at Major Ports	100.7	101.2	98.5	97.5	96.0	**91.8**	99.1	99.8	103.8	104.8	97.2	**109.4**
F.2 Railway Freight Traffic	98.0	102.8	98.8	97.0	95.4	**92.8**	97.0	97.3	103.5	105.5	98.2	**113.7**
F.3 Passenger flown (Km) - Domestic	100.4	107.1	98.2	93.8	95.9	**93.4**	99.0	100.4	**107.8**	103.1	98.9	102.2
F.4 Passenger flown (Km) - International	**91.8**	98.5	100.3	104.4	102.9	94.2	96.4	97.6	106.4	**106.9**	96.8	102.7
F.5 Passenger Vehicle Sales (wholesale)	95.0	93.6	90.8	101.0	100.2	106.0	**113.4**	99.9	**87.6**	106.4	102.3	102.9
Merchandise Trade (3 series)												
G.1 Exports	100.2	101.4	98.1	100.2	96.5	95.9	94.0	**93.9**	103.9	99.4	101.0	**115.4**
G.2 Imports	**95.4**	102.0	96.8	100.9	100.6	99.1	**105.4**	97.9	103.7	95.8	97.1	104.8
G.3 Non-Oil Non-Gold and Non-Silver Imports	96.2	99.6	99.5	102.5	99.0	101.7	103.4	98.3	**104.9**	98.5	**92.4**	103.7
Payment System Indicators (4 series)												
H.1 RTGS	**91.2**	95.0	101.0	97.8	93.9	100.9	99.2	96.6	110.3	98.6	93.1	**122.0**
H.2 Paper Clearing	109.4	102.3	95.7	99.7	**93.3**	95.3	98.2	94.9	102.3	96.6	96.7	**115.9**
H.3 REC	95.0	97.6	97.7	99.9	96.0	96.7	101.4	**94.8**	103.1	98.4	96.3	**123.2**
H.4 Cards	99.3	102.8	99.0	103.7	101.4	95.6	**111.6**	98.1	101.0	98.7	**88.7**	100.6

Annex - II

Table A2-Q1: Time Period Used for Estimating Quarterly Seasonal Factors

Quarterly Series		Industrial Outlook Survey (12 series)	
National Accounts Statistics (8 series)		L.1 Production Assessment	Q1:2000-01 to Q4:2023-2024
I.1 Real Gross Domestic Product (GDP)	Q1:2011-12 to Q4:2023-2024	L.2 Production Expectation	
I.2 Real Gross Value Added (GVA)		L.3 Order Books Assessment	
I.3 Real PFCE		L.4 Order Books Expectation	
I.4 Real GFCE		L.5 Capacity Utilisation Assessment	
I.5 Real GFCF		L.6 Capacity Utilisation Expectation	
I.6 GVA of Agriculture		L.7 Selling Price Assessment	
I.7 GVA of Industry		L.8 Selling Price Expectation	
I.8 GVA of Services		L.9 Profit Margin Assessment	
Balance of Payments (4 series)		L.10 Profit Margin Expectation	
J.1 Exports of Services	Q1:2011-12 to Q4:2023-2024	L.11Business Assessment Index	
J.2 Exports in Travel		L.12 Business Expectation Index	
J.3 Exports in Telecommunications, Computer and Information Services			
J.4 Imports in Travel			
OBICUS (1 series)			
K.1 Capacity Utilisation of manufacturing companies	Q1:2008-09 to Q3:2023-2024		

Table A2-Q2: Average* Quarterly Seasonal Factors of Selected Economic Time Series

(Per cent)

SERIES NAME	Q1	Q2	Q3	Q4
1	2	3	4	5
National Accounts Statistics (8 series)				
I.1 Real Gross Domestic Product (GDP)	**98.0**	98.1	99.6	**104.5**
I.2 Real Gross Value Added (GVA)	99.8	**98.4**	100.0	**102.0**
I.3 Real PFCE	97.3	**96.2**	**104.2**	102.3
I.4 Real GFCE	**107.1**	104.9	**90.0**	99.7
I.5 Real GFCF	100.0	**96.7**	97.8	**105.5**
I.6 GVA of Agriculture	91.7	**76.9**	**125.6**	105.8
I.7 GVA of Industry	100.2	98.1	**95.3**	**106.8**
I.8 GVA of Services	101.9	**103.6**	**95.3**	99.5
Balance of Payments (4 series)				
J.1 Exports of Services	**96.6**	98.4	102.2	**102.9**
J.2 Exports in Travel	**86.1**	96.1	108.0	**110.3**
J.3 Exports in Telecommunications, Computer and Information Services	99.1	100.8	**101.2**	**98.9**
J.4 Imports in Travel	**109.7**	106.5	**90.8**	92.8
OBICUS (1 series)				
K.1 Capacity Utilisation of manufacturing companies	**98.5**	99.3	100.0	**102.2**
Industrial Outlook Survey (12 series)				
L.1 Production Assessment	99.0	**98.1**	99.8	**103.1**
L.2 Production Expectation	**98.8**	100.7	**101.0**	99.3
L.3 Order Books Assessment	100.2	**98.7**	98.9	**102.1**
L.4 Order Books Expectation	**99.5**	100.1	100.0	**100.3**
L.5 Capacity Utilisation Assessment	99.3	**98.1**	99.4	**103.3**
L.6 Capacity Utilisation Expectation	**99.2**	99.6	**101.2**	100.0
L.7 Selling Price Assessment	**102.6**	**98.4**	98.6	100.4
L.8 Selling Price Expectation	**100.7**	100.1	99.9	**99.3**
L.9 Profit Margin Assessment	100.6	99.2	**98.7**	**101.3**
L.10 Profit Margin Expectation	99.1	**101.4**	100.6	**98.8**
L.11 Business Assessment Index	100.1	**99.2**	99.6	**101.2**
L.12 Business Expectation Index	**99.2**	99.4	**101.0**	100.3

Note: *: Average of last ten years' quarterly seasonal factors, in general. Here, the average quarterly seasonal factors have been computed on the basis of last 10 years (*i.e.*, Q1:2014-15 to Q4: 2023-24). Numbers marked in 'bold' are peaks and troughs of respective series.

Table A2-Q3: Range (Difference Between Peak and Trough) of Quarterly Seasonal Factors

(Percentage points)

SERIES \ YEAR	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	Average Range
1	2	3	4	5	6	7	8	9	10	11	12
National Accounts Statistics (8 series)											
I.1 Real Gross Domestic Product (GDP)	5.5	5.1	5.1	5.5	6.1	6.7	7.2	7.9	8.5	8.8	6.5
I.2 Real Gross Value Added (GVA)	2.3	1.7	1.7	2.1	2.7	3.6	4.6	5.4	6.0	6.2	3.6
I.3 Real PFCE	7.9	7.2	6.8	6.8	7.3	7.9	8.4	8.8	9.1	9.4	7.9
I.4 Real GFCE	30.3	31.0	29.7	25.0	16.8	18.0	19.5	26.9	33.6	37.6	17.0
I.5 Real GFCF	6.6	6.5	6.8	7.7	8.9	10.0	10.7	10.9	10.6	10.2	8.8
I.6 GVA of Agriculture	54.8	52.2	50.2	48.8	48.0	47.3	46.9	46.5	46.4	46.4	48.8
I.7 GVA of Industry	9.6	10.0	10.3	10.4	10.6	11.1	11.8	12.7	13.6	14.1	11.4
I.8 GVA of Services	10.3	10.3	10.0	9.6	8.9	8.2	7.3	6.6	6.0	5.6	8.3
Balance of Payments (4 series)											
J.1 Exports of Services	5.4	5.5	5.7	5.8	6.1	6.6	6.8	7.0	7.1	7.2	6.3
J.2 Exports in Travel	24.0	20.9	18.7	17.5	18.5	21.7	26.4	30.2	32.0	33.4	24.2
J.3 Exports in Telecommunications, Computer and Information Services	3.2	3.0	2.9	2.5	2.2	2.0	2.0	1.9	1.7	1.6	2.3
J.4 Imports in Travel	17.2	19.2	19.5	19.4	19.9	19.6	19.3	19.8	21.0	22.4	18.8
OBICUS (1 series)											
K.1 Capacity Utilisation of manufacturing companies	5.0	4.4	3.9	3.5	3.2	3.1	3.2	3.3	3.5	3.6	3.7
Industrial Outlook Survey (12 series)											
L.1 Production Assessment	4.9	4.6	4.7	4.9	5.0	5.1	5.1	5.2	5.0	4.9	4.9
L.2 Production Expectation	3.8	3.2	2.8	2.5	2.2	2.4	3.1	3.6	3.5	3.0	2.2
L.3 Order Books Assessment	4.3	4.4	4.3	4.1	4.0	3.6	3.2	2.7	2.0	1.3	3.3
L.4 Order Books Expectation	2.1	1.5	0.9	0.8	1.0	0.8	0.4	1.0	1.4	1.6	0.8
L.5 Capacity Utilisation Assessment	5.0	4.7	4.7	4.9	5.1	5.2	5.4	5.6	5.6	5.6	5.2
L.6 Capacity Utilisation Expectation	3.9	3.1	2.3	1.4	1.3	1.8	2.4	2.7	3.4	3.3	2.0
L.7 Selling Price Assessment	3.3	3.6	4.4	5.0	5.3	5.3	5.1	4.5	3.4	2.1	4.2
L.8 Selling Price Expectation	1.2	1.2	1.3	1.5	1.9	2.0	1.9	2.0	2.4	2.2	1.4
L.9 Profit Margin Assessment	3.6	3.6	3.5	3.4	3.1	2.6	2.3	2.1	1.8	1.3	2.6
L.10 Profit Margin Expectation	1.7	1.8	1.8	2.2	3.1	3.8	4.3	4.3	3.7	2.7	2.6
L.11 Business Assessment Index	2.9	2.5	2.4	2.3	2.2	1.9	1.7	1.6	1.5	1.7	2.1
L.12 Business Expectation Index	1.4	1.5	1.5	1.5	1.7	1.8	2.0	2.0	2.2	2.3	1.7

Note: Average seasonal factor range is the range of average seasonal factors for last ten years; range is calculated as the difference between maximum and minimum of quarterly seasonal factors.

Table A2-Q4: Major Diagnostics of all the Quarterly Indicators

Name of variable	Seasonality in Original Series		Residual Seasonality		Quality Diagnostics	
	F test p-value	KW test p-value	F test p-value	F test 3 yr p-value	M7	Q
I.1 Real Gross Domestic Product (GDP)	0.00	0.00	0.06	0.17	0.24	0.29
I.2 Real Gross Value Added (GVA)	0.00	0.00	0.04	0.09	0.56	0.57
I.3 Real PFCE	0.00	0.00	0.04	0.09	0.20	0.52
I.4 Real GFCE	0.00	0.00	0.47	0.11	0.76	1.07
I.5 Real GFCF	0.00	0.00	0.13	0.14	0.36	0.69
I.6 GVA of Agriculture	0.00	0.00	0.77	0.90	0.08	0.11
I.7 GVA of Industry	0.00	0.00	0.10	0.43	0.26	0.45
I.8 GVA of Services	0.00	0.00	0.03	0.10	0.32	0.60
J.1 Exports of Services	0.00	0.00	0.44	0.38	0.31	0.36
J.2 Exports in Travel	0.00	0.00	0.94	0.58	0.44	0.46
J.3 Exports in Telecommunications, Computer and Information Services	0.00	0.00	0.06	0.42	0.56	0.45
J.4 Imports of Services	0.03	0.00	0.98	0.93	1.12	0.85
J.5 Imports in Travel	0.00	0.00	0.19	0.35	0.33	0.32
J.6 Imports in Telecommunications, Computer and Information Services	0.01	0.04	0.55	0.42	1.14	1.39
K.1 Capacity Utilisation of manufacturing companies	0.00	0.00	0.16	0.28	0.34	0.44
L.1 Production Assessment	0.00	0.00	0.17	0.30	0.32	0.46
L.2 Production Expectation	0.00	0.00	0.95	0.90	0.58	0.64
L.3 Order Books Assessment	0.00	0.00	0.16	0.27	0.59	0.66
L.4 Order Books Expectation	0.00	0.00	0.31	0.56	0.84	0.96
L.5 Employment Assessment	0.40	0.07	0.31	0.40	2.38	1.13
L.6 Employment Expectation	0.03	0.05	0.65	0.64	1.37	1.10
L.7 Capacity Utilisation Assessment	0.00	0.00	0.09	0.31	0.29	0.45
L.8 Capacity Utilisation Expectation	0.00	0.00	0.89	0.79	0.73	1.07
L.9 Selling Price Assessment	0.00	0.00	0.36	0.42	0.59	0.83
L.10 Selling Price Expectation	0.01	0.00	0.50	0.82	1.16	1.21
L.11 Cost of External Finance Assessment	0.35	0.42	0.24	0.45	2.02	1.00
L.12 Cost of External Finance Expectation	0.02	0.01	0.22	0.33	1.24	0.77
L.13 Profit Margin Assessment	0.00	0.00	0.18	0.53	0.77	1.08
L.14 Profit Margin Expectation	0.00	0.00	0.91	0.52	1.05	0.90
L.15 Business Assessment Index	0.00	0.00	0.30	0.38	0.53	0.78
L.16 Business Expectation Index	0.00	0.00	0.92	0.63	0.60	0.94

Notes: Please see notes to Table A1-M4.

Table A2-Q5: Quarterly Seasonal Factors of Selected Economic Time Series for 2023-24

(Per cent)

SERIES NAME	Q1	Q2	Q3	Q4
1	2	3	4	5
National Accounts Statistics (8 series)				
I.1 Real Gross Domestic Product (GDP)	97.0	97.4	99.9	105.8
I.2 Real Gross Value Added (GVA)	98.5	97.7	100.0	103.9
I.3 Real PFCE	96.1	96.5	105.5	102.0
I.4 Real GFCE	103.0	92.5	83.8	121.4
I.5 Real GFCF	99.2	97.1	96.7	106.9
I.6 GVA of Agriculture	91.2	77.2	123.6	108.3
I.7 GVA of Industry	98.1	98.1	94.9	109.0
I.8 GVA of Services	100.4	102.0	96.3	101.4
Balance of Payments (4 series)				
J.1 Exports of Services	95.9	98.6	102.4	103.1
J.2 Exports in Travel	81.1	91.2	114.6	113.3
J.3 Exports in Telecommunications, Computer and Information Services	99.3	100.4	100.9	99.5
J.4 Imports in Travel	112.1	103.1	89.7	94.7
OBICUS (1 series)				
K.1 Capacity Utilisation of manufacturing companies	98.5	99.6	99.9	102.1
Industrial Outlook Survey (12 series)				
L.1 Production Assessment	98.7	98.1	100.2	103.0
L.2 Production Expectation	99.5	101.3	101.1	98.3
L.3 Order Books Assessment	100.0	99.5	99.5	100.8
L.4 Order Books Expectation	99.1	100.6	100.7	99.6
L.5 Capacity Utilisation Assessment	98.6	97.9	99.9	103.5
L.6 Capacity Utilisation Expectation	99.0	99.6	102.3	99.4
L.7 Selling Price Assessment	101.6	99.5	99.5	99.6
L.8 Selling Price Expectation	99.8	101.3	100.0	99.0
L.9 Profit Margin Assessment	100.3	100.3	99.0	100.4
L.10 Profit Margin Expectation	99.2	101.8	100.1	99.1
L.11 Business Assessment Index	99.7	99.5	99.7	101.2
L.12 Business Expectation Index	99.0	99.7	101.3	100.0

CURRENT STATISTICS

Contents

Notes: .. = Not available.

– = Nil/Negligible.

P = Preliminary/Provisional. PR = Partially Revised.

No. 1: Select Economic Indicators

Item	2023-24	2022-23	2023-24		2024-25
		Q4	Q1	Q4	Q1
	1	2	3	4	5
1 Real Sector (% Change)					
1.1 GVA at Basic Prices	7.2	6.0	8.3	6.3	6.8
1.1.1 Agriculture	1.4	7.6	3.7	0.6	2.0
1.1.2 Industry	9.3	1.7	5.0	8.3	7.4
1.1.3 Services	7.9	7.3	10.4	7.0	7.7
1.1a Final Consumption Expenditure	3.8	3.5	4.6	3.4	6.3
1.1b Gross Fixed Capital Formation	9.0	3.8	8.5	6.5	7.5
	2023-24	**2023**		**2024**	
		Aug.	**Sep.**	**Aug.**	**Sep.**
	1	2	3	4	5
1.2 Index of Industrial Production	5.9	10.9	6.4	-0.1	3.1
2 Money and Banking (% Change)					
2.1 Scheduled Commercial Banks					
2.1.1 Deposits	12.9	12.4	11.5	12.3	10.8
	(13.5)	(13.2)	(12.3)	(11.9)	(10.4)
2.1.2 Credit #	16.3	14.9	13.0	14.4	13.7
	(20.2)	(19.7)	(17.6)	(13.1)	(12.3)
2.1.2.1 Non-food Credit #	16.3	15.0	13.1	14.4	13.7
	(20.2)	(19.8)	(17.6)	(13.1)	(12.4)
2.1.3 Investment in Govt. Securities	11.1	14.2	16.7	7.2	7.7
	(12.8)	(16.5)	(18.9)	(6.3)	(6.8)
2.2 Money Stock Measures					
2.2.1 Reserve Money (M0)	5.6	9.8	6.4	4.8	6.0
2.2.2 Broad Money (M3)	11.1	10.8	10.9	10.2	10.8
	(11.6)	(11.5)	(11.5)	(9.8)	(10.4)
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	5.8	5.4	5.1	5.1
	(5.0)	(5.7)	(5.4)	(5.1)	(5.1)
3.4 Credit-Deposit Ratio	78.1	75.0	75.3	76.5	77.3
	(80.3)	(77.5)	(77.8)	(78.4)	(79.2)
3.5 Incremental Credit-Deposit Ratio #	95.8	60.9	69.7	50.4	64.6
	(113.4)	(103.8)	(99.5)	(47.7)	(61.6)
3.6 Investment-Deposit Ratio	29.5	30.3	30.3	29.1	29.4
	(29.8)	(30.7)	(30.6)	(29.3)	(29.6)
3.7 Incremental Investment-Deposit Ratio	25.8	35.6	33.2	22.5	27.7
	(28.4)	(40.6)	(37.0)	(20.8)	(26.2)
4 Interest Rates (%)					
4.1 Policy Repo Rate	6.50	6.50	6.50	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	6.25	6.25	6.25	6.25
4.4 Marginal Standing Facility (MSF) Rate	6.75	6.75	6.75	6.75	6.75
4.5 Bank Rate	6.75	6.75	6.75	6.75	6.75
4.6 Base Rate	9.10/10.25	8.85/10.10	8.85/10.10	9.10/10.40	9.10/10.40
4.7 MCLR (Overnight)	8.00/8.60	7.95/8.40	7.95/8.45	8.15/8.45	8.15/8.45
4.8 Term Deposit Rate >1 Year	6.50/7.25	6.00/7.25	6.00/7.25	6.00/7.25	6.00/7.25
4.9 Savings Deposit Rate	2.70/3.00	2.70/3.00	2.70/3.00	2.70/3.00	2.70/3.00
4.10 Call Money Rate (Weighted Average)	6.85	6.75	6.75	6.59	6.61
4.11 91-Day Treasury Bill (Primary) Yield	-	6.82	6.86	6.63	6.65
4.12 182-Day Treasury Bill (Primary) Yield	7.28	7.02	7.08	6.72	6.72
4.13 364-Day Treasury Bill (Primary) Yield	7.31	7.03	7.08	6.72	6.70
4.14 10-Year G-Sec Par Yield (FBIL)	7.31	7.14	7.22	6.90	6.78
5 Reference Rate and Forward Premia					
5.1 INR-US$ Spot Rate (Rs. Per Foreign Currency)	83.37	82.65	83.06	83.87	83.67
5.2 INR-Euro Spot Rate (Rs. Per Foreign Currency)	90.22	89.17	87.94	92.91	93.46
5.3 Forward Premia of US$ 1-month (%)	1.00	1.31	1.88	1.12	1.65
3-month (%)	1.11	1.38	1.69	1.34	1.74
6-month (%)	1.31	1.40	1.75	1.64	2.11
6 Inflation (%)					
6.1 All India Consumer Price Index	5.4	6.8	5.0	3.7	5.5
6.2 Consumer Price Index for Industrial Workers	5.19	6.9	4.7	2.4	4.2
6.3 Wholesale Price Index	-0.7	-0.5	-0.1	1.2	1.8
6.3.1 Primary Articles	3.5	6.7	4.4	2.5	6.6
6.3.2 Fuel and Power	-4.7	-6.3	-3.3	-0.5	-4.0
6.3.3 Manufactured Products	-1.7	-2.3	-1.3	1.0	1.0
7 Foreign Trade (% Change)					
7.1 Imports	-5.3	0.7	-14.0	3.3	1.5
7.2 Exports	-3.1	3.4	-2.8	-9.6	0.5

Note : Financial Benchmark India Pvt. Ltd. (FBIL) has commenced publication of the G-Sec benchmarks with effect from March 31, 2018 as per RBI circularFMRD.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						
	2023-24	2023	2024				
		Oct.	Sep. 27	Oct. 04	Oct. 11	Oct. 18	Oct. 25
	1	2	3	4	5	6	7
1 Issue Department							
1.1 Liabilities							
1.1.1 Notes in Circulation	3482333	3271881	3447381	3458701	3488363	3483562	3499601
1.1.2 Notes held in Banking Department	11	13	22	28	15	17	15
1.1/1.2 Total Liabilities (Total Notes Issued) or Assets	**3482344**	**3271894**	**3447403**	**3458729**	**3488378**	**3483579**	**3499616**
1.2 Assets							
1.2.1 Gold	162996	143945	199209	198637	198139	202683	205953
1.2.2 Foreign Securities	3318885	3127636	3247889	3259632	3289855	3280587	3293260
1.2.3 Rupee Coin	463	313	305	460	384	308	402
1.2.4 Government of India Rupee Securities	-	-	-	-	-	-	-
2 Banking Department							
2.1 Liabilities							
2.1.1 Deposits	1782333	1675645	1851979	1830991	1730127	1721272	1727119
2.1.1.1 Central Government	101	101	100	101	101	101	101
2.1.1.2 Market Stabilisation Scheme	-		-	-	-	-	-
2.1.1.3 State Governments	42	42	42	42	42	42	42
2.1.1.4 Scheduled Commercial Banks	1008618	906993	1020447	985504	983424	984541	1042981
2.1.1.5 Scheduled State Co-operative Banks	10092	8100	8254	8375	8072	8057	8265
2.1.1.6 Non-Scheduled State Co-operative Banks	6412	4610	5134	5659	5413	5372	5434
2.1.1.7 Other Banks	48725	47526	49498	49747	49663	49830	50532
2.1.1.8 Others	545400	566312	600409	616262	532980	530762	465711
2.1.1.9 Financial Institution Outside India	162944	141961	168095	165300	150432	142565	154053
2.1.2 Other Liabilities	1804747	1499252	2008888	1984396	1931136	1937177	1925821
2.1/2.2 Total Liabilities or Assets	**3587080**	**3174897**	**3860867**	**3815387**	**3661263**	**3658447**	**3652940**
2.2 Assets							
2.2.1 Notes and Coins	11	13	22	28	15	17	15
2.2.2 Balances Held Abroad	1480408	1225339	1944750	1919366	1806073	1783536	1736918
2.2.3 Loans and Advances							
2.2.3.1 Central Government	-	-	-	-	-	-	-
2.2.3.2 State Governments	2300	21871	24412	35809	9074	23398	24079
2.2.3.3 Scheduled Commercial Banks	266021	160738	33302	7076	4843	7756	30948
2.2.3.4 Scheduled State Co-op.Banks	-	-	-	-	-	-	-
2.2.3.5 Industrial Dev. Bank of India	-	-	-	-	-	-	-
2.2.3.6 NABARD	-	-	-	-	-	-	-
2.2.3.7 EXIM Bank	-	-	-	-	-	-	-
2.2.3.8 Others	12398	3181	8496	6851	7218	7223	8699
2.2.3.9 Financial Institution Outside India	162650	141618	167968	165099	149232	141884	153006
2.2.4 Bills Purchased and Discounted							
2.2.4.1 Internal	-	-	-	-	-	-	-
2.2.4.2 Government Treasury Bills	-	-	-	-	-	-	-
2.2.5 Investments	1365425	1371530	1316708	1314098	1315513	1314543	1313046
2.2.6 Other Assets	297868	250608	365211	367061	369295	380092	386229
2.2.6.1 Gold	272028	238344	351532	353523	353793	364349	370227

* 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
Sep. 1, 2024	-	-	-	-	675	100765	-	-	-	-100090
Sep. 2, 2024	-	-	-	38965	1131	174326	-	220	-	-212380
Sep. 3, 2024	-	-	-	62365	1077	136411	-738	100	-	-198537
Sep. 4, 2024	-	-	-	57660	1352	93975	-686	100	-	-151069
Sep. 5, 2024	-	-	-	40530	10930	72703	-	235	-	-102538
Sep. 6, 2024	-	-	-	65478	2900	184700	-	40	-	-247318
Sep. 7, 2024	-	-	-	-	16343	71891	-	-	-	-55548
Sep. 8, 2024	-	-	-	-	11153	65348	-	-	-	-54195
Sep. 9, 2024	-	-	-	-	1217	81653	-968	385	-	-81789
Sep. 10, 2024	-	-	-	-	1289	104380	968	330	-	-102453
Sep. 11, 2024	-	-	-	25000	1282	124451	-	330	-	-148499
Sep. 12, 2024	-	-	-	72240	2740	96275	-	1345	-	-167120
Sep. 13, 2024	-	-	-	-	6427	136851	-	1535	-	-131959
Sep. 14, 2024	-	-	-	-	5718	110618	-	-	-	-104900
Sep. 15, 2024	-	-	-	-	4665	106705	-	-	-	-102040
Sep. 16, 2024	-	-	-	-	26324	43007	-	-	-	-16683
Sep. 17, 2024	-	-	82630	-	5024	77881	679	1195	-	9257
Sep. 18, 2024	-	-	-	-	10807	83407	-	-	-	-72600
Sep. 19, 2024	-	-	-	-	5304	108713	745	-	-	-102664
Sep. 20, 2024	-	-	25002	-	21731	85863	-	-	-	-39130
Sep. 21, 2024	-	-	-	-	40727	47414	-	-	-	-6687
Sep. 22, 2024	-	-	-	-	29237	43762	-	-	-	-14525
Sep. 23, 2024	-	-	50007	-	3320	57919	-	-	-	-4592
Sep. 24, 2024	-	-	50003	-	1424	62381	-703	-	-	-11657
Sep. 25, 2024	-	-	-	-	5549	83582	651	-	-	-77382
Sep. 26, 2024	-	-	-	-	1370	83095	-	-	-	-81725
Sep. 27, 2024	-	-	-	-	4410	117953	-	-	-	-113543
Sep. 28, 2024	-	-	-	-	3439	91467	-	-	-	-88028
Sep. 29, 2024	-	-	-	-	3285	93486	-	-	-	-90201
Sep. 30, 2024	-	-	-	1000	5761	188048	-	-	-	-183287

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

i) Operations in onshore / offshore OTC segment

Item	2023-24	2023	2024	
		Sep.	Aug.	Sep.
	1	2	3	4
1 Net Purchase/ Sale of Foreign Currency (US $ Million) (1.1-1.2)	41271	-1508	-6494	9639
1.1 Purchase (+)	194296	27757	16141	28930
1.2 Sale (–)	153025	29265	22635	19291
2 ₹ equivalent at contract rate (₹ Crores)	339528	-12611	-54476	80549
3 Cumulative (over end-March) (US $ Million)	41271	17687	-1092	8547
(₹ Crore)	339528	144667	-9604	70945
4 Outstanding Net Forward Sales (-)/ Purchase (+) at the end of month (US $ Million)	-541	4642	-18980	-14580

ii) Operations in currency futures segment

Item	2023-24	2023	2024	
		Sep.	Aug.	Sep.
	1	2	3	4
1 Net Purchase/ Sale of Foreign Currency (US $ Million) (1.1-1.2)	0	0	0	0
1.1 Purchase (+)	7930	1598	1993	2149
1.2 Sale (–)	7930	1598	1993	2149
2 Outstanding Net Currency Futures Sales (-)/ Purchase (+) at the end of month (US $ Million)	-1080	-1725	-897	-200

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

Item	As on September 30 , 2024		
	Long (+)	Short (-)	Net (1-2)
	1	2	3
1. Upto 1 month	0	11400	-11400
2. More than 1 month and upto 3 months	0	3180	-3180
3. More than 3 months and upto 1 year	0	0	0
4. More than 1 year	0	0	0
Total (1+2+3+4)	**0**	**14580**	**-14580**

No. 5: RBI's Standing Facilities

(₹ Crore)

Item	As on the Last Reporting Friday							
	2023-24	2023	2024					
		Oct. 20	May. 31	Jun. 28	Jul. 26	Aug. 23	Sep. 20	Oct. 18
	1	2	3	4	5	6	7	8
1 MSF	49906	124191	14601	46848	2021	1818	21731	4216
2 Export Credit Refinance for Scheduled Banks								
2.1 Limit	-	-	-	-	-	-	-	-
2.2 Outstanding	-	-	-	-	-	-	-	-
3 Liquidity Facility for PDs								
3.1 Limit	9900	4900	9900	9900	9900	9900	9900	9900
3.2 Outstanding	9810	3181	9311	9061	9062	8541	8547	7223
4 Others								
4.1 Limit	76000	76000	76000	76000	76000	76000	76000	76000
4.2 Outstanding	-	-	-	-	-	-	-	-
5 Total Outstanding (1+2.2+3.2+4.2)	59716	127372	23912	55909	11083	10359	30278	11439

Money and Banking

No. 6: Money Stock Measures

(₹ Crore)

Item	Outstanding as on March 31/last reporting Fridays of the month/ reporting Fridays				
	2023-24	2023	2024		
		Sep. 22	Aug. 23	Sep. 06	Sep. 20
	1	2	3	4	5
1 Currency with the Public (1.1 + 1.2 + 1.3 – 1.4)	3410276	3195976	3404741	3403962	3392284
1.1 Notes in Circulation	3477795	3270406	3477861	3470477	3455216
1.2 Circulation of Rupee Coin	32689	30657	33563	33851	33851
1.3 Circulation of Small Coins	743	743	743	743	743
1.4 Cash on Hand with Banks	101185	105887	108200	101721	98253
2 Deposit Money of the Public	2681424	2416872	2680305	2693592	2735069
2.1 Demand Deposits with Banks	2586888	2344131	2588482	2599982	2640984
2.2 'Other' Deposits with Reserve Bank	94536	72741	91822	93610	94085
3 M1 (1 + 2)	**6091700**	**5612848**	**6085046**	**6097554**	**6127353**
4 Post Office Saving Bank Deposits	225927	211136	199017	199017	199017
5 M2 (3 + 4)	**6317627**	**5823984**	**6284063**	**6296571**	**6326370**
6 Time Deposits with Banks	18739918	17749453	19619055	19836342	19751495
	(18848160)	(17891449)	(19698002)	(19913292)	(19826970)
7 M3 (3 + 6)	24831618	23362301	25704100	25933896	25878848
	(24939860)	(23504298)	(25783048)	(26010846)	(25954324)
8 Total Post Office Deposits	1298623	1225055	1361211	1361211	1361211
9 M4 (7 + 8)	26130241	24587356	27065311	27295107	27240059
	(26238483)	(24729353)	(27144259)	(27372057)	(27315535)

Figures in parentheses include the impact of merger of a non-bank with a bank.

No. 7 : Sources of Money Stock (M_3)

(₹ Crore)

Sources	Outstanding as on March 31/last reporting Fridays of the month/reporting Fridays				
	2023-24	2023	2024		
		Sep. 22	Aug. 23	Sep. 06	Sep. 20
	1	2	3	4	5
1 Net Bank Credit to Government	**7512016**	**7179702**	**7629866**	**7790330**	**7562614**
1 Net Bank Credit to Government (Including Merger)	(7603571)	(7292667)	(7694769)	(7854015)	(7626155)
1.1 RBI's net credit to Government (1.1.1–1.1.2)	1193213	1010573	1025545	1165032	921112
1.1.1 Claims on Government	1370428	1406456	1343455	1350954	1340430
1.1.1.1 Central Government	1363828	1392976	1316653	1315528	1313984
1.1.1.2 State Governments	6600	13480	26802	35426	26447
1.1.2 Government deposits with RBI	177215	395882	317910	185922	419318
1.1.2.1 Central Government	177172	395840	317868	185879	419275
1.1.2.2 State Governments	42	42	42	42	42
1.2 Other Banks' Credit to Government	6318803	6169128	6604322	6625298	6641501
1.2 Other Banks Credit to Government (Including Merger)	(6410358)	(6282093)	(6669224)	(6688983)	(6705043)
2 Bank Credit to Commercial Sector	**16672145**	**15290027**	**17224460**	**17332342**	**17412955**
2 Bank Credit to Commercial Sector (Including Merger)	(17202832)	(15882467)	(17709792)	(17810857)	(17889364)
2.1 RBI's credit to commercial sector	14406	5118	10307	8853	10589
2.2 Other banks' credit to commercial sector	16657739	15284909	17214153	17323489	17402366
2.2 Other banks credit to commercial sector (Including Merger)	(17188426)	(15877350)	(17699485)	(17802004)	(17878775)
2.2.1 Bank credit by commercial banks	15901477	14558874	16459977	16568087	16648643
2.2.1 Bank credit by commercial banks (Including Merger)	(16432164)	(15151314)	(16945309)	(17046602)	(17125052)
2.2.2 Bank credit by co-operative banks	738194	708331	735395	736415	734471
2.2.3 Investments by commercial and co-operative banks in other securities	18068	17704	18781	18988	19252
2.2.3 Investments by commercial and co-operative banks in other securities (Including Merger)	(18068)	(17704)	(18781)	(18988)	(19252)
3 Net Foreign Exchange Assets of Banking Sector (3.1 + 3.2)	**5543700**	**5095734**	**5866203**	**5929626**	**5931859**
3.1 RBIs net foreign exchange assets (3.1.1 - 3.1.2)	5240824	4735054	5563327	5626750	5628983
3.1.1 Gross foreign assets	5241083	4735313	5563586	5627018	5629252
3.1.2 Foreign liabilities	259	259	259	268	269
3.2 Other banks' net foreign exchange assets	302876	360680	302876	302876	302876
4 Government's Currency Liabilities to the Public	**33432**	**31400**	**34306**	**34594**	**34594**
5 Banking Sector's Net Non-monetary Liabilities	**4929674**	**4234561**	**5050735**	**5152997**	**5063174**
5 Banking Sectors Net Non-monetary Liabilities (Including Merger)	(5443674)	(4797970)	(5522022)	(5618246)	(5527649)
5.1 Net non-monetary liabilities of RBI	1789875	1507527	1892962	1941771	1957063
5.2 Net non-monetary liabilities of other banks (residual)	3139799	2727034	3157772	3211226	3106111
5.2 Net non-monetary liabilities of other banks (residual) (Including Merger)	(3653798)	(3290443)	(3629060)	(3676476)	(3570586)
M_3(1+2+3+4–5)	**24831618**	**23362301**	**25704100**	**25933896**	**25878848**
M3 (1+2+3+4-5) (Including Merger)	(24939860)	(23504298)	(25783048)	(26010846)	(25954324)

Figures in parentheses include the impact of merger of a non-bank with bank.

No. 8: Monetary Survey

(₹ Crore)

Item	Outstanding as on March 31/last reporting Fridays of the month/reporting Fridays				
	2023-24	2023	2024		
		Sep. 22	Aug. 23	Sep. 06	Sep. 20
	1	2	3	4	5
Monetary Aggregates					
NM_1 (1.1+1.2.1+1.3)	6091700	5612848	6085046	6097554	6127353
NM_2 (NM_1 + 1.2.2.1)	14424855	13517264	14798820	14906842	14895519
NM2 (NM1 + 1.2.2.1) (Including Merger)	(14473564)	(13581162)	(14834346)	(14941470)	(14929483)
NM_3 (NM_2 +1.2.2.2 + 1.4 = 2.1 + 2.2 + 2.3 – 2.4 – 2.5)	25387764	24017844	26360365	26517421	26491792
NM3 (NM2 + 1.2.2.2 + 1.4 = 2.1 + 2.2 + 2.3 - 2.4 - 2.5) (Including Merger)	(25496006)	(24159840)	(26439312)	(26594372)	(26567267)
1 Components					
1.1 Currency with the Public	3410276	3195976	3404741	3403962	3392284
1.2 Aggregate Deposits of Residents	21105009	19909500	21952425	22176177	22125797
1.2 Aggregate Deposits of Residents (Including Merger)	(21213252)	(20051497)	(22031372)	(22253127)	(22201272)
1.2.1 Demand Deposits	2586888	2344131	2588482	2599982	2640984
1.2.2 Time Deposits of Residents	18518121	17565368	19363943	19576195	19484812
1.2.2 Time Deposits of Residents (Including Merger)	(18626364)	(17707365)	(19442890)	(19653145)	(19560288)
1.2.2.1 Short-term Time Deposits	8333155	7904416	8713774	8809288	8768166
1.2.2.1 Short-term Time Deposits (Including Merger)	(8381864)	(7968314)	(8749300)	(8843915)	(8802130)
1.2.2.1.1 Certificates of Deposits (CDs)	369399	280304	441388	450106	467853
1.2.2.2 Long-term Time Deposits	10184967	9660953	10650168	10766907	10716647
1.2.2.2 Long-term Time Deposits (Including Merger)	(10244500)	(9739051)	(10693589)	(10809230)	(10758158)
1.3 'Other' Deposits with RBI	94536	72741	91822	93610	94085
1.4 Call/Term Funding from Financial Institutions	777942	839627	911377	843672	879626
2 Sources					
2.1 Domestic Credit	25295986	23570334	26020508	26305923	26153058
2.1 Domestic Credit (Including Merger)	(25918227)	(24275739)	(26570742)	(26848124)	(26693009)
2.1.1 Net Bank Credit to the Government	7512016	7179702	7629866	7790330	7562614
2.1.1 Net Bank Credit to the Government (Including Merger)	(7603571)	(7292667)	(7694769)	(7854015)	(7626155)
2.1.1.1 Net RBI credit to the Government	1193213	1010573	1025545	1165032	921112
2.1.1.2 Credit to the Government by the Banking System	6318803	6169128	6604322	6625298	6641501
2.1.1.2 Credit to the Government by the Banking System (Including Merger)	(6410358)	(6282093)	(6669224)	(6688983)	(6705043)
2.1.2 Bank Credit to the Commercial Sector	17783970	16390632	18390642	18515593	18590445
2.1.2 Bank Credit to the Commercial Sector (Including Merger)	(18314656)	(16983073)	(18875973)	(18994108)	(19066853)
2.1.2.1 RBI Credit to the Commercial Sector	14406	5118	10307	8853	10589
2.1.2.2 Credit to the Commercial Sector by the Banking System	17769564	16385515	18380335	18506740	18579856
2.1.2.2 Credit to the Commercial Sector by the Banking System (Including Merger)	(18300250)	(16977955)	(18865667)	(18985255)	(19056265)
2.1.2.2.1 Other Investments (Non-SLR Securities)	1089184	1085195	1150445	1167091	1162164
2.2 Government's Currency Liabilities to the Public	33432	31400	34306	34594	34594
2.3 Net Foreign Exchange Assets of the Banking Sector	5110820	4759109	5420007	5491823	5546300
2.3.1 Net Foreign Exchange Assets of the RBI	5240824	4735054	5563327	5626750	5628983
2.3.2 Net Foreign Currency Assets of the Banking System	-130004	24056	-143320	-134927	-82683
2.4 Capital Account	3912897	3884768	4421744	4442024	4437226
2.5 Other items (net)	1653576	1021640	1163999	1338145	1269410

Figures in parentheses include the impact of merger of a non-bank with a bank.

No. 9: Liquidity Aggregates

(₹ Crore)

Aggregates	2023-24	2023	2024		
		Sep.	Jul.	Aug.	Sep.
	1	2	3	4	5
1 NM_3	**25387764**	**24017844**	**26277956**	**26360365**	**26491792**
	(25496006)	(24159840)	(26361158)	(26439312)	(26567267)
2 Postal Deposits	729246	694535	720419	724264	724264
3 L_1 (1 + 2)	**26117010**	**24712379**	**26998375**	**27084629**	**27216056**
	(26225252)	(24854375)	(27081577)	(27163576)	(27291531)
4 Liabilities of Financial Institutions	85150	65846	68324	68118	68824
4.1 Term Money Borrowings	2375	1152	748	395	94
4.2 Certificates of Deposit	70245	53260	54670	54670	55520
4.3 Term Deposits	12531	11435	12905	13054	13210
5 L_2 (3 + 4)	**26202160**	**24778225**	**27066699**	**27152748**	**27284880**
	(26310403)	(24920222)	(27149901)	(27231695)	(27360355)
6 Public Deposits with Non-Banking Financial Companies	102994	96210	..	..	102994
7 L_3 (5 + 6)	**26305155**	**24874435**	**..**	**..**	**27387874**

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				
	2023-24	2023	2024		
		Sep. 22	Aug. 23	Sep. 6	Sep. 20
	1	2	3	4	5
1 Components					
1.1 Currency in Circulation	3511461	3301863	3512941	3505684	3490538
1.2 Bankers' Deposits with the RBI	1025449	1021317	1023595	1052061	1018975
1.2.1 Scheduled Commercial Banks	956011	959345	960220	988846	956255
1.3 'Other' Deposits with the RBI	94536	72741	91822	93610	94085
Reserve Money (1.1 + 1.2 + 1.3 = 2.1 + 2.2 + 2.3 – 2.4 – 2.5)	4631446	4395920	4628359	4651355	4603598
2 Sources					
2.1 RBI's Domestic Credit	1147066	1136994	923688	931781	897083
2.1.1 Net RBI credit to the Government	1193213	1010573	1025545	1165032	921112
2.1.1.1 Net RBI credit to the Central Government (2.1.1.1.1 + 2.1.1.1.2 + 2.1.1.1.3 + 2.1.1.1.4 – 2.1.1.1.5)	1186655	997136	998785	1129648	894708
2.1.1.1.1 Loans and Advances to the Central Government	-	-	-	-	-
2.1.1.1.2 Investments in Treasury Bills	-	-	-	-	-
2.1.1.1.3 Investments in dated Government Securities	1363369	1392638	1316259	1315048	1313609
2.1.1.1.3.1 Central Government Securities	1363369	1392638	1316259	1315048	1313609
2.1.1.1.4 Rupee Coins	459	338	393	479	375
2.1.1.1.5 Deposits of the Central Government	177172	395840	317868	185879	419275
2.1.1.2 Net RBI credit to State Governments	6557	13437	26760	35384	26404
2.1.2 RBI's Claims on Banks	-60553	121303	-112164	-242104	-34618
2.1.2.1 Loans and Advances to Scheduled Commercial Banks	-60553	121303	-112164	-242104	-34618
2.1.3 RBI's Credit to Commercial Sector	14406	5118	10307	8853	10589
2.1.3.1 Loans and Advances to Primary Dealers	9358	3054	8541	7123	8547
2.1.3.2 Loans and Advances to NABARD	-	-	-	-	-
2.2 Government's Currency Liabilities to the Public	33432	31400	34306	34594	34594
2.3 Net Foreign Exchange Assets of the RBI	5240824	4735054	5563327	5626750	5628983
2.3.1 Gold	439319	367410	511818	520331	531633
2.3.2 Foreign Currency Assets	4801522	4367662	5051527	5106436	5097367
2.4 Capital Account	1589134	1622166	1863913	1879492	1874081
2.5 Other Items (net)	200741	-114638	29049	62278	82982

No. 11: Reserve Money - Components and Sources

(₹ Crore)

Item	2023-24	Outstanding as on March 31/last Fridays of the month/Fridays					
		2023	2024				
		Sep. 29	Aug. 30	Sep. 6	Sep. 13	Sep. 20	Sep. 27
	1	2	3	4	5	6	7
Reserve Money (1.1 + 1.2 + 1.3 = 2.1 + 2.2 + 2.3 + 2.4 + 2.5 – 2.6)	4631446	4395307	4668483	4651355	4669723	4603598	4660892
1 Components							
1.1 Currency in Circulation	3511461	3289165	3493088	3505684	3509043	3490538	3482214
1.2 Bankers' Deposits with RBI	1025449	1032373	1082361	1052061	1068059	1018975	1083333
1.3 'Other' Deposits with RBI	94536	73769	93034	93610	92621	94085	95346
2 Sources							
2.1 Net Reserve Bank Credit to Government	1193213	1023924	1085576	1165032	1101329	921112	957345
2.2 Reserve Bank Credit to Banks	-60553	104528	-130881	-242104	-142968	-34618	-84648
2.3 Reserve Bank Credit to Commercial Sector	14406	5080	10604	8853	9138	10589	10556
2.4 Net Foreign Exchange Assets of RBI	5240824	4719356	5579046	5626750	5627573	5628983	5742984
2.5 Government's Currency Liabilities to the Public	33432	31649	34594	34594	34594	34594	34833
2.6 Net Non- Monetary Liabilities of RBI	1789875	1489230	1910457	1941771	1959943	1957063	2000178

No. 12: Commercial Bank Survey

(₹ Crore)

Item	Outstanding as on last reporting Fridays of the month/ reporting Fridays of the month				
	2023-24	2023	2024		
		Sep. 22	Aug. 23	Sep. 6	Sep. 20
	1	2	3	4	5
1 Components					
1.1 Aggregate Deposits of Residents	20145188	18954584	20991067	21213218	21163509
	(20253430)	(19096581)	(21070014)	(21290169)	(21238985)
1.1.1 Demand Deposits	2443853	2204591	2446039	2457244	2498373
1.1.2 Time Deposits of Residents	17701334	16749993	18545028	18755975	18665136
	(17809577)	(16891990)	(18623975)	(18832925)	(18740611)
1.1.2.1 Short-term Time Deposits	7965600	7537497	8345262	8440189	8399311
1.1.2.1.1 Certificates of Deposits (CDs)	369399	280304	441388	450106	467853
1.1.2.2 Long-term Time Deposits	9735734	9212496	10199765	10315786	10265825
1.2 Call/Term Funding from Financial Institutions	777942	839627	911377	843672	879626
2 Sources					
2.1 Domestic Credit	23019606	21519171	23918044	24062713	24156294
	(23641847)	(22224577)	(24468278)	(24604913)	(24696244)
2.1.1 Credit to the Government	6014054	5867696	6300226	6319540	6338211
	(6105610)	(5980661)	(6365128)	(6383225)	(6401753)
2.1.2 Credit to the Commercial Sector	17005551	15651476	17617818	17743173	17818082
	(17536238)	(16243916)	(18103150)	(18221688)	(18294491)
2.1.2.1 Bank Credit	15901477	14558874	16459977	16568087	16648643
	(16432164)	(15151314)	(16945309)	(17046602)	(17125052)
2.1.2.1.1 Non-food Credit	15878397	14540009	16435616	16546583	16628718
	(16409083)	(15132449)	(16920948)	(17025099)	(17105126)
2.1.2.2 Net Credit to Primary Dealers	22904	15674	16000	16422	15588
2.1.2.3 Investments in Other Approved Securities	949	696	358	535	649
2.1.2.4 Other Investments (in non-SLR Securities)	1080222	1076232	1141482	1158129	1153202
2.2 Net Foreign Currency Assets of Commercial Banks (2.2.1-2.2.2-2.2.3)	-130004	24056	-143320	-134927	-82683
2.2.1 Foreign Currency Assets	241661	321548	283039	291486	358411
2.2.2 Non-resident Foreign Currency Repatriable Fixed Deposits	221796	184084	255112	260147	266682
2.2.3 Overseas Foreign Currency Borrowings	149868	113408	171247	166266	174411
2.3 Net Bank Reserves (2.3.1+2.3.2-2.3.3)	893350	932184	1168575	1320973	1077119
2.3.1 Balances with the RBI	931483	959345	960220	988846	956255
2.3.2 Cash in Hand	89433	94141	96191	90022	86246
2.3.3 Loans and Advances from the RBI	127566	121303	-112164	-242104	-34618
2.4 Capital Account	2299592	2238432	2533660	2538361	2538975
2.5 Other items (net) (2.1+2.2+2.3-2.4-1.1-1.2)	560230	442768	507195	653508	568620
2.5.1 Other Demand and Time Liabilities (net of 2.2.3)	787560	763831	759393	886025	856786
2.5.2 Net Inter-Bank Liabilities (other than to PDs)	197781	175607	122730	134616	131836

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 22, 2024	2023	2024		
		Sep. 22	Aug. 23	Sep. 06	Sep. 20
	1	2	3	4	5
1 SLR Securities	6106558	5981357	6365487	6383760	6402402
	(6015003)	(5868392)	(6300584)	(6320075)	(6338860)
2 Other Government Securities (Non-SLR)	177136	180020	158539	158553	157582
3 Commercial Paper	61175	57960	66632	65813	63049
4 Shares issued by					
4.1 PSUs	8475	8972	12953	13429	13615
4.2 Private Corporate Sector	77722	83603	95920	96592	97368
4.3 Others	5624	5399	7347	7339	6834
5 Bonds/Debentures issued by					
5.1 PSUs	103070	91056	120612	122253	123351
5.2 Private Corporate Sector	287596	287065	244395	246536	250152
5.3 Others	124690	108132	144139	149394	146237
6 Instruments issued by					
6.1 Mutual funds	62499	70679	109634	115376	111561
6.2 Financial institutions	172340	183184	181702	182843	183453

Note: Data against column Nos. (1), (2) & (3) are Final and for column Nos. (4) & (5) data are Provisional.
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			
	2023-24	2023	2024		2023-24	2023	2024	
		Sep.	Aug.	Sep.		Sep.	Aug.	Sep.
	1	2	3	4	5	6	7	8
Number of Reporting Banks	210	211	208	208	137	137	135	135
1 Liabilities to the Banking System	**554117**	**529155**	**541312**	**453177**	**549351**	**526671**	**536780**	**448404**
1.1 Demand and Time Deposits from Banks	298452	255220	334046	298150	294471	252857	330012	293853
1.2 Borrowings from Banks	182566	202599	128765	131578	182429	202552	128550	131408
1.3 Other Demand and Time Liabilities	73100	71336	78501	23449	72452	71263	78218	23143
2 Liabilities to Others	**22664868**	**21883000**	**24097455**	**24067308**	**22190597**	**21423326**	**23629065**	**23597567**
2.1 Aggregate Deposits	20932067	20141430	22139250	22197886	20475226	19701045	21688112	21746608
	(20823825)	(20000678)	(22061445)	(22123057)	(20366984)	(19560294)	(21610308)	(21671779)
2.1.1 Demand	2492916	2455794	2715452	2630676	2443853	2408810	2666996	2582832
2.1.2 Time	18439151	17685635	19423797	19567210	18031373	17292236	19021116	19163776
2.2 Borrowings	782260	795714	920015	905313	777942	791542	915858	900827
2.3 Other Demand and Time Liabilities	950541	945857	1038191	964109	937428	930738	1025094	950132
3 Borrowings from Reserve Bank	**222716**	**170292**	**6968**	**33302**	**222716**	**170292**	**6968**	**33302**
3.1 Against Usance Bills /Promissory Notes	-	-	-	-	-	-	-	-
3.2 Others	222716	170292	6968	33302	222716	170292	6968	33302
4 Cash in Hand and Balances with Reserve Bank	1043272	1087103	1134910	1132310	1020916	1064207	1112899	1110006
4.1 Cash in Hand	91886	97221	95928	92085	89433	94972	93444	89559
4.2 Balances with Reserve Bank	951386	989882	1038982	1040225	931483	969235	1019456	1020447
5 Assets with the Banking System	**455057**	**437813**	**479881**	**400181**	**374474**	**375498**	**414893**	**333625**
5.1 Balances with Other Banks	246384	236386	284096	252863	198327	194010	233398	201534
5.1.1 In Current Account	12010	18115	28162	15175	8971	14642	25424	12452
5.1.2 In Other Accounts	234373	218271	255934	237687	189357	179368	207974	189082
5.2 Money at Call and Short Notice	39614	51640	23818	27376	12355	35254	13637	16083
5.3 Advances to Banks	51325	51774	42175	45009	48368	51014	41391	44328
5.4 Other Assets	117734	98013	129792	74933	115424	95220	126467	71681
6 Investment	**6256962**	**6177145**	**6509652**	**6589114**	**6106558**	**6028859**	**6357943**	**6439289**
	(6165407)	(6066030)	(6445920)	(6525561)	(6015003)	(5917744)	(6294211)	(6375736)
6.1 Government Securities	6249319	6170331	6501765	6580833	6105610	6028163	6357504	6438770
6.2 Other Approved Securities	7643	6814	7887	8281	949	696	439	519
7 Bank Credit	**16866336**	**15717431**	**17448862**	**17661371**	**16432164**	**15323660**	**17010621**	**17215335**
	(16335650)	(15125862)	(16966951)	(17190229)	(15901477)	(14732090)	(16528710)	(16744193)
7a Food Credit	75472	59884	74656	69694	23081	18687	24036	19075
7.1 Loans, Cash-credits and Overdrafts	16565348	15444677	17133011	17344195	16134303	15053691	16697901	16901348
7.2 Inland Bills-Purchased	60471	47381	68481	67187	60467	47367	67049	65697
7.3 Inland Bills-Discounted	199761	183687	208532	211015	197358	181569	207367	209905
7.4 Foreign Bills-Purchased	16662	17124	16582	15988	16412	16896	16397	15793
7.5 Foreign Bills-Discounted	24094	24562	22256	22987	23624	24136	21906	22592

Note: Data in column Nos. (4) & (8) are Provisional
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. 22, 2024	2023	2024		Financial year so far	Y-o-Y
		Sep. 22	Aug. 23	Sep. 20	2024-25	2024
	1	2	3	4	%	%
I. Bank Credit (II + III)	**16432164**	**15151314**	**16945162**	**17125371**	**4.2**	**13.0**
	(15901477)	(14558874)	(16459830)	(16648962)	(4.7)	(14.4)
II. Food Credit	**23081**	**18865**	**24361**	**19926**	**-13.7**	**5.6**
III. Non-food Credit	**16409083**	**15132449**	**16920802**	**17105445**	**4.2**	**13.0**
	(15878397)	(14540009)	(16435470)	(16629037)	(4.7)	(14.4)
1. Agriculture & Allied Activities	**2071251**	**1862538**	**2160634**	**2167287**	**4.6**	**16.4**
2. Industry (Micro and Small, Medium and Large)	**3652804**	**3489700**	**3756194**	**3801604**	**4.1**	**8.9**
	(3635810)	(3471775)	(3740619)	(3786279)	(4.1)	(9.1)
2.1 Micro and Small	726315	662065	743704	750825	3.4	13.4
2.2 Medium	303998	277614	324746	334412	10.0	20.5
2.3 Large	2622490	2550021	2687743	2716366	3.6	6.5
3. Services	**4592227**	**4166060**	**4643586**	**4736957**	**3.2**	**13.7**
	(4490467)	(4040721)	(4559593)	(4654649)	(3.7)	(15.2)
3.1 Transport Operators	230175	209425	243486	245008	6.4	17.0
3.2 Computer Software	25917	24160	27990	29760	14.8	23.2
3.3 Tourism, Hotels & Restaurants	77513	75767	80570	78753	1.6	3.9
3.4 Shipping	7067	6642	7257	7166	1.4	7.9
3.5 Aviation	43248	39218	44837	44458	2.8	13.4
3.6 Professional Services	167234	152272	173738	177730	6.3	16.7
3.7 Trade	1025752	937960	1052621	1072493	4.6	14.3
3.7.1. Wholesale Trade[1]	538744	482405	553316	567242	5.3	17.6
3.7.2 Retail Trade	487008	455555	499305	505251	3.7	10.9
3.8 Commercial Real Estate	469013	442202	494809	497333	6.0	12.5
	(400470)	(354751)	(437854)	(441714)	(10.3)	(24.5)
3.9 Non-Banking Financial Companies (NBFCs)[2] of which,	1548027	1396680	1522204	1529006	-1.2	9.5
3.9.1 Housing Finance Companies (HFCs)	325626	308711	322093	324354	-0.4	5.1
3.9.2 Public Financial Institutions (PFIs)	226963	193196	196565	203257	-10.4	5.2
3.10 Other Services[3]	998281	881734	996074	1055250	5.7	19.7
	(978198)	(858200)	(977918)	(1037408)	(6.1)	(20.9)
4. Personal Loans	**5331290**	**4934424**	**5555484**	**5596719**	**5.0**	**13.4**
	(4919468)	(4485276)	(5170917)	(5219246)	(6.1)	(16.4)
4.1 Consumer Durables	23713	21881	24396	23764	0.2	8.6
4.2 Housing	2718715	2527201	2833166	2845505	4.7	12.6
	(2331935)	(2105971)	(2471488)	(2490574)	(6.8)	(18.3)
4.3 Advances against Fixed Deposits	125239	114851	121817	125694	0.4	9.4
4.4 Advances to Individuals against share & bonds	8492	7764	9722	9546	12.4	22.9
4.5 Credit Card Outstanding	257016	230259	276576	271813	5.8	18.0
4.6 Education	119380	109772	126148	129116	8.2	17.6
4.7 Vehicle Loans	589251	544599	610792	617180	4.7	13.3
4.8 Loan against gold jewellery	102562	97426	140391	147081	43.4	51.0
4.9 Other Personal Loans	1386921	1280670	1412476	1427020	2.9	11.4
	(1362113)	(1253324)	(1389666)	(1404553)	(3.1)	(12.1)
5. Priority Sector (Memo)						
(i) Agriculture & Allied Activities[4]	2081856	1881206	2152535	2164159	4.0	15.0
(ii) Micro & Small Enterprises[5]	1974191	1818843	2027278	2057867	4.2	13.1
(iii) Medium Enterprises[6]	490703	449895	529582	543388	10.7	20.8
(iv) Housing	755222	737700	749534	750223	-0.7	1.7
	(660572)	(637057)	(661835)	(663719)	(0.5)	(4.2)
(v) Education Loans	62235	60715	61988	62389	0.2	2.8
(vi) Renewable Energy	5991	4872	6844	6778	13.1	39.1
(vii) Social Infrastructure	2613	2581	1072	1124	-57.0	-56.5
(viii) Export Credit	11774	12209	11530	11290	-4.1	-7.5
(ix) Others	61336	51048	60587	58561	-4.5	14.7
(x) Weaker Sections including net PSLC- SF/MF	1647778	1498137	1692726	1711473	3.9	14.2

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. 22, 2024	2023	2024		Financial year so far	Y-o-Y
		Sep. 22	Aug. 23	Sep. 20	2024-25	2024
	1	2	3	4	%	%
2 Industries (2.1 to 2.19)	3652804	3489700	3756194	3801604	4.1	8.9
	(3635810)	(3471775)	(3740619)	(3786279)	(4.1)	(9.1)
2.1 Mining & Quarrying (incl. Coal)	54166	52551	52810	52560	-3.0	0.0
2.2 Food Processing	208864	172398	199514	192363	-7.9	11.6
2.2.1 Sugar	26383	16137	20808	18789	-28.8	16.4
2.2.2 Edible Oils & Vanaspati	19700	17241	18436	17113	-13.1	-0.7
2.2.3 Tea	5692	5870	6043	6157	8.2	4.9
2.2.4 Others	157089	133150	154227	150304	-4.3	12.9
2.3 Beverage & Tobacco	31136	26120	31077	31690	1.8	21.3
2.4 Textiles	256048	243634	255993	256793	0.3	5.4
2.4.1 Cotton Textiles	99199	93950	94108	93859	-5.4	-0.1
2.4.2 Jute Textiles	4280	3904	4130	4155	-2.9	6.4
2.4.3 Man-Made Textiles	45111	41800	46081	46812	3.8	12.0
2.4.4 Other Textiles	107458	103979	111675	111967	4.2	7.7
2.5 Leather & Leather Products	12588	12109	12615	12788	1.6	5.6
2.6 Wood & Wood Products	23839	22726	24731	25229	5.8	11.0
2.7 Paper & Paper Products	46426	44854	49051	49765	7.2	10.9
2.8 Petroleum, Coal Products & Nuclear Fuels	132356	135640	158505	169289	27.9	24.8
2.9 Chemicals & Chemical Products	249347	229276	257192	263369	5.6	14.9
2.9.1 Fertiliser	37569	30726	34119	32556	-13.3	6.0
2.9.2 Drugs & Pharmaceuticals	81036	76059	82683	86061	6.2	13.1
2.9.3 Petro Chemicals	23157	21612	29019	30677	32.5	41.9
2.9.4 Others	107584	100878	111370	114075	6.0	13.1
2.10 Rubber, Plastic & their Products	90420	85476	91839	94633	4.7	10.7
2.11 Glass & Glassware	12090	10845	12515	12447	3.0	14.8
2.12 Cement & Cement Products	59757	60244	60851	59806	0.1	-0.7
2.13 Basic Metal & Metal Product	384447	366324	413557	422794	10.0	15.4
2.13.1 Iron & Steel	273803	250052	295207	300521	9.8	20.2
2.13.2 Other Metal & Metal Product	110645	116272	118350	122273	10.5	5.2
2.14 All Engineering	196643	188587	215640	218183	11.0	15.7
2.14.1 Electronics	43175	43914	52395	50514	17.0	15.0
2.14.2 Others	153468	144673	163244	167669	9.3	15.9
2.15 Vehicles, Vehicle Parts & Transport Equipment	113185	110725	112816	114310	1.0	3.2
2.16 Gems & Jewellery	84860	92819	86229	91172	7.4	-1.8
2.17 Construction	133520	126918	141627	141905	6.3	11.8
2.18 Infrastructure	1304096	1273079	1306202	1299854	-0.3	2.1
2.18.1 Power	644042	620804	638639	641606	-0.4	3.4
2.18.2 Telecommunications	138192	135113	132305	124047	-10.2	-8.2
2.18.3 Roads	318072	317177	328001	325928	2.5	2.8
2.18.4 Airports	7280	7969	8261	8428	15.8	5.8
2.18.5 Ports	6681	7686	6340	6702	0.3	-12.8
2.18.6 Railways	13062	11988	11988	11940	-8.6	-0.4
2.18.7 Other Infrastructure	176767	172342	180669	181203	2.5	5.1
2.19 Other Industries	259016	235375	273430	292655	13.0	24.3

Note: (1) 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								
	2023-24	2023	2024						
		Aug. 25	Jun. 14	Jun. 28	Jul. 12	Jul. 26	Aug. 09	Aug. 23	Aug. 30
	1	2	3	4	5	6	7	8	9
Number of Reporting Banks	33	33	33	33	34	34	34	34	34
1 Aggregate Deposits (2.1.1.2+2.2.1.2)	**138788.9**	**139938.2**	**134828.9**	**133938.0**	**134144.6**	**134816.8**	**133835.2**	**133649.7**	**133771.9**
2 Demand and Time Liabilities									
2.1 Demand Liabilities	**30226.7**	**26773.3**	**28943.0**	**27801.7**	**27708.4**	**28112.2**	**27873.9**	**27398.4**	**27177.9**
2.1.1 Deposits									
2.1.1.1 Inter-Bank	9101.3	6615.2	7685.6	7904.7	8145.7	8204.5	7890.8	7972.0	7554.0
2.1.1.2 Others	15000.4	14594.4	15296.8	14567.8	13823.1	13980.0	14068.5	13618.3	13721.9
2.1.2 Borrowings from Banks	130.0		179.9			179.9	299.8		
2.1.3 Other Demand Liabilities	5995.0	5563.7	5780.7	5329.2	5739.6	5747.8	5614.8	5808.1	5902.0
2.2 Time Liabilities	**198141.8**	**182044.5**	**185975.8**	**185708.9**	**183696.0**	**183917.4**	**182003.8**	**181518.0**	**181698.8**
2.2.1 Deposits									
2.2.1.1 Inter-Bank	72308.4	53971.0	64573.2	64501.4	61491.5	61265.5	60102.2	58935.4	59084.4
2.2.1.2 Others	123788.5	125343.8	119532.1	119370.2	120321.5	120836.7	119766.7	120031.4	120050.0
2.2.2 Borrowings from Banks	673.6	1584.5	653.2	653.2	651.8	653.8	940.7	1263.8	1235.0
2.2.3 Other Time Liabilities	1371.3	1145.2	1217.2	1184.1	1231.2	1161.3	1194.2	1287.4	1329.4
3 Borrowing from Reserve Bank	0.0								
4 Borrowings from a notified bank / Government	95914.5	68594.1	84574.6	85281.4	86852.7	86318.6	84421.5	82219.7	84199.0
4.1 Demand	27317.7	18516.2	23242.7	23887.4	24191.9	24467.9	25452.2	24027.2	23957.2
4.2 Time	68596.8	50077.9	61331.9	61394.0	62660.8	61850.7	58969.3	58192.5	60241.8
5 Cash in Hand and Balances with Reserve Bank	**16263.7**	**11838.9**	**11435.2**	**13323.7**	**12646.4**	**13611.0**	**13590.9**	**11787.9**	**11195.1**
5.1 Cash in Hand	960.0	664.1	770.9	759.4	797.8	687.9	780.2	679.8	699.1
5.2 Balance with Reserve Bank	15303.7	11174.8	10664.3	12564.3	11848.6	12923.1	12810.7	11108.1	10496.0
6 Balances with Other Banks in Current Account	**2088.1**	**1475.4**	**1694.6**	**1631.9**	**2109.0**	**1700.0**	**1709.6**	**1586.6**	**1607.4**
7 Investments in Government Securities	**77700.5**	**71649.5**	**76482.9**	**75500.4**	**76042.2**	**75409.2**	**75025.8**	**74867.2**	**75232.9**
8 Money at Call and Short Notice	**34355.3**	**21285.0**	**19092.4**	**20740.5**	**18751.9**	**18960.1**	**16731.3**	**14985.4**	**14673.7**
9 Bank Credit (10.1+11)	**135141.9**	**125245.6**	**137026.6**	**134324.1**	**137253.1**	**136993.2**	**136583.7**	**138287.3**	**136830.6**
10 Advances									
10.1 Loans, Cash-Credits and Overdrafts	**134936.8**	**125169.9**	**136811.1**	**134111.9**	**137025.2**	**136836.3**	**136416.6**	**138117.1**	**136641.1**
10.2 Due from Banks	142185.2	116627.8	136794.5	135046.8	135412.8	134692.9	135559.1	137049.5	137902.0
11 Bills Purchased and Discounted	205.1	75.7	215.5	212.2	227.9	156.9	167.1	170.2	189.5

Prices and Production

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

Group/Sub group	2023-24			Rural			Urban			Combined		
	Rural	Urban	Combined	Oct.23	Sep.24	Oct.24 (P)	Oct.23	Sep.24	Oct.24 (P)	Oct.23	Sep.24	Oct.24 (P)
	1	2	3	4	5	6	7	8	9	10	11	12
1 Food and beverages	**185.9**	**192.7**	**188.4**	**188.5**	**202.1**	**206.7**	**194.9**	**209.5**	**214.0**	**190.9**	**204.8**	**209.4**
1.1 Cereals and products	181.4	181.7	181.5	183.0	194.3	196.3	182.7	192.8	194.0	182.9	193.8	195.6
1.2 Meat and fish	213.0	221.3	215.9	215.1	220.2	221.6	222.9	229.4	230.5	217.8	223.4	224.7
1.3 Egg	185.4	189.5	187.0	185.2	190.3	194.0	189.3	195.2	198.8	186.8	192.2	195.9
1.4 Milk and products	181.4	181.5	181.4	181.8	186.6	186.9	182.2	187.6	187.9	181.9	187.0	187.3
1.5 Oils and fats	165.3	158.7	162.9	163.1	169.4	180.9	157.0	160.9	168.1	160.9	166.3	176.2
1.6 Fruits	172.1	179.9	175.7	174.9	188.1	192.5	183.8	195.1	196.1	179.1	191.4	194.2
1.7 Vegetables	183.9	229.9	199.5	190.5	251.1	270.4	234.1	306.6	333.9	205.3	269.9	291.9
1.8 Pulses and products	192.2	196.5	193.7	199.8	214.1	215.0	205.7	219.7	220.2	201.8	216.0	216.8
1.9 Sugar and confectionery	126.2	128.1	126.9	128.1	131.0	131.3	129.7	132.9	133.0	128.6	131.6	131.9
1.10 Spices	238.0	228.4	234.8	248.7	229.6	229.7	238.6	224.7	225.0	245.3	228.0	228.1
1.11 Non-alcoholic beverages	180.7	168.2	175.5	181.1	184.7	185.5	168.6	173.3	174.0	175.9	179.9	180.7
1.12 Prepared meals, snacks, sweets	193.3	200.9	196.8	193.5	198.9	199.5	201.4	209.3	210.1	197.2	203.7	204.4
2 Pan, tobacco and intoxicants	**202.0**	**207.1**	**203.3**	**202.5**	**206.9**	**207.4**	**207.8**	**213.3**	**213.5**	**203.9**	**208.6**	**209.0**
3 Clothing and footwear	**192.9**	**181.5**	**188.4**	**193.2**	**197.6**	**198.3**	**182.1**	**186.5**	**187.1**	**188.8**	**193.2**	**193.9**
3.1 Clothing	193.5	183.5	189.6	193.8	198.5	199.2	184.2	188.7	189.2	190.0	194.6	195.3
3.2 Footwear	189.4	170.2	181.4	189.5	192.4	192.9	170.6	174.7	175.2	181.6	185.0	185.5
4 Housing	--	**176.7**	**176.7**	--	--	--	**177.7**	**181.0**	**182.7**	**177.7**	**181.0**	**182.7**
5 Fuel and light	**183.0**	**178.9**	**181.4**	**182.3**	**181.1**	**181.2**	**175.7**	**169.9**	**169.8**	**179.8**	**176.9**	**176.9**
6 Miscellaneous	**181.7**	**173.7**	**177.8**	**181.9**	**188.9**	**189.9**	**174.0**	**180.8**	**181.5**	**178.1**	**185.0**	**185.8**
6.1 Household goods and services	181.5	171.8	176.9	181.7	185.2	185.8	171.9	177.0	177.4	177.1	181.3	181.8
6.2 Health	190.8	185.2	188.7	191.4	197.9	198.6	185.5	193.0	193.6	189.2	196.0	196.7
6.3 Transport and communication	171.1	161.4	166.0	171.4	176.2	176.3	161.4	165.4	165.5	166.1	170.5	170.6
6.4 Recreation and amusement	175.8	171.1	173.2	176.3	179.8	180.5	171.7	175.5	176.0	173.7	177.4	178.0
6.5 Education	184.0	179.1	181.1	184.8	191.6	191.9	180.4	187.4	187.6	182.2	189.1	189.4
6.6 Personal care and effects	186.3	187.4	186.8	185.2	201.4	205.1	186.2	203.4	207.3	185.6	202.2	206.0
General Index (All Groups)	**185.6**	**182.4**	**184.1**	**187.0**	**196.7**	**199.5**	**183.4**	**191.4**	**193.7**	**185.3**	**194.2**	**196.8**

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	2023-24	2023	2024	
				Sep.	Aug.	Sep.
	1	2	3	4	5	6
1 Consumer Price Index for Industrial Workers	2016	2.88	137.9	137.5	142.6	143.3
2 Consumer Price Index for Agricultural Labourers	1986-87	5.89	1229	1226	1297	1304
3 Consumer Price Index for Rural Labourers	1986-87	-	1240	1237	1309	1316

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

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

Item	2023-24	2023	2024	
		Sep.	Aug.	Sep.
	1	2	3	4
1 Standard Gold (₹ per 10 grams)	60624	58743	70441	72878
2 Silver (₹ per kilogram)	72243	71852	82751	86187

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	2023-24	2023	2024		
			Oct.	Aug.	Sep.(P)	Oct.(P)
	1	2	3	4	5	6
1 ALL COMMODITIES	**100.000**	**151.4**	**152.5**	**154.4**	**154.6**	**156.1**
1.1 PRIMARY ARTICLES	**22.618**	**183.0**	**185.3**	**195.1**	**195.7**	**200.3**
1.1.1 FOOD ARTICLES	**15.256**	**191.3**	**192.0**	**209.0**	**210.9**	**218.0**
1.1.1.1 Food Grains (Cereals+Pulses)	3.462	193.8	197.4	210.0	211.8	213.7
1.1.1.2 Fruits & Vegetables	3.475	210.2	204.9	259.2	263.8	291.8
1.1.1.3 Milk	4.440	180.3	180.2	185.9	185.7	185.6
1.1.1.4 Eggs, Meat & Fish	2.402	172.1	171.9	173.1	172.8	171.0
1.1.1.5 Condiments & Spices	0.529	235.4	250.7	236.8	244.6	242.9
1.1.1.6 Other Food Articles	0.948	189.5	199.0	205.7	209.1	219.3
1.1.2 NON-FOOD ARTICLES	**4.119**	**162.4**	**164.1**	**160.2**	**161.9**	**161.3**
1.1.2.1 Fibres	0.839	168.0	167.1	161.2	163.8	160.1
1.1.2.2 Oil Seeds	1.115	185.0	181.8	178.6	183.6	185.5
1.1.2.3 Other non-food Articles	1.960	134.9	138.8	140.0	140.2	139.2
1.1.2.4 Floriculture	0.204	279.7	298.9	248.6	244.7	247.3
1.1.3 MINERALS	**0.833**	**217.7**	**219.7**	**227.6**	**227.6**	**223.8**
1.1.3.1 Metallic Minerals	0.648	204.2	202.7	217.4	217.4	214.6
1.1.3.2 Other Minerals	0.185	265.0	279.3	263.6	263.4	256.0
1.1.4 CRUDE PETROLEUM & NATURAL GAS	**2.410**	**153.6**	**167.0**	**155.0**	**146.1**	**146.7**
1.2 FUEL & POWER	**13.152**	**152.0**	**155.5**	**148.3**	**146.9**	**146.5**
1.2.1 COAL	**2.138**	**136.4**	**136.7**	**135.6**	**135.6**	**135.5**
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	124.8	125.8	125.8	125.8	125.8
1.2.1.3 Lignite	0.090	267.6	258.1	232.0	232.0	229.5
1.2.2 MINERAL OILS	**7.950**	**159.0**	**165.6**	**156.9**	**154.2**	**152.9**
1.2.3 ELECTRICITY	**3.064**	**145.0**	**142.5**	**134.8**	**135.8**	**137.4**
1.3 MANUFACTURED PRODUCTS	**64.231**	**140.2**	**140.4**	**141.3**	**141.8**	**142.5**
1.3.1 MANUFACTURE OF FOOD PRODUCTS	**9.122**	**160.5**	**160.8**	**166.5**	**169.2**	**173.3**
1.3.1.1 Processing and Preserving of meat	0.134	145.3	143.9	153.0	152.6	152.8
1.3.1.2 Processing and Preserving of fish, Crustaceans, Molluscs and products thereof	0.204	142.9	143.7	143.8	142.5	146.0
1.3.1.3 Processing and Preserving of fruit and Vegetables	0.138	130.4	130.6	131.6	132.8	133.2
1.3.1.4 Vegetable and Animal oils and Fats	2.643	145.0	141.4	150.5	157.7	169.9
1.3.1.5 Dairy products	1.165	179.1	180.3	178.5	179.6	180.9
1.3.1.6 Grain mill products	2.010	175.6	178.2	184.0	185.9	187.3
1.3.1.7 Starches and Starch products	0.110	157.1	154.5	173.3	174.3	173.5
1.3.1.8 Bakery products	0.215	165.4	165.1	168.4	168.7	170.1
1.3.1.9 Sugar, Molasses & honey	1.163	134.6	136.7	139.5	138.7	139.0
1.3.1.10 Cocoa, Chocolate and Sugar confectionery	0.175	139.8	138.7	157.1	160.3	162.2
1.3.1.11 Macaroni, Noodles, Couscous and Similar farinaceous products	0.026	149.9	150.6	150.8	153.6	155.7
1.3.1.12 Tea & Coffee products	0.371	176.2	182.3	202.8	202.6	199.9
1.3.1.13 Processed condiments & salt	0.163	192.1	191.1	191.9	192.4	192.9
1.3.1.14 Processed ready to eat food	0.024	146.3	148.6	151.9	151.5	151.3
1.3.1.15 Health supplements	0.225	179.1	180.8	185.9	186.8	186.9
1.3.1.16 Prepared animal feeds	0.356	208.3	211.6	208.6	210.6	209.4
1.3.2 MANUFACTURE OF BEVERAGES	**0.909**	**131.5**	**131.7**	**134.0**	**133.9**	**134.5**
1.3.2.1 Wines & spirits	0.408	133.3	133.9	135.6	135.9	136.4
1.3.2.2 Malt liquors and Malt	0.225	135.6	135.7	138.3	137.2	139.0
1.3.2.3 Soft drinks; Production of mineral waters and Other bottled waters	0.275	125.5	125.3	128.1	128.2	128.2
1.3.3 MANUFACTURE OF TOBACCO PRODUCTS	**0.514**	**173.5**	**174.1**	**176.0**	**176.9**	**176.1**
1.3.3.1 Tobacco products	0.514	173.5	174.1	176.0	176.9	176.1

No. 21: Wholesale Price Index (Contd.)

(Base: 2011-12 = 100)

Commodities	Weight	2023-24	2023	2024		
			Oct.	Aug.	Sep.(P)	Oct.(P)
	1	2	3	4	5	6
1.3.4 MANUFACTURE OF TEXTILES	**4.881**	**134.6**	**134.7**	**135.9**	**135.8**	**135.9**
1.3.4.1 Preparation and Spinning of textile fibres	2.582	120.1	120.5	122.3	121.6	121.1
1.3.4.2 Weaving & Finishing of textiles	1.509	157.5	156.8	155.7	156.3	157.3
1.3.4.3 Knitted and Crocheted fabrics	0.193	120.0	121.0	123.7	123.4	125.3
1.3.4.4 Made-up textile articles, Except apparel	0.299	156.6	156.6	160.5	160.7	161.2
1.3.4.5 Cordage, Rope, Twine and Netting	0.098	139.2	137.4	141.1	141.1	142.1
1.3.4.6 Other textiles	0.201	129.6	131.0	135.4	135.8	135.0
1.3.5 MANUFACTURE OF WEARING APPAREL	**0.814**	**150.8**	**152.0**	**152.9**	**153.5**	**153.9**
1.3.5.1 Manufacture of Wearing Apparel (woven), Except fur Apparel	0.593	148.7	149.5	150.3	150.9	151.0
1.3.5.2 Knitted and Crocheted apparel	0.221	156.6	158.6	159.8	160.5	161.6
1.3.6 MANUFACTURE OF LEATHER AND RELATED PRODUCTS	**0.535**	**124.1**	**124.0**	**124.9**	**125.1**	**125.2**
1.3.6.1 Tanning and Dressing of leather; Dressing and Dyeing of fur	0.142	107.3	106.5	104.1	105.1	106.4
1.3.6.2 Luggage, HandbAgs, Saddlery and Harness	0.075	140.9	141.2	143.1	142.7	142.9
1.3.6.3 Footwear	0.318	127.7	127.8	129.8	129.8	129.4
1.3.7 MANUFACTURE OF WOOD AND PRODUCTS OF WOOD AND CORK	**0.772**	**146.6**	**147.1**	**149.5**	**148.8**	**148.9**
1.3.7.1 Saw milling and Planing of wood	0.124	137.8	137.8	140.3	141.9	142.1
1.3.7.2 Veneer sheets; Manufacture of plywood, Laminboard, Particle board and Other panels and Boards	0.493	146.1	147.4	149.1	147.6	147.8
1.3.7.3 Builder's carpentry and Joinery	0.036	206.4	201.7	216.4	216.4	216.2
1.3.7.4 Wooden containers	0.119	139.8	139.1	141.1	140.9	140.3
1.3.8 MANUFACTURE OF PAPER AND PAPER PRODUCTS	**1.113**	**140.3**	**138.5**	**139.8**	**139.4**	**139.9**
1.3.8.1 Pulp, Paper and Paperboard	0.493	147.6	145.3	145.5	144.8	144.2
1.3.8.2 Corrugated paper and Paperboard and Containers of paper and Paperboard	0.314	140.9	141.4	146.1	145.8	148.0
1.3.8.3 Other articles of paper and Paperboard	0.306	128.0	124.8	124.0	124.0	124.6
1.3.9 PRINTING AND REPRODUCTION OF RECORDED MEDIA	**0.676**	**182.3**	**183.9**	**187.0**	**185.2**	**185.4**
1.3.9.1 Printing	0.676	182.3	183.9	187.0	185.2	185.4
1.3.10 MANUFACTURE OF CHEMICALS AND CHEMICAL PRODUCTS	**6.465**	**136.9**	**136.6**	**136.7**	**136.4**	**136.3**
1.3.10.1 Basic chemicals	1.433	139.9	139.8	137.9	138.0	137.2
1.3.10.2 Fertilizers and Nitrogen compounds	1.485	142.8	142.2	143.2	142.7	143.2
1.3.10.3 Plastic and Synthetic rubber in primary form	1.001	132.3	131.5	134.1	133.4	134.2
1.3.10.4 Pesticides and Other agrochemical products	0.454	132.8	133.0	129.8	129.4	130.3
1.3.10.5 Paints, Varnishes and Similar coatings, Printing ink and Mastics	0.491	143.7	144.1	140.7	141.1	139.7
1.3.10.6 Soap and Detergents, Cleaning and Polishing preparations, Perfumes and Toilet preparations	0.612	139.7	140.0	139.0	139.1	138.8
1.3.10.7 Other chemical products	0.692	134.4	133.9	136.2	136.2	136.6
1.3.10.8 Man-made fibres	0.296	103.6	103.2	106.9	104.7	102.9
1.3.11 MANUFACTURE OF PHARMACEUTICALS, MEDICINAL CHEMICAL AND BOTANICAL PRODUCTS	**1.993**	**142.9**	**142.9**	**144.8**	**144.8**	**143.5**
1.3.11.1 Pharmaceuticals, Medicinal chemical and Botanical products	1.993	142.9	142.9	144.8	144.8	143.5
1.3.12 MANUFACTURE OF RUBBER AND PLASTICS PRODUCTS	**2.299**	**127.5**	**127.2**	**129.1**	**129.0**	**129.2**
1.3.12.1 Rubber Tyres and Tubes; Retreading and Rebuilding of Rubber Tyres	0.609	113.7	113.2	114.8	115.1	116.6
1.3.12.2 Other Rubber Products	0.272	107.3	106.8	113.6	113.9	113.6
1.3.12.3 Plastics products	1.418	137.3	137.1	138.2	137.8	137.6
1.3.13 MANUFACTURE OF OTHER NON-METALLIC MINERAL PRODUCTS	**3.202**	**134.7**	**135.6**	**129.8**	**130.4**	**130.1**
1.3.13.1 Glass and Glass products	0.295	163.8	163.4	163.5	164.1	162.4
1.3.13.2 Refractory products	0.223	119.7	120.0	119.6	119.7	118.8
1.3.13.3 Clay Building Materials	0.121	123.9	130.1	121.6	123.9	126.0
1.3.13.4 Other Porcelain and Ceramic Products	0.222	122.3	122.3	124.6	124.6	124.7
1.3.13.5 Cement, Lime and Plaster	1.645	137.3	138.8	127.7	128.4	128.3

No. 21: Wholesale Price Index (Contd.)

(Base: 2011-12 = 100)

Commodities	Weight	2023-24	2023	2024		
			Oct.	Aug.	Sep.(P)	Oct.(P)
	1	2	3	4	5	6
1.3.13.6 Articles of Concrete, Cement and Plaster	0.292	137.7	137.6	138.4	138.0	138.1
1.3.13.7 Cutting, Shaping and Finishing of Stone	0.234	130.3	130.8	133.7	135.4	135.2
1.3.13.8 Other Non-Metallic Mineral Products	0.169	102.4	101.2	96.8	97.2	94.5
1.3.14 MANUFACTURE OF BASIC METALS	**9.646**	**141.0**	**142.2**	**138.3**	**138.5**	**139.0**
1.3.14.1 Inputs into steel making	1.411	140.3	143.3	131.2	130.4	134.3
1.3.14.2 Metallic Iron	0.653	153.6	153.6	145.4	142.8	145.2
1.3.14.3 Mild Steel - Semi Finished Steel	1.274	119.9	120.0	114.4	117.0	114.8
1.3.14.4 Mild Steel -Long Products	1.081	141.3	143.5	138.6	138.8	140.1
1.3.14.5 Mild Steel - Flat products	1.144	143.4	145.1	136.4	133.3	131.9
1.3.14.6 Alloy steel other than Stainless Steel- Shapes	0.067	137.6	139.1	134.6	133.5	134.6
1.3.14.7 Stainless Steel - Semi Finished	0.924	136.4	136.8	128.6	131.9	128.1
1.3.14.8 Pipes & tubes	0.205	169.7	170.8	165.2	163.7	163.9
1.3.14.9 Non-ferrous metals incl. precious metals	1.693	144.8	143.9	154.6	155.7	157.5
1.3.14.10 Castings	0.925	141.0	145.0	144.0	144.4	144.7
1.3.14.11 Forgings of steel	0.271	173.3	173.8	170.7	170.8	172.7
1.3.15 MANUFACTURE OF FABRICATED METAL PRODUCTS, EXCEPT MACHINERY AND EQUIPMENT	**3.155**	**138.6**	**138.9**	**136.6**	**136.4**	**135.3**
1.3.15.1 Structural Metal Products	1.031	132.3	132.3	131.5	131.4	129.9
1.3.15.2 Tanks, Reservoirs and Containers of Metal	0.660	157.6	157.7	151.2	150.6	147.2
1.3.15.3 Steam generators, Except Central Heating Hot Water Boilers	0.145	106.3	105.3	111.5	110.8	112.9
1.3.15.4 Forging, Pressing, Stamping and Roll-Forming of Metal; Powder Metallurgy	0.383	141.4	143.8	138.4	138.6	139.9
1.3.15.5 Cutlery, Hand Tools and General Hardware	0.208	108.4	108.6	101.9	102.0	101.9
1.3.15.6 Other Fabricated Metal Products	0.728	143.8	143.8	144.7	144.3	143.5
1.3.16 MANUFACTURE OF COMPUTER, ELECTRONIC AND OPTICAL PRODUCTS	**2.009**	**119.3**	**120.1**	**121.6**	**121.7**	**121.7**
1.3.16.1 Electronic Components	0.402	115.0	116.0	117.4	117.6	117.1
1.3.16.2 Computers and Peripheral Equipment	0.336	135.3	135.9	136.2	135.4	135.3
1.3.16.3 Communication Equipment	0.310	136.1	137.3	145.4	145.1	145.7
1.3.16.4 Consumer Electronics	0.641	103.6	104.7	101.1	101.2	101.1
1.3.16.5 Measuring, Testing, Navigating and Control equipment	0.181	113.8	114.1	118.1	120.9	120.9
1.3.16.6 Watches and Clocks	0.076	157.2	157.0	166.3	166.3	167.5
1.3.16.7 Irradiation, Electromedical and Electrotherapeutic equipment	0.055	108.3	107.9	119.7	117.7	117.0
1.3.16.8 Optical instruments and Photographic equipment	0.008	103.8	103.8	106.9	106.9	107.0
1.3.17 MANUFACTURE OF ELECTRICAL EQUIPMENT	**2.930**	**131.4**	**132.2**	**133.5**	**133.4**	**133.5**
1.3.17.1 Electric motors, Generators, Transformers and Electricity distribution and Control apparatus	1.298	130.1	132.1	131.7	131.6	131.6
1.3.17.2 Batteries and Accumulators	0.236	137.8	137.7	141.8	141.3	141.3
1.3.17.3 Fibre optic cables for data transmission or live transmission of images	0.133	123.4	123.5	120.7	121.2	121.2
1.3.17.4 Other electronic and Electric wires and Cables	0.428	146.1	145.4	153.3	153.1	154.6
1.3.17.5 Wiring devices, Electric lighting & display equipment	0.263	116.8	116.3	118.9	118.7	118.0
1.3.17.6 Domestic appliances	0.366	133.8	133.9	132.4	132.3	131.6
1.3.17.7 Other electrical equipment	0.206	120.9	121.4	122.6	123.0	124.1
1.3.18 MANUFACTURE OF MACHINERY AND EQUIPMENT	**4.789**	**129.0**	**128.9**	**130.6**	**130.8**	**131.0**
1.3.18.1 Engines and Turbines, Except aircraft, Vehicle and Two wheeler engines	0.638	128.9	128.6	132.4	133.6	133.9
1.3.18.2 Fluid power equipment	0.162	131.9	132.3	134.0	133.7	134.1
1.3.18.3 Other pumps, Compressors, Taps and Valves	0.552	117.4	117.0	118.5	118.5	118.3
1.3.18.4 Bearings, Gears, Gearing and Driving elements	0.340	127.7	126.3	126.4	126.2	128.0
1.3.18.5 Ovens, Furnaces and Furnace burners	0.008	83.7	82.4	86.7	88.4	86.3
1.3.18.6 Lifting and Handling equipment	0.285	128.6	128.5	129.5	129.9	129.7

No. 21: Wholesale Price Index (Concld.)

(Base: 2011-12 = 100)

Commodities	Weight	2023-24	2023	2024		
			Oct.	Aug.	Sep.(P)	Oct.(P)
	1	2	3	4	5	6
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	145.2	145.8	149.2	148.3	146.7
1.3.18.9 Agricultural and Forestry machinery	0.833	142.5	142.5	144.3	145.0	145.3
1.3.18.10 Metal-forming machinery and Machine tools	0.224	122.5	122.9	122.8	122.8	123.1
1.3.18.11 Machinery for mining, Quarrying and Construction	0.371	88.6	89.2	88.8	88.9	89.1
1.3.18.12 Machinery for food, Beverage and Tobacco processing	0.228	124.4	124.3	126.2	126.1	126.3
1.3.18.13 Machinery for textile, Apparel and Leather production	0.192	137.2	137.5	141.9	141.1	142.8
1.3.18.14 Other special-purpose machinery	0.468	144.7	144.1	144.8	144.9	144.5
1.3.18.15 Renewable electricity generating equipment	0.046	70.8	71.5	69.1	69.0	68.6
1.3.19 MANUFACTURE OF MOTOR VEHICLES, TRAILERS AND SEMI-TRAILERS	**4.969**	**128.4**	**127.7**	**129.8**	**129.6**	**129.6**
1.3.19.1 Motor vehicles	2.600	128.5	128.4	130.3	130.0	129.9
1.3.19.2 Parts and Accessories for motor vehicles	2.368	128.2	126.9	129.3	129.1	129.2
1.3.20 MANUFACTURE OF OTHER TRANSPORT EQUIPMENT	**1.648**	**143.1**	**143.7**	**144.6**	**144.8**	**145.2**
1.3.20.1 Building of ships and Floating structures	0.117	163.7	163.7	177.9	177.9	177.9
1.3.20.2 Railway locomotives and Rolling stock	0.110	107.4	109.0	110.0	108.2	109.5
1.3.20.3 Motor cycles	1.302	144.7	145.3	145.4	145.9	146.4
1.3.20.4 Bicycles and Invalid carriages	0.117	137.9	138.5	134.6	133.7	133.3
1.3.20.5 Other transport equipment	0.002	159.2	161.2	162.4	162.9	164.1
1.3.21 MANUFACTURE OF FURNITURE	**0.727**	**159.6**	**159.5**	**159.0**	**159.7**	**159.5**
1.3.21.1 Furniture	0.727	159.6	159.5	159.0	159.7	159.5
1.3.22 OTHER MANUFACTURING	**1.064**	**158.2**	**153.4**	**174.1**	**178.9**	**184.0**
1.3.22.1 Jewellery and Related articles	0.996	157.9	152.8	175.0	180.1	185.5
1.3.22.2 Musical instruments	0.001	187.0	189.4	201.4	204.7	199.7
1.3.22.3 Sports goods	0.012	155.2	155.0	163.6	164.4	168.0
1.3.22.4 Games and Toys	0.005	159.6	158.8	163.6	163.2	163.6
1.3.22.5 Medical and Dental instruments and Supplies	0.049	163.1	163.2	159.7	159.7	158.6
2 FOOD INDEX	**24.378**	**179.8**	**180.3**	**193.1**	**195.3**	**201.2**

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	2022-23	2023-24	April-September		September	
				2023-24	2024-25	2023	2024
	1	2	3	4	5	6	7
General Index	100.00	138.5	146.7	143.5	149.3	142.3	146.7
1 Sectoral Classification							
1.1 Mining	14.37	119.9	128.9	118.1	122.9	111.5	111.7
1.2 Manufacturing	77.63	137.1	144.7	141.9	147.2	141.5	147.0
1.3 Electricity	7.99	185.2	198.3	204.9	217.3	205.9	206.9
2 Use-Based Classification							
2.1 Primary Goods	34.05	139.2	147.7	144.1	150.4	138.8	141.3
2.2 Capital Goods	8.22	100.3	106.6	104.1	108.2	112.6	115.8
2.3 Intermediate Goods	17.22	149.4	157.3	154.8	161.0	154.2	160.7
2.4 Infrastructure/ Construction Goods	12.34	160.7	176.3	172.3	182.1	172.8	178.5
2.5 Consumer Durables	12.84	114.5	118.6	117.6	127.7	125.0	133.1
2.6 Consumer Non-Durables	15.33	147.7	153.7	149.3	147.4	142.6	145.5

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

(₹ Crore)

Item	Financial Year	April – September			
	2024-25 (Budget Estimates)	2024-25 (Actuals)	2023-24 (Actuals)	Percentage to Budget Estimates	
				2024-25	2023-24
	1	2	3	4	5
1 Revenue Receipts	**3129200**	**1622373**	**1397112**	**51.8**	**53.1**
1.1 Tax Revenue (Net)	2583499	1265159	1160340	49.0	49.8
1.2 Non-Tax Revenue	545701	357214	236772	65.5	78.5
2 Non Debt Capital Receipt	**78000**	**14601**	**20166**	**18.7**	**24.0**
2.1 Recovery of Loans	28000	11434	13216	40.8	57.5
2.2 Other Receipts	50000	3167	6950	6.3	11.4
3 Total Receipts (excluding borrowings) (1+2)	**3207200**	**1636974**	**1417278**	**51.0**	**52.2**
4 Revenue Expenditure of which :	3709401	1696528	1628511	45.7	46.5
4.1 Interest Payments	1162940	515010	484329	44.3	44.8
5 Capital Expenditure	1111111	414966	490628	37.3	49.0
6 Total Expenditure (4+5)	**4820512**	**2111494**	**2119139**	**43.8**	**47.1**
7 Revenue Deficit (4-1)	**580201**	**74155**	**231399**	**12.8**	**26.6**
8 Fiscal Deficit (6-3)	**1613312**	**474520**	**701861**	**29.4**	**39.3**
9 Gross Primary Deficit (8-4.1)	**450372**	**-40490**	**217532**	**-9.0**	**30.8**

Source: Controller General of Accounts (CGA), Ministry of Finance, Government of India and Interim Union Budget 2024-25.

No. 24: Treasury Bills – Ownership Pattern

(₹ Crore)

Item	2023-24	2023	2024					
		Sep. 29	Aug. 23	Aug. 30	Sep. 6	Sep. 13	Sep. 20	Sep. 27
	1	2	3	4	5	6	7	8
1 91-day								
1.1 Banks	18054	19820	3715	2796	3042	4751	3475	5662
1.2 Primary Dealers	22676	17017	7947	9371	6616	8334	8242	5698
1.3 State Governments	5701	31677	61087	66587	68588	72388	71688	69688
1.4 Others	88670	106663	86638	90133	96643	97215	94083	90440
2 182-day								
2.1 Banks	84913	75415	55945	55481	54498	55542	51781	44787
2.2 Primary Dealers	87779	108252	46735	44716	41837	42085	37767	30674
2.3 State Governments	4070	25418	15947	16093	14793	14693	13909	13909
2.4 Others	102311	83033	106420	99903	95365	86073	79152	78239
3 364-day								
3.1 Banks	91819	87844	86463	82259	84818	86514	84627	84526
3.2 Primary Dealers	159085	172707	120165	123440	120067	121511	117499	122233
3.3 State Governments	41487	48023	38128	37845	37518	36791	31022	28145
3.4 Others	165095	149448	185373	186301	187114	183975	183873	173241
4 14-day Intermediate								
4.1 Banks								
4.2 Primary Dealers								
4.3 State Governments	318736	133789	182562	180908	120753	155935	175422	167512
4.4 Others	442	783	1298	1073	1528	248	811	449
Total Treasury Bills (Excluding 14 day Intermediate T Bills) #	871662	925317	814562	814924	810899	809871	777119	747242

14D intermediate T-Bills are non-marketable unlike 91D, 182D and 364D T-Bills. These bills are 'intermediate' by nature as these are liquidated to replenish shortfall in the daily minimum cash balances of State Governments.
Note: Primary Dealers (PDs) include banks undertaking PD business.

No. 25: Auctions of Treasury Bills

(Amount in ₹ Crore)

Date of Auction	Notified Amount	Bids Received			Bids Accepted			Total Issue (6+7)	Cut-off Price (₹)	Implicit Yield at Cut-off Price (per cent)
		Number	Total Face Value		Number	Total Face Value				
			Competitive	Non-Competitive		Competitive	Non-Competitive			
	1	2	3	4	5	6	7	8	9	10
91-day Treasury Bills										
2024-25										
Aug. 28	8000	82	20488	7044	41	7956	7044	15000	98.37	6.6342
Sep. 4	8000	100	25416	8561	44	7940	8561	16501	98.37	6.6301
Sep. 11	8000	87	17251	8340	57	7960	8340	16300	98.37	6.6462
182-day Treasury Bills										
2024-25										
Aug. 28	6000	90	19914	168	38	5978	168	6145	96.76	6.7210
Sep. 4	6000	89	15897	626	52	5974	626	6600	96.76	6.7261
Sep. 11	6000	92	15990	1717	42	5983	1717	7700	96.76	6.7222
364-day Treasury Bills										
2024-25										
Aug. 28	6000	107	27850	1127	21	5985	1127	7112	93.72	6.7175
Sep. 4	6000	96	24086	1368	27	5956	1368	7325	93.72	6.7153
Sep. 11	6000	107	28815	1753	19	5981	1753	7734	93.73	6.7037

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
September 02 ,2024	5.10-6.60	6.49
September 03 ,2024	5.10-6.55	6.47
September 04 ,2024	5.10-6.55	6.46
September 05 ,2024	5.10-6.65	6.49
September 06 ,2024	5.10-6.60	6.48
September 09 ,2024	5.10-6.60	6.52
September 10 ,2024	5.10-6.60	6.50
September 11 ,2024	5.10-6.65	6.54
September 12 ,2024	5.10-6.60	6.52
September 13 ,2024	5.10-6.75	6.62
September 16 ,2024	5.50-6.25	6.03
September 17 ,2024	5.10-6.95	6.64
September 19 ,2024	5.10-6.80	6.64
September 20 ,2024	5.10-6.80	6.65
September 21 ,2024	5.75-6.70	6.29
September 23 ,2024	5.10-6.80	6.68
September 24 ,2024	5.10-6.80	6.69
September 25 ,2024	5.10-7.00	6.67
September 26 ,2024	5.10-6.70	6.54
September 27 ,2024	5.10-6.65	6.53
September 30 ,2024	5.10-6.90	6.68
October 01 ,2024	5.10-6.55	6.47
October 03 ,2024	5.10-6.55	6.44
October 04 ,2024	5.10-6.50	6.41
October 05 ,2024	5.50-6.50	6.09
October 07 ,2024	5.10-6.50	6.43
October 08 ,2024	5.10-6.75	6.42
October 09 ,2024	5.10-6.60	6.43
October 10 ,2024	5.10-6.50	6.43
October 11 ,2024	5.10-6.50	6.43
October 14 ,2024	5.10-6.50	6.42
October 15 ,2024	5.00-6.50	6.42

Note: Includes Notice Money.

No. 27: Certificates of Deposit

Item	2023	2024			
	Sep. 22	Aug. 9	Aug. 23	Sep. 6	Sep. 20
	1	2	3	4	5
1 Amount Outstanding (₹ Crore)	291829.65	435778.32	446580.44	463005.01	474683.60
1.1 Issued during the fortnight (₹ Crore)	31959.30	26212.32	46185.89	55104.80	67552.42
2 Rate of Interest (per cent)	6.88-7.70	6.96-7.56	7.03-7.68	7.02-7.56	7.11-7.83

No. 28: Commercial Paper

Item	2023	2024			
	Sep. 30	Aug. 15	Aug. 31	Sep. 15	Sep. 30
	1	2	3	4	5
1 Amount Outstanding (₹ Crore)	412234.35	473153.85	471121.50	440945.45	397590.45
1.1 Reported during the fortnight (₹ Crore)	49675.85	63925.50	78270.05	78418.60	48447.90
2 Rate of Interest (per cent)	6.89-11.36	6.97-11.69	6.90-13.77	7.09-12.88	7.07-14.72

No. 29: Average Daily Turnover in Select Financial Markets

(₹ Crore)

Item	2023-24	2023	2024					
		Sep. 29	Aug. 23	Aug. 30	Sep. 6	Sep. 13	Sep. 20	Sep. 27
	1	2	3	4	5	6	7	8
1 Call Money	17761	13325	16106	17258	18166	21371	11343	18628
2 Notice Money	2550	4295	750	4045	333	254	5874	208
3 Term Money	871	312	1024	958	1144	1077	281	805
4 Triparty Repo	601363	559348	644906	791363	607781	734837	605817	678781
5 Market Repo	574534	444818	503684	601046	510382	620109	486193	548987
6 Repo in Corporate Bond	1817	152	4666	4270	3736	3931	2839	5566
7 Forex (US $ million)	95115	106919	103856	127583	109685	120154	126154	140598
8 Govt. of India Dated Securities	90992	117087	125631	82172	74736	108595	168177	156651
9 State Govt. Securities	6102	8406	7229	2572	10025	5111	8231	11412
10 Treasury Bills								
10.1 91-Day	5378	6645	4528	3373	3055	4209	900	2522
10.2 182-Day	6079	6311	5603	2703	4416	1978	2727	5341
10.3 364-Day	4307	2936	5403	2703	5272	3406	4404	4387
10.4 Cash Management Bills			0	0	0	0	0	0
11 Total Govt. Securities (8+9+10)	112858	141385	148394	93522	97504	123299	184439	180314
11.1 RBI	492	560	1310	648	165	1062	788	586

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

(Amount in ₹ Crore)

Security & Type of Issue	2023-24		2023-24 (Apr.-Sep.)		2024-25 (Apr.-Sep.) *		Sep. 2023		Sep. 2024 *	
	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	**339**	**80942**	**147**	**31158**	**255**	**85980**	**35**	**9565**	**58**	**16883**
1A Premium	328	76319	138	29063	242	65333	34	9121	55	15314
1.1 Public	272	65832	109	24900	186	74274	31	9285	47	16213
1.1.1 Premium	272	62791	109	23965	186	55007	31	9084	47	14967
1.2 Rights	67	15110	38	6258	69	11706	4	280	11	671
1.2.1 Premium	56	13527	29	5097	56	10326	3	38	8	347
2 Preference Shares	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
2.1 Public	-	-	-	-	-	-	-	-	-	-
2.2 Rights	-	-	-	-	-	-	-	-	-	-
3 Bonds & Debentures	**44**	**16342**	**20**	**7682**	**21**	**4856**	**6**	**2318**	**5**	**1695**
3.1 Convertible	-	-	-	-	-	-	-	-	-	-
3.1.1 Public	-	-	-	-	-	-	-	-	-	-
3.1.2 Rights	-	-	-	-	-	-	-	-	-	-
3.2 Non-Convertible	44	16342	20	7682	21	4856	6	2318	5	1695
3.2.1 Public	44	16342	20	7682	21	4856	6	2318	5	1695
3.2.2 Rights	-	-	-	-	-	-	-	-	-	-
4 Total (1+2+3)	**383**	**97284**	**167**	**38840**	**276**	**90836**	**41**	**11883**	**63**	**18579**
4.1 Public	316	82174	129	32582	207	79130	37	11603	52	17908
4.2 Rights	67	15110	38	6258	69	11706	4	280	11	671

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	2023-24	2023	2024				
			Sep.	May	Jun.	Jul.	Aug.	Sep.
		1	2	3	4	5	6	7
1 Exports	₹ Crore	3618952	285750	330220	293508	282865	290409	289724
	US $ Million	437072	34408	39598	35163	33838	34615	34570
1.1 Oil	₹ Crore	696850	53631	67598	45824	43399	48669	39585
	US $ Million	84157	6458	8106	5490	5192	5801	4723
1.2 Non-oil	₹ Crore	2922102	232119	262621	247684	239466	241740	250139
	US $ Million	352915	27950	31492	29673	28646	28814	29847
2 Imports	₹ Crore	5616042	452485	518017	473149	480403	539791	463563
	US $ Million	678215	54485	62118	56684	57468	64340	55312
2.1 Oil	₹ Crore	1480232	116268	166303	125581	115934	92408	104687
	US $ Million	178733	14000	19942	15045	13869	11015	12491
2.2 Non-oil	₹ Crore	4135810	336217	351715	347568	364469	447383	358876
	US $ Million	499482	40485	42176	41639	43600	53326	42821
3 Trade Balance	₹ Crore	-1997090	-166735	-187798	-179641	-197538	-249381	-173840
	US $ Million	-241143	-20077	-22520	-21521	-23630	-29725	-20743
3.1 Oil	₹ Crore	-783382	-62637	-98705	-79757	-72535	-43739	-65103
	US $ Million	-94576	-7542	-11836	-9555	-8677	-5213	-7768
3.2 Non-oil	₹ Crore	-1213708	-104098	-89093	-99884	-125003	-205642	-108737
	US $ Million	-146567	-12535	-10684	-11966	-14953	-24512	-12975

Note: Data in the table are provisional.
Source: Directorate General of Commercial Intelligence and Statistics.

No. 32: Foreign Exchange Reserves

Item	Unit	2023	2024					
		Nov. 03	Sep. 20	Sep. 27	Oct. 04	Oct. 11	Oct. 18	Oct. 25
		1	2	3	4	5	6	7
1 Total Reserves	**₹ Crore**	**4920453**	**5785706**	**5900138**	**5887828**	**5803872**	**5786531**	**5757912**
	US $ Million	**590783**	**692296**	**704885**	**701176**	**690430**	**688267**	**684805**
1.1 Foreign Currency Assets	₹ Crore	4346726	5061914	5157443	5144410	5061364	5029601	4992326
	US $ Million	521896	605686	616154	612643	602101	598236	593751
1.2 Gold	₹ Crore	384148	531633	550741	552160	551932	567032	576181
	US $ Million	46123	63613	65796	65756	65658	67444	68527
	Volume (Metric Tonnes)	803.58	853.64	853.64	858.31	863.12	866.85	866.85
1.3 SDRs	SDRs Million	13681	13702	13702	13702	13702	13702	13702
	₹ Crore	149706	154941	155249	154715	154157	153610	153190
	US $ Million	17975	18540	18547	18425	18339	18271	18219
1.4 Reserve Tranche Position in IMF	₹ Crore	39873	37218	36706	36543	36419	36288	36215
	US $ Million	4789	4458	4387	4352	4333	4316	4307

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

No. 33: Non-Resident Deposits

(US $ Million)

Scheme	Outstanding				Flows	
	2023-24	2023	2024		2023-24	2024-25
		Sep.	Aug.	Sep. (P)	Apr.-Sep.	Apr.-Sep.(P)
	1	2	3	4	5	6
1 NRI Deposits	**151879**	**143070**	**158945**	**161623**	**5418**	**10192**
1.1 FCNR(B)	25733	21284	29204	31080	1920	5347
1.2 NR(E)RA	98624	96458	100543	100924	1617	2651
1.3 NRO	27522	25328	29198	29619	1880	2195

P: Provisional.

No. 34: Foreign Investment Inflows

(US $ Million)

Item	2023-24	2023-24	2024-25 (P)	2023	2024 (P)	
		Apr.-Sep.	Apr.-Sep.	Sep.	Aug.	Sep.
	1	2	3	4	5	6
1.1 Net Foreign Direct Investment (1.1.1-1.1.2)	**10129**	**3894**	**3561**	**631**	**1742**	**-3057**
1.1.1 Direct Investment to India (1.1.1.1-1.1.1.2)	**26807**	**10398**	**14309**	**1920**	**3950**	**-1042**
1.1.1.1 Gross Inflows/Gross Investments	**71279**	**33512**	**42103**	**6149**	**8614**	**5984**
1.1.1.1.1 Equity	45817	21143	30350	4200	6504	4119
1.1.1.1.1.1 Government (SIA/FIPB)	585	191	380	15	56	3
1.1.1.1.1.2 RBI	31826	15177	20625	2587	4273	2488
1.1.1.1.1.3 Acquisition of shares	12013	5120	8787	1486	2064	1516
1.1.1.1.1.4 Equity capital of unincorporated bodies	1394	654	558	111	111	111
1.1.1.1.2 Reinvested earnings	19768	9280	9636	1580	1580	1580
1.1.1.1.3 Other capital	5694	3089	2116	368	530	286
1.1.1.2 Repatriation/Disinvestment	**44472**	**23114**	**27794**	**4229**	**4665**	**7026**
1.1.1.2.1 Equity	41334	21628	26689	4093	4527	6934
1.1.1.2.2 Other capital	3137	1486	1104	136	138	92
1.1.2 Foreign Direct Investment by India (1.1.2.1+1.1.2.2+1.1.2.3-1.1.2.4)	**16678**	**6505**	**10749**	**1289**	**2207**	**2016**
1.1.2.1 Equity capital	9111	3547	6372	607	1104	691
1.1.2.2 Reinvested Earnings	5786	2893	2947	482	482	482
1.1.2.3 Other Capital	5406	2417	3125	488	724	1022
1.1.2.4 Repatriation/Disinvestment	3624	2352	1695	288	103	179
1.2 Net Portfolio Investment (1.2.1+1.2.2+1.2.3-1.2.4)	**44081**	**20677**	**20037**	**-2226**	**4325**	**9659**
1.2.1 GDRs/ADRs	-	-	-	-	-	-
1.2.2 FIIs	44626	21375	19954	-2113	4270	9595
1.2.3 Offshore funds and others	-	-	-	-	-	-
1.2.4 Portfolio investment by India	544	698	-83	113	-55	-64
1 Foreign Investment Inflows	**54210**	**24571**	**23597**	**-1595**	**6067**	**6601**

P: Provisional

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

(US $ Million)

Item	2023-24	2023	2024		
		Sep.	Jul.	Aug.	Sep.
	1	2	3	4	5
1 Outward Remittances under the LRS	**31735.74**	**3492.91**	**2754.05**	**3211.54**	**2758.25**
1.1 Deposit	916.45	118.56	41.68	45.56	43.00
1.2 Purchase of immovable property	242.51	29.13	24.54	22.49	25.47
1.3 Investment in equity/debt	1510.89	208.45	120.86	125.30	135.08
1.4 Gift	3580.27	383.70	275.26	244.41	221.67
1.5 Donations	11.31	0.91	0.68	0.67	0.87
1.6 Travel	17006.27	1765.07	1662.13	2013.30	1713.06
1.7 Maintenance of close relatives	4611.53	559.79	337.40	315.40	281.24
1.8 Medical Treatment	79.62	4.85	8.62	7.65	7.89
1.9 Studies Abroad	3478.65	396.08	272.16	416.39	320.10
1.10 Others	298.24	26.37	10.72	20.36	9.88

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

Item	2022-23	2023-24	2023	2024	
			Oct	Sep	Oct
	1	2	3	4	5
40-Currency Basket (Base: 2015-16=100)					
1 Trade-Weighted					
1.1 NEER	91.20	90.73	91.69	90.39	90.93
1.2 REER	102.78	103.70	105.13	105.34	107.21
2 Export-Weighted					
2.1 NEER	93.01	93.11	94.01	93.07	93.51
2.2 REER	101.10	101.21	102.41	102.68	104.28
6-Currency Basket (Trade-weighted)					
1 Base : 2015-16 =100					
1.1 NEER	85.93	83.62	84.50	81.54	81.99
1.2 REER	101.80	101.66	103.07	102.52	104.38
2 Base : 2022-23 =100					
2.1 NEER	100.00	97.31	98.33	94.89	95.42
2.2 REER	100.00	99.86	101.24	100.71	102.53

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

(Amount in US $ Million)

Item	2023-24	2023	2024	
		Sep.	Aug.	Sep.
	1	2	3	4
1 Automatic Route				
1.1 Number	1188	81	99	95
1.2 Amount	29461	2200	5460	3776
2 Approval Route				
2.1 Number	33	2	3	1
2.2 Amount	19748	564	449	1065
3 Total (1+2)				
3.1 Number	1221	83	102	96
3.2 Amount	49209	2764	5909	4841
4 Weighted Average Maturity (in years)	5.60	5.20	4.50	4.40
5 Interest Rate (per cent)				
5.1 Weighted Average Margin over alternative reference rate (ARR) for Floating Rate Loans@	1.66	1.82	1.49	1.36
5.2 Interest rate range for Fixed Rate Loans	0.00-27.00	0.00-15.00	0.01-10.00	0.00-11.00
Borrower Category				
I. Corporate Manufacturing	15836	130	1452	378
II. Corporate-Infrastructure	15916	712	1042	328
a.) Transport	1505	281	0	0
b.) Energy	3513	331	983	15
c.) Water and Sanitation	33	0	0	0
d.) Communication	6309	0	0	0
e.) Social and Commercial Infrastructure	115	0	0	0
f.) Exploration,Mining and Refinery	2480	100	0	313
g.) Other Sub-Sectors	1961	0	59	0
III. Corporate Service-Sector	1526	495	372	437
IV. Other Entities	1728	0	0	0
a.) units in SEZ	1	0	0	0
b.) SIDBI	0	0	0	0
c.) Exim Bank	1727	0	0	0
V. Banks	0	0	0	0
VI. Financial Institution (Other than NBFC)	20	0	0	0
VII. NBFCs	13361	1402	3009	3578
a). NBFC- IFC/AFC	7734	1193	773	2777
b). NBFC-MFI	531	13	18	31
c). NBFC-Others	5096	196	2218	770
VIII. Non-Government Organization (NGO)	0	0	0	0
IX. Micro Finance Institution (MFI)	0	0	0	0
X. Others	822	25	34	120

Note: Based on applications for ECB/Foreign Currency Convertible Bonds (FCCBs) which have been allotted loan registration number during the period.
@ With effect from July 01, 2023, the benchmark rate is changed to Alternative Reference Rate (ARR)

No. 38: India's Overall Balance of Payments

(US$ Million)

Item	Apr-Jun 2023			Apr-Jun 2024 (P)		
	Credit	Debit	Net	Credit	Debit	Net
	1	2	3	4	5	6
Overall Balance Of Payments (1+2+3)	**403470**	**379039**	**24432**	**506715**	**501489**	**5226**
1 Current Account (1.1+ 1.2)	**221636**	**230603**	**-8967**	**241638**	**251403**	**-9765**
1.1 Merchandise	**104936**	**161637**	**-56701**	**111175**	**176297**	**-65122**
1.2 Invisibles (1.2.1+1.2.2+1.2.3)	**116700**	**68967**	**47734**	**130463**	**75106**	**55357**
1.2.1 Services	80569	45449	35121	88466	48740	39725
1.2.1.1 Travel	6412	9489	-3077	7352	9171	-1819
1.2.1.2 Transportation	7408	7693	-285	8507	8609	-102
1.2.1.3 Insurance	761	591	170	903	593	310
1.2.1.4 G.n.i.e.	159	250	-91	161	309	-147
1.2.1.5 Miscellaneous	65830	27427	38404	71542	30058	41484
1.2.1.5.1 Software Services	38172	4243	33928	41926	4479	37447
1.2.1.5.2 Business Services	21831	15203	6627	23000	16625	6375
1.2.1.5.3 Financial Services	1891	1152	739	2215	1267	948
1.2.1.5.4 Communication Services	831	324	507	519	444	75
1.2.2 Transfers	27117	4279	22838	29519	3169	26350
1.2.2.1 Official	20	255	-235	18	266	-248
1.2.2.2 Private	27097	4024	23073	29502	2904	26598
1.2.3 Income	9014	19239	-10225	12478	23196	-10718
1.2.3.1 Investment Income	7187	18372	-11185	10341	22218	-11878
1.2.3.2 Compensation of Employees	1827	868	959	2137	978	1159
2 Capital Account (2.1+2.2+2.3+2.4+2.5)	**181834**	**148018**	**33816**	**264492**	**250086**	**14406**
2.1 Foreign Investment (2.1.1+2.1.2)	**109054**	**88595**	**20459**	**183279**	**176019**	**7259**
2.1.1 Foreign Direct Investment	19278	14551	4728	23435	17120	6315
2.1.1.1 In India	17790	10427	7362	22287	12171	10116
2.1.1.1.1 Equity	11266	9351	1915	16402	11673	4729
2.1.1.1.2 Reinvested Earnings	4541	0	4541	4897		4897
2.1.1.1.3 Other Capital	1983	1077	906	988	498	490
2.1.1.2 Abroad	1489	4123	-2634	1147	4949	-3801
2.1.1.2.1 Equity	1489	1864	-375	1147	2346	-1199
2.1.1.2.2 Reinvested Earnings	0	1446	-1446	0	1500	-1500
2.1.1.2.3 Other Capital	0	813	-813	0	1102	-1102
2.1.2 Portfolio Investment	89775	74045	15731	159844	158899	945
2.1.2.1 In India	88743	72654	16089	159240	158343	897
2.1.2.1.1 FIIs	88743	72654	16089	159240	158343	897
2.1.2.1.1.1 Equity	77174	63525	13649	139824	140833	-1009
2.1.2.1.1.2 Debt	11569	9129	2440	19416	17510	1906
2.1.2.1.2 ADR/GDRs	0	0	0	0	0	0
2.1.2.2 Abroad	1032	1391	-358	604	556	48
2.2 Loans (2.2.1+2.2.2+2.2.3)	**30359**	**28188**	**2171**	**31905**	**25940**	**5965**
2.2.1 External Assistance	3032	1603	1429	3641	2271	1371
2.2.1.1 By India	9	49	-40	8	30	-22
2.2.1.2 To India	3023	1553	1470	3634	2241	1393
2.2.2 Commercial Borrowings	15452	9721	5731	12618	10951	1667
2.2.2.1 By India	2212	2071	140	4138	4255	-117
2.2.2.2 To India	13241	7650	5591	8481	6696	1785
2.2.3 Short Term to India	11875	16864	-4989	15645	12718	2927
2.2.3.1 Buyers' credit & Suppliers' Credit >180 days	11875	14352	-2477	13572	12718	854
2.2.3.2 Suppliers' Credit up to 180 days	0	2512	-2512	2073	0	2073
2.3 Banking Capital (2.3.1+2.3.2)	**33279**	**20339**	**12940**	**36380**	**33511**	**2870**
2.3.1 Commercial Banks	33107	20339	12769	36259	33511	2749
2.3.1.1 Assets	13315	3382	9934	10705	13570	-2865
2.3.1.2 Liabilities	19792	16957	2835	25554	19941	5614
2.3.1.2.1 Non-Resident Deposits	18896	16688	2208	23426	19401	4025
2.3.2 Others	172	0	172	121	0	121
2.4 Rupee Debt Service	**0**	**62**	**-62**	**0**	**61**	**-61**
2.5 Other Capital	**9143**	**10834**	**-1691**	**12928**	**14556**	**-1627**
3 Errors & Omissions	**0**	**418**	**-418**	**585**	**0**	**585**
4 Monetary Movements (4.1+ 4.2)	**0**	**24432**	**-24432**	**0**	**5226**	**-5226**
4.1 I.M.F.	0	0	0	0	0	0
4.2 Foreign Exchange Reserves (Increase - / Decrease +)	0	24432	-24432		5226	-5226

Note: P: Preliminary.

No. 39: India's Overall Balance of Payments

(₹ Crore)

Item	Apr-Jun 2023			Apr-Jun 2024 (P)		
	Credit	Debit	Net	Credit	Debit	Net
	1	2	3	4	5	6
Overall Balance Of Payments (1+2+3)	**3316497**	**3115671**	**200826**	**4227182**	**4183585**	**43597**
1 Current Account (1.1+ 1.2)	**1821831**	**1895540**	**-73709**	**2015823**	**2097284**	**-81461**
1.1 Merchandise	**862564**	**1328641**	**-466077**	**927458**	**1470724**	**-543266**
1.2 Invisibles (1.2.1+1.2.2+1.2.3)	**959267**	**566900**	**392367**	**1088365**	**626560**	**461805**
1.2.1 Services	662275	373584	288691	738010	406609	331401
1.2.1.1 Travel	52702	77997	-25295	61335	76511	-15177
1.2.1.2 Transportation	60895	63237	-2342	70965	71816	-851
1.2.1.3 Insurance	6251	4854	1398	7535	4950	2585
1.2.1.4 G.n.i.e.	1305	2051	-746	1346	2575	-1229
1.2.1.5 Miscellaneous	541121	225445	315676	596830	250757	346073
1.2.1.5.1 Software Services	313769	34880	278889	349760	37363	312397
1.2.1.5.2 Business Services	179448	124971	54477	191873	138694	53178
1.2.1.5.3 Financial Services	15546	9473	6073	18478	10572	7906
1.2.1.5.4 Communication Services	6827	2663	4165	4331	3702	629
1.2.2 Transfers	222898	35170	187728	246261	26440	219821
1.2.2.1 Official	160	2094	-1934	150	2216	-2066
1.2.2.2 Private	222738	33076	189662	246112	24225	221887
1.2.3 Income	74093	158146	-84052	104093	193510	-89417
1.2.3.1 Investment Income	59076	151014	-91938	86265	185352	-99087
1.2.3.2 Compensation of Employees	15018	7132	7886	17829	8158	9670
2 Capital Account (2.1+2.2+2.3+2.4+2.5)	**1494666**	**1216698**	**277968**	**2206479**	**2086302**	**120178**
2.1 Foreign Investment (2.1.1+2.1.2)	**896414**	**728246**	**168169**	**1528971**	**1468411**	**60560**
2.1.1 Foreign Direct Investment	158467	119605	38862	195500	142821	52679
2.1.1.1 In India	146230	85713	60517	185930	101538	84392
2.1.1.1.1 Equity	92604	76861	15743	136835	97382	39453
2.1.1.1.2 Reinvested Earnings	37323	0	37323	40849	0	40849
2.1.1.1.3 Other Capital	16303	8853	7450	8246	4156	4090
2.1.1.2 Abroad	12237	33892	-21654	9570	41283	-31713
2.1.1.2.1 Equity	12237	15322	-3085	9570	19574	-10004
2.1.1.2.2 Reinvested Earnings	0	11889	-11889	0	12515	-12515
2.1.1.2.3 Other Capital	0	6681	-6681	0	9194	-9194
2.1.2 Portfolio Investment	737947	608641	129306	1333471	1325590	7881
2.1.2.1 In India	729461	597209	132252	1328434	1320949	7485
2.1.2.1.1 FIIs	729461	597209	132252	1328434	1320949	7485
2.1.2.1.1.1 Equity	634364	522169	112195	1166461	1174878	-8416
2.1.2.1.1.2 Debt	95097	75040	20058	161973	146071	15901
2.1.2.1.2 ADR/GDRs	0	0	0	0	0	0
2.1.2.2 Abroad	8486	11432	-2946	5037	4641	396
2.2 Loans (2.2.1+2.2.2+2.2.3)	**249550**	**231703**	**17847**	**266160**	**216400**	**49760**
2.2.1 External Assistance	24921	13173	11749	30377	18943	11433
2.2.1.1 By India	72	404	-331	64	247	-184
2.2.1.2 To India	24849	12769	12080	30313	18696	11617
2.2.2 Commercial Borrowings	127016	79909	47107	105264	91357	13907
2.2.2.1 By India	18179	17027	1153	34517	35497	-980
2.2.2.2 To India	108837	62882	45955	70747	55860	14887
2.2.3 Short Term to India	97612	138621	-41009	130519	106100	24420
2.2.3.1 Buyers' credit & Suppliers' Credit >180 days	97612	117969	-20357	113225	106100	7125
2.2.3.2 Suppliers' Credit up to 180 days	0	20652	-20652	17295	0	17295
2.3 Banking Capital (2.3.1+2.3.2)	**273549**	**167181**	**106367**	**303498**	**279556**	**23942**
2.3.1 Commercial Banks	272138	167181	104957	302487	279556	22931
2.3.1.1 Assets	109451	27797	81653	89303	113205	-23902
2.3.1.2 Liabilities	162687	139384	23304	213184	166351	46833
2.3.1.2.1 Non-Resident Deposits	155328	137175	18153	195426	161851	33575
2.3.2 Others	1410	0	1410	1011	0	1011
2.4 Rupee Debt Service	**0**	**512**	**-512**	**0**	**508**	**-508**
2.5 Other Capital	**75153**	**89057**	**-13904**	**107850**	**121427**	**-13577**
3 Errors & Omissions	**0**	**3432**	**-3432**	**4880**	**0**	**4880**
4 Monetary Movements (4.1+ 4.2)	**0**	**200826**	**-200826**	**0**	**43597**	**-43597**
4.1 I.M.F.	0	0	0	0	0	0
4.2 Foreign Exchange Reserves (Increase - / Decrease +)	0	200826	-200826	0	43597	-43597

Note: P: Preliminary.

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

(US$ Million)

Item	Apr-Jun 2023			Apr-Jun 2024 (P)		
	Credit	Debit	Net	Credit	Debit	Net
	1	2	3	4	5	6
1 Current Account (1.A+1.B+1.C)	**221635**	**230581**	**-8945**	**241638**	**251377**	**-9739**
1.A Goods and Services (1.A.a+1.A.b)	**185505**	**207085**	**-21580**	**199641**	**225037**	**-25396**
1.A.a Goods (1.A.a.1 to 1.A.a.3)	**104936**	**161637**	**-56701**	**111175**	**176297**	**-65122**
1.A.a.1 General merchandise on a BOP basis	104497	151939	-47442	111136	166784	-55648
1.A.a.2 Net exports of goods under merchanting	438	0	438	39	0	39
1.A.a.3 Nonmonetary gold	0	9698	-9698		9512	-9512
1.A.b Services (1.A.b.1 to 1.A.b.13)	**80569**	**45449**	**35121**	**88466**	**48740**	**39725**
1.A.b.1 Manufacturing services on physical inputs owned by others	481	42	439	268	22	246
1.A.b.2 Maintenance and repair services n.i.e.	47	431	-385	81	238	-157
1.A.b.3 Transport	7408	7693	-285	8507	8609	-102
1.A.b.4 Travel	6412	9489	-3077	7352	9171	-1819
1.A.b.5 Construction	870	697	174	1478	563	915
1.A.b.6 Insurance and pension services	761	591	170	903	593	310
1.A.b.7 Financial services	1891	1152	739	2215	1267	948
1.A.b.8 Charges for the use of intellectual property n.i.e.	381	3647	-3266	341	4448	-4107
1.A.b.9 Telecommunications, computer, and information services	39091	4859	34231	42541	5215	37326
1.A.b.10 Other business services	21831	15203	6627	23000	16625	6375
1.A.b.11 Personal, cultural, and recreational services	968	1279	-312	1175	1249	-74
1.A.b.12 Government goods and services n.i.e.	159	250	-91	161	309	-147
1.A.b.13 Others n.i.e.	272	116	156	444	432	12
1.B Primary Income (1.B.1 to 1.B.3)	**9014**	**19239**	**-10225**	**12478**	**23196**	**-10718**
1.B.1 Compensation of employees	1827	868	959	2137	978	1159
1.B.2 Investment income	5777	17935	-12158	8448	21594	-13146
1.B.2.1 Direct investment	2355	9950	-7595	3173	12343	-9170
1.B.2.2 Portfolio investment	208	2250	-2042	70	2411	-2341
1.B.2.3 Other investment	517	5546	-5029	1110	6620	-5510
1.B.2.4 Reserve assets	2697	189	2508	4095	220	3876
1.B.3 Other primary income	1410	436	973	1892	624	1268
1.C Secondary Income (1.C.1+1.C.2)	**27116**	**4256**	**22860**	**29519**	**3144**	**26376**
1.C.1 Financial corporations, nonfinancial corporations, households, and NPISHs	27097	4024	23073	29502	2904	26598
1.C.1.1 Personal transfers (Current transfers between resident and/non-resident households)	26325	2680	23645	28644	1989	26655
1.C.1.2 Other current transfers	772	1343	-571	857	914	-57
1.C.2 General government	19	232	-214	18	240	-222
2 Capital Account (2.1+2.2)	**150**	**145**	**5**	**185**	**146**	**40**
2.1 Gross acquisitions (DR.)/disposals (CR.) of non-produced nonfinancial assets	12	51	-39	4	45	-41
2.2 Capital transfers	138	94	44	182	101	81
3 Financial Account (3.1 to 3.5)	**181685**	**172328**	**9358**	**264307**	**255192**	**9114**
3.1 Direct Investment (3.1A+3.1B)	**19278**	**14551**	**4728**	**23435**	**17120**	**6315**
3.1.A Direct Investment in India	17790	10427	7362	22287	12171	10116
3.1.A.1 Equity and investment fund shares	15806	9351	6456	21299	11673	9626
3.1.A.1.1 Equity other than reinvestment of earnings	11266	9351	1915	16402	11673	4729
3.1.A.1.2 Reinvestment of earnings	4541	0	4541	4897		4897
3.1.A.2 Debt instruments	1983	1077	906	988	498	490
3.1.A.2.1 Direct investor in direct investment enterprises	1983	1077	906	988	498	490
3.1.B Direct Investment by India	1489	4123	-2634	1147	4949	-3801
3.1.B.1 Equity and investment fund shares	1489	3310	-1822	1147	3847	-2699
3.1.B.1.1 Equity other than reinvestment of earnings	1489	1864	-375	1147	2346	-1199
3.1.B.1.2 Reinvestment of earnings	0	1446	-1446		1500	-1500
3.1.B.2 Debt instruments	0	813	-813	0	1102	-1102
3.1.B.2.1 Direct investor in direct investment enterprises	0	813	-813		1102	-1102
3.2 Portfolio Investment	**89775**	**74045**	**15731**	**159844**	**158899**	**945**
3.2.A Portfolio Investment in India	88743	72654	16089	159240	158343	897
3.2.1 Equity and investment fund shares	77174	63525	13649	139824	140833	-1009
3.2.2 Debt securities	11569	9129	2440	19416	17510	1906
3.2.B Portfolio Investment by India	1032	1391	-358	604	556	48
3.3 Financial derivatives (other than reserves) and employee stock options	**5013**	**5736**	**-723**	**6053**	**9666**	**-3613**
3.4 Other investment	**67619**	**53565**	**14053**	**74976**	**64281**	**10694**
3.4.1 Other equity (ADRs/GDRs)	0	0	0	0	0	0
3.4.2 Currency and deposits	19068	16688	2380	23547	19401	4146
3.4.2.1 Central bank (Rupee Debt Movements; NRG)	172	0	172	121	0	121
3.4.2.2 Deposit-taking corporations, except the central bank (NRI Deposits)	18896	16688	2208	23426	19401	4025
3.4.2.3 General government	0	0	0			0
3.4.2.4 Other sectors	0	0	0			0
3.4.3 Loans (External Assistance, ECBs and Banking Capital)	32695	14974	17720	29093	27331	1762
3.4.3.A Loans to India	30474	12854	17621	24948	23046	1901
3.4.3.B Loans by India	2220	2120	100	4145	4285	-139
3.4.4 Insurance, pension, and standardized guarantee schemes	38	168	-130	47	133	-86
3.4.5 Trade credit and advances	11875	16864	-4989	15645	12718	2927
3.4.6 Other accounts receivable/payable - other	3943	4871	-928	6643	4698	1945
3.4.7 Special drawing rights	0	0	0			0
3.5 Reserve assets	**0**	**24432**	**-24432**	**0**	**5226**	**-5226**
3.5.1 Monetary gold	0	0	0			0
3.5.2 Special drawing rights n.a.	0	0	0			0
3.5.3 Reserve position in the IMF n.a.	0	0	0			0
3.5.4 Other reserve assets (Foreign Currency Assets)	0	24432	-24432	0	5226	-5226
4 Total assets/liabilities	**181685**	**172328**	**9358**	**264307**	**255192**	**9114**
4.1 Equity and investment fund shares	100552	83480	17072	168975	166708	2266
4.2 Debt instruments	77190	59545	17645	88689	78560	10129
4.3 Other financial assets and liabilities	3943	29302	-25359	6643	9924	-3281
5 Net errors and omissions	**0**	**418**	**-418**	**585**	**0**	**585**

Note: P: Preliminary.

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

(₹ Crore)

Item	Apr-Jun 2023			Apr-Jun 2024 (P)		
	Credit	Debit	Net	Credit	Debit	Net
	1	2	3	4	5	6
1 Current Account (1.A+1.B+1.C)	**1821825**	**1895356**	**-73531**	**2015820**	**2097068**	**-81248**
1.A Goods and Services (1.A.a+1.A.b)	**1524839**	**1702225**	**-177386**	**1665468**	**1877333**	**-211865**
1.A.a Goods (1.A.a.1 to 1.A.a.3)	**862564**	**1328641**	**-466077**	**927458**	**1470724**	**-543266**
1.A.a.1 General merchandise on a BOP basis	858960	1248927	-389967	927134	1391370	-464235
1.A.a.2 Net exports of goods under merchanting	3604	0	3604	324	0	324
1.A.a.3 Nonmonetary gold	0	79714	-79714	0	79355	-79355
1.A.b Services (1.A.b.1 to 1.A.b.13)	**662275**	**373584**	**288691**	**738010**	**406609**	**331401**
1.A.b.1 Manufacturing services on physical inputs owned by others	3955	345	3610	2234	183	2051
1.A.b.2 Maintenance and repair services n.i.e.	382	3546	-3164	676	1983	-1307
1.A.b.3 Transport	60895	63237	-2342	70965	71816	-851
1.A.b.4 Travel	52702	77997	-25295	61335	76511	-15177
1.A.b.5 Construction	7153	5726	1427	12327	4693	7635
1.A.b.6 Insurance and pension services	6251	4854	1398	7535	4950	2585
1.A.b.7 Financial services	15546	9473	6073	18478	10572	7906
1.A.b.8 Charges for the use of intellectual property n.i.e.	3128	29977	-26849	2843	37103	-34261
1.A.b.9 Telecommunications, computer, and information services	321321	39942	281380	354891	43507	311384
1.A.b.10 Other business services	179448	124971	54477	191873	138694	53178
1.A.b.11 Personal, cultural, and recreational services	7953	10515	-2562	9803	10418	-615
1.A.b.12 Government goods and services n.i.e.	1305	2051	-746	1346	2575	-1229
1.A.b.13 Others n.i.e.	2235	950	1285	3706	3604	102
1.B Primary Income (1.B.1 to 1.B.3)	**74093**	**158146**	**-84052**	**104093**	**193510**	**-89417**
1.B.1 Compensation of employees	15018	7132	7886	17829	8158	9670
1.B.2 Investment income	47486	147426	-99940	70478	180146	-109668
1.B.2.1 Direct investment	19356	81790	-62434	26468	102971	-76503
1.B.2.2 Portfolio investment	1710	18491	-16781	582	20112	-19530
1.B.2.3 Other investment	4252	45590	-41337	9262	55229	-45968
1.B.2.4 Reserve assets	22167	1555	20612	34166	1833	32333
1.B.3 Other primary income	11590	3588	8002	15787	5206	10581
1.C Secondary Income (1.C.1+1.C.2)	**222893**	**34986**	**187907**	**246259**	**26225**	**220034**
1.C.1 Financial corporations, nonfinancial corporations, households, and NPISHs	222738	33076	189662	246112	24225	221887
1.C.1.1 Personal transfers (Current transfers between resident and/non-resident households)	216392	22033	194358	238960	16597	222364
1.C.1.2 Other current transfers	6346	11042	-4696	7151	7628	-477
1.C.2 General government	155	1910	-1755	147	2000	-1852
2 Capital Account (2.1+2.2)	**1232**	**1188**	**44**	**1547**	**1214**	**333**
2.1 Gross acquisitions (DR.)/disposals (CR.) of non-produced nonfinancial assets	100	418	-319	32	375	-343
2.2 Capital transfers	1132	770	362	1515	839	675
3 Financial Account (3.1 to 3.5)	**1493440**	**1416520**	**76920**	**2204934**	**2128900**	**76035**
3.1 Direct Investment (3.1A+3.1B)	**158467**	**119605**	**38862**	**195500**	**142821**	**52679**
3.1.A Direct Investment in India	146230	85713	60517	185930	101538	84392
3.1.A.1 Equity and investment fund shares	129927	76861	53067	177683	97382	80301
3.1.A.1.1 Equity other than reinvestment of earnings	92604	76861	15743	136835	97382	39453
3.1.A.1.2 Reinvestment of earnings	37323	0	37323	40849	0	40849
3.1.A.2 Debt instruments	16303	8853	7450	8246	4156	4090
3.1.A.2.1 Direct investor in direct investment enterprises	16303	8853	7450	8246	4156	4090
3.1.B Direct Investment by India	12237	33892	-21654	9570	41283	-31713
3.1.B.1 Equity and investment fund shares	12237	27211	-14974	9570	32089	-22519
3.1.B.1.1 Equity other than reinvestment of earnings	12237	15322	-3085	9570	19574	-10004
3.1.B.1.2 Reinvestment of earnings	0	11889	-11889	0	12515	-12515
3.1.B.2 Debt instruments	0	6681	-6681	0	9194	-9194
3.1.B.2.1 Direct investor in direct investment enterprises	0	6681	-6681	0	9194	-9194
3.2 Portfolio Investment	**737947**	**608641**	**129306**	**1333471**	**1325590**	**7881**
3.2.A Portfolio Investment in India	729461	597209	132252	1328434	1320949	7485
3.2.1 Equity and investment fund shares	634364	522169	112195	1166461	1174878	-8416
3.2.2 Debt securities	95097	75040	20058	161973	146071	15901
3.2.B Portfolio Investment by India	8486	11432	-2946	5037	4641	396
3.3 Financial derivatives (other than reserves) and employee stock options	**41207**	**47148**	**-5941**	**50493**	**80637**	**-30144**
3.4 Other investment	**555819**	**440301**	**115518**	**625470**	**536255**	**89216**
3.4.1 Other equity (ADRs/GDRs)	0	0	0	0	0	0
3.4.2 Currency and deposits	156738	137175	19563	196437	161851	34586
3.4.2.1 Central bank (Rupee Debt Movements; NRG)	1410	0	1410	1011	0	1011
3.4.2.2 Deposit-taking corporations, except the central bank (NRI Deposits)	155328	137175	18153	195426	161851	33575
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)	268748	123088	145661	242702	228005	14697
3.4.3.A Loans to India	250497	105658	144839	208121	192261	15861
3.4.3.B Loans by India	18252	17430	821	34581	35744	-1164
3.4.4 Insurance, pension, and standardized guarantee schemes	308	1380	-1072	396	1109	-714
3.4.5 Trade credit and advances	97612	138621	-41009	130519	106100	24420
3.4.6 Other accounts receivable/payable - other	32413	40037	-7624	55416	39189	16227
3.4.7 Special drawing rights	0	0	0	0	0	0
3.5 Reserve assets	**0**	**200826**	**-200826**	**0**	**43597**	**-43597**
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	200826	-200826	0	43597	-43597
4 Total assets/liabilities	**1493440**	**1416520**	**76920**	**2204934**	**2128900**	**76035**
4.1 Equity and investment fund shares	826529	686201	140328	1409641	1390737	18904
4.2 Debt instruments	634499	489457	145042	739877	655377	84500
4.3 Other financial assets and liabilities	32413	240863	-208450	55416	82786	-27370
5 Net errors and omissions	**0**	**3432**	**-3432**	**4880**	**0**	**4880**

Note: P: Preliminary.

No. 42: India's International Investment Position

(US$ Million)

Item	As on Financial Year/Quarter End							
	2023-24		2023		2024			
			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	242271	542777	228227	532278	242271	542777	246072	552178
1.1 Equity Capital*	153343	511142	143893	501412	153343	511142	156042	520277
1.2 Other Capital	88927	31635	84334	30866	88927	31635	90029	31900
2. Portfolio investment	12162	277118	14511	258539	12162	277118	12103	277272
2.1 Equity	10644	162061	12567	152928	10644	162061	10367	160898
2.2 Debt	1517	115057	1944	105611	1517	115057	1736	116374
3. Other investment	128450	571045	105256	531184	128450	571045	141261	590312
3.1 Trade credit	33450	123659	29658	119317	33450	123659	32874	126577
3.2 Loan	13578	221886	13037	206940	13578	221886	16837	225023
3.3 Currency and Deposits	52803	154787	33117	144069	52803	154787	57032	160628
3.4 Other Assets/Liabilities	28619	48804	29443	38848	28619	48804	34518	56319
4. Reserves	646419		595051		646419		651997	
5. Total Assets/ Liabilities	1029301	1390940	943044	1322001	1029301	1390940	1051433	1419761
6. Net IIP (Assets - Liabilities)	-361639		-378956		-361639		-368329	

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 2023-24	2023	2024		FY 2023-24	2023	2024	
		Sep.	Aug.	Sep.		Sep.	Aug.	Sep.
	1	-2	-1	0	5	2	3	4
A. Settlement Systems								
Financial Market Infrastructures (FMIs)								
1 CCIL Operated Systems (1.1 to 1.3)	43.04	3.73	3.88	4.08	259206893	21104039	23205978	23840258
1.1 Govt. Securities Clearing (1.1.1 to 1.1.3)	16.80	1.52	1.62	1.57	170464587	13723954	15544033	14750412
1.1.1 Outright	9.51	0.93	0.99	0.99	13463848	1211320	1468219	1468346
1.1.2 Repo	4.94	0.41	0.41	0.37	76718788	5629136	6391039	6038102
1.1.3 Tri-party Repo	2.35	0.19	0.22	0.21	80281951	6883498	7684775	7243965
1.2 Forex Clearing	24.92	2.10	2.13	2.40	80984671	6811643	6911072	8415273
1.3 Rupee Derivatives @	1.31	0.11	0.13	0.11	7757636	568441	750873	674573
B. Payment Systems								
I Financial Market Infrastructures (FMIs)	-	-	-	-	-	-	-	-
1 Credit Transfers - RTGS (1.1 to 1.2)	2700.16	213.94	237.53	233.33	170886670	14545183	15910436	17786483
1.1 Customer Transactions	2686.04	212.80	236.33	232.21	152406168	12960210	14385410	16027655
1.2 Interbank Transactions	14.12	1.13	1.19	1.12	18480503	1584974	1525025	1758828
II Retail								
2 Credit Transfers - Retail (2.1 to 2.6)	1486106.89	119215.72	166465.50	166626.30	67542859	5340256	6408703	6384754
2.1 AePS (Fund Transfers) @	3.92	0.31	0.31	0.30	261	21	13	14
2.2 APBS $	25888.17	1818.74	2783.25	2342.41	390743	17943	35283	35550
2.3 IMPS	60053.35	4728.97	4533.37	4299.36	6495652	507497	577888	565233
2.4 NACH Cr $	16227.27	1512.78	1534.87	1657.93	1525104	109472	144196	122079
2.5 NEFT	72639.50	5598.05	7983.23	7908.83	39136014	3126190	3590588	3597885
2.6 UPI @	1311294.68	105556.87	149630.47	150417.47	19995086	1579133	2060736	2063995
2.6.1 of which USSD @	26.19	2.52	1.45	1.31	352	37	15	14
3 Debit Transfers and Direct Debits (3.1 to 3.3)	18249.53	1514.68	1774.78	1805.36	1687658	138748	177162	180707
3.1 BHIM Aadhaar Pay @	193.59	13.87	19.06	18.81	6112	441	576	568
3.2 NACH Dr $	16426.49	1371.81	1621.10	1651.69	1678769	138081	176386	179945
3.3 NETC (linked to bank account) @	1629.45	129.00	134.62	134.86	2777	226	199	193
4 Card Payments (4.1 to 4.2)	58469.79	4578.47	5323.13	5275.26	2423563	189186	211744	216304
4.1 Credit Cards (4.1.1 to 4.1.2)	35610.15	2739.43	3900.68	3921.62	1831134	142320	168202	176202
4.1.1 PoS based $	18614.08	1420.96	2023.83	1980.89	651911	49440	63208	61033
4.1.2 Others $	16996.08	1318.47	1876.85	1940.73	1179223	92879	104994	115169
4.2 Debit Cards (4.2.1 to 4.2.1)	22859.64	1839.04	1422.45	1353.64	592429	46866	43542	40102
4.2.1 PoS based $	16477.95	1325.79	1061.41	995.07	393589	30512	29346	25777
4.2.2 Others $	6381.69	513.26	361.04	358.58	198840	16355	14196	14324
5 Prepaid Payment Instruments (5.1 to 5.2)	78775.40	6143.16	5466.90	5476.69	283048	23668	16555	17489
5.1 Wallets	63256.69	4927.10	4092.83	4054.95	234353	19944	11599	11889
5.2 Cards (5.2.1 to 5.2.2)	15518.71	1216.07	1374.07	1421.74	48695	3724	4956	5600
5.2.1 PoS based $	8429.87	707.39	710.24	721.65	11247	842	908	858
5.2.2 Others $	7088.84	508.67	663.82	700.09	37447	2882	4048	4743
6 Paper-based Instruments (6.1 to 6.2)	6632.10	538.35	508.49	484.94	7212333	575021	568848	543387
6.1 CTS (NPCI Managed)	6632.10	538.35	508.49	484.94	7212333	575021	568848	543387
6.2 Others	0.00	–	–	–	–	–	–	–
Total - Retail Payments (2+3+4+5+6)	1648233.71	131990.38	179538.79	179668.56	79149461	6266879	7383012	7342641
Total Payments (1+2+3+4+5+6)	1650933.88	132204.32	179776.32	179901.89	250036131	20812062	23293447	25129124
Total Digital Payments (1+2+3+4+5)	1644301.78	131665.97	179267.83	179416.95	242823799	20237041	22724600	24585737

PART II - Payment Modes and Channels

System	Volume (Lakh)				Value (₹ Crore)			
	FY 2023-24	2023	2024		FY 2023-24	2023	2024	
		Sep.	Aug.	Sep.		Sep.	Aug.	Sep.
	1	2	3	4	5	6	7	8
A. Other Payment Channels								
1 Mobile Payments (mobile app based) (1.1 to 1.2)	1252599.21	101214.61	144031.16	143569.44	30687088	2434721	3188004	3161365
1.1 Intra-bank $	83000.56	6606.30	9171.14	9081.76	5676805	446014	598931	601330
1.2 Inter-bank $	1169598.65	94608.31	134860.02	134487.68	25010283	1988707	2589074	2560036
2 Internet Payments (Netbanking / Internet Browser Based) @ (2.1 to 2.2)	45034.98	3650.26	3912.80	3847.73	102117736	8219961	9520832	10092959
2.1 Intra-bank @	12033.28	988.10	1157.09	1101.62	53247042	4179061	4883018	5123573
2.2 Inter-bank @	33001.71	2662.16	2755.71	2746.11	48870694	4040900	4637815	4969386
B. ATMs								
3 Cash Withdrawal at ATMs $ (3.1 to 3.3)	66440.72	5377.22	5157.20	4949.81	3259388	260514	255021	245223
3.1 Using Credit Cards $	95.80	7.85	8.46	8.02	4648	380	434	417
3.2 Using Debit Cards $	66001.01	5340.70	5128.53	4922.18	3241538	259072	253703	243930
3.3 Using Pre-paid Cards $	343.90	28.67	20.20	19.62	13202	1062	883	876
4 Cash Withdrawal at PoS $ (4.1 to 4.2)	15.18	0.97	0.30	0.27	148	9	3	3
4.1 Using Debit Cards $	15.06	0.96	0.28	0.25	147	9	3	3
4.2 Using Pre-paid Cards $	0.12	0.01	0.02	0.01	1	0	0	0
5 Cash Withrawal at Micro ATMs @	11754.95	991.43	972.97	975.12	314003	25477	23935	23389
5.1 AePS @	11754.95	991.43	972.97	975.12	314003	25477	23935	23389

PART III - Payment Infrastructures (Lakh)

System	As on March 2024	2023	2024	
		Sep.	Aug.	Sep.
	1	2	3	4
Payment System Infrastructures				
1 Number of Cards (1.1 to 1.2)	10667.22	10713.04	10912.03	10968.31
1.1 Credit Cards	1018.03	930.17	1054.92	1061.13
1.2 Debit Cards	9649.19	9782.86	9857.10	9907.18
2 Number of PPIs @ (2.1 to 2.2)	16743.63	16718.12	15182.14	15339.88
2.1 Wallets @	13381.80	13588.07	11322.72	11381.79
2.2 Cards @	3361.82	3130.05	3859.42	3958.09
3 Number of ATMs (3.1 to 3.2)	2.58	2.58	2.55	2.55
3.1 Bank owned ATMs $	2.23	2.23	2.20	2.20
3.2 White Label ATMs $	0.35	0.35	0.35	0.35
4 Number of Micro ATMs @	17.55	14.87	14.42	14.45
5 Number of PoS Terminals	89.03	83.03	93.01	93.43
6 Bharat QR @	62.50	59.82	63.97	64.16
7 UPI QR *	3434.93	2950.06	5912.10	6069.95

@: 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.
1. ECS (Debit and Credit) has been merged with NACH with effect from January 31, 2020.
2. 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.
3. 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 –
4. Include transactions done through mobile apps of banks and UPI apps.
5. 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		2023-24	2023	2024		
			Jun.	Apr.	May	Jun.
		1	2	3	4	5
1 Small Savings	**Receipts**	**232460**	**21300**	**17030**	**15054**	**16131**
	Outstanding	**1865029**	**1693172**	**1881643**	**1896249**	**1911978**
1.1 Total Deposits	**Receipts**	**161344**	**14690**	**14570**	**11554**	**12719**
	Outstanding	**1298795**	**1177156**	**1313366**	**1324921**	**1337639**
1.1.1 Post Office Saving Bank Deposits	Receipts	17229	1612	4085	-332	1333
	Outstanding	191692	206919	195777	195445	196778
1.1.2 Sukanya Samriddhi Yojna	Receipts	35174	1825	3020	2348	2056
	Outstanding	157611	94113	160631	162980	165035
1.1.3 National Saving Scheme, 1987	Receipts	0	0	0	0	0
	Outstanding	0	0	0	0	0
1.1.4 National Saving Scheme, 1992	Receipts	0	0	0	0	0
	Outstanding	0	0	0	0	0
1.1.5 Monthly Income Scheme	Receipts	26696	2709	1701	2048	1788
	Outstanding	269007	251221	270708	272755	274544
1.1.6 Senior Citizen Scheme 2004	Receipts	38167	4162	2202	2475	2536
	Outstanding	175472	151990	177674	180150	182685
1.1.7 Post Office Time Deposits	Receipts	25341	1783	2686	3724	3389
	Outstanding	305776	285638	308463	312186	315575
1.1.7.1 1 year Time Deposits	Outstanding	140423	128180	142346	145006	147449
1.1.7.2 2 year Time Deposits	Outstanding	11967	9955	12218	12538	12859
1.1.7.3 3 year Time Deposits	Outstanding	8932	7998	9068	9263	9445
1.1.7.4 5 year Time Deposits	Outstanding	144454	139505	144831	145379	145822
1.1.8 Post Office Recurring Deposits	Receipts	18713	2634	909	1335	1645
	Outstanding	197134	185313	198043	199378	201023
1.1.9 Post Office Cumulative Time Deposits	Receipts	0	0	0	0	0
	Outstanding	0	0	0	0	0
1.1.10 Other Deposits	Receipts	8	-35	-33	-44	-29
	Outstanding	1754	1629	1721	1677	1648
1.1.11 PM Care for children	Receipts	16	0	0	0	1
	Outstanding	349	333	349	350	351
1.2 Saving Certificates	**Receipts**	**56069**	**6435**	**2886**	**3486**	**3343**
	Outstanding	**418021**	**382241**	**420490**	**423527**	**426469**
1.2.1 National Savings Certificate VIII issue	Receipts	16853	1417	1051	1404	1325
	Outstanding	183905	169782	184956	186360	187686
1.2.2 Indira Vikas Patras	Receipts	0	0	0	0	0
	Outstanding	0	0	0	0	0
1.2.3 Kisan Vikas Patras	Receipts	0	0	0	0	0
	Outstanding	0	0	0	0	0
1.2.4 Kisan Vikas Patras - 2014	Receipts	20939	2209	1022	1115	1169
	Outstanding	220560	206066	221582	222698	223866
1.2.5 National Saving Certificate VI issue	Receipts	0	0	0	0	0
	Outstanding	0	0	0	0	0
1.2.6 National Saving Certificate VII issue	Receipts	0	0	0	0	0
	Outstanding	0	0	0	0	0
1.2.7 M.S. Certificates	Receipts	18277	2809	813	967	849
	Outstanding	18277	6275	19090	20056	20906
1.2.8 Other Certificates	Outstanding	-4721	118	-5138	-5587	-5989
1.3 Public Provident Fund	**Receipts**	**15047**	**175**	**-426**	**14**	**69**
	Outstanding	**148213**	**133775**	**147787**	**147801**	**147870**

Note : Data on receipts from April 2017 are net receipts, i.e., gross receipt minus gross payment.
Source: Accountant General, Post and Telegraphs.

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

(Per cent)

Central Government Dated Securities					
Category	2023			2024	
	Jun.	Sep.	Dec.	Mar.	Jun.
	1	2	3	4	5
(A) Total (in ₹. Crore)	**9898751**	**10383607**	**10538792**	**10740389**	**10946860**
1 Commercial Banks	36.58	37.96	37.55	37.66	37.52
2 Co-operative Banks	1.56	1.52	1.49	1.47	1.42
3 Non-Bank PDs	0.73	0.66	0.67	0.66	0.70
4 Insurance Companies	26.21	26.05	26.16	25.98	26.11
5 Mutual Funds	2.69	3.02	3.03	2.90	2.87
6 Provident Funds	4.59	4.42	4.57	4.47	4.41
7 Pension Funds	4.18	4.32	4.44	4.52	4.74
8 Financial Institutions	1.20	0.54	0.55	0.55	0.57
9 Corporates	1.22	1.21	1.33	1.35	1.44
10 Foreign Portfolio Investors	1.59	1.61	1.92	2.34	2.34
11 RBI	13.78	13.06	12.54	12.31	11.92
12 Others	5.67	5.64	5.74	5.79	5.97
12.1 State Governments	2.03	2.04	2.07	2.04	2.13

State Governments Securities					
Category	2023			2024	
	Jun.	Sep.	Dec.	Mar.	Jun.
	1	2	3	4	5
(B) Total (in ₹. Crore)	**5050874**	**5161642**	**5338587**	**5646219**	**5727482**
1 Commercial Banks	34.13	33.87	33.90	34.14	33.85
2 Co-operative Banks	3.68	3.60	3.53	3.39	3.38
3 Non-Bank PDs	0.50	0.61	0.63	0.60	0.59
4 Insurance Companies	26.73	26.97	26.64	26.14	25.85
5 Mutual Funds	2.08	1.86	2.00	2.09	2.08
6 Provident Funds	21.19	21.70	22.00	22.35	22.94
7 Pension Funds	4.84	4.82	4.56	4.76	4.87
8 Financial Institutions	1.82	1.65	1.63	1.59	1.58
9 Corporates	1.92	1.87	2.03	2.02	2.03
10 Foreign Portfolio Investors	0.02	0.02	0.03	0.07	0.05
11 RBI	0.70	0.69	0.66	0.63	0.62
12 Others	2.39	2.34	2.37	2.20	2.17
12.1 State Governments	0.27	0.27	0.27	0.25	0.26

Treasury Bills					
Category	2023			2024	
	Jun.	Sep.	Dec.	Mar.	Jun.
	1	2	3	4	5
(C) Total (in ₹. Crore)	**1012301**	**925317**	**849151**	**871662**	**858193**
1 Commercial Banks	47.64	56.35	57.18	58.53	47.79
2 Co-operative Banks	1.20	1.20	1.28	1.67	1.49
3 Non-Bank PDs	1.99	0.54	1.70	1.66	2.69
4 Insurance Companies	4.93	5.26	5.50	5.06	5.78
5 Mutual Funds	17.04	12.74	11.21	11.89	14.50
6 Provident Funds	1.46	1.52	0.08	0.15	0.60
7 Pension Funds	0.01	0.01	0.00	0.01	0.00
8 Financial Institutions	7.96	4.10	5.34	7.16	6.56
9 Corporates	4.42	4.00	4.58	4.50	4.79
10 Foreign Portfolio Investors	0.12	0.10	0.07	0.01	0.20
11 RBI	0.00	0.00	0.00	0.00	0.00
12 Others	13.23	14.17	13.06	9.36	15.59
12.1 State Governments	10.33	11.36	9.26	5.88	11.55

Note: (-) represents nil or negligible

The Table format is revised since Monthly Bulletin for the month of June 2023.

State Government Securities include special bonds issued under Ujwal DISCOM Assurance Yojana (UDAY).

Bank PDs are clubbed under Commercial Banks. However, they form a 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.

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
4 Total Disbursements as per cent of GDP	*26.7*	*26.9*	*32.0*	*30.1*	*31.1*	*30.0*
5 Total Receipts as per cent of GDP	*26.6*	*28.5*	*32.2*	*30.3*	*30.6*	*30.3*
6 Revenue Receipts as per cent of GDP	*20.1*	*19.2*	*18.6*	*20.4*	*21.2*	*21.0*
7 Tax Receipts as per cent of GDP	*17.3*	*16.1*	*16.1*	*17.6*	*17.9*	*18.2*
8 Gross Fiscal Deficit as per cent of GDP	*5.8*	*7.2*	*13.1*	*9.5*	*9.6*	*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 September-2024					
		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	5842.45	30	2140.89	19	1426.07	4
2	Arunachal Pradesh	-	-	-	-	-	-
3	Assam	1121.53	10	-	-	-	-
4	Bihar	-	-	-	-	-	-
5	Chhattisgarh	-	-	-	-	-	-
6	Goa	68.06	5	-	-	-	-
7	Gujarat	-	-	-	-	-	-
8	Haryana	466.72	16	-	-	-	-
9	Himachal Pradesh	-	-	169.58	5	-	-
10	Jammu & Kashmir UT	-	-	489.95	15	-	-
11	Jharkhand	-	-	-	-	-	-
12	Karnataka	-	-	-	-	-	-
13	Kerala	1490.67	30	2060.82	29	732.26	18
14	Madhya Pradesh	-	-	-	-	-	-
15	Maharashtra	-	-	-	-	-	-
16	Manipur	102.66	27	239.97	27	39.80	13
17	Meghalaya	371.41	30	87.97	4	-	-
18	Mizoram	91.74	15	-	-	-	-
19	Nagaland	64.66	11	-	-	-	-
20	Odisha	-	-	-	-	-	-
21	Puducherry	-	-	-	-	-	-
22	Punjab	4053.86	30	690.70	17	-	-
23	Rajasthan	2800.20	28	1322.97	16	-	-
24	Tamil Nadu	-	-	-	-	-	-
25	Telangana	4713.44	30	2061.20	30	1188.11	17
26	Tripura	-	-	-	-	-	-
27	Uttar Pradesh	-	-	-	-	-	-
28	Uttarakhand	714.67	30	-	-	-	-
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 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 September 2024			
		Consolidated Sinking Fund (CSF)	Guarantee Redemption Fund (GRF)	Government Securities	Auction Treasury Bills (ATBs)
	1	2	3	4	5
1	Andhra Pradesh	11336	1116	0	0
2	Arunachal Pradesh	2694	7	0	2350
3	Assam	7865	89	0	0
4	Bihar	12218	-	0	11500
5	Chhattisgarh	7641	479	0	8005
6	Goa	1029	448	0	0
7	Gujarat	14971	654	0	5000
8	Haryana	2281	1673	0	0
9	Himachal Pradesh	-	-	0	0
10	Jammu & Kashmir UT	19	18	0	0
11	Jharkhand	2353	-	0	750
12	Karnataka	19884	734	0	47438
13	Kerala	3045	-	0	0
14	Madhya Pradesh	-	1249	0	0
15	Maharashtra	70297	1708	0	0
16	Manipur	68	137	0	0
17	Meghalaya	1245	106	0	0
18	Mizoram	449	62	0	0
19	Nagaland	1852	45	0	0
20	Odisha	17797	2004	115	10877
21	Puducherry	568	-	0	900
22	Punjab	8942	0	0	0
23	Rajasthan	1157	-	129	6700
24	Tamil Nadu	3364	-	0	2897
25	Telangana	7740	1695	0	0
26	Tripura	1198	26	0	325
27	Uttarakhand	4913	207	0	0
28	Uttar Pradesh	10417	-	89	15000
29	West Bengal	12914	1013	239	0
	Total	**228257**	**13472**	**572**	**111742**

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	2022-23		2023-24		2024-25						Total amount raised, so far in 2024-25	
						July		August		September			
		Gross Amount Raised	Net Amount Raised	Gross Amount Raised	Net Amount Raised	Gross Amount Raised	Net Amount Raised	Gross Amount Raised	Net Amount Raised	Gross Amount Raised	Net Amount Raised	Gross	Net
	1	2	3	4	5	6	7	8	9	10	11	12	13
1	Andhra Pradesh	57478	45814	68400	55330	10000	10000	3000	2000	4000	-1000	44000	30918
2	Arunachal Pradesh	559	389	902	672	-	-	-	-	-	-	-	-146
3	Assam	17100	16105	18500	16000	1000	1000	2000	1500	1750	1750	7750	6800
4	Bihar	36800	27467	47612	29910	-	-	6000	6000	6000	3922	12000	9922
5	Chhattisgarh	2000	-2287	32000	26213	-	-	1500	-550	2000	2000	3500	700
6	Goa	1350	500	2550	1560	200	100	150	-50	300	300	650	50
7	Gujarat	43000	28300	30500	11947	-	-	2500	2500	-	-1000	4500	500
8	Haryana	45158	28638	47500	28364	3500	3345	4500	3500	3000	1700	19500	14470
9	Himachal Pradesh	14000	11941	8072	5856	500	350	500	350	700	700	4600	3350
10	Jammu & Kashmir UT	8473	5969	16337	13904	3000	2700	1550	1550	-	-	9350	8450
11	Jharkhand	4000	-155	1000	-2505	-	-	-	-	-	-	-	-
12	Karnataka	36000	26000	81000	63003	-	-2000	-	-	3000	1000	3000	-3500
13	Kerala	30839	15620	42438	26638	4500	3000	6000	4300	3753	2253	24253	14853
14	Madhya Pradesh	40158	26849	38500	26264	-	-2200	10000	10000	5000	3950	15000	10400
15	Maharashtra	72000	42815	110000	79738	6000	3800	24000	21600	24000	17000	64000	46900
16	Manipur	1422	1147	1426	1076	200	200	200	200	-	-	600	540
17	Meghalaya	1753	1356	1364	912	400	400	-	-	150	-258	1050	562
18	Mizoram	1315	1129	901	641	90	90	90	90	90	40	541	431
19	Nagaland	1854	1199	2551	2016	-	-	-	-	-	-	300	100
20	Odisha	0	-7500	0	-4658	-	-500	-	-	-	-	-	-1000
21	Puducherry	1200	698	1100	475	-	-	-	-	-	-200	250	-50
22	Punjab	45500	33660	42386	29517	4993	4993	3200	3200	2000	1888	26893	22439
23	Rajasthan	46057	30110	73624	49718	7000	5500	5000	3750	6000	3500	36500	24438
24	Sikkim	1414	1320	1916	1701	-	-	-	-130	-	-	-	-130
25	Tamil Nadu	87000	65722	113001	75970	12000	9500	8000	6000	9000	7875	50000	34625
26	Telangana	40150	30922	49618	39385	8000	8000	6000	6000	4500	2500	31500	25582
27	Tripura	0	-645	0	-550	-	-	-	-	-	-	-	-
28	Uttar Pradesh	55612	41797	97650	85335	-	-	-	-	-	-	-	-4233
29	Uttarakhand	3200	1450	6300	3800	-	-	-	-	-	-	1400	1400
30	West Bengal	63000	42500	69910	48910	7000	5500	5000	3500	7000	5000	24500	14900
	Grand Total	758392	518829	1007058	717140	68383	53778	89190	75310	82243	52920	385637	263271

- : 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**
Per cent of GDP	*15.0*	*11.7*	*8.5*	*11.8*	*11.5*
I. Financial Assets	**788786.3**	**592945.3**	**633317.9**	**1047276.1**	**3062325.6**
Per cent of GDP	*20.3*	*12.5*	*11.6*	*18.2*	*15.4*
of which:					
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**
of which:					
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**
of which:					
(a) Mutual Funds	-16021.0	-28837.7	57675.4	51267.0	64083.8
(b) Equity	18599.4	8291.5	5307.1	6333.3	38531.2
6. Small Savings (excluding PPF)	**42751.6**	**54377.4**	**52095.1**	**91597.0**	**240821.1**
II. Financial Liabilities	**205373.6**	**38507.7**	**169734.4**	**368101.7**	**781717.4**
Per cent of GDP	*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**
of which:					
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**
Per cent of GDP	*7.2*	*6.0*	*7.9*	*7.7*	*7.2*
I. Financial Assets	**364661.7**	**527896.1**	**818355.4**	**887657.3**	**2597511.9**
Per cent of GDP	*7.1*	*9.4*	*13.1*	*13.6*	*11.1*
of which:					
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**
of which:					
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**
of which:					
(a) Mutual Funds	14573.0	63151.3	37912.2	44963.7	160600.1
(b) Equity	4502.5	13218.5	27808.2	3084.1	48613.3
6. Small Savings (excluding PPF)	**50405.2**	**66218.1**	**56372.0**	**68243.2**	**241238.4**
II. Financial Liabilities	**-5454.1**	**193661.2**	**328581.0**	**384568.3**	**901356.3**
Per cent of GDP	*-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**
of which:					
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 (Concld.)

(Amount in ₹ Crore)

Item	2022-23				
	Q1	Q2	Q3	Q4	Annual
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

(Amount in ₹ Crore)

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**
Per cent of GDP	*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				
of which:				
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**
Per cent of GDP	*37.8*	*38.3*	*38.5*	*39.2*
Loans/Borrowings				
(a) Banking Sector	**5728735.3**	**5741948.3**	**5881570.2**	**6158150.0**
of which:				
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**
of which:				
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**
Per cent of GDP	*110.7*	*109.3*	*108.7*	*108.4*
(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				
of which:				
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**
Per cent of GDP	*36.8*	*35.9*	*36.3*	*36.9*
Loans/Borrowings				
(a) Banking Sector	**6172863.3**	**6231128.1**	**6559106.7**	**6934620.2**
of which:				
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**
of which:				
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 (Concld.)

(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**
Per cent of GDP	*103.2*	*101.5*	*102.4*	*103.1*
(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				
of which:				
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**
Per cent of GDP	*36.0*	*36.0*	*36.8*	*37.6*
Loans/Borrowings				
(a) Banking Sector	**7169465.5**	**7433248.0**	**7801415.3**	**8153970.3**
of which:				
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**
of which:				
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

NM_2 and NM_3 do not include FCNR (B) deposits.
2.4: Consist of paid-up capital and reserves.
2.5: includes other demand and time liabilities of the banking system.

Table No. 9

Financial institutions comprise EXIM Bank, SIDBI, NABARD and NHB.
L_1 and L_2 are compiled monthly and L_3 quarterly.
Wherever data are not available, the last available data have been repeated.

Table No. 13

Data against column Nos. (1), (2) & (3) are Final and for column Nos. (4) & (5) data are Provisional.

Table No. 14

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

Table No. 17

2.1.1: Exclude reserve fund maintained by co-operative societies with State Co-operative Banks

2.1.2: Exclude borrowings from RBI, SBI, IDBI, NABARD, notified banks and State Governments.

4: Include borrowings from IDBI and NABARD.

Table No. 24

Primary Dealers (PDs) include banks undertaking PD business.

Table No. 30

Exclude private placement and offer for sale.

1: Exclude bonus shares.

2: Include cumulative convertible preference shares and equi-preference shares.

Table No. 32

Exclude investment in foreign currency denominated bonds issued by IIFC (UK), SDRs transferred by Government of India to RBI and foreign currency received under SAARC 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 & 1.1.1.1.1.4: Estimates.

1.1.1.2: Estimates for latest months.

'Other capital' pertains to debt transactions between parent and subsidiaries/branches of FDI enterprises.

Data may not tally with the BoP data due to lag in reporting.

Table No. 35

1.10: Include items such as subscription to journals, maintenance of investment abroad, student loan repayments and credit card payments.

Table No. 36

Increase in indices indicates appreciation of rupee and *vice versa*. For 6-Currency index, base year 2021-22 is a moving one, which gets updated every year. REER figures are based on Consumer Price Index (combined). The details on methodology used for compilation of NEER/REER indices are available in December 2005, April 2014 and January 2021 issues of the RBI Bulletin.

Table No. 37

Based on applications for ECB/Foreign Currency Convertible Bonds (FCCBs) which have been allotted loan registration number during the period.

Table Nos. 38, 39, 40 & 41

Explanatory notes on these tables are available in December issue of RBI Bulletin, 2012.

Table No. 43

Part I-A. Settlement systems

1.1.3: Tri- party Repo under the securities segment has been operationalised from November 05, 2018.

Part I-B. Payments systems

4.1.2: 'Others' includes e-commerce transactions and digital bill payments through ATMs, *etc.*

4.2.2: 'Others' includes e-commerce transactions, card to card transfers and digital bill payments through ATMs, *etc.*

5: Available from December 2010.

5.1: includes purchase of goods and services and fund transfer through wallets.

5.2.2: includes usage of PPI Cards for online transactions and other transactions.

6.1: Pertain to three grids – Mumbai, New Delhi and Chennai.

6.2: 'Others' comprises of Non-MICR transactions which pertains to clearing houses managed by 21 banks.

Part II-A. Other payment channels

1: Mobile Payments –
- Include transactions done through mobile apps of banks and UPI apps.
- The data from July 2017 includes only individual payments and corporate payments initiated, processed, and authorised using mobile device. Other corporate payments which are not initiated, processed, and authorised using mobile device are excluded.

2: Internet Payments – includes only e-commerce transactions through 'netbanking' and any financial transaction using internet banking website of the bank.

Part II-B. ATMs

3.3 and 4.2: only relates to transactions using bank issued PPIs.

Part III. Payment systems infrastructure

3: Includes ATMs deployed by Scheduled Commercial Banks (SCBs) and White Label ATM Operators (WLAOs). WLAs are included from April 2014 onwards.

Table No. 45

(-) represents nil or negligible

The table format is revised since June 2023 issue of the bulletin.

State Government Securities include special bonds issued under Ujjwal DISCOM Assurance Yojana (UDAY).

Bank PDs are clubbed under Commercial Banks. However, they form very small fraction of total outstanding securities.

The category 'Others' comprises State Governments, DICGC, PSUs, Trusts, Foreign Central Banks, HUF/ Individuals *etc.*

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://data.rbi.org.in.

Detailed explanatory notes are available in the relevant press releases issued by RBI and other publications/releases of the Bank such as **Handbook of Statistics on the Indian Economy**.

Recent Publications of the Reserve Bank of India

Name of Publication	Price	
	India	Abroad
1. Reserve Bank of India Bulletin 2024	₹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)
3. Handbook of Statistics on the Indian Economy 2023-24	₹600 (Normal) ₹650 (inclusive of postage) ₹450 (concessional) ₹500 (concessional with postage)	US$ 50 (inclusive of air mail courier charges)
4. State Finances - A Study of Budgets of 2023-24	₹600 per copy (over the counter) ₹650 per copy (inclusive of postal charges)	US$ 24 per copy (inclusive of air mail courier charges)
5. Report on Currency and Finance 2023-24	₹575 per copy (over the counter) ₹625 per copy (inclusive of postal charges)	US$ 22 per copy (inclusive of air mail courier charges)
6. Reserve Bank of India Occasional Papers Vol. 44, No. 1, 2023	₹200 per copy (over the counter) ₹250 per copy (inclusive of postal charges)	US$ 18 per copy (inclusive of air mail courier charges)
7. Finances of Panchayati Raj Institutions	₹300 per copy (over the counter) ₹350 per copy (inclusive of postal charges)	US$ 16 per copy (inclusive of air mail courier charges)
8. Report on Trend and Progress of Banking in India 2022-23	Issued as Supplement to RBI Bulletin January, 2024	
9. Annual Report 2023-24	Issued as Supplement to RBI Bulletin June, 2024	
10. Financial Stability Report, June 2024	Issued as Supplement to RBI Bulletin July, 2024	
11. Monetary Policy Report - April 2024	Included in RBI Bulletin April 2024	
12. Banking Glossary (English-Hindi)	₹100 per copy (over the counter) ₹150 per copy (inclusive of postal charges)	

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