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SPEECHES

*Inaugural Address at the 17th Statistics Day Conference**

Shaktikanta Das

I am happy to participate in the 17th annual 'Statistics Day Conference' of the Reserve Bank, and also to launch the 'Centralised Information Management System' or CIMS, which is our next generation data warehouse. Over two decades ago, the Reserve Bank was among the pioneer central banks to set up its data warehouse. Considering the developments during the interregnum, it is natural that we migrate to a new platform with a more enriched orientation.

Celebration of the National Statistics Day, which marks the birth anniversary of Professor Prasanta Chandra Mahalanobis, provides an opportunity for sensitising the general public, especially the younger minds, about the discipline of statistics, which provides scientific basis for taking informed decisions across diverse domains. Prof. Mahalanobis was instrumental in institutionalising statistics in India, both as an academic discipline and as a policy devising tool. He always approached the subject as an applied science, capable of addressing real life questions. We are reminded of practical application of statistics, such as, his analysis of half a century data on floods, which influenced the construction of the Hirakud dam, and the second Five-year Plan model which focussed on rapid industrialisation of the Indian economy. All these demonstrated how statistics can address complex problems and drive progress. As we pay our tribute to Prof. Mahalanobis on his birth anniversary, we continue to draw inspiration from the sagacious endeavours of this great visionary.

I would also like to take this opportunity to congratulate Dr. C.R. Rao, the living legend in statistics and a close associate of Prof. Mahalanobis, who has been selected for the prestigious and long overdue International Prize in Statistics in 2023. Incidentally, we have two of his distinguished students, Professor S.R.S. Varadhan and Professor Rajeeva Karandikar amidst us today. They will be talking about interesting areas in statistical theory and applications, later during the day.

Evidence and analysis are core inputs in policy formulation. Of late, macroeconomic policy making and monitoring processes have become more data intensive, with considerable reliance being placed on detailed study of developments, interlinkages among factors, identification of patterns, forecasts of possible path and scenario analysis – all aided by the discipline of statistics. A prerequisite of such analysis is the availability of timely and credible data with the three Cs of data quality, *i.e.*, completeness, correctness and consistency.

Unlike the economic variables that are directly compiled from transaction systems, which are timely and robust, certain core macroeconomic aggregates - such as, gross domestic product (GDP) growth and price inflation, where compilation process is dependent on multiple channels - are available with a time lag globally. Also, their early estimates, which are indeed very useful, are compiled with limited set of inputs and partial data and are prone to multiple and sometimes significant revisions. Policymakers who use them as inputs, however, do not have the luxury of revising decisions in retrospect[1]. Monetary policymakers supplement official estimates with information on auxiliary variables to have firmer

* Inaugural Address by Shri Shaktikanta Das, Governor at the 17th Statistics Day Conference organised by the Department of Statistics and Information Management, Reserve Bank of India on June 30, 2023, Mumbai.

[1] Athanasios Orphanides (2001). "Monetary Policy Rules Based on Real-Time Data", *The American Economic Review*, Vol. 91, No. 4 (Sep., 2001), pp. 964-985.

assessment and minimise policy errors emanating from data revision. Statistical information is also used by businesses and households in making assessment of the economic situation and firming up their near-term expectations.

To our advantage, technological developments have kept pace with the rising dimensions and depth of economic activities to support their detailed monitoring. Advances in remote sensing, automation, digitisation, information management ecosystem, text mining, natural language processing, artificial intelligence and nowcasting provide us with quick and comprehensive information on activities. Their optimal utilisation has supported and can further refine compilation of macroeconomic aggregates and increase their efficacy in navigating through uncertainties.

The Reserve Bank uses statistical methods in almost all its core functions and is both a compiler and a user of macro-financial statistics as well as other economic data collected through regular surveys. The Reserve Bank follows latest global prescriptions and best practices, and pursues standardisation across domains to generate consistent, comparable and harmonised statistics. We treat data as 'public good' and are disseminating increasingly more data in public domain for use by analysts, researchers and general public. Our preference is for general dissemination over meeting individual requirements.

The Reserve Bank established its first enterprise-wide data warehouse – the Central Database Management System (CDBMS) – which was accessible to its internal users since 2002. A large part of this data system was placed in the public domain as the 'Database on Indian Economy (DBIE)' portal in November 2004. Over the years, DBIE has evolved from a simple data repository to an information processing and management system, which has become the Reserve Bank's data dissemination platform. The DBIE remains very popular among domestic and international researchers, analysts, and general public, especially students. It received over 2.5 lakh hits in May 2023.

The Reserve Bank's Regulations Review Authority 2.0 (RRA 2.0) has recently made several recommendations on streamlining reporting mechanism and reduction in regulatory compliance burden. Many of these recommendations have already been implemented and others are in various stages of implementation. A major recommendation on system-based submission of the remaining email-based reporting will be implemented through the Centralised Information Management System (CIMS) in the coming months.

Our investment in technology for information management, periodic reviews, continuous engagement with reporting entities and technological upgradation at their end, have paid rich dividends in terms of improving coverage, quality, and timeliness of data. During the COVID-19 lockdown period, our reporting system ensured business continuity: the flow of validated information was seamless; the 'work from home (WFH)' environment was actively supported; and the public dissemination of information went uninterrupted.

With today's launch of CIMS, we embark on a major change in our information management framework for handling the massive data flow, aggregation, analysis, public dissemination and data governance. This system uses state-of-the-art technology to manage Big data and will serve as a platform for power users to carry out data mining, text mining, visual analytics and advanced statistical analysis connecting data from multiple domains, such as, financial, external, fiscal, corporate and real sectors as well as prices. In short to medium term, it would lead to a paradigm shift in the Reserve Bank's economic analysis as well as supervision, monitoring and enforcement across multiple domains.

The new system is starting with reporting by scheduled commercial banks and will be gradually extended to urban cooperative banks (UCBs) and non-banking financial companies (NBFCs). Incidentally, with the CIMS going live, the first weekly statistical supplement (WSS), which is the Reserve Bank's weekly data release on its own operations and on developments in banking and financial markets, was compiled and processed in the CIMS for the week ended June 23, 2023. It will disseminate more data for public use and will also support on-line statistical analysis by external users at their end. Regulated entities will also have access to their past data and their assessment on quality parameters in the new system.

Any transition in system with multiple dimensions involving large number of entities is prone to teething trouble and therefore, our teams will support the reporting entities for smooth transition, wherever necessary. Several new features will also be augmented in the coming months.

This conference is being organised against the backdrop of two international events with focus on statistics; one, the principle of data for development is an integral part of the work stream under India's on-going presidency of G20; and second, the upcoming membership of India in the United Nations Statistical Commission (UNSC) after a gap of two decades. I note that results of four research papers covering various aspects of G20 economies will also be presented today.

Let me now conclude with the words of Prof. Mahalanobis: "*We shall naturally devote closer attention to the collection and analysis of data relating to India, but we shall try to study all Indian questions in relation to world problems*"[2]. Drawing inspiration from these words, let me also give a message to our statisticians in the Reserve Bank: as you look for a wider canvas in your profession, I urge all of you to abide by the spirit of these words of Prof. Mahalanobis.

I wish all success to today's deliberations, which I am sure, will ignite our teams, particularly the younger officers, to strive for professional excellence in their commitment to serve the nation.

Thank you.

[2] Editorial of the first issue of *Sankhya: The Indian Journal of Statistics* (1933).

*Statistics Shape the Setting of Monetary Policy**

Michael Debabrata Patra

Namaskar and Good Afternoon!

Our eminent chief guest Professor S R S Varadhan, Frank Jay Gould Professor of Science, New York University and recipient of the Padma Vibhushan, Professor Rajeeva L. Karandikar, Chairman, National Statistical Commission – we eagerly await his keynote address -, Professor G. Sivakumar, Professor, Computer Science, Indian Institute of Technology, Bombay, whose guidance has been illuminating the voyage of CIMS from an idea to reality, distinguished members of the Technical Advisory Group who have provided wise counsel all the way, honoured guests of the Reserve Bank of India (RBI), my colleagues from the Department of Statistics and Information Management (DSIM), colleagues from various departments of the RBI, ladies and gentlemen,

More than a decade and a half ago, the birthday of Professor Mahalonobis was chosen as Statistics Day in India. My illustrious predecessor, former Deputy Governor Dr. Rakesh Mohan – who mentored me and who I always look up to – remarked on the occasion of the first Statistics Day celebration in 2007: "As a member of the statistics community, it is a matter of great pride that June 29, the birth anniversary of (late) Professor Prashanta Chandra Mahalonobis, has been declared by the Government of India as Statistics Day." Significantly, India started celebrating Statistics Day even before the UN General Assembly designated October 20 as World Statistics Day in 2010 to be celebrated every five years on that day. With our DSIM's deep bonds with the Indian Statistical Institute (ISI) founded by Professor Mahalonobis, and with several ISI *alumni* taking up statistics as a professional career in the department, the RBI was among the earliest institutions to celebrate his legacy, right up to the 17th commemoration by the RBI of his birth anniversary that elapsed yesterday. For us, it is a time to look back at the light shone by Professor Mahalanobis and look forward to relive his vision. It is also a time for taking stock of the road travelled so far, and to explore new frontiers of statistical enquiry. Our deliberations today, commencing with the insighful memorial lecture to which we were just treated, the extremely topical and relevant keynote address to which we are looking forward, and the thematic papers around the theme of India's G20 Presidency, all imbibe the essence of this journey.

Several of us present here have not been as rigorously nurtured in the statistical temper as others who have been more fortunate, but statistics touches and moulds every aspect of our lives in fundamental ways. Accordingly, instead of the foolhardy audacity of trying to talk statistics to statisticians, I thought I would use this opportunity to share a user's perceptions on how statistics informs and empowers the conduct and implementation of monetary policy in India. In this area of our work, we are forced more often than not to fly blind, yet always mindful of the fact that policy errors can be costly and welfare diminishing for our society. In this mountain of dark uncertainty, statistics provide a foothold by visualising causal relationships or the absence of them, simulating plausible scenarios, peering into the crystal ball at the future with forecasts, feeling the pulse of households and businesses and communicating our assessment to the rest of the world so as to build common expectations, all chiselled with precision and confidence. This is the subject of my address today – the key role of statistics in making monetary policy work.

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* Speech delivered by Michael Debabrata Patra, Deputy Governor, Reserve Bank of India (RBI) at the Statistics Day Conference on June 30, 2023, at RBI, Mumbai. Valuable comments received from O. P. Mall, Sanjib Bordoloi, Tushar Baran Das, Shweta Kumari, Renjith Mohan, Savita Pareek and editorial help from Samir Ranjan Behera are gratefully acknowledged.

The Context

After all the various processes that lead up to the monetary policy decision have been completed, the choice of policy action is ultimately a trade-off between the desirable and the feasible[1]. It is always formulated under conditions of high uncertainty and eventually rests on a judgment call based on information, experience, and a 'feel' or a 'sniff' of how the state of the economy is likely to evolve over the future. Illustratively, information on monetary policy's goal variables – growth and inflation – at the time of taking the policy decision is lagged and preliminary: at any given point in time, the number available on the growth of the economy is at least three months old, while data on inflation are at least one month old, and subject to revisions, but the policy decision is not! Moreover, these variables move with time and their paths are unknown. Achieving these goals always involves making the best possible guess of their likely course even as the economy is constantly being bombarded by meteorites in the form of supply shocks. Also, as is well known, monetary policy itself works its way into the economy through long and variable lags – an increase in the policy rate today does not deliver disinflation tomorrow. Uncertainty also shrouds the deep parameters that monetary policy has to wield in order to achieve its goals. In a new Keynesian world for instance, a vital parameter is the sensitivity of aggregate demand to the real interest rate. Precision in the knowledge about it is crucial to calibrate the size and timing of monetary policy actions – too little may be futile; not much may be overkill. Even ahead of this decision point, the monetary policymaker is conscious that while the policy action is imparted at the shortest end of the market continuum, it is done so with the conviction that the policy impulse will be transmitted through other market segments and the structure of interest rates to the longer term interest rates that affect aggregate demand and hence output and inflation. The reality is that much is lost in the transmission itself, a subject of another speech which I commend for your reference[2].

Another key parameter is the responsiveness of aggregate supply to prices or costs – the slope of the celebrated Phillips curve. Is there some low level of inflation that greases the wheels of production and conversely, is there some high level of inflation that is inimically harmful for output? A good fix on it is essential to determine the growth-inflation trade-off – the sacrifice of output that has to be made for every unit of disinflation or the gains in output that can be secured without pushing inflation beyond the limits of tolerance.

The policy rule, typically formulated with feedback in the form of a reaction function, involves searching issues as well. Is the Taylor principle – that the policy rate changes more than proportionately *vis-à-vis* the change in inflation – satisfied? Where is the larger weight to be assigned – to aligning inflation with the target or to stabilising output around its trend, and when? How much interest rate smoothing or baby steps should the central bank engage in so as to avoid unpleasant monetary surprises? Or should it adopt the 'cold turkey approach' of large and sudden policy moves to ensure that its actions are credible and goal-focused?

In this sense, the formulation of monetary policy has been likened to gazing at a radar screen or a distant early warning (DEW) line, scouring it for friendly or enemy formations in the information that is available. As soon as a formation is detected, monetary policy authorities must be ready to shoot forward and pre-emptively while judging the trajectory of the goal variables.

[1] Patra, M. D., "One Year in the Life of India's Monetary Policy Committee", Speech delivered at the Jaipur Regional Office of the Reserve Bank of India on October 27, 2017.

[2] Patra M. D., "Lost in Transmission? Financial Markets and Monetary Policy", Speech delivered in the Treasury Heads' Seminar organised by the Reserve Bank on November 12, 2022 at Lonavala.

The RBI's Full Information Approach

Against this backdrop, the first stage of the monetary policy process involves assimilating and parsing every information that is available on the health and functioning of the economy and the external environment in which it operates. In this regard, the DSIM specialises in two critical areas – corporate finances and external sector statistics. In fact, our statisticians have a long and hallowed history in both fields, with databases and analytics dating back to the 1940s. They also contribute directly to the national statistical system in these areas while matching the world's best practices – India is compliant with the International Monetary Fund's Special Data Dissemination Standards (SDDS) which guide members in the provision of timely and comprehensive economic and financial statistics to the public. In turn, these data disseminations contribute to sound macroeconomic policies and improved functioning of financial markets.

In the case of external sector statistics, the formal compilation of which goes back to 1948, India has developed among the most sophisticated databases in the world. Yet, the operational reality in India is that balance of payments statistics are essentially a bi-product of exchange control. The intrepid statistician compiling them has to acquire domain knowledge in the conduct of foreign exchange management, the functioning of forex markets, and the husbanding of official foreign exchange reserves in order to meet the exacting standards of data dissemination. From the point of view of monetary policy, these statistics assume vital importance in assessing the contribution of net exports to GDP, the imported component of inflation, capital flows as a supplement to domestic saving to meet desired investment rates, and the net international investment position of the economy. Although monetary policy has an exclusive domestic orientation, it is framed in a dynamic international environment, replete with spillovers and spillbacks. It is in this context that external sector statistics serve as a beacon of light, showing monetary policy makers the way forward in navigating formidable global tides.

In the area of corporate finances, the RBI's data fill important information gaps. For long, the RBI has been a source of independent evaluation of corporate savings and investment, which serves as a useful cross-check to the estimations of the National Statistical Office (NSO). The database is specifically designed to yield information critical to monetary policy formulation such as assessments of domestic demand; input cost pressures; pricing power; and the contribution of corporate profitability to gross value added in the economy. Mapping the sources and uses of funds in the corporate sector helps the monetary policymaker to evaluate the economy's position in the capex cycle. Areas of corporate vulnerability like leverage and debt servicing capacity are also tracked as they guide the setting of risk-minimising monetary policy.

Understanding and analysing external and corporate finances are important inputs in the monetary policy processes because they convey key information on the working of the economy. They are, however, backward-looking in that they tell us about developments up to the most recent past. For meeting the requirement of setting forward-looking monetary policy, we need forward-looking information to which I now turn.

Surveys Empower Forward-looking Monetary Policy

A popular expression of the stance of monetary policy in uncertain times is being data-dependent or relying on incoming data[3]. As explained earlier, however, monetary policy has to aim forward because of the lags in its operation and the fact that its goal variables are time and space contingent. Even forecasts based on incoming data are backward-looking by

[3] Monetary Policy Report. June 16, 2023, Board of Governors of the Federal Reserve System.

definition since they draw from information about the past. The RBI bridges this gap through its forward-looking surveys of households and businesses. Messages therefrom shape the policy reaction function.

Incorporating survey-based information is consistent with the received wisdom on the role of expectations in fashioning monetary policy. Economic agents such as consumers and firms are believed to be rational in that they use all available information in making their decisions within their budget constraints with a view on the future. This tendency is fully utilised by efficient markets in pricing financial assets in such a way that forward rates of interest implicit in the yield curve provide unbiased estimates of the market's expectations of future spot rates.

By putting a finger on the pulse of households and businesses, surveys enhance the efficacy of monetary policy and also brings inclusivity to its working. Conducting surveys that meet the highest standards of robustness is a formidable task as all statisticians know; the RBI is fortunate to be guided in this regard by a technical advisory committee on surveys comprising statisticians of the finest mettle and repute. The difficult part for a professional statistician working in a central bank lies in communicating survey findings to the lay public and employing the insights gleaned from them for monetary policy purposes. For instance, the RBI's inflation expectations survey provides quantifiable estimates of households' perceptions of the current inflation situation. These perceptions are significantly higher than outcomes measured by official statistics. In the May 2023 round of the survey, households felt that inflation was ruling at 8.8 per cent whereas the CPI released by the NSO for that month on June 12 showed that retail inflation declined to 4.3 per cent. What is missed in the narrative is that households are essentially backward-looking in their assessment of inflation conditions. They form their expectations on the basis of the prices of salient items in the consumption basket that they encountered during the last weekly or monthly purchase. In May 2023, the CPI showed cereals inflation at 12.7 per cent, spices inflation at 17.9 per cent, milk inflation at 8.9 per cent, *tur dal* inflation at 16.8 per cent, liquefied petroleum gas (LPG) inflation at 11.1 per cent and open market kerosene inflation at 37.2 per cent. In fact, 40 out of the 299 items comprising the CPI recorded double digit inflation in May. Yet, analysts question the apparent dissonance between the survey's findings and the published CPI.

Our view is that the utility of the survey lies in providing a sense of future direction rather than of level. The survey also sheds light on the variance of inflation expectations indicating their anchoring or de-anchoring. It also alerts us about the bias that needs to be controlled for while reading the results.

Another instance relates to the consumer confidence survey. The results have been interpreted as consumers being eternally pessimistic about the current situation but ever optimistic about the future – the indomitable power of hope rather than an objective assessment of the underlying macroeconomic situation and outlook. What is not focused on is the gap between current perceptions and expectations. India is emerging out of a once-in-a-century pandemic which stretched this gap to its widest level in the survey's history, but it is now closing rapidly, a phenomenon last seen in 2019 before the onset of the pandemic. The scars of the pandemic are deep but they are healing, and consumers that make up around 60 per cent of GDP are getting their groove back. Seen from this perspective, the future does look a little brighter and the messages from the survey a little more credible, emboldening us to expand its coverage into rural areas.

Our enterprise surveys provide nuggets of priceless forward-looking information for formulating monetary policy such as the level of capacity utilisation

(CU) in key manufacturing industries and sentiments on future expectations of CU; the outlook for demand; price expectations – both input and output - and a view of employment evolution. These results enrich our growth and inflation forecasts.

Another area of discomfort in the public perception is that the results of these surveys are expressed as net responses – the proportion of respondents expressing optimism *minus* the proportion expressing pessimism. Illustratively, the March 2023 round of the industrial outlook survey showed that in the fourth quarter of 2022-23, the sentiment on cost of raw materials was negative at (-) 59.1 suggesting extreme pessimism about input costs. Yet, a comparison with the results of the previous three rounds covering the rest of the year would show a 25 percentage points swing in the proportion of those expressing improvement from (-) 84.4 (Q1), (-) 72.5 (Q2) and (-) 64.9 (Q3). If, over the year, therefore, the proportion of respondents that felt input costs are high has been steadily and substantially falling, the correct reading should have been that it is providing real information on the actual softening of input cost pressures that we are experiencing today, with wholesale prices in deflation [(-) 3.5 per cent] in May 2023.

Forecasts: Intermediate Targets of Forward-looking Monetary Policy

The conduct of monetary policy has undergone several regime shifts over the course of history causing changes in goals, operating procedures and nominal anchors. Very briefly, the Bretton Woods system employed fixed exchange rates as the nominal anchor of monetary policy until their abandonment in the early 1970s, when exchange rates began to float. This was followed by regimes of credit allocation and rationing in which credit targets performed the role of nominal anchor; a brief period of targeting monetary aggregates during the 1980s; a twilight zone marked by the checklist or multiple indicator approach; and eventually, inflation targeting (IT) that began in the early 1990s and gains popularity by the day. In the IT framework, inflation is the nominal anchor of monetary policy. The inflation forecast functions as an intermediate target which provides a proximate view of the unobservable goal variables. Hence, the forecast assumes vital significance, requiring comprehensiveness in terms of crystallising all available information, and precision in viewing the future trajectory of inflation.

In the RBI, forecasting follows a three-stage procedure. In the first stage, contemporaneous variables, including indicators of sentiment, are chosen from their point of view of their relevance to key components of GDP and inflation. They are aggregated into 'nowcasts' that predict the very recent past and the present for which no official data are available because of inherent lags. On this base, the next stage involves full information near-term forecasts valid for the next 12 months, with key assumptions imposed as exogenous conditions. They average out the results of several small time series and structural models, based on past forecasting performance. These near-term forecasts are presented as part of the resolution of the monetary policy committee. In the third stage, these near-term forecasts are fed into macroeconomic models in which some parameters are calibrated and others are estimated. These models produce longer-term forecasts which are disseminated to the public through a semi-annual monetary policy report.

In a flexible inflation targeting framework, forecasts also perform the role of communication tools, giving the public a sense of the future direction of monetary policy, besides being intermediate targets as explained earlier. Consequently, public attention tends to be focused on these forecasts and near-term deviations from actual outcomes are subjected to animated debate. Some caveats are in order here. First, the overlapping shocks of the pandemic and

the war in Ukraine resulted in massive structural disruptions, including gaps in data availability, which produced large and persistent but unavoidable errors. Second, a large portion of deviations, when they occur, stem from the exogenous assumptions we set as initial conditions. These assumptions relate to the price of crude oil, the exchange rate of the rupee, the monsoon, global growth, the fiscal stance and changes in structural policies all of which are determined outside our forecasting framework and arguably, outside the realm of domestic monetary policy. Third, forecast errors are used as a learning experience by us, resulting in correctional steps and additional information gathering – incidentally, the RBI publishes these deviations regularly and explains reasons underlying them, as mandated in legislation and/or supporting regulations. In fact, this has resulted in our near-term forecasts becoming increasingly accurate over time. Fourth, our analysis of forecast errors indicates there is no systematic bias and that they are offsetting when assessed over a sufficiently long-time span.

Another aspect of the forecasts is the manner in which they are communicated to the public. The RBI expresses its forecasts in the form of fan charts picturising the balance of risks or uncertainty surrounding them within confidence intervals. Arguably, the choice of communicating tool could have been a point forecast like a dot plot, but the fan chart is consistent with the high uncertainty characterising developing economies like India – more than half of the CPI comprises food and fuel which are vulnerable to exogenous shocks. Furthermore, unlike the individualistic dot plot, our fan chart marks a consensus among the members of the MPC.

Exploring New Frontiers

We are in the middle of the fourth industrial revolution. Unlike its predecessor waves which were driven by steam/water power, electricity, and computing, this wave is being powered by artificial intelligence (AI) and big data whereby 'intelligent' machines are given the ability to think and act like humans. Like every other thing in its path, AI is also transforming monetary policy and its conduct.

Since 2018, our initial forays have strengthened into formal work streams dovetailed into the monetary policy processes. In the DSIM, online food and house prices are collected and analysed; satellite imagery and climatic factors are used for early assessment of crop production and likely movements in food prices; newspaper-based sentiment analysis is conducted for key macroeconomic variables, including the policy rate; and analysis of the impact of central bank communication, including speeches by the Governor, are regularly undertaken. The objective is to create leading and coincident indicators from information that is available on a near real time basis, thereby overcoming the constraints faced by traditional data. Since these inputs are drawn from high dimensional high frequency data from non-traditional sources, they warrant new techniques such as text mining, natural language processing (NLP), deep learning and other machine learning tools. These efforts help to complement and validate our traditional forecasts, greatly enhances the efficacy of monetary policy.

AI has also enabled critical self-assessment of monetary policy communication, including responding to new questions that are emerging. For instance, how do specific terms like 'open mouth operations' influence the public psyche? In Governor's monetary policy statements, we have found that the use of words like 'nimble' and 'watchful' inspire public confidence. The overall assessment is that while the readability of various monetary policy statements has been maintained, periods of uncertainty induced by the pandemic and the war in Ukraine made them lengthier, reflecting efforts to explain in greater detail to the public what then appeared like intractable situations. A recent finding from the application of NLP

to the MPC's minutes is that sentiments expressed by the members were deeply impacted by the war in Ukraine, but synergy and cohesion as a group seems to have transcended individualistic views on specific aspects. Another interesting aspect is how monetary policy communication is perceived in the media. Statements providing confidence in the economy and financial stability are the most preferred in terms of quotations and headlines. Content coverage is another indicator of the media's choice of transmission of messages put out by the RBI.

Conclusion

It is said that economics studies uncertainty, but statistics measures uncertainty. By reducing uncertainty to a quantifiable value, statistics enable monetary policy to manage its trade-offs and chart its course through known and unknown unknowns. This enhances accountability and hence credibility. That is the power of statistics.

For my colleagues in the DSIM, this empowerment involves riding an endless roller coaster every day through layers of data collection, validation, processing, analysis and research. This is true not just of the important monetary policy requirements tasked to them but also of almost all other functions of the RBI. Besides their unshakable commitment to their calling, they have shown remarkable adaptability in embracing new challenges, techniques, and data sources. It is they who make the difference. In an influential view, the numbers have no way of speaking for themselves; it is our statisticians who speak for them and imbue them with meaning[4]. To my DSIM colleagues, therefore, all power and a few words of advice, drawing on David Spiegelhalter's unputdownable book titled *The Art of Statistics*[5], and I quote: *"…claims based on data need to be Accessible; Intelligible; Assessable; Usable."*

Thank you.

[4] Silver, Nate, *The Signal and the Noise: Why So Many Predictions Fail – but Some Don't*, Penguin Press, New York, 2012.

[5] Spiegelhalter, D., *Art of Statistics: How to Learn from Data*, Hachette Book Group, New Work, 2019.

*RBI & Fintech: The Road Ahead**

T Rabi Sankar

Good Morning to all

I am delighted to be present here at the India Start-up Conclave. All of you represent the best of the Indian entrepreneurial spirit and it is my privilege to be addressing this gathering. India is one of the fastest growing large economies today, our population is young and adequately skilled, the policy environment is supportive of private enterprise, our capital markets are capable of funding good business ideas, the India stack-the envy of the world- all these factors have allowed many start-ups to bloom thereby creating a robust Indian start-up ecosystem. FinTech entities comprise a large part of this start-up ecosystem.

The emergence of FinTechs

FinTechs are transforming financial services across sectors, including credit, payment systems, wealth management, investment advice, insurance, financial inclusion, and even financial sector supervision. The COVID-19 pandemic has given a strong boost to digitisation - the fusion of technology and finance played a crucial role by facilitating smooth loan disbursals, robust 24x7 payment systems, uninterrupted access to financial services, and direct benefit transfers. New and innovative technologies brought by FinTechs are helping in driving down cost, refocussing products and services and improving customer reach and experience. The ongoing developments, innovations, and emergence of new technologies will significantly shape the trends in the financial world of tomorrow. As a principal regulator of the financial system and with a mandate for ensuring financial stability, the RBI is closely watching the fast evolving world of FinTechs. In fact, to provide necessary support to the nascent sector, more than a year ago, we had set up a FinTech Department to give dedicated focus to this sector and to foster innovation. I will take the opportunity today to share with you, how, we in the Reserve Bank, view the changes in the financial services space, caused by absorption of new and innovative technologies and the resulting issues like regulatory level playing field, consumer protection, innovation, and central bank digital currencies (CBDCs).

Regulation and Fintech

We believe that the fintech sector will play a crucial role in achieving objectives of greater financial inclusion, cost and time efficiency and so we play the role of someone who encourages development of this sector. One way of looking at FinTech innovation is in terms of three variables – Time, Access and Data. Many innovations, in essence, enable saving time, that is, transactions to be done with speed, *e.g.,* fast payment systems. The second element of innovation is about access, that is they take services to people who are not exposed to financial services, promoting inclusion in both senses – equity as well as formalisation of economic activity. The third element of innovation is data – using available data to create new processes and generating further data that can incentivise further innovation – think of cash-flow based lending, or using tax data for credit assessment. Increased penetration of internet, processing speed and data availability has given a huge boost to financial innovation in the last decade or so. These three elements are driving innovation in the Fintech space.

While these innovations are paradigmatic changes, financial products remain exactly what they are. There are still deposits, there is still credit or lending, and there are still investments, personal investments, personal finances, and so forth. These financial products have been in existence for a very long time. What has changed is the delivery of these products – channels of delivery, speed of delivery and price of these products. We often hear that these

* Keynote address delivered by Deputy Governor T Rabi Sankar at the Moneycontrol India Startup Conclave in Bengaluru on July 7, 2023.

changes are disruptive. When we talk of disruption, we are not talking of new products but basically talking of disruption of existing institutions and processes. Conceptually therefore, a Fintech entity providing characteristic banking services like loans or payments is pretty much doing a banking activity – it just looks different. Such entities may not require a banking license but they need to be regulated similar to how such activities are regulated for a bank.

Financial services are among the most regulated industries, if not the most regulated. For good reasons as well – they are key to growth and development, they involve the use of public money and they are the conduit through which financial integrity is enforced. Fintech firms should therefore be subject to similar regulatory oversight. Regulation might lag in responding to the speed and complexity of changing processes. Eventually, however, regulatory gaps will get filled and uniformity in regulation will be ensured. Fintech firms would therefore be more stable as a long term business proposition if business strategies include regulatory compliance as a basic requirement. Innovation should not be about exploiting regulatory arbitrage. The usual complaint one hears, for example when authorities globally are clamping down on cryptocurrencies, that innovation is being stifled, is not really valid.

Undoubtedly, we see a critical role for the fintech ecosystem to act as a force multiplier as we seek to achieve our goals of financial inclusion, digitalisation and customer protection. RBI has taken several steps to create a nurturing environment to foster innovation. In 2016, we issued guidelines for Account Aggregators (AAs), recognising their potential. In 2017, regulations were established for Peer-to-Peer (P2P) lending, even at a time when the sector was nascent in India. The regulatory sandbox framework released by the Reserve Bank in August 2019 was intended for the purpose of fostering innovation. The response to the regulatory sandbox has been encouraging to say the least. An Interoperable Regulatory Sandbox (IoRS), to facilitate testing of hybrid products/ services falling within the regulatory ambit of more than one financial regulator is in place. In November 2021, the Reserve Bank launched its first global hackathon - "HARBINGER with the theme 'Smarter Digital Payments'. The hackathon received encouraging response with 363 proposals submitted by teams from within India and from 22 other countries across the globe. As a sequel, we have also announced the second hackathon with the theme "Inclusive Digital Services".

In 2021, the Reserve Bank established its own Innovation Hub called the RBIH here in Bengaluru to support creation of an innovation ecosystem through collaboration among financial institutions, the technology industry, and academia. RBI and the Innovation Hub have commenced pilots in the states of Madhya Pradesh, Tamil Nadu, UP and Maharashtra for fully digitalised Kisan Credit Card loan, which is being disbursed in minutes. Similarly, pilot on fully digital dairy loan based on milk pouring data has commenced in Gujarat.

RBI has launched the Rupee Central Bank Digital Currency (CBDC) pilot. Currently, 10 banks are participating in the wholesale pilot and 13 banks are part of the retail pilot. Both the pilots have been going on successfully and we have been able to test various technical architecture, design choices and use cases. As on June 30th, in the retail pilot, we had crossed more than one million users and more than 262,000 merchants. The digital form of currency brings along the multiple possibilities which can bring innovation and efficiency such as features of offline, programmability, cross border transactions in current systems and may create altogether new frameworks for financial system to operate in. I believe, like in the case of UPI, we will witness a lot of innovation on this tokenised form of money in the days to come.

The RBI is mindful of the fact that innovation has potential to make finance more inclusive, the financial system more competitive and healthier, and regulation more effective and efficient. While innovation is crucial, it is necessary for these innovations to be responsible and even more beneficial if they address actual challenges faced by people in their day-to-day lives. It is also important for these innovations to be scalable and interoperable, allowing for expansion and providing advantages to a wider network of participants. Bearing these principles in mind, I would urge fintech players to contribute to development of the sustainability of the sector and ensure responsible digital innovations. While focus on short-term valuation gains may look attractive, creating long term value should be the basic goal. Fintech companies can prioritise several key areas, like improving customer protection, enhancing cybersecurity and resilience, effectively managing financial integrity, and robust data protection. It is also essential for every player in the Fintech industry to devote sufficient attention to governance, business conduct, compliance, and risk mitigation frameworks, as these aspects are vital for long term sustainability.

I conclude by emphasising that it is crucial for regulators, the Fintech industry, and established institutions to engage in open and meaningful dialogue. This dialogue is necessary to establish a shared understanding of fintech activities, business models, and the rationale behind regulatory measures. Such collaboration among stakeholders will play a key role in ensuring effective regulation and fostering a conducive environment for FinTech innovation.

Thank you all for your attention, and have a fruitful convention.

ARTICLES

*State of the Economy**

Global growth momentum appears to be stalling, especially manufacturing and investment, amidst moderating headline inflation with a stubborn core. Market expectations of future interest rates have gone up in response to the hawkish policy stance; equity prices have flattened; and bond yields have hardened. In India, the rain deficit is rapidly closing amidst a highly cyclone-skewed distribution. Manufacturing and services activity remains in expansion albeit with some sequential moderation in June. The overall balance of payments surplus improved strongly in Q1:2023-24, indicating that financial flows comfortably exceeded the current account deficit.

Introduction

As torrential monsoon rains lash north-west India in July, setting off landslides, bringing most rivers to spate and setting off floods, it is sobering to remember that the month just gone by was the hottest June globally on record. Across the world, surface air temperatures crossed the critical 1.5 degrees Celsius threshold committed under the Paris Agreement. Global temperature maps have become dark red as abnormally high temperatures recorded on both land and sea pushed the average atmospheric temperature on July 5 to 62.9 degrees Fahrenheit, breaking all previous records. The World Meteorological Organisation has stated that the beginning of July was the hottest week on record.[1] Climate scientists believe that this is the result of accumulating global warming and a powerful *El Nino* pattern that has developed over the Pacific Ocean.[2] It is a stern warning that we are heading into very warm uncharted territory. More than 90 per cent probability has been assigned to *El Nino* persisting into 2024, fuelling concerns about another year of unprecedented heat. In this context, the pledge in early July by the International Maritime Organisation to achieve net zero emissions by or around 2050 may have missed the boat of achieving the 1.5 degrees Celsius target.

In this torridity, global growth momentum appears to be stalling, especially manufacturing and investment. International trade is also showing the knock-on effects of re-engineering of supply chains through muscular industrial and trade policies. Once again, the world's constituents are set on diverging paths and the fear that a global growth deficit may be festering beneath the headline developments. The US economy is displaying surprising vigour, with fresh signs of labour market strength reflected in an ebbing of the unemployment rate in June and a higher than expected rise in hourly earnings. Interestingly, the surge in the US job quits rate has abated from its pandemic peak and top-line hiring is firming up. On the other side of the Atlantic, output has contracted in several manufacturing-heavy economies of Europe although labour markets remain tight and unemployment rates close to historical lows. China's re-opening has not triggered the tailwinds for global growth that were widely expected. By contrast, emerging market economies (EMEs) in Latin America and Asia are growing at a solid pace. The update of the World Economic Outlook by the International Monetary Fund (IMF) later this month should shed new light on the state of the world economy.

Globally, inflation has been moderating on the back of easing commodity prices. Yet core inflation

* This article has been prepared by G. V. Nadhanael, Rajni Dahiya, Shashi Kant, Kunal Priyadarshi, Harshita Keshan, Ramesh Kumar Gupta, Pankaj Kumar, Harendra Behera, Arjit Shivhare, Harshita Yadav, Akash Kovuri, Jobin Sebastian, Shelja Bhatia, Shivam, Satyendra Kumar, Priyanka Sachdeva, Ashish S Khobragade, Dilpreet Sharma, Jitendra Sokal, Yuvraj Kashyap, Supriyo Mondal, Shubham Agnihotri, Aratrika Kundu, Rajendra Raghumanda, Vineet Kumar Srivastava, Samir Ranjan Behera, Deba Prasad Rath and Michael Debabrata Patra. Views expressed in this article are those of the authors and do not represent the views of the Reserve Bank of India.

[1] https://public.wmo.int/en/media/news/preliminary-data-shows-hottest-week-record-unprecedented-sea-surface-temperatures-and

[2] National Oceanic and Atmospheric Administration (NOAA).

remains stubborn due to still strong momentum in prices of services that are usually sticky, with output being relatively labour-intensive and susceptible to wage pressures. The narrative about inflation is coalescing around the view that while the disinflation was achieved in about a year as in earlier inflation episodes, the 'last mile' in the descent to the target may pose the biggest challenge.[3] Although rents and used car prices may offer a downside to core inflation going forward, it is believed that households and firms may first seek to recoup previous and expected future losses through their wage- and price-setting decisions. These effects may play out more strongly in countries where inflation expectations are less anchored and indexation is more prevalent. Moreover, as the Bank for International Settlements (BIS) points out, the share of items in the consumer price index whose prices increased at a fast rate has not come down. Also, price spillovers across consumption categories are slightly larger in the current inflation episode than they were in the recent past. This implies that increases in the price level due to price shocks in one category are propagating to others and sustaining overall inflation pressures. Price changes across categories are becoming increasingly similar, implying that differences in consumption patterns across consumers and input cost pressures across firms matter relatively less and the general price level becomes more relevant for individual decisions. Consequently, policy authorities in advanced economies (AEs) are bracing up for a possible self-sustaining wage-price dynamics and a de-anchoring of inflation expectations upsetting the disinflation that is underway. In EMEs, by contrast, evidence of a wage-spiral building up is weak, but the re-anchoring of inflation expectations remains work in progress in view of the severe erosion of purchasing power. Across the world, businesses that were driving up inflation by flexing pricing power and jacking up output prices more than input costs – or greedflation[4]- will now face narrowing profit margins as wage pressures rise and drive up prices – 'wageflation'[5].

Although many central banks have reduced the pace of interest rate increases, they have signalled their readiness to increase interest rates further and keep them high as long as they see the labour market as the key inflation risk. In response, market expectations of future interest rates have gone up, equity prices have flattened and bond yields have hardened. Corporate bond issuances have stabilised, with those in high-yield segments virtually drying up. Economists warn, however, of the risks of a deep recession and/or a systemic financial crisis[6]. In particular, they worry that the tightening of financial conditions could set off a rapid repricing of assets and a sharp rise in credit spreads leading up to significant financial stresses. Higher rates can also amplify other vulnerabilities arising from high levels of indebtedness among households and governments. Hence, they believe that financial stresses could generate tensions between central banks' price and financial stability objectives, especially if fiscal space is inadequate or in consolidation. In such circumstances, it is argued that central banks may actually tolerate a somewhat slower return to the inflation target to avert systemic stress. Another view is that even if further financial stress were to emerge, price stability should not be compromised. In the longer run, the objectives of price and financial stability do not pose a trade-off. If, an inflation psychology takes root, it could heighten the risks of a deeper and systemic financial instability.[7] And moreover, central banks are in no

[3] Das, Shaktikanta (2023) "Governor's Statement" Bi-monthly Monetary Policy Statement, 2023-2024, RBI. This view is also echoed in BIS Annual Report, 2023 and in the Wall Street Journal, July 9, 2023.

[4,5] https://www.wsj.com/articles/as-greedflation-starts-to-fade-wageflation-creeps-in-1adb7b9c

[6] 'Three Uncomfortable Truths for Monetary Policy' Remarks by Gita Gopinath at the ECB Forum on Central Banking, Sintra, Portugal, June 26, 2023.

[7] BIS Annual Report, 2022-23.

mood to give up their hard earned credibility. Should signs of financial stress emerge, they will put on their lender-of-last resort hats – the Bagehot dictum: "to avert panic, lend early and freely to solvent firms against good collateral and at high rates" – and open up the full range of macro-prudential policies rather than give up on driving inflation down to target.

In India, the onset of the monsoon is typically a time for a change of gears in the growth trajectory and of sporadic price flares firming up headline inflation as in the reading for June 2023. For the farm sector, the rain deficit is rapidly closing amidst a highly cyclone-skewed distribution that has left the south peninsula and east and north-east India moisture deficient. Yet, reservoir levels are above historical averages and cereal stocks are above July 1 buffer norms by 1.1 times for wheat and by 3.1 times for rice as *kharif* sowing gathers pace. An insightful documentation of the 'Odyssey' of agricultural development in the past 75 years that witnessed India's transformation of a food-deficient country into a leading exporter points to the green revolution, massive technological advancements, diversification towards high-value agriculture and trade liberalization in helping the agricultural sector raise its secular growth to 3.5 per cent in the post-2000 period. Food production increased from 0.81 kg per person per day in 1950-51 to 1.87 kg/person/day. The future of agriculture in India hinges around a sustained increase in farm income stemming from the enhanced role of the private sector, science-led technology transfers, liberalised output markets, and an efficient land lease market. It has been argued that the yardstick for agricultural growth needs to be redefined as 'productivity', and the attainment of world-class productivity depends on cost-effective methods of production and the use of quality inputs. Green growth, promotion of agri-tech start-ups and digital initiatives, direct subsidies, more regulated use of chemicals, location-based suitable production techniques, and productive employment creation need to be expedited to reach the goals of *Amrit Kaal*.[8]

Manufacturing and services activity remains in expansion *albeit* with some sequential moderation in June in composite terms from a near 13-year high in April and May. Coincident indicators for the construction sector grew robustly, with cement production at a six-month high on the back of public spending on infrastructure and strong demand for both residential and commercial real estate. Domestic and international air travel is scaling new records across the nation's 136 operational airports and airstrips.

Consumption expenditure continues to be hamstrung by lingering memories of elevated price pressures. This is reflected in lower levels of spending on discretionary items such as personal care and confectionary. Spending on beverages has been held back by unseasonal rains. Progressively, the urban rural divide in sales of fast-moving consumer goods – urban spending strong; rural spending muted – narrowed within the overall moderation. Consumers are optimistic that the onset of the festival season from August and down trending food inflation will revive spends in the second quarter of 2023-24. Brokerages expect listed companies to have recorded double digit growth in their earnings in the first quarter of 2023-24, driven by banks, the automobile industry and oil and gas companies. Banks are expected to have recorded bullish loan growth although net interest margins may have compressed as deposits got repriced at a faster pace than loans. Corporate earnings are, however, expected to be led by margin expansions enabled by lower input costs rather than higher volumes and revenues. While this expected improvement in profitability for the second consecutive quarter

[8] Chand, R. and Singh, J. (2023). From Green Revolution to Amrit Kaal: Lessons and Way Forward for Indian Agriculture. NITI Working Paper 02/2023. https://www.niti.gov.in/sites/default/files/2023-07/Aggricultrue_Amritkal.pdf

provides congenial conditions for investment, the expectations of continuing slowdown in sales growth raises concerns about the sustainability of the current pace of growth of corporate profitability. Purchasing managers polled moderation in export orders for both manufacturing and services firms in June relative to the preceding month, but an improvement has been gradually forming in relation to the preceding quarter.

With domestic demand gaining traction and import demand picking up even as exports remained weak, the current account deficit is expected to have expanded modestly in April-June 2023 from a near-balance in the preceding quarter. The overall balance of payments improved from a surplus of US$ 5.6 billion in January-March 2023 to US$ 24.4 billion in April-June 2023, indicating that financial flows comfortably exceeded the current account again on a quarterly basis. The World Investment Report 2023 of the United Nations Conference on Trade and Development (UNCTAD) expects India to remain a bright spot in a challenging global environment in which global foreign direct investment (FDI) may continue to face downward pressure. Greenfield investments provide a positive counterweight, with India and ASEAN being the most buoyant recipients right up to the first quarter of 2023. Of the number of international project finance deals, the most significant rise was in India, where project numbers increased by 64 per cent, making it the recipient of the second largest number of international project finance deals. For portfolio flows, India is clearly the flavour of the season: net portfolio investment inflows at US$ 7.2 billion scaled a ten-month high in June 2023, with cumulative net inflows during the April-June 2023 quarter at US$ 14.8 billion after net outflows of US$ 2.2 billion in the preceding quarter. In the first ten days of July 2023 alone, net inflows have crossed US$ 1 billion. The equity segment accounted for most of the inflows in June, with India attracting the maximum inflows among emerging market peers. India's external debt remained broadly stable at US$ 625 billion at the end of March 2023, declining to 18.9 per cent of GDP from 20.0 per cent a year ago, as per the data released by the RBI at the end of June 2023. The ratio of short-term debt in the total and in relation to the level of reserves has, however, recorded an uptick in relation to the position in March 2022. Taking a broader measure of India's total international assets and liabilities, net claims of non-residents on India [*i.e.*, net international investment position (IIP)] declined to (-)11.2 per cent of GDP in March 2023 from (-)11.7 per cent a year ago and (-)13.2 per cent two years ago.

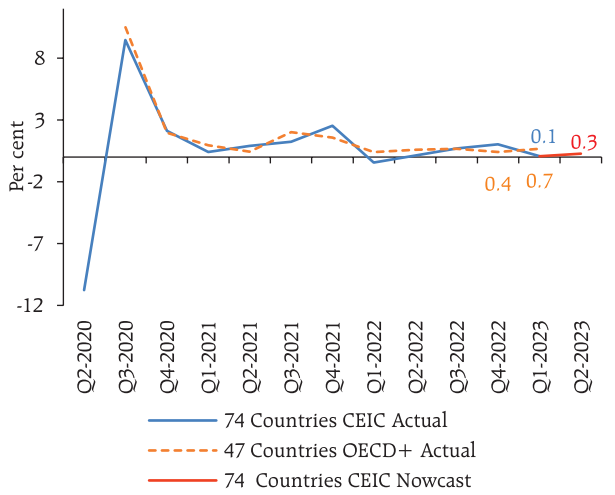
Set against this backdrop, the remainder of the article is structured into four sections. Section II sketches the rapidly evolving developments in the global economy. The evolution of the domestic economy is laid out in Section III. Section IV evaluates the domestic financial conditions, while the last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

II. Global Setting

Global growth remains supported by the rebound in services, but sluggish manufacturing and trade activity are operating as drags. Although consumption demand remains resilient, risks stem from a wage-price spiral taking hold against the backdrop of tight labour markets. Meanwhile, financial conditions continue to tighten amidst high debt and volatile asset prices. Factoring in these developments, our model-based nowcast for global GDP points towards flattening of global growth momentum in Q2:2023 (Chart 1).

Among high frequency indicators, the global composite purchasing managers' index (PMI) moderated to 52.7 in June 2023 from 54.4 in the previous month. While the global services PMI remained in the expansionary zone despite a sequential moderation, the global manufacturing PMI contracted to a 6-month low of 48.8 in June 2023 following a decrease in new orders (Chart 2a).

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



Sources: CEIC; OECD; and RBI staff estimates.

Global supply chain pressures registered some uptick in June, as reflected in the marginal pick up of global supply chain pressure index (GSCPI) after five consecutive months of decline (Chart 2b).

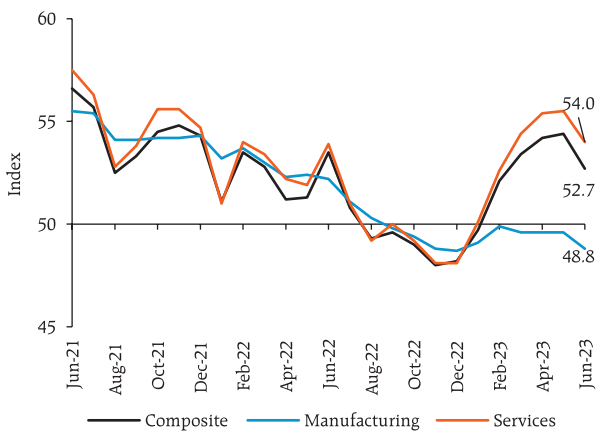
Weakening global manufacturing also drove a decline in world trade (Chart 3). Nowcasts of the United Nations Conference on Trade and Development (UNCTAD) that were released on July 11, 2023 show world merchandise trade growth barely edging up into positive territory at 0.86 per cent in Q3:2023 from (-)0.43 per cent in Q2:2023 while the nowcasts for growth in services trade were placed at 1.55 per cent for Q2, and 0.26 per cent in Q3.

Global commodity prices recorded an uptick in the first half of June 2023, followed by a correction thereafter (Chart 4a). The food price index of the Food and Agriculture Organization (FAO) declined by 1.4 per cent (m-o-m) in June 2023 to sink 23.4 per cent below its peak recorded in March 2022 as prices of vegetable oils, cereals, sugar and dairy moderated (Chart 4b). Despite a decline by 3.2 per cent in June enabled by a better than expected harvest in Brazil and a slowdown in global demand, sugar prices recorded an annual inflation of 30 per cent in June.

Crude oil prices remained range bound around US$ 75 per barrel in June and US$77 per barrel in the first half of July (up to 12th), weighed down by slowing demand. Saudi Arabia's decision to extend its supply cut through August added volatility to the market (Chart 4c). The US Energy Information Administration

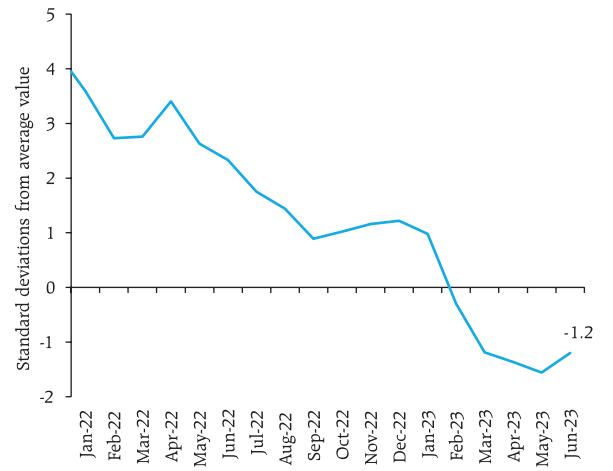
Chart 2: Global Business Conditions

a: Global PMI



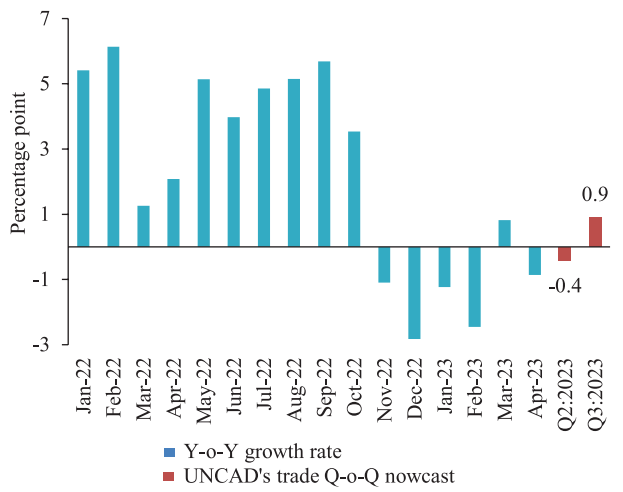
Note: A level of 50 corresponds to no change in activity and a reading above 50 denotes expansion and *vice versa*.
Source: S&P Global.

b. Global Supply Chain Pressure Index (GSCPI)



Source: Federal Reserve Bank of New York.

Chart 3: Growth in World Merchandise Trade Volume

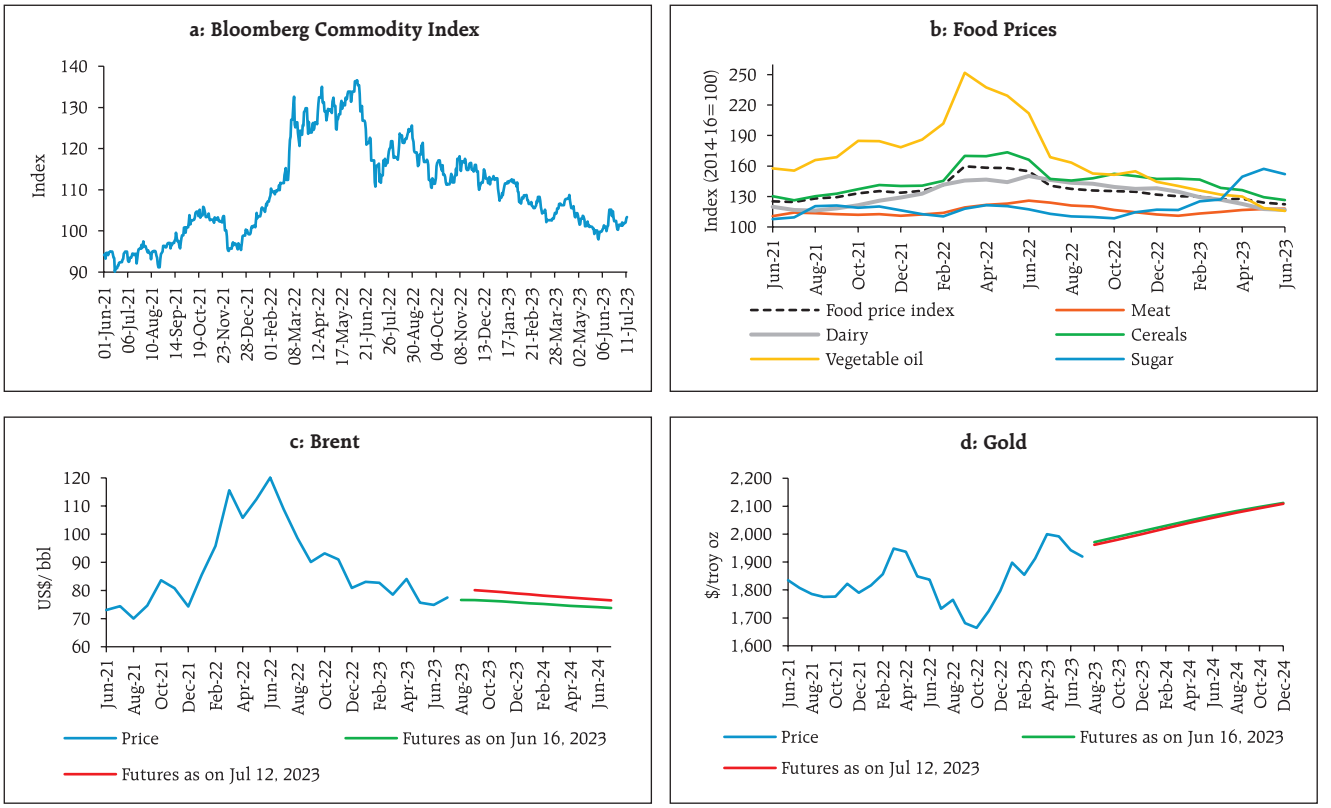


Sources: CEIC; OECD; and RBI staff estimates.

(EIA) lowered its forecast of global oil production through 2024, following the recent production cut announcements from OPEC+, with expectations that inventory drawdowns could trigger higher prices.[9] Gold prices witnessed their third consecutive month of decline in June as central banks' purchases slowed and retail demand for gold slumped reflecting the effect of high prices on demand as well as seasonal factors (Chart 4d).

Headline inflation moderated across most economies although core inflation remained stubbornly high. As per the flash estimates, inflation in the Euro area moderated to 5.5 per cent in June 2023, its lowest level since January 2022 (Chart 5a). Annual CPI inflation in the US moderated sharply to

Chart 4: Commodity and Food Prices



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

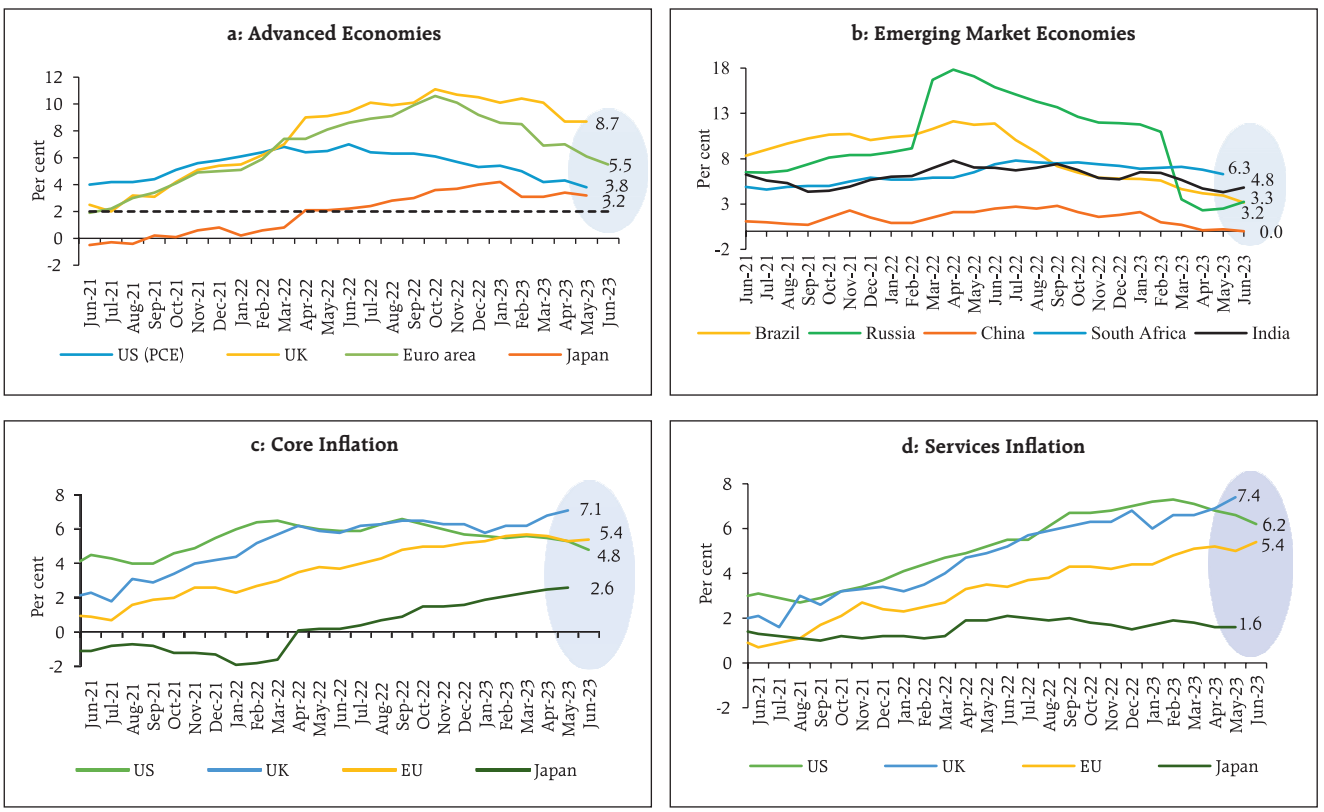
[9] The US Energy Information Administration (EIA), Short-term Energy Outlook, June 2023.

3.0 per cent in June 2023 from 4.0 per cent in May marking its lowest reading since March 2021. Inflation based on the US personal consumption expenditure (PCE) index slowed to 3.8 per cent in May 2023, the lowest reading since April 2021. In the UK, CPI inflation remained steady at 8.7 per cent in May 2023 while Japan's CPI (all items *minus* fresh food) inflation declined to 3.2 per cent in May from 3.4 per cent in April. Among the EMEs, inflation has moderated across the board (Chart 5b). Except South Africa, all the BRICS countries recorded inflation below 5 per cent. Early signs of cooling core and services inflation are emerging in most countries except in the UK and the European Union (EU) [Chart 5c and 5d].

Global financial markets, especially those in AEs, gathered momentum in the first half of June but remained rangebound after hawkish policy talk by some central banks (Chart 6a). Markets, however, responded positively to lower than expected inflation in the US. Bond yields generally hardened, especially for shorter-duration bonds but fell by over 10 basis points (bps) following the inflation data release. Yield curve inversion in the US has persisted with the spread hovering around -96 bps in July 2023 (up to 12th) [Chart 6b].

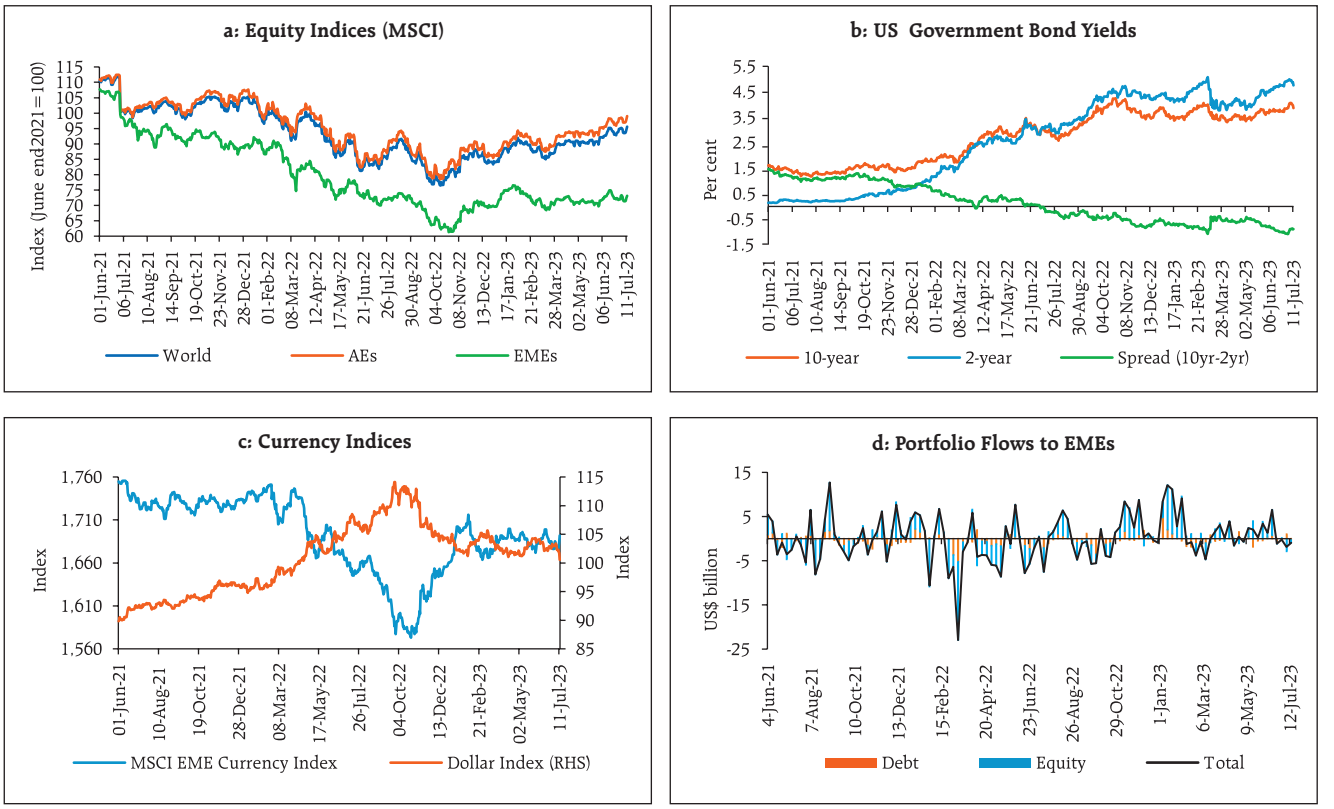
In the currency markets, the US dollar depreciated in June by one per cent in response to the Federal Reserve's pivot towards a pause in its June meeting. Although the US dollar recouped some of its losses in early July after hawkish Fed minutes reinforced rate hike expectations, it again depreciated following the larger than expected decline in CPI inflation. The

Chart 5: Inflation



Sources: Bloomberg; and OECD.

Chart 6: Global Financial Markets



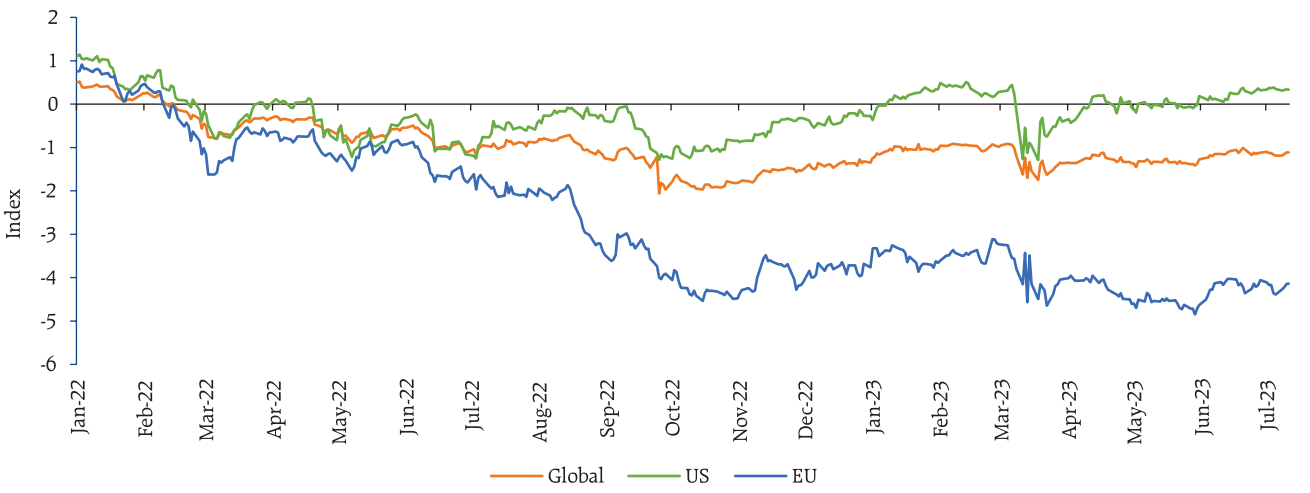
Sources: Bloomberg; and IIF.

Morgan Stanley Capital International (MSCI) currency index for EMEs gained marginally in June due to capital inflows (Chart 6c and 6d).

Financial conditions remain tight across jurisdictions. Restrictive credit conditions, which followed the global banking turmoil, along with declines in business investment intentions and weak corporate loan demand contributed to the tightening of financial conditions (Chart 7).

Most central banks in AEs have either paused or moderated the magnitude of rate hikes (Chart 8a). The US Federal Open Market Committee (FOMC) held its target range of the federal funds rate steady (at 5.0 - 5.25 per cent) in its June 2023 meeting following a cumulative increase of 500 bps since March 2022. Australia, New Zealand and Israel also paused in their July meetings. The European Central Bank (ECB), Swiss National Bank and the Sveriges Riksbank raised their policy rates by 25 bps each in their June meetings, while Canada hiked further by 25 bps in its July meeting. The UK and Norway, however, accelerated their pace of rate hikes in their latest meetings to 50 bps from 25 bps in the previous meeting.

Chart 7: Daily Financial Conditions Index



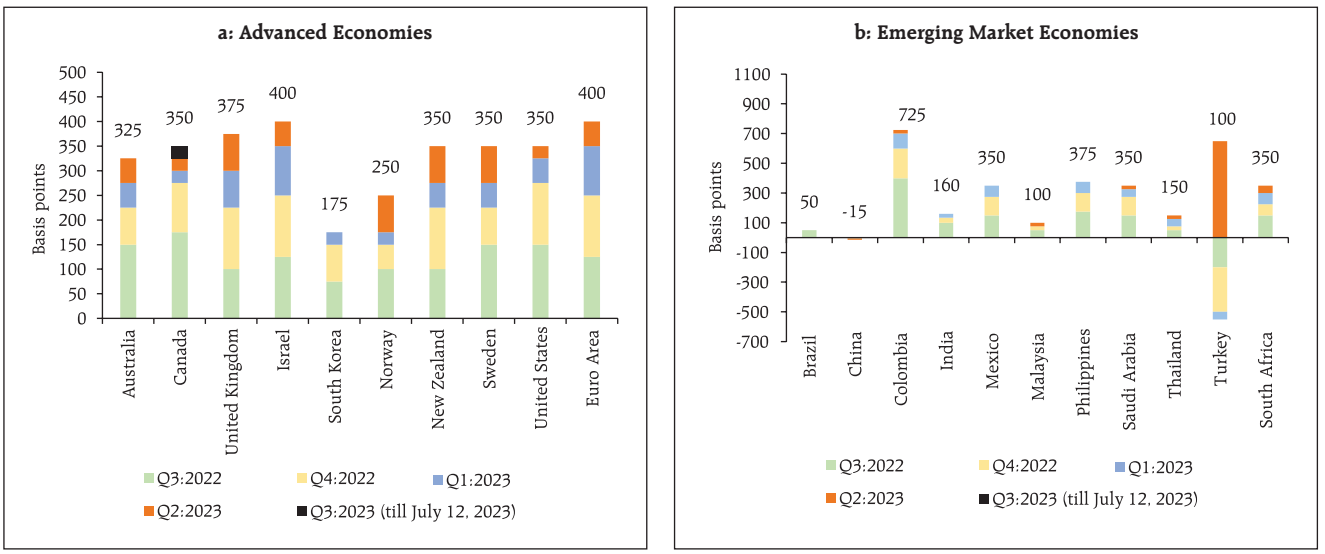
Note: Bloomberg Daily Financial Conditions Index is a Z-score tracking the overall level of financial stress in the money, bond, and equity markets to assess the availability and cost of credit. Positive value indicates easy financial conditions, while negative value indicates tighter financial conditions relative to the pre-2008 crisis levels.
Source: Bloomberg.

EME central banks have generally kept their policy rates constant in Q3:2023 so far (Chart 8b). The Central Bank of the Republic of Turkey, however, raised its key rate by 650 basis points to 15 per cent in June - the first hike since 2021.

III. Domestic Developments

The Indian economy is poised to be the fastest growing major economy in the world[10] despite some sequential moderation in economic activity in June.

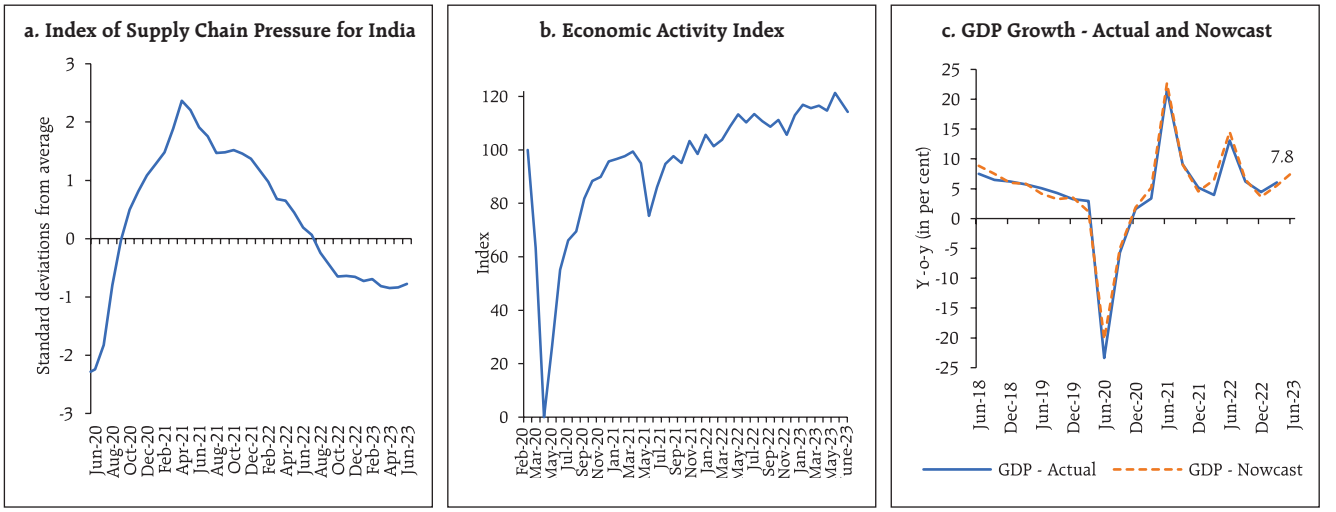
Chart 8: Monetary Policy Actions



Source: Bloomberg.

[10] World Bank, Global Economic Prospects, June 2023.

Chart 9: Economic Activity and GDP Growth Nowcast



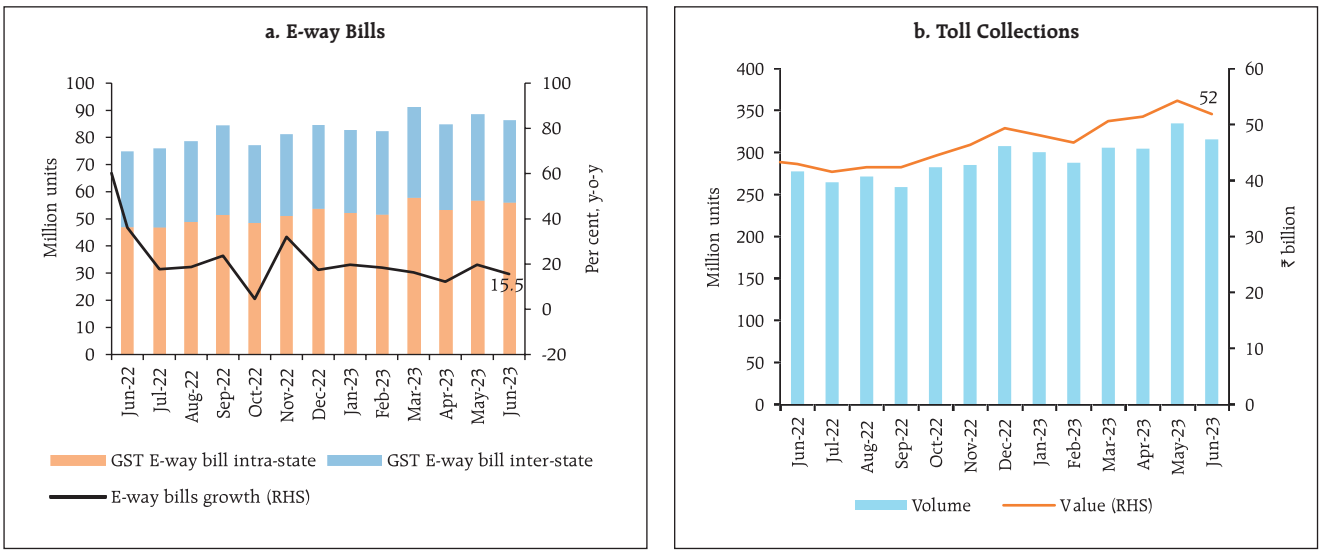
Note: The economic activity index (EAI) is constructed by extracting the common trend underlying twenty-seven high frequency indicators of economic activity using a Dynamic Factor Model. EAI is scaled to 100 in February 2020 and 0 in April 2020, the worst affected month due to mobility restrictions.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

The index of supply chain pressure for India (ISPI) remains below its historical average, supporting growth impulses (Chart 9a). Our economic activity index (EAI) nowcasts GDP growth for Q1:2023-24 at 7.8 per cent (Chart 9b and 9c).

Aggregate Demand

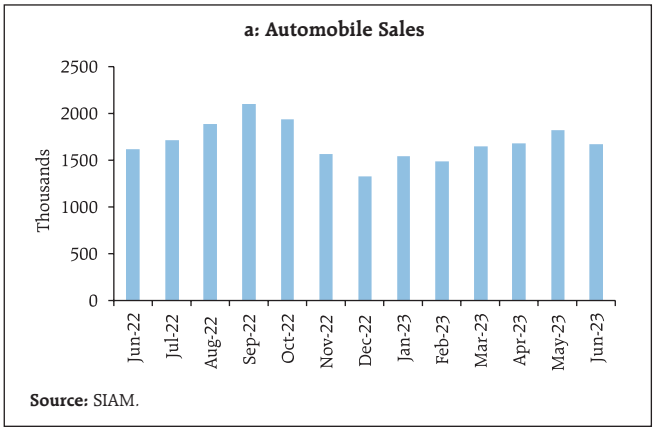
Among lead indicators of demand conditions, E-way bill volumes marked double-digit y-o-y growth, pointing towards strong trade and transportation activity (Chart 10a). Despite a sequential moderation,

Chart 10: E-way Bills and Toll Collections

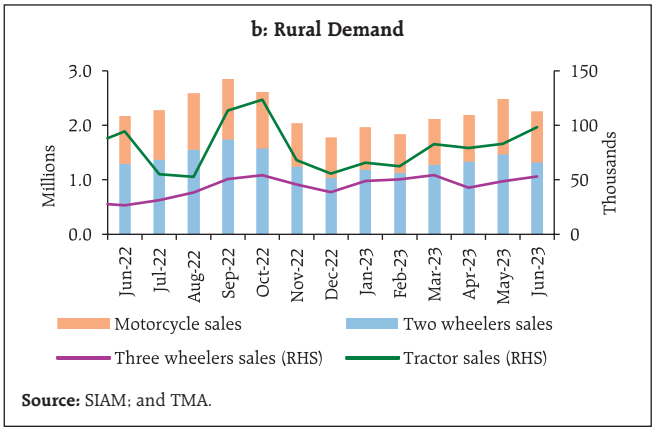


Sources: GSTN; RBI; CEIC; and RBI staff estimates.

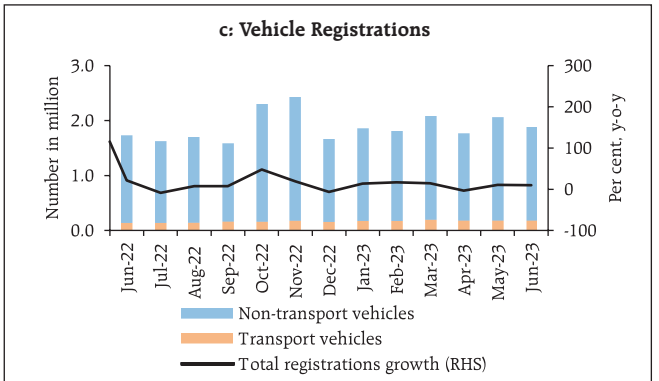
Chart 11: Automobile Sector Indicators



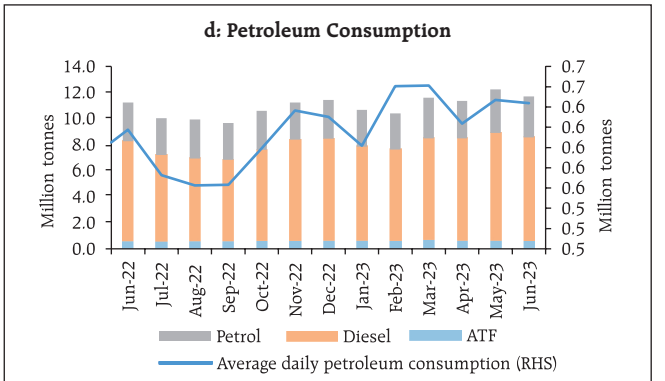
Source: SIAM.



Source: SIAM; and TMA.



Source: Ministry of Road Transport and Highways.



Sources: Petroleum Planning and Analysis Cell.

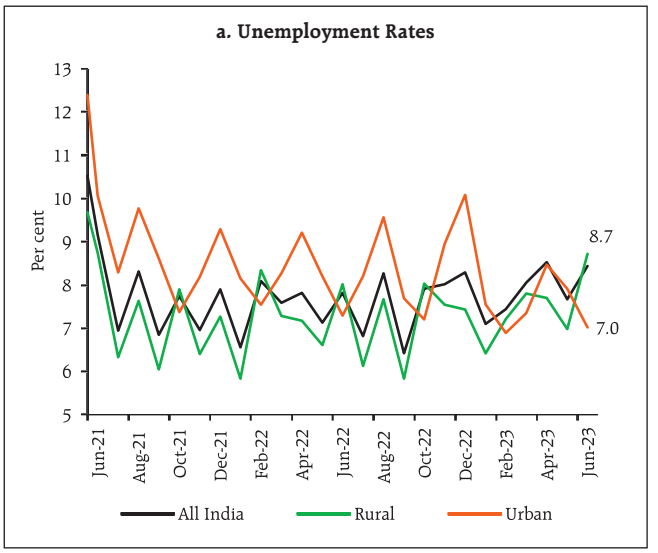
toll collections in June 2023 recorded the highest-ever value of transactions for the month of June (Chart 10b).

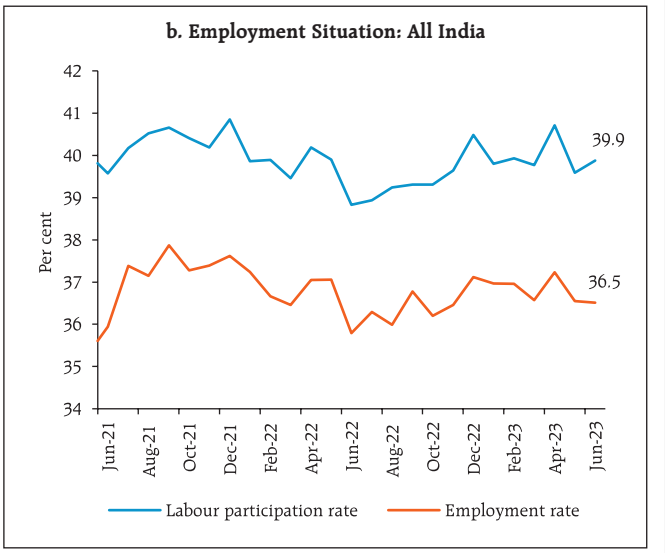
Automobile sales (wholesale) recorded a y-o-y growth of 3.3 per cent in June 2023 with multi-utility vehicle segment driving the demand for passenger vehicles (Chart 11a). Three-wheeler sales in June 2023 almost doubled over last year and tractor sales were at an eight-month high (Chart 11b). Retail sales, as reflected in vehicle registrations increased by 9.5 per cent (y-o-y) in June (Chart 11c). Two-wheeler sales also registered a growth despite the Electronic Vehicles (EV) segment recording a decline, following the reduction of subsidy under the FAME-II scheme. The daily average consumption of petroleum products decreased by 0.5 per cent m-o-m in June, led by lower demand for transportation fuels as monsoon reduced mobility (Chart 11d).

The all-India unemployment rate (UR)[11] edged up to 8.5 per cent in June 2023 on account of higher UR in rural areas (Chart 12a). While the labour force participation rate (LFPR) improved sequentially, the

[11] As per the data compiled by Centre for Monitoring Indian Economy (CMIE).

Chart 12: Labour Market Conditions





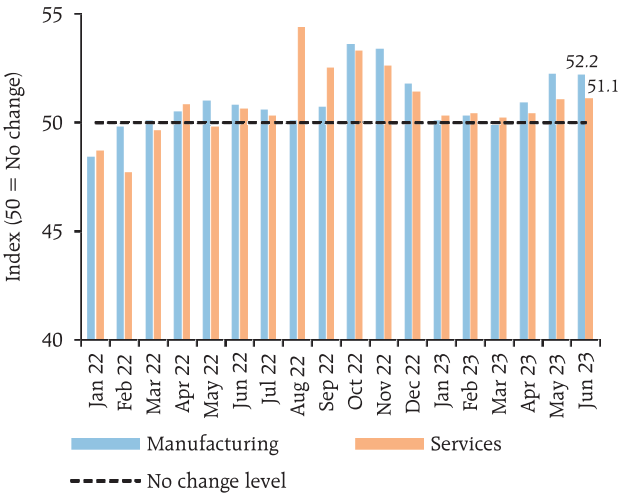
Source: CMIE.

employment rate (ER) recorded a marginal decline (Chart 12b). The employment outlook in the organised sector, as polled by the purchasing managers' index (PMI) for manufacturing and services, remained in expansionary zone (Chart 13).

The demand for work under the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) showed an uptick in June, reflecting the sluggish progress of *kharif* sowing on account of the late arrival and uneven spread of the south-west monsoon (SWM) [Chart 14].

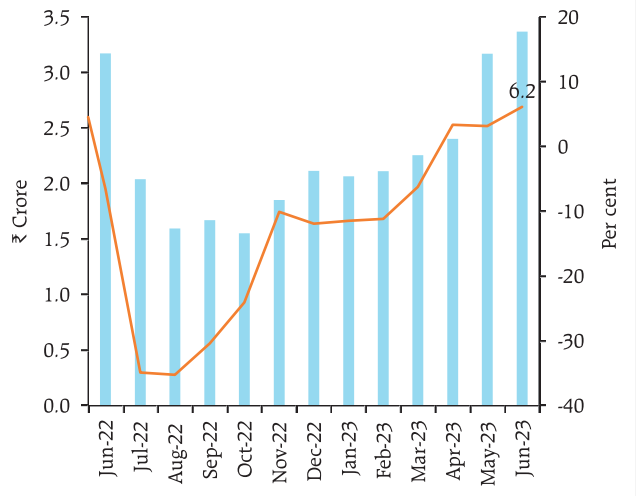
India's merchandise exports registered contraction for the fifth consecutive month in June 2023, declining by 22.0 per cent (y-o-y) as a sharp negative momentum of

Chart 13: PMI Employment Indices



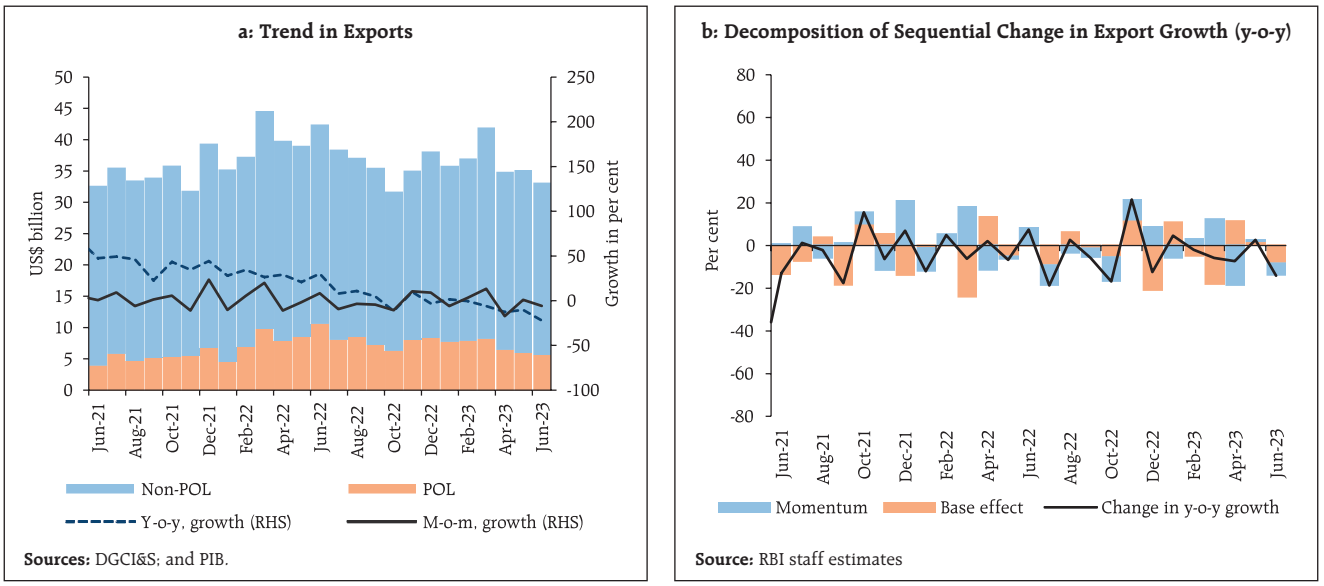
Note: PMI value of above 50 indicates expansion.
Source: S&P Global.

Chart 14. Demand for Work under MGNREGS



Source: Ministry of Rural Development.

Chart 15: Merchandise Exports



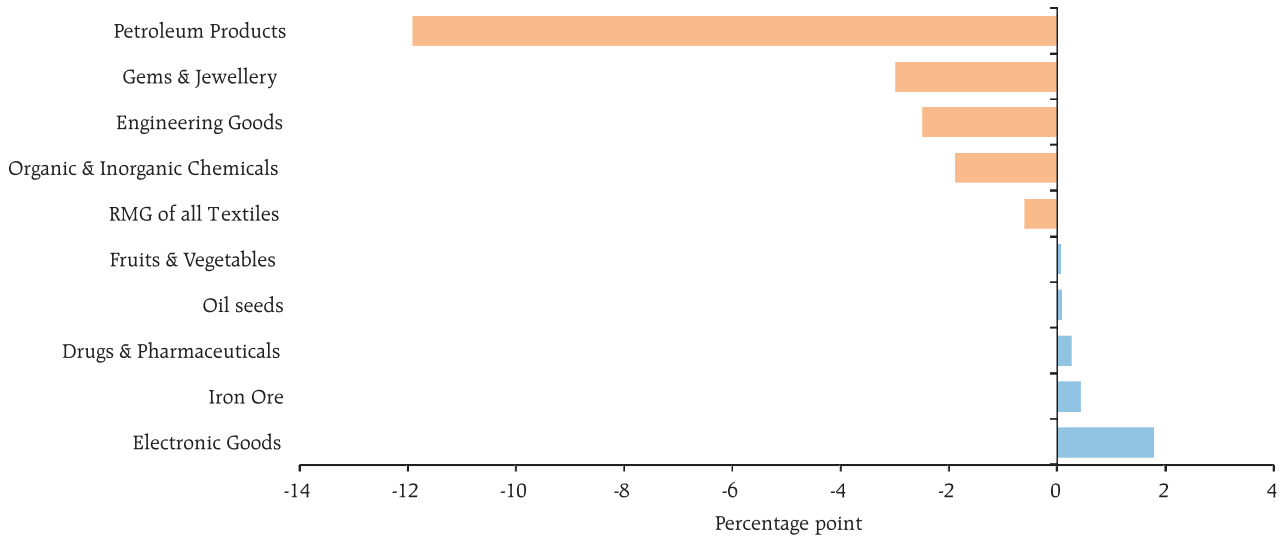
Sources: DGCI&S; and PIB.

Source: RBI staff estimates

(-) 5.8 per cent interacted with an adverse base (Chart 15). The contraction in exports was broad-based, with 77.5 per cent of the export basket (21 out of 30 major commodities) registering a decline on a y-o-y basis

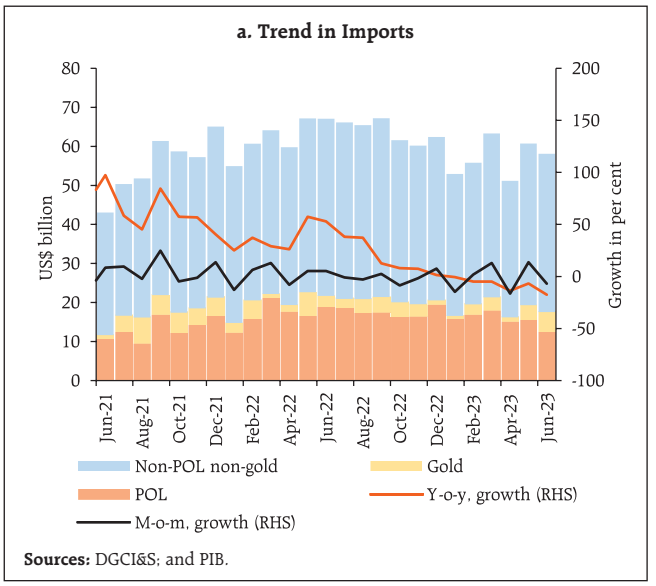
The largest drag on growth was from petroleum products, followed by gems and jewellery. Amidst the overall decline, electronic goods, which account for 7.4 per cent of total merchandise exports, remained positive contributors to export growth (Chart 16).

Chart 16: Relative Contribution to Export Growth – June 2023 over June 2022



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

Chart 17: Merchandise Imports

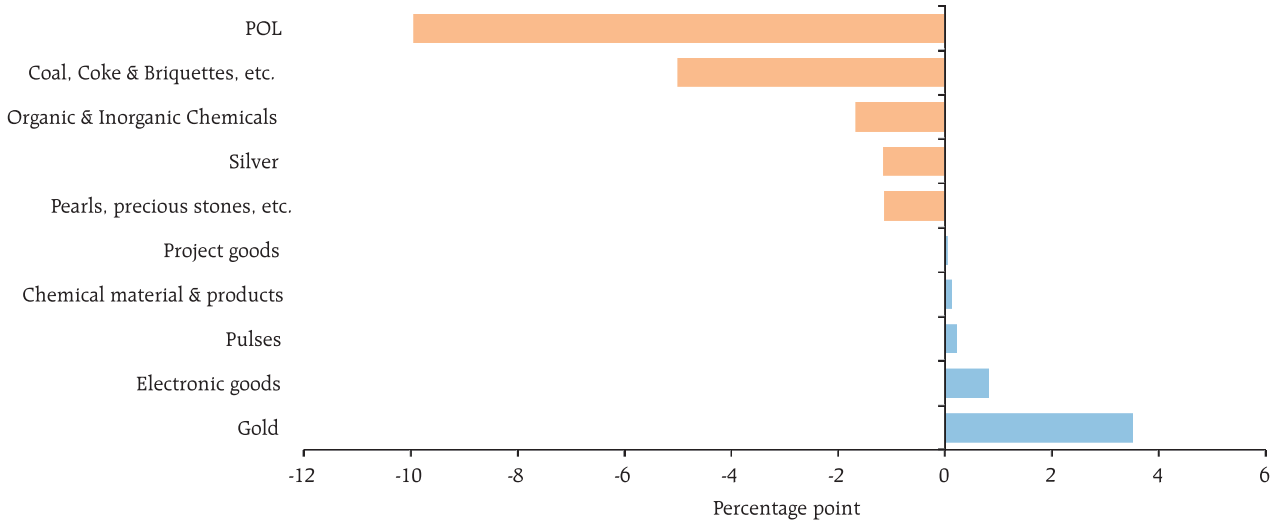


Sources: DGCI&S; and PIB.

Source: RBI staff estimates

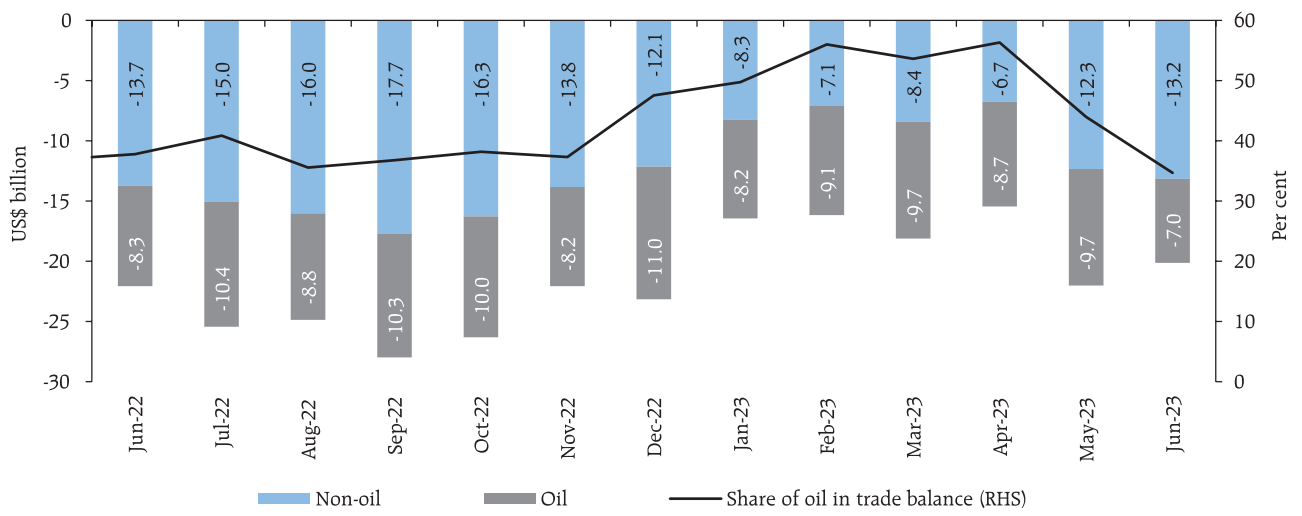
Merchandise imports declined for the sixth consecutive month to US$ 53.1 billion in June 2023, registering a decline of 17.5 per cent (y-o-y) [Chart 17]. The contraction was broad-based, with nearly 66.2 per cent of the import basket (21 out of 30 major commodities) registering a decline on a y-o-y basis. Petroleum, oil, and lubricants (POL), coal, and chemicals dragged down import growth; gold, electronic goods, and pulses, however, contributed positively to import growth (Chart 18). The deficit on account of oil trade decreased by US$ 2.7 billion due to POL imports witnessing higher sequential

Chart 18: Relative Contribution to Import Growth – June 2023 over June 2022



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

Chart 19: Merchandise Trade Balance

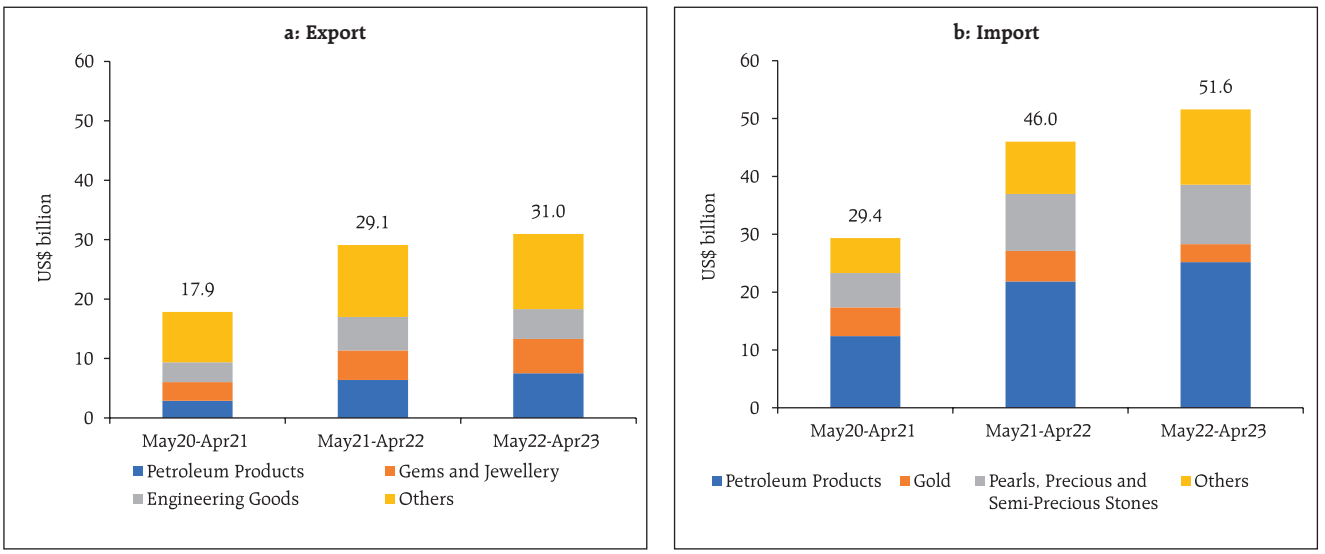


Sources: DGCI&S; PIB; and RBI staff estimates.

contraction relative to exports. The share of oil in the total trade deficit fell to 34.7 per cent in June 2023 due to a sharper decline in non-oil exports relative to non-oil imports (Chart 19).

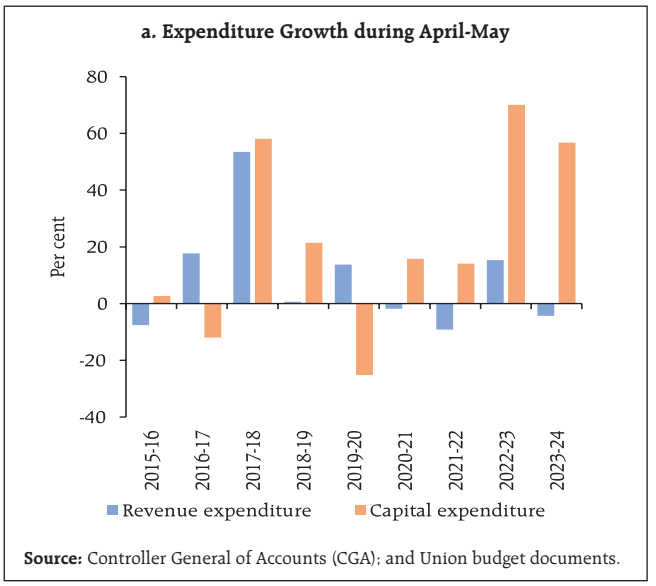
The India-UAE Comprehensive Economic Partnership Agreement (CEPA) came into effect on May 1, 2022. In the year since the agreement came into force (between May 2022 and April 2023), the bilateral trade in goods between the two countries increased to US$ 82.6 billion from US$ 75.2 billion in the corresponding period a year ago (Chart 20). Exports to the UAE grew by 6.5 per cent during this period, as against India's overall merchandise export growth of 3.5 per cent. Imports from the UAE, however, grew by

Chart 20: India-UAE Merchandise Trade

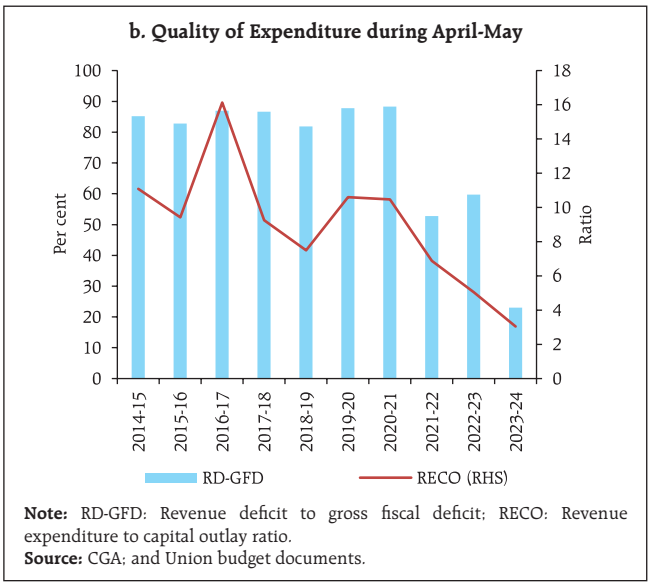


Source: DGCI&S.

Chart 21: Government Expenditure



Source: Controller General of Accounts (CGA); and Union budget documents.



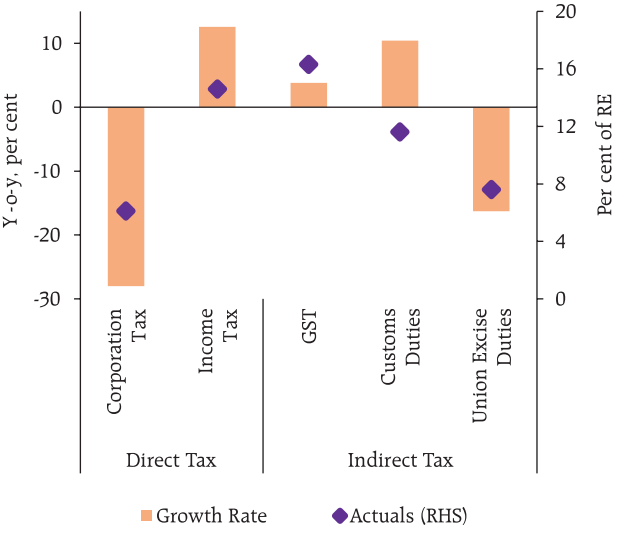
Note: RD-GFD: Revenue deficit to gross fiscal deficit; RECO: Revenue expenditure to capital outlay ratio.
Source: CGA; and Union budget documents.

12.2 per cent, lower than India's overall merchandise import growth of 13.0 per cent.

As per the latest data released by the Controller General of Accounts (CGA), the gross fiscal deficit (GFD) of the central government during April-May 2023 stood at 11.8 per cent of the budget estimates (BE) for 2023-24, which was lower than in the corresponding period of the previous year. This improvement is attributable to higher collections under non-tax receipts. On the other hand, the total expenditure of the central government increased by 6.9 per cent on a y-o-y basis. A noteworthy feature is the continued thrust on capital outlay with a y-o-y growth of 58.8 per cent. On the other hand, revenue expenditure contracted by 4.3 per cent. This led to a marked improvement in the quality of spending of the central government (Chart 21a and 21b).

On the receipts side, direct tax collections contracted by 5.0 per cent, owing to a decline in corporate tax receipts by 28 per cent. Indirect taxes recorded a moderation in growth to 1.6 per cent, attributable to a reduction in excise duty collections by 16.3 per cent[12]. Net tax collections contracted by 9.6 per cent over their level a year ago (Chart 22).

Chart 22: Tax Revenue during 2023-24 (April-May)

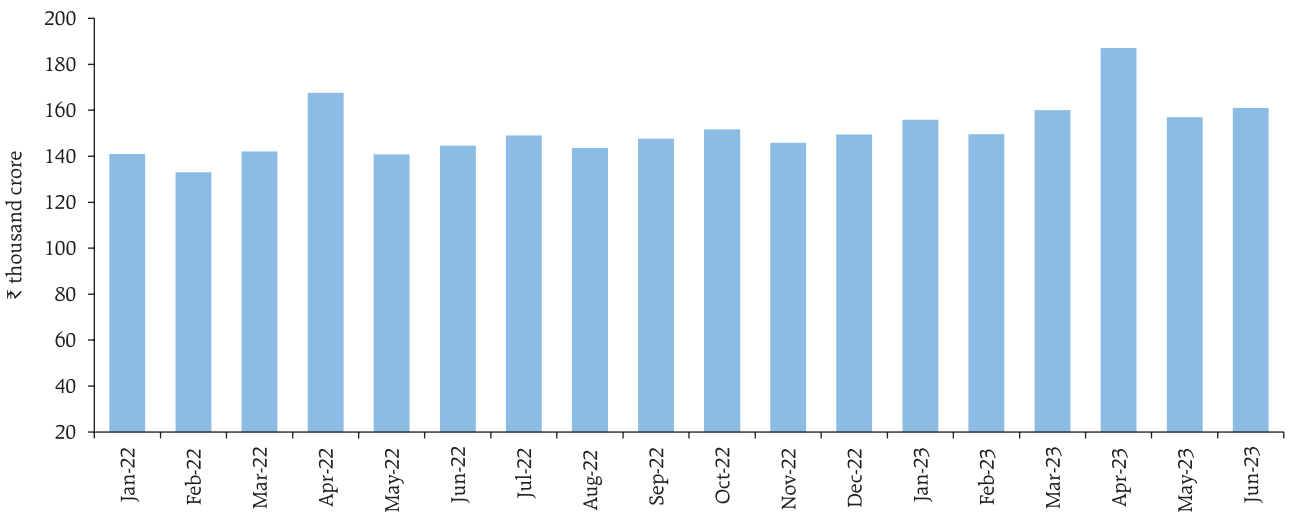


Sources: CGA; and Union budget documents.

[12] The contraction in growth of excise duty collections during April-May 2023-24 over the corresponding period of the previous year is associated with the cut in excise duties (in case of petrol and diesel) by the union government on May 22, 2022.

[13] During April-May 2023-24, the government mobilised ₹49.64 crore in the form of disinvestment receipts as compared with ₹24,046.41 crore during the corresponding period of the previous year.

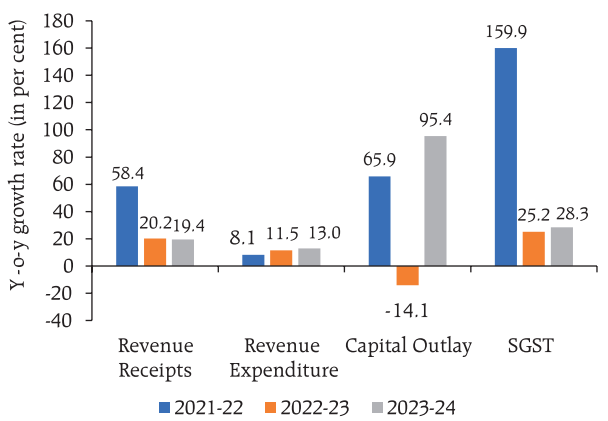
Chart 23: Monthly GST Revenue



Source: Press Information Bureau (PIB).

Conversely, non-tax revenue collections of the central government recorded a y-o-y growth of 173.4 per cent on the back of higher surplus transfer by the Reserve Bank. Non-debt capital receipts contracted by 88.0 per cent *vis-à-vis* the corresponding period of the previous year on account of slower pace of disinvestment.[13]

Chart 24: Growth in the Receipts and Expenditure of the States/UTs during April-May



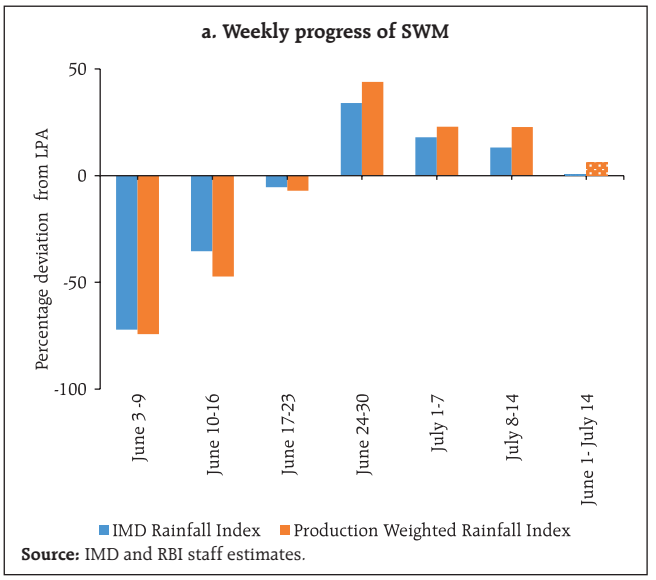
Note: Data pertains to 21 States.
Sources: Budget documents of the states; Comptroller and Auditor General of India; and RBI.

GST collections (Centre *plus* States) stood at ₹1.6 lakh crore in June 2023, registering a year-on-year growth of 11.7 per cent. The consistent rise in GST collections in the recent past is indicative of the improvement in the GST compliance rate, increasing momentum of underlying economic activity as well as the stabilisation of the GST regime (Chart 23).

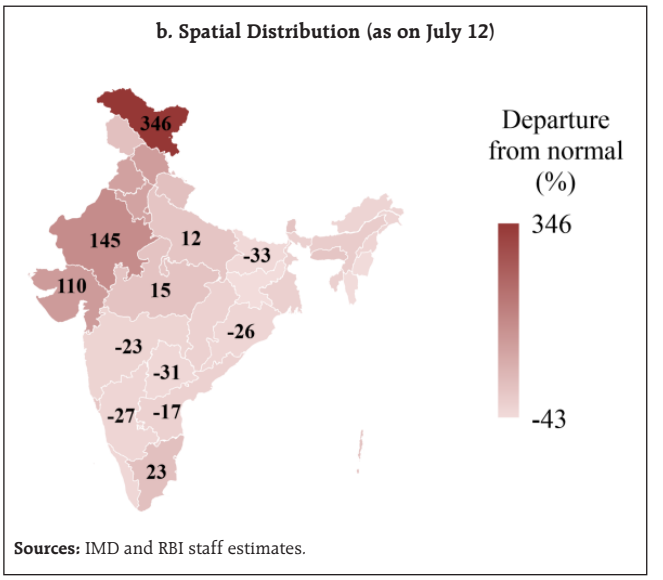
As per the data available for 21 States, the growth in their revenue receipts remained robust during April-May 2023, driven by buoyant growth in SGST collections. States have accelerated spending on capital outlay (Chart 24). In the month of June, the Union Government released an additional instalment of tax devolution to states. Apart from front-loading its own capital spending[14] in 2023-24, the central government has also approved ₹56,415 crore (accounting for 43.4 per cent of the ₹1.3 lakh crore budgeted for 2023-24) to 16 States for capital investment under the scheme of Special Assistance to States for Capital Investment 2023-24 with the objective of providing a boost to their capital spending.

[14] During April-May 2023-24, capital outlay of the central government constituted 18.0 per cent of the 2023-24 (BE) as compared with 15.5 per cent during the corresponding period of the previous year.

Chart 25: SWM Rainfall in 2023



Source: IMD and RBI staff estimates.

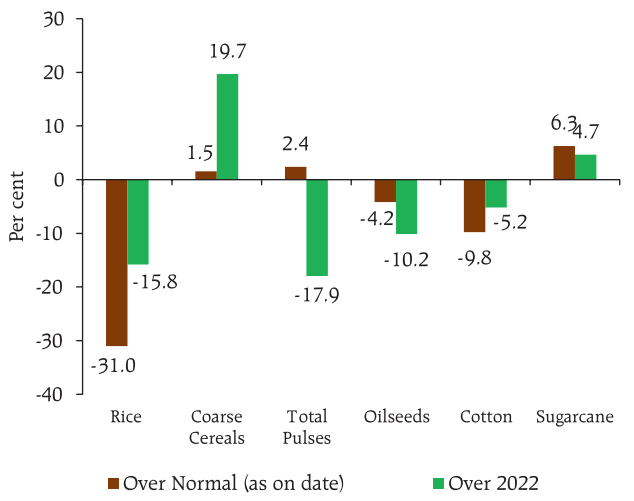


Sources: IMD and RBI staff estimates.

Aggregate Supply

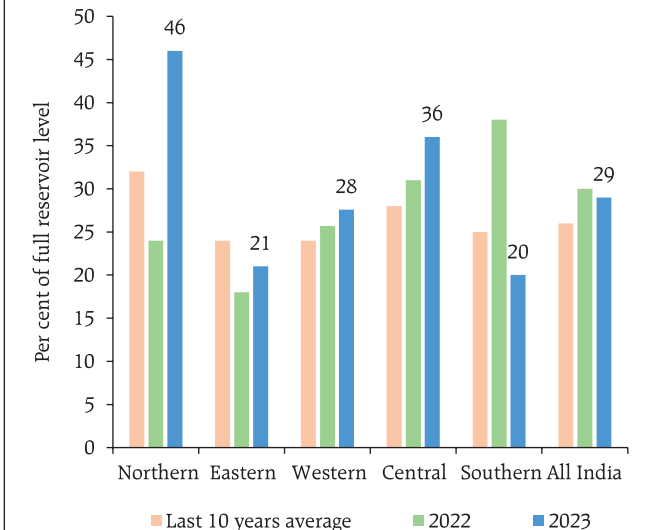
The South-west monsoon (SWM) covered the entire country on July 02, 2023 six days before the normal date, even though its onset was delayed by eight days – SWM touched the Kerala coast on June 08 as against June 04 predicted by the India Meteorological Department (IMD). The progress of SWM has, however, been uneven partly on account of the impact of cyclone *Biparjoy*. Precipitation picked up in recent weeks and as per the latest data as of July 14, 2023 the cumulative monsoon was one per cent above the long period average (LPA) [Chart 25a]. The spatial distribution of rainfall remains skewed (Chart 25b). As on July 09, 2023 the total *kharif* sown area was 5.4 per cent lower than the previous year's level across all major crop categories, except sugarcane

Chart 26: Change in *Kharif* Area Coverage (as on July 09, 2023)



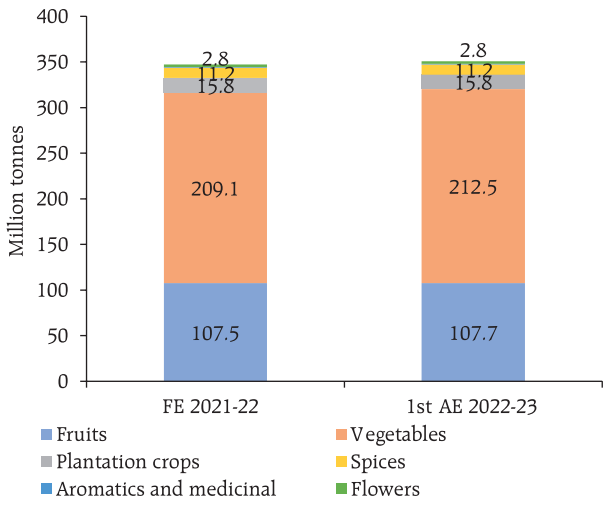
Source: MoA & FW.

Chart 27: Reservoir Status (as on July 06, 2023)



Source: Central Water Commission.

Chart 28: Horticultural Production in India



Note: FE- Final estimate; AE- Advance Estimate.
Source: MoA & FW.

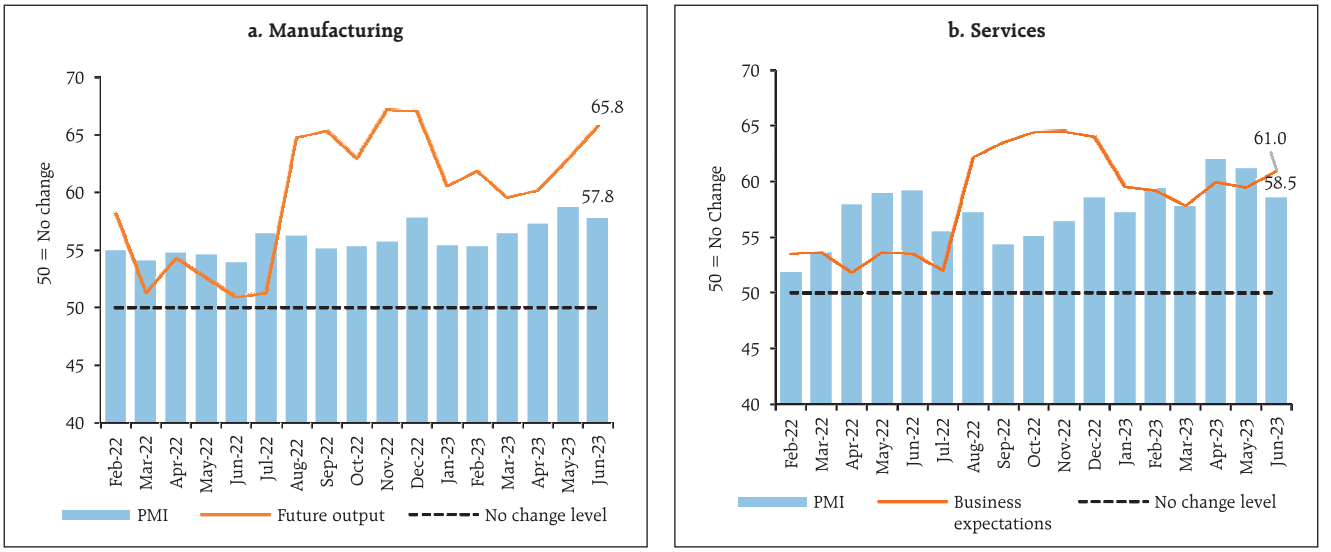
and coarse cereals (Chart 26). The current reservoir storage levels are much above long period averages, which augurs well for ongoing sowing activity (Chart 27).

The horticulture sector, accounting for about 33 per cent of total agriculture gross value added (GVA) in India, continued to register record production as per the first advance estimates (1st AE) for 2022-23. Total horticultural production surpassed last year's final production estimate by 1.1 per cent, driven by vegetables (Chart 28).

Rice procurement in the *Kharif* Marketing Season (KMS) 2022-23 and wheat procurement in the *Rabi* Marketing Season (RMS) 2023-24 touched 56.8 million tonnes and 26.2 million tonnes, respectively on July 11, 2023. In order to alleviate retail price pressures, the Food Corporation of India (FCI) has been conducting e-auctions for rice and wheat under the Open Market Sale Scheme (Domestic); and the third weekly e-auctions for rice and wheat commenced on July 12, 2023.[15]

The headline PMI for the manufacturing sector moderated to 57.8 in June 2023 from 58.7 in May due to a deceleration in new orders, output, and stocks of purchases. Index of future output expanded to a six-month high of 65.8 in June 2023 (Chart 29a). The PMI services in expansionary zone, despite a sequential moderation, with a strong momentum in business expectations (Chart 29b).

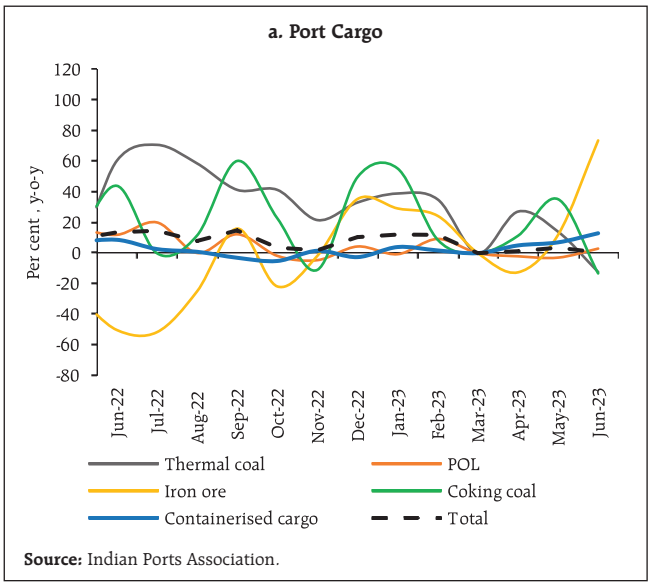
Chart 29: Purchasing Managers' Index (PMI)



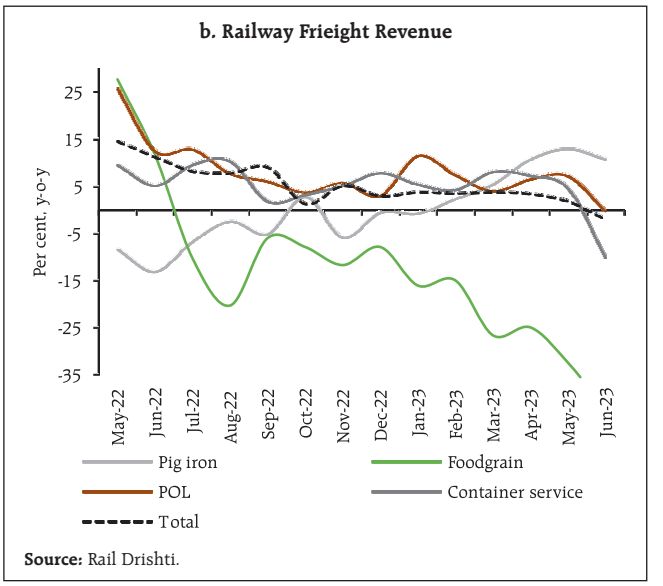
Source: S&P Global.

[15] https://pib.gov.in/PressReleasePage.aspx?PRID=1938040.

Chart 30: Railway and Port Cargo Traffic



Source: Indian Ports Association.



Source: Rail Drishti.

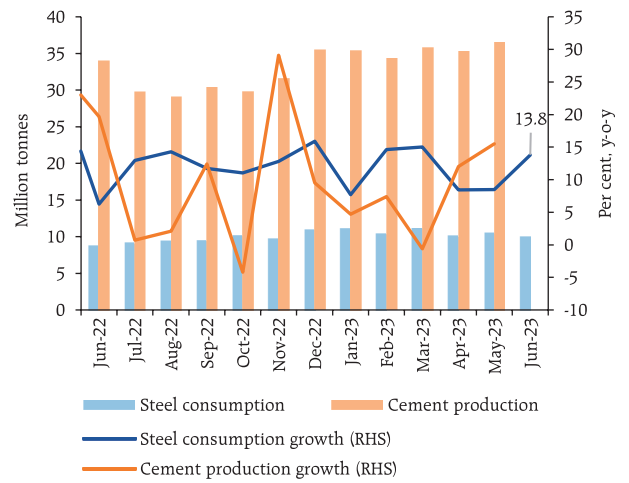
Transport indicators indicated a mixed picture. Cargo traffic at major ports recorded a marginal uptick in June driven by surge in iron ore and raw fertiliser (Chart 30a). However, railway freight traffic fell in June due to a decrease in freight of food grains and containerised cargo (Chart 30b).

Coincident indicators of the construction sector remained buoyant (Chart 31).

High-frequency services sector indicators for June 2023 attest to the resilience of overall economic activity. Notably, both domestic and international aviation passenger traffic recorded growth in excess of 20 per cent (Table 1).

In terms of regional policy initiatives, Odisha has approved a novel 'Odisha Rural-Urban Transition Policy', which aims to bridge the rural-urban gap by providing essential urban infrastructure, amenities and services to all citizens residing in the fast-growing rural areas adjoining cities. Tamil Nadu has launched a web portal named '*Tamil Man Valam*' that aims to serve as a facilitator for farmers to assess the soil fertility status, obtain soil health cards and also access various schemes designed to augment foodgrain production. Maharashtra became the first state to launch a "Green

Chart 31: Steel Consumption and Cement Production



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

Table 1: High Frequency Indicators – Services

Growth (y-o-y, per cent)

Sector	Indicator	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23
Urban Demand	Passenger Vehicles Sales	17.2	11.0	4.5	12.9	14.9	1.6
Rural Demand	Two Wheeler Sales	5.0	7.6	7.7	15.1	17.4	1.7
	Three Wheeler Sales	103.0	86.1	69.2	104.2	70.4	98.6
	Tractor Sales	24.4	20.0	13.7	-11.1	1.2	4.2
Trade, hotels, transport, communication	Commercial Vehicles Sales	7.1			-5.1		
	Railway Freight Traffic	3.8	3.6	3.8	3.5	1.9	-1.9
	Port Cargo Traffic	12.2	12.0		1.3	3.4	0.43
	Domestic Air Cargo Traffic*	-7.5	0.0	-4.4	-1.7	-12.7	-12.2
	International Air Cargo Traffic*	-4.3	-8.1	0.8	-3.0	-0.5	5.8
	Domestic Air Passenger Traffic *	95.3	50.2	22.9	23.2	15.9	21.1
	International Air Passenger Traffic *	115.1	98.0	62.4	43.9	35.8	24.1
	GST E-way Bills (Total)	19.7	18.4	16.3	12.2	19.7	15.5
	GST E-way Bills (Intra State)	24.1	22.2	20.7	16.2	23.0	18.8
	GST E-way Bills (Inter State)	12.8	12.4	9.3	5.9	14.3	9.9
	Hotel occupancy rate	81.9	32.2	3.0	-2.4	-3.4	
	Average revenue per room	53.1	62.0	39.6	21.2	15.8	
	Tourist Arrivals	330.8	259.4	132.5			
Construction	Steel Consumption	7.7	14.6	15.0	8.5	8.5	13.8
	Cement Production	4.7	7.4	-0.6	12.0	15.5	
PMI Index#	Services	57.2	59.4	57.8	62.0	61.2	58.5

Note: #: Data in levels. *: Data is based on the monthly average of daily figures.
Sources: CMIE; CEIC data; IHS Markit; SIAM; Airports Authority of India; and Joint Plant Committee.

Hydrogen Policy" to promote renewable energy and green hydrogen projects. Haryana has taken a noteworthy stride to foster accountability and ensure timely completion of infrastructure projects. The 'Haryana Project Monitoring System (HPMS)' portal serves as a platform for uploading progress of projects on an interactive dashboard within the initial weeks of each month.

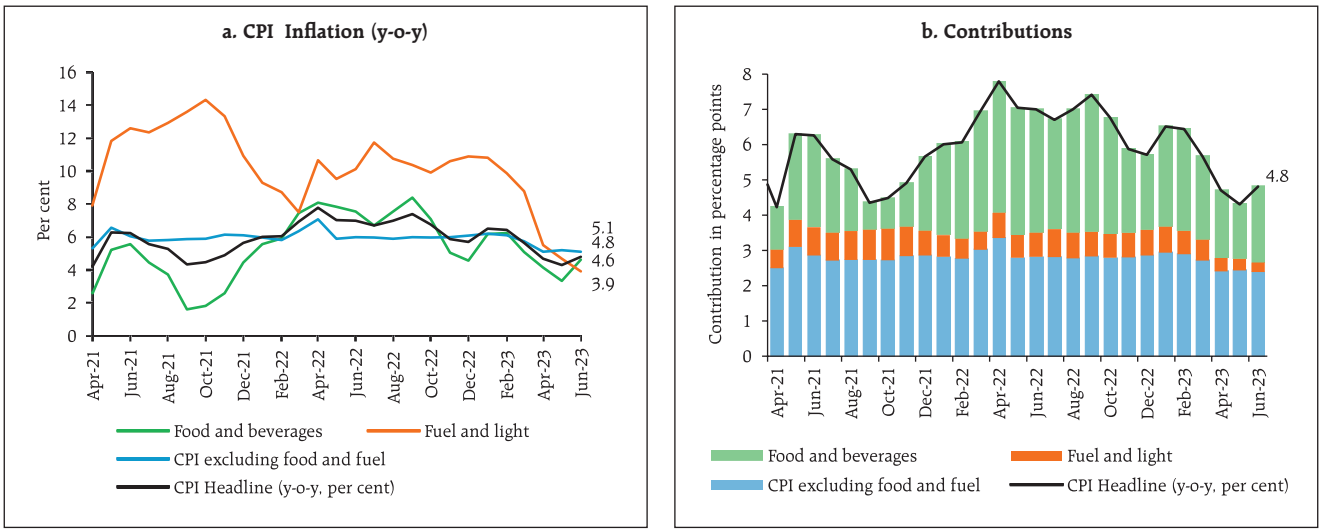
Inflation

Headline inflation, as measured by y-o-y changes in the all-India consumer price index (CPI)[16], increased to 4.8 per cent in June 2023 from 4.3 per cent in May primarily on account of an increase in food inflation (Chart 32). Between May and June, the CPI recorded a possitive momentum of 100 bps, which was partially offset by a favourable base effect of around 50 bps, resulting in a rise in headline inflation by 50 bps. The m-o-m increase in food and fuel prices were around 220 bps and 5 bps, respectively. Core group (excluding food and fuel) prices remained broadly unchanged.

Food inflation increased to 4.6 per cent in June from 3.3 per cent in May as inflation in sub-groups such as spices and pulses witnessed a spike. Despite a m-o-m increase in prices by 12.2 per cent, y-o-y inflation in vegetables remained in negative territory.

[16] As per the provisional data released by the NSO on July 12, 2023.

Chart 32: Trends and Drivers of CPI Inflation

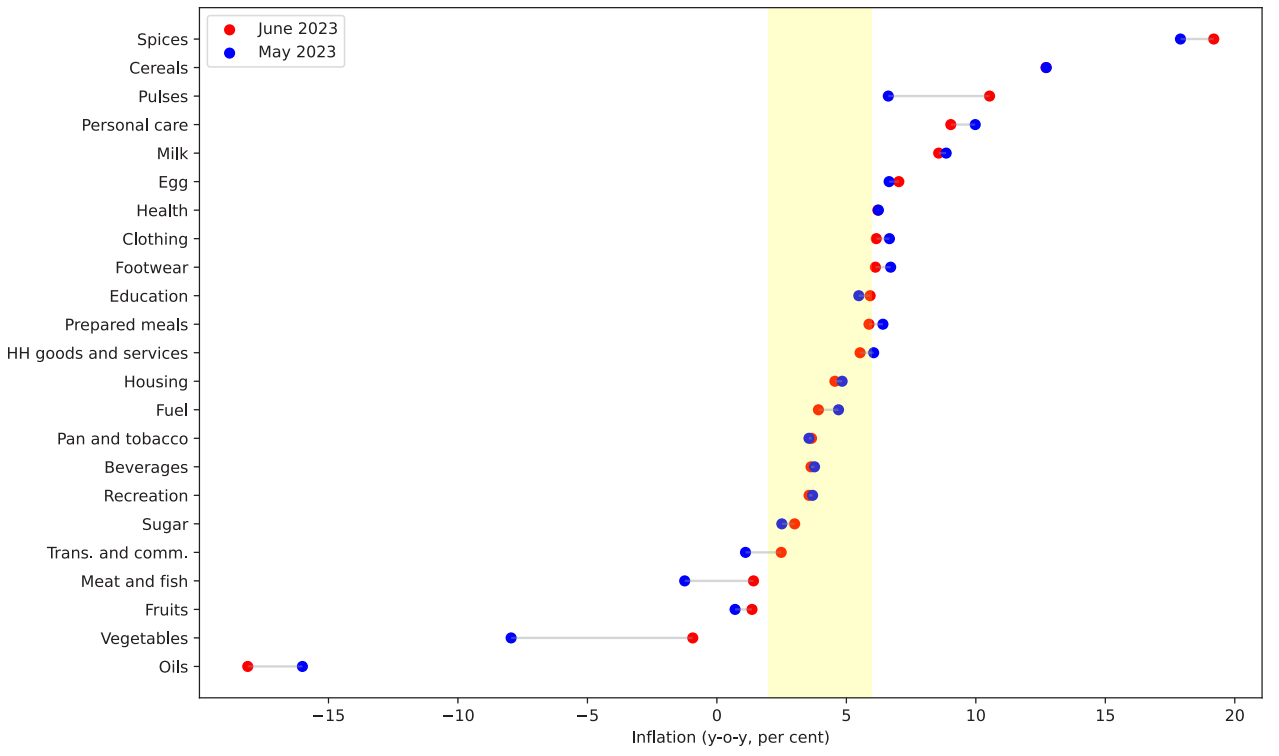


Note: Inflation for April-May 2021 was computed based on imputed CPI for April-May 2020.
Sources: National Statistical Office (NSO); and RBI staff estimates.

Deflation in edible oils also deepened. Inflation in cereals remained elevated (Chart 33).

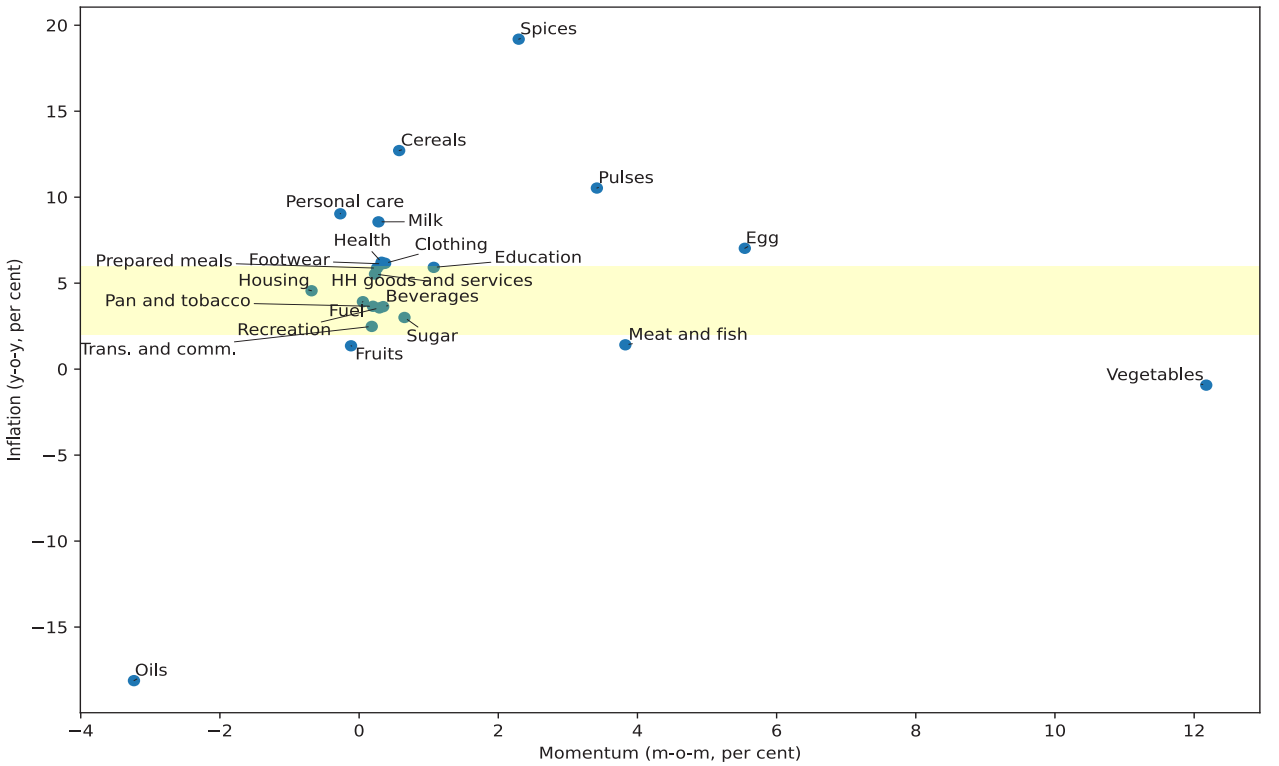
Inflation in the fuel and light group softened to 3.9 per cent in June from 4.6 per cent in May, mainly

Chart 33: Annual Inflation across Sub-groups (June 2023 versus May 2023)



Sources: NSO; and RBI staff estimates.

Chart 34: Annual Inflation (y-o-y) and Momentum (m-o-m) across Sub-groups



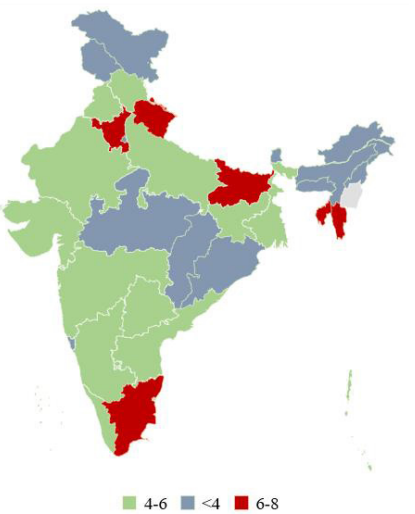
Sources: NSO; and RBI staff estimates.

driven by steep deflation in kerosene (PDS) prices. Inflation in LPG moderated further. Electricity prices, however, increased sharply (206 bps m-o-m).

Core inflation declined marginally to 5.1 per cent in June from 5.2 per cent in May. While inflation in most of the constituents of the core group softened, it remained steady for health and increased in the case of transport and communication, and education (Chart 34).

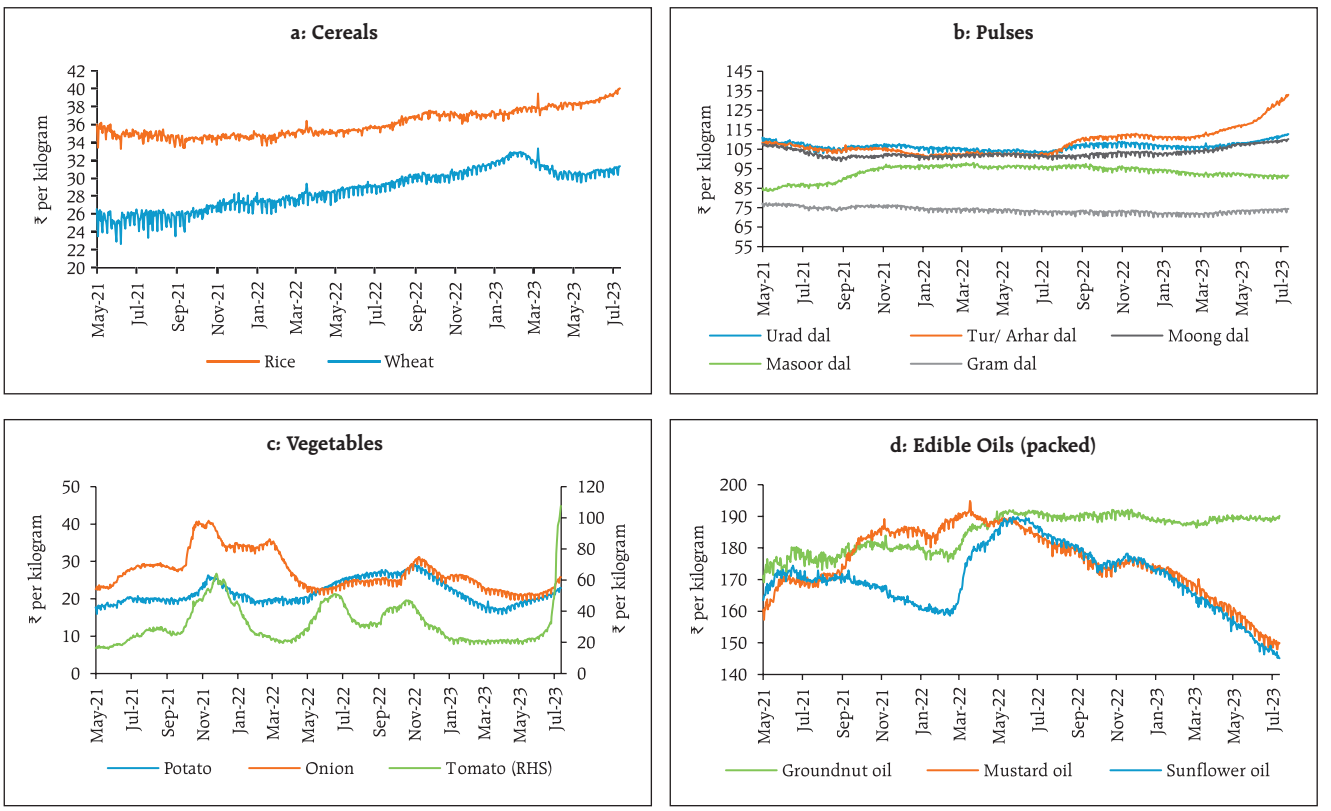
In terms of regional distribution, rural inflation at 4.7 per cent was marginally lower than urban inflation (5.0 per cent) in June 2023. Majority of the states registered inflation in the range of 4 to 6 per cent (Chart 35).

Chart 35: Spatial Distribution of Inflation: June 2023 (CPI - Combined, y-o-y)



Sources: NSO; and RBI Staff estimates.

Chart 36: DCA Essential Commodity Prices



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

High frequency food price data for July so far (up to 12th) point to a sustained increase in cereal prices (Chart 36). Prices of pulses and vegetables recorded a general uptick with tomato prices registering the maximum increase (Box 1). Edible oil prices continued to slide down in line with the fall in global prices.

Retail selling prices of petrol and diesel in the four major metros remained steady in July so far (up to 12th). While kerosene prices increased slightly, LPG prices remained unchanged (Table 2).

The PMIs for June 2023 indicated an increase in input costs in the manufacturing sector while they moderated for services sector. Selling prices, however, edged up further (Chart 37).

Table 2: Petroleum Products Prices

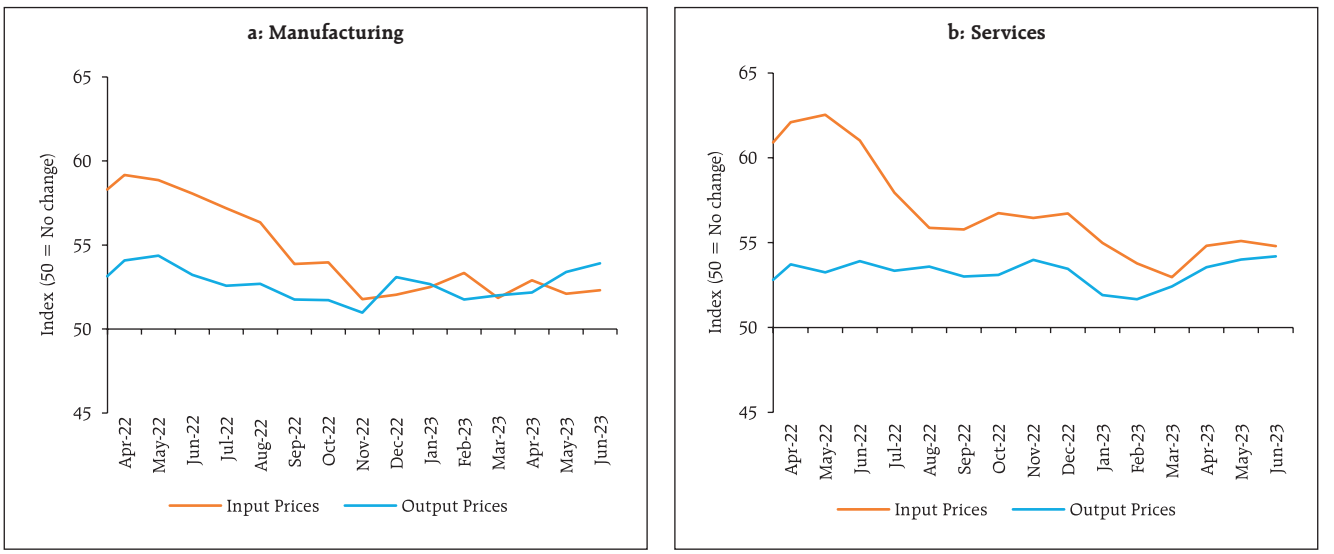
Item	Unit	Domestic Prices			Month-over-month (per cent)	
		Jul-22	Jun-23	Jul-23 ^	Jun-23	Jul-23 ^
Petrol	₹/litre	103.49	102.92	102.92	0.0	0.0
Diesel	₹/litre	93.06	92.72	92.72	0.0	0.0
Kerosene (subsidised)	₹/litre	71.44	44.12	44.21	-7.2	0.2
LPG (non-subsidised)	₹/cylinder	1055.19	1113.25	1113.25	0.0	0.0

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

Note: Other than kerosene, prices represent the average Indian Oil Corporation Limited (IOCL) prices in four major metros (Delhi, Kolkata, Mumbai and Chennai). For kerosene, prices denote the average of the subsidised prices in Kolkata, Mumbai and Chennai.

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

Chart 37: PMI: Input and Output Prices



Source: PMI Markit.

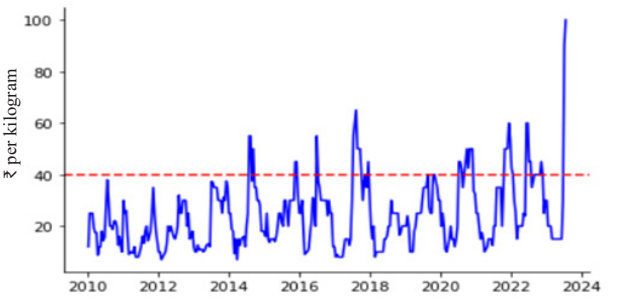
Box 1: Five Facts About Tomato Prices

The recent spike in tomato prices on account of crop damage due to inclement weather and pest attacks in the major production belts has received widespread attention as it has taken a toll on households' budgets. Historically, tomato prices have been an important contributor to volatility in overall inflation (Kishore and Shekhar 2022). Its volatility also gets transmitted to prices of other vegetables in both retail and wholesale markets (Padhi *et al.*, 2023).

Tomato, being a highly perishable item with a very short crop duration, exhibits considerable seasonal variation in prices but these episodes are short lived (Chart B1).

The average duration of a high price episode, derived from the Markov Chain transition probability matrix, shows that prices stay above ₹40 for an average duration of 2.6 fortnights whereas prices remain below ₹20 for an average duration of 10 fortnights (Table B1).

Chart B1: Trends in Tomato Prices



Note: 1. Data pertain to fortnightly wholesale prices at the all-India level.
2. The red line represents the 95th percentile of wholesale tomato prices.
Sources: CEIC; and RBI staff estimates.

Multiple crop cycles with varying time spans across locations lead to more than one spell of price spike within the same year (Table B2).

Table B1: Duration of Price Spells: Tomato (Period: Jan 2010 – Jun 2023)

Range of Price (₹/Kg)	Duration (in Fortnights)
Less than 20	10.00
20-40	4.76
Above 40	2.63

Note: Duration of price spells are estimated using a three state Markov transition matrix.
Sources: CEIC; and RBI staff estimates.

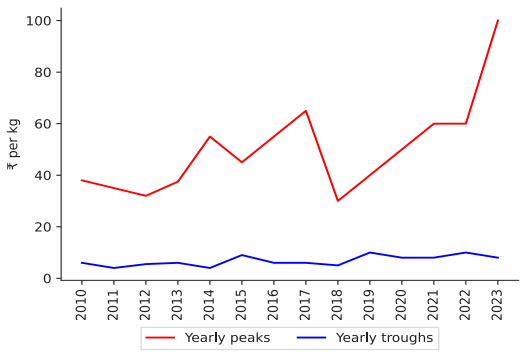
Table B2: Tomato Crop Cycles

Region	Harvest Period
Southern and Western States	1. August – September 2. December – February 3. March – June
Northern and Eastern States	1. January – March 2. March – June

Source: Ministry of Agriculture and Farmers Welfare, GoI.

(Contd.)

Chart B2: Trends in Annual Peaks and Troughs of Tomato Prices



Note: Data pertain to wholesale prices at the all-India level.
Sources: CEIC; and RBI staff estimates.

While the yearly peaks have exhibited a general increase, the troughs have remained largely constant, indicating that prices do not ratchet up across spells (Chart B2).

Empirical estimates show that even though margins (the wedge between wholesale and retail prices) respond to shocks, their elasticity to wholesale prices is low – for a one per cent rise in wholesale prices, the wedge increases by 0.1 per cent.[17] Thus margins act as a shock absorbing mechanism and, therefore, inflation in retail prices is less volatile than wholesale.

Spillovers from tomato price spikes to prices of other commodities and unhinging inflation expectations remain a major concern. Increasing amplitudes of price spells over the years calls for improving the supply chains to contain overall inflation volatility.

References

Kishore, Vimal and Himani Shekhar (2022) "Extreme Weather Events and Vegetable Inflation in India", *Economic and Political Weekly* Vol. 57, Issue No. 44-45, 29

Padhi, Puja., Himani Shekhar and Akanksha Handa (2023) "Anatomy of Price Volatility Transmission in Indian Vegetables Market" *RBI DRG Study* No 49.

IV. Financial Conditions

During the second half of June 2023 and early July (up to July 12, 2023), developments in liquidity conditions largely mirrored Government spending – a key driver of frictional liquidity. Advance tax payments and GST related outflows moderated surplus liquidity in the second half of June, though the seasonal return of currency to the banking system ameliorated some of the pressure. The Reserve Bank also conducted one variable rate repo (VRR) fine tuning operation on June 19 to inject liquidity amounting to ₹75,004 crore to the banking system (offers received were ₹75,695 crore). Subsequently, Government spending in the beginning of July augmented surplus liquidity in the banking system.

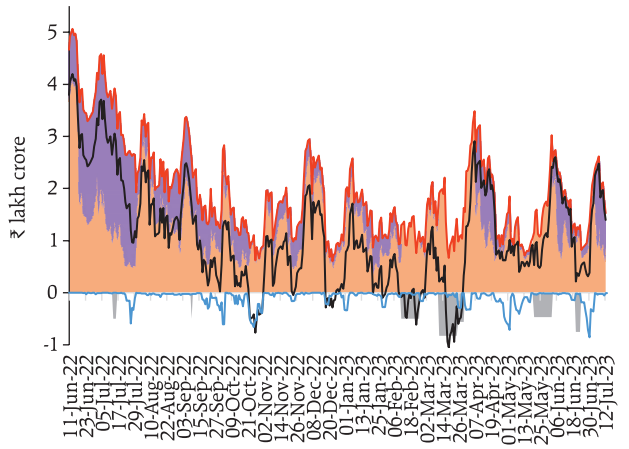
Volatile liquidity conditions have induced some aversion among banks to park surplus funds for longer tenors. Illustratively, while the response to the 14-day variable rate reverse repo (VRRR) (main operation) conducted on June 30 was tepid, with offers received amounting to a mere ₹11,789 crore (notified amount of ₹1.0 lakh crore), six-fine tuning VRRR operations of 1-4 days maturity conducted in July evoked more interest. The liquidity absorbed through these operations amounted to ₹63,843 crore (July 3), ₹67,295 crore (July 4), ₹87,870 crore (July 5), ₹39,000 crore (July 6), ₹1.06 lakh crore (July 7) and ₹40,291 crore (July 11).[18] Overall, the average total absorption under the liquidity adjustment facility (LAF) narrowed to ₹1.6 lakh crore during June 16-July 12 (from ₹1.8 lakh crore during May 16 to June 15).

Of the total average surplus liquidity, placement of funds under the standing deposit facility (SDF) averaged ₹1.1 lakh crore during June 16 to July 12, 2023, down from ₹1.4 lakh crore during the previous period (May 16 to June 15, 2023). Amidst tapering of surplus liquidity and its skewed distribution, recourse to the marginal standing facility (MSF) averaged

[17] Elasticity estimates are derived for Nashik Mandi, during 2016-2023 on account of data availability.

[18] Four of these auctions had notified amount of ₹1 lakh crore while the auction of July 7 and July 11, 2023 had a notified amount of ₹ 2 lakh crore.

Chart 38: Liquidity Operations



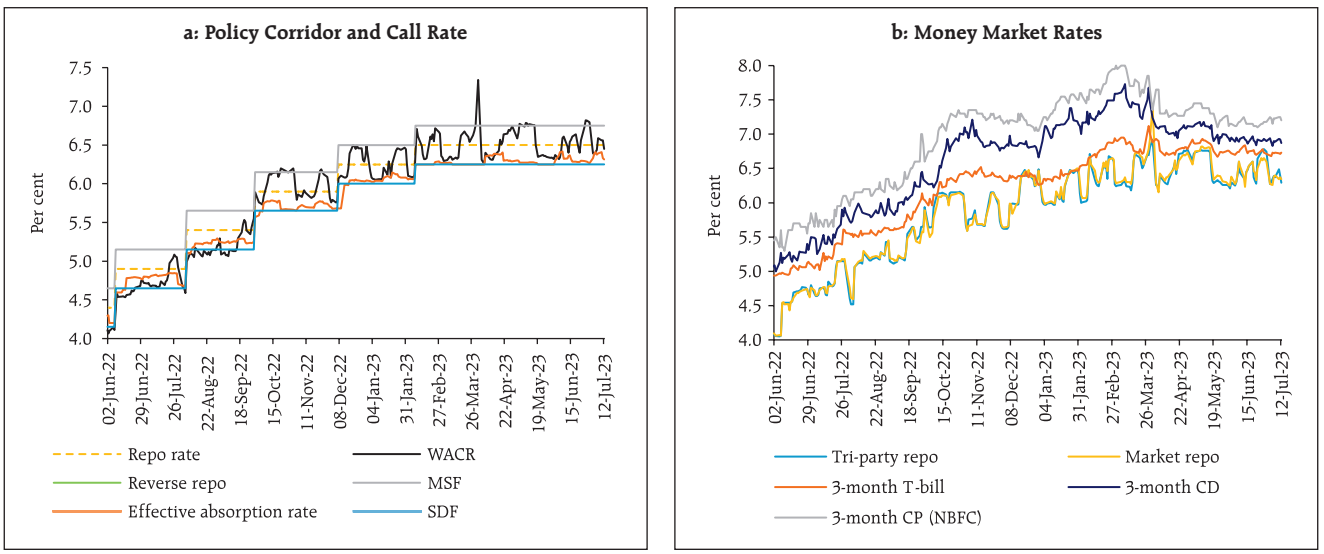
Sources: RBI; and CCIL.

₹17000 crore during June 16 to July 12, 2023 (₹2000 crore during the previous period) and the daily MSF reached ₹85,821 crore on June 29, 2023 – the highest since April 1, 2019. Consequently, net absorptions under the LAF declined to ₹1.19 lakh crore during June 16 to July 12, 2023 as compared with ₹1.45 lakh crore during May 16 to June 15, 2023 (Chart 38).

Reflecting the shifting liquidity dynamics, the weighted average call rate (WACR) gradually trended towards the upper band of the LAF corridor during the second half of June before easing sharply in the first week of July. On an average basis, the WACR traded 6 bps above the policy repo rate while the triparty repo rate and the market repo rate traded 2 bps and 5 bps, respectively, below the policy repo rate during June 16 to July 12, 2023 (Chart 39a).

Across the term money segment, yields on 3-month certificates of deposit (CDs) and commercial paper (CP) for non-banking financial companies (NBFCs) remained above the upper band of the corridor, but largely stable. The yield on 3-month treasury bills (T-bills) was broadly aligned with the MSF rate (Chart 39b). In the primary market, fund mobilisation through issuances of CDs at ₹1.45 lakh

Chart 39: Policy Corridor and Money Market Rates



Sources: RBI; Bloomberg; and RBI staff estimates.

crore during 2023-24 (up to June 30) was lower than ₹1.54 lakh crore in the corresponding period of the previous year. CP issuances at ₹3.80 lakh crore (up to June 30), however, was higher than ₹3.48 lakh crore in the corresponding period of the previous year.

Domestic bond yields traded with a hardening bias and the yield on the 10-year benchmark Government securities (G-sec) (7.26 per cent GS 2033) closed at 7.12 per cent on July 12, 2023 as compared with 7.04 per cent on June 15 (Chart 40a). Stronger than expected US GDP data and a sharp rise in US treasury yields imparted pressure on domestic bond yields across the term structure (Chart 40b).

Corporate bond yields also hardened during this period, though the risk premia exhibited a mixed trend. The average risk premia in the bond market (5-year AAA *minus* 5 year G-sec) declined by 7 bps (Table 3). Funds mobilised through corporate bond issuances amounted to ₹0.84 lakh crore during May 2023, significantly higher than ₹0.18 lakh crore for the same period in the preceding year.

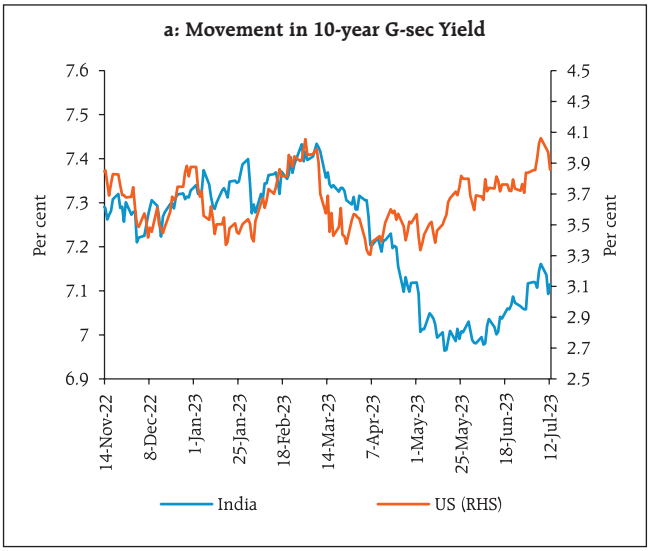
Table 3: Corporate Bonds - Rates and Spread

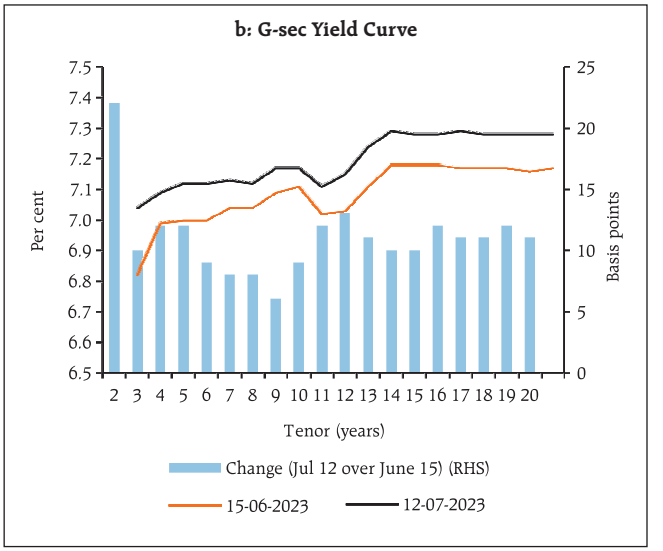
Instrument	Interest Rates (per cent)			Spread (basis points) (Over Corresponding Risk-free Rate)		
	May 16, 2023 – Jun 15, 2023	Jun 16, 2023 – Jul 11, 2023	Variation	May 16, 2023 – Jun 15, 2023	Jun 16, 2023 – Jul 11, 2023	Variation
1	2	3	(4 = 3-2)	5	6	(7 = 6-5)
Corporate Bonds						
(i) AAA (1-year)	7.65	7.54	-11	64	56	-8
(ii) AAA (3-year)	7.73	7.85	12	72	71	-1
(iii) AAA (5-year)	7.66	7.71	5	60	53	-7
(iv) AA (3-year)	8.36	8.50	14	133	135	2
(v) BBB- (3-year)	12.07	12.14	7	505	499	-6

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

Reserve money (RM), excluding the first-round impact of change in cash reserve ratio (CRR), grew by 6.6 per cent on a y-o-y basis as on July 07, 2023 (8.8 per cent a year ago) [Chart 41a]. Currency in circulation (CiC), the largest component of RM, decelerated to 4.4

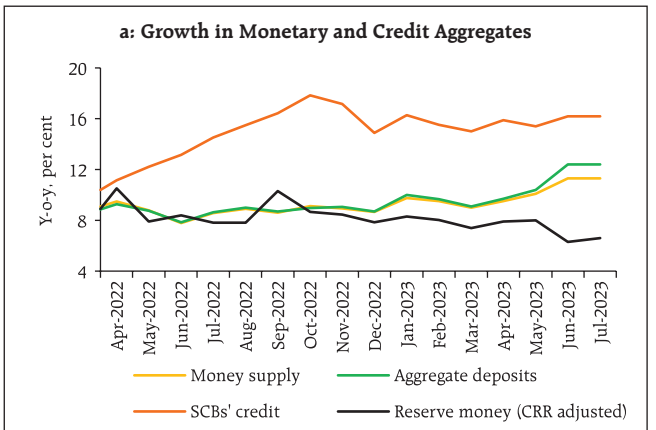
Chart 40: Developments in the G-sec Market



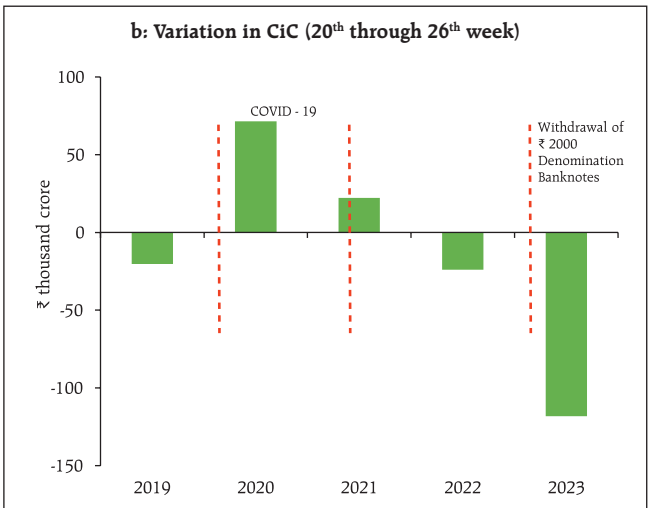


Sources: Bloomberg; CCIL; and RBI staff estimates.

Chart 41: Monetary and Credit Aggregates



Note: 1. Data pertain to last reporting Friday of every month for money supply, aggregate deposits and bank credit; and last Friday of every month for reserve money.
2. Latest data for reserve money pertain to July 7, 2023 and money supply pertain to June 30, 2023.
Source: RBI.



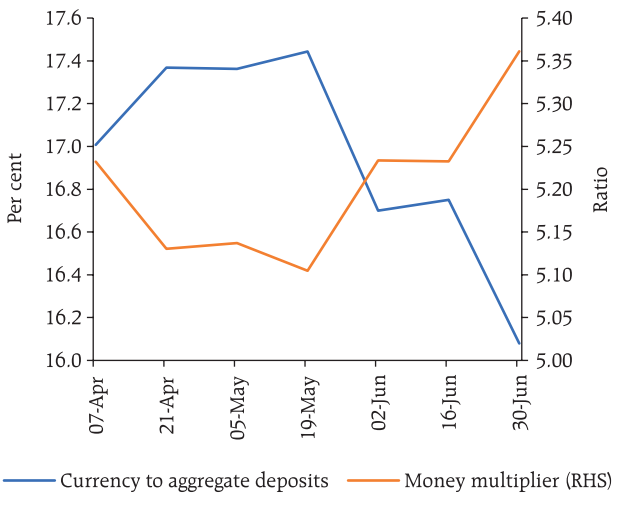
Note: Data are on calendar year basis.
Source: RBI.

per cent from 8.0 per cent a year ago. The withdrawal of ₹2000 banknotes from circulation announced on May 19, 2023 (20th week) resulted in a decline in CiC between 20th (May 19) and 26th week (June 30) in 2023 when compared with the corresponding period of previous years. About 87 per cent of the notes received back from circulation as on June 30 has been deposited with the banks (Chart 41b).

As on June 30, 2023 money supply (M_3) growth was higher at 11.3 per cent (y-o-y) than 8.9 per cent in the corresponding period of last year. Aggregate deposits with banks increased by 12.4 per cent (9.2 per cent a year ago). Reflecting the return of ₹2,000 banknotes, the currency to aggregate deposit ratio declined and correspondingly, the money multiplier increased (Chart 42).

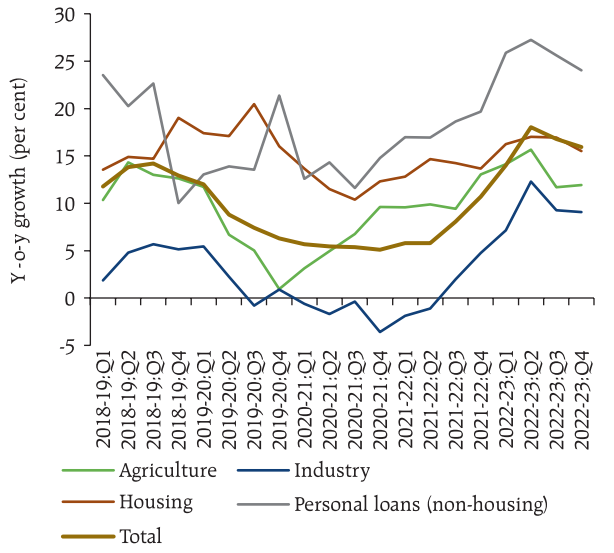
Scheduled commercial banks' (SCBs') credit growth remained strong at 16.2 per cent as on June 30, 2023. The rapid pace of personal loan growth (both housing and non-housing) has been supporting

Chart 42: Money Multiplier and Currency to Deposit Ratio



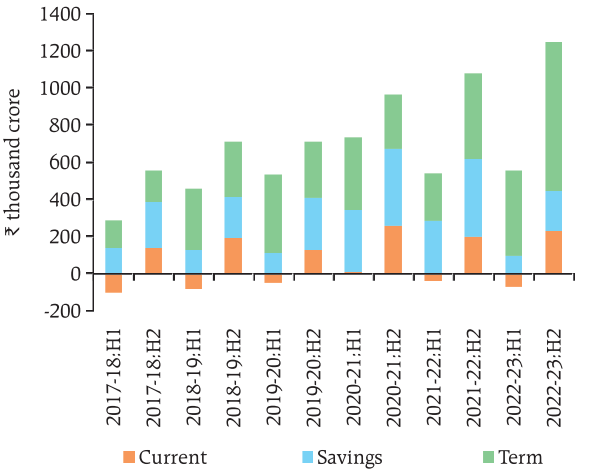
Source: RBI.

Chart 43: Annual Credit Growth - Major Sectors



Source: RBI.

Chart 45: Half-yearly Increase in Type of Deposits of SCBs*

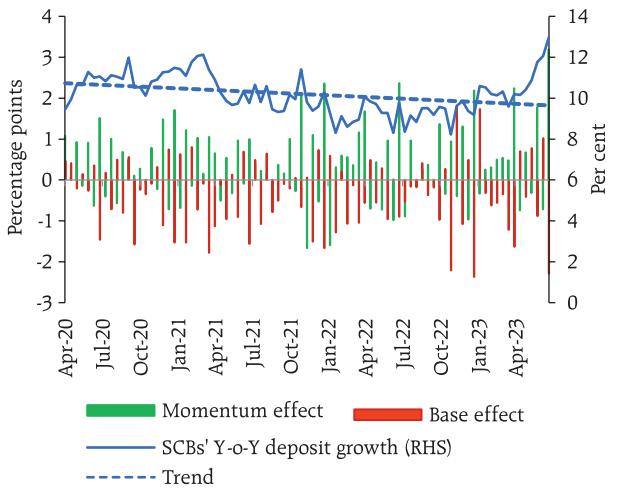


Note: *: Including regional rural banks (RRBs).
Source: RBI.

overall credit expansion (Chart 43). Accordingly, the share of personal loans in total bank credit has surged to 28 per cent in 2022-23 from 21 per cent in 2017-18.

The decomposition of y-o-y deposit growth of SCBs shows that strong momentum offset unfavourable base effects in recent months (Chart 44).

Chart 44: Aggregate Deposit of SCBs – Base Effect and Momentum



Note: Latest data pertain to June 30, 2023.
Source: RBI.

Term deposit growth far exceeded growth in saving deposits (Chart 45), atypical of the patterns observed during 2020-21 and 2021-22.

In response to the 250 bps hike in the policy repo rate since May 2022, banks have revised their repo-linked external benchmark-based lending rates (EBLRs) upwards by a similar magnitude. The 1-year median MCLR of SCBs increased by 142 bps during May 2022-May 2023. Consequently, the weighted average lending rate (WALR) on fresh and outstanding rupee loans increased by 176 bps and 106 bps, respectively, during the same period. On the deposit side, the weighted average domestic term deposit rates (WADTDR) on fresh and outstanding rupee deposits increased to 229 bps and 134 bps, respectively (Table 4). The share of EBLR-linked loans in total outstanding floating rate rupee loans of SCBs was 49.6 per cent at end-March 2023 while that of MCLR-linked loans was 45.5 per cent.

The increases in the WADTDR on fresh rupee deposits and WALR on fresh rupee loans were higher in the case of public sector banks, while the WADTDR

Table 4: Transmission to Banks' Deposit and Lending Rates

(Variation in basis points)

Period	Repo Rate (bps)	Deposit Rates (bps)		Lending Rates			
		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	-	-155	-232	-150
Tightening Period May 2022 to May 2023	250	229	134	250	142	176	106
May 2022 to June 2023	250	-	-	250	150	-	-

Notes: Data on EBLR pertain to 32 domestic banks.
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.

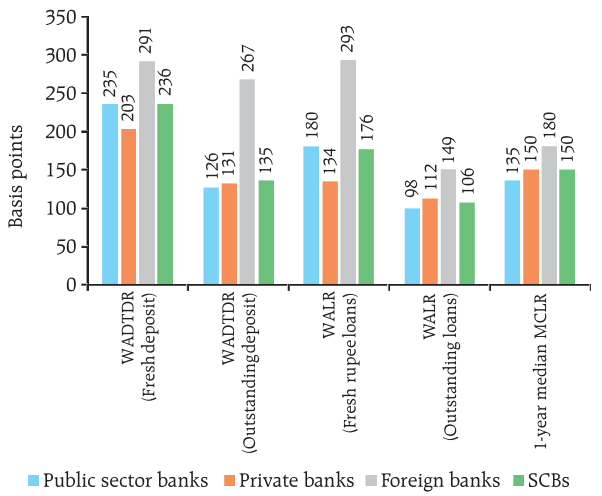
on outstanding deposits and WALR on outstanding loans were higher for private banks (Chart 46).

In March 2023, over two-thirds of the bank loans were priced below 10 per cent of which 46 per cent were priced between 8 and 10 per cent and another 21 were priced below 8 per cent (Chart 47). The improvement in transmission is starkly visible in loans priced at 8 per cent or above since March 2022.

On June 30, 2023 the Government of India revised rates on select small savings instruments, namely, post office term deposits of 1 and 2-year tenor and recurring deposits, upwards by 10-30 bps for Q2:2023-24 (Chart 48).

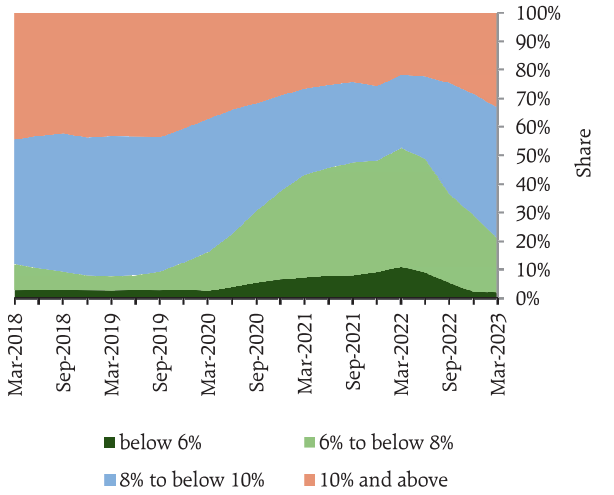
Equity markets remained ebullient, scaling an all-time peak towards end-June (Chart 49). Strong macroeconomic data releases, a pause in the policy repo rate hike cycle as well as the merger of a major Indian private sector bank helped boost market sentiments. The exuberance of the secondary markets also translated into increased resource mobilisation in the primary markets. Initial public offering (IPO) listings increased from ₹1558.5 crore

Chart 46: Transmission across Bank Groups (May 2022 to May 2023)



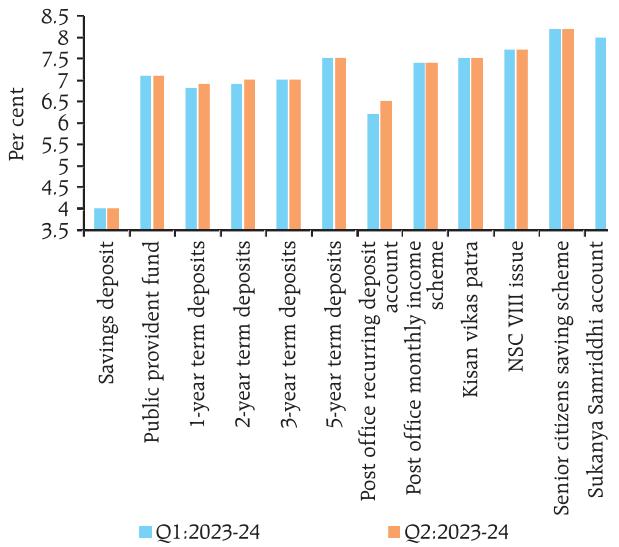
Note: Data on 1-year median MCLR pertain to May 2022 to June 2023 period.
Source: RBI.

Chart 47: Bank Loans and Advances - Interest Rates



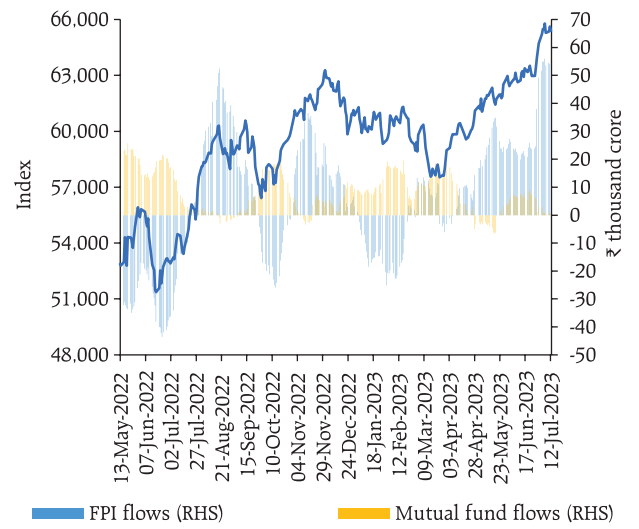
Source: RBI.

Chart 48: Rates of Small Saving Instruments



Source: GoI (https://dea.gov.in/sites/default/files/Q2_2324.pdf).

Chart 49: BSE Sensex and Institutional Flows

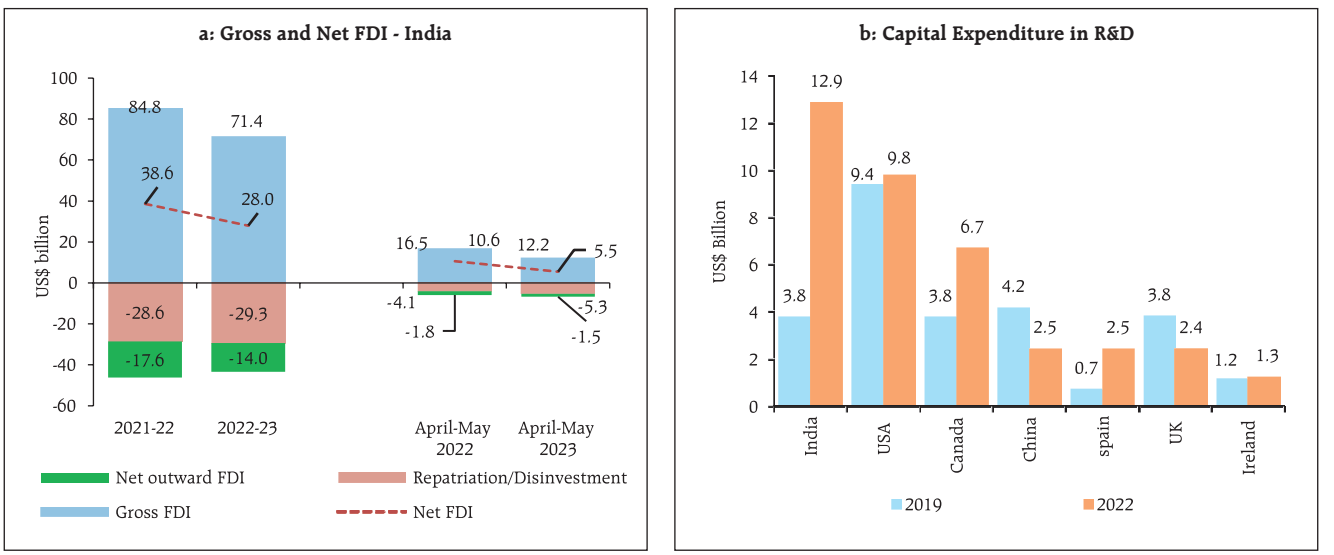


Note: FPI and MF Flows are represented on 15-day rolling sum basis.
Sources: SEBI; NSDL; and Bloomberg.

in Q4:2022-23 to ₹6880.6 crore in Q1:2023-24. The positive momentum continued in July with strong GST collections and optimism surrounding corporate earnings for Q1:2023-24 leading to market gains. The BSE Sensex gained 3,439 points (5.49 per cent) since end-May 2023 to close at 66,061 points on July 14, 2023.

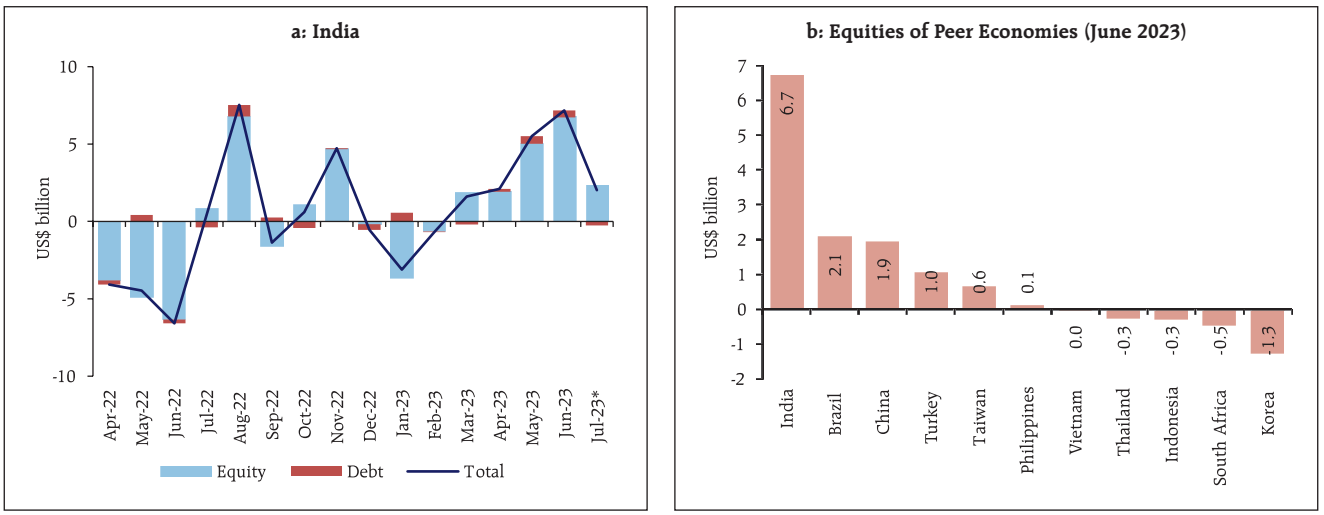
The shifting of trade from the Singapore Exchange (SGX) to the NSE International Exchange (NSE IX) and the rebranding of SGX Nifty as Gift Nifty have opened Indian capital markets to higher international exposure by creating a financial corridor. The deal between the exchanges led to a US$ 9.1 billion open interest in NSE futures and options combined on the

Chart 50: Foreign Direct Investment Flows to India



Sources: RBI; and fDi Intelligence.

Chart 51: Net Portfolio Investments



Note: 1. *: Data for July 2023 is up to July 13, 2023.
2. Debt includes investments under the voluntary retention route and hybrid instruments.
Source: National Securities Depository Limited; and Institute of International Finance.

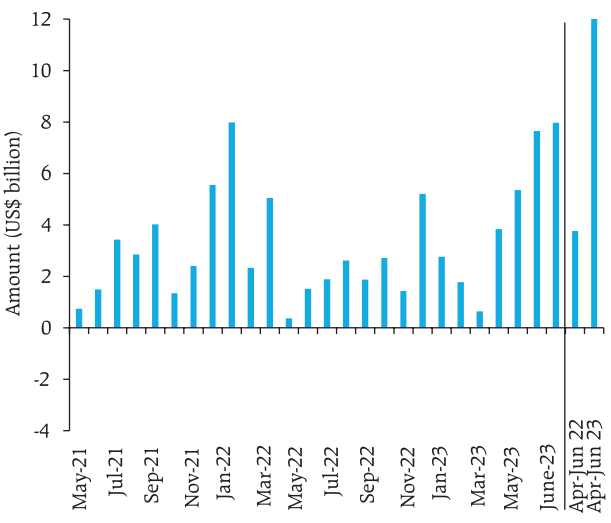
first day in the Gift city with NSE handling the trades and SGX clearing and settling the trades.

Gross inward foreign direct investment (FDI) flows, albeit strong, moderated to US$ 12.2 billion in April-May 2023, from US$ 16.5 billion in April-May 2022 (Chart 50a). Net FDI declined to US$ 5.5 billion in April-May 2023 from US$ 10.6 billion a year ago. Manufacturing, business services and financial services attracted the majority of FDI inflows in April-May 2023, while Singapore, the Netherlands and the US were major source countries for FDI during the month. According to a report released by the fDi Intelligence[19], India recorded US$ 12.9 billion of estimated capital expenditure in research and development (R&D) in 2022, as compared with an investment of US$ 3.8 billion during 2019 (Chart 50b).

FPI flows recorded a ten-month high in June 2023 with India attracting the maximum FPI equity inflows among emerging market peers (Chart 51).

The surge in external commercial borrowing (ECB) registrations during Q1:2023-24 reflects the momentum in import demand for capital goods. The loan agreement amount stood at nearly 80 per cent of the level registered in 2022-23 as a whole (Chart 52). Nearly two-third of new ECBs were

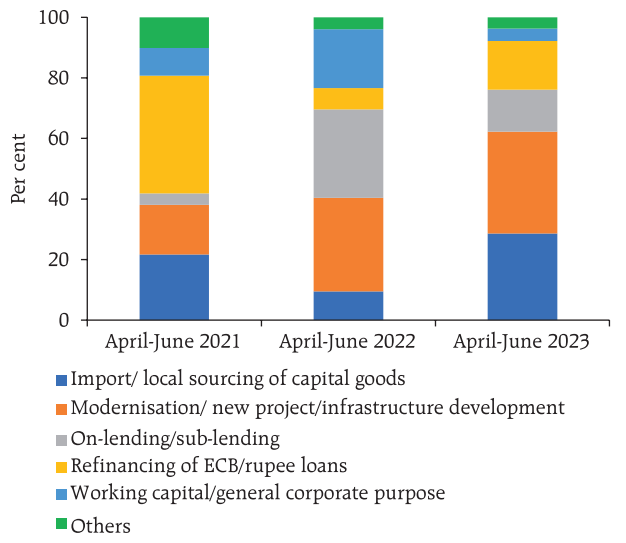
Chart 52: ECB - Registrations



Source: RBI.

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

Chart 53: End-use of the Registered ECBs



Source: RBI.

earmarked for modernisation / new projects / infrastructure development and import / local sourcing of capital goods (Chart 53).

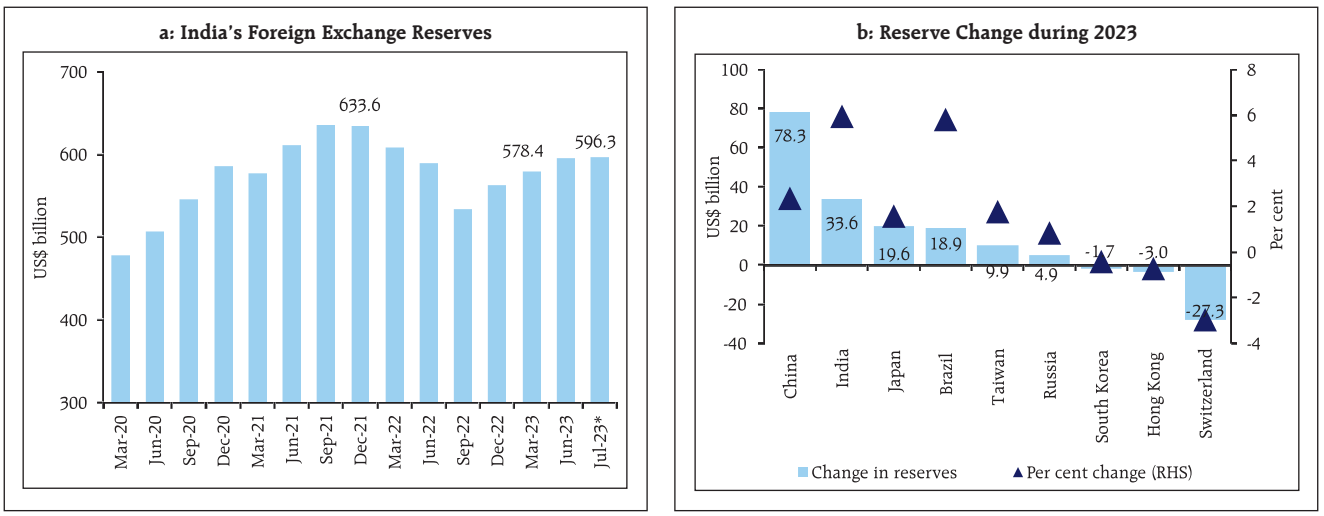
The foreign exchange reserves increased by US$ 71.8 billion since October 21, 2022 and stood at US$ 596.3 billion on July 7, 2023 sufficient to cover 9.7 months of projected imports for 2023-24 or 95 per cent of total external debt outstanding at end-March 2023 (Chart 54a). India recorded the second highest accretion to foreign exchange reserves among major holding countries during 2023 (Chart 54b).

The Indian rupee (INR) appreciated by 0.1 per cent (m-o-m) *vis-à-vis* the US dollar in June 2023, as against depreciation undergone by most major currencies (Chart 55).

The INR appreciated by 2.3 per cent (m-o-m) in terms of the 40-currency real effective exchange rate (REER) in June 2023 (Chart 56).

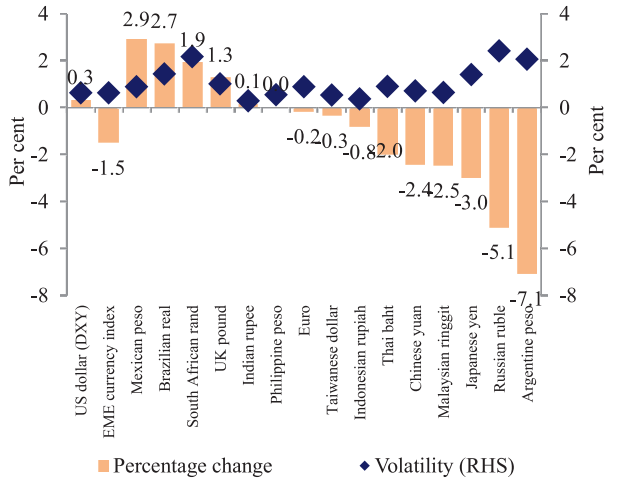
Net claims of non-residents on India [*i.e.*, net international investment position (IIP)] declined by US$ 5.7 billion during Q4:2022-23 and stood at

Chart 54: Foreign Exchange Reserves



Note: 1. *: Data for July 2023 is up to July 7, 2023.
2. Data for India are for July 7, 2023, for Hong Kong and Switzerland are for May 2023, and June 2023 for remaining countries.
Source: RBI; and respective central bank websites.

Chart 55: Movements of the Indian Rupee and Major Currencies against the US Dollar



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

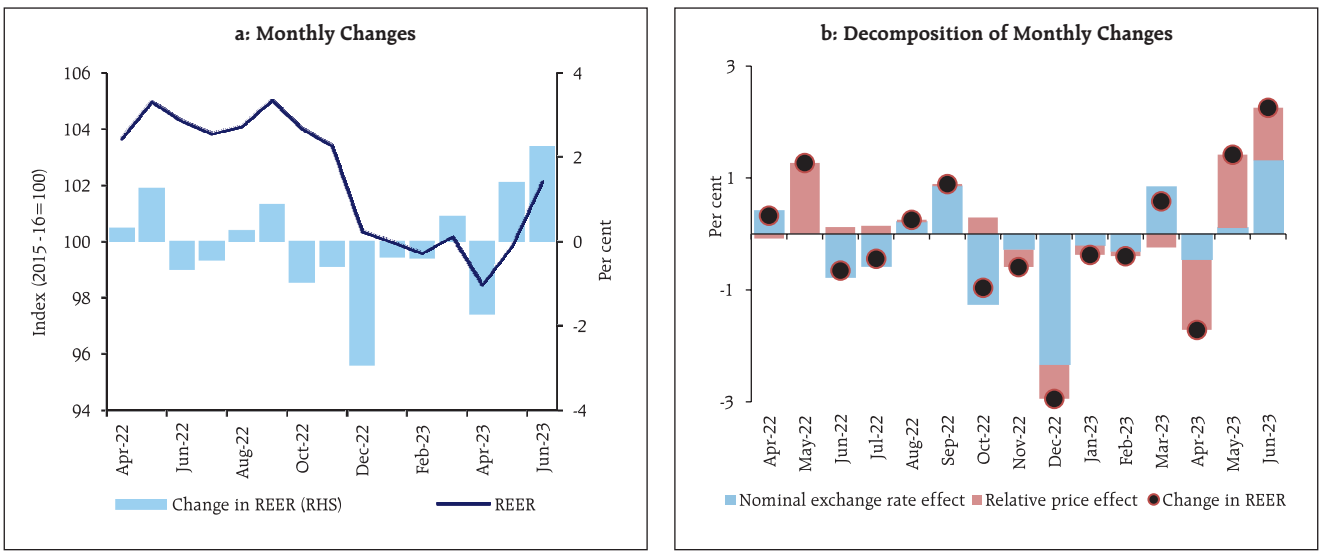
US$ 367.8 billion in March 2023 (Chart 57). Reserve assets accounted for 64.1 per cent of Indian residents' overseas financial assets and its ratio to external debt improved for the second successive quarter to 92.5 per cent in March 2023.

As pointed out in the intro section, key indicators of external sector vulnerability remained at sustainable levels at end-March 2023 (Chart 58a). These indicators also suggest that India's external sector is more resilient than most other comparable economies (Chart 58b).

Payment Systems

Digital transactions exhibited consistent growth (y-o-y) across various payment modes in June (Table 5). The volume of transactions through the National Automated Clearing House (NACH) recovered, owing to an increase in direct benefit transfers using Aadhaar Payment Bridge System (APBS). Among prepaid payment instruments, wallets continue to gain in share over cards. The growing spread of online spending beyond tier-1 centres in the country is expected to further bolster the adoption of digital payments.[20] On July 06, 2023 the Reserve Bank issued a draft circular that mandates card issuers (banks/non-banks) to issue cards on more than one card network, along with providing customers the facility to choose any one among multiple card networks.

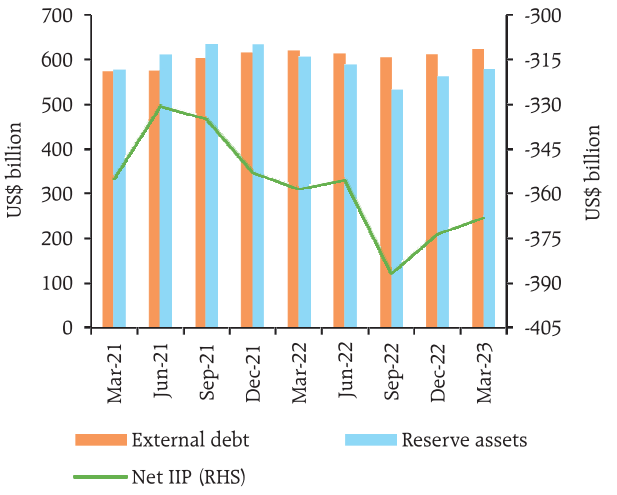
Chart 56: Movements in the 40-Currency Real Effective Exchange Rate



Source: RBI.

[20] CyberMedia Research. June 2023. *Consumer Aspirations and E-commerce in Bharat: A Primary Survey Report.*

Chart 57: Movement of Net IIP, External Debt and Reserve Assets



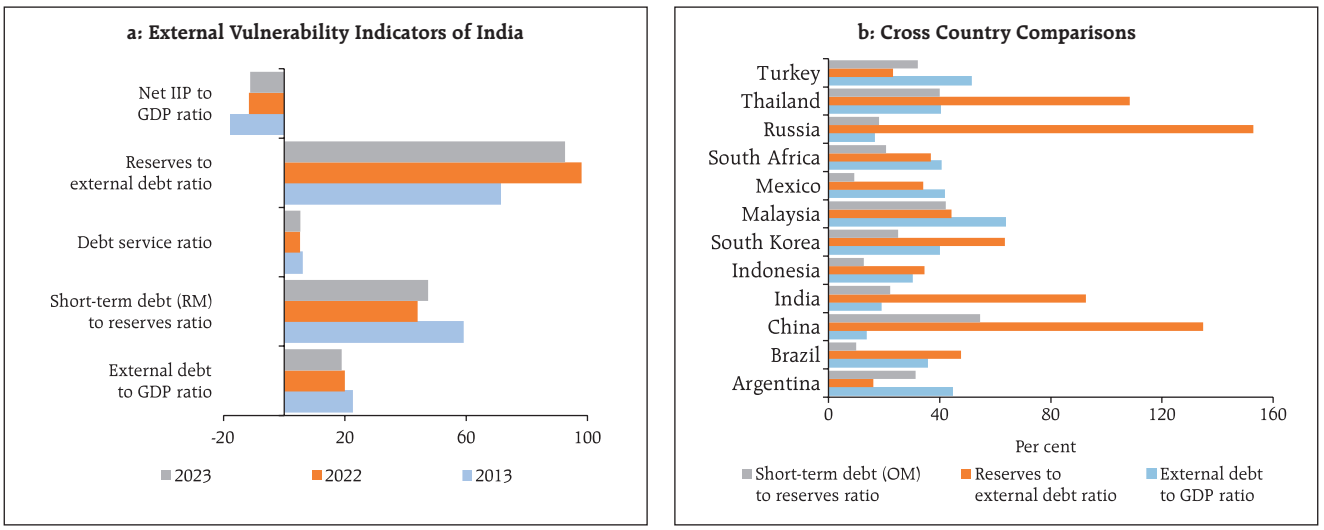
Source: RBI.

Driven by the success of India's digital public infrastructure (DPI) – India Stack – the digitalisation of financial services is on the rise. The account aggregator ecosystem, which enables secure and convenient data exchange facilitating further access to financial products and services, exhibited strong growth in its adoption and usage. The number of newly linked accounts and consent requests received grew more than ten-fold in June 2023 compared with June 2022. Additionally, the number of successful e-KYC authentications through Aadhar grew by 38 per cent (y-o-y) in June. India has also entered into Memorandums of Understanding (MoU) with four countries – Armenia; Sierra Leone; Suriname; and Antigua and Barbuda; for the purpose of sharing the India Stack.[21]

V. Conclusion

As macroeconomic prospects steadily improve, India is dynamically seeking fuller expression of its full potential and a transformative change in its global position. Being the most populous and aspirational nation, and an eminently influential diaspora that is the world's biggest are regarded as powerful resources today rather than a Malthusian drag.[22] India's labour

Chart 58: External Vulnerability Indicators



Note: Data for India is for end-March 2023, whereas for end-December 2022 for remaining countries. Reserves to external debt ratio for Turkey is for end-September 2022.
Source: RBI; World Bank; and Bloomberg.

[21] Press Information Bureau. Press Releases. June 13, 2023.

[22] 'Making it as migrants, The Economist, June 12, 2023.

Table 5: Growth in Select Payment Systems

(y-o-y in per cent)

Payment System Indicators	Transaction Volume				Transaction Value			
	May-22	May-23	Jun-22	Jun-23	May-22	May-23	Jun-22	Jun-23
RTGS	58.7	12.6	26.1	9.2	33.7	15.2	21.2	16.0
NEFT	48.6	28.4	37.6	26.7	40.0	18.8	29.5	11.9
UPI	135.1	58.3	108.8	59.2	112.7	43.2	85.3	45.5
IMPS	73.2	3.5	50.0	2.7	69.9	16.6	56.2	12.8
NACH	24.9	-14.3	6.7	18.8	14.9	19.5	19.5	18.7
NETC	145.0	17.4	76.1	13.7	105.6	24.3	67.0	20.8
BBPS	109.3	28.4	80.6	24.8	120.5	44.8	91.0	41.6

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

force is expected to account for a full percentage point of annual GDP growth over the next five years[23].

It is believed that 'India is at a tipping point'[24] in the fulfilment of its aspirations. Set to become the second largest economy of the world within this century even at current growth rates[25] and even perhaps to match the dominant position in the world economy that it enjoyed in 1700 AD before the colonial invasions, India is rapidly upgrading its infrastructure to global standards. Its road network has expanded above 6 million kilometres, with some of the best airports in the world, a digital public infrastructure gaining global recognition that fosters both inclusion and innovation, accretions to solar generating capacity planned in 2023 that may rival world leaders in the field. India is already the seventh largest exporter of services in the world and is rapidly diversifying beyond IT into new fields, with global capability centres providing a leading edge. A giant leap of digitalisation that is already opening up exciting new opportunities for enhancing productivity. Some aspects of manufacturing such as machinery, electronics and vehicles and parts are gaining international competitiveness, accounting for a fifth of merchandise exports. With focused industrial policy initiatives, India is striving to raise the share of manufacturing from 17 per cent of GDP to at least 25 per cent over a decade. Given favourable demographics, this will empower the labour force with jobs and livelihood, although boosting labour participation will require providing training and skills. Increasing worker productivity is going to be the most important lever of growth. Investment will also benefit from this demographic advantage as India's savings rate is likely to increase with rising employment and deepening financial development. The transition to green energy is opening up large investment avenues. A window is opening up for the private sector to scale up on creating capacities in both manufacturing and services, and this opportunity must be grasped.

Food price spikes typical of the onset of the monsoon drove up headline inflation in June, corroborating the monetary policy committee's (MPC) view[26] that the fight against inflation is far from over and monetary policy has to stay the course on the arduous last leg of the journey to align inflation with the target.

[23] 'The elephant in a boom', The Economist, June 13, 2023.

[24] Tim Cook, as quoted in 'The elephant in a boom', The Economist, June 13, 2023.

[25] https://www.goldmansachs.com/intelligence/pages/how-india-could-rise-to-the-worlds-second-biggest-economy.html

[26] Das, Shaktikanta (2023) "Governor's Statement" Bi-monthly Monetary Policy Statement, 2023-2024, RBI.

When Circumspection is the Better Part of Communication

*by Michael Debabrata Patra, Indranil Bhattacharyya and Joice John^*

The role of monetary policy communication in the form of forward guidance in the tightening phase of the policy cycle is under close scrutiny. The results of an auto regressive conditional heteroscedastic (ARCH) model on overnight indexed swap rates indicate that forward guidance has a statistically significant impact on long-term interest rate expectations, but it progressively loses potency as the policy rate rises from highly accommodative levels.

"…Communication comes with the cost of misinterpretation and also may limit flexibility. So I think we should use forward guidance sparingly when the course of policy is either reasonably well understood, or on the contrary, is so dependent on uncertain future developments that little really can be said constructively about the future."

– remarks by Jerome Powell, Chairman of the Federal Reserve of the United States (US), Panel Discussion, Thomas Laubach Research Conference, Washington, D. C. on May 19, 2023.

Introduction

The global financial crisis (GFC) brought about a paradigm shift in the manner in which monetary policy is communicated to the public. The monetary mystique or "constructive ambiguity"[1] of the 1990s was jettisoned in favour of greater openness and clarity. Overwhelmingly, central banks chose to provide information about their view of the state of the economy and the likely future course of monetary policy. The term forward guidance gained currency worldwide. Central banks began to provide verbal assurance to the public about the intent of monetary policy going forward so as to anchor expectations to their stated goals and nudge the behaviour of the public in the direction they desired. This was a natural corollary to their encounter with the zero lower bound on interest rates – the glass floor below which it was believed that interest rates cannot fall. Forward guidance became recognised as an important instrument in the monetary policy toolkit – "*monetary policy is 98 per cent talk, and only two per cent action*" (Bernanke, 2015). The underlying belief has been that transparency instils credibility.

The shock and awe of the pandemic overlapped by the war in Ukraine produced a surge of inflation across the world to heights last seen four decades ago. This inflation visitation has also turned out to be tenacious and broad-based, resisting one of the most aggressive and sychronised episodes of monetary policy tightening in recent global history – illustratively, policy rates have been increased since January 2022 in the range of 225-675 basis points (bps) in major advanced economies[2] (AEs) and 75-5900 bps in major emerging market economies[3] (EMEs) – accompanied by active balance sheet consolidation. More recently, as inflation has shown grudging signs of relenting, central banks have either tempered the size of rate increases or have paused only to find themselves in a twilight zone on communicating their future intentions to the public. In fact, a few central banks have recently resumed policy rate increases after pausing.[4]

These developments have brought the role of monetary policy communication, especially forward

^ 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 A phrase credited to Henry Kissinger, it has been used to characterise the manner of monetary policy communication by Alan Greenspan, former Chairman of the US Federal Reserve.

2 excluding Japan.

3 excluding China, Russia and Turkey

4 Australia, Canada, Norway and Malaysia.

guidance, in the tightening phase of the policy cycle under close scrutiny. As central banks raised interest rates, they also engaged in hawkish forward guidance which unleashed bouts of high turbulence in global financial markets, amplified the tightening of financial conditions and triggered exodus of capital from the emerging world. Once again, the paradigm began to shift, with monetary policy communication seen as engendering risks to financial stability. With banking collapses in some jurisdictions, the view gaining ascendency is that financial stability considerations should be taken into account while formulating monetary policy and communicating it (Schnabel, 2023). Implicit in this view is that unlike the zero lower bound to interest rate cuts, there is no upper bound to interest rate increases, and a shrill pitch in forward guidance can be deeply destabilising. Discretion in forward guidance when monetary policy has to be formulated under heightened uncertainty is increasingly gaining advocacy over the value of hawkishness, as reflected in the influential view with which this paper began.

In India, monetary policy communication has imbibed global best practices with country-specific adaptations. The decision of the monetary policy committee (MPC) on the policy rate and its underlying rationale along with forward guidance are conveyed to the public through a resolution on the day of the MPC's meeting. This is backed up by a statement of the Governor, Reserve Bank of India (RBI), as the chairman of the MPC. In addition, press briefings, speeches, forward-looking surveys, research, minutes of the MPC meeting and a semi-annual monetary policy report are other avenues of conditioning expectations. In this context, however, there has been animated debate in the public domain in India about the relevance of forward guidance in conveying the future intent of monetary policy in a rate tightening cycle. The dilemma is sharpened by the public's elation with recent small moderations in inflation and improvements in growth performance whereas the MPC remains focused on closing the wide gap between headline inflation and the target, and the relatively smaller gap between output and its potential.

Addressing this dilemma is the main motivation of this paper. Employing an auto regressive conditional heteroscedastic (ARCH) model, we find that forward guidance communicated in the policy resolution has a statistically significant impact on long-term interest rate expectations, but it progressively loses potency as the policy rate rises from highly accommodative levels. The rest of the paper is organised, into three sections. The next section presents some stylised facts about recent monetary policy developments in India as reflected in market expectations, as a backdrop for the choice of the methodological framework and results obtained therefrom in Section III. The last section concludes the paper with a few policy perspectives.

II. Forward Guidance through the Lens of Financial Markets

While forward guidance has been elevated to the status of a monetary policy instrument, no consensus has yet emerged on what constitutes "optimal". The challenge is to strike the right balance between the quantity and the quality of information and between clarity and sensitivity in a highly uncertain outlook. In other words, even if monetary policy communication is clear and unambiguous, it may not deliver the desired results if it is not interpreted by the public/markets in the way envisioned by the central bank. In times of uncertainty when there is incomplete information about the state of the economy in the future, the feasibility and desirability of announcing a future path of policy rates, which is what forward guidance seeks to achieve, has been questioned (Natvik, et al.,2020). Markets and the public may not fully understand the conditionality attached to the announced future

policy path forecasts or the underlying assumptions. Forward guidance on the likely future path of policy rates in this *milieu* may be misinterpreted as a quasi-promise or commitment and could lead to disorderly adjustment of interest rate expectations (Blinder, 2018). If the communication of future policy rates consistently deviates from their realised path, it may weaken the public's confidence in the central bank and its commitment to the stated policy objectives. This may even entail the risk of delivering unpleasant monetary surprises to financial market expectations and eventually aggravate inflation and output volatility.

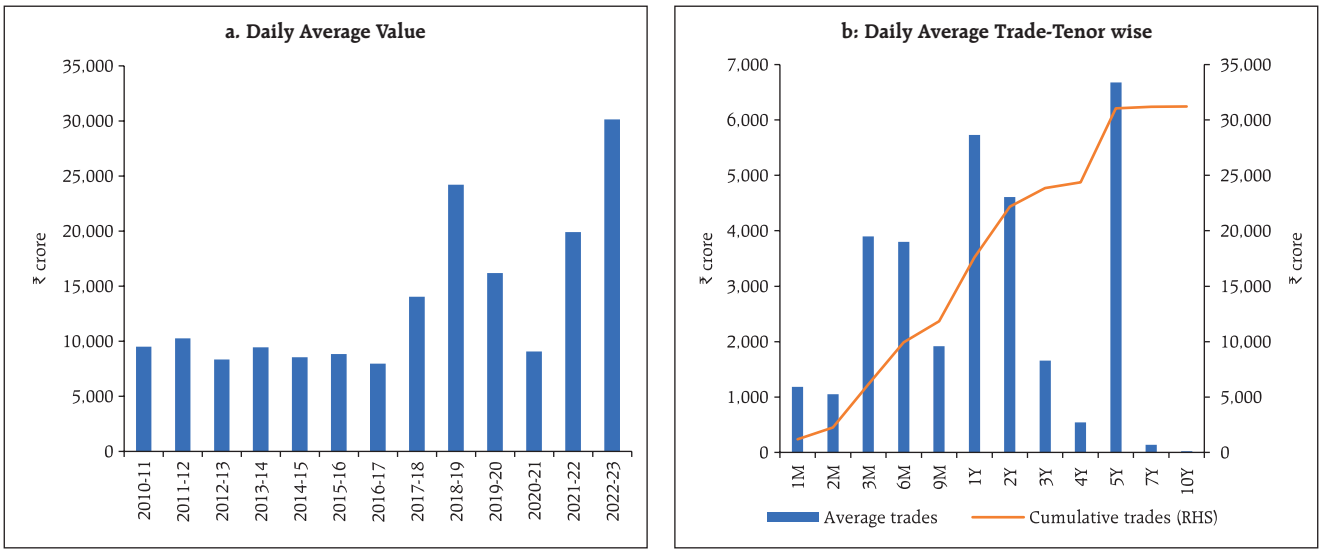
Forward guidance is priced in by financial markets as expectations of interest rates and this is reflected in financial prices, both spot and future. In countries that do not have money market futures segments or they are shallow, overnight indexed swap (OIS) rates are a natural candidate for measuring monetary policy expectations of market participants (Hubert and Labondance, 2018; Kamber and Mohanty, 2018; Altavilla *et al.*, 2019; Lloyd, 2018, 2021). An OIS is an interest rate derivative contract in which two entities agree to exchange a fixed interest rate payment (the OIS rate) *vis-à-vis* a floating interest rate payment computed over a notional principal amount during the tenor of the contract. The floating leg interest payment is derived by calculating the accrued interest payments from a strategy of investing the notional principal in a reference rate and repeating this on an overnight basis for the duration of the contract, reinvesting principal plus interest continuously. The floating rate for OIS contracts is the overnight (unsecured) interbank rate. Thus, the OIS rate is a combination of the current overnight interest rate, the expected future overnight rates, and the term premium (Lloyd, 2021). The use of OIS offers various advantages. First, counterparty risk is minimal in OIS contracts since it does not involve an exchange of principal amounts (Finlay and Olivan, 2012). Second, OIS contracts do not involve any initial cash flow and only the net payments are exchanged, thus minimising liquidity risk.

In India, the reference floating rate for OIS contracts is the Mumbai Interbank Offered Rate (MIBOR). The overnight MIBOR is traded on the basis of the inter-bank call money rate – the operating target of monetary policy. The 2-month OIS rate, which has the same tenor as the bi-monthly monetary policy cycle, gradually hardens over the ensuing two months if the market expects an increase in the policy repo rate in the upcoming monetary policy meeting and vice versa. OIS rates of longer maturity reflect expectations about the future path of the policy rate and the term premia in accordance with the expectation hypothesis of the term structure of interest rates – interest rates are expected to move in a way that equalises the expected return on short and long-term investment strategies for comparable investment horizons (Piazzesi and Swanson, 2008; Lloyd, 2021).

The daily average values of MIBOR-based OIS transactions have increased considerably since COVID-19 (Chart 1a). April 2023 data suggest that trading is primarily concentrated in the 1 year, 2 years and 5 years maturity segments, with the segments up to 1 year comprising more than 50 per cent of total trade volume (Chart 1b).

Since the beginning of the formal adoption of flexible inflation targeting (FIT) in October 2016, the OIS rates have tracked changes in monetary policy. After the sharp reduction in the policy rate following the outbreak of the pandemic in March 2020, OIS rates (up to one year) moved in tandem across maturities, indicating that market expectations were anchored to accommodative monetary policy (Chart 2). From 2021 onwards, longer term OIS rates firmed up above the 2-month rate, indicating market expectations of an eventual increase in the policy repo rate. With the progressive tightening of policy since May 2022, OIS

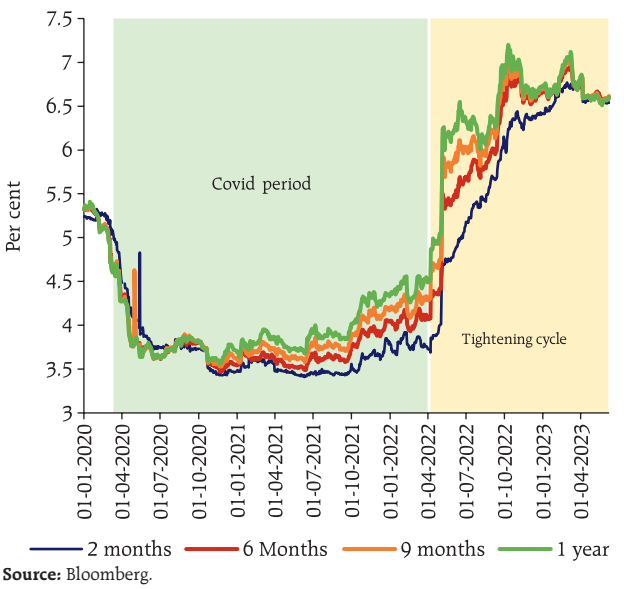
Chart 1: MIBOR-OIS Transactions



Source: Clearing Corporation of India Ltd.

rates across tenors firmed up with a steeper increase in longer maturities. Since then, the longer-term rates remained above the shorter-term rates till April 2023 when the MPC decided to pause. Thereafter, the OIS rates seem to have converged.

Chart 2: MIBOR-OIS Rates



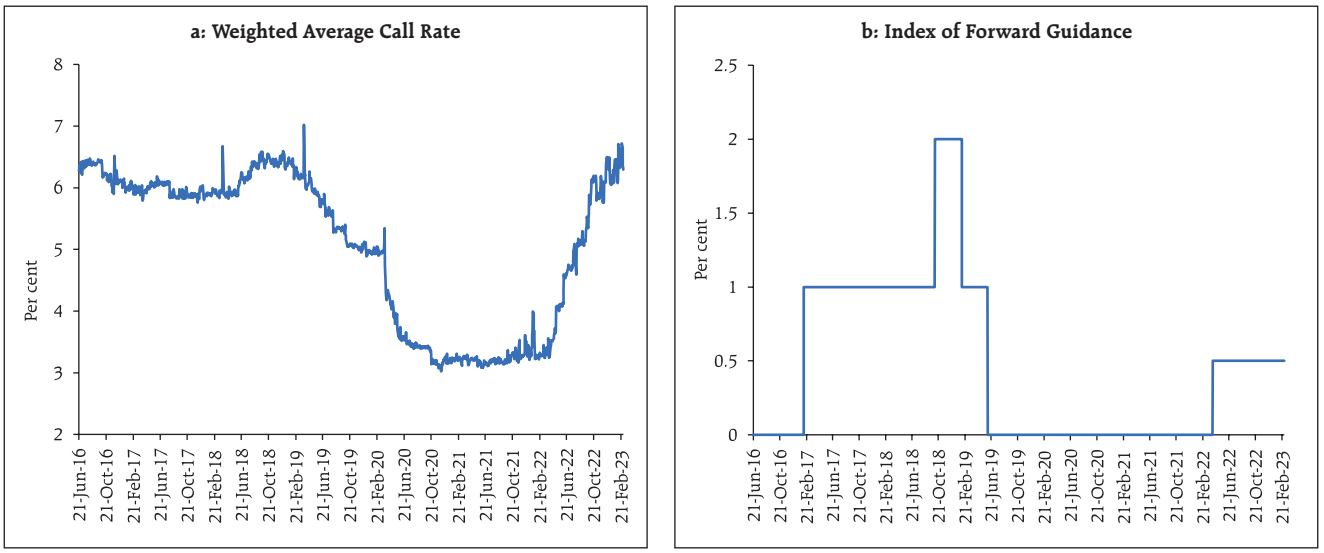
Source: Bloomberg.

III. Methodology and Results

We adopt a high-frequency approach that relies on daily movements in OIS rates. This is because movements in OIS rates that can be specifically attributed only to monetary policy related developments occur on the day of the policy announcement. This assumption is vital for the identification of monetary policy impulses on OIS rates since it strips out the variations that are associated with shocks due to other factors (Kuttner, 2001; Cochrane and Piazzesi, 2002; Hubert and Labondance, 2018).

Adapting from the recent literature cited above, monetary policy changes are bifurcated into two parts (a) policy actions *viz.* repo rate changes; liquidity measures; specific changes in the operating procedure such as an asymmetric corridor; and so on, and (b) explicit forward guidance (FG). The impact of policy actions is reflected in the movements of the weighted average call money rate (WACR), which is the operating target of monetary policy in India (Chart 3a). Adapting from Hubert and Labondance (2018), forward guidance is represented by an ordinal index measure of the form:

Chart 3: Measuring Policy Expectations



Sources: Bloomberg, Authors' estimates.

$$FG_t = \begin{cases} 2.0: \text{Calibrated Tightening} \\ 1.0: \text{Neutral} \\ 0.5: \text{Withdrawal of Accomodation} \\ 0.0: \text{Accomodative} \end{cases} \quad ...(1)$$

By construction, this index ranges between 0 to 2, with an increase indicating progressive tightening (Chart 3b). The increase is expected to have a positive effect on the long-term OIS rates, hardening policy rate expectations.

We regress the daily changes in OIS rates of different maturities (up to 1 year) on changes in the WACR and changes in the index. An interaction term is also incorporated into this equation to identify the differential impact of forward guidance on OIS rates at different levels of the monetary policy rate. Two separate sets of regression equations are estimated: with and without the interaction term. To address the autocorrelation problem in residuals, an auto regressive error term is added to the specification.

One of the standard assumptions of the classical linear regression model (CLRM) is constant variance (homoscedasticity) of the error term. In high frequency financial markets data, however, the variance of the error term changes over time mainly due to "volatility clustering" *i.e.*, periods of increased volatility followed by periods of relative calm. Under these conditions, volatility measures like implied volatility or other measures of variance can at best be comparative static indicators. On the other hand, an autoregressive conditionally heteroscedastic (ARCH) model allows the variance to change over time and is often used in situations characterised by short periods of increased variation. Apart from a mean equation, the ARCH model has a variance equation which expresses the variance of the error as a function of the squared error terms of previous time periods. The equations are estimated on daily data from June 2016 to February 2023 (1,626 observations) representing the flexible inflation targeting (FIT) period, during which forward guidance has been explicitly used for monetary policy communication. The ARCH model is estimated by using the maximum likelihood (ML) method[5] with the following specification:

[5] Estimating the parameters of a regression model using an ML method is accomplished by maximising the likelihood function - joint probability - of the observed data, so that it has the maximum probability (likelihood) of occurrence under the specified regression framework. Ronald A. Fisher introduced the ML method in a series of papers from 1912-1922 (Aldrich, 1997).

Table 1: Estimated Regression on OIS Rates

Independent Variables	Dependent Variables						
	ΔMIBOR	ΔOIS1M	ΔOIS2M	ΔOIS3M	ΔOIS6M	ΔOIS9M	ΔOIS1Y
ΔWACR	0.82***	0.23***	0.20***	0.15***	0.17***	0.14***	0.09***
ΔFG	0.01	0.00	0.02***	0.04***	0.08***	0.09***	0.14***
AR(1)	0.48***	0.74***	-0.12**	-0.06	-0.05	-0.03	0.02
constant	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Variance equation						
ARCH(1)	0.63***	0.98***	0.07***	0.40***	0.13***	0.10***	0.51***
constant	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***

Note: * p<0.05; ** p<0.01; *** p<0.001.
Source: Authors' estimates.

$$\Delta OIS_t^m = \alpha_0 + \alpha_1 \Delta WACR_t + \alpha_2 \Delta FG_t + \alpha_3 \Delta FG_t (Repo - 4)/2.5 + \xi_t \quad ...(2)$$

$$\xi_t = \rho \xi_{t-1} + \varepsilon_t \quad ...(3)$$

$$\varepsilon_t \sim N(0, \sigma_t^2) \text{ and } \sigma_t^2 = \gamma_0 + \sum_{j=1}^{n} \gamma_j \varepsilon_{t-j}^2 \quad ...(4)$$

Where

ΔOIS_t^m: is the change in OIS rates for a given maturity m.

$\Delta WACR_t$: represents the change in monetary policy actions (short-term interest rate).

ΔFG_t: is the change in forward guidance.

$\Delta FG_t (Repo - 4)/2.5$: is the interaction term representing the effect of change in forward guidance at different levels of the policy rate(Repo).

Equation (3) represents the auto regressive error term[6] and (4) is the variance equation with ARCH effects.[7]

The results indicate that the contemporaneous impact of policy actions is significant across all maturities of OIS rates, though progressively lower for longer-term rates, as expected. Forward guidance also has a statistically significant impact on OIS rates of maturities of 2 months and beyond – and hence on monetary policy expectations – with a relatively higher impact on longer-term OIS rates up to one year, which are in this exercise (Table 1).

As stated earlier, an interaction term is introduced to identify the differential impact of forward guidance on policy rate expectations at different levels of policy rates. The interaction term is found to be negative and

Table 2: Estimated Regression on OIS Rates with Interaction Term

Independent Variables	Dependent Variables						
	ΔMIBOR	ΔOIS1M	ΔOIS2M	ΔOIS3M	ΔOIS6M	ΔOIS9M	ΔOIS1Y
ΔWACR	0.82***	0.23***	0.19***	0.14***	0.16***	0.13***	0.07***
ΔFG	0.03	0.07***	0.42***	0.49***	0.54***	0.62***	0.65***
Interaction term	-0.03	-0.08***	-0.48***	-0.55***	-0.56***	-0.65***	-0.64***
AR(1)	0.48***	0.74***	-0.11**	-0.06	-0.03	-0.02	0.07**
constant	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Variance equation						
ARCH(1)	0.63***	0.98***	0.07***	0.44***	0.11***	0.09***	0.47***
constant	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***

Note: * p<0.05; ** p<0.01; *** p<0.001.
Source: Authors' estimates.

6 Controls for the autocorrelation in residuals.
7 Controls for the non-constant variance of residuals (ARCH effects).

Table 3: Varying Impact of FG on Policy Rate Expectations at Different Levels of Policy Rate

Repo Rate	Dependent Variables						
	ΔMIBOR	ΔOIS1M	ΔOIS2M	ΔOIS3M	ΔOIS6M	ΔOIS9M	ΔOIS1Y
4.00	0.03	0.07	0.42	0.49	0.54	0.62	0.65
4.25	0.03	0.06	0.37	0.44	0.48	0.56	0.59
4.50	0.02	0.05	0.32	0.38	0.43	0.49	0.52
4.75	0.02	0.05	0.28	0.33	0.37	0.43	0.46
5.00	0.02	0.04	0.23	0.27	0.32	0.36	0.39
5.25	0.02	0.03	0.18	0.22	0.26	0.30	0.33
5.50	0.01	0.02	0.13	0.16	0.20	0.23	0.27
5.75	0.01	0.01	0.08	0.11	0.15	0.17	0.20
6.00	0.01	0.01	0.04	0.05	0.09	0.10	0.14
6.25	0.00	0.00	-0.01	-0.01	0.04	0.03	0.07
6.50	0.00	-0.01	-0.06	-0.06	-0.02	-0.03	0.01

Source: Authors' estimates.

statistically significant for maturities of 1 month and beyond. This indicates that at higher levels of policy rates, the impact of forward guidance on policy rate expectations declines progressively (Table 2).

The results in Table 2 can be used to generate the impact of forward guidance on OIS rates at different levels of policy repo rates (Table 3). It is observed that as the repo rate increases, the impact of forward guidance on policy rate expectation declines. Notably, the impact of it on near term OIS rates, *i.e.*, where monetary policy action is expected to be the most potent, disappears as the policy rate crosses 5.5 per cent. In fact, as the level of policy rate reaches 6 per cent, forward guidance has a near zero impact on OIS rates except in the outermost maturity (one year). By the time the policy rate reaches 6.5 per cent, even this impact fades away.

IV. Conclusion

The experience with conducting monetary policy through the overlapping shocks of the pandemic and geo-political conflict sheds new light on the role of monetary policy communication, especially through forward guidance. While its utility at very low policy rates is unambiguously proven, its efficacy at higher rates is questionable. This is consistent with the asymmetric nature of the monetary policy cycle – the way down has a lower bound but the way up is technically unbridled by any upper bound.[8] Under heightened uncertainty, discretion in forward guidance is increasingly under active consideration of major central banks, as we cited at the start of this paper. Such views have been expressed in the context of India as well: " *...it would be inadvisable to provide specific guidance when we are in a tightening cycle and when we are experiencing such extreme uncertainty. The only forward guidance that we can provide is that we will remain vigilant, monitor every incoming information and data, and shall act appropriately to maintain price stability in the interest of strengthening medium-term growth*" (Das, 2023a). "*...Recognising that explicit guidance in a rate tightening cycle is inherently fraught with risks, the MPC has also eschewed from providing any future guidance on the timing and level of the terminal rate*" (Das, 2023b).

Our results indicate that forward guidance is a useful instrument of monetary policy in extraordinary times that warrant ultra-accommodation. In these periods, the policy rate itself is usually much lower than its normal level. In this context, forward guidance becomes valuable to the conduct of monetary policy because of its influence on longer-term interest rate expectations – the central bank leapfrogs the structure of interest rates in transmission and nudges long-term rates towards the level of the ultra-low short-term rates. It loses steam, however, as the policy rate increases. Separate articulation of forward guidance loses its relevance when monetary policy is in a tightening mode and the economy is returning to normalcy. At the other end of the spectrum, the utility of forward guidance when the economy is overheating can be the subject of future research and empirical verification when the current monetary

[8] Illustratively, the policy rate in Argentina was 97 per cent in May 2023, having been increased by a cumulative 5900 basis points.

policy framework encounters such an episode. In the interregnum, a pragmatic solution has been offered: "*… monetary policy can be well served by calibrating the size of the policy rate to the dynamics of the situation and the size of the change itself can convey the stance of policy… This approach can also be useful when the central bank is on a tightening mode and potentially help avoid policy turnaround from forward guidance via stance too far into the future, which in a highly volatile global scenario, may not even be a year. …*" (Das, 2019).

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A Prototype Dynamic Stochastic General Equilibrium Model for India

by Shesadri Banerjee, Harendra Behera and Michael Debabrata Patra ^

Dynamic Stochastic General Equilibrium (DSGE) models have become the workhorse organising frameworks among modern central banks for formulating and communicating monetary policy. A prototype DSGE model for India with open economy and New Keynesian properties estimated over the period 2004-05:Q1 to 2022-23:Q4 reveals that aggregate demand has become more elastic to changes in the real rate of interest after the shocks of the pandemic and the war in Ukraine; and disinflation has become costlier in terms of output sacrificed.

Introduction

Dynamic Stochastic General Equilibrium (DSGE) models have become the workhorse organising frameworks among modern central banks for formulating and communicating monetary policy. Built on microeconomic foundations to characterise intra- and inter-temporal choices, these models assign a key role to the expectations of economic agents about the uncertain future, making them dynamic. DSGE models typically involve a detailed specification of shocks – surprises in the form of mismatches between expectations and outcomes – that give rise to economic fluctuations, and this renders these models stochastic. They are also able to capture interactions between the behaviour of economic agents and policy actions within their general equilibrium structure. In response to criticism that DSGE models failed to predict the global financial crisis (Solow, 2010; Stiglitz, 2018; Blanchard, 2018), these models have evolved to incorporate financial intermediation and frictions, labour market mismatches, household heterogeneity and macroprudential policy tools in order to reflect emerging realities (Roger and Vleck, 2011; Galvao *et al.*, 2016; Ravn and Sterk, 2016; Ghironi, 2017; Christiano *et al.*, 2018; Kaplan *et al.*, 2018). In essence, DSGE models serve the purposes of story telling, policy evaluation and forecasting in a framework that connects business cycle fluctuations and stabilisation policies (Del Negro and Schorfheide, 2013).

Drawing on influential work on the theme[1], we sketch out a prototype DSGE model for India with open economy and New Keynesian properties[2]. We estimate the model over the period 2004-05:Q1 to 2022-23:Q4[3] to assess the structural changes in the economy and shifts in key wielding parameters characterising the conduct of monetary policy before the twin shocks of the pandemic and the war in Ukraine, and after them. The economy is conceptualised as comprising a representative household, which maximises the present value of satisfaction as a consumer, subject to a budget constraint; a representative firm maximising a discounted stream of profit as a producer in response to prospects of demand for its production; and the central bank which follows a feedback rule in the use of its policy instruments to achieve its mandate. All the agents are rational[4] and engage in collective interplay, which shapes demand-supply adjustments over time. This adjustment is, however, exposed to

^ 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] Smets and Wouters, 2003; 2007; Christiano *et al.*, 2005; Monacelli, 2003; Gali and Monacelli, 2005; Justiniano and Preston, 2010; Anand *et al.*, 2010; and Ca' Zorzi *et al.*, 2017.

[2] As discussed in Gali (2015), New Keynesian elements are incorporated *via* the assumptions of imperfectly competitive commodity markets and staggered price-setting behaviour of firms; the economy also engage in foreign trade and its economic agents can hold foreign bonds, giving it an open economy character.

[3] The choice of 2004-05 as the initial starting point coincides with it being the base year for both national accounts and wholesale price index. The terminal point is determined by data availability.

[4] Rationality implies that individuals make decisions based on all available information and learn from past events (Muth, 1961; Lucas, 1972, 1976).

the uncertainties of random shocks emanating from changes in productivity, aggregate demand, import prices and the external sector.

We attempt a baseline estimation for the sample period 2004:Q1 – 2019:Q4 (pre-pandemic), and then extend the sample to include the pandemic period (post-pandemic). Our results suggest that (i) aggregate demand has become more elastic to changes in the real rate of interest; and (ii) more output has to be given up for reducing inflation in the post-pandemic period relative to the pre-pandemic period. In Section 2, we provide some stylised facts as a backdrop for a broad description of the model in Section 3. The choice of data and period of study, and model estimation are discussed in Section 4. Section 5 presents the results and highlights the main shifts in the features of the Indian economy between pre- and post-pandemic periods. Section 6 concludes with some policy perspectives.

II. Stylised Facts

Commencing in 2003, the Indian economy experienced a phase of high growth relative to trend that lasted up to 2007 before it was interrupted by the global financial crisis (GFC). Real GDP growth averaged 7.9 per cent during this period. The economy slowed down in the immediate aftermath of the GFC to 3.1 per cent in 2008-09, but recovered during 2009-2013 and real GDP growth averaged 6.0 per cent. This recovery co-existed with double digit inflation (13.3 per cent during July 2009 - July 2010 and 10.1 per cent during June 2012 – November 2013), which moderated only with the institution of the pre-conditions for a flexible inflation targeting (FIT) framework. Average inflation was 3.9 per cent during 2016-20 with the *de jure* establishment of the FIT regime, in alignment with the inflation target of 4 per cent within a tolerance band of +/- 2 per cent around it.

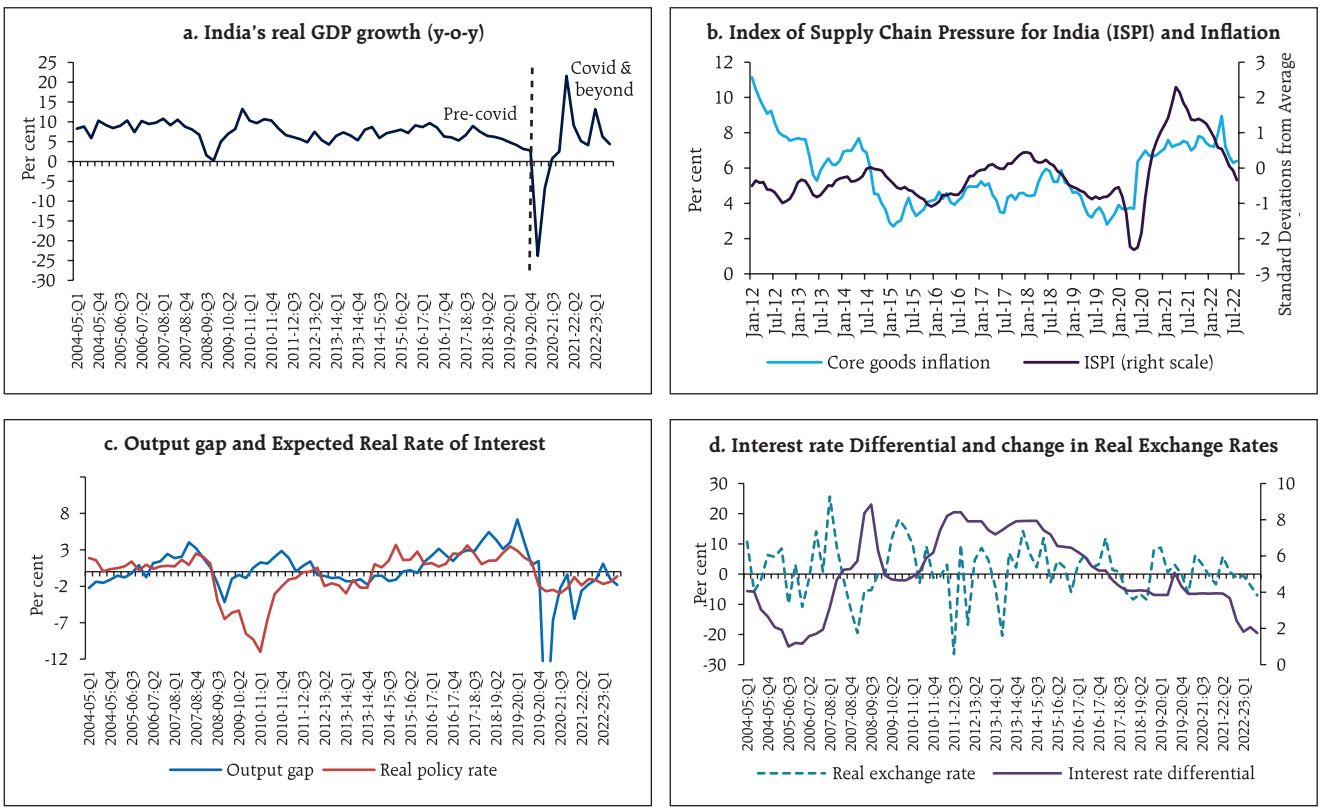
With the onset of the COVID-19 pandemic which was a 'once in a century' shock, India suffered among the deepest contractions in the world in 2020-21, with GDP declining by 23.4 per cent in Q1 (Chart 1). Fiscal stimulus and various conventional and unconventional monetary and liquidity measures were undertaken to protect "life and livelihood of people"[5]. In response, the economy started recovering in the second half of 2020-21, although GDP trailed below pre-pandemic levels. In early 2022, as inflationary pressures eased and signs of a recovery gained traction, the outbreak of war in Ukraine upended the situation and altered the trajectory of the world economy drastically. International commodity prices, especially the price of crude oil, shot up by more than 80 per cent during 2021-22. Supply chain pressures built up both globally and domestically, leading to mounting input cost pressures. Under the impact of these developments, CPI headline inflation breached the upper tolerance level of 6 per cent and stayed above it for ten months consecutively, dipping below to 5.7 per cent in March 2023 and to 4.7 per cent in April. For the year 2022-23 as a whole, inflation averaged 6.7 per cent, up from 5.5 per cent a year ago. It is expected to ease to 5.1 per cent in 2023-24[6]. Real GDP growth at 7.2 per cent in 2022-23 on top of 9.1 per cent in 2021-22 and is projected to ease to 6.5 per cent in 2023-24.

In this highly uncertain and rapidly changing macroeconomic environment, therefore, the question that is drawing animated discussion is: have the key structural relationships and/or driving forces in the Indian economy changed? We investigate this question through the lens of a prototype DSGE model that is presented and estimated in the following sections.

[5] Das, S., (2020). Indian Economy at a Crossroad: A view from Financial Stability Angle. Speech delivered at the 7th SBI Banking & Economics Conclave, State Bank of India, July 11, URL:https://rbidocs.rbi.org.in/rdocs/Speeches/PDFs/SBIS4443A645BE9C44F3B45F1B3AA2018EDF.PDF

[6] Resolution of the Monetary Policy Committee (MPC) June 6-8, 2023, Reserve Bank of India (RBI).

Chart 1: Stylized Facts



Sources: National Statistical Office; RBI; Authors' calculation.

III. Model Environment

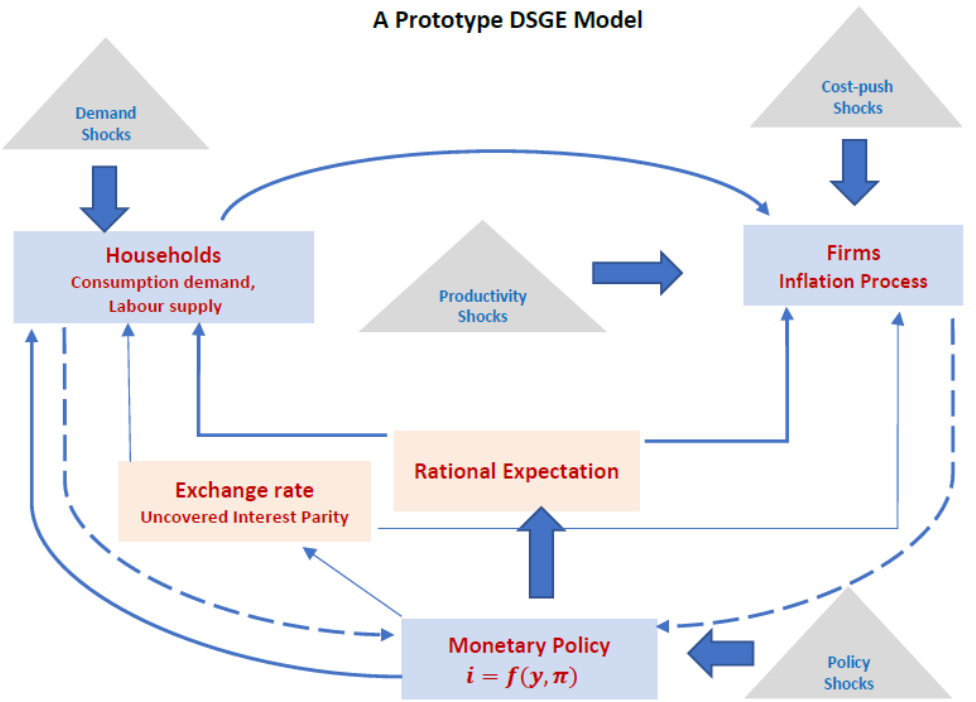
In our DSGE world, the household's consumption basket is a composite of domestically produced and imported goods and services. Consumption essentially involves a trade-off between current and future spending, subject to the degree of habit formation and the sensitivity of consumption demand to the expected real rate of interest. The household provides labour to the firm, which is the only input for production.

Turning to the production side, both domestic producers and importers exercise pricing power but face nominal rigidities like staggered price setting (Calvo, 1983)[7]. As regards the firm's profit maximising behaviour, we depict it through two supply relationships taking the form of New Keynesian Phillips Curves (NKPC) – one for domestically produced goods and services and the other for imported ones. These equations connect inflation dynamics of each category to cost pressures (real marginal cost for domestic production and markups on imported goods that drive a wedge between landed costs and retail prices), inflation inertia, *i.e.*, the magnitude of past inflation feeding into current inflation, staggered price setting or price stickiness and a discount factor which measures the influence of inflation expectations in determining current period inflation. Consumer price inflation is aggregated as the weighted average of domestic and imported inflation, with the weights representing the degree of trade openness and home bias[8].

[7] When a firm sets a price for its product, there is a constant probability that it will be able to reset the price independent of the time since it was last reset.

[8] Note that in the case of zero indexation to past inflation, absence of habit formation and zero degree of trade openness, the framework will reduce to the standard closed economy New Keynesian model with a dynamic IS curve, a forward looking NKPC and an interest rate rule.

Chart 2: Interplay among Model Building Blocks



Source: Authors' Illustration.

Monetary policy is conducted according to an interest rate rule that reacts more than proportionately to changes in inflation relative to target. The rule also stabilises output around its potential level (Taylor, 1993). There is a considerable degree of interest rate smoothing in which the policy rate is adjusted in a sequence of small steps and gradually.

To reiterate, in addition to staggered price setting, the model also features several structural rigidities as suggested in the business cycle literature such as (i) habit formation in consumption; (ii) indexation of prices set by firms to past inflation; (iii) uncovered interest rate parity (UIP) with external risk premium[9]; and (v) short-run deviations from the law of one price (LOOP)[10] (Adolfson *et al.*, 2007; Anand *et al.*, 2010).

The model incorporates a number of shocks like changes in the firms' productivity, importers' markups, risk in international financial markets, monetary policy, and disturbances from the foreign economy such as changes in global GDP, global CPI inflation and the US Federal Funds rate (Chart 2). All of these variables are assumed to be determined outside the model and to follow a first-order autoregressive process, *i.e.*, their current values depend on their one-period lagged realisations[11].

IV. Model Estimation

We calibrate some of the model parameters from the existing body of work on the Indian economy and estimate the others as they can vary spatially and over time. We consider eight macro-economic indicators, *i.e.*, output gap measured as the deviation of actual GDP from its trend (per cent); CPI inflation measured

[9] Under the UIP condition, the difference in interest rates between two countries will equal to the expected change in their exchange rates.

[10] In the model, the 'law of one price gap' is the difference between the foreign currency price and the domestic currency price of imports.

[11] Detailed modelling framework is provided in the Appendix.

as year-on-year (y-o-y) changes; the weighted average call money rate as a proxy for the policy rate; changes in the nominal exchange rate of the Indian rupee *vis-à-vis* the US dollar (seasonally adjusted annualised rate or saar); global GDP growth (y-o-y); world CPI inflation rate (saar); changes (y-o-y) in the terms of trade measured by the ratio of prices of import to export unit values; and the US Fed funds rate.

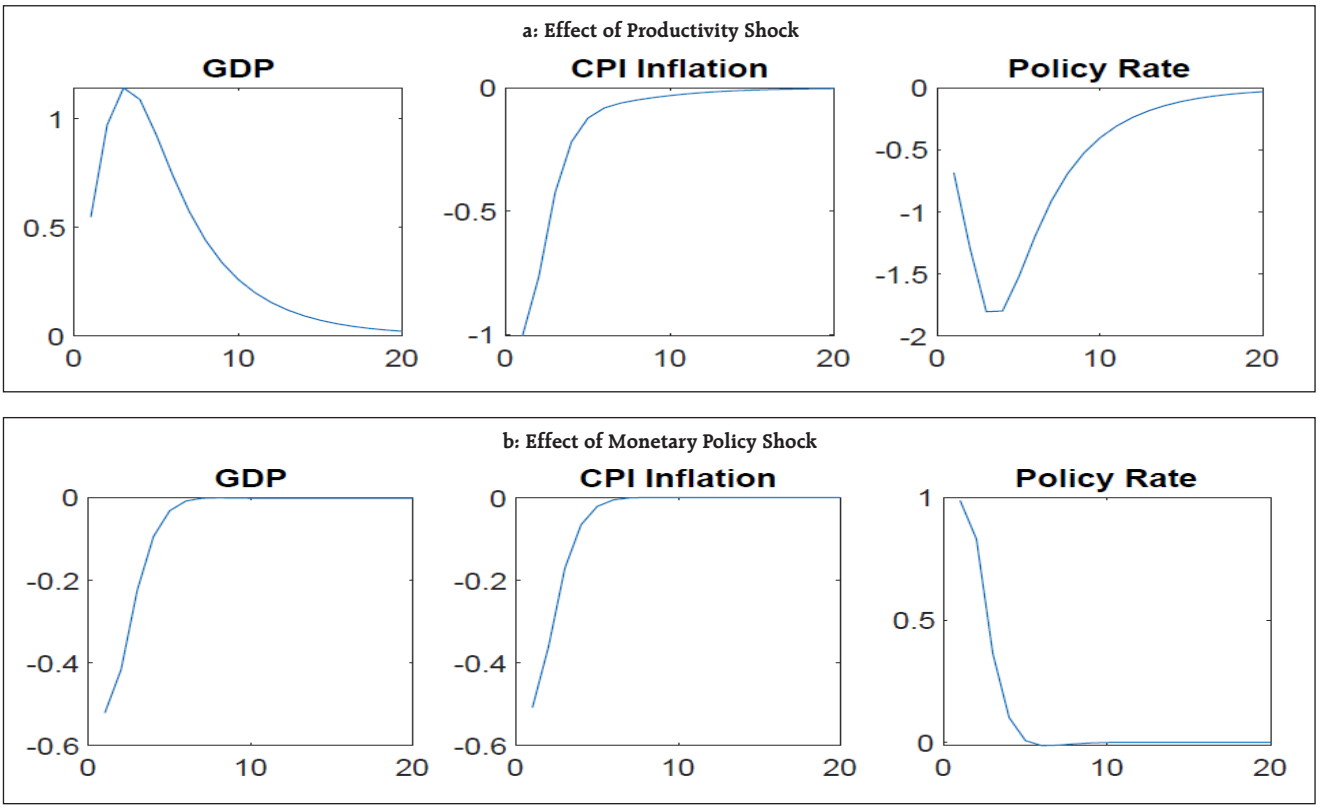
In our estimation routine, we apply Bayesian methods to estimate the following parameters: (i) degree of trade openness and substitutability between domestic and imported goods; (ii) (inverse) elasticity of substitution between current and future consumption and the degree of habit formation; (iii) price stickiness and past inflation indexation; (iv) coefficients of the Taylor-type policy rule; (v) first order persistence coefficients which indicate how long a shock to the system lasts; and (vi) the standard error of the shocks, which measures the degree of uncertainty the economy is facing.

We employ a two-step estimation procedure. In the first step, probable values of estimable parameters of the model are set up on the basis of *a priori* knowledge and proximate guidance in the literature as initial starting points or 'priors' with theoretically plausible probability density functions, since they are unknown or unobserved in real life[12]. For instance, the beta distribution is used for the degree of price stickiness, while the inverse gamma distribution is specified for the standard errors of the shocks because they take only positive values. We obtain the posteriors in five steps. First, the economic relationships and the eight observable variables with measurement equations are written in a Kalman filter recursion form. Second, the log likelihood function of the relevant parameter vector is constructed. Third, the log posterior kernel is derived from the probability distributions assigned to the priors. Fourth, the mode of this posterior kernel is computed by using standard numerical optimisation routines. Finally, a Gaussian approximation is constructed in the neighbourhood of this posterior mode by employing the Markov Chain Monte Carlo-Metropolis-Hastings (MCMC-MH) algorithm. We take 100,000 replications to implement the MH algorithm in which the first 50 per cent of the 'burn-in' observations are discarded to reduce the importance of starting values. Four parallel chains are used in the MCMC-MH algorithm with an acceptance rate of 26 per cent. This algorithm simulates the smoothed histogram that approximates the posterior distributions of parameters of our interest. The univariate and multivariate diagnostic statistics show convergence when comparing between and within moments of multiple chains (Brooks and Gelman, 1998). Based on the simulation exercise, the key impulse responses of the exogenous shocks to productivity and monetary policy are presented (Chart 3).

It is observed that a positive shock to productivity increases output and reduces real marginal cost that, in turn, lowers domestic inflation. Following the decline in inflation, the policy rate is reduced. In case of a positive shock to the policy rate, the rise in the policy rate increases the cost of current consumption *vis-à-vis* future consumption. Hence, consumers cut down present consumption demand which, in turn, entails a reduction in firms' production and thus, output shrinks. The real marginal cost of production drops and this leads to a decline in inflation. A 100 basis points (bps) rise in the policy rate is estimated to reduce the output gap by 50 bps and inflation by 45 bps over eight quarters.

[12] Probability density function is a statistical measure used to gauge the likely outcome of a discrete value of a variable.

Chart 3: Impulse Responses



Note: Impulse responses represent the percentage deviation of the variables from their steady state level with respect to one standard deviation shock.
Source: Authors' estimates.

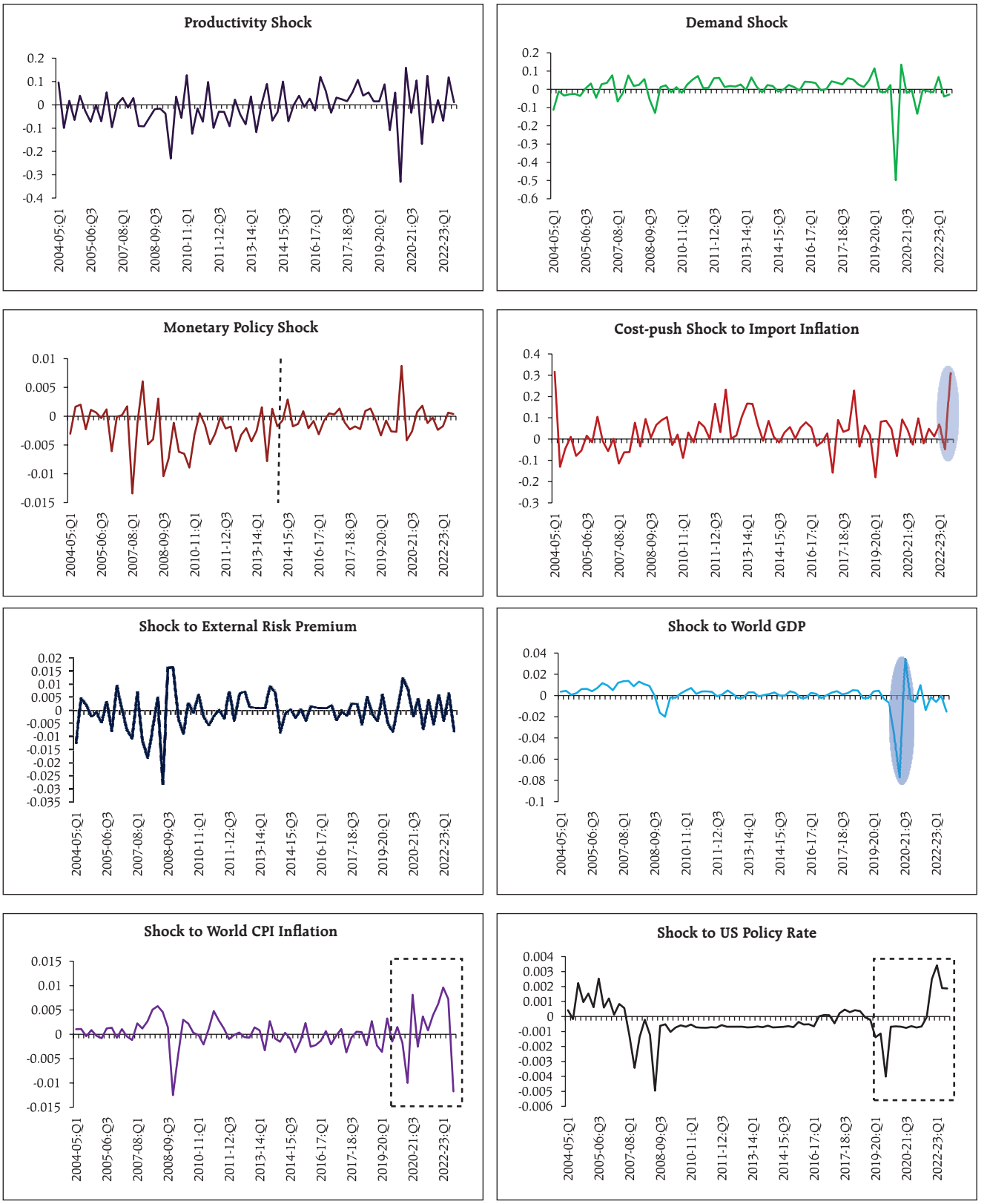
V. What has Changed in India after the Pandemic?

Given the sheer scale of the impact of the pandemic and the war, it is worthwhile to look for structural changes in the economy. The standard errors of shocks have increased considerably, indicative of the unprecedented nature of the shocks (Chart 4). Uncertainty related to productivity and demand has gone up by 2.9 and 1.5 times, respectively, in India and by 2.3 times for global output, in comparison with pre-pandemic levels.

On the demand side, there is a shift in the preference pattern of consumers. First, the substitutability between the current and future consumption has increased, revealing that the households have become more risk averse and prone to build up precautionary savings; and second, the habit of past consumption has lesser effect on current consumption. Although the share of imports in the consumption basket remains the same, its substitutability with domestic components has increased. These parametric shifts in household behaviour underline the change in the sensitivity of aggregate demand to interest rate changes, which during the period of twin shocks helped the transmission of policy impulses to support demand. Our estimation results show that interest rate sensitivity of aggregate demand has increased from 0.44 to 0.48.

On the supply side, changes are observed in the price setting behaviour of domestic firms in contrast to importing firms. First, the indexation of past inflation by domestic retailers has declined relative to importers. This implies that domestic firms have become more forward looking. Second, the price of domestic goods has become stickier, while price stickiness has dropped for imported goods. This

Chart 4: Estimated Shocks



Note: All the shocks are reported in percentage form.
Source: Authors' estimates.

Table 1: Estimated Parameters: Pre-COVID *vis-à-vis* Post-COVID

Parameters	Prior Mean	Prior	Std. Dev.	Posterior Mean	
				Pre-COVID	Post-COVID
Trade openness (α)	0.10	Beta	0.02	0.102	0.101
Elasticity of substitution between domestic & imported goods (η)	0.50	Beta	0.10	0.735	0.750
Inverse elasticity of inter-temporal substitution (σ)	2.00	Norm	0.50	1.769	1.723
Habit formation in consumption (h)	0.50	Beta	0.10	0.364	0.291
Past inflation indexation in domestic goods (δ_H)	0.50	Beta	0.10	0.321	0.302
Past inflation indexation in imported goods (δ_F)	0.50	Beta	0.10	0.404	0.411
Size of price stickiness in domestic goods (θ_H)	0.50	Beta	0.10	0.715	0.819
Size of price stickiness in imported goods (θ_F)	0.50	Beta	0.10	0.283	0.267
Size of interest rate smoothing (ρ)	0.60	beta	0.10	0.718	0.750
Output stabilising coefficient in policy rule (φ_y)	0.50	norm	0.10	0.507	0.544
Inflation stabilising coefficient in policy rule (φ_π)	1.50	norm	0.10	1.523	1.465
AR(1) coefficient of TFP shock (ρ_z)	0.80	beta	0.10	0.770	0.482
AR(1) coefficient of cost-push shock (ρ_{cp})	0.80	beta	0.10	0.943	0.944
AR(1) coefficient of demand shock (ρ_g)	0.80	beta	0.10	0.532	0.421
AR(1) coefficient of monetary policy shock (ρ_m)	0.60	beta	0.10	0.436	0.437
AR(1) coefficient of external risk premium (ρ_φ)	0.80	beta	0.10	0.833	0.831
AR(1) coefficient of global output (ρ_{y^*})	0.60	norm	0.10	0.879	0.775
AR(1) coefficient of global inflation (ρ_{π^*})	0.60	norm	0.10	0.535	0.568
AR(1) coefficient of global interest rate (ρ_{i^*})	0.60	norm	0.10	0.906	0.913
Std. error of Productivity shock (ε_z)	0.01	invg	Inf	0.0332	0.0974
Std. error of Cost-push shock (ε_{cp})	0.01	invg	Inf	0.0910	0.0982
Std. error of Demand shock (ε_g)	0.01	invg	Inf	0.0478	0.0700
Std. error of Monetary policy shock (ε_m)	0.01	invg	Inf	0.0143	0.0123
Std. error of External risk premium shock (ε_φ)	0.01	invg	Inf	0.0053	0.0055
Std. error of Global output shock (ε_{y^*})	0.01	invg	Inf	0.0053	0.0124
Std. error of Global monetary policy shock (ε_{i^*})	0.01	invg	Inf	0.0016	0.0016
Std. error of Global inflation shock (ε_{π^*})	0.01	invg	Inf	0.0029	0.0034

reveals a structural shift in the pattern of price setting, pointing to a decline in the sensitivity of inflation to demand. The responsiveness of inflation to real marginal cost, formally the slope of the NKPC has declined from 0.29 (pre-pandemic) to 0.24 (post-pandemic). This flattening of the Phillips curve makes the inflation-output trade-off costlier – every unit of disinflation costs more in terms of the sacrifice of output after the pandemic than before it[13].

On the policy front, the monetary policy rule appears to be stable with a modest increase in interest rate smoothing and output gap coefficients[14], and a mild decline in the inflation stabilising coefficient. Such changes in the coefficients can be attributed to the accommodative stance of monetary policy during the pandemic period and the current stance of withdrawal of accommodation that has been preferred over aggressive rate hikes.

[13] The recursive estimates from the model show a significant fall in the response of inflation to marginal cost at the time of pandemic leading to a lower slope coefficient in the post-pandemic period. However, the slope has started rising incrementally in subsequent period.

[14] Despite the accommodative stance of monetary policy in massive scale to tackle severe slacks in the economy, the coefficient of output gap in the policy reaction function has increased marginally on account of rise in amplitudes of output gap. Moreover, the post-pandemic sample contains mostly the periods of sustained reduction in the policy rate generating a higher value of interest rate smoothing parameter.

VI. Conclusion

The world is not the same after the overlapping shocks of the pandemic and the war in Ukraine. What has changed and how these shifts can be measured is our motivation in an environment in which evidence is still forming and the standard relationships that capture the interaction of monetary policy with the rest of the economy are fluid. Two salient results would inform the setting of monetary policy going forward. First, higher sensitivity of aggregate demand to changes in the real rate of interest that we find in the post-pandemic period indicates that smaller magnitudes of policy rate increases may be needed to quell inflationary pressures than in the pre-pandemic period. Second, the flattening of the Phillips curve points to higher costs of stabilisation than in the past. This will make disinflation strategies more costly in the future. As regards the finding that the transmission of cost pressures to inflation is more muted now than before, a caveat is in order: depressed demand conditions prevailed during the pandemic, and hence, our results may be subject to an end-point bias. Nonetheless, if the pandemic experience gets fully incorporated into expectations, the sacrifice ratio is set to increase – it will be costlier in the future for monetary policy to ensure price stability than in the pre-pandemic period. The conduct of monetary policy after the pandemic has become more complicated than before.

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Appendix

In this section, we describe our modelling framework drawing from the literature (Linardi, 2016; Justiniano and Preston, 2010; Anand *et al.*, 2010). The building blocks are as follows: households, domestic producers, retailers, external block, and the monetary authority.

A.1. Households

Households are assumed to maximise the present value of the expected utility as:

$$E_t \sum_{t=0}^{\infty} \beta^t \tilde{\varepsilon}_{g,t} \left[\frac{(C_t - H_t)^{1-\sigma}}{1-\sigma} - \frac{N_t^{1+\varphi}}{1+\varphi} \right]$$

where, N_t is the labor input, $H_t = hC_{t-1}$ is the external habit formation by the household; $0 < \beta < 1$ is the discount factor; $\sigma, \varphi > 0$ are the inverse elasticities of intertemporal substitution and labor supply, respectively; and $\tilde{\varepsilon}_{g,t}$ is a preference shock. Changes in $\tilde{\varepsilon}_{g,t}$ represent shocks to the household's impatience and acts as a traditional demand shock which affects desired consumption and saving exogenously (Sbordone *et al.*, 2010). C_t is a composite consumption index and specified as:

$$C_t = \left[(1-\alpha)^{\frac{1}{\eta}} C_{H,t}^{\frac{\eta-1}{\eta}} + \alpha^{\frac{1}{\eta}} C_{F,t}^{\frac{\eta-1}{\eta}} \right]^{\frac{\eta}{\eta-1}}$$

where, $C_{H,t}$ and $C_{F,t}$ are Dixit-Stiglitz aggregates of the domestic and foreign produced goods with $C_{H,t} = \left[\int_0^1 C_{H,t}^{\frac{\varepsilon-1}{\varepsilon}}(i)\, di \right]^{\frac{\varepsilon}{\varepsilon-1}}$; and $C_{F,t} = \left[\int_0^1 C_{F,t}^{\frac{\varepsilon-1}{\varepsilon}}(i)\, di \right]^{\frac{\varepsilon}{\varepsilon-1}}$, respectively. The share of imported goods in the domestic consumption bundle is denoted by α; $\eta > 0$; is the elasticity of substitution between domestic and foreign goods; and $\varepsilon > 1$ is the elasticity of substitution between the types of differentiated domestically produced and foreign goods.

Given that the only available assets are one-period domestic and foreign bonds; household's optimisation takes place subject to the flow budget constraint:

$$P_t C_t + D_t + \tilde{e}_t B_t = D_{t-1}(1 + i_{t-1}) +$$

$$\tilde{e}_t B_{t-1}(1 + i^*_{t-1})\phi_t(A_t)$$

$$+ W_t N_t + \Pi_{H,t} + \Pi_{F,t} + T_t$$

for all $t > 0$, where D_t and B_t denote households' one-period domestic and foreign bond holdings with corresponding interest rates i_t and i^*_t, respectively. The nominal exchange rate is $\tilde{e}_t$. P_t, $P_{H,t}$, $P_{F,t}$ and P^*_t correspond to the domestic CPI, domestic goods prices, the domestic currency price of imported goods and the foreign CPI, respectively. Wages W_t are earned on labor supplied and $\Pi_{H,t}$ and $\Pi_{F,t}$ denote profits from holding shares of domestic and imported goods firms. T_t denotes lump-sum taxes/ transfers.

We assume that all households in the home economy receive an equal fraction of both domestic and retail firms' profits. Therefore, nominal income in each period is $(W_t N_t + \Pi_{H,t} + \Pi_{F,t})$ which in equilibrium equals to $\{P_{H,t} Y_{H,t} + (P_{F,t} - \tilde{e}_t P^*_t) C_{F,t}\}$ for all households[15].

As in Schmitt-Grohe and Uribe (2003), the function $\phi_t(A_t)$ is taken as the debt elastic interest rate premium given by $\phi_t = exp[-\chi(A_t + \tilde{\phi}_t)]$, where, $A_t \equiv \left(\frac{\tilde{e}_{t-1} B_{t-1}}{Y P_{t-1}}\right)$ is the real quantity of outstanding foreign debt expressed in terms of domestic currency as a fraction of steady-state output and is a risk premium shock[16].

(Contd.)

[15] Households are assumed to have identical initial wealth, so that each faces the same periodical budget constraint, and therefore, make identical consumption and portfolio decisions.

[16] This functional form ensures stationarity of the foreign debt level in a log-linear approximation to the model.

The household's optimisation problem requires allocation of expenditures across all types of domestic and foreign goods, both intra-temporally and inter-temporally. This yields the following set of optimality conditions.

The demand for each category of consumption good is:

$$C_{H,t}(i) = \left[\frac{P_{H,t}(i)}{P_{H,t}}\right]^{-\varepsilon} C_{H,t}$$

$$C_{F,t}(i) = \left[\frac{P_{F,t}(i)}{P_{F,t}}\right]^{-\varepsilon} C_{F,t}$$

for all i with associated aggregate price indices for the domestic and foreign consumption bundles given by $P_{H,t}$ and $P_{F,t}$. The optimal allocation of expenditure across domestic and foreign goods produces the demand functions:

$$C_{H,t} = (1-\alpha)\left[\frac{P_{H,t}}{P_t}\right]^{-\eta} C_t \quad \ldots(1)$$

$$C_{F,t} = \alpha\left[\frac{P_{F,t}}{P_t}\right]^{-\eta} C_t \quad \ldots(2)$$

where, P_t is the consumer price index (CPI) and defined as:

$$P_t = \left[(1-\alpha)P_{H,t}^{1-\eta} + \alpha P_{F,t}^{1-\eta}\right]^{\frac{1}{\eta-1}} \quad \ldots(3)$$

Allocation of expenditures on the aggregate consumption bundle, optimal labour supply, and portfolio choice are determined by:

$$\lambda_t = \tilde{\varepsilon}_{g,t}(C_t - H_t)^{-\sigma} \quad \ldots(4)$$

$$\lambda_t = \tilde{\varepsilon}_{g,t}\left(\frac{P_t}{W_t}\right) N_t^{\varphi} \quad \ldots(5)$$

$$\lambda_t P_t = \beta E_t[(1+i_t)\lambda_{t+1}P_{t+1}] \quad \ldots(6)$$

$$\lambda_t \tilde{e}_t P_t = \beta E_t[(1+i_t^*)\phi_{t+1}\lambda_{t+1}\tilde{e}_{t+1}P_{t+1}] \quad \ldots(7)$$

for Lagrange multiplier λ_t.

A.2. Domestic Producers

There is a continuum of monopolistically competitive domestic firms producing differentiated goods. Calvo-style price setting is assumed along with the indexation to past domestic goods price inflation. Hence, in any period t, a fraction $(1-\theta_H)$ of firms set prices optimally, while the rest of firms $(0 < \theta_H < 1)$ adjust their prices according to the indexation rule:

$$P_{H,t}(i) = P_{H,t-1}(i)\left(\frac{P_{H,t-1}}{P_{H,t-2}}\right)^{\delta_H} \quad \ldots(8)$$

where, $0 < \delta_H < 1$ measures the degree of indexation to the previous period's inflation rate and $\pi_{H,t} = log\left(\frac{P_{H,t}}{P_{H,t-1}}\right)$. Since all firms have the chance to reset their price in period t, they face the same decision problem and set a common price $P'_{H,t}$. The Dixit-Stiglitz aggregate price index therefore evolves according to the relation:

$$P_{H,t} = \left[(1-\theta_H)P'^{1-\varepsilon}_{H,t} + \theta_H\left\{P_{H,t-1}(i)\left(\frac{P_{H,t-1}}{P_{H,t-2}}\right)^{\delta_H}\right\}^{1-\varepsilon}\right]^{\frac{1}{1-\varepsilon}}$$

Firms setting prices in period t face a demand curve:

$$Y_{H,T}(i) = \left\{\left(\frac{P_{H,t}(i)}{P_{H,T}}\right)\left(\frac{P_{H,T-1}}{P_{H,t-1}}\right)^{\delta_H}\right\}^{-\varepsilon}\left(C_{H,T} + C^*_{H,T}\right)$$

for all t and consider that the aggregate prices and consumption bundles are parametrically given to them.

It is assumed that the i^{th} good is produced using a single labor input $N_t(i)$ according to the relation: $Y_{H,t}(i) = \tilde{\varepsilon}_{a,t}N_t(i)$, where $\tilde{\varepsilon}_{a,t}$ is an exogenous technology shock. The firm's price-setting problem in period t is to maximise the expected present value of profits which yields:

$$E_t\sum_{T=t}^{\infty}\theta_H^{T-t}Q_{t,T}Y_{H,T}(i)\left[P_{H,t}(i)\left(\frac{P_{H,T-1}}{P_{H,t-1}}\right)^{\delta_H} - \left(\frac{\varepsilon}{\varepsilon-1}\right)P_{H,T}MC_T\right] = 0 \quad \ldots(9)$$

A.3. Retail Firms

Retail firms import foreign-produced differentiated goods for which the law of one price holds at the docks. In determining the domestic currency price of the imported good, firms are assumed to be monopolistically competitive. They face a Calvo-style price-setting problem allowing for indexation

(Contd.)

to past inflation. Hence, in any period t, a fraction $(1-\theta_F)$ of firms set prices optimally, while the other fraction $0 < \theta_F < 1$ of firms adjust their goods prices according to an indexation rule analogous to (8). The Dixit-Stiglitz price aggregator evolves as:

$$P_{F,t} = \left[(1-\theta_F)P'^{1-\varepsilon}_{F,t} + \theta_F \left\{P_{F,t-1}\left(\frac{P_{F,t-1}}{P_{F,t-2}}\right)^{\delta_F}\right\}^{1-\varepsilon}\right]^{\frac{1}{1-\varepsilon}}$$

for all t considering aggregate prices and consumption bundles as parametrically given. The firm's price-setting problem in period t is to maximise the expected present value of profits subject to the sequence of demand constraint:

$$C_{F,T}(i) = \left\{\left(\frac{P_{F,t}(i)}{P_{F,T}}\right)\left(\frac{P_{F,T-1}}{P_{F,t-1}}\right)^{\delta_F}\right\}^{-\varepsilon} C_{F,T}$$

The price re-optimisation exercise produces:

$$E_t \sum_{T=t}^{\infty} \theta_F^{T-t} Q_{t,T} Y_{F,T}(i) \left[P_{F,t}(i)\left(\frac{P_{F,T-1}}{P_{F,t-1}}\right)^{\delta_F} - \left(\frac{\varepsilon}{\varepsilon-1}\right)\tilde{e}_t P^*_{F,t}\right] = 0 \quad \ldots(10)$$

A.4. External Block

The uncovered interest rate parity condition follows from the asset-pricing conditions (6) and (7) that determine domestic and foreign bond holdings, and connect the relative movements of the domestic and foreign interest rate to changes in the nominal exchange rate:

$$E_t \lambda_{t+1} P_{t+1}\left[(1+i_t) - (1+i^*_t)\left(\frac{\tilde{e}_{t+1}}{\tilde{e}_t}\right)\phi_{t+1}\right] = 0 \quad \ldots(11)$$

Further, as in Kollmann (2002), we assume that the demand for the exportable ($C^*_{H,t}$) will evolve as:

$$C^*_{H,t} = \left(\frac{P^*_{H,t}}{P^*_t}\right)^{-\lambda^*} Y^*_t \quad \ldots(12)$$

where $\lambda^* > 0$, and Y^*_t is world output.

6.5 Monetary Policy

The central bank follows a feedback rule according to which the interest rate responds to deviations of inflation and output gap from their respective steady-state levels.

$$\left(\frac{i_t}{i}\right) = \left(\frac{i_{t-1}}{i}\right)^{\rho}\left[\left\{\prod_{j=0}^{3}\left(\frac{\pi_{t-j}}{\pi}\right)\right\}^{\varphi_\pi}\left(\frac{Y_t}{Y}\right)^{\varphi_y}\right]^{(1-\rho)} exp\{\epsilon^m_t\} \quad \ldots(13)$$

We close the model with goods market clearing condition using symmetric equilibrium; and equilibrium condition for the balance of payments. We assume that the fiscal authority is: (i) pursuing a zero debt policy with net supply of Dt=0 ; and (ii) imposing taxes equal to the subsidy as required to eliminate the steady-state distortion emerging from imperfect competition in the domestic and imported goods markets. Finally, the time paths of foreign variables are considered as autoregressive processes of order one.

*Quality of Public Expenditure and Economic Growth: An Empirical Assessment at Sub-National Level**

*by Ipsita Padhi^, Ranjeeta Mishra^, Samir Ranjan Behera^ and Deba Prasad Rath^*

A sustained improvement in the quality of public spending through higher share of productive expenditure can play a conducive role in supporting growth. A composite index of quality of public expenditure (QPE) is derived from five underlying indicators using a dynamic factor model for fourteen major States. Applying a pooled OLS framework, the QPE index is found to have a positive and statistically significant impact on GSDP growth, highlighting the pivotal role of States' expenditure quality in fostering higher growth.

Introduction

A sustained improvement in the quality of public spending, with a focus on infrastructure, research and development, health, education and other social services can play a conducive role in promoting an inclusive and sustainable economic growth (RBI, 2023). The channels through which such positive effects emerge are high multiplier benefits, crowding in of private investment, relieving critical supply constraints, improving productivity and ultimately raising potential growth (European Commission, 2012; Bose and Bhanumurthy, 2015; Cordes *et al.,* 2015). In India, at the sub-national level, States account for 60 per cent of general government expenditure, as against the global average for sub-national spending of about 30 per cent, and therefore the expenditure quality of State governments can have important implications for growth (Das, 2021). Moreover, State capex multipliers have been found to be higher than that of the Centre, underlining the pivotal role of States' expenditure quality in fostering higher growth (Jain and Kumar, 2013). Increasingly, the quality of life and the business environment in India is going to be defined by shifts in the focus of public policy that foster competitive federalism among India's States in achieving the aspirational goals of sustainable economic development (Patra, 2023). In this backdrop, this article seeks to analyse the trends in the quality of expenditure of State governments and investigate its impact on economic growth.

The quality of public spending has two complementary dimensions – (i) the composition of spending; and (ii) the effectiveness of policies. An improvement in the composition of public expenditure through a higher share of capital or developmental spending can have positive effects on growth. At the same time, the effectiveness of policies also matters – the same amount of expenditure could generate higher output if utilised more effectively; *e.g.,* good governance practices can generate better outcomes without necessitating more fiscal resources (Mohanty and Bhanumurthy, 2018). Most empirical studies on the impact of the quality of public spending on economic growth, however, focus on the first dimension as public-sector efficiency is very hard to measure (Busatto, 2011). Accordingly, the share of capital outlay in total expenditure (COTE), capital outlay as per cent of GDP (CO-GDP), development expenditure as per cent of GDP (DE-GDP) and revenue expenditure to capital outlay (RECO) ratio are some of the indicators commonly used in the literature to assess the quality of public spending (Misra *et al.,* 2021). The share of the revenue deficit in the gross fiscal deficit (RD-GFD) is also used as an indicator of the quality of spending as it indicates the proportion

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of borrowed resources exhausted on revenue expenditure rather than on growth-giving investment (GoI, 2021).

Using the above-mentioned indicators, we construct composite indices of quality of government expenditure for 14 major States that account for around 80 per cent of India's GDP for the period 2005-06 to 2019-20 and analyse its relationship with gross state domestic product (GSDP). We find that the quality of public spending has a positive impact on GSDP growth, underlining the need for States to step-up productive expenditures to spur economic growth, create jobs and raise living standards.

The rest of the article is divided into six sections. After a brief survey of literature in Section 2, Section 3 presents some stylised facts. The data and methodology are described in Section 4, while the results are discussed in Section 5. The final Section sets out the concluding observations.

II. Literature Review

There is a long-standing debate on whether government spending can lead to better growth outcomes with different schools of economic thought viewing this relationship as complex and dependent on a variety of factors (Bussato, 2011; Alqadi and Ismail, 2019). While the Keynesians acknowledge that government spending can help to stimulate economic growth by increasing demand for goods and services and boosting investment, the Ricardian school of thought is based on the premise that people are rational and will make decisions based on their expectations of future events. Accordingly, consumer expectations of future tax hike by the government to fund current government expenditure would make them sceptical about spending and induce them to save, which offsets the effect of government spending on economic growth. The neo-classical school of thought, on the other hand, proffers that increased government spending leads to competition and can crowd out private investment by increasing domestic interest rates (Alqadi and Ismail, 2019).

Majority of the empirical work devoted to addressing the issue of the impact of government expenditure on economic growth mostly relates to the *size*- dimension and not the *quality*- dimension (Cooray, 2009). In recent years, however, there has been a growing body of research focussing on the quality of government spending which suggests that the quality of government spending is important for economic growth (Barrios and Schaechter, 2008; Bussato, 2011; Masih, 2019). Assessment of the quality aspects of public expenditure with clear definitions and more disaggregated data on expenditure is important as it can help countries to better identify priorities of expenditure and get the desired results (Koroma, 2016).

The quality of government spending has some basic principles, which are priority, allocation, time, accountability, and effectiveness; and these are conducive to economic development, reducing poverty and enhancing the human development index (HDI) (Masduki *et al.,* 2022; Haque, 2019). Additionally, the quality of public expenditure is considered to be multi-dimensional; the different dimensions of public finance in a growth-oriented framework indicate that the impact on growth can run through six channels - the size of the government; the level of sustainability; the composition and efficiency of public expenditure; the structure and efficiency of revenue systems; the existence of/adherence to fiscal rules, institutions, and procedures; and lastly, fiscal governance (Barrios and Schaechter, 2008).

According to endogenous growth theory, the impact of fiscal policy on economic growth is contingent upon the composition and magnitude of public expenditure and taxation (Bleaney *et al.*, 2001). Several indicators have been identified in the literature to accurately depict the quality of expenditure of the government such as the ratio of

revenue expenditure to capital outlay [*i.e.*, capital expenditure *minus* loans and advances] and the ratio of revenue deficit to the gross fiscal deficit (Misra *et al.*, 2021). Furthermore, Banka (2022) proposes that the ratios of development to non-development expenditure and economic expenditure to social expenditure can also be considered as indicators of quality of expenditure.

The composition of public expenditure is often used for assessing the quality of public spending. Redirecting spending towards capital expenditure is found to have a positive effect on economic growth both in the short run and the long run, whereas expenditure on current consumption and subsidies is found to hurt economic growth in the long run (Sever *et al.*, 2011). For instance, countries with demographic burdens attributable to the ageing population would be incurring a considerable amount of public expenditure towards social security aspects, which may crowd out capital outlays thereby hindering economic growth (Colombier, 2011). Infrastructure development also has the potential to catalyse employment generation (Chingoiro and Mbulawa, 2016; Leigh and Neill, 2011). Additionally, government spending on education and health while keeping a balance on the investment in infrastructure, can reduce inequality, poverty, and unemployment (Campodonico *et al.*, 2014; Mekdad *et al.*, 2014). An increase in government expenditure on education by one per cent is found to increase GDP by more than one per cent in the case of Italy, Luxembourg, Slovenia and India (Zoran, 2017). Apart from the composition of expenditure, the effectiveness of expenditure also matters, *e.g.*, using data for fourteen Indian States, Jha *et al.* (2006) estimate that spending on higher, university, technical, vocational and adult education is more effective in poverty reduction as opposed to expenditure in elementary and secondary education.

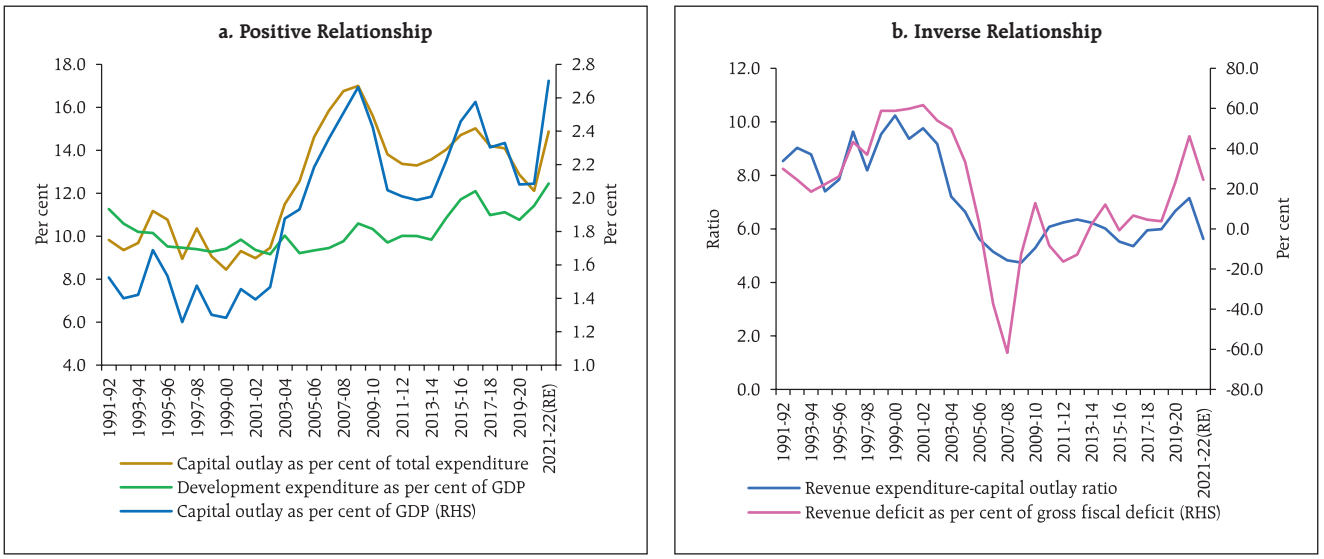
According to Mohanty and Bhanumurthy (2018), public expenditure is efficient when the government, using its given resources, produces maximum possible benefit for the country's population. *Ceteris paribus*, governments that produce more output while spending less on inputs can be viewed as more efficient than governments that produce fewer output and use more inputs. While measurement of public sector efficiency is complex, the authors have used outlays-outcome framework to measure the efficiency of government expenditures on social sector for the Indian States. They find that States are spending their resources more efficiently on education than on health and overall social sector spending. Further, they find that the quality of governance plays a vital role in improving the efficiency of public spending.

To summarise, most studies in the Indian context have focussed on analysing individual indicators of the quality of public spending which in isolation may not provide a comprehensive picture of the overall quality of expenditure. This paper contributes to the existing literature by generating a set of composite indicators of the quality of government expenditure at the State-level. Additionally, we use these indicators to empirically examine the impact of the quality of government spending on economic growth.

III. Stylised Facts

Five main indicators of government expenditure quality are considered in the study, *viz.*, share of capital outlay in total expenditure (COTE); (ii) capital outlay as per cent of GDP (CO-GDP); (iii) development expenditure as per cent of GDP (DE-GDP); (iv) revenue expenditure to capital outlay (RECO) ratio; and (v) share of revenue deficit in the gross fiscal deficit (RD-GFD). While the first three of these indicators share a positive association with the quality of government spending, the latter two are inversely related to the quality of spending with an increase in RECO or RD-GFD implying a worsening of the quality of government expenditure. Aggregated for all States[1],

Chart 1: Indicators of Spending Quality



Sources: Budget documents of state governments; and authors' estimates.

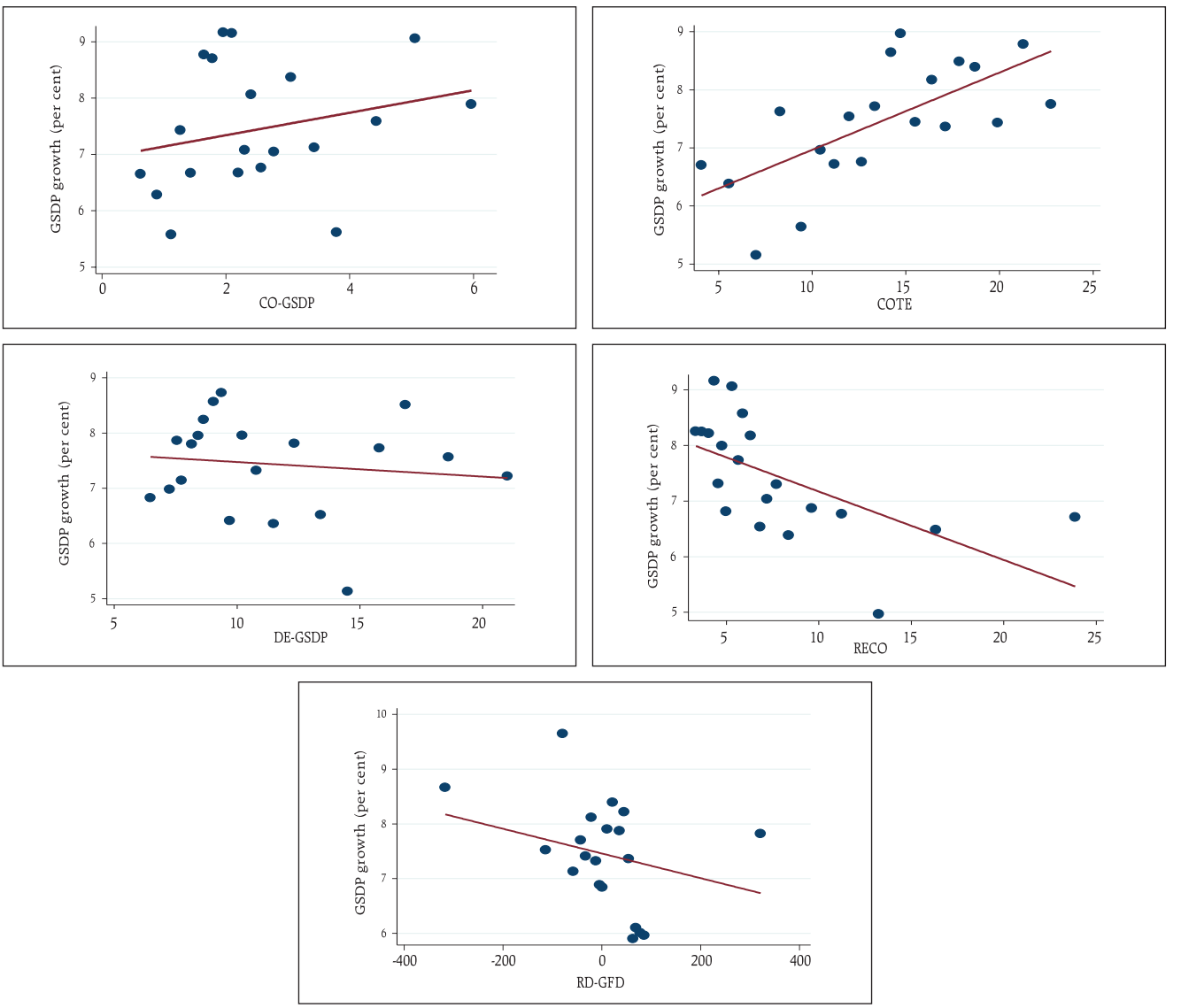
each of these indicators broadly shows similar trends with a notable improvement in government spending quality during the high growth years of 2003-04 to 2007-08, notwithstanding the fiscal responsibility legislations (FRL)-led fiscal consolidation during the period (Chart 1). A deterioration in the quality of expenditure, however, set in after the global financial crisis (GFC), which was arrested in 2014-15. During 2015-16 and 2016-17, the expenditure quality improved across most dimensions. Thereafter, from 2017-18 to 2019-20, the RECO and COTE show a sustained deterioration in the expenditure quality, but other indicators present a mixed picture. In 2020-21, COVID-19 dented government revenues while necessitating counter-cyclical spending (Rath *et al.*, 2023a). As States' focussed on medical and public health expenditure in response to the pandemic, development expenditure-GDP ratio increased while most of the other indicators of expenditure quality witnessed a deterioration. In 2021-22 (RE), the indicators signal a general improvement in spending quality, supported by a buoyant growth in tax revenues, higher tax devolution from the Centre, and long-term interest-free loans extended by the Centre for capex (RBI, 2023).

Turning next to State-level data on indicators of expenditure quality, we analyse data for 14 States for 15 years from 2005-06 to 2019-20[2]. We generate binned scatter plots to visualise this data effectively and examine the relationship between quality of public spending and economic growth. The data for the expenditure quality indicator is first partitioned into equal-sized bins, following which the average GSDP growth is calculated for each bin. A scatterplot of the average GSDP growth and average expenditure quality within each bin is then plotted and a linear fit representing the best linear approximation to the conditional expectation function is generated. The binned scatter plots show that higher CO-GSDP and COTE and lower RECO and

[1] Each indicator of expenditure quality is aggregated across States to obtain headline indicators of expenditure quality that represent all States. Since all States are considered, the ratios are expressed as per cent of GDP rather than sum of GSDP of all States.

[2] Since State-level data is being considered, the indicators of expenditure quality are now expressed as per cent of GSDP, *viz.*, COTE, CO-GSDP, DE-GSDP, RECO, RD-GFD.

Chart 2: Relationship of Indicators of Quality of Government Spending with GSDP Growth



Note: Extreme values have been excluded while generating the plots.
Source: Authors' estimates.

RD-GFD are associated with higher GSDP growth along expected lines (Chart 2). DE-GSDP, however, does not show a strong association with GSDP growth with higher development expenditure associated with slightly lower GSDP growth. This could be due to the lagged effect of developmental expenditure such as education and health spending on economic growth.

IV. Data and Methodology

The data set for this article covers 14 major Indian States[3] for the time period 2005-06 to 2019-20[4]. The set of variables includes real gross state domestic product

[3] These States are Andhra Pradesh, Bihar, Gujarat, Haryana, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Odisha, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, West Bengal. Together they account for around 80 per cent of India's GDP as well as around 80 per cent of total expenditure of States.

[4] This pertains to the period after the adoption of fiscal responsibility legislation by most States until the COVID-19 pandemic.

Table 1: Descriptive Statistics

Variable	Number of Observations	Mean	Standard Deviation	Minimum	Maximum
GSDP Growth	203	0.074	0.031	-0.017	0.162
QPE (log)	203	2.573	0.866	-0.254	3.858
Workforce Growth	203	0.003	0.043	-0.125	0.174
Fiscal Deficit (log)	203	9.413	0.930	5.622	11.052

Source: Authors' estimates.

(GSDP) growth, indicators of expenditure quality of States, workforce growth and gross fiscal deficit. The indicators of expenditure quality are used to derive the quality of public expenditure (QPE) index, the data for which is sourced from various issues of the State Finance Report of the Reserve Bank of India. The QPE index is generated for all-States as well as each of the 14 major States[5]. The GDP/GSDP data are obtained from National Statistics Office (NSO), Ministry of Statistics and Programme Implementation (MoSPI) and data for workforce is sourced from various rounds of the National Sample Survey reports. Table 1 lays out some descriptive statistics for the data set used in the regression model.

Identification of Quality of Public Expenditure Index

To capture the quality of spending, we derive a composite index of the five indicators, as previously mentioned, using a dynamic factor model (DFM) to extract a common factor from these indicators. The DFM is based on the premise that a small number of latent factors explain the common dynamics of a larger number of observed time series (Stock & Watson, 2016). The composite index provides a dynamic representation that captures the overall quality of spending. DFMs are dimension reduction models for multi-variate time series in which the observed endogenous variables are linear functions of exogenous covariates and unobserved factors, which have a vector autoregressive structure. Following Stock and Watson (1989, 1991), the parameters of DFMs are estimated by maximum likelihood (ML) in state-space form by using the Kalman filter to derive and implement the log likelihood. The unobserved factor is estimated using the following specification:

$$y_t = PF_t + \epsilon_t \quad \ldots(1)$$

$$F_t = \lambda F_{t-1} + \mu_t \quad \ldots(2)$$

Where, y_t is the vector of indicators of quality of expenditure, F_t is the common unobserved factor, λ, P are parameters and ϵ_t, μ_t are the error terms.

Main Regression Model

Apart from the quality of public expenditure, the main regression equation (3) includes fiscal deficit and workforce growth as control variables. The impact of fiscal deficit on growth would depend on several factors such as the state of the business cycle, the magnitude of fiscal deficit and the financing of the deficit (Adam and Bevan, 2001). Workforce participation can impact growth through its impact on the demand for goods and services and as an input in the production process (Kucharski and Kwiatkowski, 2020).

$$y_{it} = \alpha + \beta_1 QPE_{it} + \beta_2 workforce_{it} + \beta_3 fiscaldeficit_{it} + u_{it} \quad \ldots(3)$$

where y_{it} is the GSDP growth in State 'i' at time 't', QPE_{it} is the index of quality of public expenditure of State 'i' at time 't', $workforce_{it}$ and $fiscaldeficit_{it}$ represent the workforce growth and fiscal deficit,

[5] The indicators of expenditure quality are expressed as per cent of GDP when deriving the QPE index for all-States, *viz.*, COTE, CO-GDP, DE-GDP, RECO, RD-GFD whereas they are expressed as per cent of GSDP when the QPE index is derived for individual States, *viz.*, COTE, CO-GSDP, DE-GSDP, RECO, RD-GFD.

respectively of State 'i' at time 't', β refers to the regression coefficients and u_{it} refers to the error term.

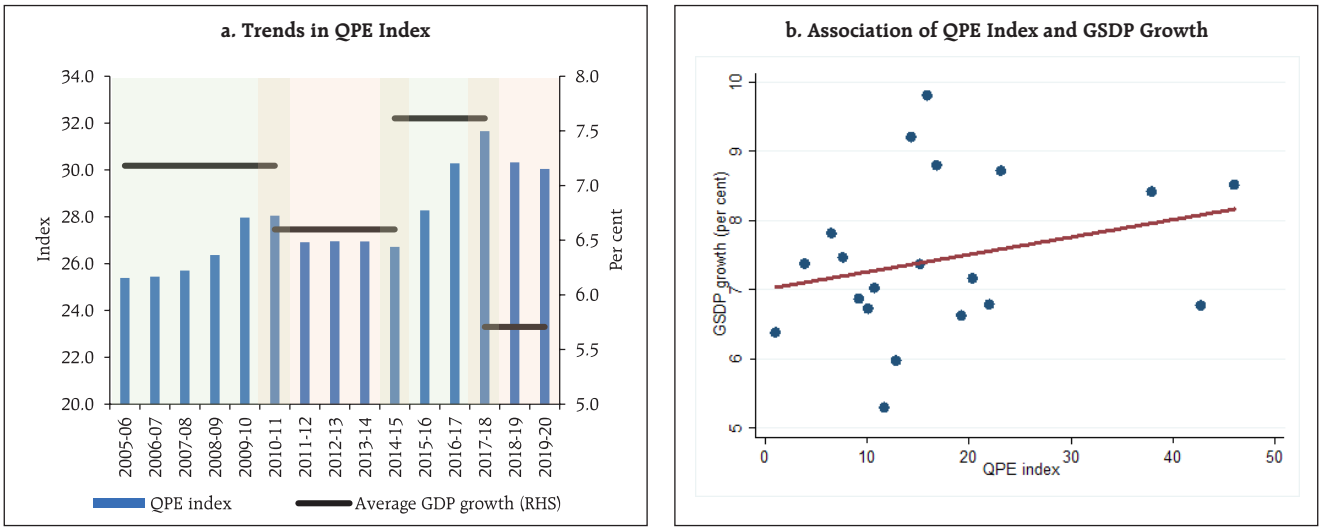
V. Results

The QPE index, aggregated for all States, is presented in Chart 3a, with the periods of improvement in the quality of government expenditure marked in green and the periods of deterioration or stagnation in the quality of spending marked in orange. It is observed that periods with enhanced quality of public spending are associated with higher average GDP growth while periods of poor or declining QPE index have lower average GDP growth. To investigate further, a binned scatter plot of the State-level QPE indices with GSDP growth is generated (Chart 3b). The best fit line is positively sloped suggesting that a higher QPE index is correlated with higher economic growth.

To empirically determine the impact of the quality of government expenditure on economic growth, we consider three different forms of estimation for the regression: fixed effects, random effects and pooled OLS[6]. However, since the Hausman test does not reject the null hypothesis that the preferred model is random effects, *i.e.*, that the individual characteristics are not correlated with regressors, with prob > χ^2 = 0.3552, the fixed effects model is not considered. Further LM test between the random effect regression and pooled OLS regression highlighted that there is no significant difference across the States, *i.e.*, no panel effect (prob > $\bar{\chi}^2$ = 0.0940). Accordingly, we resort to pooled OLS as our base model and estimate the pooled regression equation. The main results are presented in Table 2.

Controlling for the impact of workforce growth and fiscal deficit, we find that the index of quality of

Chart 3: Quality of Expenditure and Growth



Note: A higher value of QPE index implies improvement in the quality of expenditure and *vice versa*.
Source: Authors' estimates.

[6] The choice between fixed effects, random effects, and pooled OLS in panel data analysis depends on factors such as the presence of unobserved heterogeneity, the correlation between the unobserved effects and independent variables, and the research objectives. Fixed effects are preferred when there is correlated unobserved heterogeneity with the independent variables. Random effects are appropriate when unobserved heterogeneity is assumed to be uncorrelated with the independent variables. Pooled OLS should only be used when there are no concerns about unobserved individual or time-specific effects. Statistical tests, *viz.*, Hausman test is used to decide between fixed effects and random effects; and Lagrange Multiplier Test is used to determine whether random effects are significant in panel data models (Greene, 2008).

Table 2: Regression Results

Variables	Pooled OLS	Fixed Effects	Random Effects
QPE (log)	0.01***	0.02**	0.01*
	(0.00)	(0.01)	(0.00)
Workforce Growth	-0.13***	-0.13***	-0.13***
	(0.04)	(0.05)	(0.05)
Fiscal Deficit (log)	-0.01***	-0.01***	-0.01***
	(0.00)	(0.00)	(0.00)
Constant	0.12***	0.08**	0.12***
	(0.02)	(0.04)	(0.02)
Observations	203	203	203

Notes: (i) Conclusions are drawn based on the Pooled OLS model only;
(ii) Standard errors are given in parentheses;
(iii) *, ** and *** indicate significance at 10 per cent, 5 per cent and 1 per cent level, respectively.

Source: Authors' estimates.

government expenditure has a positive (statistically significant) effect on GSDP growth, which could be due to the higher share of government capital expenditure or due to higher share of developmental expenditure such as education, health or research and development. The significant association between the share of government capital expenditure and economic growth has been noted in previous studies (Cashin, 1995; Bose *et al.,* 2007). Government investment in capital goods is associated with higher rates of economic growth by increasing productivity, stimulating innovation and crowding-in private investment resulting in higher capital expenditure multipliers compared to revenue expenditure multipliers (Wahab, 2011). While capital expenditure multiplier is estimated to be well above unity for both the Union and State governments in India, revenue expenditure multiplier is found to be less than one as an increase in revenue expenditure has been associated with reduction in capital expenditure which affects private investment adversely and offsets the positive impact emerging from the consumption channel and ultimately increases the output by an amount less than one (Rath *et al.,* 2023b; RBI, 2022). The positive impact of development expenditures such as higher share of education and health expenditure on growth has also been documented (Zhang *et al.,* 2020; Kesavarajah, 2019; Bose *et al.,* 2007).

VI. Conclusion

With States accounting for around 60 per cent of general government expenditure and about 70 per cent of general government capital outlay (adjusted for defence spending), they have an important role to play in India's growth story. This paper provides a composite measure of quality of public expenditure of Indian States using a dynamic factor model (DFM) which tracks the evolution of quality of public expenditure over the years. Further, the empirical analysis of the expenditure quality of select States over the period 2005-06 to 2019-20 shows that an improvement in expenditure quality of States is associated with higher GSDP growth, underlining the crucial role of States' expenditure quality in realising higher growth.

These results assume critical importance as there has been a distinct shift in the compositional pattern of State government expenditure in favour of capital expenditure since 2020-21. As against the 30-year average of States' capital outlay at 1.9 per cent of GDP, their capital outlay is budgeted at 2.9 per cent of GDP in 2022-23 (BE), which bodes well for economic growth (RBI, 2023). The Central government has also been promoting capital expenditure at the sub-national level – it has extended the scheme for 'Special Assistance to States for Capital Investment' in 2023-24 with an enhanced allocation of ₹1.3 lakh crore. Under this scheme, the Centre has approved capital investment proposals of ₹56,415 crore in 16 States as of June 26, 2023. It has also been front-loading tax transfers to boost States capex – in 2022-23, the Centre released one extra instalment of devolution in August and another in November, as against the norm of releasing additional instalments towards the end

of the year; in 2023-24, one advance instalment has already been released in June. If States manage to use the available fiscal headroom to step up productive expenditures, the beneficial impact on growth would ensue.

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India @ 100

*by Harendra Behera, V. Dhanya, Kunal Priyadarshi and Sapna Goel^*

This article provides an indicative roadmap for enabling India to become a developed country by 2047-48, which would require India's real GDP to grow at 7.6 per cent per annum over the next 25 years, raising its current per capita GDP of US$ 2,500 to US$ 22,000. The sustainable path to development requires investment in physical capital and comprehensive reforms across sectors covering education, infrastructure, healthcare and technology to raise productivity. Collaboration between the government, private sector, civil society, and citizens is essential for driving this transformation.

Introduction

Addressing the nation on August 15, 2022 – the 75th year of India's independence – the Prime Minister laid down a vision for the next 25 years, to become a developed nation by 2047. As a nation with the largest democracy, rich cultural heritage, young and dynamic population, large middle-class and a rapidly growing economy, India is poised to make significant strides towards achieving this ambitious goal. To transform this vision into reality, several key factors must be addressed and prioritised while focusing on strong macroeconomic fundamentals, structural reforms, demographic dividend, manpower skilling, technological advancements, sustainable practices and good governance.

To become a developed country by 2047, India's per capita GDP needs to rise by 8.8 times from the current level[1]. This would largely depend on the policy changes and their effective implementation. This article explores the potential drivers of growth over the next 25 years and the challenges that may crop up necessitating timely and targeted policy responses to tackle them effectively.

The next Section presents the criteria to define a developed country and estimates the required growth rate for India to achieve that status. Section III explores the feasibility of India becoming a developed country by referring to cross-country growth experiences. Section IV examines the structural drivers of growth in India and the challenges. Section V provides the roadmap to achieve the target, followed by the conclusion in Section VI.

II. India as a Developed Country

No unique criterion is used to define a country as 'developed'. The World Bank classifies countries as low-income, lower-middle-income, upper-middle-income and high-income countries based on per capita income (PCI). As per World Bank classification, a country with a per capita income of US$ 13,205 or more in 2022-23 is classified as a high-income country. The International Monetary Fund (IMF) classifies countries into two major groups: advanced economies (AEs) and emerging market and developing economies (EMDEs) based on three criteria: (i) per capita gross domestic product (GDP); (ii) export diversification; and (iii) global financial integration. As PCI is the only common criterion and no PCI threshold is given for the advanced country category by the IMF, the lowest PCI recorded (US$ 18,427 for Croatia) among the AEs in 2022 is considered in this article as a benchmark to evaluate a country as an 'advanced' economy.

The Target

Based on the above two classifications of developed country, two scenarios are considered by

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[1] The year 2047 has been used interchangeably with the financial year 2047-48 throughout this article.

Table 1: Target Level of Per-Capita GDP for India in 2047-48
(Implicit Annual Average Real GDP Growth)

	Current	Projected	Advanced Economy (IMF Classification)	High-Income Country (World Bank Classification)
	2021-22	2022-23	2047-48	2047-48
Nominal GDP (USD billion)	3,150	3,388	49,069	35,025
Nominal Per Capita GDP (USD)	2,302	2,450	30,351	21,664
Required Nominal GDP (USD billion) CAGR (%)			11.3	9.8
Required Nominal Per Capita GDP (USD) CAGR (%)			10.6	9.1
Required Real GDP (INR) CAGR (%)			9.1	7.6

Sources: IMF; National Statistical Office (NSO); World Bank; Authors' calculations.

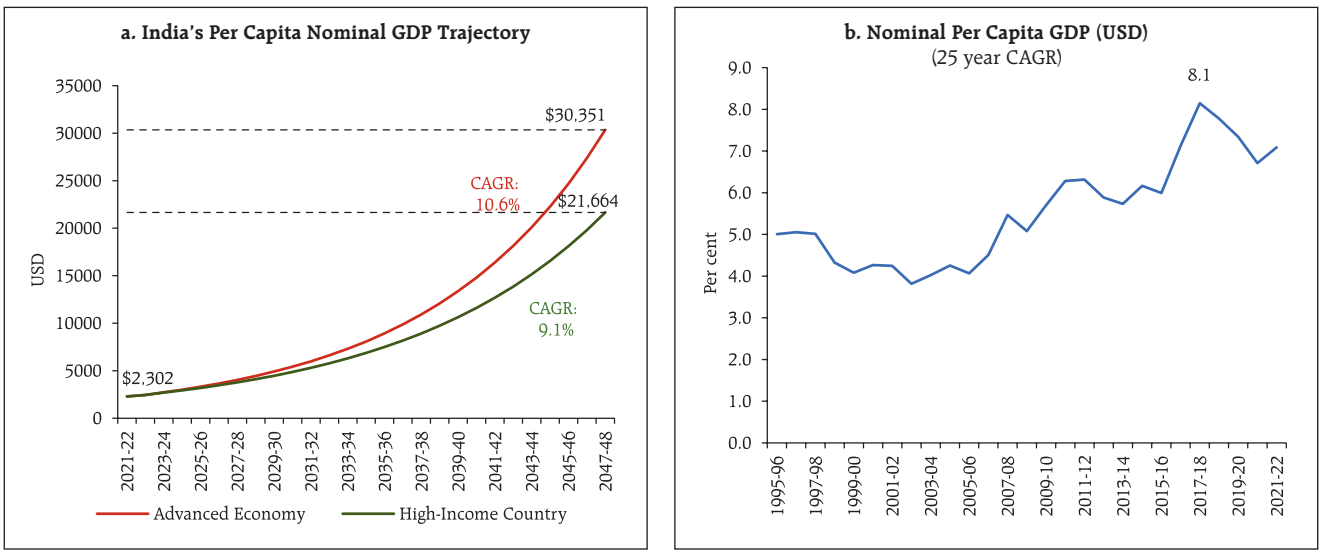
assuming annual average global inflation of 2 per cent until 2047-48 (Table 1)[2]:

1. The IMF classification of an AE: To achieve the status of an AE by 2047, a country's per capita nominal GDP must be more than US$ 30,351. To achieve this target, the real GDP compound annual growth rate (CAGR) required for India should be 9.1 per cent during 2023-24 to 2047-48.

2. The World Bank classification of a high-income country: A country's per capita nominal GDP must be more than US$ 21,664 to become a high-income country by 2047. To achieve this target, the required real GDP CAGR for India works out to be 7.6 per cent during 2023-24 to 2047-48.

To become an AE (high-income country) by 2047-48, India's per capita GDP in nominal terms would

Chart 1: Required Rate of Growth to Achieve the Target



Source: IMF; RBI; National Statistical Office (NSO); World Bank; Authors' calculations.

[2] India's inflation differential *vis-à-vis* AEs is assumed at 2 per cent until 2047-48; accordingly, the Indian rupee (INR) is expected to depreciate by 2 per cent per annum (with the remaining 2 per cent of the 4 per cent of India's inflation target being explained by productivity differentials). Population growth is assumed to grow at 0.6 per cent on average as projected by the United Nations for the calculation of per capita GDP.

have to record a CAGR of 10.6 per cent (9.1 per cent) (Chart 1)[3]. It may, however, be mentioned that the best India achieved over a period of consecutive 25 years in the past is a CAGR of 8.1 per cent during 1993-94 to 2017-18[4].

III. Feasibility of Attaining the Target: Cross-Country Experience

Achieving high growth over a long time is not a rarity in economic history; the episodes of sustained high growth phases are more recent and highlight the importance of technology and globalised markets in sustaining high growth. It may be stated that India must surpass its preceding record to achieve the nominal per capita GDP of 9.1 per cent growth target. The growth record of our neighbouring countries which managed to achieve this target during their respective high growth phases over a period of 25 consecutive years suggests that most of these countries had started from a low level of income. The highest CAGR was registered by South Korea – 17.9 per cent during 1966-1990, starting from a low per capita GDP of US$ 109 in 1965 to reach US$ 6,610 in 1990. China, though not an AE or high-income country yet, grew robustly at 10.9 per cent during 1983-2007 from a level of US$ 203 in 1982 to US$ 2,694 by 2007. The growth trajectories experienced by other countries during their respective take-off phases, thus, show that India's prospects of becoming a developed nation by 2047 are feasible.

Two common characteristics that marked the transition towards the high income status in these countries are the conscious decision to industrialise and focus on external trade. South Korea, Singapore and China placed special emphasis on industry – especially manufacturing – to propel their growth. Further, the development requirement for the manufacturing sector was met by quality infrastructure and a low cost and trained labour force.

A corollary to the conscious decision to promote manufacturing sector was the export orientation which provided markets and helped in improving the efficiency of firms. Their targeted measures include**:** (i) exchange-rate depreciation; (ii) export promotion *via* preferential credit allocation, tax exemptions, and other direct measures favouring export promotion; (iii) harnessing comparative advantage in labour-intensive manufacturing and, later, increasing capital-intensive or skill-intensive products; and (iv) policies that favoured new industries with export potential. Furthermore, they were helped by the rapid growth of world income during the 1960s and the beginning of the 1970s which increased demand for exports.

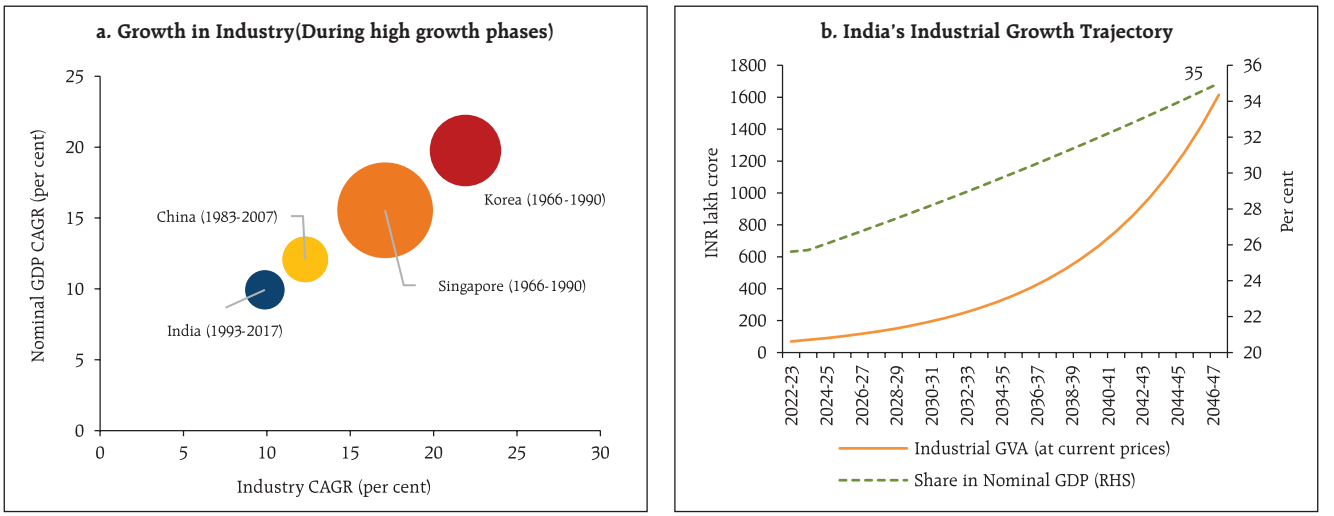
Compared to these countries, which underwent structural transformations from agriculture to industry to services sector, India leapfrogged into the services sector while the industrial sector remained stagnant. To sustain growth over the next 25 years, India must rebalance its economic structure by strengthening its industrial sector which has strong backward and forward linkages. Besides providing employment opportunities, a wider industrial sector would mean that India would be able to meet domestically the increasing demand from the burgeoning population. Accordingly, it is expected that India's industrial sector should increase its share from the current 25.6 per cent to 35 per cent by 2047-48 with manufacturing occupying a 25 per cent share in total value added. This would require the industrial sector to grow at a nominal CAGR of 13.4 per cent (Chart 2).

While these economies majorly focused on manufacturing exports, the current scenario warrants attention on services exports too. Given India's comparative advantage in services exports, if it manages to sustain the growth in exports of goods and services (nominal) at 13.3 per cent over the next

[3] Hereafter, all the analyses are based on the World Bank classification and 'developed is' used synonymously with 'high income'.

[4] It may be noted that the period was also marked by high inflation.

Chart 2: Growth Drivers: Industry

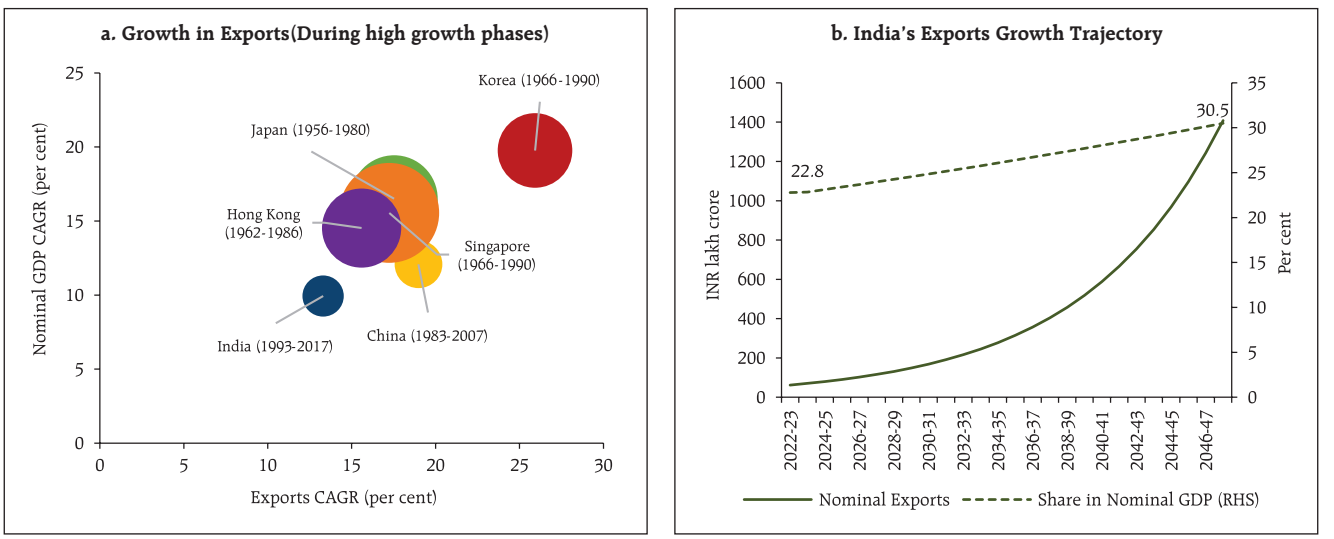


Notes: (i) Bubble size represents per capita GDP (USD) at the end of the growth period; (ii) Industry includes mining and quarrying, manufacturing, electricity, gas, water supply and other utility services and construction.
Source: NSO; World Bank; Authors' calculations.

25 years (as observed during the high growth phase of 1993-2017), their share in GDP would increase from 22.8 per cent in 2022-23 to 30.5 per cent by 2047-48 (Chart 3).

Another feature that marked the growth path of these economies was the gradual transition from an agriculture-led to an industry and services-led economy with the share of the agriculture sector reducing to below 5 per cent of GDP (Table 2). At the time of India's independence, agriculture accounted for more than 50 per cent share which has declined gradually over the years. Going forward, the share of agriculture would have to come down with the rise in the share of services as observed in AEs. Accordingly, agriculture would have to grow at a CAGR of 4.9 per cent and the services sector by 13 per cent in the

Chart 3: Growth Drivers: Exports of Goods and Services



Note: Bubble size represents per capita GDP (USD) at the end of the growth period.
Sources: NSO; World Bank; Authors' calculations.

Table 2: Share in Nominal GDP: 2022

Countries	Industry	Services	Agriculture	Exports
South Korea	31.8	58.2	1.6	48.3
China	39.9	52.8	7.3	20.7
Japan	28.8*	69.9*	1.0*	18.2*
Singapore	24.2	70.9	0.0	186.6
Hong Kong	6.0*	89.7*	0.1*	193.9
Average sectoral mix	**26.4**	**67.8**	**2.1**	**93.2**
India	**25.6**	**48.6**	**16.6**	**22.4**

*: Latest data are available for 2021.
Sources: World Bank; Authors' calculations.

coming 25 years to have a sectoral share of 5 per cent and 60 per cent, respectively, by 2047-48.

For realising these growth targets, India needs a development strategy focusing on sustained economic growth with structural change. Along with achieving high per capita income, the goal should be to accomplish all-round development ensuring quality of growth and sustainability in the use of natural resources. In the next section, we explore the growth drivers in detail.

IV. Growth Drivers

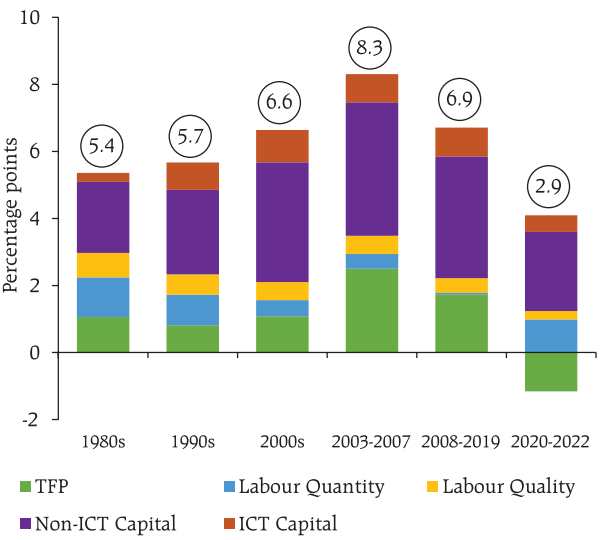
Growth Accounting

The neoclassical growth theory postulates that economic growth is the result of three factors – labour, capital, and technology (Solow, 1956; Swan, 1956; Solow, 1957). An increase in employment and investment or technological advancement can increase the growth of an economy. A rise in savings rate or higher capital inflows can contribute to the capital accumulation of a country. Similarly, employing more people in the production process (or a high labour force participation rate) can increase the contribution of labour to overall output. While a country may have limited resources to generate employment or add more capital, it can boundlessly increase the contribution from technology to grow. Therefore, a persistently higher rate of growth can be achieved by creating new forms of technology and efficient and effective means of production – generally termed as total factor productivity (TFP) – through investments in human capital and research and development (R&D) (Romer, 1986, 1990; Aghion and Howitt, 1992).

The growth accounting exercise reveals that India's growth is mainly driven by non-information and communications technology (non-ICT) capital. Despite India being a labour-abundant country, the contribution of both quantity and quality of labour to overall growth is diminutive. TFP played a major role during the high growth-phase of 2003-07 with its contribution coming down in the post-GFC period and turning negative during the pandemic (Chart 4). The impact of a decline in productivity during the COVID-19 pandemic is partly offset by contributions from strong employment growth during 2021-2022; however, the overall growth suffered due to lower contributions from other accounts mainly from ICT and non-ICT capital.

To assess the feasibility of maintaining an annual real GDP growth of 7.6 per cent over next 25 years, a baseline scenario along with five alternative scenarios are being generated within growth accounting framework for the period 2023-47. These scenarios

Chart 4: Sources of Economic Growth



Source: The Conference Board.

Table 3: Assumptions on Growth in Factors of Production for Longer-term Projections

Variables	Baseline	Alt_Skill	Alt_Cap	Alt_ICT	Alt_Skill_Cap_ICT	2047 Target
Labour Hours	Same as employment growth	Baseline	Baseline	Baseline	Baseline	Baseline
Labour Quality (Skill set)	5-year moving average	Baseline *plus* a gradual increase of 0.1 pp in first year, 0.11 pp in 2nd year, 0.12 pp in 3rd year, so on.	Baseline	Baseline	Alt_Skill	Alt_Skill
ICT	5-year moving average	Baseline	Baseline	Average growth observed during 2003-19	Alt_ICT	Alt_ICT *minus* 5 pp
Non-ICT	5-year moving average	Baseline	A gradual rise in growth by 0.2 pp up to 2033	Baseline	Alt_Cap	Alt_Cap *minus* 0.25 pp
TFP	Average growth observed during 2003-16	Baseline	Baseline	Baseline	Baseline	Baseline plus a gradual rise in TFP by 0.05 pp for initial 5 years and subsequently by 0.01 pp.

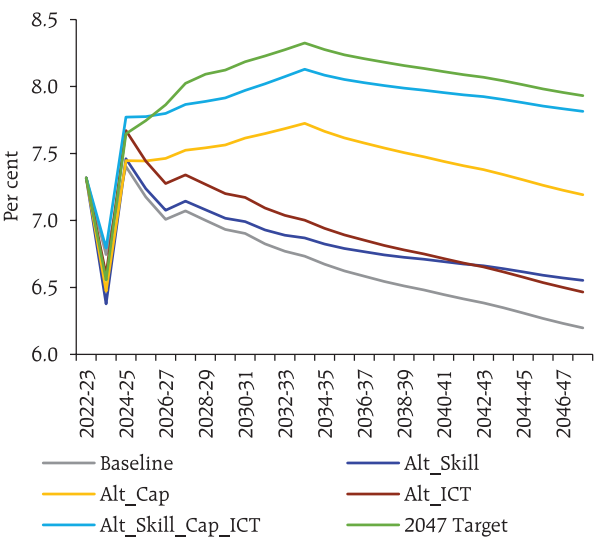
pp: percentage points; Alt: Alternative; ICT: Information and Communication Technology

Notes:
(a) Employment numbers are generated by using United Nation Working age population and a gradual rise in labour force participation rate by 1 pp per year from the level of 40 per cent in 2022.
(b) Reflecting the impact of new education policy and several measures undertaken by the Government, the skill set is assumed to grow gradually and slowly.
(c) TFP in baseline scenario is assumed to grow at relatively higher rate, as observed during 2003-16, reflecting various measures undertaken by the Government.
(d) Non-ICT capital growth is assumed to be lower as compared to a very strong growth experience in the past; but higher than the current growth rate.
(e) Share coefficients are assumed at 5-year moving average levels.

involve different assumptions regarding all factors of production and their respective shares in overall output (Table 3).

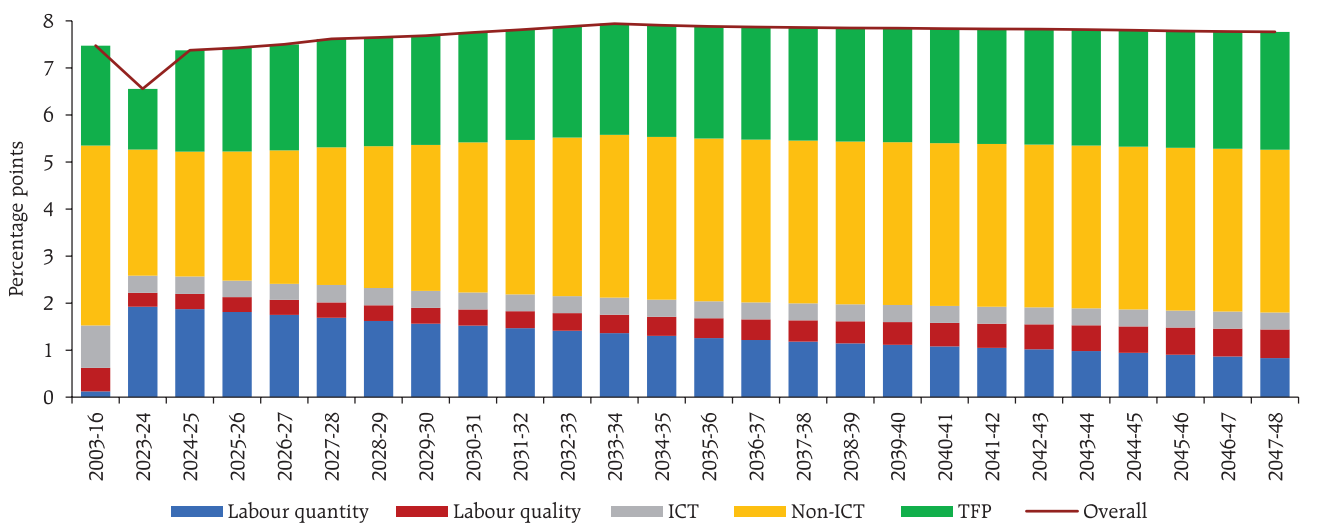
Various scenario analyses underscore the importance of concerted action across sectors for achieving high-income economy status (Chart 5). By continuing the status-co, as assumed under the baseline scenario, the projected growth falls significantly short of the target required to attain developed country status. Even with an increase in skills or assuming a higher growth rate in ICT capital as observed during 2003-19, India's growth would still fall considerably below the target. While higher growth in physical capital could provide some boost to the growth momentum, it still falls short of the desired growth (Alt_Cap scenario). However, higher growth in labour quality and capital (Alt_Skill_Cap_ICT scenario) or a combination of improvements in labour quality, ICT and non-ICT capital and greater productivity growth (2047 Target scenario), would assist India in its journey towards becoming a developed nation.

Chart 5: Scenarios of Real GDP Growth Paths



Source: Authors' calculations.

Chart 6: Required Factor Contributions to Achieve the Target



Source: Authors' calculations.

Therefore, it is necessary to focus on larger contributions from physical capital and TFP (Chart 6). At the same time, improvement in labour quality should be a continuous endeavour as it plays a major role in enhancing TFP. It becomes crucial to increase capital per worker, as this would enhance the productivity and efficiency of the workforce. By emphasising the importance of capital investment and technological advancements, India can empower its workers to produce more efficiently, ensuring sustained economic growth in the long run.

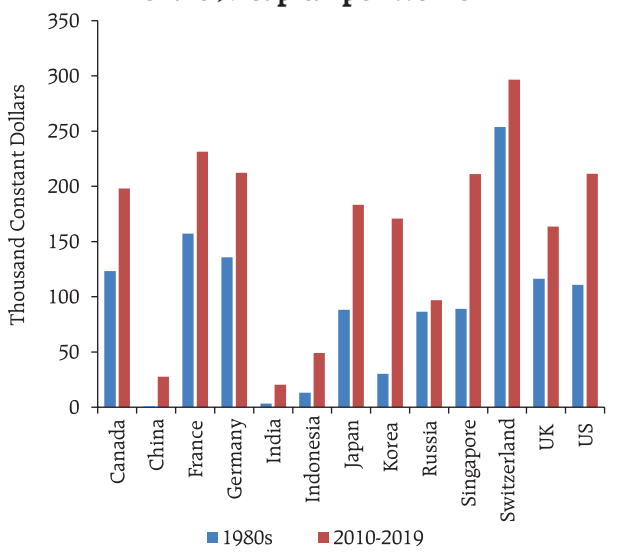
Challenges

Accumulation of Capital to Upscale Production

India's path to a developed nation by 2047 would crucially depend on developing both physical and human capital. In India, investments are mainly financed by domestic savings and a small portion through capital inflows. Saving and investment rates picked up following liberalisation with private capital playing an increasingly important role in total capital formation. India's savings rate has, however, declined gradually from 37.8 per cent in 2007-08 to 30.2 per cent in 2021-22 with investments also witnessing a slowdown. Given the development requirements of the country, capital accumulation needs to be at a faster rate with focus on both domestic and external sources for capital formation. Considering that a significant portion of India's household savings primarily consists of physical assets, gold and silver, there is a crucial need to efficiently mobilise and direct these resources towards investments.

Though the Indian economy is becoming increasingly capital-intensive, the rise in capital per worker and capital-output ratio is more of a recent phenomenon. Still, India's capital per worker remains lower as compared to the AEs and other peer countries (Chart 7). This hinders economic growth by reducing productivity, impeding innovation and technological progress. At the sectoral level, it has been found that the rise in capital intensity in construction and mining sectors failed to translate its disproportionate use of capital into productivity (Krishna *et al.*, 2022). Hence, it is important to focus on increasing capital investment as well as its productivity.

Chart 7: Capital per Worker



Sources: IMF; OECD; The Conference Board; India KLEMS Database; Authors' calculations.

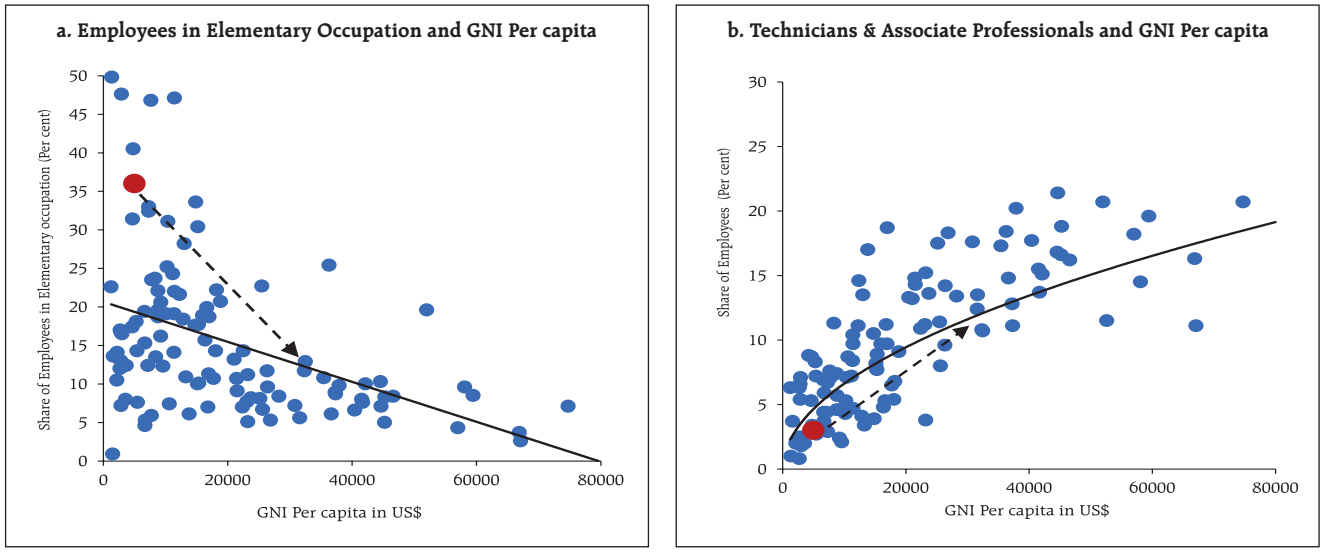
Skilling the Indian Labour Force to Reap the Demographic Dividend

Given India has vast human resources, investment in human capital is crucial to take advantage of the large working age population. Currently, India's population of 1.42 billion is the world's youngest, with a median age of 28.2 years, and 68 per cent of the population belonging to the working age group[5]. In the context of fast-moving technological developments, the future contribution from the labour force would depend on the skill-set available to them. A significant portion of the Indian labour force is employed in the unorganised sector (above 90 per cent of total employment)[6], and employability[7] of the existing workforce is only around 50 per cent (Patra, 2022). In a cross-country perspective, India's employment is dominated by elementary occupations and lagging in skill-based occupations (Chart 8).

Promoting Health and Education

India has to prioritise spending on education and health; and the private sector should play a proactive role in promoting quality education and health system. Few, if any, countries have achieved a sustained period of high economic growth without

Chart 8: Skill Requirements



Source: OECD.

5 World Population Prospects 2022, United Nations.

6 Ministry of Labour and Employment, Government of India.

7 Employability refers to both a product (a set of skills that enable) and a process that empowers an individual to acquire and improve marketable skills that can lead to gainful employment.

having invested substantial amounts on their labour force. General government expenditure on health and education in India at 1.8 per cent and 3.1 per cent of GDP, respectively, is low as compared to both transition economies (average 4.7 per cent and 3.6 per cent, respectively) and developed western economies (average 9.1 per cent and 5.2 per cent, respectively).

Enhancing Total Factor Productivity

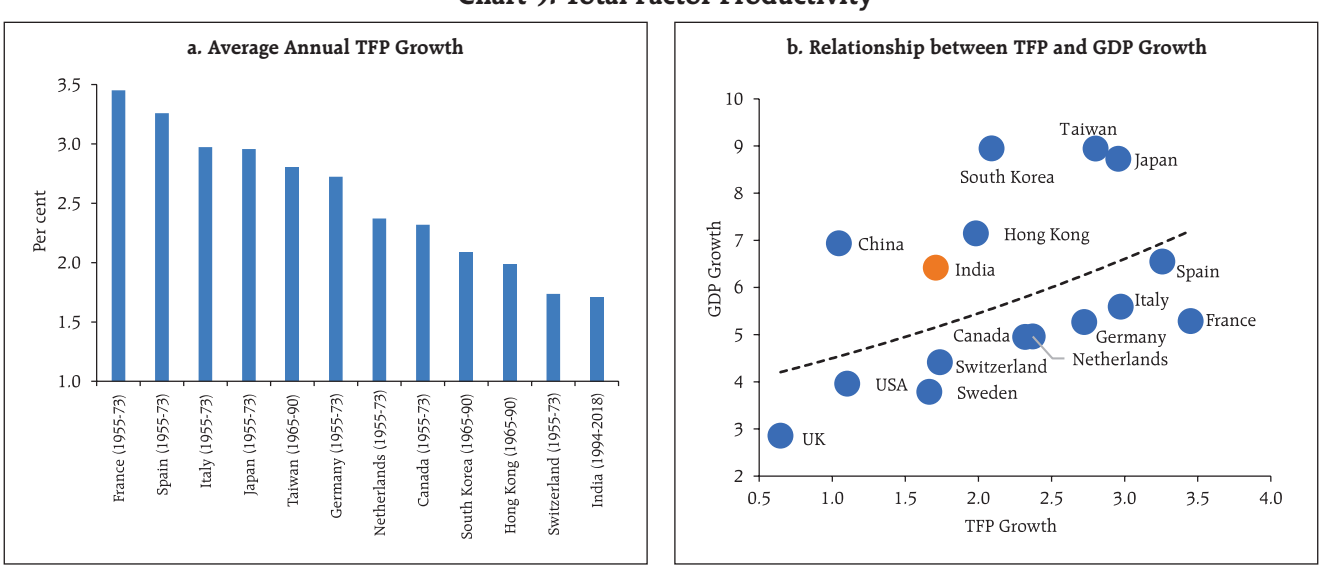
Studies in cross-country context have found that TFP growth explains a dominant portion of their growth (Eichengreen *et al.*, 2012; Bulman *et al.*, 2014; Kim and Park, 2017). TFP growth is also found to be a prime factor in a country's upward transition from middle-income to high-income country group (Kim and Park, 2017); hence, middle-income countries have to complete the "transition from input-driven to TFP-driven growth" (Tran, 2013).

Most of today's advanced nations witnessed higher TFP growth during their high-growth phases, than what India has experienced. For instance, during the two decades of their high growth phases between 1955 and 1973, major European countries like France, Germany, Italy, Spain, and Japan experienced TFP growth in the range of 2.7 to 3.5 per cent per year. In contrast, India's TFP growth during 1994 - 2018, was only 1.7 per cent per year despite being one of the major growing economies in the world (Chart 9). To enhance productivity, faster diffusion of global frontier technologies to domestic firms through strengthened value chains is required along with reallocation of labour force from low to high-productive sectors.

Scaling up R&D and strengthening innovation to enhance TFP

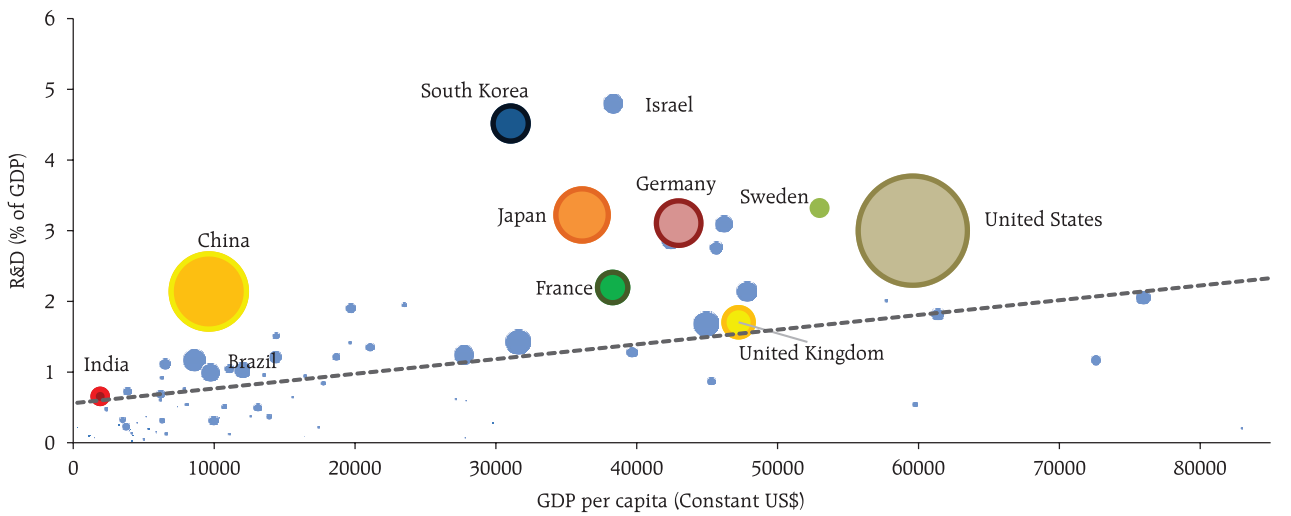
Low investment in R&D, particularly by the private sector, is a key impediment to reaping benefits from potential productivity gains. Despite economic slowdown in the post-global financial crisis period, major economies increased their R&D expenditure, while it remained low and almost unchanged for India (at 0.7 per cent of GDP for the last two decades). The aggregate R&D expenditure of South Korea, Germany and China was about 4 per cent, 3 per cent and 2 per cent of their respective GDPs between 2009 and 2018 (Chart 10). The share of patents applied and granted to India in total patents granted globally has been rising in recent years, even as it languishes below 1 per cent.

Chart 9: Total Factor Productivity



Source: Penn World Table 10.0.

Chart 10: R&D Expenditure and Per capita GDP



Note: Smaller value indicates better position.
Source: World Economic Forum.

Stepping up R&D investment would require more efforts by the private sector, with the Government focusing on creating an enabling environment – by providing incentives, encouraging collaboration with private sector and research institutes, streamlining regulatory processes and strengthening the enforcement of Intellectual Property Rights (IPR).

V. Roadmap to Achieve the Target

History offers plausible growth paths, but the export-led growth strategy which helped Japan, South Korea and China in the past may not be applicable or available for India at the current juncture, particularly given the subdued medium-term global growth outlook as well as rising trend towards deglobalisation. On the other hand, services sector globally has become the growth powerhouse as opposed to manufacturing propelled economic growth. India may have to follow a multi-pronged approach with a focus on various aspects of development: strong manufacturing and services sector, structural reforms enabling reallocation of labour from agriculture to other sectors, and investments in human and physical capital. While services sector will continue as the main driver of economic growth, India must also focus on widening its manufacturing base to meet the demand of large domestic market. Apart from sectoral rearrangements, India's path to a developed nation would depend crucially on addressing the structural bottlenecks in the economy. Here we discuss the broad contours of transformation, first at the economy-wide level and subsequently for select target sectors.

Strengthening institutional capacity

Globally, a strong correlation has been observed between the quality of national institutions and economic prosperity. Daron Acemoglu[8] describes economic institutions as those that set "economic rules of the game" – in particular, the degree of property rights enforcement, the set of contracts that can be written and enforced, and the rules and regulations that determine the economic opportunities open to agents. At its core, the rule of law guarantees public safety, legal security, respect for

[8] http://web.mit.edu/14.773/www/2003%20Class%20notes.pdf

human rights, access to justice, and accountability. Technological advancements can also improve the quality of institutional services as evident in the recent digitisation drive and subsequent rise in transparency in public service delivery. Institutional quality transcends the public sector; and efforts to create an institutional framework promoting sound corporate governance policies could also help in building an environment of trust, long-term stability and business integrity (Das, 2023).

Deepening the financial system

It is important to enhance the efficiency of the domestic financial system to improve the allocation of resources to productive sectors. Investments in India have been primarily fuelled by domestic savings. While India's savings rate is high as compared to EMDEs, efforts should be made to channelise these savings into productive assets wherein innovations and technology can help. The lack of credit history of borrowers and good collateral, combined with information asymmetry, exacerbates the challenge for lenders to lend. Technological innovations in the financial sector have improved the credit delivery mechanisms, and the scope for further innovation in banking and financial products and furthering differentiated banking needs to be explored. The recent measures undertaken by the government on digitalisation of the economy and availability of data provide a more objective and comprehensive basis for credit assessment and thereby enhanced lending to both individuals and businesses.

Additionally, corporate bond market needs to be widened which otherwise puts the onus of furthering financial reach entirely on the banking system. This would free up bank resources to concentrate on the untapped segments of the economy. Streamlining and strengthening regulatory requirements across various financial sector entities, developing alternate investment opportunities, utilising fintech and digital innovation, widening the investor base, promoting financial literacy, and coordinated implementation of policies by various policymakers are essential for further deepening the financial system.

Increasing Labour Force Participation rate

Along with improving the skill-set of the labour force, it is equally important to bring more working age population into the labour force. As of now, only one-fifth of women are part of the labour force, which is one of the lowest in the world. There is a need to increase the participation of women in the workforce by spreading awareness to influence social norms in favour of working women; incentivising institutes to maintain the diversity of students and employees; flexible working hours; women-friendly policies and facilities at workplaces, availability of work closer to the household; and increasing formalisation of jobs (Patra, 2022).

Targeting knowledge-oriented sectors

While a broad-based approach is necessary for sustained high growth, a focused approach to harness the benefits from key sectors which could offer low-hanging fruits of growth also needs to be explored. Services sector presents itself as a candidate for such a strategy. Literature identifies two distinct waves of service sector growth. The first occurs in "traditional" services (such as personal services, retail and wholesale trade, *etc.*) at the early stage of development at relatively low levels of income, while the second occurs later at higher incomes in industries such as communication, computers, and technical and business services that use information technology and possess greater scope for cross-border tradability (Eichengreen and Gupta, 2009). India has started this transformation; and exports of engineering, information technology (IT) and IT enabled services (ITeS) are increasingly contributing to national wealth.

Given the large pool of Indian talents available to global corporations and 45 per cent of the 1500 global capability centers (GCCs) present in India which are scalable with access to manpower skilled in new technologies, India is well-positioned to leverage this success and cater to more skill-intensive and increasingly digitised services. Riding on the spurt in e-commerce, FinTech and EdTech sectors are expected to lead the next wave of the Indian startup ecosystem. With more diversified solutions in areas of artificial intelligence (AI) and machine learning (ML), big data, data analytics, blockchain and virtual reality, firms will be operationally efficient, globally competitive and highly productive.

The policies should focus on facilitating the export of professional services (*e.g.* accounting and legal services). This may involve outsourcing of services and identification of gaps between the current skillsets of Indian professionals and expected requirements from foreign organisations. Tie-ups with foreign institutes may be considered to fill up the gaps and develop the global best practices amongst Indian firms and professionals. Initiatives towards greater formalisation of the economy should continue as the role of certain services, such as corporate accounting, merchant banking and corporate law shall gain more prominence with increased corporate activity, such as initial public offerings (IPOs), mergers and acquisitions, *etc.* Moreover, the policies can be initiated in taking steps to build the capacity of domestic firms by shifting away from the reliance on Big 4 accounting[9] / Big 3 management consulting[10] firms to favour domestic firms.

Structural transformation and role of MSMEs

The demographic advantage in terms of existence of large working age population can be fully reaped only if employment opportunities are generated outside agriculture. Micro, small and medium enterprises (MSMEs) can play a pioneering role in providing employment opportunities in manufacturing and services sectors. Compared to AEs and EMDEs, the shares of MSMEs in value added and employment are low in India. MSME's contribution to GDP in Malaysia, Singapore, Germany and Japan ranges between 40-50 per cent while their share in employment is around 70 per cent. In contrast, in India, the shares of MSMEs in gross value added and employment, at 30 and 24 per cent, respectively, are low. This offers a potential to capitalise on this segment and raise its shares in both value added and employment.

Various initiatives taken by the government to promote economic development and improve ease of doing business for MSMEs are expected to bring better synergies between the organised manufacturing sector and MSMEs. The corporate sector must take the lead in supporting industrial parks to produce highly customised and specialised products. Acting as innovation hubs, these industrial clusters would ensure smooth functioning of supply chain, supporting domestic manufacturing. Scaling up of physical infrastructure, reducing logistics costs, enhancing skillset of the workforce and integrating MSMEs into the value chain would shape India's journey in developing the manufacturing sector. This would also require addressing the structural issues relating to land availability, labour market flexibility and speedier dispute resolution.

Harnessing the potential in tourism

For many countries, including a few large economies, travel and tourism sector contributes a noticeable share to their GDP. India has a major advantage as a tourist destination in the form of its rich endowment of natural and cultural resources, robust air, ground and port infrastructure, and price competitiveness. Further investments in providing safety and security, improving tourist

[9] Deloitte, Ernst & Young (EY), KPMG, and PricewaterhouseCoopers (PwC).

[10] McKinsey & Company, Bain & Company and Boston Consulting Group.

service infrastructure, health and hygiene, and ICT readiness would enhance its attractiveness. Policy focus could be on facilitating digital readiness of state and municipal departments, competitive federalism like aspirational districts and smart city program for travel and tourism, improvement of basic health and sanitary infrastructure especially in and around major tourism destinations. Tourism can also be promoted by leveraging its diaspora to promote Indian culture and inbound tourism using the template of East Asian and European economies which have used liberal travel environment along with showcasing natural resource endowment and culture.

Ensuring energy security with a sustained thrust on renewables

While following a growth enhancing strategy, India also has to be cognisant of its commitments towards pursuing a clean energy pathway as eventually ignoring climate concerns could threaten long-term growth sustainability (RBI, 2023). Currently, coal accounts for more than half of India's primary energy consumption, second only to China among the major economies. To reduce its dependence on conventional sources, India has committed to meet 50 per cent of its energy requirement from renewable energy by 2030. Pushing for renewable energy, the government is proactively taking various policy measures to incentivise the production and usage of renewable energy. Nevertheless, the overall rise in consumption and economic size is expected to push up the costs of energy import in absolute terms in the near term.

India has taken various steps to amass the critical minerals required for production of renewable energy as the sector is more mineral intensive than conventional energy sources. The International Energy Agency (2021) highlighted that geopolitical risks to energy will intensify with the shift to clean energy, as the endowment of critical raw materials is more geographically concentrated. Additionally, low grid connectivity for renewables, and volatile supply linked to weather conditions pose further risks to energy security through renewables.

In view of this, creating a regular and stable supply of critical minerals is essential for meeting the needs of the industry and achieving the country's climate targets. India may, therefore, conduct an audit of critical minerals which are essential to India's green transition and promote capital expenditure in these sectors. India may expand international alliances, strategic investments and diversify supply chains to ensure steady supply of critical minerals

Securing supply chains and reducing logistic costs

Exposure to global supply chain disruptions is quickly transmitted to domestic supply chains, especially from those countries from where India sources a large part of its requirements of raw materials and intermediates (Patra *et al*, 2022). Thus, it becomes essential for India to work towards securing its supply chains. Moreover, experience from the pandemic and aggravated geopolitical tensions-induced supply chain disruptions have created interests in maintaining supply chain flexibility and resilience or the ability to adapt to aggregate shocks.

There are significant gains to be made by lowering logistics costs – a reduction of logistics costs from 14 per cent to 10 per cent of GDP, can save up to ₹10 lakh crore and significantly reduce carbon emissions (Niti Aayog, 2021)[11]. With a focus on the same, the National Logistics Policy (NLP) was launched in September 2022 to: (i) reduce logistics costs comparable to the global level by 2030 through the policies to improve efficiency and multimodal connectivity *via* Unified Logistics Interface Platform (ULIP) under PM *Gati Shakti;* and (ii) create data-driven decision support mechanism for an efficient logistics ecosystem with the use of AI and ML.

[11] https://www.niti.gov.in/sites/default/files/2021-06/FreightReportNationalLevel.pdf

Certain challenges, however, remain as a major share of logistics cost is arising from transportation (62 per cent of total logistics cost). To reduce the transportation cost, therefore, dependence on road transport needs to be brought down to 25 to 30 per cent. Simultaneously, there is also a need to increase freight transport through railways from the current 27 per cent to 45 per cent[12]. For achieving the same, the firms/units may be incentivised to use railway freights by lowering the costs and by building separate railway freight tracts.

VI. Conclusion

India could become a developed country by 2047 with an average annual real GDP growth of 7.6 per cent sustained over the next 25 years. Analysis presented in this article shows that it is feasible, powered by the growth augmenting impact of policy focus on structural reforms, investments, logistics and digitalisation of the economy, upskilling the labour force to reap the potential of favourable demography, and sectoral policy initiatives covering manufacturing, exports, tourism, education, and health.

The task, however, may not be easy, given the current level of capital stocks, infrastructure and skill sets of the people. India needs to follow a multipronged approach for engaging the large pool of labour force productively and harnessing growth opportunities in knowledge-oriented sectors. While the unskilled/semi-skilled labour force can be absorbed in MSMEs, new-age manufacturing and services sectors will require upskilling and preparing the younger generation to meet the future demand. While augmenting capital and empowering human resources could place India on the desired growth trajectory, technology will be a key player in this transformation.

[12] https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1883514

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Perspectives on the History of the Reserve Bank of India

*by Dr. Ashutosh Ravikar^*

This article takes a bird's eye view of the history of the Reserve Bank of India and unravels the treasure trove embodied therein. Spanning over five volumes, the Reserve Bank's history is an insightful account of its policies, operations and institutional evolution. During the journey, its public policy initiatives and institutional, structural and financial reforms transformed the Indian economy. It is not only an institutional history of India's central bank, but also a major part of India's economic and financial history. Presented in a lucid, interesting and analytical way, it is a precious repository of knowledge for everyone.

Introduction

The fifth volume in the series 'The Reserve Bank of India' has been recently published by the Reserve Bank. With this, a new milestone is reached, as India's central bank has completed the documentation of its history for 73 of its 88 years' of existence, thereby throwing light on a major part of its life. This article presents an encapsulated view of the journey of the Reserve Bank and its contributions to the economy that left footprints on the sands of time. Section II explains the significance of recording history and outlines the developments in economic history. Section III takes stock of published histories of central banks across the world. Section IV explains the process of preparation of the Reserve Bank's history volumes and highlights their features. Section V summarises the content in the first four history volumes. Section VI elaborates on the latest fifth volume. Section VII gives the overall perspectives. Section VIII concludes.

II. Why History?

In his welcome remarks at the release of the fourth volume of RBI History, the erstwhile Governor Dr. Subbarao said, "…at least in matters of economics and finance, history repeats itself, not because it is an inherent trait of history, but because we don't learn from history and let the repeat occur". History is a precious teacher. The documentation of history is important for several reasons. First, history strengthens and keeps our faith alive during testing times and helps us tide over the critical phases. Second, achievements in the past give inspiration for present performance that builds our future. Third, historical documents serve as a permanent institutional memory. They concretely bring out contemporary policies, thought processes and decisions. They guide the policymakers in resolving policy dilemmas by deriving insights from time and context specific policy responses. The economic regularities are better understood from history and enable the policymakers to make predictions and prepare for black swan events. Fourth, history acts as a permanent repository of knowledge. It is a contribution to economic literature and serves as a valuable reference for researchers. Fifth, history documents form the institutional memory – a precious and permanent knowledge base – that helps everyone in their personal, social, public and professional life and respective work areas. Finally, documentation of history is a value addition. Unlike the periodic publications which are generally the factsheets of the near term, a history publication is an interesting story that covers the developments over a longer period. The former are photographs or snapshots while the latter is a complete film unravelling the whole story and giving deep insights.

The Economic History

Economic history combines economics with history. The field of economic history began in the

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The views expressed are those of the author and do not necessarily represent the views of the Reserve Bank of India.

late nineteenth century to explore why Western Europeans and Americans prospered and attained productivity-led growth. It tried to find the causes of economic growth and inequality. The rise in global trade, investment and industrialisation were the main driving forces. Economists such as Karl Marx, Adam Smith and Max Weber propounded that competitive markets without government interference created incentives for work leading to a rise in productivity. In the second half of the twentieth century, the newly independent nations in Asia and Africa tried to gain self-reliance for their development. The debt crisis led by East Asian economies in the eighties somewhat mollified the reservations against capitalism. Since 2000, with the economic emergence of China and India, the field focused on the histories of Africa and Asia. During the last decade, there emerged new research areas including inequality among countries, how the states acquired the capability to build economic systems, and interaction between the changes in environment and economies. The history of central banks is a part of economic history. We now turn to this segment.

III. Histories of Central Banks

Central banks are at the heart of the economy and society. Their operations and policies impact the lives of millions of people. Publication of their histories creates a permanent institutional repository. These documents show the effectiveness of the role played by central banks in shaping their economies. The analysis and interpretation of events and policies therein act as a permanent reference for the policymakers and their advisers. In the economic literature, we come across the published histories of some of the leading central banks. Prominent among them include the US Federal Reserve, Bank of England, Banque De France and German Bundesbank. The other lesser known are those of the Bank of Canada, Reserve Bank of Australia, Bank of Japan and Bank of Italy. The Bank of England's commissioned histories include John Clapham's 'The Bank of England: A History', John Fforde's 'The Bank of England and Public Policy, 1941-1958', Elizabeth Hennessy's 'A Domestic History of the Bank of England, 1930-1960', and Forest Cappie's 'The Bank of England 1950s to 1979'. The coverage of these books consists of the central bank's association with the government, their policies under various governors, internal workings, organisation, personnel policy, the periods of growth, innovation and inflation. 'A History of the Federal Reserve' by Allen Meltzer is a research work. In addition to history, it also deciphers the major macroeconomic crises concerning policies of the Fed. 'The History of the Bundesbank: Lessons for the European Central Bank' by Jacob de Haan is not an official history. In this, we learn about lessons for the ECB from the Bundesbank's successful management of inflation and an assessment of the Bundesbank's policies. Bank De France's commissioned history is written by an economist from the Paris School of Economics. It throws light on the relationship between the Bank and the government. Though brief histories of many central banks are mentioned on their websites, the commissioned histories in published book form are only a few as mentioned above. The Reserve Bank of India is one among the select few countries in the world which have commissioned the documentation and publication of their histories.

IV. History of the Reserve Bank

The significance of the Reserve Bank's history cannot be overstated. According to the Reserve Bank's first Indian Governor C. D. Deshmukh, it is the financial history of India. In the words of former Reserve Bank Governor Bimal Jalan, "The Reserve Bank's history was 10 per cent its own history and 90 per cent history of the country's economy and thus a treasure trove for research on the economic development in India". Realising its importance, the process of preparing the history of the Reserve Bank commenced way back in 1967 with a compilation of the history and management of India's monetary

sector and then the publication of the first history volume in 1970. The preparation of history and its publication goes through a systematic process.

The Process of Preparation

The process of writing history is based on extensive research and analysis. The history volumes are prepared by the History Cell, an in-house entity in the Department of Economic and Policy Research. An advisory committee comprising experts in various domains from outside the Reserve Bank is appointed with the approval of the central board. An eminent person is appointed as the author. A team of consultants is also appointed comprising senior officers retired from the service of the Reserve Bank. A concept paper is prepared to conceptualise the content of the volume. The records of historical value are collected from the RBI Archives and various departments of the Reserve Bank. Other relevant information, data and publications are also compiled. In addition, to record the history through oral evidence, discussions are held with persons who worked and got associated with the Reserve Bank during the period under consideration. These consist of former Governors, Deputy Governors, economists and bureaucrats. The meetings of the advisory committee are conducted periodically and various issues are discussed therein. Once the draft volume is ready, comments are sought from the central government. After considering these, the volume is finalised and published. Titled 'The Reserve Bank of India', the history spans over five volumes published so far (Table 1).

Table 1: The History of the Reserve Bank of India at a Glance

Volume No.	Year of Publication	Period Covered	Chairman of Editorial / Advisory Committee	Publisher
1	1970	1935-51	C. D. Deshmukh	Reserve Bank of India
2	1998	1951-67	C. Rangarajan	Oxford University Press
3	2005	1967-81	C. Rangarajan	Reserve Bank of India
4	2013	1981-97	Bimal Jalan	Academic Foundation
5	2022	1997-2008	Narendra Jadhav	Cambridge University Press

The Salient Features

The Reserve Bank's history has several distinguishing features. First, it is an authentic account, as it is based on official and authentic records and sources. Second, it is an unbiased document. The fact that it is prepared under the guidance of an advisory committee comprising eminent persons usually from outside the Reserve Bank bestows objectivity. The independence granted to the team of writers makes it free from being an official record and maintains transparency. Third, each volume covers a sufficiently long period to capture a meaningful historical phase. An analysis of the duration of the history volumes reveals that the period of volumes ranged from 11 to 16 years. Volumes 1, 2 and 4 were for the periods of 16 years each, while Volume 3 was for 14 years period. The period for Volume 5 was the smallest at 11 years. The average period for all volumes is about 14 years. Fourth, the history volumes are written with a considerable lag. This helps the appropriate evaluation, as with time, the impact of the actions and decisions is more visible. The lag between the end year of the reference period of the volume and the year of publication of the volume ranged between 14 to 31 years for the five volumes published so far. The lag was smallest for Volume 5 and largest for Volume 2. The average lag was 21 years. Fifth, the history volumes have both chronological and functional blends. The volumes contain information and analysis of the policies and operations of the Bank as they evolved. Sixth, a wide gamut of sources is used for preparing the history including official files, board resolutions, circulars, speeches of top management, electronic resources, material from other regulatory bodies and government, articles from newspapers, journals, etc. This enriches the publication. Seventh, to have wider dissemination and reach, the history

volumes are printed in book form as well as placed on the Reserve Bank's website in due course. While two volumes were published by the Reserve Bank, three were published through private publishers. Finally, with comprehensive information and analysis including hitherto unrevealed information, and written in a lucid language, reader-friendly style, and easy-to-hold size, the Reserve Bank history makes an interesting reading for everyone.

V. The Four Volumes

The gist of the story in the first four volumes of Reserve Bank history is encapsulated below.

First Volume (1935-51)

A fascinating feature of this volume is that it gives information about the banking, exchange and monetary system in India that prevailed for a century before the establishment of the Reserve Bank. The volume is divided into four phases viz., preparatory (up to 1935), formative (1935-39), war 1939-45, and post-war (1945-51). The preparatory period covers the genesis of central banking in India, the existing banking, currency and exchange system before the establishment of the Reserve Bank, and details of the RBI Act. In view of growing demands on the financial sector of India, the Royal Commission on Indian Currency and Finance (1925) recommended the creation of the Reserve Bank of India for maintaining monetary stability and pooling of monetary reserves to serve the nation's needs. The Reserve Bank commenced its operations on April 1, 1935 initially with traditional functions such as currency issuance, banker to banks and government, and non-traditional functions like the development of rural cooperatives and credit to agriculture. The formative period covers the Reserve Bank's policies, operations, its role as a bank of bankers, efforts towards agricultural finance, and information about board and shareholders. After the establishment of the Reserve Bank, in the initial years prior to the outbreak of World War II, the Bank was entrusted with exchange control. Financing the war expenses by the Reserve Bank led to inflation. The account during the war years deals with organisational matters, agricultural credit, exchange control, financing of war, commercial banking, repatriation of sterling debt, and currency arrangements after the war. The analysis for the post-war period covers organisational changes in the Bank, partition-related matters, exchange and management, global financial institutions, steps in the provision of agricultural finance, the Act for regulation of commercial banks, and the Bank's role as employer. With the then Governor C. D. Deshmukh's vision and initiative, the Department of Research and Statistics was set up in Reserve Bank in 1945 for undertaking research and providing guidance to the Bank based on it. The foresight of the Reserve Bank was commendable because at that time, even the contemporary developed countries had not sufficiently recognised the role of research in central banks. In the post-war period, monetary policy focused on inflation control. It also underwent a journey from a privately owned entity at its establishment to a nationalised institution. After independence, it assumed a new responsibility for the economy. The Rural Banking Enquiry Committee and All India Rural Credit Survey Committee were appointed.

Second Volume (1951-67)

The second volume was published during the fiftieth year of Indian independence. Its period encompasses a major part of the first two decades after independence. The main theme of the volume is the Reserve Bank's public policy initiatives, institution building, and establishing the foundations of central banking. It elaborates on how central banking was built upon its four main pillars viz., monetary policy, regulation and development of commercial banks, the institutionalisation of agricultural credit, and the institutionalisation of financing to industries. Monetary policy's interface with short-term pulls

and requirements of government financing, funding the budget deficits through a system of ad hoc treasury bills, initiating the system of maintenance of minimum forex reserves for currency issue, variable cash reseve ratio (CRR), and statutory liquidity ratio (SLR) has been narrated.

On the background of the banking crisis, the Reserve Bank strengthened the country's banking system and introduced deposit insurance through the setting up of Deposit Insurance Corporation with an initial insurance cover of Rs. 1,500. During the period, the Reserve Bank came across the peculiar demands of the developing and emerging nation. It brought out changes in the financial and economic landscape of the country through its development, diversification and strengthening. The development of a cooperative movement was initiated. As recommended by the Shroff Committee[1], the Reserve Bank established institutions for the long-term financing of the industrial sector. The base for institutional credit to industry and agriculture was created. This is one of the unusual or non-traditional functions taken up by any central bank. The mobilisation of savings was also institutionalised through the creation of financial intermediaries and assets. Unit Trust of India (UTI) was set up to channelise small savings directly into the capital market. Such efforts spread credit to the unreached sections of society and developed the financial system of the country. The efforts towards the institutionalisation of both savings and credit resulted in multiple benefits. The development of the financial system strengthened the monetary transmission mechanism. The rise in bank deposits reduced their reliance on the Reserve Bank for funds, thereby strengthening the use of monetary instruments and increasing the efficacy of monetary policy. The higher mobilisation of funds also reduced the government's deficit financing requirements. The year 1967 witnessed a breakthrough due to various crises and policy responses for their resolution.

The period was marked by new vistas such as the Green Revolution, the institution of the All India Rural Credit Survey, and the creation of the State Bank of India. There are interesting accounts of various developments such as deficit financing, the beginning of five-year plans, public debt management, regulation of banks and norms therefor, the banking crisis in Kerala, consolidation of commercial banking through a reduction in their number to impart viability, development of institutional infrastructure through the establishment of institutions like Industrial Development Bank of India (IDBI), and devaluation of Rupee. The volume also highlights the long-term overseas funding by the government for the development of the nation. The narrative pertains to banks and governments, the external sector, industrial financing, rural finance, government financing, banking for state governments, and monetary policy. In the whole process, the organisation witnessed the transformation of itself. A remarkable feature of this volume is that the Bank's select documents were published for the first time.

Third Volume (1967-81)

The third history volume was published when Reserve Bank completed seventy years. It records the transformations witnessed in the financial infrastructure of India during the period. The period was marked by increased regulation of the Reserve Bank in all financial activities. The major event was the nationalisation of fourteen banks. Social control over banking transformed the operations and orientations of commercial banks. There was a spread of banking to semi-urban and rural parts of the country. Credit largely spread to the unreached sections. Lead Bank Scheme was introduced to address the issue of dwindling credit-deposit ratio and to make credit available to unreached persons. The side effects of the

[1] The Committee on Finance for the Private Sector was appointed by the Reserve Bank of India in 1953 with A. D. Shroff as its Chairman.

process occurred with impairment in the efficiency and viability of banks that came to the surface in the subsequent period. Major ownership of the government over banks caused dual control issues. The financial system deepened. Reserve Bank had to resolve the issues of whom to lend, how, and how much. The financial sector expanded and diversified. IDBI and UTI were set up respectively for the provision of long-term finance to the industry and to provide safe havens to the small savers. Later, they were delinked from the Reserve Bank due to coordination issues.

From the 1970s, fiscal policy dominated the scene and monetary policy had to play a subservient role. Monetary tools were used only when inflation reached alarming proportions, and during the rest of the times, the government's financial needs were accommodated. CRR was deployed. Monetary management was supply-driven at times of shortage of agricultural output. SLR was deployed for mobilising resources for the government from captive sources. The resultant scarcity of credit led to its directed allocation. Priority sector lending was incentivised with the system of refinancing. The interest rates were administered. Ad hoc Treasury Bills kept on renewing thus laying the foundations of automatic monetisation.

The inspection system was realigned by the Reserve Bank to ensure the viability of banks in the light of branch expansion. Centre-wise inspection with reduced frequency to explore the business potential and resolve local issues became a new focus. The deposit insurance cover was extended to cooperative banks. Deposit Insurance and Credit Guarantee Corporation (DICGC) was formed through the merger of two entities Deposit Insurance Corporation (DIC) and Credit Guarantee Corporation (CGC) for the protection of small depositors and provision of guarantee cover for credit to small borrowers.

The Reserve Bank succeeded in balancing between the compulsions of fiscal policy and containing the inflation caused by the unexpected external shocks in the seventies including oil shocks and the Bangladesh war. There were foreign exchange shortages. The Bretton Woods system collapsed, and the system of flexible exchange rates came up as a part of the new international financial system. The Reserve Bank contributed to the global discussion on the reform of the international monetary system as advocated by the developing countries and managed the process of change. The policy and priorities, especially in exchange control, exchange rate management, and banking had to be frequently experimented and changed due to several crises. The policies were aligned with development and plan priorities. The volume, for the first time, elaborated on the Reserve Bank's external sector management. The other developments covered in the volume included the Reserve Bank's initiatives in designing banknotes of new denominations, opening new issue offices and currency chests, and expansion of management teams, departments and offices.

Fourth Volume (1981-97)

The fourth volume is in two parts. The first phase of the period comprised consolidation and early liberalisation during 1981-89. The volume elaborates on these in the areas of policy on rural credit, banking supervision, finance, fiscal-monetary interface, balance of payments, exchange control and monetary policy. Subsequently, it analyses the next phase of crisis and reforms during 1989-97 consisting of the balance of payments crisis of the early nineties and the reforms initiated in its aftermath to manage it. The reforms included liberalisation in the external sector, monetary policy, management of debt, institutional reforms in banking and financial institutions and markets, and development of the rural sector and agriculture. The organisational matters include initiatives in communications and institutional reforms.

The country grappled with several uncertainties

during the period such as drought in 1987, reduction in banks' profitability, reduced strength of monetary policy due to administered interest rates, and imbalances on the external front caused by the fixed exchange rate system. In these circumstances, it was necessary to control inflation, rectify fiscal imbalance, attain monetary stability, and restore export competitiveness. The government and the Reserve Bank had to deal with the severe strain on the external payments front. A major programme on economic reforms was initiated of which the Reserve Bank was a significant partner. Its role consisted of creating ideas, processing proposals and executing reforms.

The institutional setup for rural financing was created through the establishment of National Bank for Agriculture and Rural Development (NABARD) in 1982. Efforts were made to develop the financial markets including the money market. The establishment of Securities and Exchange Board of India (SEBI) boosted the development of the capital market. The Sukhamoy Chakravarty Committee changed the perspectives and approach towards monetary and interest rate policy and fiscal-monetary coordination. The exports revived due to the devaluation of the Rupee. Liberalised Exchange Rate Management System (LERMS) was instituted. There was a shift from direct to indirect instruments of monetary policy. As per the recommendations of the Narasimham Committee, reforms were carried out in the financial sector. With the agreement between the government and the Reserve Bank to phase out the system of ad hoc treasury bills and stop the automatic monetisation of fiscal deficit, the Reserve Bank got further space in its monetary policy operations. Efforts were made to attain consolidation in commercial banking and strengthen supervision in the non-banking sector. Thus, this volume is a story of the paradigm shift in economic management in the wake of the crisis and the subsequent trajectory of reforms adopted by India that put it into a new orbit.

VI. The Fifth Volume (1997-2008)

The fifth volume of the Reserve Bank's history is an interesting story of the developments in its policies and operations in major functional areas during the period. Its theme is 'managing change'. This experience is relevant in today's dynamic policy environment in which change is occurring very fast and the policymakers face the challenges to cope with it dynamically. The story begins by explaining the macroeconomic context. The economic reforms undertaken since the mid-eighties coupled with integration with the global economy and its continued momentum despite the changes in governments bore positive fruits and resulted in economic growth and betterment in all parameters. The economy remained insulated from the Asian financial crisis and stayed stable. The Reserve Bank could successfully face the global headwinds with a monetary policy armed with new instruments, excellent coordination with markets and government, legal refinements and technological advances.

The period 1997-2008 dwelled between the Asian currency and financial crisis and the beginning of the global financial meltdown. During this period, against the backdrop of a swiftly evolving macroeconomic environment, the Reserve Bank initiated significant institutional, structural, and financial market reforms and facilitated faster integration of the Indian economy with the world economy. The space was created for monetary policy. The Reserve Bank phased out the system of automatic monetization of government deficit through agreements with the government, rationalized and strengthened monetary policy operating instruments, viz., the institution of Liquidity Adjustment Facility (LAF) as the principal instrument of monetary control through Repo Rate and a unique and innovative Monetary Stabilization Scheme (MSS); focused on building financial market

institutions such as The Clearing Corporation of India Ltd. (CCIL); built up the payment system infrastructure such as Real Time Gross Settlement (RTGS) System, Delivery versus Payment (DvP), Negotiated Dealing System (NDS) and Electronic Clearing Service (ECS); strengthened the regulatory and supervisory processes for banking and non-banking sectors; adjusted its approach to achieve and sustain financial stability; and created a sound legal structure through legal and other amendments in the larger public interest and for ensuring economic stability. The landmark legislative reforms included an amendment to the RBI Act, 1934 by removing the floor and ceiling on CRR and prohibiting the Reserve Bank from payment of interest on CRR balances, an amendment to the Banking Regulation Act, 1949 removing the floor rate for SLR thereby imparting flexibility and effectiveness in monetary management, repealing of Foreign Exchange Regulation Act (FERA) and establishment of new legal framework under Foreign Exchange Management Act (FEMA) marking a clear regime shift, putting in place a sound legal structure for providing flexibility and ensuring outcome and accountability through legislations such as Government Securities Act, 2006, Payment and Settlement Systems Act, 2007 etc. Thus, the foundation and construction of the present modern system were laid out through achieving various milestones.

The deregulation of the external sector resulted in high capital inflows and a rise in forex reserves. This caused various challenges which were dealt with through a hierarchical approach to the flows and responsiveness to environmental conditions. Non-debt creating flows such as foreign direct investment (FDI) and foreign institutional investment (FII) in equities were encouraged along with long-term flows within the debt. The speed of reform was governed by market conditions. In good years, the deregulation was faster. Simultaneously, the development of financial markets was carried forward. The gradualist reform approach proved right on the advent of the global financial crisis (GFC) in 2008.

The policy on exchange rates curbed the extreme volatility in exchange rates through foreign exchange market intervention and adopted measures to prevent speculative onslaughts in the currency market. The goal of market stability was attained. The foreign exchange reserves management is aimed at safety, liquidity and optimisation of returns. Measures for the development of financial markets were aimed at structural reforms that impacted institutions, instruments, procedures, and participants with a focus on the money market. These imparted liquidity and depth to the money market and government securities transactions. The transaction cost declined. The macroeconomic stability and strong economic growth facilitated the transition. Reserve Bank played an effective role in the switchover from a regulated to a market-based system of managing public debt. It comprised of the institutional change in the securities market, the changed relationship between the Bank and the government, and modification in procedures and processes. The Reserve Bank played a crucial role in the new Fiscal Responsibility and Budget Management (FRBM) legislation. It initiated active consolidation of the gilts portfolio and propagated the need for separating debt and monetary management. Far-reaching changes took place in the debt management of states. The Reserve Bank started a collaboration with the states through consultation, mutual trust, and dialogue. It initiated strategy on ways and means advances and investment of cash balances.

The Reserve Bank played a significant role in developing the payment and settlement system for retail and large value payments and electronic clearing service and fund transfer. The evolution of state-of-the-art payment systems paved the way for a shift from paper-based to electronic systems. Reserve Bank also assumed oversight over payment systems. Electronic payments were made mandatory between

markets and Bank-regulated entities. The introduction of RTGS in 2004 and National Electronic Fund Transfer (NEFT) in 2005 were landmark developments. With the setting up of CCIL in 2002, the settlement of transactions in markets strengthened. At the heart was safeguarding the interests of consumers and the safety in transactions that was achieved with the help of technology and the resolution of legal issues which mainly comprised of the enactment of the Payment and Settlement Systems Act, 2007.

In the area of currency management, technological and distributional improvements were initiated to remove currency shortages, handle counterfeits, and improvement in the quality of notes. 'Clean Note Policy' boosted the improvement in the quality of notes. Currency Verification and Processing System (CVPS) for counting, sorting, and online destruction of unfit notes, and the Shredding and Briquetting System (SBS) cleaned up the process and improved efficiency in internal operations. As the automated teller machines (ATMs) gained popularity, the denominations of bank notes changed. The public awareness campaigns reduced the value of counterfeits.

On the front of bank regulation, reforms were carried out through negotiation with the government as the latter was the owner of the largest part of the banking system. Efforts were made to establish a level-playing field between them through competition. Due to the fast adoption of technology, computerisation, efficient customer service, the introduction of innovative products, younger staff, and speedier decision-making, private sector banks increased their share of deposits. Comprehensive reforms bore the fruits as evident from the limited impact of the GFC of 2007-08, improvement in the performance of commercial banks while boosting financial innovation and competition. In the case of non-banking entities, the focus was on improving their efficiency and responsiveness to customers through improvement in governance and transparency. Due to the diversity in circumstances of institutions, regional economic and political factors, dual control, and the Reserve Bank's limited authority over them, the transition was a complicated process. The success was achieved through consultation and negotiation.

The Reserve Bank also worked to upgrade the rural credit system, strengthen customer protection and service through initiatives like setting up of Banking Codes and Standards Board of India (BCSBI) and deepen financial inclusion. As regards the regulation of rural credit, the challenge was to revive banks and provide credit to priority sectors. Though the farmers' distress and banks' non performing assets (NPAs) continued during the period, the broadening of priority sector borrowers, reforms in local area banks and cooperatives, and the emergence of microfinance and Kisan Credit Cards (KCCs) indicated positive developments. The initiatives for financial inclusion such as the publication of bank-wise complaints made banks strengthen their mechanisms for redressal of customer grievances. Many new accounts were opened. This caused a change in public perception of the Reserve Bank.

Considering the significance of communication in the Bank's monetary, regulatory, and supervisory role, internal and external communication was given thrust. With a focus on transparency, information dissemination was undertaken with an increase in its clarity, quality, coverage, and timeliness. Thus, owing to its proactive leadership and emphasis on human capital through incentives, opportunities, training, and restructuring of its workforce, Reserve Bank became a resilient and dynamic organisation over the period.

An easy-to-hold size without compromising on the content makes the volume a perfect read. Spanning over fifteen chapters, it covers all functional areas of the Reserve Bank viz., monetary management, forex market, management of capital account, forex

reserves management, financial markets, public debt management, payment and settlement systems, currency management, regulation and supervision of the financial system, rural credit, financial inclusion, communication policy and organisational change. This is not just a narrative history of the Reserve Bank; it is also a rich resource for anyone interested in understanding how an emerging market central bank manages change, responds to challenges, and shapes the evolution of the economy through proactive and forward-looking reforms. The matters encapsulated in boxes on a variety of topics such as autonomy of the Reserve Bank, derivatives, separate trading of registered interest and principal of securities (STRIPS), separation of monetary and debt management, Indian Financial System Code, and shift from Ashoka Pillar Series to Mahatma Gandhi Series Notes make it an interesting read. Moreover, there are interesting debates, reflections, dissents, views, issues, contours, arguments, concepts, quotes from eminent policymakers, original notifications and letters, and photographs of historic events and persons. Thus, there is a take for everyone – laymen, policymakers, researchers, students, etc.

VII. The Perspectives

The Reserve Bank's history gives a comprehensive perspective on India's economic and financial landscape. It is a treatise on crucial themes of the Bank's formative phase, institution building, transformation in financial infrastructure, expansion in financial sector, management of external crisis, financial sector reforms, and management of change along with laying the foundations of a modern system. It is an inspiring story of how the central bank of a developing country contributed to the building of the nation and took it to the greater altitudes.

The Reserve Bank acted as an enabler for the multidimensional growth of economy by playing a catalytic role in development of a diversified financial system with institutional credit and financial infrastructure. With multiple non-traditional functions, it took up a large and diversified gamut of responsibilities. With its early vision and foresight, it became a global pioneer in setting up systems like deposit insurance and a dedicated in-house department for research which contributed to the resolution of several policy dilemmas that arose from time to time. The Reserve Bank also acted as a macroeconomic stabiliser in many crises such as the world war, foreign exchange crisis, banking crises, oil crisis, the balance of payment crisis, Asian crisis, and various episodes of inflation. The challenges were tough, but those were insightfully resolved. The policies and functions were reoriented as per the needs of time. Various new functions were also taken up over the years. Many new frontiers were added, reforms were implemented and non-conventional policies and strategies were adopted with innovative approaches.

The story has many precious takeaways. With a long-term vision, dynamism, and commitment in its public policy, the Reserve Bank transformed the nation in several spheres and placed it into newer and higher orbits. This documented journey of the Reserve Bank sets an example that with gradualism, cautious sequencing and appropriate timing of reforms, appropriate blending of policies, spirit of dynamism, and paradigm shift in economic management in tune with the needs of time, the economic goals of the country could be achieved on a sustainable basis. India's experience in economic management has shown that the holistic and integrated approach enables steady march ahead on the path. An optimal combination of time-tested remedies along with the incorporation of new vistas has proved as a successful strategy for central banking policy. The Reserve Bank's contribution to building of the country's fiscal architecture, development and deployment of novel monetary tools and balancing of fiscal-monetary

objectives highlights the significance of monetary-fiscal coordination. Its own organisational evolution and transformation coupled with development of human and other resources over the years sets an example and imparts message that the organisational capacity building always pays dividends in the long run. With the approach of constant reorientation of existing functions, exploring new horizons for the resolution of emerging challenges, and capturing new opportunities, the Reserve Bank has played the role of an enabler and stabiliser for the country. Overall, the Reserve Bank's history denotes the contribution of India's central bank and its policies and operations in the construction and development of the national economy, and it is a reflection of the economic voyage of the country itself. It would always inspire and guide the further journey of the travellers in global economic spheres. it would continue to act as a lamp post showing the road ahead by throwing light on the road travelled.

VIII. Conclusion

The recording of economic history is significant as it guides in resolving policy dilemmas through insights into time and context specific policy responses. The Reserve Bank of India is one of the few central banks in the world which commissioned the publication of its history. With the recent release of the Fifth Volume, the Reserve Bank has completed documentation of a major part of its history. It is an authentic and unbiased account written lucidly. The five history volumes give a comprehensive account of the formative phase of the Reserve Bank, its policy initiatives, transformation in financial infrastructure, management of crises, process of change and introduction of reforms that led to building of modern systems. A crucial part of the economic and financial history of the country, these history volumes contain precious information and analysis of developments in policies and operations of the Reserve Bank during the period in an interesting way. It is the permanent and inspiring institutional memory that would continue to give insightful guidance for contemporary policy decisions in future.

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CURRENT STATISTICS

Select Economic Indicators

Reserve Bank of India

Money and Banking

Prices and Production

Government Accounts and Treasury Bills

Financial Markets

External Sector

Payment and Settlement Systems

Occasional Series

Contents

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

No. 1: Select Economic Indicators

Item	2022-23	2021-22		2022-23	
		Q3	Q4	Q3	Q4
	1	2	3	4	5
1 Real Sector (% Change)					
1.1 GVA at Basic Prices	7.0	4.7	3.9	4.7	6.5
1.1.1 Agriculture	4.0	2.3	4.1	4.7	5.5
1.1.2 Industry	2.4	2.2	1.3	0.1	4.7
1.1.3 Services	9.5	6.5	4.9	6.4	7.4
1.1a Final Consumption Expenditure	6.4	10.2	5.8	1.8	2.7
1.1b Gross Fixed Capital Formation	11.4	1.2	4.9	8.0	8.9
	2022-23	**2022**		**2023**	
		Apr.	**May.**	**Apr.**	**May.**
	1	2	3	4	5
1.2 Index of Industrial Production	5.2	6.7	19.7	4.5	5.2
2 Money and Banking (% Change)					
2.1 Scheduled Commercial Banks					
2.1.1 Deposits	9.6	10.0	8.8	10.1	11.4
2.1.2 Credit #	15.0	11.0	12.5	15.7	15.3
2.1.2.1 Non-food Credit #	15.4	11.4	13.0	15.9	15.5
2.1.3 Investment in Govt. Securities	14.5	6.6	6.0	13.1	14.8
2.2 Money Stock Measures					
2.2.1 Reserve Money (M0)	7.8	13.2	10.4	10.2	8.1
2.2.2 Broad Money (M3)	9.0	9.5	8.8	9.5	10.1
3 Ratios (%)					
3.1 Cash Reserve Ratio	4.50	4.00	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	5.0	5.2	5.3	5.2
3.4 Credit-Deposit Ratio	75.8	71.5	72.7	75.1	75.2
3.5 Incremental Credit-Deposit Ratio#	113.0	34.7	129.9	46.5	50.5
3.6 Investment-Deposit Ratio	30.0	28.8	29.1	29.5	30.0
3.7 Incremental Investment-Deposit Ratio	43.5	31.0	76.9	10.0	28.5
4 Interest Rates (%)					
4.1 Policy Repo Rate	6.50	4.00	4.40	6.50	6.50
4.2 Fixed Reverse Repo Rate	3.35	3.35	3.35	3.35	3.35
4.3 Standing Deposit Facility (SDF) Rate *	6.25	3.75	4.15	6.25	6.25
4.4 Marginal Standing Facility (MSF) Rate	6.75	4.25	4.65	6.75	6.75
4.5 Bank Rate	6.75	4.25	4.65	6.75	6.75
4.6 Base Rate	8.65/10.10	7.25/8.80	7.25/8.80	8.75/10.10	8.75/10.10
4.7 MCLR (Overnight)	7.50/8.50	6.50/7.00	6.60/7.00	7.90/8.50	7.90/8.50
4.8 Term Deposit Rate >1 Year	6.00/7.25	5.00/5.60	5.00/5.75	6.00/7.25	6.00/7.25
4.9 Savings Deposit Rate	2.70/3.00	2.70/3.00	2.70/3.00	2.70/3.00	2.70/3.00
4.10 Call Money Rate (Weighted Average)	6.78	3.63	4.09	6.70	6.36
4.11 91-Day Treasury Bill (Primary) Yield	-	3.98	4.89	6.82	6.78
4.12 182-Day Treasury Bill (Primary) Yield	7.28	4.40	5.43	6.97	6.90
4.13 364-Day Treasury Bill (Primary) Yield	7.31	4.81	5.91	7.00	6.89
4.14 10-Year G-Sec Par Yield (FBIL)	7.31	7.15	7.43	7.12	7.05
5 Reference Rate and Forward Premia					
5.1 INR-US$ Spot Rate (Rs. Per Foreign Currency)	82.22	76.42	77.66	81.78	82.72
5.2 INR-Euro Spot Rate (Rs. Per Foreign Currency)	89.61	80.58	83.49	90.08	88.79
5.3 Forward Premia of US$ 1-month (%)	2.41	4.08	3.55	1.73	1.45
3-month (%)	2.19	3.77	3.63	1.82	1.55
6-month (%)	2.31	3.69	3.66	1.98	1.62
6 Inflation (%)					
6.1 All India Consumer Price Index	6.7	7.8	7.0	4.7	4.3
6.2 Consumer Price Index for Industrial Workers	6.1	6.3	7.0	5.1	4.4
6.3 Wholesale Price Index	9.6	15.4	16.6	-0.8	-3.5
6.3.1 Primary Articles	10.3	15.2	18.8	1.9	-1.8
6.3.2 Fuel and Power	29.4	38.8	49.0	1.0	-9.2
6.3.3 Manufactured Products	5.7	11.4	10.3	-2.3	-3.0
7 Foreign Trade (% Change)					
7.1 Imports	16.5	26.1	57.4	-13.6	-6.7
7.2 Exports	6.9	29.1	20.8	-12.6	-10.2

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.
*: As per Press Release No. 2022-2023/41 dated April 08, 2022
#: Bank credit growth and related ratios for all fortnights from December 3, 2021 to November 18, 2022 are adjusted for past reporting errors by select scheduled commercial banks (SCBs)

Reserve Bank of India

No. 2: RBI - Liabilities and Assets *

(₹ Crore)

Item	As on the Last Friday/ Friday						
	2022-23	2022	2023				
		Jun.	Jun. 02	Jun. 09	Jun. 16	Jun. 23	Jun. 30
	1	2	3	4	5	6	7
1 Issue Department							
1.1 Liabilities							
1.1.1 Notes in Circulation	3348235	3189152	3384229	3378164	3356978	3341455	3329493
1.1.2 Notes Held in Banking Department	9	15	17	14	15	14	12
1.1/1.2 Total Liabilities (Total Notes Issued) or Assets	**3348245**	**3189167**	**3384246**	**3378178**	**3356992**	**3341469**	**3329505**
1.2 Assets							
1.2.1 Gold	140766	123505	141564	141275	139375	137235	135772
1.2.2 Foreign Securities	3207202	3065265	3242310	3236566	3217314	3203773	3193298
1.2.3 Rupee Coin	277	396	372	337	304	461	435
1.2.4 Government of India Rupee Securities	-	-	-	-	-	-	-
2 Banking Department							
2.1 Liabilities							
2.1.1 Deposits	1354217	1694383	1339995	1367586	1381090	1402336	1468566
2.1.1.1 Central Government	5001	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	868940	776521	852243	849466	852858	838532	871167
2.1.1.5 Scheduled State Co-operative Banks	8100	8015	9292	8263	8922	8340	9040
2.1.1.6 Non-Scheduled State Co-operative Banks	5177	4487	4653	4623	4654	4490	4436
2.1.1.7 Other Banks	48260	42974	46006	45757	45751	46021	46583
2.1.1.8 Others	316490	804425	349317	362011	380951	417027	450334
2.1.1.9 Financial Institution Outside India	102207	57819	78342	97323	87811	87784	86862
2.1.2 Other Liabilities	1642294	1258297	1544891	1539944	1529444	1512729	1484223
2.1/2.2 Total Liabilities or Assets	**2996512**	**2952681**	**2884886**	**2907529**	**2910535**	**2915064**	**2952789**
2.2 Assets							
2.2.1 Notes and Coins	9	15	17	14	15	14	12
2.2.2 Balances Held Abroad	1008993	1107213	1115280	1120391	1133166	1133866	1165073
2.2.3 Loans and Advances							
2.2.3.1 Central Government	48677	-	-	-	-	-	-
2.2.3.2 State Governments	792	8618	16049	18267	7480	12339	9835
2.2.3.3 Scheduled Commercial Banks	112731	94514	20815	20493	33498	37759	50867
2.2.3.4 Scheduled State Co-op.Banks	-	-	-	-	-	-	-
2.2.3.5 Industrial Dev. Bank of India	-	-	-	-	-	-	-
2.2.3.6 NABARD	-	14801	-	-	-	-	-
2.2.3.7 EXIM Bank	-	-	-	-	-	-	-
2.2.3.8 Others	24485	30517	1688	2292	2842	3169	3319
2.2.3.9 Financial Institution Outside India	102128	58082	77704	96789	87295	87394	86409
2.2.4 Bills Purchased and Discounted							
2.2.4.1 Internal	-	-	-	-	-	-	-
2.2.4.2 Government Treasury Bills	-	-	-	-	-	-	-
2.2.5 Investments	1408486	1435151	1414756	1410924	1410799	1408218	1406348
2.2.6 Other Assets	290209	203770	238577	238359	235441	232305	230926
2.2.6.1 Gold	230734	197089	233362	232884	229753	226225	223813

* 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
May. 1, 2023	-	-	-	-	9836	30712	-	-	-	-20876
May. 2, 2023	-	-	-	-	9167	76804	142	-	-	-67495
May. 3, 2023	-	-	-	-	1542	83283	-	-	-	-81741
May. 4, 2023	-	-	-	8447	5412	80511	-	-	-	-83546
May. 5, 2023	-	-	-	-	16874	36991	-	-	-	-20117
May. 6, 2023	-	-	-	-	10726	12186	-	-	-	-1460
May. 7, 2023	-	-	-	-	1649	6932	-	-	-	-5283
May. 8, 2023	-	-	-	-	40973	84385	-3150	-	-	-46562
May. 9, 2023	-	-	-	-	31193	81013	-5250	-	-	-55070
May. 10, 2023	-	-	-	-	21873	84755	-7500	-	-	-70382
May. 11, 2023	-	-	-	-	13344	75012	-	-	-	-61668
May. 12, 2023	-	-	-	-	8708	63206	-	-	-	-54498
May. 13, 2023	-	-	-	-	59	4964	-	-	-	-4905
May. 14, 2023	-	-	-	-	10	4014	-	-	-	-4004
May. 15, 2023	-	-	-	-	17221	71206	-	-	-	-53985
May. 16, 2023	-	-	-	-	18172	81446	-	-	-	-63274
May. 17, 2023	-	-	-	-	930	90564	-	-	-	-89634
May. 18, 2023	-	-	-	-	906	96262	7	-	-	-95349
May. 19, 2023	-	-	46790	-	3326	115515	-322	-	-	-65721
May. 20, 2023	-	-	-	-	112	40496	-	-	-	-40384
May. 21, 2023	-	-	-	-	49	3627	-	-	-	-3578
May. 22, 2023	-	-	-	-	2261	112438	3	-	-	-110174
May. 23, 2023	-	-	-	-	1139	107527	-560	-	-	-106948
May. 24, 2023	-	-	-	-	1006	112115	-659	-	-	-111768
May. 25, 2023	-	-	-	-	1366	143454	-	-	-	-142088
May. 26, 2023	-	-	-	-	843	161819	-223	-	-	-161199
May. 27, 2023	-	-	-	-	760	8240	-	-	-	-7480
May. 28, 2023	-	-	-	-	29	5096	-	-	-	-5067
May. 29, 2023	-	-	-	-	1241	166822	-	-	-	-165581
May. 30, 2023	-	-	-	-	1431	197508	-673	-	-	-196750
May. 31, 2023	-	-	-	-	1577	238026	-	-	-	-236449

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

i) Operations in onshore / offshore OTC segment

Item	2022-23	2022	2023	
		May	Apr.	May
	1	2	3	4
1 Net Purchase/ Sale of Foreign Currency (US $ Million) (1.1-1.2)	-25516	2001	7704	7371
1.1 Purchase (+)	187054	10143	8404	7371
1.2 Sale (–)	212570	8142	700	0
2 ₹ equivalent at contract rate (₹ Crores)	-217259	14789	63333	60342
3 Cumulative (over end-March) (US $ Million)	-25516	3966	7704	15075
(₹ Crore)	-217259	28850	63333	123675
4 Outstanding Net Forward Sales (-)/ Purchase (+) at the end of month (US $ Million)	23600	49191	19932	19268

ii) Operations in currency futures segment

Item	2022-23	2022	2023	
		May	Apr.	May
	1	2	3	4
1 Net Purchase/ Sale of Foreign Currency (US $ Million) (1.1-1.2)	0	0	0	0
1.1 Purchase (+)	10930	2085	0	0
1.2 Sale (–)	10930	2085	0	0
2 Outstanding Net Currency Futures Sales (-)/ Purchase (+) at the end of month (US $ Million)	0	-1200	0	0

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

Item	As on May 31 , 2023		
	Long (+)	Short (-)	Net (1-2)
	1	2	3
1. Upto 1 month	3081	200	2881
2. More than 1 month and upto 3 months	2600	1246	1354
3. More than 3 months and upto 1 year	15033	0	15033
4. More than 1 year	0	0	0
Total (1+2+3+4)	**20714**	**1446**	**19268**

No. 5: RBI's Standing Facilities

(₹ Crore)

Item	As on the Last Reporting Friday							
	2022-23	2022	2023					
		Jun. 17	Jan. 27	Feb. 24	Mar. 24	Apr. 21	May. 19	Jun. 30
	1	2	3	4	5	6	7	8
1 MSF	28388	7	27370	15233	28388	16945	3326	31256
2 Export Credit Refinance for Scheduled Banks								
2.1 Limit			-	-	-	-	-	-
2.2 Outstanding			-	-	-	-	-	-
3 Liquidity Facility for PDs								
3.1 Limit	4900	4900	4900	4900	4900	4900	4900	4900
3.2 Outstanding	2442		1675	2107	2442	3719	3800	3319
4 Others								
4.1 Limit	76000	76000	76000	76000	76000	76000	76000	76000
4.2 Outstanding	15900	49364	7500	8350	15900	15900		
5 Total Outstanding (1+2.2+3.2+4.2)	46730	49371	36545	25690	46730	36564	7126	34575

Money and Banking

No. 6: Money Stock Measures

(₹ Crore)

Item	Outstanding as on March 31/last reporting Fridays of the month/ reporting Fridays				
	2022-23	2022	2023		
		May 20	Apr. 21	May 05	May 19
	1	2	3	4	5
1 Currency with the Public (1.1 + 1.2 + 1.3 – 1.4)	3276436	3117960	3346545	3366196	3371391
1.1 Notes in Circulation	3348219	3197840	3425056	3445388	3447924
1.2 Circulation of Rupee Coin	29542	27417	29542	29739	29739
1.3 Circulation of Small Coins	743	743	743	743	743
1.4 Cash on Hand with Banks	102085	108039	108858	109736	107088
2 Deposit Money of the Public	2398359	2180138	2349412	2386073	2328228
2.1 Demand Deposits with Banks	2320598	2126310	2281104	2317858	2260234
2.2 'Other' Deposits with Reserve Bank	77761	53828	68309	68215	67994
3 M1 (1 + 2)	**5674795**	**5298098**	**5695957**	**5752270**	**5699619**
4 Post Office Saving Bank Deposits	200257	190438	200257	200257	200257
5 M2 (3 + 4)	**5875052**	**5488536**	**5896214**	**5952527**	**5899876**
6 Time Deposits with Banks	16668966	15384209	16987296	17069409	17067146
7 M3 (3 + 6)	**22343760**	**20682307**	**22683254**	**22821679**	**22766765**
8 Total Post Office Deposits	1113230	1032181	1113230	1113230	1113230
9 M4 (7 + 8)	**23456990**	**21714488**	**23796484**	**23934909**	**23879995**

No. 7: Sources of Money Stock (M_3)

(₹ Crore)

Sources	Outstanding as on March 31/last reporting Fridays of the month/ reporting Fridays				
	2022-23	2022	2023		
		May. 20	Apr. 21	May. 05	May. 19
	1	2	3	4	5
1 Net Bank Credit to Government	**7165533**	**6264553**	**7165547**	**7228038**	**7135938**
1.1 RBI's net credit to Government (1.1.1–1.1.2)	1451126	1196325	1420099	1404199	1284068
1.1.1 Claims on Government	1456169	1449291	1420242	1435558	1434729
1.1.1.1 Central Government	1455377	1440787	1417096	1420104	1422535
1.1.1.2 State Governments	792	8504	3146	15455	12194
1.1.2 Government deposits with RBI	5043	252966	143	31360	150661
1.1.2.1 Central Government	5001	252924	101	31317	150619
1.1.2.2 State Governments	42	42	43	42	42
1.2 Other Banks' Credit to Government	5714407	5068228	5745447	5823839	5851870
2 Bank Credit to Commercial Sector	**14429636**	**12769727**	**14611529**	**14655837**	**14633072**
2.1 RBI's credit to commercial sector	26549	15275	21792	22198	5863
2.2 Other banks' credit to commercial sector	14403087	12754452	14589737	14633639	14627209
2.2.1 Bank credit by commercial banks	13675235	12038119	13859394	13900053	13893970
2.2.2 Bank credit by co-operative banks	710187	699492	713417	716770	716536
2.2.3 Investments by commercial and co-operative banks in other securities	17665	16841	16925	16816	16703
3 Net Foreign Exchange Assets of Banking Sector (3.1 + 3.2)	**4845307**	**4895017**	**4887014**	**4966698**	**4996510**
3.1 RBI's net foreign exchange assets (3.1.1–3.1.2)	4587355	4483433	4629063	4708747	4738559
3.1.1 Gross foreign assets	4587616	4483667	4629323	4709007	4738819
3.1.2 Foreign liabilities	260	234	260	260	260
3.2 Other banks' net foreign exchange assets	257951	411583	257951	257951	257951
4 Government's Currency Liabilities to the Public	**30285**	**28160**	**30285**	**30482**	**30482**
5 Banking Sector's Net Non-monetary Liabilities	**4127000**	**3275149**	**4011121**	**4059376**	**4029236**
5.1 Net non-monetary liabilities of RBI	1587565	1253040	1614462	1639030	1553290
5.2 Net non-monetary liabilities of other banks (residual)	2539436	2022109	2396659	2420345	2475946
M_3(1+2+3+4–5)	**22343760**	**20682307**	**22683254**	**22821679**	**22766765**

No. 8: Monetary Survey

(₹ Crore)

Item	Outstanding as on March 31/last reporting Fridays of the month/reporting Fridays				
	2022-23	2022	2023		
		May 20	Apr. 21	May 05	May 19
	1	2	3	4	5
Monetary Aggregates					
NM_1 (1.1+1.2.1+1.3)	5674795	5298098	5695957	5752270	5699502
NM_2 (NM_1 + 1.2.2.1)	13103414	12162728	13265253	13355941	13302318
NM_3 (NM_2 +1.2.2.2 + 1.4 = 2.1 + 2.2 + 2.3 – 2.4 – 2.5)	22628166	20946600	22975130	23130191	23048311
1 Components					
1.1 Currency with the Public	3276436	3117960	3346545	3366196	3371395
1.2 Aggregate Deposits of Residents	18828640	17381042	19101760	19214905	19155260
1.2.1 Demand Deposits	2320598	2126310	2281104	2317858	2260113
1.2.2 Time Deposits of Residents	16508042	15254732	16820656	16897047	16895146
1.2.2.1 Short-term Time Deposits	7428619	6864629	7569295	7603671	7602816
1.2.2.1.1 Certificates of Deposits (CDs)	304088	190349	302212	289922	297389
1.2.2.2 Long-term Time Deposits	9079423	8390103	9251361	9293376	9292331
1.3 'Other' Deposits with RBI	77761	53828	68309	68215	67994
1.4 Call/Term Funding from Financial Institutions	445329	393770	458516	480874	453662
2 Sources					
2.1 Domestic Credit	22710664	20124298	22864668	22980593	22885698
2.1.1 Net Bank Credit to the Government	7165533	6264553	7165547	7228038	7135938
2.1.1.1 Net RBI credit to the Government	1451126	1196325	1420099	1404199	1284068
2.1.1.2 Credit to the Government by the Banking System	5714407	5068228	5745447	5823839	5851870
2.1.2 Bank Credit to the Commercial Sector	15545132	13859745	15699122	15752555	15749760
2.1.2.1 RBI Credit to the Commercial Sector	26549	38358	21792	22198	5863
2.1.2.2 Credit to the Commercial Sector by the Banking System	15518583	13821387	15677330	15730357	15743897
2.1.2.2.1 Other Investments (Non-SLR Securities)	1096267	1053085	1070157	1078878	1096528
2.2 Government's Currency Liabilities to the Public	30285	28160	30285	30482	30482
2.3 Net Foreign Exchange Assets of the Banking Sector	4702285	4709367	4739836	4782637	4770954
2.3.1 Net Foreign Exchange Assets of the RBI	4587355	4483433	4629063	4708747	4738559
2.3.2 Net Foreign Currency Assets of the Banking System	114930	225933	110773	73890	32395
2.4 Capital Account	3446793	3255287	3556592	3588525	3760607
2.5 Other items (net)	1368276	659937	1103067	1074995	878215

No. 9: Liquidity Aggregates

(₹ Crore)

Aggregates	2022-23	2022	2023		
		May	Mar.	Apr.	May
	1	2	3	4	5
1 NM_3	**22617633**	**20946600**	**22617633**	**22975130**	**23048311**
2 Postal Deposits	668887	608643	668887	656356	656356
3 L_1 (1 + 2)	**23286520**	**21555243**	**23286520**	**23631486**	**23704667**
4 Liabilities of Financial Institutions	54724	30285	54724	69591	65082
4.1 Term Money Borrowings	1692	2044	1692	1811	1802
4.2 Certificates of Deposit	46407	28070	46407	57985	53485
4.3 Term Deposits	6625	171	6625	9795	9795
5 L_2 (3 + 4)	**23341244**	**21585529**	**23341244**	**23701077**	**23769749**
6 Public Deposits with Non-Banking Financial Companies	78061	..	78061	..	..
7 L_3 (5 + 6)	**23419305**	**..**	**23419305**	**..**	**..**

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

No. 10: Reserve Bank of India Survey

(₹ Crore)

Item	Outstanding as on March 31/last reporting Fridays of the month/ reporting Fridays				
	2022-23	2022	2023		
		May 20	Apr. 21	May 5	May 19
	1	2	3	4	5
1 Components					
1.1 Currency in Circulation	3378521	3226000	3455403	3475932	3478479
1.2 Bankers' Deposits with the RBI	930477	863500	897580	898439	913455
1.2.1 Scheduled Commercial Banks	868940	810295	838212	837756	852417
1.3 'Other' Deposits with the RBI	77761	53828	68309	68215	67994
Reserve Money (1.1 + 1.2 + 1.3 = 2.1 + 2.2 + 2.3 – 2.4 – 2.5)	4386759	4143328	4421292	4442586	4459928
2 Sources					
2.1 RBI's Domestic Credit	1356683	884775	1376406	1342388	1244177
2.1.1 Net RBI credit to the Government	1451126	1196325	1420099	1404199	1284068
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)	1450376	1187863	1416995	1388787	1271916
2.1.1.1.1 Loans and Advances to the Central Government	48677	-	3145	-	-
2.1.1.1.2 Investments in Treasury Bills	-	-	-	-	-
2.1.1.1.3 Investments in dated Government Securities	1406423	1440459	1413577	1419797	1422300
2.1.1.1.3.1 Central Government Securities	1406423	1440459	1413577	1419797	1422300
2.1.1.1.4 Rupee Coins	277	329	374	307	235
2.1.1.1.5 Deposits of the Central Government	5001	252924	101	31317	150619
2.1.1.2 Net RBI credit to State Governments	749	8461	3104	15412	12151
2.1.2 RBI's Claims on Banks	-120992	-349908	-65486	-84009	-45754
2.1.2.1 Loans and Advances to Scheduled Commercial Banks	-120992	-326824	-65486	-84009	-45754
2.1.3 RBI's Credit to Commercial Sector	26549	38358	21792	22198	5863
2.1.3.1 Loans and Advances to Primary Dealers	8476	-	3719	4115	3800
2.1.3.2 Loans and Advances to NABARD	-	23084	-	-	-
2.2 Government's Currency Liabilities to the Public	30285	28160	30285	30482	30482
2.3 Net Foreign Exchange Assets of the RBI	4587355	4483433	4629063	4708747	4738559
2.3.1 Gold	371500	316885	378926	378914	373000
2.3.2 Foreign Currency Assets	4215873	4166566	4250154	4329850	4365577
2.4 Capital Account	1505657	1365613	1562091	1551741	1692762
2.5 Other Items (net)	81908	-112573	52371	87289	-139472

No. 11: Reserve Money - Components and Sources

(₹ Crore)

Item	2022-23	Outstanding as on March 31/last Fridays of the month/Fridays					
		2022	2023				
		May 27	Apr. 28	May 5	May 12	May 19	May 26
	1	2	3	4	5	6	7
Reserve Money (1.1 + 1.2 + 1.3 = 2.1 + 2.2 + 2.3 + 2.4 + 2.5 – 2.6)	4386759	4092142	4474080	4442586	4464807	4459928	4421992
1 Components							
1.1 Currency in Circulation	3378521	3219429	3455282	3475932	3488610	3478479	3442197
1.2 Bankers' Deposits with RBI	930477	817317	951088	898439	908280	913455	911321
1.3 'Other' Deposits with RBI	77761	55395	67710	68215	67917	67994	68474
2 Sources							
2.1 Net Reserve Bank Credit to Government	1451126	1128141	1425449	1404199	1370095	1284068	1293643
2.2 Reserve Bank Credit to Banks	-120992	-309121	-54322	-84009	-43300	-45754	-94537
2.3 Reserve Bank Credit to Commercial Sector	26549	15275	22000	22198	6179	5863	4420
2.4 Net Foreign Exchange Assets of RBI	4587355	4510138	4651213	4708747	4759076	4738559	4698223
2.5 Government's Currency Liabilities to the Public	30285	28293	30482	30482	30482	30482	30692
2.6 Net Non- Monetary Liabilities of RBI	1587565	1280583	1600742	1639030	1657725	1553290	1510449

No. 12: Commercial Bank Survey

(₹ Crore)

Item	Outstanding as on last reporting Fridays of the month/ reporting Fridays of the month				
	2022-23	2022	2023		
		May 20	Apr. 21	May 5	May 19
	1	2	3	4	5
1 Components					
1.1 Aggregate Deposits of Residents	17882990	16444797	18145164	18261716	18204191
1.1.1 Demand Deposits	2180431	1985767	2138355	2177876	2120870
1.1.2 Time Deposits of Residents	15702560	14459030	16006809	16083840	16083320
1.1.2.1 Short-term Time Deposits	7066152	6506563	7203064	7237728	7237494
1.1.2.1.1 Certificates of Deposits (CDs)	304088	190349	302212	289922	297389
1.1.2.2 Long-term Time Deposits	8636408	7952466	8803745	8846112	8845826
1.2 Call/Term Funding from Financial Institutions	445329	393770	458516	480874	453662
2 Sources					
2.1 Domestic Credit	20197180	17867170	20383774	20507220	20553286
2.1.1 Credit to the Government	5414322	4770031	5444679	5518341	5550541
2.1.2 Credit to the Commercial Sector	14782858	13097139	14939095	14988878	15002745
2.1.2.1 Bank Credit	13675235	12038119	13859394	13900053	13893871
2.1.2.1.1 Non-food Credit	13655330	11984865	13838102	13866868	13857522
2.1.2.2 Net Credit to Primary Dealers	19491	14113	17699	18104	20522
2.1.2.3 Investments in Other Approved Securities	826	784	807	807	786
2.1.2.4 Other Investments (in non-SLR Securities)	1087305	1044122	1061195	1069915	1087566
2.2 Net Foreign Currency Assets of Commercial Banks (2.2.1-2.2.2-2.2.3)	114930	225933	110773	73890	32395
2.2.1 Foreign Currency Assets	353850	427226	358172	323580	281238
2.2.2 Non-resident Foreign Currency Repatriable Fixed Deposits	160923	129477	166640	172362	170264
2.2.3 Overseas Foreign Currency Borrowings	77997	71816	80759	77328	78580
2.3 Net Bank Reserves (2.3.1+2.3.2-2.3.3)	833002	1232851	1000933	1019717	993524
2.3.1 Balances with the RBI	809907	810295	838212	837756	852417
2.3.2 Cash in Hand	90263	95732	97235	97952	95354
2.3.3 Loans and Advances from the RBI	67168	-326824	-65486	-84009	-45754
2.4 Capital Account	1916966	1865502	1970331	2012613	2043674
2.5 Other items (net) (2.1+2.2+2.3-2.4-1.1-1.2)	899827	621884	921469	845623	877678
2.5.1 Other Demand and Time Liabilities (net of 2.2.3)	711654	565542	660124	756801	718297
2.5.2 Net Inter-Bank Liabilities (other than to PDs)	44733	7741	29540	22146	46066

No. 13: Scheduled Commercial Banks' Investments

(₹ Crore)

Item	As on March 24, 2023	2022	2023		
		May 20	Apr. 21	May 05	May 19
	1	2	3	4	5
1 SLR Securities	5415148	4770815	5445485	5519148	5551328
2 Other Government Securities (Non-SLR)	182265	160644	181087	181060	181210
3 Commercial Paper	65058	58764	61928	60835	60463
4 Shares issued by					
4.1 PSUs	9736	9784	9737	9673	9616
4.2 Private Corporate Sector	71099	72112	71624	70924	71498
4.3 Others	4500	5133	4379	4646	4640
5 Bonds/Debentures issued by					
5.1 PSUs	92304	98683	86727	85786	86935
5.2 Private Corporate Sector	325035	315849	306067	307509	298579
5.3 Others	99384	91104	100601	105042	106619
6 Instruments issued by					
6.1 Mutual funds	48810	59599	58641	61938	83743
6.2 Financial institutions	189180	172452	182573	182504	184262

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

(₹ Crore)

Item	As on the Last Reporting Friday (in case of March)/ Last Friday							
	All Scheduled Banks				All Scheduled Commercial Banks			
	2022-23	2022	2023		2022-23	2022	2023	
		May	Apr.	May		May	Apr.	May
	1	2	3	4	5	6	7	8
Number of Reporting Banks	212	212	211	211	137	136	136	136
1 Liabilities to the Banking System	**355252**	**281473**	**346011**	**368110**	**351843**	**277568**	**342636**	**364801**
1.1 Demand and Time Deposits from Banks	228517	196517	246563	252075	226119	193068	244088	249546
1.2 Borrowings from Banks	67566	50013	39616	55183	67199	50009	39367	55065
1.3 Other Demand and Time Liabilities	59170	34943	59832	60851	58524	34491	59181	60190
2 Liabilities to Others	**19730504**	**18094184**	**20211387**	**20189965**	**19278894**	**17645370**	**19747119**	**19733207**
2.1 Aggregate Deposits	18477677	17028142	18928963	18932703	18043914	16597227	18482933	18494503
2.1.1 Demand	2225416	2030246	2306829	2226502	2180431	1985304	2257697	2182057
2.1.2 Time	16252261	14997895	16622134	16706201	15863483	14611923	16225236	16312446
2.2 Borrowings	449945	399209	470367	461474	445329	393281	465363	456685
2.3 Other Demand and Time Liabilities	802881	666833	812058	795788	789651	654863	798824	782019
3 Borrowings from Reserve Bank	**165085**	**94368**	**73004**	**67278**	**165085**	**94368**	**73004**	**67278**
3.1 Against Usance Bills /Promissory Notes	-	-	-	-	-	-	-	-
3.2 Others	165085	94368	73004	67278	165085	94368	73004	67278
4 Cash in Hand and Balances with Reserve Bank	920953	881424	1002109	992760	900170	859658	980478	970799
4.1 Cash in Hand	92788	100874	92263	121647	90263	97922	90055	118608
4.2 Balances with Reserve Bank	828165	780550	909846	871113	809907	761736	890423	852191
5 Assets with the Banking System	**397974**	**342124**	**405522**	**396786**	**326601**	**278517**	**338073**	**330985**
5.1 Balances with Other Banks	232378	228875	241266	240356	193422	193977	199558	197906
5.1.1 In Current Account	18939	16545	17154	16824	15528	13681	13123	12782
5.1.2 In Other Accounts	213440	212330	224112	223532	177894	180296	186435	185124
5.2 Money at Call and Short Notice	49763	33081	47269	36430	24864	9843	28233	18894
5.3 Advances to Banks	45330	31176	42830	40670	41184	29323	39612	38116
5.4 Other Assets	70503	48992	74157	79330	67130	45374	70670	76070
6 Investment	**5560664**	**4973070**	**5605397**	**5688417**	**5415148**	**4830428**	**5458940**	**5543545**
6.1 Government Securities	5553702	4966935	5599381	5682400	5414322	4829622	5458213	5542758
6.2 Other Approved Securities	6963	6135	6016	6016	826	806	727	787
7 Bank Credit	**14078261**	**12431471**	**14286638**	**14306101**	**13675235**	**12062731**	**13879284**	**13902746**
7a Food Credit	65622	96386	79502	85546	19906	50666	27669	33571
7.1 Loans, Cash-credits and Overdrafts	13824693	12193291	14024236	14045791	13424906	11827177	13619986	13646315
7.2 Inland Bills-Purchased	39446	34607	42626	43001	39435	34590	42614	42075
7.3 Inland Bills-Discounted	165428	155143	170157	172767	162910	153369	167732	170441
7.4 Foreign Bills-Purchased	19758	20987	19345	18105	19545	20703	19136	17930
7.5 Foreign Bills-Discounted	28936	27444	30274	26437	28439	26892	29816	25985

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

(₹ Crore)

Sector	Outstanding as on				Growth(%)	
	Mar. 24, 2023	2022	2023		Financial year so far	Y-o-Y
		May 20	Apr. 21	May 19	2023-24	2023
	1	2	3	4	%	%
I. Bank Credit (II+III)	**13675228**	**12038119**	**13857671**	**13893871**	**1.6**	**15.4**
II. Food Credit	**19906**	**53254**	**21292**	**36350**	**82.6**	**-31.7**
III. Non-food Credit	**13655322**	**11984865**	**13836379**	**13857522**	**1.5**	**15.6**
1. Agriculture & Allied Activities	**1687191**	**1482029**	**1725511**	**1719260**	**1.9**	**16.0**
2. Industry (Micro and Small, Medium and Large)	**3336722**	**3165450**	**3368480**	**3354988**	**0.5**	**6.0**
2.1 Micro and Small	598390	550806	597629	603217	0.8	9.5
2.2 Medium	270449	230745	274071	274344	1.4	18.9
2.3 Large	2467884	2383899	2496780	2477428	0.4	3.9
3. Services	**3608574**	**3034005**	**3665569**	**3682532**	**2.0**	**21.4**
3.1 Transport Operators	176239	151538	180377	180525	2.4	19.1
3.2 Computer Software	21559	19235	21568	21525	-0.2	11.9
3.3 Tourism, Hotels & Restaurants	66466	64100	66959	66429	-0.1	3.6
3.4 Shipping	6677	7617	6342	6224	-6.8	-18.3
3.5 Aviation	28330	22381	29983	31628	11.6	41.3
3.6 Professional Services	134661	119495	135928	136103	1.1	13.9
3.7 Trade	819921	713178	834959	837821	2.2	17.5
3.7.1. Wholesale Trade[1]	396631	369485	413551	419081	5.7	13.4
3.7.2 Retail Trade	423291	343693	421409	418739	-1.1	21.8
3.8 Commercial Real Estate	314604	301170	321861	321149	2.1	6.6
3.9 Non-Banking Financial Companies (NBFCs)[2] of which,	1331097	1049567	1345436	1339615	0.6	27.6
3.9.1 Housing Finance Companies (HFCs)	314678	293849	313491	315109	0.1	7.2
3.9.2 Public Financial Institutions (PFIs)	175614	131962	177673	175566	0.0	33.0
3.10 Other Services[3]	709020	585723	722157	741512	4.6	26.6
4. Personal Loans	**4085168**	**3470472**	**4119592**	**4137821**	**1.3**	**19.2**
4.1 Consumer Durables	20044	17995	20295	20542	2.5	14.2
4.2 Housing	1936428	1707462	1949920	1956438	1.0	14.6
4.3 Advances against Fixed Deposits	121897	81649	112597	110583	-9.3	35.4
4.4 Advances to Individuals against share & bonds	6778	6184	6803	6791	0.2	9.8
4.5 Credit Card Outstanding	194282	154854	200258	201131	3.5	29.9
4.6 Education	96847	82662	97395	97756	0.9	18.3
4.7 Vehicle Loans	500299	416409	506466	509022	1.7	22.2
4.8 Loan against gold jewellery	88428	74303	89665	90697	2.6	22.1
4.9 Other Personal Loans	1120165	928953	1136194	1144860	2.2	23.2
5. Priority Sector (Memo)						
(i) Agriculture & Allied Activities[4]	1708951	1456432	1682168	1657924	-3.0	13.8
(ii) Micro & Small Enterprises[5]	1570231	1413016	1580835	1617667	3.0	14.5
(iii) Medium Enterprises[6]	399260	361334	403313	402915	0.9	11.5
(iv) Housing	621376	615355	623781	622834	0.2	1.2
(v) Education Loans	59507	57912	59290	59466	-0.1	2.7
(vi) Renewable Energy	4656	4024	4614	4752	2.1	18.1
(vii) Social Infrastructure	2464	2578	2494	2607	5.8	1.1
(viii) Export Credit	15375	21685	18667	12234	-20.4	-43.6
(ix) Others	59659	50688	51805	62878	5.4	24.0
(x) Weaker Sections including net PSLC- SF/MF	1384249	1172379	1355514	1309907	-5.4	11.7

Note 1: Data are provisional. Bank credit, Food credit and Non-food credit data are based on Section-42 return, which covers all scheduled commercial banks (SCBs), while sectoral non-food credit data are based on sector-wise and industry-wise bank credit (SIBC) return, which covers select banks accounting for about 93 per cent of total non-food credit extended by all SCBs .
Note 2: With effect from January 2019, sectoral credit data are based on revised format due to which values and growth rates of some of the existing components published earlier have undergone changes.
Note 3: Credit data are adjusted for past reporting errors by select SCBs from December 2021 onwards.
1 Wholesale trade includes food procurement credit outside the food credit consortium.
2 NBFCs include HFCs, PFIs, Microfinance Institutions (MFIs), NBFCs engaged in gold loan and others.
3 "Other Services" include Mutual Fund (MFs), Banking and Finance other than NBFCs and MFs and other services which are not indicated elsewhere under services.
4 "Agriculture and Allied Activities" under the priority sector also include priority sector lending certificates (PSLCs).
5 "Micro and Small Enterprises" under the priority sector include credit to micro and small enterprises in industry and services sectors and also include PSLCs.
6 "Medium Enterprises" under the priority sector include credit to medium enterprises in industry and services sectors.

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

(₹ Crore)

Industry	Outstanding as on				Growth(%)	
	Mar. 24, 2023	2022	2023		Financial year so far	Y-o-Y
		May 20	Apr 21	May 19	2023-24	2023
	1	2	3	4	%	%
2 Industries (2.1 to 2.19)	3336722	3165450	3368480	3354988	0.5	6.0
2.1 Mining & Quarrying (incl. Coal)	58812	46986	60642	55317	-5.9	17.7
2.2 Food Processing	182878	174697	179568	181879	-0.5	4.1
2.2.1 Sugar	22867	25399	23713	22798	-0.3	-10.2
2.2.2 Edible Oils & Vanaspati	19737	17739	19012	18971	-3.9	6.9
2.2.3 Tea	5162	6094	5195	5354	3.7	-12.1
2.2.4 Others	135112	125465	131647	134755	-0.3	7.4
2.3 Beverage & Tobacco	23362	17777	24169	22951	-1.8	29.1
2.4 Textiles	227843	219503	232402	231066	1.4	5.3
2.4.1 Cotton Textiles	91095	87674	92873	92592	1.6	5.6
2.4.2 Jute Textiles	3867	3567	3982	3966	2.6	11.2
2.4.3 Man-Made Textiles	40354	38396	40301	39614	-1.8	3.2
2.4.4 Other Textiles	92527	89866	95246	94894	2.6	5.6
2.5 Leather & Leather Products	11675	11427	11782	11677	0.0	2.2
2.6 Wood & Wood Products	19963	16510	19984	20025	0.3	21.3
2.7 Paper & Paper Products	43010	40356	42682	42445	-1.3	5.2
2.8 Petroleum, Coal Products & Nuclear Fuels	149363	104717	144708	137232	-8.1	31.0
2.9 Chemicals & Chemical Products	216481	208697	214476	218286	0.8	4.6
2.9.1 Fertiliser	33805	37820	35297	38102	12.7	0.7
2.9.2 Drugs & Pharmaceuticals	67130	62557	66706	66882	-0.4	6.9
2.9.3 Petro Chemicals	20661	21555	21058	21572	4.4	0.1
2.9.4 Others	94885	86765	91416	91731	-3.3	5.7
2.10 Rubber, Plastic & their Products	79037	71290	78784	78382	-0.8	9.9
2.11 Glass & Glassware	8100	5768	7774	7770	-4.1	34.7
2.12 Cement & Cement Products	56592	47880	56752	54070	-4.5	12.9
2.13 Basic Metal & Metal Product	343507	291957	342726	340208	-1.0	16.5
2.13.1 Iron & Steel	228860	187713	226500	224255	-2.0	19.5
2.13.2 Other Metal & Metal Product	114646	104244	116225	115953	1.1	11.2
2.14 All Engineering	175260	168674	177025	177390	1.2	5.2
2.14.1 Electronics	41781	38445	43499	43410	3.9	12.9
2.14.2 Others	133479	130229	133526	133980	0.4	2.9
2.15 Vehicles, Vehicle Parts & Transport Equipment	96603	91247	99103	97735	1.2	7.1
2.16 Gems & Jewellery	77718	72009	77943	77213	-0.6	7.2
2.17 Construction	122880	114427	121069	123807	0.8	8.2
2.18 Infrastructure	1201983	1201605	1234477	1222702	1.7	1.8
2.18.1 Power	620425	615508	628643	617235	-0.5	0.3
2.18.2 Telecommunications	111334	129261	128757	128229	15.2	-0.8
2.18.3 Roads	284793	275426	292378	289655	1.7	5.2
2.18.4 Airports	9492	6767	7831	7726	-18.6	14.2
2.18.5 Ports	8175	7938	7619	7724	-5.5	-2.7
2.18.6 Railways	11169	11382	11359	11378	1.9	0.0
2.18.7 Other Infrastructure	156593	155323	157890	160755	2.7	3.5
2.19 Other Industries	241656	259922	242415	254832	5.5	-2.0

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

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

(₹ Crore)

Item	Last Reporting Friday (in case of March)/Last Friday/ Reporting Friday								
	2022-23	2022	2023						
		Apr, 29	Feb, 24	Mar, 10	Mar, 24	Mar, 31	Apr, 07	Apr, 21	Apr, 28
	1	2	3	4	5	6	7	8	9
Number of Reporting Banks	33	33	33	33	33	33	32	32	32
1 Aggregate Deposits (2.1.1.2+2.2.1.2)	**144701.9**	**130356.1**	**135950.9**	**132345.1**	**136275.2**	**144701.9**	**142270.4**	**142818.0**	**134614.3**
2 Demand and Time Liabilities									
2.1 Demand Liabilities	**30241.2**	**26799.3**	**28527.7**	**26330.1**	**27393.9**	**30241.2**	**28767.3**	**28897.3**	**27252.9**
2.1.1 Deposits									
2.1.1.1 Inter-Bank	6893.3	5097.7	5720.7	5459.7	5882.5	6893.3	7112.1	6127.9	8403.6
2.1.1.2 Others	18195.4	14888.6	17432.4	14856.1	15407.1	18195.4	16072.1	17700.1	14202.6
2.1.2 Borrowings from Banks	0.0	579.8							
2.1.3 Other Demand Liabilities	5152.4	6233.2	5374.5	6014.3	6104.3	5152.4	5583.1	5069.3	4646.7
2.2 Time Liabilities	**194129.9**	**188046.3**	**175896.3**	**173546.0**	**180973.3**	**194129.9**	**192111.4**	**189254.7**	**175445.2**
2.2.1 Deposits									
2.2.1.1 Inter-Bank	65875.0	69276.0	54797.7	53880.1	58092.5	65875.0	64177.9	62407.9	53288.9
2.2.1.2 Others	126506.5	115467.5	118518.4	117488.9	120868.1	126506.5	126198.3	125117.9	120411.7
2.2.2 Borrowings from Banks	845.8	1000.0	1604.0	1185.6	1079.8	845.8	843.2	843.2	843.1
2.2.3 Other Time Liabilities	902.6	2302.9	976.1	991.4	932.8	902.6	892.0	885.7	901.5
3 Borrowing from Reserve Bank	0.0								
4 Borrowings from a notified bank / Government	84382.5	63081.2	77988.7	76620.2	81020.8	84382.5	81055.0	78029.8	72240.6
4.1 Demand	20545.9	13292.8	16530.5	16418.4	17932.3	20545.9	19755.9	19076.4	19096.3
4.2 Time	63836.7	49788.3	61458.3	60201.7	63088.6	63836.7	61299.1	58953.4	53144.3
5 Cash in Hand and Balances with Reserve Bank	**12386.8**	**10297.1**	**10769.8**	**10928.5**	**11111.3**	**12386.8**	**12761.4**	**11195.2**	**11744.3**
5.1 Cash in Hand	1540.1	886.4	797.2	913.2	913.6	1540.1	1118.9	726.9	743.8
5.2 Balance with Reserve Bank	10846.7	9410.7	9972.6	10015.3	10197.7	10846.7	11642.5	10468.3	11000.5
6 Balances with Other Banks in Current Account	**3500.7**	**1398.7**	**2038.1**	**1929.6**	**1637.1**	**3500.7**	**4856.0**	**2857.9**	**2697.7**
7 Investments in Government Securities	**80906.4**	**72964.6**	**72892.1**	**74623.0**	**71681.6**	**80906.4**	**72785.8**	**74705.2**	**74288.0**
8 Money at Call and Short Notice	**34771.6**	**28772.6**	**21601.9**	**22730.9**	**27431.3**	**34771.6**	**37834.6**	**26219.0**	**22217.5**
9 Bank Credit (10.1+11)	**124978.1**	**120025.5**	**123225.6**	**122954.0**	**123758.3**	**124978.1**	**123742.3**	**124914.6**	**120784.8**
10 Advances									
10.1 Loans, Cash-Credits and Overdrafts	**124928.2**	**120004.5**	**123202.0**	**122923.9**	**123721.3**	**124928.2**	**123695.5**	**124857.0**	**120726.3**
10.2 Due from Banks	131095.9	108476.3	128522.2	123021.0	127305.7	131095.9	128373.0	125908.8	121140.9
11 Bills Purchased and Discounted	49.9	21.0	23.6	30.2	37.0	49.9	46.8	57.6	58.5

Prices and Production

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

Group/Sub group	2022-23			Rural			Urban			Combined		
	Rural	Urban	Combined	Jun.22	May.23	Jun.23 (P)	Jun.22	May.23	Jun.23 (P)	Jun.22	May.23	Jun.23 (P)
	1	2	3	4	5	6	7	8	9	10	11	12
1 Food and beverages	**173.9**	**179.7**	**176.0**	**172.4**	**176.8**	**180.3**	**179.3**	**183.1**	**187.6**	**174.9**	**179.1**	**183.0**
1.1 Cereals and products	163.3	165.3	164.0	153.8	173.2	174.2	157.5	174.7	175.7	155.0	173.7	174.7
1.2 Meat and fish	208.7	215.2	211.0	217.2	211.5	220.3	223.4	219.4	226.6	219.4	214.3	222.5
1.3 Egg	174.7	177.1	175.6	169.6	171.0	181.2	172.8	176.7	185.4	170.8	173.2	182.8
1.4 Milk and products	170.1	170.7	170.3	165.4	179.6	180.1	166.4	179.4	179.8	165.8	179.5	180.0
1.5 Oils and fats	197.0	181.1	191.2	208.1	173.3	167.3	188.6	164.4	159.7	200.9	170.0	164.5
1.6 Fruits	164.1	169.6	166.7	165.8	169.0	166.9	174.1	175.8	177.8	169.7	172.2	172.0
1.7 Vegetables	160.8	198.7	173.6	167.3	148.7	165.3	211.5	185.0	210.4	182.3	161.0	180.6
1.8 Pulses and products	168.1	168.2	168.2	164.6	174.9	180.8	163.6	176.9	183.2	164.3	175.6	181.6
1.9 Sugar and confectionery	119.9	122.2	120.7	119.1	121.9	122.8	121.4	124.2	125.0	119.9	122.7	123.5
1.10 Spices	199.4	193.5	197.5	188.9	221.0	226.2	183.5	211.9	216.6	187.1	218.0	223.0
1.11 Non-alcoholic beverages	175.4	161.3	169.6	174.2	178.7	179.3	159.1	165.9	166.7	167.9	173.4	174.0
1.12 Prepared meals, snacks, sweets	185.1	190.4	187.6	181.9	191.1	191.5	186.3	197.7	198.4	183.9	194.2	194.7
2 Pan, tobacco and intoxicants	**195.0**	**199.9**	**196.3**	**192.9**	**199.9**	**200.3**	**198.3**	**204.2**	**204.6**	**194.3**	**201.0**	**201.4**
3 Clothing and footwear	**184.5**	**172.9**	**179.9**	**180.4**	**190.8**	**191.4**	**169.4**	**179.3**	**180.0**	**176.0**	**186.2**	**186.9**
3.1 Clothing	184.8	175.0	180.9	180.7	191.2	191.9	171.6	181.3	182.0	177.1	187.3	188.0
3.2 Footwear	182.7	161.4	173.9	178.7	187.9	188.6	157.4	168.1	168.5	169.9	179.7	180.3
4 Housing	**--**	**170.0**	**170.0**	**--**	**--**	**--**	**166.8**	**175.6**	**174.4**	**166.8**	**175.6**	**174.4**
5 Fuel and light	**179.7**	**178.4**	**179.2**	**176.7**	**182.5**	**181.8**	**174.9**	**183.4**	**184.6**	**176.0**	**182.8**	**182.9**
6 Miscellaneous	**173.8**	**166.5**	**170.3**	**171.0**	**179.5**	**179.9**	**163.8**	**171.6**	**172.3**	**167.5**	**175.7**	**176.2**
6.1 Household goods and services	173.7	165.1	169.6	170.3	179.8	180.3	162.1	170.1	170.4	166.4	175.2	175.6
6.2 Health	181.3	174.6	178.7	178.2	187.8	188.5	170.9	182.2	182.8	175.4	185.7	186.3
6.3 Transport and communication	167.3	158.8	162.8	165.5	169.7	169.9	157.2	160.4	160.8	161.1	164.8	165.1
6.4 Recreation and amusement	170.0	165.8	167.6	168.0	173.8	174.1	164.1	169.2	169.8	165.8	171.2	171.7
6.5 Education	175.6	169.7	172.2	172.6	180.3	181.8	166.5	174.8	177.1	169.0	177.1	179.0
6.6 Personal care and effects	173.2	173.4	173.3	169.5	184.9	184.4	169.2	185.6	185.2	169.4	185.2	184.7
General Index (All Groups)	**175.8**	**173.5**	**174.7**	**173.6**	**179.8**	**181.8**	**171.4**	**178.2**	**179.9**	**172.6**	**179.1**	**180.9**

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

No. 19: Other Consumer Price Indices

Item	Base Year	Linking Factor	2022-23	2022	2023	
				May.	Apr.	May.
	1	2	3	4	5	6
1 Consumer Price Index for Industrial Workers	2016	2.88	131.1	129.0	134.2	134.7
2 Consumer Price Index for Agricultural Labourers	1986-87	5.89	1148	1119	1180	1186
3 Consumer Price Index for Rural Labourers	1986-87	-	1160	1131	1192	1197

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

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

Item	2022-23	2022	2023	
		May	Apr.	May
	1	2	3	4
1 Standard Gold (₹ per 10 grams)	52731	50879	60145	60583
2 Silver (₹ per kilogram)	61991	61572	74386	73015

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

No. 21: Wholesale Price Index

(Base: 2011-12 = 100)

Commodities	Weight	2022-23	2022	2023					
			Jun.	Jan.	Feb.	Mar.	Apr.	May (P)	Jun. (P)
	1	2	3	4	5	6	7	8	9
1 ALL COMMODITIES	**100.000**	**152.5**	**155.4**	**150.7**	**150.9**	**151.0**	**151.1**	**149.6**	**149.0**
1.1 PRIMARY ARTICLES	**22.618**	**176.8**	**181.5**	**174.3**	**173.6**	**175.2**	**177.8**	**175.3**	**176.3**
1.1.1 FOOD ARTICLES	**15.256**	**179.5**	**182.5**	**176.6**	**176.9**	**178.8**	**182.1**	**181.1**	**184.9**
1.1.1.1 Food Grains (Cereals+Pulses)	3.462	178.6	170.7	187.0	185.4	183.0	183.7	183.1	185.2
1.1.1.2 Fruits & Vegetables	3.475	200.6	225.9	171.2	173.0	180.7	192.2	185.8	194.3
1.1.1.3 Milk	4.440	167.8	164.2	172.9	174.1	175.3	176.7	175.1	178.3
1.1.1.4 Eggs,Meat & Fish	2.402	170.6	175.3	170.0	169.8	171.9	171.1	177.2	180.1
1.1.1.5 Condiments & Spices	0.529	187.2	177.9	195.7	191.8	192.9	197.7	203.5	209.7
1.1.1.6 Other Food Articles	0.948	178.1	172.4	180.8	182.3	183.3	184.2	181.2	178.8
1.1.2 NON-FOOD ARTICLES	**4.119**	**172.1**	**175.9**	**173.7**	**170.2**	**167.1**	**165.6**	**162.7**	**158.8**
1.1.2.1 Fibres	0.839	203.0	226.3	185.0	182.6	179.9	180.0	175.7	169.4
1.1.2.2 Oil Seeds	1.115	205.2	217.5	201.6	199.5	192.5	191.8	188.7	186.2
1.1.2.3 Other non-food Articles	1.960	131.2	128.6	137.6	135.0	135.2	135.6	133.5	132.0
1.1.2.4 Floriculture	0.204	257.4	196.3	321.8	297.7	281.7	252.1	248.8	223.3
1.1.3 MINERALS	**0.833**	**203.5**	**206.3**	**202.3**	**217.5**	**222.4**	**224.6**	**224.5**	**214.8**
1.1.3.1 Metallic Minerals	0.648	191.7	198.7	185.9	206.1	212.8	214.3	214.3	203.9
1.1.3.2 Other Minerals	0.185	245.2	233.2	259.7	257.2	256.2	260.8	260.3	252.9
1.1.4 CRUDE PETROLEUM & NATURAL GAS	**2.410**	**158.4**	**176.4**	**151.4**	**143.2**	**149.8**	**155.0**	**142.9**	**138.6**
1.2 FUEL & POWER	**13.152**	**159.5**	**167.1**	**155.6**	**157.6**	**156.4**	**152.7**	**148.6**	**146.0**
1.2.1 COAL	**2.138**	**133.3**	**130.9**	**134.3**	**135.6**	**135.1**	**135.5**	**134.2**	**137.5**
1.2.1.1 Coking Coal	0.647	143.4	143.4	143.4	143.4	143.4	143.4	143.4	143.4
1.2.1.2 Non-Coking Coal	1.401	119.8	119.8	119.8	119.8	119.8	119.8	119.8	125.6
1.2.1.3 Lignite	0.090	271.1	212.6	294.3	324.4	312.6	323.3	292.1	279.8
1.2.2 MINERAL OILS	**7.950**	**172.9**	**189.8**	**160.9**	**165.5**	**165.2**	**159.6**	**156.4**	**152.8**
1.2.3 ELECTRICITY	**3.064**	**143.3**	**133.7**	**156.7**	**152.4**	**148.4**	**146.8**	**138.6**	**134.5**
1.3 MANUFACTURED PRODUCTS	**64.231**	**142.6**	**143.9**	**141.4**	**141.6**	**141.3**	**141.4**	**140.7**	**140.0**
1.3.1 MANUFACTURE OF FOOD PRODUCTS	**9.122**	**165.3**	**169.0**	**163.1**	**161.9**	**160.8**	**160.5**	**159.1**	**158.9**
1.3.1.1 Processing and Preserving of meat	0.134	143.7	147.2	142.8	142.7	145.5	146.5	146.4	145.9
1.3.1.2 Processing and Preserving of fish, Crustaceans, Molluscs and products thereof	0.204	144.9	144.8	141.7	144.4	140.7	138.8	141.1	144.1
1.3.1.3 Processing and Preserving of fruit and Vegetables	0.138	125.8	124.0	126.9	126.8	126.6	128.8	129.1	129.5
1.3.1.4 Vegetable and Animal oils and Fats	2.643	181.9	204.7	166.1	162.9	157.9	155.4	150.5	145.8
1.3.1.5 Dairy products	1.165	167.0	160.6	171.9	174.7	176.4	177.7	177.6	178.6
1.3.1.6 Grain mill products	2.010	162.1	152.6	171.0	168.8	168.5	166.8	166.4	168.7
1.3.1.7 Starches and Starch products	0.110	158.9	155.6	159.2	157.3	157.1	155.7	154.7	150.9
1.3.1.8 Bakery products	0.215	163.0	160.1	166.0	166.3	166.2	165.1	163.8	165.0
1.3.1.9 Sugar, Molasses & honey	1.163	126.8	125.9	127.1	127.1	126.5	129.2	129.9	131.0
1.3.1.10 Cocoa, Chocolate and Sugar confectionery	0.175	135.9	133.5	137.4	138.0	137.1	137.3	138.2	138.9
1.3.1.11 Macaroni, Noodles, Couscous and Similar farinaceous products	0.026	155.8	157.4	154.6	153.7	154.4	150.6	148.3	149.4
1.3.1.12 Tea & Coffee products	0.371	178.2	190.0	166.7	165.2	173.7	181.1	183.1	186.6
1.3.1.13 Processed condiments & salt	0.163	176.5	169.7	181.1	178.1	182.7	180.9	182.1	186.9
1.3.1.14 Processed ready to eat food	0.024	141.2	141.0	141.2	141.3	141.8	142.1	143.3	144.0
1.3.1.15 Health supplements	0.225	179.4	178.5	181.0	181.1	178.7	180.7	179.9	183.1
1.3.1.16 Prepared animal feeds	0.356	208.8	206.3	209.6	207.8	206.9	207.7	205.6	205.5
1.3.2 MANUFACTURE OF BEVERAGES	**0.909**	**128.9**	**128.5**	**129.8**	**130.3**	**130.3**	**130.9**	**131.0**	**130.9**
1.3.2.1 Wines & spirits	0.408	129.3	127.6	130.9	132.0	131.2	132.0	132.3	132.4
1.3.2.2 Malt liquors and Malt	0.225	134.5	135.4	134.4	134.5	134.4	135.1	134.6	134.5
1.3.2.3 Soft drinks; Production of mineral waters and Other bottled waters	0.275	123.7	124.3	124.3	124.4	125.5	125.8	126.0	125.6

No. 21: Wholesale Price Index (Contd.)

(Base: 2011-12 = 100)

Commodities	Weight	2022-23	2022	2023					
			Jun.	Jan.	Feb.	Mar.	Apr.	May (P)	Jun. (P)
	1	2	3	4	5	6	7	8	9
1.3.3 MANUFACTURE OF TOBACCO PRODUCTS	**0.514**	**165.3**	**164.0**	**165.9**	**166.5**	**169.2**	**169.8**	**171.2**	**173.1**
1.3.3.1 Tobacco products	0.514	165.3	164.0	165.9	166.5	169.2	169.8	171.2	173.1
1.3.4 MANUFACTURE OF TEXTILES	**4.881**	**142.7**	**149.3**	**137.1**	**137.2**	**136.8**	**137.2**	**136.2**	**135.1**
1.3.4.1 Preparation and Spinning of textile fibres	2.582	133.2	144.6	123.8	123.8	122.9	123.3	121.7	120.5
1.3.4.2 Weaving & Finishing of textiles	1.509	158.9	159.4	158.7	159.3	159.5	160.3	159.9	158.3
1.3.4.3 Knitted and Crocheted fabrics	0.193	129.9	132.7	124.2	123.0	123.4	122.6	120.5	120.1
1.3.4.4 Made-up textile articles, Except apparel	0.299	153.6	154.4	152.4	152.9	154.0	154.1	154.4	156.0
1.3.4.5 Cordage, Rope, Twine and Netting	0.098	156.8	163.0	149.4	147.4	145.1	143.0	140.3	139.8
1.3.4.6 Other textiles	0.201	132.2	135.0	129.2	130.4	127.9	129.6	130.4	129.5
1.3.5 MANUFACTURE OF WEARING APPAREL	**0.814**	**148.7**	**146.7**	**149.1**	**149.7**	**150.0**	**149.5**	**149.3**	**149.3**
1.3.5.1 Manufacture of Wearing Apparel (woven), Except fur Apparel	0.593	147.3	145.2	147.9	148.4	148.4	148.4	148.1	149.3
1.3.5.2 Knitted and Crocheted apparel	0.221	152.2	150.5	152.3	153.2	154.3	152.2	152.6	149.5
1.3.6 MANUFACTURE OF LEATHER AND RELATED PRODUCTS	**0.535**	**122.2**	**122.5**	**121.2**	**122.2**	**122.3**	**123.4**	**123.0**	**124.1**
1.3.6.1 Tanning and Dressing of leather; Dressing and Dyeing of fur	0.142	105.6	107.3	102.2	106.4	103.5	107.2	106.1	108.6
1.3.6.2 Luggage, HandbAgs, Saddlery and Harness	0.075	141.0	141.2	140.4	140.1	140.7	141.3	141.4	142.5
1.3.6.3 Footwear	0.318	125.2	124.8	125.2	125.1	126.3	126.4	126.2	126.6
1.3.7 MANUFACTURE OF WOOD AND PRODUCTS OF WOOD AND CORK	**0.772**	**143.2**	**142.0**	**143.1**	**142.6**	**143.0**	**143.9**	**144.4**	**145.1**
1.3.7.1 Saw milling and Planing of wood	0.124	137.6	136.9	138.6	137.7	138.7	138.6	137.0	138.2
1.3.7.2 Veneer sheets; Manufacture of plywood, Laminboard, Particle board and Other panels and Boards	0.493	141.8	140.8	141.2	140.7	140.8	142.0	142.8	143.3
1.3.7.3 Builder's carpentry and Joinery	0.036	204.0	203.0	203.2	203.2	205.0	204.6	206.2	206.9
1.3.7.4 Wooden containers	0.119	136.7	133.8	137.6	137.6	137.9	139.4	140.4	141.6
1.3.8 MANUFACTURE OF PAPER AND PAPER PRODUCTS	**1.113**	**152.0**	**155.8**	**148.3**	**148.0**	**147.0**	**147.2**	**146.4**	**144.3**
1.3.8.1 Pulp, Paper and Paperboard	0.493	158.4	159.3	157.3	157.2	156.5	155.1	154.7	151.9
1.3.8.2 Corrugated paper and Paperboard and Containers of paper and Paperboard	0.314	148.3	150.2	145.1	143.1	142.5	141.5	140.5	139.2
1.3.8.3 Other articles of paper and Paperboard	0.306	145.6	155.9	137.1	138.2	136.5	140.1	139.1	137.1
1.3.9 PRINTING AND REPRODUCTION OF RECORDED MEDIA	**0.676**	**172.5**	**166.8**	**180.7**	**180.4**	**179.8**	**178.4**	**178.6**	**179.3**
1.3.9.1 Printing	0.676	172.5	166.8	180.7	180.4	179.8	178.4	178.6	179.3
1.3.10 MANUFACTURE OF CHEMICALS AND CHEMICAL PRODUCTS	**6.465**	**145.4**	**148.3**	**143.3**	**142.8**	**142.2**	**141.1**	**140.2**	**138.3**
1.3.10.1 Basic chemicals	1.433	159.2	166.6	152.5	150.7	150.0	148.2	146.9	143.1
1.3.10.2 Fertilizers and Nitrogen compounds	1.485	144.8	143.3	147.4	146.7	146.0	145.5	144.6	144.2
1.3.10.3 Plastic and Synthetic rubber in primary form	1.001	143.2	150.8	138.0	140.4	138.5	137.2	136.3	133.1
1.3.10.4 Pesticides and Other agrochemical products	0.454	143.4	144.4	141.6	140.7	140.1	136.6	135.8	134.7
1.3.10.5 Paints, Varnishes and Similar coatings, Printing ink and Mastics	0.491	145.0	143.4	146.3	145.5	145.8	145.3	144.3	143.2
1.3.10.6 Soap and Detergents, Cleaning and Polishing preparations, Perfumes and Toilet preparations	0.612	140.8	139.6	141.6	141.3	141.1	140.9	140.4	140.5
1.3.10.7 Other chemical products	0.692	142.1	144.4	139.8	138.3	138.6	137.5	137.1	135.3
1.3.10.8 Man-made fibres	0.296	110.7	117.2	105.4	106.3	106.0	106.7	105.8	104.1
1.3.11 MANUFACTURE OF PHARMACEUTICALS, MEDICINAL CHEMICAL AND BOTANICAL PRODUCTS	**1.993**	**140.9**	**139.8**	**142.2**	**142.4**	**141.7**	**142.8**	**143.1**	**143.2**
1.3.11.1 Pharmaceuticals, Medicinal chemical and Botanical products	1.993	140.9	139.8	142.2	142.4	141.7	142.8	143.1	143.2
1.3.12 MANUFACTURE OF RUBBER AND PLASTICS PRODUCTS	**2.299**	**129.7**	**131.3**	**128.6**	**128.7**	**128.3**	**128.4**	**128.0**	**127.1**
1.3.12.1 Rubber Tyres and Tubes; Retreading and Rebuilding of Rubber Tyres	0.609	111.8	108.8	113.8	113.7	113.7	114.5	114.5	113.6
1.3.12.2 Other Rubber Products	0.272	106.4	106.7	105.8	106.3	105.8	106.7	107.4	106.6
1.3.12.3 Plastics products	1.418	141.8	145.7	139.3	139.4	138.9	138.6	137.7	136.8

No. 21: Wholesale Price Index (Contd.)

(Base: 2011-12 = 100)

Commodities	Weight	2022-23	2022	2023					
			Jun.	Jan.	Feb.	Mar.	Apr.	May (P)	Jun. (P)
	1	2	3	4	5	6	7	8	9
1.3.13 MANUFACTURE OF OTHER NON-METALLIC MINERAL PRODUCTS	**3.202**	**133.7**	**134.0**	**135.3**	**135.3**	**134.6**	**135.2**	**134.5**	**134.6**
1.3.13.1 Glass and Glass products	0.295	158.1	152.9	165.3	164.0	163.5	163.8	164.2	163.2
1.3.13.2 Refractory products	0.223	119.0	119.0	118.7	118.8	118.7	119.1	120.3	119.0
1.3.13.3 Clay Building Materials	0.121	135.3	140.1	132.9	130.0	129.2	133.4	129.5	130.0
1.3.13.4 Other Porcelain and Ceramic Products	0.222	118.0	117.2	118.7	119.2	119.4	120.2	121.4	121.3
1.3.13.5 Cement, Lime and Plaster	1.645	137.2	139.0	138.9	138.9	137.9	138.2	136.8	137.3
1.3.13.6 Articles of Concrete, Cement and Plaster	0.292	134.4	133.8	134.3	135.6	135.5	137.7	137.0	137.4
1.3.13.7 Cutting, Shaping and Finishing of Stone	0.234	125.6	123.8	126.3	126.0	127.0	127.3	127.1	127.3
1.3.13.8 Other Non-Metallic Mineral Products	0.169	105.9	103.9	107.4	108.4	106.3	105.3	105.3	105.2
1.3.14 MANUFACTURE OF BASIC METALS	**9.646**	**148.7**	**150.0**	**145.5**	**146.9**	**146.2**	**145.3**	**143.7**	**141.7**
1.3.14.1 Inputs into steel making	1.411	159.7	158.1	150.9	154.6	152.4	151.9	148.5	142.0
1.3.14.2 Metallic Iron	0.653	165.9	172.2	158.9	160.8	158.0	157.5	157.6	156.3
1.3.14.3 Mild Steel - Semi Finished Steel	1.274	127.0	127.4	124.9	124.8	126.0	122.8	122.9	121.7
1.3.14.4 Mild Steel -Long Products	1.081	149.7	151.6	148.3	148.4	147.6	145.7	144.5	141.9
1.3.14.5 Mild Steel - Flat products	1.144	155.0	162.3	144.1	150.5	151.0	150.4	147.8	145.0
1.3.14.6 Alloy steel other than Stainless Steel- Shapes	0.067	146.9	145.5	145.8	144.8	144.9	144.4	145.5	142.9
1.3.14.7 Stainless Steel - Semi Finished	0.924	151.9	147.8	148.6	146.8	145.3	146.0	141.5	142.3
1.3.14.8 Pipes & tubes	0.205	175.4	174.3	175.3	175.2	173.8	172.4	170.7	169.9
1.3.14.9 Non-ferrous metals incl. precious metals	1.693	145.9	149.8	146.6	147.7	147.0	146.8	145.4	143.9
1.3.14.10 Castings	0.925	130.7	128.2	134.7	133.8	133.1	133.7	133.7	133.9
1.3.14.11 Forgings of steel	0.271	172.4	169.9	173.8	175.7	175.5	172.9	173.5	172.2
1.3.15 MANUFACTURE OF FABRICATED METAL PRODUCTS, EXCEPT MACHINERY AND EQUIPMENT	**3.155**	**139.0**	**140.0**	**137.9**	**139.1**	**139.2**	**139.5**	**139.6**	**139.5**
1.3.15.1 Structural Metal Products	1.031	132.7	134.6	131.8	131.5	133.1	132.7	132.9	132.6
1.3.15.2 Tanks, Reservoirs and Containers of Metal	0.660	161.1	165.8	155.4	159.7	160.5	161.0	161.2	160.4
1.3.15.3 Steam generators, Except Central Heating Hot Water Boilers	0.145	100.5	98.2	103.7	102.4	101.2	105.3	101.4	105.4
1.3.15.4 Forging, Pressing, Stamping and Roll-Forming of Metal; Powder Metallurgy	0.383	135.2	136.0	136.7	138.3	136.8	139.7	141.1	140.3
1.3.15.5 Cutlery, Hand Tools and General Hardware	0.208	112.2	112.5	110.8	110.6	110.6	110.7	110.6	110.7
1.3.15.6 Other Fabricated Metal Products	0.728	145.0	142.6	145.9	146.9	145.4	144.7	144.6	144.9
1.3.16 MANUFACTURE OF COMPUTER, ELECTRONIC AND OPTICAL PRODUCTS	**2.009**	**116.6**	**116.6**	**117.1**	**116.8**	**116.4**	**117.5**	**117.5**	**117.8**
1.3.16.1 Electronic Components	0.402	115.0	116.0	115.4	114.8	113.4	113.8	113.5	114.1
1.3.16.2 Computers and Peripheral Equipment	0.336	135.0	134.9	135.0	135.1	135.1	135.1	135.1	135.1
1.3.16.3 Communication Equipment	0.310	129.4	128.0	129.8	130.5	130.5	131.0	131.0	131.5
1.3.16.4 Consumer Electronics	0.641	99.7	99.6	100.6	99.5	100.0	101.8	102.7	102.8
1.3.16.5 Measuring, Testing, Navigating and Control equipment	0.181	112.8	112.8	113.0	113.0	111.7	113.0	113.0	111.6
1.3.16.6 Watches and Clocks	0.076	151.2	152.6	151.5	151.9	150.0	153.1	151.4	154.1
1.3.16.7 Irradiation, Electromedical and Electrotherapeutic equipment	0.055	108.9	109.2	108.9	109.1	106.8	110.5	106.4	109.8
1.3.16.8 Optical instruments and Photographic equipment	0.008	100.5	98.3	100.3	100.3	100.3	103.7	103.5	103.6
1.3.17 MANUFACTURE OF ELECTRICAL EQUIPMENT	**2.930**	**128.8**	**128.6**	**130.1**	**129.9**	**129.5**	**130.7**	**130.8**	**130.2**
1.3.17.1 Electric motors, Generators, Transformers and Electricity distribution and Control apparatus	1.298	126.3	125.2	129.0	127.3	126.0	128.1	129.0	127.7

No. 21: Wholesale Price Index (Concld.)

(Base: 2011-12 = 100)

Commodities	Weight	2022-23	2022	2023					
			Jun.	Jan.	Feb.	Mar.	Apr.	May (P)	Jun. (P)
	1	2	3	4	5	6	7	8	9
1.3.17.2 Batteries and Accumulators	0.236	131.9	131.7	131.6	131.6	134.4	136.4	135.9	136.8
1.3.17.3 Fibre optic cables for data transmission or live transmission of images	0.133	116.6	112.5	119.9	122.9	121.6	121.5	119.9	123.7
1.3.17.4 Other electronic and Electric wires and Cables	0.428	146.3	150.6	146.4	149.0	148.3	148.6	146.9	145.6
1.3.17.5 Wiring devices, Electric lighting & display equipment	0.263	117.2	116.8	117.0	116.9	117.5	116.9	116.8	116.9
1.3.17.6 Domestic appliances	0.366	134.1	134.3	133.8	133.2	133.2	133.8	133.9	134.0
1.3.17.7 Other electrical equipment	0.206	117.4	115.8	118.9	120.0	120.8	121.2	122.5	120.9
1.3.18 MANUFACTURE OF MACHINERY AND EQUIPMENT	**4.789**	**126.2**	**125.1**	**127.0**	**127.7**	**128.0**	**128.4**	**128.4**	**128.1**
1.3.18.1 Engines and Turbines, Except aircraft, Vehicle and Two wheeler engines	0.638	126.9	126.9	126.4	128.0	127.4	127.7	127.6	127.2
1.3.18.2 Fluid power equipment	0.162	128.4	127.0	129.9	130.3	133.5	132.8	132.9	132.0
1.3.18.3 Other pumps, Compressors, Taps and Valves	0.552	117.6	117.7	117.6	117.5	117.8	117.8	117.9	118.1
1.3.18.4 Bearings, Gears, Gearing and Driving elements	0.340	124.2	121.3	125.7	126.6	127.7	128.1	126.8	126.5
1.3.18.5 Ovens, Furnaces and Furnace burners	0.008	79.8	78.5	82.3	81.5	80.9	80.7	81.6	83.1
1.3.18.6 Lifting and Handling equipment	0.285	126.3	125.6	127.2	128.0	128.3	127.5	127.7	127.7
1.3.18.7 Office machinery and Equipment	0.006	130.2	130.2	130.2	130.2	130.2	130.2	130.2	130.2
1.3.18.8 Other general-purpose machinery	0.437	143.0	142.6	144.2	145.7	144.1	145.2	146.2	144.0
1.3.18.9 Agricultural and Forestry machinery	0.833	137.2	135.0	139.4	139.4	140.0	140.9	140.9	141.4
1.3.18.10 Metal-forming machinery and Machine tools	0.224	120.5	118.7	121.2	121.6	122.3	122.3	122.2	121.8
1.3.18.11 Machinery for mining, Quarrying and Construction	0.371	84.9	84.5	86.1	86.6	86.9	87.1	87.3	87.5
1.3.18.12 Machinery for food, Beverage and Tobacco processing	0.228	127.7	129.1	124.7	124.6	124.7	124.8	124.8	124.9
1.3.18.13 Machinery for textile, Apparel and Leather production	0.192	130.0	126.5	131.1	130.9	132.3	136.7	136.7	134.7
1.3.18.14 Other special-purpose machinery	0.468	140.6	138.4	142.1	143.6	144.0	143.2	143.8	142.9
1.3.18.15 Renewable electricity generating equipment	0.046	69.2	68.5	69.7	69.7	70.6	71.1	71.7	71.5
1.3.19 MANUFACTURE OF MOTOR VEHICLES, TRAILERS AND SEMI-TRAILERS	**4.969**	**127.6**	**127.8**	**127.1**	**127.1**	**128.4**	**128.0**	**127.9**	**128.0**
1.3.19.1 Motor vehicles	2.600	126.0	126.5	125.7	125.8	127.8	127.4	127.1	127.7
1.3.19.2 Parts and Accessories for motor vehicles	2.368	129.3	129.2	128.7	128.6	129.0	128.6	128.7	128.4
1.3.20 MANUFACTURE OF OTHER TRANSPORT EQUIPMENT	**1.648**	**137.4**	**135.5**	**138.8**	**139.6**	**141.6**	**141.9**	**141.9**	**142.1**
1.3.20.1 Building of ships and Floating structures	0.117	162.5	159.1	163.6	163.6	163.6	163.6	163.6	163.7
1.3.20.2 Railway locomotives and Rolling stock	0.110	105.5	104.0	108.4	106.5	106.3	104.8	104.8	105.9
1.3.20.3 Motor cycles	1.302	137.6	135.6	139.1	140.3	142.8	143.4	143.4	143.6
1.3.20.4 Bicycles and Invalid carriages	0.117	139.8	139.9	138.9	138.5	138.6	137.3	137.1	136.9
1.3.20.5 Other transport equipment	0.002	152.5	147.7	157.1	155.8	156.2	155.8	158.2	158.1
1.3.21 MANUFACTURE OF FURNITURE	**0.727**	**157.2**	**157.0**	**157.9**	**158.2**	**160.1**	**160.1**	**160.0**	**160.0**
1.3.21.1 Furniture	0.727	157.2	157.0	157.9	158.2	160.1	160.1	160.0	160.0
1.3.22 OTHER MANUFACTURING	**1.064**	**147.7**	**139.6**	**151.1**	**153.8**	**154.0**	**159.5**	**157.9**	**157.4**
1.3.22.1 Jewellery and Related articles	0.996	146.5	137.7	150.2	153.1	153.3	159.1	157.6	157.0
1.3.22.2 Musical instruments	0.001	189.3	175.4	185.6	200.4	201.4	193.9	187.7	181.1
1.3.22.3 Sports goods	0.012	150.5	147.8	153.0	152.4	152.6	154.7	155.7	154.8
1.3.22.4 Games and Toys	0.005	159.0	160.1	158.7	158.5	157.6	159.4	158.9	159.7
1.3.22.5 Medical and Dental instruments and Supplies	0.049	170.4	173.5	167.2	166.7	166.3	166.3	163.6	164.5
2 FOOD INDEX	**24.378**	**174.2**	**177.4**	**171.5**	**171.3**	**172.1**	**174.0**	**172.8**	**175.2**

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	2021-22	2022-23	April-May		May	
				2022-23	2023-24	2022	2023
	1	2	3	4	5	6	7
General Index	100.00	131.6	138.5	136.2	142.8	137.8	145.0
1 Sectoral Classification							
1.1 Mining	14.37	113.3	119.9	118.5	125.4	120.4	128.1
1.2 Manufacturing	77.63	131.0	137.1	133.1	140.4	134.6	142.3
1.3 Electricity	7.99	170.1	185.2	197.2	197.0	199.9	201.6
2 Use-Based Classification							
2.1 Primary Goods	34.05	129.5	139.2	142.1	146.0	144.7	149.8
2.2 Capital Goods	8.22	88.7	100.2	91.7	97.7	94.9	102.7
2.3 Intermediate Goods	17.22	143.9	149.4	150.6	152.1	151.7	154.1
2.4 Infrastructure/ Construction Goods	12.34	148.2	160.6	151.5	173.5	153.3	174.7
2.5 Consumer Durables	12.84	113.8	114.5	112.3	111.6	113.9	115.2
Consumer non-durables	15.33	146.7	147.6	138.2	151.0	137.5	148.0

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

Government Accounts and Treasury Bills

No. 23: Union Government Accounts at a Glance

(Amount in ₹ Crore)

Item	Financial Year	April – May			
	2023-24 (Budget Estimates)	2023-24 (Actuals)	2022-23 (Actuals)	Percentage to Budget Estimates	
				2023-24	2022-23
	1	2	3	4	5
1 Revenue Receipts	**2632281**	**412700**	**356840**	**15.7**	**16.2**
1.1 Tax Revenue (Net)	2330631	278045	307589	11.9	15.9
1.2 Non-Tax Revenue	301650	134655	49251	44.6	18.3
2 Non Debt Capital Receipt	**84000**	**2991**	**25013**	**3.6**	**31.5**
2.1 Recovery of Loans	23000	2941	966	12.8	6.8
2.2 Other Receipts	61000	50	24047	0.1	37.0
3 Total Receipts (excluding borrowings) (1+2)	**2716281**	**415691**	**381853**	**15.3**	**16.7**
4 Revenue Expenditure of which :	3502136	458189	478700	13.1	15.0
4.1 Interest Payments	1079971	110663	105422	10.2	11.2
5 Capital Expenditure	1000961	167789	107074	16.8	14.3
6 Total Expenditure (4+5)	**4503097**	**625978**	**585774**	**13.9**	**14.8**
7 Revenue Deficit (4-1)	**869855**	**45489**	**121860**	**5.2**	**12.3**
8 Fiscal Deficit (6-3)	**1786816**	**210287**	**203921**	**11.8**	**12.3**
9 Gross Primary Deficit (8-4.1)	**706845**	**99624**	**98499**	**14.1**	**13.7**

Source: Controller General of Accounts (CGA), Ministry of Finance, Government of India and Union Budget 2023-24

No. 24: Treasury Bills – Ownership Pattern

(₹ Crore)

Item	2022-23	2022	2023					
		May 27	Apr. 21	Apr. 28	May 5	May 12	May 19	May 26
	1	2	3	4	5	6	7	8
1 91-day								
1.1 Banks	6191	7033	9992	10204	10546	10364	9221	8585
1.2 Primary Dealers	20071	36013	22480	25288	27438	25400	25310	28872
1.3 State Governments	8038	53400	15115	15339	27439	27439	25439	28041
1.4 Others	80638	111670	89728	92208	94716	101935	108169	110243
2 182-day								
2.1 Banks	53154	71904	51137	54468	55979	59680	56903	56574
2.2 Primary Dealers	97274	101768	115456	120906	123723	126681	134531	132394
2.3 State Governments	2592	23811	13158	14658	15388	15620	14929	15929
2.4 Others	110072	95329	111907	109126	110798	110138	111065	120032
3 364-day								
3.1 Banks	101834	97446	103312	103724	104056	99155	95112	95766
3.2 Primary Dealers	146080	179691	141197	138309	143414	150359	151994	153147
3.3 State Governments	48284	26369	43546	47496	47705	47039	47087	47090
3.4 Others	149086	123863	152492	154967	149530	147487	149894	148087
4 14-day Intermediate								
4.1 Banks								
4.2 Primary Dealers								
4.3 State Governments	212758	141999	180691	167840	104787	126446	134097	132454
4.4 Others	926	862	1683	696	711	611	1275	1183
Total Treasury Bills (Excluding 14 day Intermediate T Bills) #	823313	928296	869518	886693	910731	921297	929654	944759

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										
2023-24										
May. 3	12000	119	25020	14638	80	11962	14638	26600	98.31	6.8984
May. 10	12000	138	29817	1049	75	11951	1049	13000	98.30	6.9482
May. 17	12000	164	45303	2041	18	11959	2041	14000	98.32	6.8391
May. 24	12000	131	28800	4030	73	11970	4030	16000	98.34	6.7677
May. 31	12000	141	29327	1534	87	11966	1534	13500	98.34	6.7839
182-day Treasury Bills										
2023-24										
May. 3	12000	132	27214	760	70	11970	760	12730	96.63	6.9889
May. 10	12000	162	29457	305	76	11927	305	12233	96.61	7.0292
May. 17	12000	142	37932	165	55	11967	165	12132	96.64	6.9685
May. 24	12000	147	30437	1529	92	11971	1529	13500	96.67	6.8998
May. 31	12000	169	29885	25	77	11975	25	12000	96.68	6.8963
364-day Treasury Bills										
2023-24										
May. 3	8000	192	38466	238	31	7970	238	8209	93.48	6.9955
May. 10	8000	164	33867	34	38	7979	34	8014	93.46	7.0182
May. 17	8000	164	33500	68	21	7980	68	8049	93.51	6.9554
May. 24	8000	119	23866	29	62	7974	29	8003	93.58	6.8850
May. 31	8000	131	19555	11	56	7989	11	8000	93.57	6.8941

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
May 02 ,2023	5.10-6.80	6.58
May 03 ,2023	5.10-6.85	6.67
May 04 ,2023	5.10-6.95	6.77
May 06 ,2023	5.55-7.00	6.63
May 08 ,2023	2.85-6.85	6.73
May 09 ,2023	4.90-7.00	6.79
May 10 ,2023	4.90-7.00	6.78
May 11 ,2023	5.15-6.90	6.75
May 12 ,2023	5.15-7.00	6.77
May 15 ,2023	5.15-6.90	6.76
May 16 ,2023	5.15-6.90	6.76
May 17 ,2023	5.15-6.60	6.50
May 18 ,2023	5.15-6.55	6.44
May 19 ,2023	5.10-6.50	6.35
May 20 ,2023	5.60-6.45	6.23
May 22 ,2023	5.15-6.70	6.37
May 23 ,2023	5.15-6.55	6.36
May 24 ,2023	5.15-6.55	6.36
May 25 ,2023	5.15-6.45	6.36
May 26 ,2023	5.15-6.45	6.35
May 29 ,2023	5.15-6.40	6.33
May 30 ,2023	5.15-6.40	6.34
May 31 ,2023	5.15-6.65	6.33
June 01 ,2023	5.15-6.40	6.32
June 02 ,2023	5.20-6.46	6.37
June 03 ,2023	5.70-6.40	6.28
June 05 ,2023	5.30-6.45	6.32
June 06 ,2023	4.90-6.40	6.34
June 07 ,2023	4.90-6.50	6.43
June 08 ,2023	4.90-7.00	6.59
June 09 ,2023	4.90-6.75	6.61
June 12 ,2023	5.00-6.55	6.47
June 13 ,2023	5.00-6.50	6.40
June 14 ,2023	5.00-6.75	6.54
June 15 ,2023	5.00-6.70	6.57

Note: Includes Notice Money.

No. 27: Certificates of Deposit

Item	2022	2023			
	May. 20	Apr. 7	Apr. 21	May. 5	May. 19
	1	2	3	4	5
1 Amount Outstanding (₹ Crore)	193034.11	301402.80	300404.89	288834.64	302117.26
1.1 Issued during the fortnight (₹ Crore)	26309.36	10659.73	11657.30	4837.12	41744.11
2 Rate of Interest (per cent)	4.88-5.76	6.99-7.92	6.90-7.79	6.92-8.06	6.76-7.32

No. 28: Commercial Paper

Item	2022	2023			
	May 31	Apr. 15	Apr. 30	May 15	May 31
	1	2	3	4	5
1 Amount Outstanding (₹ Crore)	384544.00	391420.90	421736.55	421454.40	433543.35
1.1 Reported during the fortnight (₹ Crore)	72437.60	52791.25	58226.95	37178.35	81179.55
2 Rate of Interest (per cent)	4.48-12.31	6.73-13.84	6.75-13.84	7.01-13.84	6.73-16.31

No. 29: Average Daily Turnover in Select Financial Markets

(₹ Crore)

Item	2022-23	2022	2023					
		May 27	Apr. 21	Apr. 28	May 05	May 12	May 19	May 26
	1	2	3	4	5	6	7	8
1 Call Money	19987	17938	19389	16349	13349	18800	19915	18453
2 Notice Money	2605	591	261	4787	6431	852	4614	306
3 Term Money	612	338	976	670	793	598	588	725
4 Triparty Repo	697245	664721	536030	615665	473819	476780	562563	500008
5 Market Repo	504418	367359	650656	759202	572669	634311	766626	571417
6 Repo in Corporate Bond	2085	384	474	612	107	2135	283	822
7 Forex (US $ million)	67793	76519	92494	106579	90072	84131	84493	87835
8 Govt. of India Dated Securities	66200	66154	84715	143286	127118	93600	123924	101929
9 State Govt. Securities	5450	4540	10468	9866	8652	3954	7338	6122
10 Treasury Bills								
10.1 91-Day	4380	7611	3729	3125	6921	4331	2263	5468
10.2 182-Day	4480	2874	10675	5049	4469	5543	6964	6539
10.3 364-Day	2900	2914	4745	4241	3585	4357	5059	2960
10.4 Cash Management Bills								
11 Total Govt. Securities (8+9+10)	83410	84094	114332	165566	150746	111785	145548	123018
11.1 RBI	660	810	164	632	85	147	362	942

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

(Amount in ₹ Crore)

Security & Type of Issue	2022-23		2022-23 (Apr.-May)		2023-24 (Apr.-May) *		May. 2022		May. 2023 *	
	No. of Issues	Amount	No. of Issues	Amount	No. of Issues	Amount	No. of Issues	Amount	No. of Issues	Amount
	1	2	3	4	5	6	7	8	9	10
1 Equity Shares	**237**	**45266**	**33**	**16719**	**28**	**9255**	**18**	**11762**	**14**	**7274**
1A Premium	218	42408	31	16037	25	8953	17	11172	12	7052
1.1 Public	164	38515	23	15650	18	5594	13	10830	8	4484
1.1.1 Premium	161	37158	22	15139	18	5526	12	10379	8	4462
1.2 Rights	73	6751	10	1070	10	3661	5	932	6	2790
1.2.1 Premium	57	5250	9	898	7	3427	5	793	4	2590
2 Preference Shares	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
2.1 Public	-	-	-	-	-	-	-	-	-	-
2.2 Rights	-	-	-	-	-	-	-	-	-	-
3 Bonds & Debentures	**34**	**9221**	**8**	**1682**	**7**	**2036**	**2**	**339**	**-**	**-**
3.1 Convertible	-	-	-	-	-	-	-	-	-	-
3.1.1 Public	-	-	-	-	-	-	-	-	-	-
3.1.2 Rights	-	-	-	-	-	-	-	-	-	-
3.2 Non-Convertible	34	9221	8	1682	7	2036	2	339	-	-
3.2.1 Public	34	9221	8	1682	7	2036	2	339	-	-
3.2.2 Rights	-	-	-	-	-	-	-	-	-	-
4 Total (1+2+3)	**271**	**54487**	**41**	**18402**	**35**	**11290**	**20**	**12101**	**14**	**7274**
4.1 Public	198	47736	31	17332	25	7630	15	11169	8	4484
4.2 Rights	73	6751	10	1070	10	3661	5	932	6	2790

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

Source : Securities and Exchange Board of India.

* : Data is Provisional.

External Sector

No. 31: Foreign Trade

Item	Unit	2022-23	2022	2023				
			May	Jan.	Feb.	Mar.	Apr.	May
		1	2	3	4	5	6	7
1 Exports	₹ Crore	3620631	301573	293041	305610	344781	284606	288298
	US $ Million	450958	39004	35780	36995	41899	34699	35012
1.1 Oil	₹ Crore	781744	65530	63017	64688	68347	53039	48918
	US $ Million	97401	8475	7694	7831	8306	6466	5941
1.2 Non-oil	₹ Crore	2838887	236044	230024	240921	276434	231567	239380
	US $ Million	353558	30528	28086	29164	33593	28233	29071
2 Imports	₹ Crore	5733959	472625	427747	439144	493854	411324	469618
	US $ Million	714042	61126	52228	53160	60015	50149	57032
2.1 Oil	₹ Crore	1682475	128470	130040	139479	148300	124431	128649
	US $ Million	209418	16616	15878	16884	18022	15171	15623
2.2 Non-oil	₹ Crore	4051483	344155	297707	299665	345554	286893	340969
	US $ Million	504624	44511	36350	36275	41993	34978	41408
3 Trade Balance	₹ Crore	-2113328	-171052	-134706	-133534	-149073	-126718	-181319
	US $ Million	-263084	-22123	-16448	-16165	-18116	-15450	-22020
3.1 Oil	₹ Crore	-900731	-62940	-67023	-74791	-79953	-71392	-79731
	US $ Million	-112018	-8140	-8184	-9054	-9716	-8704	-9683
3.2 Non-oil	₹ Crore	-1212596	-108112	-67683	-58744	-69120	-55326	-101588
	US $ Million	-151066	-13983	-8264	-7111	-8400	-6745	-12337

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

No. 32: Foreign Exchange Reserves

Item	Unit	2022	2023					
		Jul. 01	May. 26	Jun. 02	Jun. 09	Jun. 16	Jun. 23	Jun. 30
		1	2	3	4	5	6	7
1 Total Reserves	**₹ Crore**	**4643705**	**4864556**	**4897289**	**4896139**	**4884306**	**4866441**	**4881602**
	US $ Million	**588314**	**589138**	**595067**	**593749**	**596098**	**593198**	**595051**
1.1 Foreign Currency Assets	₹ Crore	4141861	4301298	4330529	4329845	4323489	4310564	4331357
	US $ Million	524745	520931	526201	525073	527651	525440	527979
1.2 Gold	₹ Crore	319055	370756	374926	374159	369128	363459	359585
	US $ Million	40422	44902	45557	45374	45049	44304	43832
	Volume (Metric Tonnes)	768.82	796.50	797.44	797.44	797.44	797.44	797.44
1.3 SDRs	SDRs Million	13657	13674	13674	13674	13674	13674	13674
	₹ Crore	143129	150207	149664	149974	149531	150408	149626
	US $ Million	18133	18192	18186	18187	18249	18334	18239
1.4 Reserve Tranche Position in IMF	₹ Crore	39660	42295	42170	42160	42159	42010	41035
	US $ Million	5014	5113	5123	5115	5149	5120	5002

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

No. 33: Non-Resident Deposits

(US$ Million)

Scheme	Outstanding				Flows	
	2022-23	2022	2023		2021-22	2022-23
		Mar.	Feb.	Mar.	Apr.-Mar.	Apr.-Mar.
	1	2	3	4	5	6
1 NRI Deposits	**138879**	**139022**	**135542**	**138879**	**3234**	**8989**
1.1 FCNR(B)	19363	16918	18402	19363	-3555	2445
1.2 NR(E)RA	95817	100801	94135	95817	3332	2505
1.3 NRO	23699	21303	23005	23699	3456	4039

No. 34: Foreign Investment Inflows

(US $ Million)

Item	2022-23	2022-23	2023-24	2022	2023	
		Apr.-May	Apr.-May	May	Apr.	May
	1	2	3	4	5	6
1.1 Net Foreign Direct Investment (1.1.1-1.1.2)	**27986**	**10637**	**5468**	**5311**	**2768**	**2700**
1.1.1 Direct Investment to India (1.1.1.1-1.1.1.2)	**42006**	**12393**	**6928**	**6043**	**4017**	**2911**
1.1.1.1 Gross Inflows/Gross Investments	**71355**	**16534**	**12236**	**8113**	**6930**	**5306**
1.1.1.1.1 Equity	47600	12850	8023	6271	5225	2798
1.1.1.1.1.1 Government (SIA/FIPB)	692	266	40	203	25	15
1.1.1.1.1.2 RBI	37097	10120	6746	4281	4625	2120
1.1.1.1.1.3 Acquisition of shares	8245	2225	999	1667	455	543
1.1.1.1.1.4 Equity capital of unincorporated bodies	1566	239	239	119	119	119
1.1.1.1.2 Reinvested earnings	19105	2927	2927	1463	1463	1463
1.1.1.1.3 Other capital	4650	758	1287	379	242	1045
1.1.1.2 Repatriation/Disinvestment	**29349**	**4141**	**5308**	**2070**	**2913**	**2395**
1.1.1.2.1 Equity	27094	3864	4284	1932	1920	2364
1.1.1.2.2 Other capital	2255	276	1024	138	993	31
1.1.2 Foreign Direct Investment by India (1.1.2.1+1.1.2.2+1.1.2.3-1.1.2.4)	**14020**	**1756**	**1460**	**731**	**1249**	**211**
1.1.2.1 Equity capital	8771	810	1320	333	750	570
1.1.2.2 Reinvested Earnings	4412	735	735	368	368	368
1.1.2.3 Other Capital	4714	578	621	214	397	224
1.1.2.4 Repatriation/Disinvestment	3877	368	1216	184	265	951
1.2 Net Portfolio Investment (1.2.1+1.2.2+1.2.3-1.2.4)	**-5152**	**-8568**	**7518**	**-4683**	**2045**	**5474**
1.2.1 GDRs/ADRs	-	-	-	-	-	-
1.2.2 FIIs	-4828	-8587	7630	-4692	2110	5519
1.2.3 Offshore funds and others	-	-	-	-	-	-
1.2.4 Portfolio investment by India	324	-19	111	-10	66	46
1 Foreign Investment Inflows	**22834**	**2070**	**12986**	**629**	**4812**	**8174**

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

(US $ Million)

Item	2022-23	2022	2023		
		May	Mar.	Apr.	May
	1	2	3	4	5
1 Outward Remittances under the LRS	**27140.65**	**2039.26**	**2956.76**	**2332.08**	**2887.80**
1.1 Deposit	1011.07	79.46	194.16	103.47	99.89
1.2 Purchase of immovable property	188.73	11.76	33.01	22.87	21.22
1.3 Investment in equity/debt	1256.15	82.47	232.86	82.19	106.81
1.4 Gift	3005.27	248.69	452.95	339.79	390.72
1.5 Donations	12.78	1.01	1.08	0.94	0.98
1.6 Travel	13662.15	994.82	1149.85	1099.85	1495.35
1.7 Maintenance of close relatives	4174.06	336.96	630.10	449.38	490.73
1.8 Medical Treatment	55.74	4.43	5.15	4.22	5.19
1.9 Studies Abroad	3427.81	264.61	228.49	209.76	247.33
1.10 Others	346.89	15.04	29.11	19.60	29.59

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

Item	2021-22	2022-23	2022	2023	
			Jun.	May	Jun.
	1	2	3	4	5
40-Currency Basket (Base: 2015-16=100)					
1 Trade-Weighted					
1.1 NEER	93.13	91.27	92.41	89.23	90.4
1.2 REER	104.64	102.78	104.29	99.85	102.11
2 Export-Weighted					
2.1 NEER	93.55	93.03	94.22	91.17	92.2
2.2 REER	103.46	101.04	102.71	97.79	99.64
6-Currency Basket (Trade-weighted)					
1 Base : 2015-16 =100					
1.1 NEER	87.08	85.93	87.34	83.25	84.12
1.2 REER	102.22	101.90	103.18	99.31	101.29
2 Base : 2021-22 =100					
2.1 NEER	100.00	98.72	100.35	95.64	96.64
2.2 REER	100.00	99.69	100.95	97.15	99.09

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

(Amount in US $ Million)

Item	2022-23	2022	2023	
		May	Apr	May
	1	2	3	4
1 Automatic Route				
1.1 Number	1093	95	102	129
1.2 Amount	24156	1416	1561	2648
2 Approval Route				
2.1 Number	9	1	4	1
2.2 Amount	2473	100	3799	5000
3 Total (1+2)				
3.1 Number	1102	96	106	130
3.2 Amount	26629	1516	5360	7648
4 Weighted Average Maturity (in years)	5.72	5.80	5.40	6.90
5 Interest Rate (per cent)				
5.1 Weighted Average Margin over 6-month LIBOR or reference rate for Floating Rate Loans	1.68	2.52	0.92	2.41
5.2 Interest rate range for Fixed Rate Loans	0.00-11.80	0.00-10.50	0.00-11.50	0.00-12.00
Borrower Category				
I. Corporate Manufacturing	6925	712	413	5570
II. Corporate-Infrastructure	8396	456	3516	924
a.) Transport	333	0	3	97
b.) Energy	2235	54	205	96
c.) Water and Sanitation	32	10	0	0
d.) Communication	1538	0	2799	170
e.) Social and Commercial Infrastructure	530	100	0	0
f.) Exploration,Mining and Refinery	2085	16	500	300
g.) Other Sub-Sectors	1643	276	9	261
III. Corporate Service-Sector	1773	129	90	47
IV. Other Entities	1805	0	0	0
a.) units in SEZ	6	0	0	0
b.) SIDBI	0		0	0
c.) Exim Bank	1800	0	0	0
V. Banks	0	0	0	0
VI. Financial Institution (Other than NBFC)	0	0	0	0
VII. NBFCs	7540	210	1327	1078
a). NBFC- IFC/AFC	3031	100	1059	150
b). NBFC-MFI	313	0	18	39
c). NBFC-Others	4196	110	250	889
VIII. Non-Government Organization (NGO)	0	0	0	0
IX. Micro Finance Institution (MFI)	0	0	0	0
X. Others	189	9	14	29

Note: Based on applications for ECB/Foreign Currency Convertible Bonds (FCCBs) which have been allotted loan registration number during the period.

No. 38: India's Overall Balance of Payments

(US$ Million)

Item	Jan-Mar 2022			Jan-Mar 2023 (P)		
	Credit	Debit	Net	Credit	Debit	Net
	1	2	3	4	5	6
Overall Balance Of Payments (1+2+3)	**384903**	**400927**	**-16024**	**391827**	**386248**	**5579**
1 Current Account (1.1+ 1.2)	**218823**	**232247**	**-13424**	**238010**	**239366**	**-1356**
1.1 Merchandise	**118020**	**172503**	**-54483**	**115821**	**168408**	**-52587**
1.2 Invisibles (1.2.1+1.2.2+1.2.3)	**100803**	**59744**	**41059**	**122189**	**70959**	**51231**
1.2.1 Services	69876	41557	28319	85833	46758	39075
1.2.1.1 Travel	2757	5133	-2376	8445	7698	747
1.2.1.2 Transportation	9398	11002	-1604	7956	8091	-135
1.2.1.3 Insurance	904	428	476	824	455	369
1.2.1.4 G.n.i.e.	160	271	-111	144	307	-163
1.2.1.5 Miscellaneous	56657	24723	31934	68464	30207	38256
1.2.1.5.1 Software Services	32786	3520	29266	38473	4103	34370
1.2.1.5.2 Business Services	16835	13867	2968	22260	16314	5945
1.2.1.5.3 Financial Services	1615	1504	111	2093	1303	790
1.2.1.5.4 Communication Services	763	269	494	2558	2217	341
1.2.2 Transfers	23723	2591	21132	28650	3888	24762
1.2.2.1 Official	21	239	-218	24	342	-318
1.2.2.2 Private	23702	2353	21350	28627	3547	25080
1.2.3 Income	7204	15596	-8392	7706	20312	-12606
1.2.3.1 Investment Income	5589	14792	-9202	6010	19395	-13385
1.2.3.2 Compensation of Employees	1614	804	810	1695	917	778
2 Capital Account (2.1+2.2+2.3+2.4+2.5)	**166081**	**167787**	**-1707**	**153422**	**146882**	**6540**
2.1 Foreign Investment (2.1.1+2.1.2)	**95111**	**96550**	**-1439**	**83781**	**79091**	**4691**
2.1.1 Foreign Direct Investment	24396	10620	13777	17084	10730	6355
2.1.1.1 In India	23281	6028	17253	15858	6538	9319
2.1.1.1.1 Equity	15845	5177	10669	9708	6254	3454
2.1.1.1.2 Reinvested Earnings	5229		5229	4976		4976
2.1.1.1.3 Other Capital	2207	851	1356	1173	284	889
2.1.1.2 Abroad	1115	4592	-3477	1227	4191	-2964
2.1.1.2.1 Equity	1115	2132	-1017	1227	2123	-896
2.1.1.2.2 Reinvested Earnings	0	845	-845	0	1103	-1103
2.1.1.2.3 Other Capital	0	1615	-1615	0	965	-965
2.1.2 Portfolio Investment	70715	85930	-15215	66697	68361	-1664
2.1.2.1 In India	70254	84543	-14289	66117	67704	-1588
2.1.2.1.1 FIIs	70254	84543	-14289	66117	67704	-1588
2.1.2.1.1.1 Equity	62553	75636	-13083	57476	59959	-2483
2.1.2.1.1.2 Debt	7701	8907	-1206	8640	7745	895
2.1.2.1.2 ADR/GDRs	0		0	0		0
2.1.2.2 Abroad	461	1387	-926	580	657	-77
2.2 Loans (2.2.1+2.2.2+2.2.3)	**33737**	**20826**	**12911**	**26512**	**23457**	**3055**
2.2.1 External Assistance	3988	1331	2657	3240	1522	1718
2.2.1.1 By India	13	16	-3	8	22	-14
2.2.1.2 To India	3976	1315	2661	3232	1500	1732
2.2.2 Commercial Borrowings	11346	7913	3433	7323	5698	1624
2.2.2.1 By India	514	373	141	272	382	-110
2.2.2.2 To India	10832	7540	3292	7051	5316	1735
2.2.3 Short Term to India	18403	11582	6821	15950	16237	-287
2.2.3.1 Buyers' credit & Suppliers' Credit >180 days	14571	11582	2988	15950	13646	2305
2.2.3.2 Suppliers' Credit up to 180 days	3833	0	3833	0	2592	-2592
2.3 Banking Capital (2.3.1+2.3.2)	**27241**	**33202**	**-5961**	**27997**	**32047**	**-4050**
2.3.1 Commercial Banks	27195	32602	-5407	27922	32047	-4125
2.3.1.1 Assets	13120	17970	-4850	4274	13260	-8986
2.3.1.2 Liabilities	14075	14632	-557	23648	18787	4861
2.3.1.2.1 Non-Resident Deposits	13468	13309	159	21066	17485	3581
2.3.2 Others	46	600	-554	75	0	75
2.4 Rupee Debt Service	**0**	**12**	**-12**		**7**	**-7**
2.5 Other Capital	**9991**	**17196**	**-7205**	**15131**	**12280**	**2852**
3 Errors & Omissions	**0**	**893**	**-893**	**395**	**0**	**395**
4 Monetary Movements (4.1+ 4.2)	**16024**	**0**	**16024**	**0**	**5579**	**-5579**
4.1 I.M.F.	0	0	0	0	0	0
4.2 Foreign Exchange Reserves (Increase - / Decrease +)	16024	0	16024	0	5579	-5579

Note: P: Preliminary.

No. 39: India's Overall Balance of Payments

(₹ Crore)

Item	Jan-Mar 2022			Jan-Mar 2023 (P)		
	Credit	Debit	Net	Credit	Debit	Net
	1	2	3	4	5	6
Overall Balance Of Payments (1+2+3)	**2895618**	**3016163**	**-120545**	**3223390**	**3177490**	**45899**
1 Current Account (1.1+ 1.2)	**1646199**	**1747190**	**-100991**	**1958005**	**1969160**	**-11155**
1.1 Merchandise	**887863**	**1297738**	**-409875**	**952809**	**1385415**	**-432606**
1.2 Invisibles (1.2.1+1.2.2+1.2.3)	**758336**	**449452**	**308883**	**1005196**	**583745**	**421451**
1.2.1 Services	525672	312631	213042	706112	384660	321451
1.2.1.1 Travel	20740	38617	-17877	69476	63331	6145
1.2.1.2 Transportation	70702	82770	-12068	65454	66565	-1111
1.2.1.3 Insurance	6801	3218	3583	6777	3740	3037
1.2.1.4 G.n.i.e.	1201	2035	-834	1185	2525	-1339
1.2.1.5 Miscellaneous	426228	185990	240238	563219	248500	314719
1.2.1.5.1 Software Services	246649	26481	220167	316497	33753	282744
1.2.1.5.2 Business Services	126651	104321	22330	183122	134212	48910
1.2.1.5.3 Financial Services	12147	11313	834	17215	10718	6497
1.2.1.5.4 Communication Services	5742	2024	3718	21041	18237	2804
1.2.2 Transfers	178471	19496	158975	235693	31986	203706
1.2.2.1 Official	158	1796	-1638	194	2810	-2616
1.2.2.2 Private	178313	17700	160613	235499	29176	206322
1.2.3 Income	54193	117326	-63133	63392	167098	-103707
1.2.3.1 Investment Income	42047	111277	-69230	49444	159555	-110111
1.2.3.2 Compensation of Employees	12145	6049	6096	13948	7544	6404
2 Capital Account (2.1+2.2+2.3+2.4+2.5)	**1249419**	**1262257**	**-12838**	**1262134**	**1208330**	**53804**
2.1 Foreign Investment (2.1.1+2.1.2)	**715520**	**726343**	**-10823**	**689231**	**650644**	**38587**
2.1.1 Foreign Direct Investment	183534	79893	103640	140546	88268	52278
2.1.1.1 In India	175144	45346	129797	130453	53788	76665
2.1.1.1.1 Equity	119205	38945	80260	79863	51450	28413
2.1.1.1.2 Reinvested Earnings	39334	0	39334	40937	0	40937
2.1.1.1.3 Other Capital	16605	6401	10203	9652	2338	7315
2.1.1.2 Abroad	8390	34547	-26157	10093	34480	-24387
2.1.1.2.1 Equity	8390	16040	-7650	10093	17465	-7372
2.1.1.2.2 Reinvested Earnings	0	6355	-6355	0	9073	-9073
2.1.1.2.3 Other Capital	0	12153	-12153	0	7941	-7941
2.1.2 Portfolio Investment	531986	646450	-114463	548685	562376	-13691
2.1.2.1 In India	528521	636017	-107496	543912	556972	-13060
2.1.2.1.1 FIIs	528521	636017	-107496	543912	556972	-13060
2.1.2.1.1.1 Equity	470586	569008	-98422	472831	493254	-20423
2.1.2.1.1.2 Debt	57935	67009	-9074	71080	63718	7363
2.1.2.1.2 ADR/GDRs	0	0	0	0	0	0
2.1.2.2 Abroad	3465	10433	-6968	4774	5404	-631
2.2 Loans (2.2.1+2.2.2+2.2.3)	**253804**	**156675**	**97128**	**218106**	**192973**	**25133**
2.2.1 External Assistance	30003	10013	19989	26652	12519	14133
2.2.1.1 By India	95	120	-26	63	180	-117
2.2.1.2 To India	29908	9893	20015	26589	12339	14250
2.2.2 Commercial Borrowings	85354	59528	25826	60240	46876	13363
2.2.2.1 By India	3867	2804	1062	2237	3144	-907
2.2.2.2 To India	81487	56723	24764	58003	43732	14271
2.2.3 Short Term to India	138447	87134	51313	131214	133577	-2364
2.2.3.1 Buyers' credit & Suppliers' Credit >180 days	109614	87134	22479	131214	112256	18958
2.2.3.2 Suppliers' Credit up to 180 days	28833	0	28833	0	21322	-21322
2.3 Banking Capital (2.3.1+2.3.2)	**204931**	**249778**	**-44847**	**230320**	**263635**	**-33315**
2.3.1 Commercial Banks	204584	245264	-40680	229701	263635	-33934
2.3.1.1 Assets	98701	135191	-36490	35162	109084	-73921
2.3.1.2 Liabilities	105884	110073	-4190	194539	154551	39988
2.3.1.2.1 Non-Resident Deposits	101318	100121	1197	173302	143842	29461
2.3.2 Others	347	4514	-4167	619	0	619
2.4 Rupee Debt Service	**0**	**93**	**-93**	**0**	**60**	**-60**
2.5 Other Capital	**75165**	**129368**	**-54203**	**124477**	**101018**	**23459**
3 Errors & Omissions	**0**	**6716**	**-6716**	**3250**	**0**	**3250**
4 Monetary Movements (4.1+ 4.2)	**120545**	**0**	**120545**	**0**	**45899**	**-45899**
4.1 I.M.F.	0	0	0	0	0	0
4.2 Foreign Exchange Reserves (Increase - / Decrease +)	120545	0	120545	0	45899	-45899

Note: P: Preliminary.

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

(US$ Million)

Item	Jan-Mar 2022			Jan-Mar 2023 (P)		
	Credit	Debit	Net	Credit	Debit	Net
	1	2	3	4	5	6
1 Current Account (1.A+1.B+1.C)	**218822**	**232225**	**-13404**	**238010**	**239346**	**-1336**
1.A Goods and Services (1.A.a+1.A.b)	**187896**	**214060**	**-26164**	**201654**	**215166**	**-13512**
1.A.a Goods (1.A.a.1 to 1.A.a.3)	**118020**	**172503**	**-54483**	**115821**	**168408**	**-52587**
1.A.a.1 General merchandise on a BOP basis	118046	164299	-46253	115268	161779	-46511
1.A.a.2 Net exports of goods under merchanting	-26	0	-26	553	0	553
1.A.a.3 Nonmonetary gold		8204	-8204	0	6629	-6629
1.A.b Services (1.A.b.1 to 1.A.b.13)	**69876**	**41557**	**28319**	**85833**	**46758**	**39075**
1.A.b.1 Manufacturing services on physical inputs owned by others	214	24	190	327	52	275
1.A.b.2 Maintenance and repair services n.i.e.	44	440	-397	56	644	-587
1.A.b.3 Transport	9398	11002	-1604	7956	8091	-135
1.A.b.4 Travel	2757	5133	-2376	8445	7698	747
1.A.b.5 Construction	596	720	-124	1099	705	394
1.A.b.6 Insurance and pension services	904	428	476	824	455	369
1.A.b.7 Financial services	1615	1504	111	2093	1303	790
1.A.b.8 Charges for the use of intellectual property n.i.e.	193	2518	-2325	290	2729	-2438
1.A.b.9 Telecommunications, computer, and information services	33629	4009	29620	41116	6606	34509
1.A.b.10 Other business services	16835	13867	2968	22260	16314	5945
1.A.b.11 Personal, cultural, and recreational services	970	1224	-253	1045	1390	-346
1.A.b.12 Government goods and services n.i.e.	160	271	-111	144	307	-163
1.A.b.13 Others n.i.e.	2560	416	2145	178	464	-286
1.B Primary Income (1.B.1 to 1.B.3)	**7204**	**15596**	**-8392**	**7706**	**20312**	**-12606**
1.B.1 Compensation of employees	1614	804	810	1695	917	778
1.B.2 Investment income	4303	13417	-9113	4839	18772	-13934
1.B.2.1 Direct investment	3206	8193	-4987	2156	10609	-8453
1.B.2.2 Portfolio investment	80	1591	-1511	78	2755	-2676
1.B.2.3 Other investment	96	3629	-3533	210	5246	-5035
1.B.2.4 Reserve assets	922	4	918	2393	163	2231
1.B.3 Other primary income	1286	1375	-89	1172	623	549
1.C Secondary Income (1.C.1+1.C.2)	**23722**	**2570**	**21153**	**28650**	**3868**	**24782**
1.C.1 Financial corporations, nonfinancial corporations, households, and NPISHs	23702	2353	21350	28627	3547	25080
1.C.1.1 Personal transfers (Current transfers between resident and/non-resident households)	22943	1677	21267	27984	2631	25352
1.C.1.2 Other current transfers	759	676	83	643	915	-272
1.C.2 General government	20	217	-197	23	321	-298
2 Capital Account (2.1+2.2)	**244**	**173**	**71**	**272**	**260**	**12**
2.1 Gross acquisitions (DR.)/disposals (CR.) of non-produced nonfinancial assets	117	29	88	120	35	85
2.2 Capital transfers	127	144	-17	152	225	-73
3 Financial Account (3.1 to 3.5)	**181861**	**167636**	**14226**	**153151**	**152222**	**929**
3.1 Direct Investment (3.1A+3.1B)	**24396**	**10620**	**13777**	**17084**	**10730**	**6355**
3.1.A Direct Investment in India	23281	6028	17253	15858	6538	9319
3.1.A.1 Equity and investment fund shares	21074	5177	15897	14684	6254	8430
3.1.A.1.1 Equity other than reinvestment of earnings	15845	5177	10669	9708	6254	3454
3.1.A.1.2 Reinvestment of earnings	5229		5229	4976	0	4976
3.1.A.2 Debt instruments	2207	851	1356	1173	284	889
3.1.A.2.1 Direct investor in direct investment enterprises	2207	851	1356	1173	284	889
3.1.B Direct Investment by India	1115	4592	-3477	1227	4191	-2964
3.1.B.1 Equity and investment fund shares	1115	2977	-1862	1227	3226	-1999
3.1.B.1.1 Equity other than reinvestment of earnings	1115	2132	-1017	1227	2123	-896
3.1.B.1.2 Reinvestment of earnings		845	-845	0	1103	-1103
3.1.B.2 Debt instruments	0	1615	-1615	0	965	-965
3.1.B.2.1 Direct investor in direct investment enterprises		1615	-1615	0	965	-965
3.2 Portfolio Investment	**70715**	**85930**	**-15215**	**66697**	**68361**	**-1664**
3.2.A Portfolio Investment in India	70254	84543	-14289	66117	67704	-1588
3.2.1 Equity and investment fund shares	62553	75636	-13083	57476	59959	-2483
3.2.2 Debt securities	7701	8907	-1206	8640	7745	895
3.2.B Portfolio Investment by India	461	1387	-926	580	657	-77
3.3 Financial derivatives (other than reserves) and employee stock options	**4629**	**7403**	**-2774**	**3661**	**6332**	**-2671**
3.4 Other investment	**66098**	**63683**	**2415**	**65708**	**61219**	**4489**
3.4.1 Other equity (ADRs/GDRs)	0	0	0	0	0	0
3.4.2 Currency and deposits	13514	13909	-395	21141	17485	3656
3.4.2.1 Central bank (Rupee Debt Movements; NRG)	46	600	-554	75	0	75
3.4.2.2 Deposit-taking corporations, except the central bank (NRI Deposits)	13468	13309	159	21066	17485	3581
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)	29061	28537	524	17418	21782	-4364
3.4.3.A Loans to India	28534	28148	386	17139	21378	-4239
3.4.3.B Loans by India	527	389	138	280	404	-125
3.4.4 Insurance, pension, and standardized guarantee schemes	40	17	22	41	30	11
3.4.5 Trade credit and advances	18403	11582	6821	15950	16237	-287
3.4.6 Other accounts receivable/payable - other	5080	9637	-4557	11157	5685	5472
3.4.7 Special drawing rights	0	0	0	0	0	0
3.5 Reserve assets	**16024**	**0**	**16024**	**0**	**5579**	**-5579**
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)	16024	0	16024	0	5579	-5579
4 Total assets/liabilities	**181861**	**167636**	**14226**	**153151**	**152222**	**929**
4.1 Equity and investment fund shares	89872	92596	-2725	77670	76458	1212
4.2 Debt instruments	70886	65402	5484	64323	64499	-176
4.3 Other financial assets and liabilities	21104	9637	11466	11157	11265	-107
5 Net errors and omissions		**893**	**-893**	**395**	**0**	**395**

Note: P: Preliminary.

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

(₹ Crore)

Item	Jan-Mar 2022			Jan-Mar 2023 (P)		
	Credit	Debit	Net	Credit	Debit	Net
	1	2	3	4	5	6
1 Current Account (1.A+1.B+1.C)	**1646190**	**1747025**	**-100835**	**1958000**	**1968993**	**-10992**
1.A Goods and Services (1.A.a+1.A.b)	**1413535**	**1610368**	**-196833**	**1658921**	**1770076**	**-111155**
1.A.a Goods (1.A.a.1 to 1.A.a.3)	**887863**	**1297738**	**-409875**	**952809**	**1385415**	**-432606**
1.A.a.1 General merchandise on a BOP basis	888059	1236020	-347961	948262	1330884	-382622
1.A.a.2 Net exports of goods under merchanting	-196	0	-196	4548	0	4548
1.A.a.3 Nonmonetary gold	0	61718	-61718	0	54532	-54532
1.A.b Services (1.A.b.1 to 1.A.b.13)	**525672**	**312631**	**213042**	**706112**	**384660**	**321451**
1.A.b.1 Manufacturing services on physical inputs owned by others	1613	184	1429	2689	425	2264
1.A.b.2 Maintenance and repair services n.i.e.	329	3313	-2984	464	5295	-4831
1.A.b.3 Transport	70702	82770	-12068	65454	66565	-1111
1.A.b.4 Travel	20740	38617	-17877	69476	63331	6145
1.A.b.5 Construction	4482	5418	-937	9040	5797	3244
1.A.b.6 Insurance and pension services	6801	3218	3583	6777	3740	3037
1.A.b.7 Financial services	12147	11313	834	17215	10718	6497
1.A.b.8 Charges for the use of intellectual property n.i.e.	1454	18944	-17489	2389	22449	-20059
1.A.b.9 Telecommunications, computer, and information services	252989	30162	222827	338240	54349	283891
1.A.b.10 Other business services	126651	104321	22330	183122	134212	48910
1.A.b.11 Personal, cultural, and recreational services	7300	9206	-1906	8596	11438	-2842
1.A.b.12 Government goods and services n.i.e.	1201	2035	-834	1185	2525	-1339
1.A.b.13 Others n.i.e.	19262	3129	16133	1463	3817	-2354
1.B Primary Income (1.B.1 to 1.B.3)	**54193**	**117326**	**-63133**	**63392**	**167098**	**-103707**
1.B.1 Compensation of employees	12145	6049	6096	13948	7544	6404
1.B.2 Investment income	32373	100933	-68559	39805	154433	-114627
1.B.2.1 Direct investment	24116	61632	-37516	17740	87278	-69538
1.B.2.2 Portfolio investment	602	11973	-11371	644	22661	-22016
1.B.2.3 Other investment	721	27299	-26578	1731	43156	-41425
1.B.2.4 Reserve assets	6935	29	6906	19690	1338	18352
1.B.3 Other primary income	9674	10344	-670	9638	5122	4516
1.C Secondary Income (1.C.1+1.C.2)	**178462**	**19331**	**159131**	**235688**	**31819**	**203869**
1.C.1 Financial corporations, nonfinancial corporations, households, and NPISHs	178313	17700	160613	235499	29176	206322
1.C.1.1 Personal transfers (Current transfers between resident and/non-resident households)	172602	12613	159989	230210	21647	208563
1.C.1.2 Other current transfers	5711	5086	624	5288	7529	-2241
1.C.2 General government	149	1631	-1482	189	2642	-2453
2 Capital Account (2.1+2.2)	**1836**	**1303**	**533**	**2237**	**2137**	**100**
2.1 Gross acquisitions (DR.)/disposals (CR.) of non-produced nonfinancial assets	879	220	660	986	288	698
2.2 Capital transfers	957	1084	-127	1250	1849	-599
3 Financial Account (3.1 to 3.5)	**1368137**	**1261119**	**107018**	**1259902**	**1252260**	**7643**
3.1 Direct Investment (3.1A+3.1B)	**183534**	**79893**	**103640**	**140546**	**88268**	**52278**
3.1.A Direct Investment in India	175144	45346	129797	130453	53788	76665
3.1.A.1 Equity and investment fund shares	158539	38945	119594	120800	51450	69350
3.1.A.1.1 Equity other than reinvestment of earnings	119205	38945	80260	79863	51450	28413
3.1.A.1.2 Reinvestment of earnings	39334	0	39334	40937	0	40937
3.1.A.2 Debt instruments	16605	6401	10203	9652	2338	7315
3.1.A.2.1 Direct investor in direct investment enterprises	16605	6401	10203	9652	2338	7315
3.1.B Direct Investment by India	8390	34547	-26157	10093	34480	-24387
3.1.B.1 Equity and investment fund shares	8390	22395	-14005	10093	26539	-16446
3.1.B.1.1 Equity other than reinvestment of earnings	8390	16040	-7650	10093	17465	-7372
3.1.B.1.2 Reinvestment of earnings	0	6355	-6355	0	9073	-9073
3.1.B.2 Debt instruments	0	12153	-12153	0	7941	-7941
3.1.B.2.1 Direct investor in direct investment enterprises	0	12153	-12153	0	7941	-7941
3.2 Portfolio Investment	**531986**	**646450**	**-114463**	**548685**	**562376**	**-13691**
3.2.A Portfolio Investment in India	528521	636017	-107496	543912	556972	-13060
3.2.1 Equity and investment fund shares	470586	569008	-98422	472831	493254	-20423
3.2.2 Debt securities	57935	67009	-9074	71080	63718	7363
3.2.B Portfolio Investment by India	3465	10433	-6968	4774	5404	-631
3.3 Financial derivatives (other than reserves) and employee stock options	**34822**	**55690**	**-20868**	**30121**	**52094**	**-21973**
3.4 Other investment	**497250**	**479086**	**18164**	**540550**	**503623**	**36927**
3.4.1 Other equity (ADRs/GDRs)	0	0	0	0	0	0
3.4.2 Currency and deposits	101664	104634	-2970	173921	143842	30080
3.4.2.1 Central bank (Rupee Debt Movements; NRG)	347	4514	-4167	619	0	619
3.4.2.2 Deposit-taking corporations, except the central bank (NRI Deposits)	101318	100121	1197	173302	143842	29461
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)	218623	214684	3939	143291	179189	-35898
3.4.3.A Loans to India	214662	211760	2902	140991	175865	-34873
3.4.3.B Loans by India	3961	2925	1037	2300	3324	-1024
3.4.4 Insurance, pension, and standardized guarantee schemes	300	131	169	337	245	92
3.4.5 Trade credit and advances	138447	87134	51313	131214	133577	-2364
3.4.6 Other accounts receivable/payable - other	38216	72502	-34286	91787	46770	45017
3.4.7 Special drawing rights	0	0	0	0	0	0
3.5 Reserve assets	**120545**	**0**	**120545**	**0**	**45899**	**-45899**
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)	120545	0	120545	0	45899	-45899
4 Total assets/liabilities	**1368137**	**1261119**	**107018**	**1259902**	**1252260**	**7643**
4.1 Equity and investment fund shares	676102	696601	-20499	638957	628987	9970
4.2 Debt instruments	533274	492016	41258	529159	530604	-1445
4.3 Other financial assets and liabilities	158761	72502	86259	91787	92669	-883
5 Net errors and omissions	**0**	**6716**	**-6716**	**3250**	**0**	**3250**

Note: P: Preliminary.

No. 42: India's International Investment Position

(US $ Million)

Item	As on Financial Year/Quarter End							
	2022-23		2022				2023	
			Mar.		Dec.		Mar.	
	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
	1	2	3	4	5	6	7	8
1. Direct investment Abroad/in India	225592	523335	211573	521653	222628	510748	225592	523335
1.1 Equity Capital*	142071	493896	132765	493987	140072	482123	142071	493896
1.2 Other Capital	83521	29439	78807	27666	82556	28626	83521	29439
2. Portfolio investment	10966	243351	10642	268635	10890	243885	10966	243351
2.1 Equity	4958	138958	1110	156381	8624	140469	4958	138958
2.2 Debt	6008	104393	9533	112253	2266	103416	6008	104393
3. Other investment	87717	503891	90974	488484	79507	494503	87717	503891
3.1 Trade credit	27507	124301	18561	117788	26063	124588	27507	124301
3.2 Loan	10714	203127	10474	197498	8628	197219	10714	203127
3.3 Currency and Deposits	30526	141133	42081	140994	27093	136132	30526	141133
3.4 Other Assets/Liabilities	18970	35330	19858	32203	17723	36564	18970	35330
4. Reserves	578449		607309		562721		578449	
5. Total Assets/ Liabilities	902725	1270577	920498	1278772	875745	1249136	902725	1270577
6. Net IIP (Assets - Liabilities)	-367852		-358274		-373391		-367852	

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

Payment and Settlement Systems

No.43: Payment System Indicators

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

System	Volume (Lakh)				Value (₹ Crore)			
	FY 2022-23	2022	2023		FY 2022-23	2022	2023	
		May.	Apr.	May.		May.	Apr.	May.
	1	2	3	4	5	6	7	8
A. Settlement Systems								
Financial Market Infrastructures (FMIs)								
1 CCIL Operated Systems (1.1 to 1.3)	41.44	3.32	3.21	4.03	258797336	19742339	20115131	22537634
1.1 Govt. Securities Clearing (1.1.1 to 1.1.3)	15.00	1.23	1.32	1.63	172251292	13110275	13093142	15227196
1.1.1 Outright	7.99	0.66	0.79	0.98	10090700	832089	1158660	1326724
1.1.2 Repo	4.07	0.31	0.36	0.45	68032487	4940038	6633808	7732270
1.1.3 Tri-party Repo	2.94	0.26	0.17	0.20	94128105	7338148	5300674	6168201
1.2 Forex Clearing	25.16	1.98	1.79	2.23	78932050	6039213	6450151	6189356
1.3 Rupee Derivatives @	1.27	0.11	0.09	0.17	7613994	592851	571838	1121082
B. Payment Systems								
I Financial Market Infrastructures (FMIs)	-	-	-	-	-	-	-	-
1 Credit Transfers - RTGS (1.1 to 1.2)	2425.62	195.72	201.57	220.46	149946286	11183947	11876806	12882587
1.1 Customer Transactions	2411.19	194.53	200.44	219.21	131667176	9851274	10452024	11413321
1.2 Interbank Transactions	14.43	1.19	1.13	1.25	18279111	1332673	1424781	1469266
II Retail								
2 Credit Transfers - Retail (2.1 to 2.6)	983694.78	72187.50	100492.45	107130.93	55012192	4177865	4834441	5196720
2.1 AePS (Fund Transfers) @	5.90	0.58	0.36	0.34	356	36	25	23
2.2 APBS $	17898.09	2268.03	1066.77	1838.94	247580	41011	19744	31424
2.3 IMPS	56532.64	4848.13	4957.93	5015.49	5585441	452328	521050	527558
2.4 NACH Cr $	19267.00	1794.53	1009.42	1227.66	1544342	97341	117079	122239
2.5 NEFT	52847.43	3813.34	4825.37	4896.66	33719541	2546928	2761038	3026331
2.6 UPI @	837143.73	59462.89	88632.60	94151.85	13914932	1040221	1415505	1489145
2.6.1 of which USSD @	17.21	1.00	1.64	1.75	197	14	19	21
3 Debit Transfers and Direct Debits (3.1 to 3.3)	15343.22	1177.32	1398.58	1457.43	1289393	95542	120185	125654
3.1 BHIM Aadhaar Pay @	214.22	17.81	16.09	15.45	6791	571	604	535
3.2 NACH Dr $	13502.69	1018.05	1242.93	1288.88	1280001	94752	119338	124864
3.3 NETC (linked to bank account) @	1626.31	141.46	139.56	153.10	2601	218	243	256
4 Card Payments (4.1 to 4.2)	63337.24	5693.68	4887.94	4974.51	2152418	179494	187396	193436
4.1 Credit Cards (4.1.1 to 4.1.2)	29145.25	2378.03	2592.55	2734.74	1432255	113694	132769	140660
4.1.1 PoS based $	15598.70	1220.26	1408.20	1419.98	541944	42266	51624	50811
4.1.2 Others $	13546.54	1157.77	1184.35	1314.76	890311	71428	81144	89849
4.2 Debit Cards (4.2.1 to 4.2.1)	34192.00	3315.65	2295.38	2239.77	720163	65800	54627	52776
4.2.1 PoS based $	22917.38	2150.28	1633.96	1592.87	476693	44273	37647	35589
4.2.2 Others $	11274.61	1165.37	661.43	646.89	243470	21527	16980	17187
5 Prepaid Payment Instruments (5.1 to 5.2)	74667.44	6529.11	6313.42	6872.86	287111	25698	22595	23967
5.1 Wallets	59112.76	5198.06	5145.40	5660.41	221896	19616	18894	20344
5.2 Cards (5.2.1 to 5.2.2)	15554.69	1331.05	1168.01	1212.46	65215	6082	3701	3624
5.2.1 PoS based $	1013.09	92.80	676.37	721.33	14777	1336	1080	1190
5.2.2 Others $	14541.60	1238.25	491.65	491.13	50438	4746	2620	2434
6 Paper-based Instruments (6.1 to 6.2)	7087.81	590.44	554.06	572.39	7162537	594562	639281	627772
6.1 CTS (NPCI Managed)	7087.81	590.44	554.06	572.39	7162537	594562	639281	627772
6.2 Others	0.00	–	–	–	–	–	–	–
Total - Retail Payments (2+3+4+5+6)	1144130.50	86178.05	113646.45	121008.13	65903651	5073160	5803897	6167549
Total Payments (1+2+3+4+5+6)	1146556.12	86373.77	113848.01	121228.59	215849937	16257107	17680703	19050136
Total Digital Payments (1+2+3+4+5)	1139468.31	85783.33	113293.95	120656.20	208687400	15662546	17041422	18422364

PART II - Payment Modes and Channels

System	Volume (Lakh)				Value (₹ Crore)			
	FY 2022-23	2022	2023		FY 2022-23	2022	2023	
		May.	Apr.	May.		May.	Apr.	May.
	1	2	3	4	5	6	7	8
A. Other Payment Channels								
1 Mobile Payments (mobile app based) (1.1 to 1.2)	806541.16	57896.19	83595.17	87374.84	22031617	1672651	2154811	2268476
1.1 Intra-bank $	62306.61	4617.48	5789.55	6127.73	4191430	318546	402248	424314
1.2 Inter-bank $	744234.54	53278.71	77805.62	81247.11	17840187	1354105	1752562	1844163
2 Internet Payments (Netbanking / Internet Browser Based) @ (2.1 to 2.2)	42630.64	3015.15	3406.99	3597.36	91539296	5707944	7036829	7800437
2.1 Intra-bank @	10703.78	675.57	855.07	916.83	53506133	3628328	3713764	4116621
2.2 Inter-bank @	31926.86	2339.58	2551.92	2680.53	38033163	2079615	3323065	3683816
B. ATMs								
3 Cash Withdrawal at ATMs $ (3.1 to 3.3)	69465.15	5868.45	5707.08	5694.70	3305007	280267	282873	279622
3.1 Using Credit Cards $	88.37	6.64	7.49	7.73	4296	328	357	366
3.2 Using Debit Cards $	68971.46	5829.01	5667.31	5655.91	3286748	278833	281248	278080
3.3 Using Pre-paid Cards $	405.32	32.79	32.28	31.07	13963	1106	1268	1175
4 Cash Withdrawal at PoS $ (4.1 to 4.2)	27.73	2.23	2.10	2.33	278	22	21	23
4.1 Using Debit Cards $	27.41	2.20	2.09	2.31	276	22	21	23
4.2 Using Pre-paid Cards $	0.33	0.03	0.01	0.02	2	0	0	0
5 Cash Withrawal at Micro ATMs @	12375.16	1073.66	998.82	990.53	333966	29828	28954	27958
5.1 AePS @	12375.16	1073.66	998.82	990.53	333966	29828	28954	27958

PART III - Payment Infrastructures (Lakh)

System	As on March 2023	2022	2023	
		May.	Apr.	May.
	1	2	3	4
Payment System Infrastructures				
1 Number of Cards (1.1 to 1.2)	10465.62	9944.98	10535.25	10616.74
1.1 Credit Cards	853.03	768.77	865.13	877.47
1.2 Debit Cards	9612.59	9176.21	9670.12	9739.26
2 Number of PPIs @ (2.1 to 2.2)	16185.26	15591.10	16414.16	16455.95
2.1 Wallets @	13384.68	12884.13	13334.21	13372.11
2.2 Cards @	2800.58	2706.97	3079.95	3083.84
3 Number of ATMs (3.1 to 3.2)	2.59	2.52	2.55	2.56
3.1 Bank owned ATMs $	2.23	2.20	2.19	2.20
3.2 White Label ATMs $	0.36	0.32	0.36	0.36
4 Number of Micro ATMs @	16.11	10.13	14.28	14.66
5 Number of PoS Terminals	77.90	61.69	78.37	79.61
6 Bharat QR @	53.82	41.38	54.36	55.45
7 UPI QR *	2563.77	1881.16	2609.08	2667.57

@: New inclusion w.e.f. November 2019
#: Data reported by Co-operative Banks, LABs and RRBs included with effect from December 2021.
$: Inclusion separately initiated from November 2019 - would have been part of other items hitherto.
*: New inclusion w.e.f. September 2020; Includes only static UPI QR Code
Note : 1. Data is provisional.
2. ECS (Debit and Credit) has been merged with NACH with effect from January 31, 2020.
3. The data from November 2019 onwards for card payments (Debit/Credit cards) and Prepaid Payment Instruments (PPIs) may not be comparable with earlier months/ periods, as more granular data is being published along with revision in data definitions.
4. Only domestic financial transactions are considered. The new format captures e-commerce transactions; transactions using FASTags, digital bill payments and card-to-card transfer through ATMs, etc.. Also, failed transactions, chargebacks, reversals, expired cards/ wallets, are excluded.
Part I-A. Settlement systems
1.1.3: Tri- party Repo under the securities segment has been operationalised from November 05, 2018.
Part I-B. Payments systems
4.1.2: 'Others' includes e-commerce transactions and digital bill payments through ATMs, etc.
4.2.2: 'Others' includes e-commerce transactions, card to card transfers and digital bill payments through ATMs, etc.
5: Available from December 2010.
5.1: includes purchase of goods and services and fund transfer through wallets.
5.2.2: includes usage of PPI Cards for online transactions and other transactions.
6.1: Pertain to three grids – Mumbai, New Delhi and Chennai.
6.2: 'Others' comprises of Non-MICR transactions which pertains to clearing houses managed by 21 banks.
Part II-A. Other payment channels
1: Mobile Payments –
o Include transactions done through mobile apps of banks and UPI apps.
o The data from July 2017 includes only individual payments and corporate payments initiated, processed, and authorised using mobile device. Other corporate payments which are not initiated, processed, and authorised using mobile device are excluded.
2: Internet Payments – includes only e-commerce transactions through 'netbanking' and any financial transaction using internet banking website of the bank.
Part II-B. ATMs
3.3 and 4.2: only relates to transactions using bank issued PPIs.
Part III. Payment systems infrastructure
3: Includes ATMs deployed by Scheduled Commercial Banks (SCBs) and White Label ATM Operators (WLAOs). WLAs are included from April 2014 onwards.

Occasional Series

No. 44: Small Savings

(₹ Crore)

Scheme		2021-22	2021	2022		
			Dec.	Oct.	Nov.	Dec.
		1	2	3	4	5
1 Small Savings	**Receipts**	**203175**	**18175**	**10387**	**9057**	**11632**
	Outstanding	**1463777**	**1397878**	**1556375**	**1565352**	**1576921**
1.1 Total Deposits	**Receipts**	**144749**	**13855**	**7696**	**6204**	**9136**
	Outstanding	**1012241**	**969847**	**1082284**	**1088482**	**1097617**
1.1.1 Post Office Saving Bank Deposits	Receipts	17581	2630	6	-393	3806
	Outstanding	188433	179437	196446	196053	199859
1.1.2 Sukanya Samriddhi Yojna	Receipts	23748	1845	1394	1597	1890
	Outstanding	58783	47264	70176	71773	73663
1.1.3 National Saving Scheme, 1987	Receipts	-1524	-366	-20	-20	-22
	Outstanding	1894	3200	1701	1680	1659
1.1.4 National Saving Scheme, 1992	Receipts	-352	2	-2	-2	-2
	Outstanding	-177	150	-195	-198	-200
1.1.5 Monthly Income Scheme	Receipts	14441	1228	506	275	-125
	Outstanding	235820	232747	240671	240946	240821
1.1.6 Senior Citizen Scheme 2004	Receipts	22281	1929	1491	1256	935
	Outstanding	119333	114134	130652	131908	132843
1.1.7 Post Office Time Deposits	Receipts	43725	3926	1900	1547	527
	Outstanding	251282	241034	272186	273732	274259
1.1.7.1 1 year Time Deposits	Outstanding	118282	116043	124019	124073	123599
1.1.7.2 2 year Time Deposits	Outstanding	8008	7931	8553	8686	8765
1.1.7.3 3 year Time Deposits	Outstanding	6918	6983	6879	6913	6938
1.1.7.4 5 year Time Deposits	Outstanding	118074	110077	132735	134060	134957
1.1.8 Post Office Recurring Deposits	Receipts	24840	2662	2421	1941	2125
	Outstanding	156869	151885	170550	172491	174616
1.1.9 Post Office Cumulative Time Deposits	Receipts	7	-1	0	0	0
	Outstanding	-19	-25	-19	-19	-19
1.1.10 Other Deposits	Receipts	2	0	0	0	0
	Outstanding	23	21	22	22	22
1.1.11 PM Care for children	Receipts			0	3	2
	Outstanding			94	94	94
1.2 Saving Certificates	**Receipts**	**45307**	**3978**	**2545**	**2564**	**2115**
	Outstanding	**333189**	**321027**	**353818**	**356308**	**358362**
1.2.1 National Savings Certificate VIII issue	Receipts	19696	1860	791	627	446
	Outstanding	155043	150513	162152	162779	163224
1.2.2 Indira Vikas Patras	Receipts	-16	0	0	0	0
	Outstanding	143	158	142	142	142
1.2.3 Kisan Vikas Patras	Receipts	-1115	-426	-134	-165	-238
	Outstanding	-7891	-8455	-9302	-9466	-9704
1.2.4 Kisan Vikas Patras - 2014	Receipts	26619	2544	1888	2102	1907
	Outstanding	174560	168720	189654	191756	193663
1.2.5 National Saving Certificate VI issue	Receipts	92	0	0	0	0
	Outstanding	-22	-114	-22	-22	-22
1.2.6 National Saving Certificate VII issue	Receipts	31	0	0	0	0
	Outstanding	-44	-74	-44	-44	-44
1.2.7 Other Certificates	Outstanding	11400	10279	11238	11163	11103
1.3 Public Provident Fund	**Receipts**	**13119**	**342**	**146**	**289**	**381**
	Outstanding	**118347**	**107004**	**120273**	**120562**	**120942**

Note : Data on receipts from April 2017 are net receipts, *i.e.,* gross receipt *minus* gross payment.
Source: Accountant General, Post and Telegraphs.

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

(Per cent)

Central Government Dated Securities					
Category	2022				2023
	Mar.	Jun.	Sep.	Dec.	Mar.
	1	2	3	4	5
(A) Total (in ₹. Crore)	**8529036**	**8784931**	**9098788**	**9373372**	**9645776**
1 Commercial Banks	35.93	36.16	36.44	36.13	36.61
2 Co-operative Banks	1.81	1.84	1.80	1.70	1.64
3 Non-Bank PDs	0.29	0.33	0.38	0.44	0.49
4 Insurance Companies	25.89	26.34	25.94	26.14	25.97
5 Mutual Funds	2.91	2.32	2.58	2.87	2.81
6 Provident Funds	4.60	4.77	4.66	4.67	4.71
7 Pension Funds	3.50	3.61	3.84	3.91	3.98
8 Financial Institutions	0.94	1.09	0.98	1.07	0.98
9 Corporates	1.47	1.52	1.58	1.57	1.62
10 Foreign Portfolio Investors	1.56	1.43	1.38	1.31	1.36
11 RBI	16.62	16.06	15.28	14.73	14.26
12 Others	4.46	4.57	5.14	5.45	5.57
12.1 State Governments	1.82	1.84	1.83	1.88	2.03

State Governments Securities					
Category	2022				2023
	Mar.	Jun.	Sep.	Dec.	Mar.
	1	2	3	4	5
(B) Total (in ₹. Crore)	**4410250**	**4472011**	**4589128**	**4712902**	**4929079**
1 Commercial Banks	34.39	34.22	34.37	34.34	33.91
2 Co-operative Banks	4.04	4.06	3.89	3.80	3.64
3 Non-Bank PDs	0.38	0.41	0.36	0.44	0.62
4 Insurance Companies	28.42	28.39	27.71	27.42	26.80
5 Mutual Funds	1.82	1.89	2.08	2.02	1.94
6 Provident Funds	20.79	20.52	20.18	20.31	21.29
7 Pension Funds	4.32	4.43	4.73	4.74	4.81
8 Financial Institutions	1.72	1.73	1.71	1.77	1.84
9 Corporates	1.82	1.98	1.85	1.94	2.00
10 Foreign Portfolio Investors	0.02	0.02	0.02	0.02	0.02
11 RBI	0.80	0.79	0.79	0.75	0.72
12 Others	1.48	1.56	2.32	2.45	2.42
12.1 State Governments	0.20	0.21	0.21	0.24	0.27

Treasury Bills					
Category	2022				2023
	Mar.	Jun.	Sep.	Dec.	Mar.
	1	2	3	4	5
(C) Total (in ₹. Crore)	**757198**	**1022053**	**920205**	**839931**	**823313**
1 Commercial Banks	49.04	51.37	50.91	49.15	53.92
2 Co-operative Banks	1.79	1.34	1.48	1.27	1.29
3 Non-Bank PDs	4.20	2.49	2.12	2.17	2.85
4 Insurance Companies	6.58	5.34	5.46	5.81	6.11
5 Mutual Funds	14.01	14.86	11.98	14.23	15.30
6 Provident Funds	0.21	1.70	3.21	1.37	0.10
7 Pension Funds	0.03	0.05	0.02	0.02	0.07
8 Financial Institutions	3.53	3.73	4.17	4.52	3.72
9 Corporates	3.47	4.27	3.86	3.59	4.99
10 Foreign Portfolio Investors	0.49	0.40	0.53	0.50	0.40
11 RBI	0.00	0.00	0.00	0.00	0.00
12 Others	16.66	14.45	16.25	17.37	11.25
12.1 State Governments	11.54	10.99	12.27	13.38	7.16

No. 46: Combined Receipts and Disbursements of the Central and State Governments

(₹ Crore)

Item	2017-18	2018-19	2019-20	2020-21	2021-22 RE	2022-23 BE
	1	2	3	4	5	6
1 Total Disbursements	**4515946**	**5040747**	**5410887**	**6353359**	**7453320**	**8008684**
1.1 Developmental	2635110	2882758	3074492	3823423	4489442	4761567
1.1.1 Revenue	2029044	2224367	2446605	3150221	3444624	3536719
1.1.2 Capital	519356	596774	588233	550358	963856	1144725
1.1.3 Loans	86710	61617	39654	122844	80962	80123
1.2 Non-Developmental	1812455	2078276	2253027	2442941	2864084	3140466
1.2.1 Revenue	1741432	1965907	2109629	2271637	2653832	2928102
1.2.1.1 Interest Payments	814757	894520	955801	1060602	1244104	1408929
1.2.2 Capital	69370	111029	141457	169155	178038	209892
1.2.3 Loans	1654	1340	1941	2148	32214	2472
1.3 Others	68381	79713	83368	86995	99794	106652
2 Total Receipts	**4528422**	**5023352**	**5734166**	**6397162**	**7193029**	**7944834**
2.1 Revenue Receipts	3376416	3797731	3851563	3688030	4894050	5497245
2.1.1 Tax Receipts	2978134	3278947	3231582	3193390	4026487	4551271
2.1.1.1 Taxes on commodities and services	1853859	2030050	2012578	2076013	2608666	2904479
2.1.1.2 Taxes on Income and Property	1121189	1246083	1216203	1114805	1414088	1642678
2.1.1.3 Taxes of Union Territories (Without Legislature)	3086	2814	2800	2572	3732	4115
2.1.2 Non-Tax Receipts	398282	518783	619981	494640	867564	945974
2.1.2.1 Interest Receipts	34224	36273	31137	33448	40481	46552
2.2 Non-debt Capital Receipts	142433	140287	110094	64994	117937	90824
2.2.1 Recovery of Loans & Advances	42213	44667	59515	16951	33188	19835
2.2.2 Disinvestment proceeds	100219	95621	50578	48044	84748	70989
3 Gross Fiscal Deficit [1 - (2.1 + 2.2)]	**997097**	**1102729**	**1449230**	**2600335**	**2441333**	**2420614**
3A Sources of Financing: Institution-wise						
3A.1 Domestic Financing	989167	1097210	1440548	2530155	2421587	2401363
3A.1.1 Net Bank Credit to Government	144792	387091	571872	890012	627255	-----
3A.1.1.1 Net RBI Credit to Government	-144847	325987	190241	107493	350911	-----
3A.1.2 Non-Bank Credit to Government	844375	710119	868676	1640143	1794332	2401363
3A.2 External Financing	7931	5519	8682	70180	19746	19251
3B Sources of Financing: Instrument-wise						
3B.1 Domestic Financing	989167	1097210	1440548	2530155	2421587	2401363
3B.1.1 Market Borrowings (net)	794856	795845	971378	1696012	1377060	1808401
3B.1.2 Small Savings (net)	71222	88961	209232	458801	565522	398870
3B.1.3 State Provident Funds (net)	42351	51004	38280	41273	45133	44731
3B.1.4 Reserve Funds	18423	-18298	10411	4545	-1675	5824
3B.1.5 Deposits and Advances	25138	66289	-14227	25682	32945	34029
3B.1.6 Cash Balances	-12476	17395	-323279	-43802	260291	63850
3B.1.7 Others	49653	96014	548753	347643	142310	45659
3B.2 External Financing	7931	5519	8682	70180	19746	19251
4 Total Disbursements as per cent of GDP	*26.4*	*26.7*	*27.0*	*32.1*	*31.5*	*31.0*
5 Total Receipts as per cent of GDP	*26.5*	*26.6*	*28.6*	*32.3*	*30.4*	*30.8*
6 Revenue Receipts as per cent of GDP	*19.8*	*20.1*	*19.2*	*18.6*	*20.7*	*21.3*
7 Tax Receipts as per cent of GDP	*17.4*	*17.3*	*16.1*	*16.1*	*17.0*	*17.6*
8 Gross Fiscal Deficit as per cent of GDP	*5.8*	*5.8*	*7.2*	*13.1*	*10.3*	*9.4*

…: Not available. RE: Revised Estimates; BE: Budget Estimates

Source : Budget Documents of Central and State Governments.

No. 47: Financial Accommodation Availed by State Governments under various Facilities

(₹ Crore)

Sr. No	State/Union Territory	During May-2023					
		Special Drawing Facility (SDF)		Ways and Means Advances (WMA)		Overdraft (OD)	
		Average amount availed	Number of days availed	Average amount availed	Number of days availed	Average amount availed	Number of days availed
	1	2	3	4	5	6	7
1	Andhra Pradesh	620.59	18	2072.36	18	2460.39	11
2	Arunachal Pradesh	-	-	-	-	-	-
3	Assam	1405.83	10	48.16	1	-	-
4	Bihar	31.18	1	-	-	-	-
5	Chhattisgarh	867.26	23	-	-	-	-
6	Goa	-	-	-	-	-	-
7	Gujarat	-	-	-	-	-	-
8	Haryana	286.43	13	305.62	7	-	-
9	Himachal Pradesh	-	-	-	-	-	-
10	Jammu & Kashmir UT	-	-	933.92	22	412.44	16
11	Jharkhand	-	-	-	-	-	-
12	Karnataka	-	-	-	-	-	-
13	Kerala	115.36	7	415.88	7	-	-
14	Madhya Pradesh	-	-	-	-	-	-
15	Maharashtra	-	-	-	-	-	-
16	Manipur	-	-	183.61	20	88.12	4
17	Meghalaya	135.09	22	76.53	18	88.14	2
18	Mizoram	-	-	124.68	25	17.69	12
19	Nagaland	-	-	180.04	24	123.15	14
20	Odisha	-	-	-	-	-	-
21	Puducherry	-	-	-	-	-	-
22	Punjab	1180.15	19	-	-	-	-
23	Rajasthan	6120.16	30	359.26	3	-	-
24	Tamil Nadu	-	-	-	-	-	-
25	Telangana	757.81	31	1404.37	29	436.01	9
26	Tripura	-	-	-	-	-	-
27	Uttar Pradesh	-	-	-	-	-	-
28	Uttarakhand	82.08	3	-	-	-	-
29	West Bengal	-	-	-	-	-	-

Notes: 1. SDF is availed by State Governments against the collateral of Consolidated Sinking Fund (CSF), Guarantee Redemption Fund (GRF) & Auction Treasury Bills (ATBs) balances and other investments in government securities.
2. WMA is advance by Reserve Bank of India to State Governments for meeting temporary cash mismatches.
3. OD is advanced to State Governments beyond their WMA limits.
4. Average amount availed is the total accommodation (SDF/WMA/OD) availed divided by number of days for which accommodation was extended during the month.
5. - : Nil.

Source: Reserve Bank of India.

No. 48: Investments by State Governments

(₹ Crore)

Sr. No	State/Union Territory	As on end of May 2023			
		Consolidated Sinking Fund (CSF)	Guarantee Redemption Fund (GRF)	Government Securities	Auction Treasury Bills (ATBs)
	1	2	3	4	5
1	Andhra Pradesh	10185	1006	0	0
2	Arunachal Pradesh	2273	4	0	600
3	Assam	5381	79	0	0
4	Bihar	8232	-	0	0
5	Chhattisgarh	6475	5	1	3800
6	Goa	838	404	0	0
7	Gujarat	10785	589	0	17000
8	Haryana	1795	1504	0	0
9	Himachal Pradesh	-	-	0	0
10	Jammu & Kashmir UT	-	-	0	0
11	Jharkhand	1581	-	0	0
12	Karnataka	14306	320	0	38442
13	Kerala	2634	-	0	0
14	Madhya Pradesh	-	1130	0	0
15	Maharashtra	58832	1238	0	0
16	Manipur	61	124	0	0
17	Meghalaya	1040	82	8	0
18	Mizoram	375	43	0	0
19	Nagaland	1567	41	0	0
20	Odisha	16004	1803	103	19189
21	Puducherry	477	-	0	1250
22	Punjab	6966	0	0	0
23	Rajasthan	-	-	129	7300
24	Tamil Nadu	8229	-	0	2653
25	Telangana	6958	1522	0	0
26	Tripura	987	21	0	825
27	Uttarakhand	4437	187	0	0
28	Uttar Pradesh	5801	-	89	0
29	West Bengal	11280	819	239	0
	Total	**187499**	**10922**	**569**	**91059**

Notes: 1. CSF and GRF are reserve funds maintained by some State Governments with the Reserve Bank of India.
2. ATBs include Treasury bills of 91 days, 182 days and 364 days invested by State Governments in the primary market.
3. - : Not Applicable (not a member of the scheme).

No. 49: Market Borrowings of State Governments

(₹ Crore)

Sr. No.	State	2021-22		2022-23		2022-23		2023-24				Total amount raised, so far in 2023-24	
						March		April		May			
		Gross Amount Raised	Net Amount Raised	Gross Amount Raised	Net Amount Raised	Gross Amount Raised	Net Amount Raised	Gross Amount Raised	Net Amount Raised	Gross Amount Raised	Net Amount Raised	Gross	Net
	1	2	3	4	5	6	7	8	9	10	11	12	13
1	Andhra Pradesh	46443	36103	57478	45814	5618	4452	6000	5417	9500	8917	15500	14334
2	Arunachal Pradesh	563	530	559	389	-	-100	-	-	-	-	-	-
3	Assam	12753	10753	17100	16105	1000	305	1000	1000	3000	3000	4000	4000
4	Bihar	28489	24334	36800	27467	5800	2345	-	-	-	-	-	-
5	Chhattisgarh	4000	913	2000	-2287	2000	-287	-	-	-	-800	-	-800
6	Goa	2000	1450	1350	500	-	-200	-	-	-	-200	-	-200
7	Gujarat	31054	13554	43000	28300	9500	9500	1000	-	1500	1500	2500	1500
8	Haryana	30500	20683	45158	28638	8658	4198	2000	1337	4500	3500	6500	4837
9	Himachal Pradesh	4000	1875	14000	11941	3200	2990	-	-250	-	-	-	-250
10	Jammu & Kashmir UT	8562	5373	8473	5969	1728	964	-	-200	800	600	800	400
11	Jharkhand	5000	3191	4000	-155	-	-1655	-	-	-	-	-	-
12	Karnataka	59000	49000	36000	26000	-	-1000	-	-	-	-	-	-
13	Kerala	27000	18120	30839	15620	7800	5567	-	-1000	4000	2500	4000	1500
14	Madhya Pradesh	22000	13900	40158	26849	15158	8349	-	-500	2000	2000	2000	1500
15	Maharashtra	68750	40790	72000	42815	22000	18375	3000	3000	12000	12000	15000	15000
16	Manipur	1476	1326	1422	1147	200	200	-	-	350	350	350	350
17	Meghalaya	1608	1298	1753	1356	-	-68	-	-100	150	150	150	50
18	Mizoram	747	447	1315	1129	125	54	-	-80	250	250	250	170
19	Nagaland	1727	1222	1854	1199	91	-114	300	180	450	370	750	550
20	Odisha	0	-6473	0	-7500	-	-1000	-	-	-	-500	-	-500
21	Puducherry	1374	841	1200	698	-	-	-	-	-	-	-	-
22	Punjab	25814	12428	45500	33660	8900	7414	2500	500	6700	5300	9200	5800
23	Rajasthan	51149	38243	46057	30110	11306	6615	4500	3000	8000	7000	12500	10000
24	Sikkim	1511	1471	1414	1320	100	76	-	-	300	300	300	300
25	Tamil Nadu	87000	72500	87000	65722	19000	17119	-	-3000	11000	8000	11000	5000
26	Telangana	45716	39256	40150	30922	5150	3424	2000	1583	4000	3583	6000	5166
27	Tripura	300	0	0	-645	-	-330	-	-	-	-	-	-
28	Uttar Pradesh	62500	42355	55612	41797	22112	20084	-	-	4000	2000	4000	2000
29	Uttarakhand	3200	1800	3200	1450	1450	1450	-	-	-	-	-	-
30	West Bengal	67390	45199	63000	42500	21000	18300	-	-1000	5000	4000	5000	3000
	Grand Total	701626	492483	758392	518829	171896	127026	22300	9887	77500	63820	99800	73707

- : Nil.

Note: The State of J&K has ceased to exist constitutionally from October 31, 2019 and the liabilities of the State continue to remain as liabilities of the new UT of Jammu and Kashmir.

Source: Reserve Bank of India.

No. 50 (a): Flow of Financial Assets and Liabilities of Households - Instrument-wise

(Amount in ₹ Crore)

Item	2019-20				
	Q1	Q2	Q3	Q4	Annual
Net Financial Assets (I-II)	**238613.6**	**476724.8**	**386450.4**	**530769.8**	**1632558.5**
Per cent of GDP	*4.8*	*9.8*	*7.5*	*10.3*	*8.1*
I. Financial Assets	**398076.7**	**567753.2**	**517351.0**	**924069.3**	**2407250.2**
Per cent of GDP	*8.1*	*11.7*	*10.1*	*18.0*	*12.0*
of which:					
1.Total Deposits (a+b)	12239.0	296625.6	124015.7	451698.3	884578.5
(a) Bank Deposits	-10550.9	278124.4	116211.9	444044.6	827830.0
i. Commercial Banks	-13293.8	269475.4	66666.7	446006.7	768855.0
ii. Co-operative Banks	2742.9	8649.0	49545.2	-1962.1	58975.0
(b) Non-Bank Deposits	22789.9	18501.2	7803.7	7653.7	56748.5
2. Life Insurance Funds	117873.1	108209.1	110373.8	37714.2	374170.2
3. Provident and Pension Funds (including PPF)	104681.1	98426.3	103356.1	193739.0	500202.5
4. Currency	61244.1	-26104.8	86832.6	160690.2	282662.1
5. Investments	43936.8	43018.8	22655.1	-11953.8	97656.9
of which:					
(a) Mutual Funds	23303.5	38382.2	19191.1	-19191.1	61685.7
(b) Equity	18648.2	2172.4	936.2	4981.0	26737.8
6. Small Savings (excluding PPF)	57038.5	46514.1	69053.6	91117.2	263723.4
II. Financial Liabilities	**159463.1**	**91028.5**	**130900.6**	**393299.5**	**774691.7**
Per cent of GDP	*3.2*	*1.9*	*2.6*	*7.7*	*3.9*
Loans (Borrowings) from					
1. Financial Corporations (a+b)	159429.6	90994.9	130867.1	393266.0	774557.6
(a) Banking Sector	140261.4	58074.4	114905.9	196581.1	509822.8
of which:					
Commercial Banks	135754.1	57135.0	87377.4	202214.2	482480.6
(b) Other Financial Institutions	19168.2	32920.5	15961.2	196684.8	264734.8
i. Non-Banking Financial Companies	-519.7	22976.7	29930.7	198264.3	250652.0
ii. Housing Finance Companies	17033.0	8093.1	-15710.4	-3093.1	6322.6
iii. Insurance Companies	2655.0	1850.8	1740.9	1513.6	7760.2
2. Non-Financial Corporations (Private Corporate Business)	33.8	33.8	33.8	33.8	135.1
3. General Government	-0.3	-0.3	-0.3	-0.3	-1.0

No. 50 (a): Flow of Financial Assets and Liabilities of Households - Instrument-wise (Contd.)

(Amount in ₹ Crore)

Item	2020-21				
	Q1	Q2	Q3	Q4	Annual
Net Financial Assets (I-II)	**600422.5**	**573643.2**	**481433.5**	**719844.5**	**2375343.7**
Per cent of GDP	*15.5*	*12.1*	*8.8*	*12.5*	*12.0*
I. Financial Assets	**805869.5**	**612224.3**	**651241.3**	**1092617.4**	**3161952.5**
Per cent of GDP	*20.8*	*13.0*	*12.0*	*19.0*	*16.0*
of which:					
1.Total Deposits (a+b)	297412.4	278631.7	158172.2	525550.7	1259767.1
(a) Bank Deposits	281191.3	264565.3	147096.0	527056.7	1219909.2
i. Commercial Banks	279010.5	262033.7	143558.6	471730.9	1156333.7
ii. Co-operative Banks	2180.8	2531.6	3537.3	55325.8	63575.6
(b) Non-Bank Deposits	16221.1	14066.4	11076.3	-1506.0	39857.9
2. Life Insurance Funds	123291.4	142365.7	156438.6	141120.0	563215.8
3. Provident and Pension Funds (including PPF)	119666.9	110916.6	108512.2	207604.5	546700.1
4. Currency	202432.7	21286.9	91456.0	66800.5	381976.1
5. Investments	6249.8	-12956.4	67659.3	63624.0	124576.7
of which:					
(a) Mutual Funds	-16021.0	-28837.7	57675.4	51267.0	64083.8
(b) Equity	18599.4	8291.5	5307.1	6333.3	38531.2
6. Small Savings (excluding PPF)	55760.7	70924.2	67947.4	86862.2	281494.6
II. Financial Liabilities	**205447.0**	**38581.1**	**169807.8**	**372772.9**	**786608.8**
Per cent of GDP	*5.3*	*0.8*	*3.1*	*6.5*	*4.0*
Loans (Borrowings) from					
1. Financial Corporations (a+b)	205490.3	38624.3	169851.0	372816.9	786782.5
(a) Banking Sector	211058.8	13213.0	139622.0	284732.6	648626.4
of which:					
Commercial Banks	211259.3	13213.8	140514.3	242476.0	607463.5
(b) Other Financial Institutions	-5568.6	25411.3	30229.0	88084.4	138156.1
i. Non-Banking Financial Companies	-15450.4	21627.1	15921.2	61326.1	83424.0
ii. Housing Finance Companies	10516.6	2875.1	13048.5	25336.1	51776.2
iii. Insurance Companies	-634.8	909.2	1259.3	1422.2	2955.9
2. Non-Financial Corporations (Private Corporate Business)	33.8	33.8	33.8	33.0	134.4
3. General Government	-77.0	-77.0	-77.0	-77.0	-308.0

No. 50 (a): Flow of Financial Assets and Liabilities of Households - Instrument-wise (Concld.)

(Amount in ₹ Crore)

Item	2021-22				
	Q1	Q2	Q3	Q4	Annual
Net Financial Assets (I-II)	**519781.2**	**358325.2**	**453302.7**	**636259.8**	**1967668.9**
Per cent of GDP	*10.1*	*6.4*	*7.2*	*9.6*	*8.3*
I. Financial Assets	**382780.7**	**547346.2**	**834009.6**	**796341.7**	**2560478.2**
Per cent of GDP	*7.5*	*9.7*	*13.2*	*12.0*	*10.8*
of which:					
1.Total Deposits (a+b)	-84377.1	202652.1	425821.4	151374.9	695471.4
(a) Bank Deposits	-106507.3	197301.2	422819.5	140297.2	653910.7
i. Commercial Banks	-108037.7	195617.4	418642.9	145510.5	651733.1
ii. Co-operative Banks	1530.4	1683.8	4176.7	-5213.3	2177.6
(b) Non-Bank Deposits	22130.2	5350.9	3001.9	11077.7	41560.7
2. Life Insurance Funds	114617.8	127356.0	103154.9	95681.7	440810.4
3. Provident and Pension Funds (including PPF)	126469.7	108777.0	91543.9	254877.2	581667.9
4. Currency	128660.2	-68631.2	62793.3	146845.0	269667.4
5. Investments	24929.6	82305.4	69760.9	50980.8	227976.7
of which:					
(a) Mutual Funds	14573.0	63151.3	37912.2	44963.7	160600.1
(b) Equity	4502.5	13218.5	27808.2	3084.1	48613.3
6. Small Savings (excluding PPF)	71423.1	93829.6	79877.9	95524.7	340655.3
II. Financial Liabilities	**-137000.5**	**189021.0**	**380706.9**	**160081.8**	**592809.2**
Per cent of GDP	*-2.7*	*3.4*	*6.0*	*2.4*	*2.5*
Loans (Borrowings) from					
1. Financial Corporations (a+b)	-137021.8	188999.7	380685.6	160060.6	592724.1
(a) Banking Sector	-113662.5	134166.1	320160.2	153323.3	493987.0
of which:					
Commercial Banks	-108061.2	135728.8	317452.5	152364.2	497484.4
(b) Other Financial Institutions	-23359.3	54833.7	60525.5	6737.3	98737.1
i. Non-Banking Financial Companies	-31118.4	28880.1	29479.8	-31016.3	-3774.8
ii. Housing Finance Companies	7132.0	24403.8	29494.8	37436.2	98466.8
iii. Insurance Companies	627.1	1549.8	1550.9	317.4	4045.2
2. Non-Financial Corporations (Private Corporate Business)	33.8	33.8	33.8	33.8	135.1
3. General Government	-12.5	-12.5	-12.5	-12.5	-50.0

Notes: 1. Net Financial Savings of households refer to the flow of net financial assets, which represents change in financial assets held by households minus change in their financial liabilities.
2. Revisions in small savings and PPF are mainly on account of quarterly figures being derived from monthly receipts data sourced from Controller General of Accounts, Government of India.
3. Revisions in bank deposits for 2021-22 are attributed to the lower share of households in total deposits as per BSR-2.
4. Data as ratios to GDP have been calculated based on the Provisional Estimates of National Income 2021-22 released on May 31, 2022.
5. Figures in the columns may not add up to the total due to rounding off.

No. 50 (b): Stocks of Financial Assets and Liabilities of Households- Select Indicators

(Amount in ₹ Crore)

Item	Jun-2019	Sep-2019	Dec-2019	Mar-2020
Financial Assets (a+b+c+d)	**16315506.3**	**16632816.5**	**17010694.5**	**17180616.2**
Per cent of GDP	*84.7*	*85.4*	*86.2*	*85.6*
(a) Bank Deposits (i+ii)	8858293.4	9136417.9	9252629.8	9696674.3
i. Commercial Banks	8131543.2	8401018.6	8467685.3	8913692.0
ii. Co-operative Banks	726750.2	735399.2	784944.4	782982.3
(b) Life Insurance Funds	3883609.7	3930727.6	4049902.5	3884771.5
(c) Currency	2010842.9	1984738.1	2071570.7	2232261.0
(d) Mutual Funds	1404631.5	1412654.1	1468727.6	1197092.9
Financial Liabilities (a+b)	**6370092.6**	**6461087.5**	**6591954.6**	**6985220.6**
Per cent of GDP	*33.1*	*33.2*	*33.4*	*34.8*
Loans (Borrowings) from				
(a) Banking Sector	5148115.0	5206189.4	5321095.3	5517676.4
of which:				
i. Commercial Banks	4668496.4	4725631.3	4813008.7	5015222.9
ii. Co-operative Banks	478956.2	479656.9	506946.6	501074.8
(b) Other Financial Institutions	1221977.5	1254898.1	1270859.3	1467544.1
of which:				
i. Non-Banking Financial Companies	451922.3	474899.0	504829.7	703094.0
ii. Housing Finance Companies	673312.1	681405.2	665694.8	662601.7

No. 50 (b): Stocks of Financial Assets and Liabilities of Households- Select Indicators (Contd.)

(Amount in ₹ Crore)

Item	Jun-2020	Sep-2020	Dec-2020	Mar-2021
Financial Assets (a+b+c+d)	**18039169.4**	**18606364.4**	**19333484.1**	**20168953.3**
Per cent of GDP	*94.9*	*98.6*	*100.8*	*101.9*
(a) Bank Deposits (i+ii)	9977865.6	10242430.9	10389526.9	10916583.6
i. Commercial Banks	9192702.5	9454736.2	9598294.8	10070025.7
ii. Co-operative Banks	785163.1	787694.7	791232.1	846557.9
(b) Life Insurance Funds	4102000.7	4274424.9	4551882.0	4718718.2
(c) Currency	2434693.7	2455980.6	2547436.6	2614237.0
(d) Mutual Funds	1343752.0	1443784.4	1648999.0	1730461.0
Financial Liabilities (a+b)	**7190710.8**	**7229335.1**	**7399186.1**	**7772003.0**
Per cent of GDP	*37.8*	*38.3*	*38.6*	*39.3*
Loans (Borrowings) from				
(a) Banking Sector	5728735.3	5741948.3	5881570.2	6166302.8
of which:				
i. Commercial Banks	5226482.2	5239696.0	5380210.4	5622686.4
ii. Co-operative Banks	500870.2	500865.3	499968.8	542221.2
(b) Other Financial Institutions	1461975.5	1487386.9	1517615.9	1605700.3
of which:				
i. Non-Banking Financial Companies	687643.6	709270.7	725191.9	786518.0
ii. Housing Finance Companies	673118.3	675993.4	689041.8	714377.9

No. 50 (b): Stocks of Financial Assets and Liabilities of Households- Select Indicators (Concld.)

(Amount in ₹ Crore)

Item	Jun-2021	Sep-2021	Dec-2021	Mar-2022
Financial Assets (a+b+c+d)	**20508115.7**	**21057343.4**	**21673261.7**	**22104312.7**
Per cent of GDP	*97.4*	*95.9*	*95.0*	*93.4*
(a) Bank Deposits (i+ii)	10810076.3	11007377.6	11430197.1	11570494.3
i. Commercial Banks	9961988.0	10157605.4	10576248.3	10721758.8
ii. Co-operative Banks	848088.3	849772.1	853948.8	848735.5
(b) Life Insurance Funds	4894238.5	5105262.1	5175997.5	5287980.3
(c) Currency	2742897.3	2674266.1	2737059.4	2883904.4
(d) Mutual Funds	1855000.1	2064363.5	2126112.0	2152140.5
Financial Liabilities (a+b)	**7634981.2**	**7823980.9**	**8204666.6**	**8364727.1**
Per cent of GDP	*36.3*	*35.6*	*36.0*	*35.3*
Loans (Borrowings) from				
(a) Banking Sector	6052640.2	6186806.3	6506966.5	6660289.7
of which:				
i. Commercial Banks	5514625.2	5650354.1	5967806.6	6120170.8
ii. Co-operative Banks	536604.9	535027.3	537720.1	538664.3
(b) Other Financial Institutions	1582341.0	1637174.6	1697700.1	1704437.4
of which:				
i. Non-Banking Financial Companies	755399.6	784279.7	813759.5	782743.2
ii. Housing Finance Companies	721510.0	745913.7	775408.5	812844.7

Notes: 1. Data have been compiled for select financial instruments only (loans from Banking Sector, NBFCs and HFCs) for which data are available.
2. Data as ratios to GDP have been calculated based on the Provisional Estimates of National Income 2021-22 released on May 31, 2022.
3. Figures in the columns may not add up to the total due to rounding off.

Explanatory Notes to the Current Statistics

Table No. 1

1.2& 6: Annual data are average of months.
3.5 & 3.7: Relate to ratios of increments over financial year so far.
4.1 to 4.4, 4.8,4.9 &5: Relate to the last friday of the month/financial year.
4.5, 4.6 & 4.7: Relate to five major banks on the last Friday of the month/financial year.
4.10 to 4.12: Relate to the last auction day of the month/financial year.
4.13: Relate to last day of the month/ financial year
7.1&7.2: Relate to Foreign trade in US Dollar.

Table No. 2

2.1.2: Include paid-up capital, reserve fund and Long-Term Operations Funds.
2.2.2: Include cash, fixed deposits and short-term securities/bonds, e.g., issued by IIFC (UK).

Table No. 4

Maturity-wise position of outstanding forward contracts is available at http://nsdp.rbi.org.in under ''Reserves Template''.

Table No. 5

Special refinance facility to Others, *i.e.* to the EXIM Bank, is closed since March 31, 2013.

Table No. 6

For scheduled banks, March-end data pertain to the last reporting Friday.
2.2: Exclude balances held in IMF Account No.1, RBI employees' provident fund, pension fund, gratuity and superannuation fund.

Table Nos. 7 & 11

3.1 in Table 7 and 2.4 in Table 11: Include foreign currency denominated bonds issued by IIFC (UK).

Table No. 8

NM_2 and NM_3 do not include FCNR (B) deposits.
2.4: Consist of paid-up capital and reserves.
2.5: includes other demand and time liabilities of the banking system.

Table No. 9

Financial institutions comprise EXIM Bank, SIDBI, NABARD and NHB.
L_1 and L_2 are compiled monthly and L_3 quarterly.
Wherever data are not available, the last available data have been repeated.

Table No. 13

Data against column Nos. (1), (2) & (3) are Final and for column Nos. (4) & (5) data are Provisional.

Table No. 14

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

Table No. 17

2.1.1: Exclude reserve fund maintained by co-operative societies with State Co-operative Banks

2.1.2: Exclude borrowings from RBI, SBI, IDBI, NABARD, notified banks and State Governments.

4: Include borrowings from IDBI and NABARD.

Table No. 24

Primary Dealers (PDs) include banks undertaking PD business.

Table No. 30

Exclude private placement and offer for sale.

1: Exclude bonus shares.

2: Include cumulative convertible preference shares and equi-preference shares.

Table No. 32

Exclude investment in foreign currency denominated bonds issued by IIFC (UK), SDRs transferred by Government of India to RBI and foreign currency received under SAARC SWAP arrangement. Foreign currency assets in US dollar take into account appreciation/depreciation of non-US currencies (such as Euro, Sterling, Yen and Australian Dollar) held in reserves. Foreign exchange holdings are converted into rupees at rupee-US dollar RBI holding rates.

Table No. 34

1.1.1.1.2 & 1.1.1.1.1.4: Estimates.

1.1.1.2: Estimates for latest months.

'Other capital' pertains to debt transactions between parent and subsidiaries/branches of FDI enterprises.

Data may not tally with the BoP data due to lag in reporting.

Table No. 35

1.10: Include items such as subscription to journals, maintenance of investment abroad, student loan repayments and credit card payments.

Table No. 36

Increase in indices indicates appreciation of rupee and *vice versa*. For 6-Currency index, base year 2021-22 is a moving one, which gets updated every year. REER figures are based on Consumer Price Index (combined). The details on methodology used for compilation of NEER/REER indices are available in December 2005, April 2014 and January 2021 issues of the RBI Bulletin.

Table No. 37

Based on applications for ECB/Foreign Currency Convertible Bonds (FCCBs) which have been allotted loan registration number during the period.

Table Nos. 38, 39, 40 & 41

Explanatory notes on these tables are available in December issue of RBI Bulletin, 2012.

Table No. 43

Part I-A. Settlement systems

1.1.3: Tri- party Repo under the securities segment has been operationalised from November 05, 2018.

Part I-B. Payments systems

4.1.2: 'Others' includes e-commerce transactions and digital bill payments through ATMs, *etc.*

4.2.2: 'Others' includes e-commerce transactions, card to card transfers and digital bill payments through ATMs, *etc.*

5: Available from December 2010.

5.1: includes purchase of goods and services and fund transfer through wallets.

5.2.2: includes usage of PPI Cards for online transactions and other transactions.

6.1: Pertain to three grids – Mumbai, New Delhi and Chennai.

6.2: 'Others' comprises of Non-MICR transactions which pertains to clearing houses managed by 21 banks.

Part II-A. Other payment channels

1: Mobile Payments –
- Include transactions done through mobile apps of banks and UPI apps.
- The data from July 2017 includes only individual payments and corporate payments initiated, processed, and authorised using mobile device. Other corporate payments which are not initiated, processed, and authorised using mobile device are excluded.

2: Internet Payments – includes only e-commerce transactions through 'netbanking' and any financial transaction using internet banking website of the bank.

Part II-B. ATMs

3.3 and 4.2: only relates to transactions using bank issued PPIs.

Part III. Payment systems infrastructure

3: Includes ATMs deployed by Scheduled Commercial Banks (SCBs) and White Label ATM Operators (WLAOs). WLAs are included from April 2014 onwards.

Table No. 45

(-) represents nil or negligible

The table format is revised since June 2023 issue of the bulletin.

State Government Securities include special bonds issued under Ujjwal DISCOM Assurance Yojana (UDAY).

Bank PDs are clubbed under Commercial Banks. However, they form very small fraction of total outstanding securities.

The category 'Others' comprises State Governments, DICGC, PSUs, Trusts, Foreign Central Banks, HUF/ Individuals *etc.*

Table No. 46

GDP data is based on 2011-12 base. GDP for 2022-23 is from Union Budget 2022-23.

Data pertains to all States and Union Territories.

1 & 2: Data are net of repayments of the Central Government (including repayments to the NSSF) and State Governments.

1.3: Represents compensation and assignments by States to local bodies and Panchayati Raj institutions.

2: Data are net of variation in cash balances of the Central and State Governments and includes borrowing receipts of the Central and State Governments.

3A.1.1: Data as per RBI records.

3B.1.1: Borrowings through dated securities.

3B.1.2: Represent net investment in Central and State Governments' special securities by the National Small Savings Fund (NSSF).

This data may vary from previous publications due to adjustments across components with availability of new data.

3B.1.6: Include Ways and Means Advances by the Centre to the State Governments.

3B.1.7: Include Treasury Bills, loans from financial institutions, insurance and pension funds, remittances, cash balance investment account.

Table No. 47

SDF is availed by State Governments against the collateral of Consolidated Sinking Fund (CSF), Guarantee Redemption Fund (GRF) & Auction Treasury Bills (ATBs) balances and other investments in government securities.

WMA is advance by Reserve Bank of India to State Governments for meeting temporary cash mismatches.

OD is advanced to State Governments beyond their WMA limits.

Average amount Availed is the total accommodation (SDF/WMA/OD) availed divided by number of days for which accommodation was extended during the month.

- : Nil.

Table No. 48

CSF and GRF are reserve funds maintained by some State Governments with the Reserve Bank of India.

ATBs include Treasury bills of 91 days, 182 days and 364 days invested by State Governments in the primary market.

--: Not Applicable (not a member of the scheme).

The concepts and methodologies for Current Statistics are available in Comprehensive Guide for Current Statistics of the RBI Monthly Bulletin **(https://rbi.org.in/Scripts/PublicationsView.aspx?id=17618)**

Time series data of 'Current Statistics' is available at https://dbie.rbi.org.in.

Detailed explanatory notes are available in the relevant press releases issued by RBI and other publications/releases of the Bank such as **Handbook of Statistics on the Indian Economy**.

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12. Perspectives on Central Banking Governors Speak (1935-2010) Platinum Jubilee	₹1400 per copy (over the counter)	US$ 50 per copy (inclusive of air mail courier charges)
13. Report on Municipal Finances	₹300 per copy (over the counter) ₹350 per copy (inclusive of postal charges)	US$ 16 per copy (inclusive of air mail courier charges)

Notes

1. Many of the above publications are available at the RBI website (www.rbi.org.in).
2. Time Series data are available at the Database on Indian Economy (http://dbie.rbi.org.in).
3. The Reserve Bank of India History 1935-1997 (4 Volumes), Challenges to Central Banking in the Context of Financial Crisis and the Regional Economy of India: Growth and Finance are available at leading book stores in India.

* Concession is available for students, teachers/lecturers, academic/education institutions, public libraries and Booksellers in India provided the proof of eligibility is submitted.

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