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MONETARY POLICY STATEMENT FOR 2019-20

Sixth Bi-monthly Monetary Policy Statement, 2019-20

*Sixth Bi-monthly Monetary Policy Statement, 2019-20 Resolution of the Monetary Policy Committee (MPC) Reserve Bank of India**

On the basis of an assessment of the current and evolving macroeconomic situation, the Monetary Policy Committee (MPC) at its meeting today (February 6, 2020) decided to:

- keep the policy repo rate under the liquidity adjustment facility (LAF) unchanged at 5.15 per cent.

Consequently, the reverse repo rate under the LAF remains unchanged at 4.90 per cent and the marginal standing facility (MSF) rate and the Bank Rate at 5.40 per cent.

- The MPC also decided to continue with the accommodative stance as long as it is necessary to revive growth, while ensuring that inflation remains within the target.

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

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

Assessment

Global Economy

2. Since the MPC met last in December 2019, global economic activity has remained slow-paced, but is getting differentiated across geographies. Among the key advanced economies (AEs), the US economy grew by 2.1 per cent in Q4:2019, the same pace as in Q3, with slack in consumer spending offset by government expenditure. In the euro area, economic activity slowed down in Q4 as France and Italy shrank unexpectedly amid waning consumer confidence. Growth momentum in the UK appears to have weakened in Q4 as reflected in a decline in industrial production and tepid retail sales. The Japanese economy was weighed down in Q4 by weak retail sales as reflected in subdued consumer spending in the wake of the sales tax hike in October. Industrial production in Japan was pulled down by muted global demand.

3. Among emerging market economies (EMEs), the Chinese economy slowed down to a 29-year low of 6.1 per cent in 2019, caused by sluggish domestic demand and prolonged trade tensions. In Russia, available indicators point to a loss of momentum in activity in Q4:2019 with industrial production easing, although private consumption may have provided some cushion. In Brazil, activity seems to have slowed down, as reflected in a contraction in industrial production and depressed retail sales. The South African economy recorded a growth of -0.6 per cent in Q3 and is likely to have also contracted in Q4 as industrial production slumped and household spending remained subdued amidst lingering consumer pessimism.

4. Crude oil and gold prices shot up in early January sparked by the US-Iran confrontation, but both softened from mid-January as geo-political tensions eased. By end-January, crude oil prices dipped sharply due to sell-offs triggered by the outbreak of the coronavirus. Gold prices, on the other hand, inched up towards end-January because of safe haven demand. International food prices have been rising on higher demand and supply disruptions from major exporting countries. Reflecting these developments, inflation has edged up in some major AEs and EMEs.

5. Global financial markets remained resilient in December 2019 and for the most part of January 2020 as thawing US-China trade relations and improved prospects of an orderly Brexit buoyed investors' sentiment. Equity markets rallied across AEs and EMEs, turning bearish towards end-January with the

* Released on February 06, 2020.

outbreak of the coronavirus as markets braced up for the likely adverse impact on growth prospects, particularly in China. However, equity markets in most economies recovered some of the losses in early February. Bond yields, which had hardened in the US towards the end of 2019 as investors turned to riskier assets, softened in January 2020, especially after the US Fed left the policy rate unchanged and assured the extension of repo operations. In the euro area, bond yields sank further into negative territory in January. Yields also softened across several EMEs. In currency markets, the US dollar strengthened in January against major advanced economies in sympathy with factors impacting US bond markets. EME currencies, which were generally trading with an appreciating bias, have depreciated since the last week of January.

Domestic Economy

6. Moving on to the domestic economy, the first advance estimates (FAE) released by the National Statistical Office (NSO) on January 7, 2020 placed India's real gross domestic product (GDP) growth for 2019-20 at 5.0 per cent. In its January 31 release, the NSO revised real GDP growth for 2018-19 to 6.1 per cent from 6.8 per cent given in the provisional estimates of May 2019. On the supply side, growth of real gross value added (GVA) is estimated at 4.9 per cent in 2019-20 as compared with 6.0 per cent in 2018-19.

7. Turning to more recent indicators, both production and imports of capital goods – two key pointers of investment activity – continued to contract in November/December, though at a moderate pace compared with the previous month. Revenue expenditure of the Centre (excluding interest payments and subsidies) remained robust in Q3, indicative of the counter-cyclical buffer to domestic demand being provided by government final consumption. As per revised estimates given in the Union Budget, growth in revenue expenditure of the Centre (excluding interest payments and subsidies) is estimated to be lower in Q4 compared with Q3.

8. On the supply side, *rabi* sowing has been higher by 9.5 per cent up to January 31, 2020 compared with a year ago. The north east monsoon rainfall was above normal. Storage in major reservoirs – the main source of irrigation during the *rabi* season – was 70 per cent of the full reservoir level (as on January 30, 2020) as compared with 45 per cent a year ago. Based on the first advance estimates, horticulture production is estimated to have risen 0.8 per cent to a record level in 2019-20. Production of vegetables is estimated to have increased by 2.6 per cent in 2019-20 due to higher production of onions, potatoes and tomatoes.

9. Industrial activity, measured by the index of industrial production (IIP), improved in November after contracting in the previous three months. The output of core industries returned to positive territory in December after four months of contraction, buoyed by five out of eight of its constituents – coal; refinery products; fertilisers; steel; and cement. Capacity utilisation (CU) in the manufacturing sector, measured by the Reserve Bank's order books, inventory and capacity utilisation survey (OBICUS), fell to 69.1 per cent in Q2 from 73.6 per cent in Q1; seasonally adjusted CU also eased to 70.3 per cent from 73.4 per cent. The Reserve Bank's industrial outlook survey points to weak demand conditions facing the manufacturing sector in Q3:2019-20. The Reserve Bank's business expectations index suggests an improvement in Q4. This is corroborated by the manufacturing purchasing managers' index (PMI) for January 2020 which picked up sharply to 55.3 from 51.2 in November 2019 on the back of increased output and new orders.

10. Several high frequency indicators of services have turned upwards in the recent period, pointing to a modest revival in momentum, although the outlook is still muted. Amongst indicators of rural demand, while tractor sales grew by 2.4 per cent in December after ten months of a decline, motorcycle sales continued to contract. Domestic air passenger traffic – an indicator of urban demand – posted double digit growth in November, followed by a modest growth in December. Growth in three-wheeler sales and railway

freight traffic has accelerated, while port traffic turned around in December. On the other hand, passenger vehicle sales continued to contract. The PMI services index improved to 55.5 in January 2020 from 52.7 in November 2019, boosted by a rise in new business and output.

11. Retail inflation, measured by year-on-year changes in the CPI, surged from 4.6 per cent in October to 5.5 per cent in November and further to 7.4 per cent in December 2019, the highest reading since July 2014. While food group inflation rose to double digits, the fuel group moved out of deflation. Inflation in CPI excluding food and fuel continued to edge up from its October trough.

12. CPI food inflation increased from 6.9 per cent in October to 12.2 per cent in December, primarily caused by a spike in onion prices due to unseasonal rains in October-November. Excluding onions, food inflation would have been lower by 4.7 percentage points and headline inflation by 2.1 percentage points in December. In addition, inflation in several other food sub-groups such as milk, pulses, cereals, edible oils, eggs, meat and fish also firmed up.

13. The CPI fuel group registered inflation of 0.7 per cent in December, reflecting an increase in prices of electricity and firewood and chips; and in administered prices of kerosene. Together they constitute 68 per cent of the CPI fuel basket. LPG inflation remained in negative territory despite a sharp recovery in prices in November-December.

14. CPI inflation excluding food and fuel rose from a low of 3.4 per cent in October to 3.8 per cent by December 2019, driven by an increase in inflation in mobile phone charges, petrol, diesel, transportation fares and clothing. Housing inflation moderated further in December reflecting subdued demand.

15. Households' inflation expectations eased in the January 2020 round of the Reserve Bank's survey – after a sharp pick-up in the previous round – with the 3-month ahead and 1-year ahead inflation expectations falling by 60 basis points (bps) and 70 bps, respectively. Based on the Reserve Bank's consumer confidence survey, consumer spending on non-essential items of consumption contracted from a year ago; however, overall spending is expected to rise, going forward, reflecting an increase in prices. The December 2019 round of the Reserve Bank's industrial outlook survey suggests that the input and output prices of manufacturing firms remained subdued in Q3:2019-20 and are likely to remain so in Q4.

16. Overall liquidity in the system remained in surplus in December 2019 and January 2020. Average daily net absorption under the liquidity adjustment facility (LAF) amounted to ₹ 2.61 lakh crore in December 2019. In January 2020, the average daily net absorption of surplus liquidity soared to ₹ 3.18 lakh crore. The Reserve Bank conducted four auctions involving the simultaneous purchase of long-term and sale of short-term government securities under open market operations (OMOs) for a notified amount of ₹ 10,000 crore each during December and January (December 23 and 30, 2019 and January 6 and 23, 2020). Reflecting these operations, the 10-year G-sec yield softened cumulatively by 15 bps between December 19, 2019 and January 31, 2020. During the intervening period, however, the yields fell by as much as 25 bps. The weighted average call rate (WACR) traded below the policy repo rate (on an average) by 10 bps in December and by 19 bps in January on easy liquidity conditions.

17. Monetary transmission across various money market segments and the private corporate bond market has been sizable. As against the cumulative reduction in the policy repo rate by 135 bps since February 2019, transmission to various money and corporate debt market segments up to January 31, 2020 ranged from 146 bps (overnight call money market) to 190 bps (3-month CPs of non-banking finance companies). Transmission through the longer end of government securities market was at 73 bps (5-year government securities) and 76 bps (10-year government securities). Transmission to the credit market is gradually improving. The 1-year median marginal cost of funds-based lending rate (MCLR)

declined by 55 bps during February 2019 and January 2020. The weighted average lending rate (WALR) on fresh rupee loans sanctioned by banks declined by 69 bps and the WALR on outstanding rupee loans by 13 bps during February-December 2019.

18. After the introduction of the external benchmark system, most banks have linked their lending rates for housing, personal and micro and small enterprises (MSEs) to the policy repo rate of the Reserve Bank. During October-December 2019, the WALRs of domestic (public and private sector) banks on fresh rupee loans declined by 18 bps for housing loans, 87 bps for vehicle loans and 23 bps for loans to micro, small and medium enterprises (MSMEs).

19. Export growth continued to contract in November-December 2019, reflecting the slowdown in global trade. Import growth slumped in November-December 2019, with contraction in both oil and non-oil non-gold imports. While the latter reflected the underlying weakness in domestic demand and was spread across categories such as transport equipment, coal, iron and steel and chemicals, outgoes on account of oil imports were lower due to a cut back in oil import volume. Gold imports also declined in December 2019. On the financing side, net foreign direct investment rose to US$ 24.4 billion in April-November 2019 from US$ 21.2 billion a year ago. Net foreign portfolio investment was of the order of US$ 8.6 billion in 2019-20 (up to February 4) as against net outflows of US$ 14.2 billion in the same period last year. In addition, net investments by FPIs under the voluntary retention route have aggregated US$ 7.8 billion since March 11, 2019. External commercial borrowings were higher at US$ 13.4 billion during April-December 2019 as compared with US$ 2.5 billion during the same period a year ago. India's foreign exchange reserves were at US$ 471.4 billion on February 4, 2020 – an increase of US$ 58.5 billion over end-March 2019.

Outlook

20. In the fifth bi-monthly resolution of December 2019, CPI inflation was projected at 5.1-4.7 per cent for H2:2019-20 and 4.0-3.8 per cent for H1:2020-21, with risks broadly balanced. The actual inflation outcome for Q2 at 5.8 per cent overshot projections by 70 bps, primarily due to the intensification of the onion price shock in December 2019 on account of unseasonal rains in October-November.

21. Going forward, the inflation outlook is likely to be influenced by several factors. First, food inflation is likely to soften from the high levels of December and the decline is expected to become more pronounced during Q4:2019-20 as onion prices fall rapidly in response to arrivals of late *kharif* and *rabi* harvests. Higher vegetables production, despite the early loss due to unseasonal rain, is also likely to have a salutary impact on food inflation. On the other hand, the recent pick-up in prices of non-vegetable food items, specifically in milk due to a rise in input costs, and in pulses due to a shortfall in *kharif* production, are all likely to sustain. These factors could impart some upward bias to overall food prices. Second, crude prices are likely to remain volatile due to unabating geo-political tensions in the Middle East on the one hand, and the uncertain global economic outlook on the other. Third, there has been an increase in input costs for services, in recent months. However, subdued demand conditions, muted pricing power of corporates and the correction in energy prices since the last week of January may limit the pass-through to selling prices. Fourth, domestic financial markets remain volatile reflecting both global and domestic factors, which may have an influence on the inflation outlook. Fifth, base effects would turn favourable during Q3:2020-21. Sixth, the increase in customs duties on items of retail consumption in the budget may result in only a marginal one-time uptick in inflation. Taking into consideration these factors, and under the assumption of a normal south west monsoon in 2020-21, the CPI inflation projection is revised upwards to 6.5 per cent for Q4:2019-20; 5.4-5.0 per cent for H1:2020-21; and 3.2 per cent for Q3:2020-21, with risks broadly balanced (Chart 1).

Chart 1: Quarterly Projection of CPI Inflation (y-o-y)

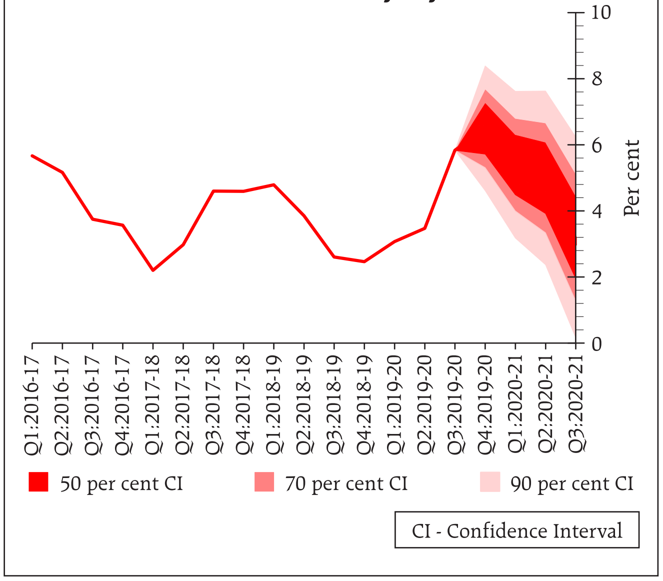
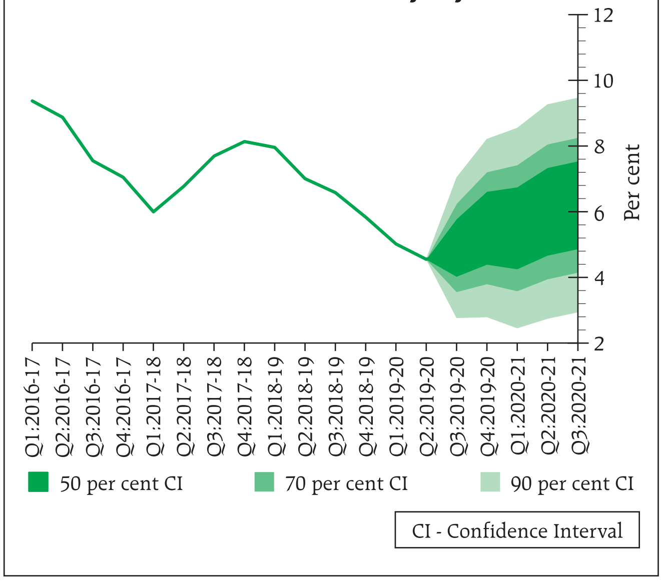


Chart 2: Quarterly Projection of Real GDP Growth (y-o-y)



22. Turning to the growth outlook, real GDP growth for 2019-20 was projected in the December 2019 policy at 5.0 per cent – 4.9-5.5 per cent in H2. GDP growth for H1:2020-21 was projected at 5.9-6.3 per cent. For 2020-21, the growth outlook will be influenced by several factors. First, private consumption, particularly in rural areas, is expected to recover on the back of improved *rabi* prospects. The recent rise in food prices has shifted the terms of trade in favour of agriculture, which will support rural incomes. Second, the easing of global trade uncertainties should encourage exports and spur investment activity. The breakout of the coronavirus may, however, impact tourist arrivals and global trade. Third, monetary transmission in terms of a reduction in lending rates and financial flows to the commercial sector has progressed *vis-à-vis* the last policy, and this could spur both consumption and investment demand. Fourth, the rationalisation of personal income tax rates in the Union Budget 2020-21 should support domestic demand along with measures to boost rural and infrastructure spending. Taking into consideration the above factors, GDP growth for 2020-21 is projected at 6.0 per cent – in the range of 5.5-6.0 per cent in H1 and 6.2 per cent in Q3 (Chart 2).

23. The MPC notes that inflation has surged above the upper tolerance band around the target in December 2019, primarily on the back of the unusual spike in onion prices. Over the coming weeks and months, onion prices are likely to ebb as supply conditions improve. The salutary effects on headline inflation are, however, likely to be tempered by hardening of prices of other food items, notably those of pulses and proteins. Meanwhile adjustments to telecom charges are imparting cost-push pressures to CPI inflation excluding food and fuel. Going forward, the trajectory of inflation excluding food and fuel needs to be carefully monitored as the pass-through of remaining revisions in mobile phone charges, the increase in prices of drugs and pharmaceuticals and the impact of new emission norms play out and feed into inflation formation. The MPC anticipates that the combination of these factors may keep headline inflation elevated in the short-run, at least through H1:2020-21. Overall, the inflation outlook remains highly uncertain. Accordingly, the MPC will remain vigilant about the potential generalisation of inflationary pressures as several of the underlying factors cited earlier appear to be operating in concert.

24. At the same time, the MPC observes that the economy continues to be weak and the output gap remains negative. While some high-frequency indicators have turned around and point to a lift in the momentum of economic activity, there is a need to await incoming data to gauge their sustainability. Financial flows to the commercial sector have improved in recent months. The Union Budget 2020-21 has introduced several measures to provide an impetus to growth. While the emphasis on boosting the rural economy and infrastructure should help the growth momentum in the near-term, the corporate tax rate cuts of September 2019 should help boost the growth potential over the medium-term. The fiscal deficit of the Central Government for 2019-20 is placed at 3.8 per cent of GDP in the revised estimates as against 3.3 per cent of GDP in the budget estimates. The higher fiscal deficit in 2019-20 has not resulted in an increase in market borrowings compared to the budget estimates. The fiscal deficit is budgeted to decline to 3.5 per cent of GDP for 2020-21. Fresh gross market borrowings are budgeted to increase by ₹ 70,000 crore to ₹ 7.8 lakh crore in 2020-21 from ₹ 7.1 lakh crore in 2019-20. The MPC notes that while there is a need for adjustment in interest rates on small saving schemes, the external benchmark system introduced from October 1, 2019 has strengthened monetary transmission. These developments should amplify the effects of the cumulative policy rate reductions undertaken by the Reserve Bank since February 2019 and pull up domestic demand going forward.

25. The MPC recognises that there is policy space available for future action. The path of inflation is, however, elevated and on a rising trajectory through Q4:2019-20. The outlook for inflation is highly uncertain at this juncture. On the other hand, economic activity remains subdued and the few indicators that have moved up recently are yet to gain traction in a more broad-based manner. Given the evolving growth-inflation dynamics, the MPC felt it appropriate to maintain *status quo*. Accordingly, the MPC decided to keep the policy repo rate unchanged and persevere with the accommodative stance as long as necessary to revive growth, while ensuring that inflation remains within the target.

26. Dr. Chetan Ghate, Dr. Pami Dua, Dr. Ravindra H. Dholakia, Dr. Janak Raj, Dr. Michael Debabrata Patra and Shri Shaktikanta Das voted in favour of the decision.

27. The minutes of the MPC's meeting will be published by February 20, 2020.

28. The next meeting of the MPC is scheduled during March 31, April 1 and 3, 2020.

Statement on Developmental and Regulatory Policies

This Statement sets out various developmental and regulatory policy measures for improving credit flows to certain sectors; reinforcing monetary transmission; strengthening regulation and supervision; broadening and deepening financial markets; and improving payment and settlement systems.

I. Liquidity Management, Monetary Transmission and Credit Flows

1. Revised Liquidity Management Framework

As announced in the Statement on Developmental and Regulatory Policies of June 6, 2019, an Internal Working Group was set up to review the liquidity management framework with a view to simplifying it and to suggest measures to clearly communicate the objectives and the toolkit for liquidity management. The Group's report was placed on the RBI's website on September 26, 2019 for comments from stakeholders and members of the public. Based on the feedback received, it has been decided to fine-tune the existing liquidity management framework. The key elements of the revised framework are set out below:

i. Liquidity management is the operating procedure of monetary policy; the weighted average call rate (WACR) will continue to be its operating target.

ii. The liquidity management corridor is retained, with the marginal standing facility (MSF) rate as its upper bound (ceiling) and the fixed rate reverse repo rate as the lower bound (floor), with the policy repo rate in the middle of the corridor.

iii. The width of the corridor remains unchanged at 50 basis points – the reverse repo rate being 25 basis points below the repo rate and the MSF rate 25 basis points above the repo rate.

iv. With the WACR being the single operating target, the need for specifying a one-sided target for liquidity provision of one percent of net demand and time liabilities (NDTL) does not arise. Accordingly, the daily fixed rate repo and four 14-day term repos every fortnight being conducted, at present, are being withdrawn. However, the Reserve Bank will ensure adequate provision/absorption of liquidity as warranted by underlying and evolving market conditions - unrestricted by quantitative ceilings - at or around the policy rate.

v. Instruments of liquidity management will include fixed and variable rate repo/reverse repo auctions, outright open market operations (OMOs), forex swaps and other instruments as may be deployed from time to time to ensure that the system has adequate liquidity at all times.

vi. A 14-day term repo/reverse repo operation at a variable rate and conducted to coincide with the cash reserve ratio (CRR) maintenance cycle would be the main liquidity management tool for managing frictional liquidity requirements.

vii. The main liquidity operation would be supported by fine-tuning operations, overnight and/or longer, to tide over any unanticipated liquidity changes during the reserve maintenance period.

viii. In addition, the Reserve Bank will conduct, if needed, longer-term variable rate repo/reverse repo operations of more than 14 days.

ix. The current requirement of maintaining a minimum of 90 per cent of the prescribed CRR on a daily basis will continue.

x. Standalone Primary Dealers (SPDs) would be allowed to participate directly in all overnight liquidity management operations.

xi. The margin requirements under the Liquidity Adjustment Facility (LAF) would be reviewed on a periodic basis; the margin requirement for reverse repo transactions, however, would continue to be 'Nil'.

xii. In order to improve communication on the Reserve Bank's liquidity management framework and procedures, the following measures are being introduced (a) the Press Release detailing Money Market Operations (MMO) would be modified suitably to show both the daily flow impact as well as the stock impact of the Reserve Bank's liquidity operations; (b) a quantitative assessment of durable liquidity conditions of the banking system on a fortnightly basis would be published with a lag of one fortnight; and (c) periodic consultations will be conducted with market participants and other stakeholders.

2. Long Term Repo Operations (LTROs) for Improving Monetary Transmission

Since June 2019, the Reserve Bank has ensured that comfortable liquidity is available in the system in order to facilitate the transmission of monetary policy actions and flow of credit to the economy. These efforts are being carried forward with a view to assuring banks about the availability of durable liquidity at reasonable cost relative to prevailing market conditions. This should encourage banks to undertake maturity transformation smoothly and seamlessly so as to augment credit flows to productive sectors. Accordingly, it has been decided that from the fortnight beginning on February 15, 2020, the Reserve Bank shall conduct term repos of one-year and three-year tenors of appropriate sizes for up to a total amount of ₹ 1,00,000 crore at the policy repo rate. Details about the LTRO facility are being issued separately.

3. Incentivising Bank Credit to Specific Sectors

Alongside sustained efforts to improve monetary transmission, the Reserve Bank is actively engaged in revitalizing the flow of bank credit to productive sectors having multiplier effects to support impulses of growth. As a part of this, it has now been decided that scheduled commercial banks will be allowed to deduct the equivalent of incremental credit disbursed by them as retail loans for automobiles, residential housing and loans to micro, small and medium enterprises (MSMEs), over and above the outstanding level of credit to these segments as at the end of the fortnight ended January 31, 2020 from their net demand and time liabilities (NDTL) for maintenance of cash reserve ratio (CRR). This exemption will be available for incremental credit extended up to the fortnight ending July 31, 2020.

II. Regulation and Supervision

4. External Benchmarking of New Floating Rate Loans by Banks to Medium Enterprises

In pursuance of the recommendations of an Internal Study Group (Chairman: Dr. Janak Raj), all new floating rate personal or retail loans and floating rate loans to micro and small enterprises (MSEs) extended by banks were linked to external benchmarks, *viz.*, (i) the policy repo rate; or (ii) any benchmark market interest rate produced by the Financial Benchmarks India Private Ltd. (FBIL), including Treasury bill rates effective October 1, 2019. Subsequent to the introduction of an external benchmark system, the monetary transmission has improved to the sectors where new floating rate loans have been linked to the external benchmark. With a view to further strengthening monetary transmission, it has been decided to link pricing of loans by scheduled commercial banks for the medium enterprises also to an external benchmark effective April 1, 2020. Detailed guidelines to this effect will be issued separately.

5. Extension of One-time Restructuring Scheme for MSME advances

The Micro, Small and Medium Enterprises (MSMEs) sector plays an important role in the growth of the Indian economy, contributing over 28 per cent of the GDP[1], more than 40 per cent of exports[2], while creating employment for about 11 crore people[3]. Considering the importance of MSMEs in the Indian economy and for creating an enabling environment for the sector in its efforts towards formalisation, a one-time restructuring of loans to MSMEs that were in default but 'standard' as on January 1, 2019, was permitted without an asset classification downgrade. The restructuring of the borrower account was to be implemented by March 31, 2020. The scheme has

1 Annual Report of Ministry of MSME, 2018-19.

2 Unlocking the Potential of MSME Exports - Strategy Action Plan of Ministry of MSME, November 01, 2018

3 Annual Report of Ministry of MSME, 2018-19.

provided relief to a large number of MSMEs. As the process of formalisation of the MSME sector has a positive impact on financial stability and this process is still underway, it has been decided to extend the benefit of one-time restructuring without an asset classification downgrade to standard accounts of GST registered MSMEs that were in default as on January 1, 2020. The restructuring under the scheme has to be implemented latest by December 31, 2020. This will benefit the eligible MSME entities which could not be restructured under the provisions of the circular dated January 1, 2019 as also the MSME entities which have become stressed thereafter. It is re-emphasised that this is a one-time regulatory dispensation. Detailed guidelines, in this regard, will be issued shortly.

6. Guidelines on Projects under Implementation in Commercial Real Estate sector

It has been decided to permit extension of date of commencement of commercial operations (DCCO) of project loans for commercial real estate, delayed for reasons beyond the control of promoters, by another one year without downgrading the asset classification, in line with treatment accorded to other project loans for non-infrastructure sector. This would complement the initiatives taken by the Government of India in the real estate sector. The detailed instructions will be issued shortly.

7. Regional Rural Banks - Permission for Merchant Acquiring Business

To give a fillip to digital banking and enabling regional rural banks (RRBs) to provide cost effective and user-friendly solutions to their customers, it has been decided to allow RRBs, like other commercial banks, to act as merchant acquiring banks, using Aadhaar Pay – BHIM app and POS terminals. The detailed instructions in this regard will be issued today.

8. Proposed Changes in Regulations Applicable to Housing Finance Companies (HFCs) for Public Comments

Post transfer of regulation of HFCs from National Housing Bank (NHB) to Reserve Bank with effect from August 09, 2019, a Press Release dated August 13, 2019 was issued stating that Reserve Bank will carry out a review of the extant regulatory framework applicable to HFCs and issue revised regulations in due course, and till such time HFCs shall continue to comply with the directions and instructions issued by NHB. It is proposed to place the draft revised regulations on the Bank's website by the end of this month, for public comments.

III. Financial Markets

9. Deepening of Rupee Interest Rate Derivative Market

Currently, market makers undertaking rupee interest rate derivative (IRD) transactions with non-residents by way of 'back-to-back' arrangements are required to recognise all rupee IRD transactions undertaken by their related entities globally, in their books in India. This arrangement is proposed to be extended to cover all market makers, whether or not they undertake back-to-back transactions. It is accordingly proposed that all rupee IRD transactions of market makers and their related entities globally, shall be accounted for in India. This measure would encourage higher non-resident participation, enhance the role of domestic market makers in the offshore market, improve transparency, and achieve better regulatory oversight. The revised draft directions shall be issued by end-March 2020.

10. Margin Requirements for Non-Centrally Cleared Derivatives

Well-established margining arrangements for financial contracts contribute to financial stability by enhancing credibility of the market mechanism and discouraging excessive risk-taking. To improve safety of settlement of over-the-counter (OTC) derivatives that are not centrally cleared, following the G-20 recommendations, the Reserve Bank had issued a discussion paper to implement global practices related to margin requirements for such derivatives. The introduction of legislation for netting of financial transactions proposed in the Union Budget 2020-21 would be a significant enabler for efficient margining. It has, therefore, been decided to issue the directions regarding exchange of variation margin (VM) for non-centrally cleared derivatives (NCCDs) by end-March 2020. Draft directions on exchange of initial margin (IM) for NCCDs will be issued by end-June 2020.

11. Inter-operability of Depositories

In continuation of efforts to facilitate interoperability of Government securities depositories, as announced in the Union Budget 2019-20, the Reserve Bank will modify its Government securities registry (the PDO-NDS system) to include constituent details in the Constituent Subsidiary General Ledger (CSGL) accounts. This is expected to fuel interest of retail investors to invest in Government securities. The upgrade is expected to be made operational by end of July 2020.

IV. Payment and Settlement System

12. Digital Payments Index

Digital payments in India have been growing rapidly. The Reserve Bank shall construct and periodically publish a composite "Digital Payments Index" (DPI) to capture the extent of digitisation of payments effectively. The DPI would be based on multiple parameters and shall reflect accurately the penetration and deepening of various digital payment modes. The DPI will be made available from July 2020 onwards.

13. Framework to Establish Self-Regulatory Organisation (SRO) for Digital Payment System

With substantial growth in digital payments and maturity gained by entities in the payment ecosystem, it is desirable to have a Self-Regulatory Organisation (SRO) for orderly operations of the entities in the payment system. The Reserve Bank will put in place a framework for establishing an SRO for the digital payment system by April 2020 with a view to fostering best practices on security, customer protection and pricing, among others. The SRO will serve as a two-way communication channel between the players and the regulator/supervisor.

14. Pan India Cheque Truncation System (CTS)

The Cheque Truncation System (CTS), which is currently operational at the major clearing houses of the country, has stabilised well and it has made large efficiency gains. In view of this, a pan India CTS will be made operational by September 2020.

SPEECH

Seven Ages of India's Monetary Policy
Shaktikanta Das

*Seven Ages of India's Monetary Policy**

Shaktikanta Das

I am delighted to be back in my alma mater. Being here, brings back a surge of memories. Today, I wish to dwell upon a few aspects of central banking in the Indian context and RBI's role in the current situation. I shall specifically focus on the evolution of monetary policy regimes in India and if I am to use the poetic license of Shakespeare, may I call it the seven ages of India's monetary policy?

The history of central banking goes back to the seventeenth century when the first institution, 'the Riksbank', recognised as a central bank was set up in Sweden in 1668. Set up as a joint stock bank, it was chartered to lend funds to the government and to act as a clearing house for commerce. Later on, the Riksbank abandoned commercial lending and was granted a monopoly for issuing banknotes in 1897. Subsequently, several countries set up institutions that functioned as central banks. These early central banks like the Bank of England and Banque de France, though set up with private capital, helped sovereigns finance their debt and were engaged in banking activities. Since then, the role of central banks across countries has constantly evolved in line with the changing needs of their economies and evolving financial structure. Today, the functions of modern central banks are vastly different from what was expected from their early counterparts.

Let me briefly outline how the profile of the Reserve Bank has been intrinsically interwoven with the economic and financial developments in our country since independence.

The Reserve Bank was set up under the Reserve Bank of India Act 1934 with the original Preamble that describes the broad mandate of the Reserve Bank as follows:

> *"it is expedient to constitute a Reserve Bank for India to regulate the issue of Bank notes and keeping of reserves with a view to securing monetary stability in India and generally, to operate the currency and credit system of the country to its advantage".*

Later, the Reserve Bank of India was nationalised in 1949. While the Reserve Bank continues to perform its traditional functions such as currency management, bankers' bank and banker to the Government, its function of conducting monetary policy has undergone a sea change in various respects from time to time.

As we know, policy change is generally guided by two major forces: first, the objectives that may seem appropriate earlier may lose relevance with changing behavioural relationships over time. For instance, when we found that the relationship of money with nominal income was not very predictable as in the past, we adopted multiple indicators approach in 1998. Second, the state of knowledge, updated with new theories and evidences, requires to be applied in pursuit of better policy outcomes. This is precisely what shaped the conduct of monetary policy in India over time.

Evolution of Monetary Policy in line with the Changing Character of the Economy

1935 to 1949: Initial Phase

It is interesting to note that the Reserve Bank came into being in the backdrop of the great depression facing the world economy. Given the unsettled international monetary systems, the Preamble to the RBI Act, 1934 provided the edifice for the evolution of monetary policy framework. Until independence, the focus was on maintaining the sterling parity by regulating liquidity through open market operations (OMOs), with additional monetary tools of bank rate and cash reserve ratio (CRR). In other words, exchange rate was the nominal anchor for monetary policy. In view of the agrarian nature of the economy, inflation often emerged

* Shri Shaktikanta Das, Governor, Reserve Bank of India, Speech delivered at St. Stephen's College, University of Delhi on January 24, 2020.

as a concern due to frequent supply side shocks. While the price control measures and rationing of essential commodities was undertaken by the Government, the Reserve Bank also used selective credit control and moral suasion to restrain banks from extending credit for speculative purposes.

1949 to 1969: Monetary Policy in sync with the Five-Year Plans

India's independence in 1947 was a turning point in the economic history of the country. What followed was a policy of planned economic development. These two decades were characterised not only by a predominant role of the state but also by a marked shift in the conduct of monetary policy. The broad objective was to ensure a socialistic pattern of society through economic growth with a focus on self-reliance. This was intended to be achieved by building up of indigenous capacity, encouraging small as well as large-scale industries, reducing income inequalities, ensuring balanced regional development, and preventing concentration of economic power. Accordingly, the government also assumed entrepreneurial role to develop the industrial sector by establishing public sector undertakings.

As planned expenditure was accorded pivotal role in the process of development, there was emphasis on credit allocation to productive sectors. The role of monetary policy, therefore, during this phase of planned economic development revolved around the requirements of five-year plans. Even if there was no formal framework, monetary policy was relied upon for administering the supply of and demand for credit in the economy. The policy instruments used in regulating the credit availability were bank rate, reserve requirements and open market operations (OMOs). With the enactment of the Banking Regulation Act in 1949, statutory liquidity ratio (SLR) requirement prescribed for banks emerged as a secured source for government borrowings and also served as an additional instrument of monetary and liquidity management. Inflation remained moderate in the post-independence period but emerged as a concern during 1964-68.

1969 to 1985: Credit Planning

Nationalisation of major banks in 1969 marked another phase in the evolution of monetary policy. The main objective of nationalisation of banks was to ensure credit availability to a wider range of people and activities. As banks got power to expand credit, the Reserve Bank faced the challenge of maintaining a balance between financing economic growth and ensuring price stability in the wake of the sharp rise in money supply emanating from credit expansion. Besides, Indo-Pak war in 1971, drought in 1973, global oil price shocks in 1973 and 1979, and collapse of the Bretton-woods system in 1973 also had inflationary consequences. Therefore, concerns of high inflation caused by deficit financing during 1960s gathered momentum during the 1970s. Incidentally, the high inflation in the domestic economy coincided with stagflation – high inflation and slow growth – in advanced economies. In such a milieu, traditional monetary policy instruments, *viz.*, the Bank Rate and OMOs were found inadequate to address the implications of money supply for price stability. As banks were flushed with deposits under the impact of deficit financing, they did not need to approach RBI for funds. This undermined the efficacy of Bank Rate as a monetary policy instrument. Similarly, due to underdeveloped government securities market, OMOs had limited scope to be used as monetary policy instrument. During this phase, the average growth rate hovered around 4.0 per cent, while wholesale price index (WPI) based inflation was around 8.8 per cent.

1985 to 1998: Monetary Targeting

In the 1980s, fiscal dominance accentuated as reflected in automatic monetisation of budget deficit through ad hoc treasury bills and progressive increase in SLR by 1985. Concomitantly, inflationary impact of deficit financing warranted tightening of monetary policy – both the CRR and Bank Rate were raised significantly. The experience of monetary policy in dealing with the objectives of containing inflation and promoting growth eventually led to adoption of monetary targeting as a formal monetary policy framework in 1985 on the recommendations of the Chakravarty Committee. In this framework, with the objective of controlling inflation through limiting monetary expansion, reserve money was used as operating target and broad money as intermediate target. The targeted growth in money supply was based on expected real GDP growth and a tolerable level of inflation. This approach was flexible as it allowed for feedback effects. CRR was used as the primary instrument for monetary control. Nonetheless, due to continued fiscal dominance, both SLR and CRR reached their peak levels by 1990.

The worsening of fiscal situation in late 1980s was manifested in deterioration of external balance position and collapse in domestic growth in 1991-92, in the backdrop of adverse global shocks – the gulf war and disintegration of the Soviet Union. The resultant balance of payments crisis triggered large scale structural reforms, financial sector liberalisation and opening up of the economy to achieve sustainable growth with price stability. Concurrently, there was a shift from fixed exchange rate regime to a market determined exchange rate system in 1993. In the wake of trade and financial sector reforms and the consequent rise in foreign capital flows and financial innovations, the assumption of stability in money demand function as well as efficacy of broad money as intermediate target came under question. At the same time, there was a notable shift towards market-based financing for both the government and the private sector. In fact, automatic monetisation through ad hoc treasury bills was abolished in 1997 and replaced with a system of ways and means advances (WMAs). During this period, average domestic growth rate was 5.6 per cent and average WPI-based inflation was 8.1 per cent.

1998 to 2015: Multiple Indicators Approach

As liberalisation of the economy since the early 1990s and financial innovations began to undermine the efficacy of the prevalent monetary targeting framework, a need was felt to review the monetary policy framework and recast its operating procedures. As a result, the Reserve Bank of India adopted multiple indicators approach in April 1998. Under this approach, besides monetary aggregates, a host of forward looking indicators such as credit, output, inflation, trade, capital flows, exchange rate, returns in different markets and fiscal performance constituted the basis of information set used for monetary policy formulation. The enactment of the Fiscal Responsibility and Budget Management (FRBM) Act in 2003, by introducing fiscal discipline, provided flexibility to monetary policy. Increased market orientation of the domestic economy and deregulation of interest rates introduced since the early 1990s also enabled a shift from direct to indirect instruments of monetary policy. There was, therefore, greater emphasis on rate channels relative to quantity instruments for monetary policy formulation. Accordingly, short-term interest rates became instruments to signal monetary policy stance of RBI.

In order to stabilise short-term interest rates, the Reserve Bank placed greater emphasis on the integration of money market with other market segments. It modulated market liquidity to steer monetary conditions to the desired trajectory by using a mix of policy instruments. Some of these instruments including changes in reserve requirements, standing facilities and OMOs were meant to affect the quantum of marginal liquidity, while changes in policy rates, such as the Bank Rate and reverse repo/repo rates were the instruments for changing the price of liquidity.

An assessment of macroeconomic outcomes suggests that the multiple indicator approach served fairly well from 1998-99 to 2008-09. During this period, average domestic growth rate improved to 6.4 per cent and WPI based inflation moderated to 5.4 per cent.

2013-2016: Preconditions Set for Inflation Targeting

In the post-global financial crisis period (*i.e.*, post-2008), however, the credibility of this framework came into question as persistently high inflation and weakening growth began to co-exist. In the face of double-digit inflation of 2012-13, the US Fed's taper talk in May/June 2013 posed significant challenges to domestic monetary policy for maintaining the delicate balance between sustaining growth, containing inflation and securing financial stability. The extant multiple indicators approach was criticised on the ground that a large set of indicators do not provide a clearly defined nominal anchor for monetary policy. An Expert Committee was set up by RBI to revise and strengthen the monetary policy framework and suggest ways to make it more transparent and predictable. In its Report of 2014, the Committee reviewed the multiple indicators approach and recommended that inflation should be the nominal anchor for the monetary policy framework in India. Against this backdrop, the Reserve Bank imposed on itself a glide path for bringing down inflation in a sequential manner – from its peak of 11.5 per cent in November 2013 to 8 per cent by January 2015; 6 per cent by January 2016 and 5 per cent by Q4 of 2016-17.

2016 Onwards: Flexible Inflation Targeting

Amid this, a Monetary Policy Framework Agreement (MPFA) was signed between the Government of India and the Reserve Bank on February 20, 2015. Subsequently, flexible inflation targeting (FIT) was formally adopted with the amendment of the RBI Act in May 2016. The role of the Reserve Bank in the area of monetary policy has been restated in the amended Act as follows:

> *"the primary objective of monetary policy is to maintain price stability while keeping in mind the objective of growth".*

Empowered by this mandate, the RBI adopted a flexible inflation targeting (FIT) framework under which primacy is accorded to the objective of price stability, defined numerically by a target of 4 per cent for consumer price headline inflation with a tolerance band of +/- 2 per cent around it, while simultaneously focusing on growth when inflation is under control. The relative emphasis on inflation and growth depends on the macroeconomic scenario, inflation and growth outlook, and signals emerging from incoming data. Since then RBI has been conducting monetary policy in a forward-looking manner and effectively communicating its decisions to maintain inflation around its target and thereby to support growth. At the same time, RBI is also fine-tuning its operating procedures of monetary policy for effective policy transmission across the financial markets and thereby onto the real economy. As an outcome, inflation has fallen successively and has averaged below 4 per cent since 2017-18, notwithstanding recent up-tick in inflation driven by food prices, especially the sharp increase in vegetable prices reflecting the adverse impact of unseasonal rains and cyclone.

Evolution of Monetary Policy in line with the Changing Theoretical Developments and International Best Practices

The monetary policy framework in India has also been guided by developments in theory and international best practices. For instance, the collapse of the Bretton-Woods system of fixed exchange rates and high inflation in many advanced economies during the 1970s provided the necessary background to the choice of money supply as a nominal anchor. Since the late 1980s, however, experience of many advanced countries with monetary targeting framework was not satisfactory *inter alia* due to growing disconnect between monetary aggregates and goal variables such as inflation. A similar instability in money demand function was also evidenced in the Indian context in the 1990s which led to a shift from monetary targeting to multiple indicators approach in 1998.

Since early 1990s, beginning with New Zealand in 1990, many advanced and emerging market economies (EMEs) have switched to inflation targeting as the preferred policy framework. India, however, formally adopted the framework in 2016 which has helped us in terms of learning from the experiences of a diverse set of countries over a long period of time. In fact, the post-global financial crisis experience questioned the relevance of narrow focus on price stability as the sole objective of monetary policy, which called for adoption of a flexible approach to inflation targeting to achieve macro-financial stability. In this milieu, financial stability has emerged as another key consideration for monetary policy, though jury is still out as to whether it should be added as an explicit objective. It is interesting to note that the central banking function as the lender of last resort (LOLR) has remained intact, notwithstanding the developments and refinements in the policy frameworks across countries, including India.

Evolution of Monetary Policy in line with the Financial Market Developments

Financial markets play a critical role in effective transmission of monetary policy impulses to the rest of the economy. Monetary policy transmission involves two stages. In the first stage, monetary policy changes are transmitted through the money market to other markets, *i.e.*, the bond market and the bank loan market. The second stage involves the propagation of monetary policy impulses from the financial market to the real economy - by influencing spending decisions of individuals and firms. Within the financial system, money market is central to monetary operations conducted by the central bank.

In the case of India, money market prior to the 1980s was characterised by paucity of instruments and lack of depth. Owing to limited participation, money market liquidity was highly skewed, characterised by a few dominant lenders and a large number of chronic borrowers. In the presence of ad hoc Treasury Bills with fixed interest rate under the system of automatic monetisation, Treasury Bills could not emerge as a short-term money market instrument. Administered interest rates and captive investor base in government securities market further impeded open market operations as an effective instrument of monetary control. The prevalence of interest rate regulations along with restrictions on participation prohibited the integration of different market segments which is a prerequisite for effective monetary policy transmission. In this environment, monetary policy initially relied mainly on credit planning and selective credit controls and eventually on monetary targeting through quantitative instruments.

Financial markets reforms since the early 1990s, therefore, focused on dismantling various price and non-price controls in the financial system to facilitate integration of financial markets. Reform measures encompassed removing structural bottlenecks, introducing new players/instruments, ensuring free pricing of financial assets, relaxing quantitative restrictions, strengthening institutions, improving trading, clearing and settlement practices, encouraging good market practices and promoting greater transparency. These reforms gradually facilitated the price discovery in financial markets and interest rate emerged as a signaling mechanism. This paved way for introduction of the Liquidity Adjustment Facility (LAF) in 2000-01 as a tool for both liquidity management and also a signalling device for interest rates in the overnight money market. Amid greater integration of domestic financial markets with global markets, subsequently, the RBI also began to recognise the impact of global developments on domestic monetary policy. The developments in financial markets enabled the Reserve Bank to use market-based instruments of monetary policy and utilise the forward-looking information provided by financial markets in the conduct of monetary policy under the multiple indicators approach.

Although various segments of financial markets had acquired depth and maturity over time, a key challenge has been on fuller and faster transmission of policy rate changes not only to money market segments but also to the broader credit markets. In order to address these challenges, the Reserve Bank has been trying different models. At the same time, the liquidity management framework was also fine-tuned since April 2016 with the objective of maintaining the operating target close to the policy rate. Under this framework, the Reserve Bank assured the market to meet its durable liquidity requirements while fine-tuning its operations to make short-term liquidity conditions consistent with the stated policy stance. This was achieved through a variety of instruments including fixed and variable rate repo/reverse repo of various maturities, the marginal standing facility (MSF) and outright open market operations – complemented at times by the cash management bills and foreign exchange swaps.

Challenges in the Current Context

One of the major challenges for central banks is the assessment of the current economic situation. As we all know, the precise estimation of key parameters such as potential output and output gaps on a real time basis is a challenging task, although they are crucial for the conduct of monetary policy. In recent times, shifting trend growth in several economies, global spillover effects and disconnect between the financial cycles and business cycles in the face of supply shocks broadly explain why monetary policy around the world is in a state of flux. Nonetheless, a view has to be taken on the true nature of the slack in demand and supply-side shocks to inflation for timely use of counter cyclical policies.

We, in the Reserve Bank, therefore, constantly update our assessment of the economy based on incoming data and survey based forward looking information juxtaposed with model-based estimates for policy formulation. This approach helped the Reserve Bank to use the policy space opened up by the expected moderation in inflation and act early, recognising the imminent slowdown before it was confirmed by data subsequently. Monetary policy, however, has its own limits. Structural reforms and fiscal measures may have to be continued and further activated to provide a durable push to demand and boost growth. In my previous talks elsewhere, I have highlighted certain potential growth drivers which, through backward and forward linkages, could give significant push to growth. Some of these areas include prioritising food processing industries, tourism, e-commerce, start-ups and efforts to become a part of the global value chain. The Government is also focusing on infrastructure spending which will augment growth potential of the economy. States should also play an important role by enhancing capital expenditure which has high multiplier effect.

Concluding Remarks

Monetary policy frameworks in India has thus evolved in line with the developments in theory and country practices, the changing nature of the economy and developments in financial markets. Within the broad objectives, however, the relative emphasis on inflation, growth and financial stability has varied across monetary policy regimes. Although global experience with financial stability as an added policy objective is still unsettled, the Reserve Bank has always been giving due importance to financial stability since the enactment of the Preamble to the RBI Act. The regulation and supervision of banks and non-bank financial intermediaries has rested with the Reserve Bank and has kept pace with the prescribed global norms over time. More recently, the focus of financial stability has not only confined to regulation and supervision but also extending the reach of formal financial system to the unbanked and unserved population.

Apart from financial inclusion, there is also a focus on promoting secured, seamless and real-time payments and settlements. This renewed focus on financial inclusion and secured payments and settlements are not only aimed at promoting the confidence of general public in the domestic financial system but also improving the credibility of monetary policy for price stability, inclusive growth and financial stability.

ARTICLES

Private Corporate Investment in 2019-20:
Some Signs of Improvement

Sentiments of Indian Manufacturers in 2018-19

Distributed Ledger Technology, Blockchain and Central Banks

*Private Corporate Investment in 2019-20: Some Signs of Improvement**

This article analyses data on investment intentions of the private corporate sector in India during 2018-19 and 2019-20 and finds signs of improvement in the envisaged capital expenditure (capex) for the year 2019-20 based on the projects already sanctioned/contracted previously across different channels of financing. The total cost (in terms of value) of projects sanctioned/contracted through the major channels of financing can provide lead information about the near term momentum of investment activity and in the current context of weak private investment demand in the economy, this article highlights likely beginning of a turnaround in the investment cycle.

Introduction

Economic growth hinges on private investments. In the growth literature, investment has been regarded as one of the primary engines of growth. Investment, as a key component of GDP, can also influence labour productivity, capacity creation, introduction of new technology, employment generation, *etc.*, and accordingly, could provide early indication about the growth outlook. Thus, for short to medium-term economic analysis and forecasting purposes, timely information on capital expenditure (capex) is vital. However, hard data on private investments from published annual accounts of companies comes with a considerable time lag and, therefore may not be very useful for short-term analysis. Thus, countries often use survey-based methods to generate information on envisaged corporate investments (Abberger, 2005; Aurizio and Stefano, 2011; Barnes and Ellis, 2005; Ferrari, 2005; Osterholm, 2013). The survey-based results offer a valuable tool for the assessment of both current investment behaviour and investment intentions that are likely to materialise in the short-term.

Following international best practices, efforts have been geared towards conducting surveys in India also since the late 1980s for the assessment and forecasting of the investment intentions. Since 1970s, the Reserve Bank of India has been tracking capex plans of the private corporate sector (projects that are already funded by financial institutions) for providing an outlook on investment intentions based on the methodology adopted by Rangarajan (1970) on time phasing of capex. Such articles were published initially in the Economic and Political Weekly and subsequently (since 1989) in the RBI Bulletin.

The primary source of data on investment intentions are the financiers of capex projects, *viz.*, banking sector and financial institutions (FIs)[1] as well as external commercial borrowings (ECBs)[2], foreign currency convertible bonds (FCCBs), rupee denominated bonds (RDBs) and initial public offerings (IPOs), follow-on public offerings (FPOs), and rights issues for a year.

This article delves into the investment intentions of the private corporate sector during 2018-19 and 2019-20 captured from their project implementation plans. The article is structured into six sections. Section II sets out the methodology and its limitations. Section III addresses the characteristics of projects sanctioned or contracted during the period of review, funding thereof, distributional aspects in terms of regions and industries. Section IV deals with the phasing profile of the sanctioned/contracted loans/financing and estimates the growth of corporate

* This article is prepared by Pronita P Saikia and R K Sinha in the Corporate Studies Division of the Department of Statistics and Information Management. The views expressed in the article are those of the authors and do not represent the views of the Reserve Bank of India. The previous study titled 'Private Corporate Investment in 2018-19: Slow Recovery Underway' was published in the March 2019 issue of the Reserve Bank of India Bulletin.

1 Includes all public sector banks, major private sector and foreign banks, and financial institutions which are actively involved in project financing namely, Industrial Financial Corporation of India (IFCI), Life Insurance Corporation (LIC), Power Finance Corporation (PFC), Rural Electrification Corporation of India (REC) and Export-Import Bank of India (EXIM).

2 ECBs include rupee denominated bonds (RDBs).

investment. Section V presents an analysis of private placements and foreign direct investment made during the year. Section VI concludes the study.

II. Methodology

The short-term (one-year ahead) forecasting of capex based on time phasing of corporate projects financed by financial institutions was pioneered by Dr. C. Rangarajan in 1970. For the estimation of capex under this methodology, data on projects sanctioned are obtained from banks/FIs, supplemented with data on finances raised through other sources such as ECBs/FCCBs/IPOs/FPOs/rights issues. Based on *ex ante* phasing plans furnished by the companies at the time of appraisal, an estimate of the likely level of capex that would have been made during the year is obtained.

In this analysis, due care has been taken to ensure that each project enters the information set only once, even if it is financed through multiple channels by using databases internal to the RBI as well as information provided by the Securities and Exchange Board of India (SEBI). Projects not financed through any of the aforementioned channels or of a size lower than ₹10 crore are not covered. Projects with private ownership below 51 per cent or undertaken by trusts, Central and State governments, and educational institutions are also excluded.

The estimates are obtained based on the assumption that companies adhere to their *ex ante* expenditure plans. However, these estimates digress in scope and methodology from the *ex post* estimates of corporate fixed investment available in the National Accounts Statistics (NAS) in view of the possibility that some *ex ante* intentions may not fructify into realised investment in terms of their amount and timing of investment.

III. Characteristics of Projects Sanctioned / Contracted

During 2018-19, banks and FIs sanctioned 414 project proposals of the private companies with a total cost of ₹1,76,581 crore. There are 535 companies, which did not avail of any financing from the banks/FIs, but contracted loan amount of ₹76,515 crore through ECBs/FCCBs. Similarly, 39 companies did not avail of any bank finance or ECBs/FCCBs but raised ₹609 crore for their capex needs through domestic equity issues. Altogether, investment plans of 988 projects were made during 2018-19 aggregating to ₹2,53,705 crore as against 955 projects with investment intentions totalling ₹2,07,673 crore in 2017-18 (Annex: Table A1-A4).

The size-wise distribution of the projects describes how the cost of individual projects, sanctioned in a particular span of time, are distributed. The empirical results reveal that the statistical distribution of project cost carries a heavy right-tail. The average cost of projects sanctioned in a period tends to be driven by the nature and profile of this tail reflecting the relative presence of outliers (large values). The size-wise distribution of projects showed a marginal increase in the number of mega projects (₹5,000 crore & above) from three in 2017-18 to five in 2018-19 along with an increase in their combined share in the total project cost. This partly contributed to the rise in the total project cost in 2018-19, which otherwise witnessed a decline in the total number of projects in 2018-19 *vis-à-vis* 2017-18. Mega projects generally run over a longer span of time, as reflected in their phasing plan, and the presence of such projects boost the total cost of projects sanctioned in a year. There were 40 large projects of size ₹1,000 crore-₹5,000 crore with a combined share of around 41 per cent in the total project cost (Box 1 and Annex: Table A5).

A look at the purpose-wise pattern of projects indicates that investment in green field (new) projects occupied the largest share (76.9 per cent) in the total cost of projects sanctioned by banks and FIs during 2018-19, followed by expansion and modernisation of existing projects constituting 19.7 per cent of the total project cost, which is an increase in its share *vis-à-vis* 2017-18 (Annex: Table A6).

Box 1: Statistical Distribution of Project Cost

The aggregate cost of projects sanctioned in a particular time period is jointly influenced by the number of projects and their individual amounts. As indicated in the earlier section, projects with cost of ₹10 crore and above are only reported by the entities, and therefore, information on very small projects (of less than ₹10 crore) is not captured in the dataset.

To study the profile (in terms of size), the set of all 2,112 projects sanctioned by the banks/FIs during the 5-year period (2014-15 to 2018-19) was considered. The results reveal that the statistical distribution of project cost is highly skewed (asymmetrical) with a heavy (thick) right tail having an arithmetic mean of ₹332.91 crore, which is larger than its 75th percentile. The distribution shows that around 30 per cent of the projects were of the cost ranging from ₹10 crore to less than ₹30 crore. The last 5 per cent of observations lie in the wide range of ₹1,480 crore to ₹15,000 crore, reflecting existence of low frequency and varied-sized large projects (Table B1 and Chart B1).

The fitting of the distribution of the dataset of project cost identified that the 3-parameter lognormal distribution describes the dataset appropriately. The probability density function of a 3-parameter lognormal distribution is defined as:

$$f(x) = \exp\,[-1/2\ \{\ln\,(x-\gamma) - \mu\}^2/\sigma]\ /\ (x-\gamma)\ \sigma\ \sqrt{2\pi}$$

Table B1: Descriptive Statistics of Project Cost-size

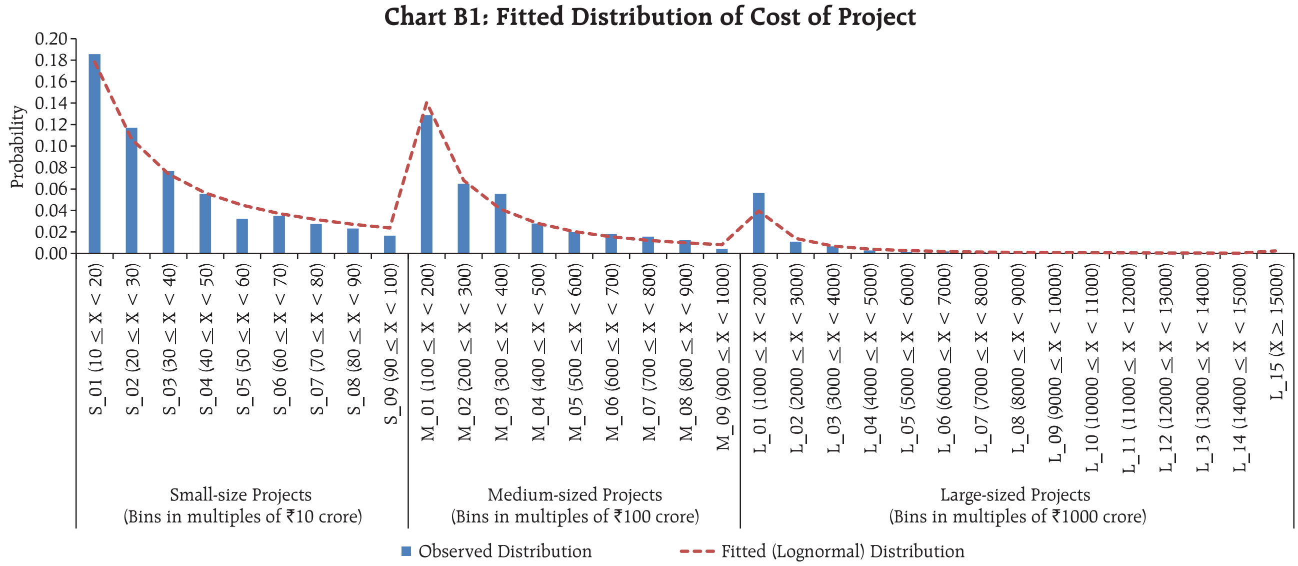
Number of Projects	2112	25th Percentile (Q_1)	24.43
Mean	332.91	Median (Q_2)	69.04
Standard deviation	880.64	75th Percentile (Q_3)	278.72
Minimum	10.00	95th Percentile	1480.00
Maximum	15000.00	Skewness	7.93
Range	14990.00	Kurtosis	94.66

wherein, γ, μ and σ are the three parameters of the distribution. The distribution transforms to the traditional 2-parameter lognormal distribution with $\gamma=0$.

Estimated parameters of the lognormal distribution with the estimated parameter could be useful in assessing the profile of the project cost and in computing various relevant probabilities (e.g. probability that a particular project cost will fall in a particular band). Three test statistics *viz*, Kolmogorov-Smirnov, Anderson-Darling and Chi-Square confirm appropriateness of the lognormal distribution in describing the nature of the distribution of cost of projects (Table B2). Further, the probability-probability (PP) plot, exhibiting a straight line at an angle of 45°, reconfirms the log-normality of the distribution of the project cost (Chart B2).

Further, having identified and established the appropriateness of the said distribution, it would be

Chart B1: Fitted Distribution of Cost of Project



Note: The costs of projects were grouped into three categories *viz.,* Small (₹10 crore to less than ₹100 crore), Medium (₹100 crore to less than ₹1,000 crore) and Large (₹1,000 crore and above). The distribution is not multi-modal, which may apparently look due to different bin sizes. The bin sizes were appropriately chosen to ensure visibility of the right tail.

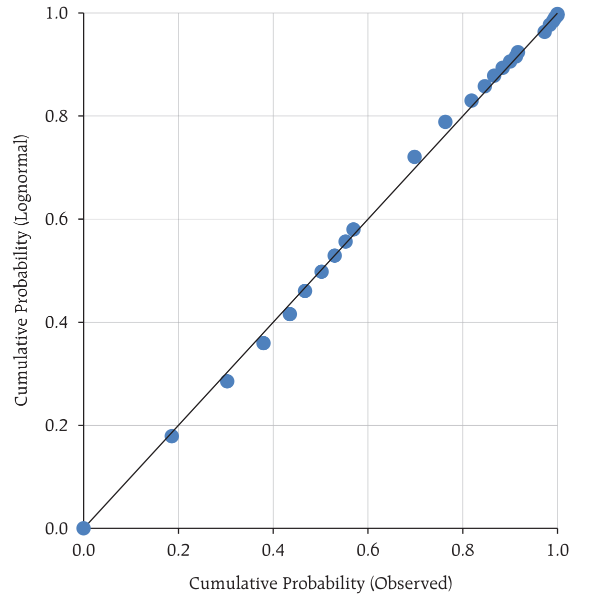
(Contd...)

Table B2: Estimates of Parameters and Test Statistics for Goodness of Fit

Parameter Estimates		Test Statistics	
γ	9.9083	Kolmogorov-Smirnov (KS)	0.029
μ	4.1071	Anderson-Darling (AD)	2.799
σ	1.9516	Chi-Square	39.665

Note: The Kolmogorov-Smirnov, Anderson-Darling and Chi-Square tests are used for testing goodness of fit, i.e. how well the chosen theoretical distribution fits the underlying dataset.

Chart B2: PP-Plot



desirable to estimate the parameters in order to describe subsets of this dataset, which are expected to be more homogeneous. For example, the 3-parameter lognormal distribution was fitted to two data subsets – split by location (*viz.*, single-state and multi-states). The fitting and estimated parameters reveal differential characteristics of projects by location. The average size of the project cost in multi-state projects was larger than that of the single-state projects. However, the former are found to be less skewed and less leptokurtic (peaked).

An analysis of the profile of infrastructure sector projects relative to non-infrastructure sector projects suggests that the share of infrastructure sector projects, led by power, roads and airports, has broadly been within the range of about 50 per cent to 70 per cent (by amount), although in terms of the number of projects share constitute about 30 per cent. The median sizes of the infrastructure and non-infrastructure projects, using the estimated lognormal distribution were computed as ₹283.87 crore and ₹40.30 crore respectively, which are comparable with the empirical data.

Table B3: Descriptive Statistics of Project Cost-size by location

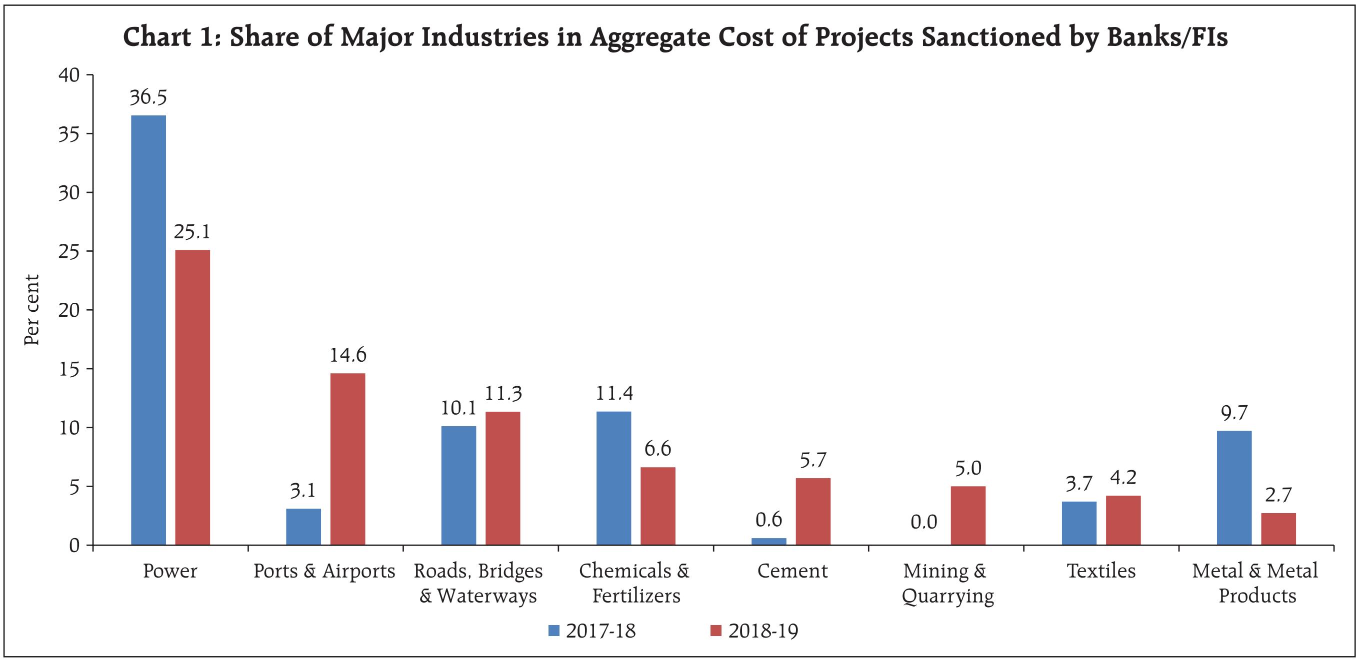
Statistics	Multi-state	Single-state
Number of Projects	72	2040
Mean	1001.80	309.30
Standard deviation	1284.20	853.89
Median	396.22	65.44
Skewness	2.43	8.61
Kurtosis	10.99	108.82
Fitting of 3-parameter lognormal		
γ	12.2740	9.9044
μ	5.9003	4.0432
σ	1.7007	1.9293

Table B4: Descriptive Statistics of Project Cost-size by Infrastructure / Non-Infrastructure

Statistics	Infrastructure	Non-Infrastructure
Number of Projects	661	1451
Mean	622.14	201.15
Standard deviation	1084.00	733.93
Median	283.87	40.30
Skewness	5.66	11.02
Kurtosis	52.25	167.65
Fitting of 3-parameter lognormal		
γ	5.3906	9.8992
μ	5.4444	3.5443
σ	1.5423	1.7773

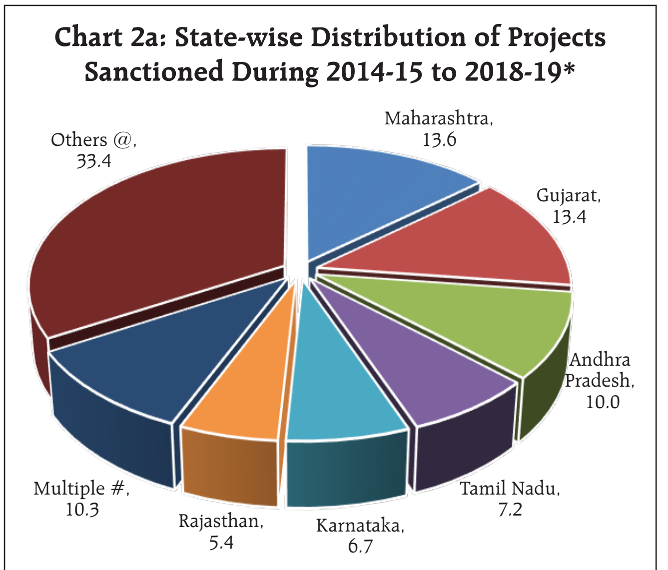
Industry-wise, the infrastructure sector, comprising (i) power, (ii) telecom, (iii) ports and airports, (iv) storage and water management, (v) Special Economic Zone (SEZ), industrial, biotech and IT park, and (vi) roads and bridges, recorded a surge in its share to 58.5 per cent in 2018-19 from 51.8 per cent in 2017-18, despite significant fall in the share of its largest component, *viz.*, 'power sector'.

'Ports and airports' have witnessed a remarkable surge in aggregate cost of projects sanctioned by banks/ FIs. Out of 5 projects sanctioned in 2018-19, four were 'new' and one was for 'expansion and modernisation'.



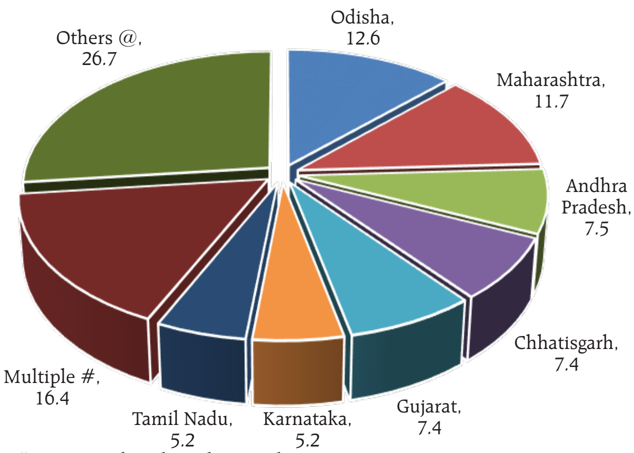
The share of 'cement' projects in the aggregate project cost, which rose sharply from a meagre 0.6 per cent in 2017-18 to 5.7 per cent in 2018-19, may facilitate the infrastructure sector to expand in the forthcoming years. Total project cost (and number of projects) in "cement' industry rose markedly from ₹1,068 crore in 2017-18 to ₹10,138 crore in 2018-19 (from three to eleven projects respectively). Out of these eleven projects sanctioned in 2018-19, eight were 'new' and three were for 'expansion and modernisation'. However, industry groups like 'metal and metal products'; and 'construction' demonstrated lacklustre momentum in activities in 2018-19 as revealed from their significant reduction in aggregate project cost as well as number of projects and this slippage is likely to impact the growth for some time. Among other important industries, while the share of 'mining and quarrying' witnessed a remarkable surge, the share of 'chemical and chemical products' slipped. Aggregate project cost as well as the number of projects increased for 'mining and quarrying' with four 'new' projects and two other projects for 'expansion and 'modernisation' (Chart 1 and Annex: Table A7).

The deciding factors for the location of a project are accessibility of raw materials, availability of skilled labour, adequate infrastructure, market size, and growth prospects. Data for the last five years (2014-15 to 2018-19) revealed that 56 per cent of the projects were taken up in six states, *viz.*, Andhra Pradesh, Gujarat, Karnataka, Maharashtra, Rajasthan and Tamil Nadu indicating their locational advantages over other states (Chart 2a).



#: Projects distributed in 'multi-state'
* : Share is in per cent
@: Includes states with less than 5 per cent share

Chart 2b: State-wise Distribution of Projects Sanctioned During 2009-10 to 2013-14*



#: Projects distributed in 'multi-state'
* : Share is in per cent
@: Includes states with less than 5 per cent share

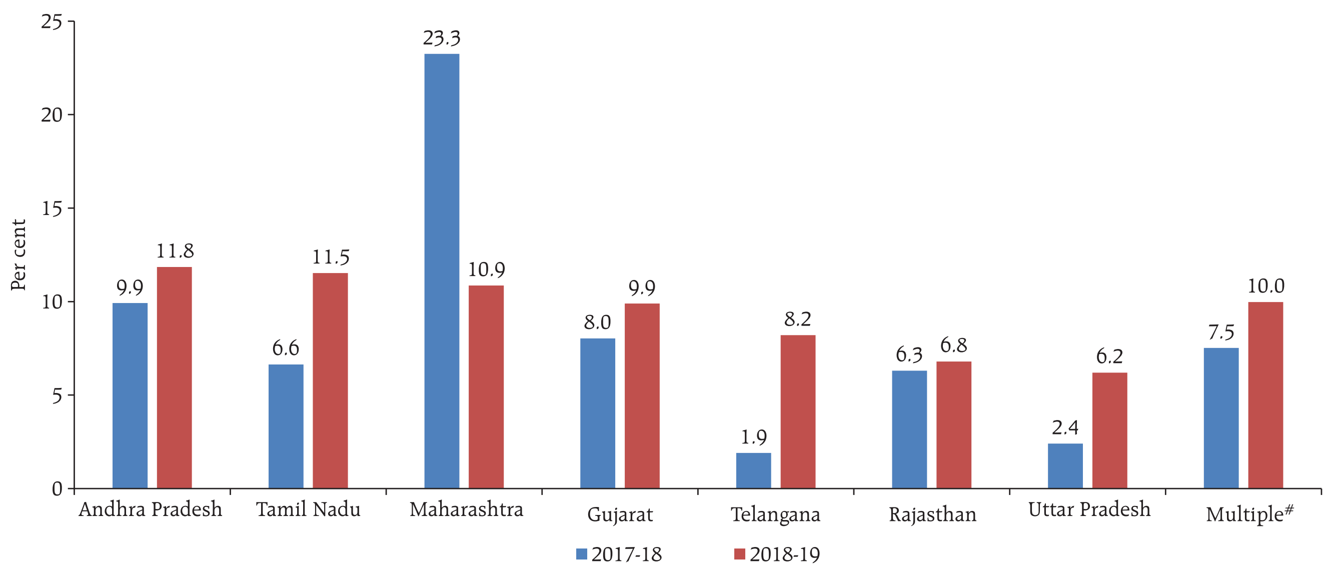
The spread of projects encompassing more than one state has declined significantly during the quinquennial period of 2014-19 over the quinquennial period of 2009-14. This is partly due to lower share of multi-state mega projects (project cost of ₹5,000 crore and more) in total number of mega projects. Only one out of fifteen mega projects (6.67 per cent) sanctioned during 2014-19 had spread across multi-states, as against nine multi-state projects out of 63 mega projects (14.29 per cent) sanctioned during 2009-14 (Chart 2a and Chart 2b).

In 2018-19, Andhra Pradesh accounted for the highest share (11.8 per cent) in total cost of projects sanctioned by banks/FIs followed by Tamil Nadu (11.5 per cent), Maharashtra (10.9 per cent), Gujarat (9.9 per cent), Telangana (8.2 per cent), Rajasthan (6.8 per cent) and Uttar Pradesh (6.2 per cent). States like Maharashtra and Karnataka registered a marked fall in their share from the previous year. On the other hand, Telangana recorded significant gains in their share followed by Tamil Nadu and Uttar Pradesh (Chart 3 and Annex: Table A8).

IV. Phasing Profile of Investment Intentions

The information on the phasing profile of envisaged capex from the cohorts of projects sanctioned during different years helps short-term (one year) forecasting of capex. The phasing from the cohort of projects sanctioned by the banks/FIs in 2018-19 indicates that around 35 per cent (₹62,561 crore) of the total proposed expenditure would be spent in 2018-19, 30 per cent (₹53,351 crore) in 2019-20 and another 24 per cent (₹42,281 crore) in the subsequent years. Around 11 per cent of total cost of

Chart 3: Share of Major States in Aggregate Cost of Projects Sanctioned by Banks/FIs



#: Projects distributed in 'multi-state' the projects sanctioned in 2018-19 was already spent during 2015-16 to 2017-18 (Annex: Table A1).

From the planned expenditure, the aggregate capex envisaged in 2018-19 showed an increase over the previous year despite a fall in the number of sanctions by banks/FIs. In 2018-19, capex planned to be incurred from resources raised through international bond markets increased sharply by around 133 per cent from its level a year ago. The capital market (equity route) enabled financing of envisaged capex of ₹1,179 crore in 2018-19, which was significantly lower than in the previous year (Annex: Table A1, A2, A3).

To sum up, it is assessed that a total capex (from all channels) of ₹1,96,312 crore (of which, ₹1,11,710 crore was from fresh sanctions during the year) would have been incurred by the private corporate sector in 2018-19, translating into a substantial improvement by around 24 per cent. This improvement can be mainly attributed to ECB channel of capex financing. To add to it, the planned capex based on the pipeline projects[3] (already sanctioned in preceding years) is poised to be high at around ₹1,20,157 crore in 2019-20, marking a significant improvement over the previous year (₹84,602 crore) (Annex: Table A2, A4).

Going forward, the aggregate envisaged capex in 2019-20 would also be contingent upon the level of corporate investment in 2019-20 from the new cohort of projects getting sanctioned in 2019-20. The envisaged capex from the major channels of financing may further improve driven by higher amount sanctioned/contracted in the first half of 2019-20 over first half of 2018-19. The total project cost sanctioned by banks and financial institutions also increased markedly from ₹86,607 crore to ₹1,25,305 crore. Total loan amount contracted for capex purpose through the ECB channel increased significantly from ₹39,833 crore to ₹61,833 crore (Table 1).

[3] Pipeline projects are those projects, which are already undertaken for implementation. Capex from a pipeline project are envisaged amounts for a given year, which got sanctioned prior to that given year.

Table 1: Projects Funded through Banks/FIs/ECBs/FCCBs/RDBs/IPOs*

	H1:2019-20		H1:2018-19	
	Number of projects	Amount sanctioned/ contracted (in ₹ crore)	Number of projects	Amount sanctioned/ contracted (in ₹ crore)
Banks/FIs	142	1,25,305	193	86,607
ECBs/FCCBs/RDBs	272	61,833	262	39,833
IPOs	9	78	30	481
Total	**423**	**1,87,216**	**485**	**1,26,921**

*Provisional data.

V. Corporate Investment Financed by Private Placements and Foreign Direct Investment

In recent years, debt instruments like bonds and debentures and foreign direct investment (FDI) have assumed prominence as alternative sources of capex financing. Mobilisation of funds through private placement of debt (bonds and debentures) rose substantially during the period from 2013-14 to 2016-17 but moderated during 2017-18 and 2018-19. Preference for FDI as an alternative source of capex financing is also observed, with an upsurge in FDI amount from 2012-13 to 2016-17. Thereafter, it subsided in 2017-18 but rose again in 2018-19. The rise in FDI inflows continued in the first half of 2019-20 as compared to the corresponding period of the previous year (Table 2).

Table 2: Private Placements and FDI (in ₹ crore)

Period	Debt-Private Placements*	Foreign Direct Investments**
2011-12	27,040	1,65,146
2012-13	59,188	1,21,907
2013-14	56,042	1,47,518
2014-15	97,358	1,81,682
2015-16	1,17,394	2,62,322
2016-17#	1,53,136	2,91,696
2017-18#	1,35,988	2,88,889
2018-19#	1,34,540	3,09,867
H1:2019-20#	51,068	1,82,000
(H1:2018-19)#	(55,022)	(1,55,117)

*: Only for the manufacturing and services companies in the private sector
**: FDI inflows includes equity capital only.
#: Provisional Data.
Source: Prime Database and Government of India.

VI. Conclusion

This article uses data on investment intentions of firms to assess the outlook for investment activity in 2019-20. The phasing profile of financing for projects sanctioned /contracted helps generate forward looking assessment of likely investment to be undertaken in the near term. This article demonstrates existence of heavy right tail in the distribution of project cost. It finds that a lognormal distribution could describe this positive skewness in project cost data appropriately and, therefore, could be useful in exploring future research on the subject.

High value and mega projects sanctioned/contracted during a particular year affects the phasing profile of the cohort of projects. The number of new mega projects, sanctioned by banks/FIs, has been small since 2011-12 in the aftermath of global financial crisis of 2008-09. However, it is noteworthy that projects, which were already announced and implemented prior to/around the global financial crisis, got higher financial capital from multiple sources to execute sanctioned investment plans.

The planned or envisaged capex from all sources based on the pipeline projects sanctioned in all preceding years points to a noticeable improvement in 2019-20. The investment cycle appears to be poised to gain momentum in the short to medium term, but, its sustainability needs to be watched closely.

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Annex

Table A1: Phasing of Capex of Projects Sanctioned by Banks/FIs

Year of sanction ↓	No. of Projects	Project Cost in the Year of Sanction (in ₹ crore)	Project Cost due to Revision/ Cancellation[@] (in ₹ crore)	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	Beyond 2019-20
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Up to 2010-11				3,13,583	2,23,698	1,23,259	58,668	11,938	118	869				
2011-12	636	2,12,002	1,91,592 (9.6)	23,005	66,915	55,384	28,190	9,470	2,926					
2012-13	414	1,96,345	1,89,483 (3.5)	82	36,664	56,725	48,976	27,325	11,219	6,447	2,045			
2013-14	472	1,34,019	1,27,328 (5.0)		1,332	15,139	34,769	44,925	19,909	7,105	2,677	1,472		
2014-15	326	87,601	87,253 (0.4)			98	14,822	34,589	25,765	9,535	1,246	162	1,036	
2015-16	346	95,371	91,781 (3.8)				3,787	7,434	37,517	28,628	8,079	4,964	1,152	220
2016-17	541	1,82,807	1,79,249 (2.0)				1,352	3,952	25,388	71,186	41,075	21,643	8,566	6,087
2017-18	485	1,72,831	1,68,239 (2.6)					620	15,184	12,445	63,001	41,436	22,767	12,786
2018-19	414	1,76,581							569	6,847	10,972	62,561	53,351	42,281
Total#				**3,36,670**	**3,28,609**	**2,50,605**	**1,90,564**	**1,40,253**	**1,38,595**	**1,43,062**	**1,29,095**	**1,32,238**	**86,872**	**61,374**
Percentage change					**-2.4**	**-23.7**	**-24.0**	**-26.4**	**-1.2**	**3.2**	**-9.8**	**2.4**	*****	

#: Column totals indicate envisaged capex in a particular year covering the projects which received financial assistance in various years. The estimate is *ex ante*, incorporating only envisaged investment. They are different from those actually realized/utilised.
*: Per cent change for 2019-20 is not worked out as capex from proposals that are likely to be sanctioned in 2019-20 is not fully available.
@: Figures in bracket are percentage of revision/cancellation.

Table A2: Phasing of Capex Projects* Funded Through ECBs/FCCBs/RDBs**

Loans contracted in ↓	No. of Companies	Total loan contracted (in ₹ crore)	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	Beyond 2019-20
	1	2	3	4	5	6	7	8	9	10	11	12	13
Up to 2010-11			31,829	13,130	2,873	500							
2011-12	438	40,012		25,212	12,800	1,900	100						
2012-13	519	65,692			37,792	20,267	6,300	1,333					
2013-14	563	80,736				56,197	20,976	3,563					
2014-15	478	57,327					36,791	16,806	3,151	575	2	2	
2015-16	314	38,885						28,998	7,311	2,572	4		
2016-17	346	22,154							14,953	6,005	1,192	2	2
2017-18	419	37,896								17,822	13,054	6,484	536
2018-19	535	76,515									48,643	25,706	2,166
Total[&]			**31,829**	**38,342**	**53,465**	**78,864**	**64,167**	**50,700**	**25,415**	**26,974**	**62,895**	**32,194**	**2,704**
Percentage change				**20.5**	**39.4**	**47.5**	**-18.6**	**-21.0**	**-49.9**	**6.1**	**133.2**	**#**	

*: Projects which did not receive assistance from banks/FIs.
**: Rupee Denominated Bonds (RDBs) have been included since 2016-17.
#: Per cent change for 2019-20 is not worked out as capex from proposals that are likely to be drawn in 2019-20 is not fully available.
&: The estimate is ex ante, incorporating only envisaged investment, they are different from those actually realised/utilised.

Table A3: Phasing of Capex of Projects Funded Through Equity Issues*

Equity issued during↓	No. of Companies	Capex Envisaged (₹ crore)	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	Beyond 2019-20
	1	2	3	4	5	6	7	8	9	10	11	12	13
Up to 2010-11			1,923	726	95								
2011-12	21	973	153	460	360								
2012-13	25	1,135			533	494	108						
2013-14	21	454					384	70					
2014-15	24	1,078					189	557	332				
2015-16	40	4,511					11	644	2,753	849	183	71	
2016-17	29	1,159						14	471	368	163	143	
2017-18	51	1,538								419	327	787	5
2018-19	39	609									506	90	13
Total&			**2,076**	**1,186**	**988**	**494**	**692**	**1,285**	**3,556**	**1,636**	**1,179**	**1,091**	**18**
Percentage change				**-42.9**	**-16.7**	**-50.0**	**40.0**	**85.7**	**176.9**	**-54.0**	**-27.9**	**#**	

* : Projects which did not receive assistance from banks/FIs/ECBs/FCCBs/RDBs.
#: Per cent change for 2019-20 is not worked out as capex from proposals that are likely to be implemented in 2019-20 is not fully available.
& : The estimate is ex ante, incorporating only envisaged investment, they are different from those actually realised/utilised.

Table A4: Phasing of Capex of Projects Funded Through Banks/FIs/IPOs/ECBs/FCCBs/RDBs*/IPOs

Year of sanction ↓	No. of Companies	Project Cost (₹ crore)	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	Beyond 2019-20
	Banks/ FIs, ECBs/ FCCBs/ RDBs/ IPOs												
	1	2	3	4	5	6	7	8	9	10	11	12	13
Upto 2010-11			3,47,335	2,37,554	1,26,227	59,168	11,938	118	869	0	-	-	-
2011-12	1,095	2,32,577	23,158	92,587	68,544	30,090	9,570	2,926	-	-	-	-	-
2012-13	958	2,56,310	84	36,664	95,050	69,737	33,733	12,552	6,447	2,045	-	-	-
2013-14	1,056	2,08,518	-	1,332	15,139	90,966	66,285	23,542	7,105	2,677	1,472	-	-
2014-15	828	1,45,658	-	-	98	14,822	71,569	43,128	13,018	1,821	164	1,038	-
2015-16	700	1,35,177	-	-	-	3,787	7,445	67,159	38,692	11,500	5,151	1,223	220
2016-17	916	2,02,562	-	-	-	1,352	3,952	25,402	86,610	47,448	22,998	8,711	6,089
2017-18	955	2,07,673	-	-	-	-	620	15,184	12,445	81,242	54,817	30,038	13,327
2018-19	988	2,53,705	-	-	-	-	-	569	6,847	10,972	1,11,710	79,147	44,460
Total&			**3,70,577**	**3,68,145**	**3,05,058**	**2,69,922**	**2,05,112**	**1,90,580**	**1,71,164**	**1,57,705**	**1,96,312**	**1,20,157**	**64,096**
Percentage change				**-0.7**	**-17.1**	**-11.5**	**-24.0**	**-7.1**	**-10.2**	**-7.9**	**24.5**	**#**	

*: Rupee Denominated Bonds (RDBs) have been included since 2016-17.
#: Per cent change for 2019-20 is not worked out as capex from proposals that are likely to be sanctioned in 2019-20 is not fully available.
&: The estimate is *ex ante*, incorporating only envisaged investment, they are different from those actually realised/utilised.

Table A5: Size-wise Distribution of Projects Sanctioned by Banks/FIs: 2009-10 to 2018-19

Period		Less than ₹100 crore	₹100 crore to ₹500 crore	₹500 crore to ₹1000 crore	₹1000 crore to ₹5000 crore	₹5000 crore & above	Total
2009-10	No. of Projects	439	189	40	39	22	**729**
	Per cent Share	3.8	11.0	6.8	20.8	57.5	**100 (4,09,502)**
2010-11	No. of Projects	412	172	42	51	20	**697**
	Per cent Share	4.4	10.2	8.6	29.3	47.5	**100 (3,75,176)**
2011-12	No. of Projects	420	145	36	26	9	**636**
	Per cent Share	8.3	17.0	13.7	27.6	33.4	**100 (1,91,592)**
2012-13	No. of Projects	245	119	20	23	7	**414**
	Per cent Share	4.8	14.6	7.3	26.8	46.4	**100 (1,89,483)**
2013-14	No. of Projects	306	115	25	21	5	**472**
	Per cent Share	8.3	20.0	13.9	29.1	28.7	**100 (1,27,328)**
2014-15	No. of Projects	223	65	18	19	1	**326**
	Per cent Share	9.0	16.6	14.6	47.8	12.0	**100 (87,253)**
2015-16	No. of Projects	214	76	34	21	1	**346**
	Per cent Share	8.6	20.9	26.0	38.5	5.9	**100 (91,781)**
2016-17	No. of Projects	287	180	29	40	5	**541**
	Per cent Share	5.8	23.3	11.9	41.7	17.4	**100 (1,79,249)**
2017-18	No. of Projects	263	149	28	42	3	**485**
	Per cent Share	5.2	21.0	10.8	43.9	19.1	**100 (1,68,239)**
2018-19	No. of Projects	215	115	39	40	5	**414**
	Per cent Share	4.3	15.8	15.3	41.1	23.5	**100 (1,76,581)**

Note: i. Figures in bracket are total cost of projects in ₹ crore.
ii. Per cent share is the share in total cost of projects.

Table A6: Purpose-wise Distribution of Projects Sanctioned by Banks/FIs: 2010-11 to 2018-19

Period	Number and Share of Projects	New	Expansion & Modernisation	Diversification	Others	Total
2010-11	No. of Projects	454	224	6	13	**697**
	Per cent Share	66.8	30.9	1.8	0.5	**100 (3,75,176)**
2011-12	No. of Projects	449	172	5	10	**636**
	Per cent Share	70.6	23.1	0.1	6.3	**100 (1,91,592)**
2012-13	No. of Projects	303	107	-	4	**414**
	Per cent Share	84.2	14.7	-	1.1	**100 (1,89,483)**
2013-14	No. of Projects	361	95	2	14	**472**
	Per cent Share	65.2	20.1	-	14.7	**100 (1,27,328)**
2014-15	No. of Projects	203	92	2	29	**326**
	Percent Share	39.4	14.7	0.2	45.7	**100 (87,253)**
2015-16	No. of Projects	260	64	3	19	**346**
	Per cent Share	73.6	14.3	0.1	12.0	**100 (91,781)**
2016-17	No. of Projects	429	97	4	11	**541**
	Per cent Share	78.6	9.9	0.1	11.3	**100 (1,79,249)**
2017-18	No. of Projects	396	80	2	7	**485**
	Per cent Share	89.0	9.4	0.1	1.5	**100 (1,68,239)**
2018-19	No. of Projects	320	78	-	16	**414**
	Per cent Share	76.9	19.7	-	3.4	**100 (1,76,581)**

Note: i. Figures in bracket are total cost of projects in ₹ crore.
ii. Per cent share is the share in total cost of projects.
iii. - : Nil/ Negligible.

Table A7: Industry-wise Distribution of Projects Sanctioned by Banks/FIs: 2009-10 to 2018-19

Industry	2009-10		2010-11		2011-12		2012-13		2013-14		2014-15		2015-16		2016-17		2017-18		2018-19	
	Number of Projects	Per cent Share	Number of Projects	Per cent Share	Number of Projects	Per cent Share	Number of Projects	Per cent Share	Number of Projects	Per cent Share	Number of Projects	Per cent Share	Number of Projects	Per cent Share	Number of Projects	Per cent Share	Number of Projects	Per cent Share	Number of Projects	Per cent Share
Infrastructure	100	48.9	121	53.7	107	47.4	82	47.9	87	39.8	74	48.8	108	72.0	204	62.6	150	51.8	125	58.5
i) Power	75	30.7	105	46.3	82	42.4	71	39.4	70	35.1	65	42.2	92	57.1	170	45.4	117	36.5	81	25.1
ii) Telecom	6	16.4	2	5.7	1	0.0	2	5.6	1	0.0	1	4.9	1	0.3	1	0.0	-	-	-	-
iii) Ports & Airports	2	0.3	1	0.7	1	1.3	1	1.9	1	0.8	-	-	3	2.4	8	5.7	6	3.1	5	14.6
iv) Storage & Water Management	2	0.9	1	0.0	12	0.5	-	-	5	1.1	2	0.6	4	4.2	6	3.7	2	0.4	15	5.3
v) SEZ, Industrial, Biotech and IT Park	15	0.6	12	1.1	11	3.2	8	0.9	8	1.5	3	0.9	1	0.4	2	0.4	9	1.6	6	2.2
vi) Roads & Bridges	-	-	-	-	-	-	-	-	2	1.2	3	0.3	7	7.6	17	7.3	16	10.1	18	11.3
Chemicals & Fertilizers	28	0.8	27	1.3	17	3.5	19	1.1	15	1.0	7	2.6	11	1.6	10	2.1	23	11.4	20	6.6
Cement	29	2.8	15	2.7	9	2.0	11	3.9	12	7.1	7	3.8	5	1.9	5	2.3	3	0.6	11	5.7
Mining & Quarrying	9	3.4	1	0.2	4	0.2	2	0.1	1	0.6	2	0.1	10	2.7	4	0.4	1	0.0	7	5.0
Textiles	77	2.2	77	2.9	94	7.0	31	1.9	58	10.3	50	4.1	49	4.8	57	4.1	54	3.7	29	4.2
Metal & Metal Products	134	18.1	113	21.1	73	16.3	51	28.9	44	17.0	17	17.4	14	1.5	23	4.9	21	9.7	15	2.7
Rubber Products	15	0.4	19	0.5	18	0.9	7	0.5	9	0.3	8	0.8	4	0.5	8	0.2	10	2.5	6	2.5
Construction	20	11.5	18	3.3	23	1.8	20	2.8	27	2.1	29	4.0	26	1.8	60	12.0	39	5.3	28	2.5
Hospitals	23	0.9	22	0.6	9	0.3	17	1.4	10	0.7	2	0.1	1	0.0	22	1.1	18	1.8	15	2.3
Hotel & Restaurants	56	2.6	63	3.5	51	4.6	31	3.1	29	2.7	15	1.1	16	1.1	12	0.8	29	2.9	28	1.7
Pharmaceuticals	31	0.5	18	0.3	20	0.8	10	0.4	19	1.3	9	1.5	11	0.3	12	1.1	15	0.6	23	1.5
Food Products	41	0.5	39	0.7	41	1.5	36	0.9	43	1.8	34	2.9	26	1.8	38	0.9	47	2.8	28	1.3
Other Services	2	0.0	3	0.1	4	0.1	2	0.1	8	0.8	2	0.1	-	-	3	0.1	-	-	11	1.2
Other Manufacturing	18	0.5	22	0.2	22	0.4	8	0.1	15	0.7	7	0.1	9	1.4	7	0.2	9	0.7	20	0.7
Transport Equipment	25	1.3	27	0.8	26	2.6	17	0.9	16	1.2	7	5.3	4	2.5	9	3.6	10	0.3	5	0.7
Others*	121	5.6	112	8.2	118	10.5	70	5.7	79	12.6	56	7.3	52	6.0	67	3.6	56	5.9	43	3.0
Total	**729**	**100**	**697**	**100**	**636**	**100**	**414**	**100**	**472**	**100**	**326**	**100**	**346**	**100**	**541**	**100**	**485**	**100**	**414**	**100**
Total cost of projects (₹ crore)	**4,09,502**		**3,75,176**		**1,91,592**		**1,89,483**		**1,27,328**		**87,253**		**91,781**		**1,79,249**		**1,68,239**		**1,76,581**	

* : Comprise industries like Agricultural & related activities, Paper & Paper products, Printing & Publishing, Rubber, IT Software, Communication, Trading of services, Entertainments, *etc.*

- : Nil/Negligible.

Note: Per cent share is the share in total cost of project.

Table A8: State-wise Distribution of Projects Sanctioned by Banks/FIs: 2009-10 to 2018-19

State	2009-10		2010-11		2011-12		2012-13		2013-14		2014-15		2015-16		2016-17		2017-18		2018-19	
	Number of Projects	Per cent Share	Number of Projects	Per cent Share	Number of Projects	Per cent Share	Number of Projects	Per cent Share	Number of Projects	Per cent Share	Number of Projects	Per cent Share	Number of Projects	Per cent Share	Number of Projects	Per cent Share	Number of Projects	Per cent Share	Number of Projects	Per cent Share
Andhra Pradesh	73	7.1	65	11.4	52	5.1	35	5.7	37	4.0	24	8.1	33	12.3	47	8.0	22	9.9	29	11.8
Tamil Nadu	66	5.5	93	6.1	58	5.7	22	1.8	33	5.4	27	2.9	26	9.3	22	4.4	28	6.6	33	11.5
Maharashtra	117	10.0	71	7.4	86	19.1	67	10.7	76	19.7	38	14.8	36	9.4	57	8.8	65	23.3	37	10.9
Gujarat	69	3.2	65	9.6	75	9.0	58	5.6	66	14.5	71	9.5	61	15.1	102	23.0	71	8.0	55	9.9
Telangana	-	-	-	-	-	-	-	-	-	-	-	-	10	3.8	52	6.8	17	1.9	25	8.2
Rajasthan	23	2.9	28	0.8	49	4.9	41	5.3	24	1.4	29	11.1	10	0.9	23	2.8	33	6.3	20	6.8
Uttar Pradesh	27	0.4	32	4.6	42	7.8	26	4.4	21	1.1	20	5.4	15	2.3	22	3.7	30	2.4	29	6.2
Karnataka	42	1.4	40	7.2	39	12.0	20	1.6	39	6.2	27	5.4	21	6.2	52	6.8	64	9.6	33	4.7
Punjab	23	0.4	38	1.1	37	1.7	12	10.9	28	1.5	6	0.3	11	1.7	29	2.1	31	2.2	14	1.8
West Bengal	33	2.6	29	3.3	19	4.9	13	1.0	12	1.2	9	1.3	14	3.1	18	1.7	14	1.8	15	1.6
Madhya Pradesh	23	4.2	21	5.2	16	5.6	13	3.9	30	6.1	14	3.9	21	6.9	18	7.5	10	0.7	11	1.4
Odisha	25	13.9	25	7.4	15	6.3	10	26.8	10	11.7	5	15.9	6	3.1	6	3.1	5	3.0	9	1.3
Chhatisgarh	23	6.0	31	12.1	11	2.4	9	4.1	16	10.7	8	7.4	8	4.7	15	4.0	7	4.8	5	0.8
Jammu & Kashmir	2	0.1	3	0.1	5	0.2	10	0.2	10	5.2	2	0.1	9	0.2	3	0.1	8	2.0	12	0.4
Himachal Pradesh	19	0.6	13	0.8	7	0.5	5	0.3	3	1.8	3	0.1	8	1.4	1	0.0	8	2.3	7	0.3
Multiple#	45	29.0	48	16.2	34	4.5	15	7.7	21	6.9	10	9.5	13	13.5	17	11.8	16	7.5	16	10.0
Others*	119	12.7	95	6.7	91	10.3	58	10.0	46	2.6	33	4.3	44	6.1	57	5.4	56	7.7	64	12.4
Total	**729**	**100**	**697**	**100**	**636**	**100**	**414**	**100**	**472**	**100**	**326**	**100**	**346**	**100**	**541**	**100**	**485**	**100**	**414**	**100**
Total cost of projects (₹ crore)	**4,09,502**		**3,75,176**		**1,91,592**		**1,89,483**		**1,27,328**		**87,253**		**91,781**		**1,79,249**		**1,68,239**		**1,76,581**	

#: Comprise projects over several States.
*: Comprise remaining States / Union Territories.
' -' information not available.
Note: Per cent share is the share in total cost of project.

*Sentiments of Indian Manufacturers in 2018-19**

Early indicators from the Industrial Outlook Survey – an indispensable tool of policy makers to gauge economic condition – point to steady demand conditions during 2018-19, with optimism moderating in the first quarter of 2019-20. As an outcome of concerted efforts towards boosting demand, survey responses suggest improvement in financing conditions in Q1:2019-20. On the prices front, the softening in input costs, especially of raw materials, are being passed on to consumers leading to softening of selling prices. Forecasts based on Hidden Markov Model (HMM) regression using responses from the survey were found to track the movements of the index of industrial production (IIP) growth and wholesale price index (WPI) inflation for the manufacturing sector.

Introduction

In the array of instruments used by policy makers to gauge current economic environment and to help in short-term forecasts, business outlook surveys assume the prime spot. These surveys yield crucial—*albeit* qualitative—information, with added advantage of being low cost and easily accessible tools in forecasting turning points in the business cycle (OECD, 2003). These surveys have been profoundly used to get an "informed opinion" about economic trends in key industries in a forward-looking manner (Vincent 2006). With the inception of its quarterly Industrial Outlook Survey (IOS) in 1998, the Reserve Bank emerged as a forerunner among emerging market economies (EMEs) in conducting such surveys.

Against this backdrop, the aim of the article is two-fold: first, with a benefit of hindsight, the article presents the key messages emanating from the survey and analyses how closely the survey indictors track related macroeconomic aggregates primarily the IIP and WPI during 2018-19. Second, taking a longer time horizon from Q1:2000-01 to Q1:2019-20, and employing novel econometric technique of Hidden Markov Model Regression (HMMR), the usefulness of IOS in tracking the turning points in business cycles is established.

The rest of the article is organised into five sections. Section 2 summarises cross-country experience in business tendency surveys and provides a brief literature review on HMMR in analysing survey inputs. Section 3 presents an overview of the stylised facts on select parameters of manufacturing conditions that were surveyed during 2018-19. Section 4 provides evidence that the indicators of IOS forecast business cycle turning points accurately. Section 5 concludes the findings of the article.

2. Literature Review

Business tendency or outlook surveys have a history dating back to as early as 1920s and they have been implemented by an increasing number of countries over the years. Some of the earliest surveys were conducted by trade associations such as, the *Confederation of British Industries* and the *Ifo Institute for Economic Research* in Germany. Central banks in countries like Japan and Belgium have been carrying out such surveys to gauge advance information on economic situation before the release of official data. Among member countries of the Organisation for Economic Cooperation and Development (OECD), Canada, Australia, transition countries in Europe and Central Asia sponsor a handful of business tendency surveys which are being conducted by their national statistical offices, private or public. Some of the most prominent business outlook surveys are conducted and released by private institutes such as the Conference Board and Thompson Reuters in the United States.

As part of its joint harmonised European Union (EU) programme of surveys, the Directorate General

* This article is prepared by Sayantika Bhowmick and S. Majumdar, Division of Enterprise Surveys, Department of Statistics and Information Management (DSIM). The views expressed in the article are those of the authors only. The latest round of the survey data was released on February 6, 2020 on the RBI's website at *https://www.rbi.org.in/Scripts/PublicationsView.aspx?id=19415*. The previous article was published in January 2019 issue of the RBI Bulletin and can be accessed at *https://www.rbi.org.in/Scripts/BS_ViewBulletin.aspx?Id=17996*.

for Economic and Financial Affairs (DG ECFIN) of the European Commission addresses regular surveys to the industry representatives of the EU and candidate countries. In this league, Centre for International Research on Economic Tendency Surveys (CIRET)– a forum for leading economists and institutions that conduct and analyse surveys can be credited for much of the early developments as well as recent improvements in business tendency surveys.

Business Tendency/Outlook Surveys gather information about a wide range of variables including production, order books, stocks of finished goods, employment and prices. Literature suggests that since such series do not undergo drastic revisions, they are useful in predicting turning points in the business cycle (OECD, 2003). As the survey responses help in monitoring and forecasting business cycles, they are used widely by a broad spectre of economic agents. The data series are usually seasonally adjusted and the cyclical profiles are easy to detect given the absence of long-term trend in such responses.

Before employing the indicators gathered through such surveys, it is important to establish that such information truly tracks the business cycles. The Markov-switching (MS) regression or hidden Markov models (HMM)[1] for regression techniques have an edge over other techniques such as ordinary least square (OLS) because of ability to capture asymmetry in business cycle expansion and recession (Burns and Mitchell, 1946).

Extensions of HMMs to determine the growth rates and business cycle turning points were studied by Hamilton (1989). Later, Diebold and Rudebusch (1996), Kim and Nelson (1998), Filardo and Gordon (1999), Chauvet (1998) and Camacho *et al.* (2012) combined the characteristics of factor models and MS models by allowing MS features in determination of factor. Such time-varying MS regression models have found applications in capturing business cycle fluctuations from leading indicators for the French economy (Bardaji, 2009), studying the economic situation in Poland (Bernardelli, 2015), detecting turning points in the American business cycle (Bellone and Saint-Martin, 2003).

In the Indian context, previous research has already shown that factor indices derived from responses to IOS yield lead indicators for tracking manufacturing activities in India (Ansari and Majumdar, 2019). The present work aims to supplement the existing research in this area by exploring the application of MS regression models using survey responses for detecting turning points in the Indian business cycle.

3. IOS in 2018-19: Some Stylised Facts

The Reserve Bank's IOS encompasses a panel of 2,500 manufacturing companies with paid-up capital of above ₹ 50 lakhs, which undergoes periodic revision with addition of newly formed companies and removal of closed or merged companies. The respondents comprise of senior management personnel or finance heads of enterprises and the response rate hovers around 45-50 per cent. The survey schedule seeks responses to qualitative questions on 23 parameters[2] to gauge information about the current situation as well as outlook/expectations for the next quarter. The questions on stock variables (*viz.*, production capacity, pending orders, level of capacity utilisation, inventories) seek a comparison with the normal situation, whereas, sequential responses, *i.e.*, changes over the previous quarter, are sought for flow variables (*viz.*, change in production, order books, exports, imports, availability of finance).

[1] For an existing unobserved or hidden Markov chain on state space S, an observed time series is related to a set of covariates through different regression planes. The regression planes depict the relationship between the dependent and independent variables with distinct regression parameters under different states of the unobserved Markov chain (Annex - I).

[2] Parameters are overall business situation, financial situation, working capital finance requirement, availability of finance, production, order books, cost of raw material, cost of finance, inventory levels (both raw material and finished goods), employment, exports, imports, capacity utilisation indicators, selling prices and profit margins.

3.1 Methodology

The survey responses are quantified using single summary statistic called the Net Response (NR), which is generally defined as the difference between the proportions of optimistic and pessimistic responses. NR can take values spanning from -100 to +100. Positive values of NR signal growth/ optimism while a value below zero indicates contraction/ pessimism[3]. The zero value is interpreted as 'status quo'. However, for sake of comparison with the target macroeconomic indicators in this article, we have maintained the convention of defining NRs of all parameters as the excess of proportion of respondents indicating "increase" from that indicating 'decrease', thus positive NR would indicate an 'increase' and negative value of NR would signify a 'decline'. In the rest of this article, the proportion of respondents indicating "no change (NC)", has also been included in conjunction with the NRs for comprehensive presentation.[4]

3.2 Demand Conditions

Sentiments of Indian manufacturers on select parameters such as production (PR), order books (OB), capacity utilisation (CU), stock of raw material inventories (INV) and employment (EMP) are indicative of aggregate demand conditions in the economy.

The net responses for assessment of production (NRA-PR) during 2018-19 maintained proximity with the peak level of recent years which was attained in Q4:2017-18, pointing to steady demand conditions during the period. During the year, net responses on expectations of production (NRE-PR) perceived a quarter back was found to co-move with the assessment realised subsequently[5]. Expectations for Q1:2019-20 pointed to some moderation as compared to Q4:2018-19. Feedbacks of manufacturers on production, as captured by NRA-PR and NRE-PR, broadly corroborate the trend traced out by the quarterly growth of IIP (Chart 1a). The proportion of respondents indicating "no change" on production (NCA-PR and NCE-PR) hovered around 48 per cent during the entire period.

Manufacturers' perceptions on another indicator of demand such as order books (OB) mirrored their views on production largely in both assessment and expectations periods. While order books dipped slightly in Q3:2018-19 and thereafter remained stable in Q4:2018-19, the outlook for Q1:2019-20 showed some moderation from Q4 (Chart 1b). Capacity utilisation outlines the portion of installed capacity actually utilised by an enterprise in its production process and is recorded by a quantitative survey of the Reserve Bank, namely order books, inventories and capacity utilisation survey (OBICUS) for the Indian manufacturing sector. The assessment on CU, as captured by the IOS, evolved in the direction similar to the actual CU as measured by OBICUS and the outlook for the first quarter of 2019-20 was seen to moderate in concordance with the movement of actual CU (Chart 1c).

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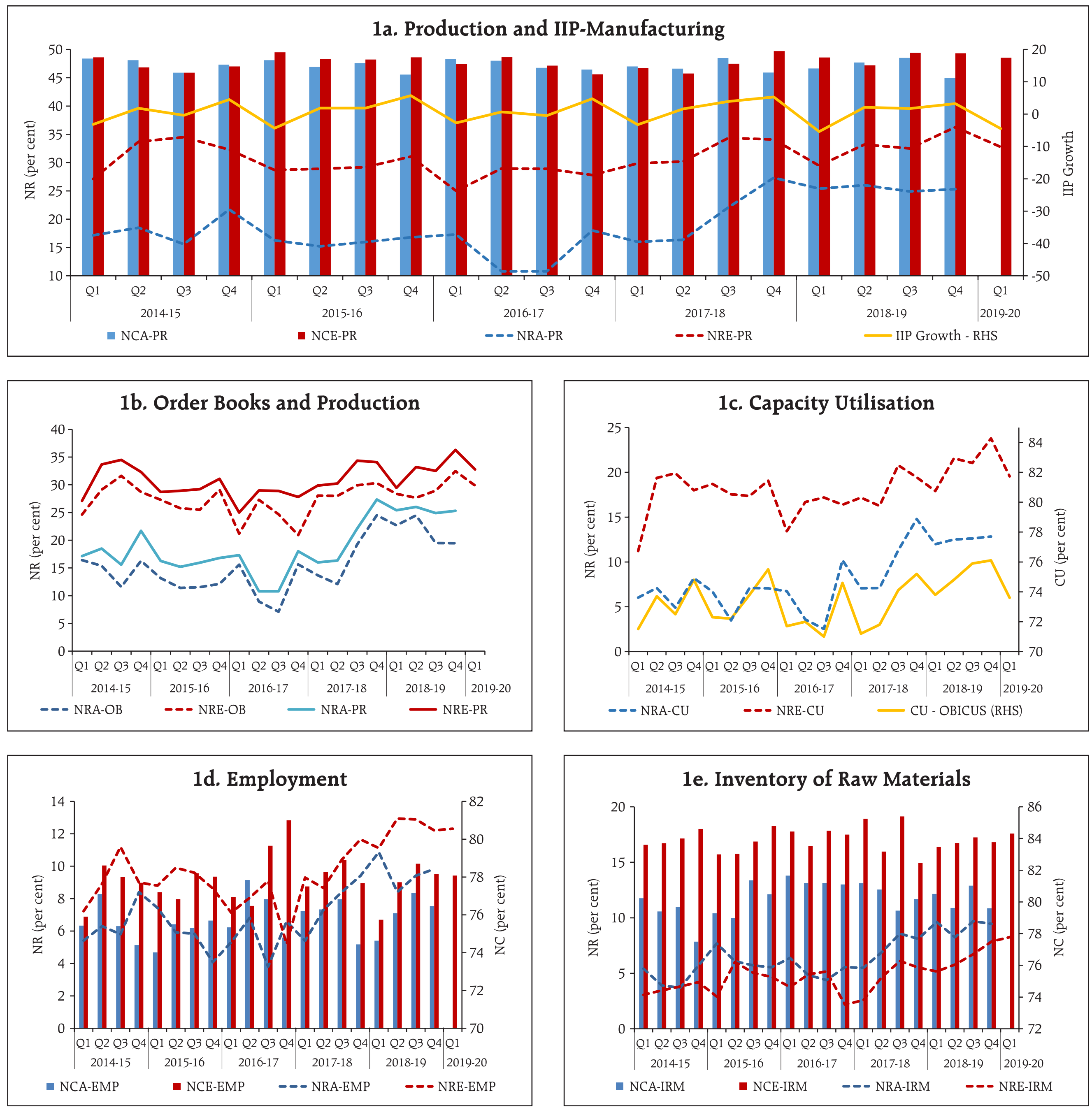
3 Usually, an increase in NR is considered to be optimistic in case of demand parameters such as production, order books, capacity utilisation *etc.*, price indicators like selling prices. Though, for all cost related parameters such as cost of raw materials, cost of finance *etc.*, a decrease in NR signifies optimism. However, this convention has not been used in this article.

4 If I, N and D represent the percentage of increase, no change and decrease to a particular parameter then NR = 100 × (I – D) and NC = 100 × N. For example, if the proportions of respondents indicating an "increase", "no change" and "decrease" in the study variable as compared to the previous quarter are 15 per cent, 85 per cent and 0 per cent respectively, net response of 15 per cent would reveal that respondents assessed an "increase" in the study variable, overshadowing the fact that a majority proportion voted for "no change" in consensus. On the other hand, if the respective proportions are 48 per cent, 4 per cent and 48 per cent, net response of 0 per cent in this case might lead to conclude about a no-change scenario, whereas, in reality such situation depicts a case of complete disagreement among the respondents resulting in inconclusive direction of movement of the target variable. In general, NC of at least 50 per cent would lead to more conclusive consensus of "status quo" among respondents. Therefore, very high or low values NCs are presented in charts.

5 NRA-PR and NRE-PR denote the net responses for assessment and expectation on production. NCA-PR and NCE-PR are proportions of no-change responses for assessment and expectations on production. These representations are uniformly used for all other parameters discussed in this article. Likewise, the corresponding measures have been used for other parameters such as order books (OB), employment (EMP), inventory of raw materials (IRM), capacity utilisation (CU), overall financial situation (OFS), cost of external finance (CoF), cost of raw materials (CRM), selling prices (SP), profit margins (PM) and overall business situation (OBS).

Employment, another yardstick to gauge business climate, is captured in the survey and the parameter includes all cadres of employees (like part-time, full-time and casual labourers). Sentiments on employment had been on an improving spree for four consecutive quarters till Q1:2018-19, which was followed by a dip in Q2:2018-19 and remained stable through the remaining part of the year. The proportion

Chart 1: Sentiments on Demand Conditions



of responses indicating "no change", typically around 75 per cent, tends to dominate the responses on this parameter (Chart 1d).

Inventories of raw materials (IRM) witnessed gradual ascent starting Q1:2017-18 which sustained in the outlook for Q1:2019-20. The responses to this parameter can be mainly categorised as NC (at around 80 per cent) since companies generally set a fixed level of raw materials except during periods of large variations in demand and/or prices (Chart 1e).

3.3 Financial Situation

A sound financial situation of a company is reflective of its own strength as well as overall optimistic business environment, giving an impetus to investments. During 2018-19, the respondents expressed waning optimism on overall financial situation (OFS) for the first three quarters, with slight improvement in the fourth quarter which sustained in the outlook for Q1:2019-20 (Chart 2a). Manufacturers indicated edging up of cost of external finance (CoF), as reflected by the gradual shoring up of NRs from the onset of 2018-19; however, Q1:2019-20 pointed to some respite (Chart 2b).

3.4 Price Scenario and Profitability

Net responses on select parameters such as cost of raw materials, selling prices and salary outgo relay the sentiments on price scenario in the manufacturing sector. Cost of raw materials (CRM) spiked up during the initial half of 2018-19 and eased thereafter. The survey feedbacks on CRM closely track the movements in WPI inflation for raw materials (Chart 3a).

Mellowed input costs, especially of raw materials, were passed on to consumers leading to softening of selling prices to some extent, as indicated by descending NRs on selling prices (SP) from Q2:2018-19 (Chart 3b).

The interplay between input costs incurred during production process and selling prices (ex-factory unit prices) bear significance in determining the profit margin of manufacturers. Recovery in

Chart 2: Sentiments on Financial Situation

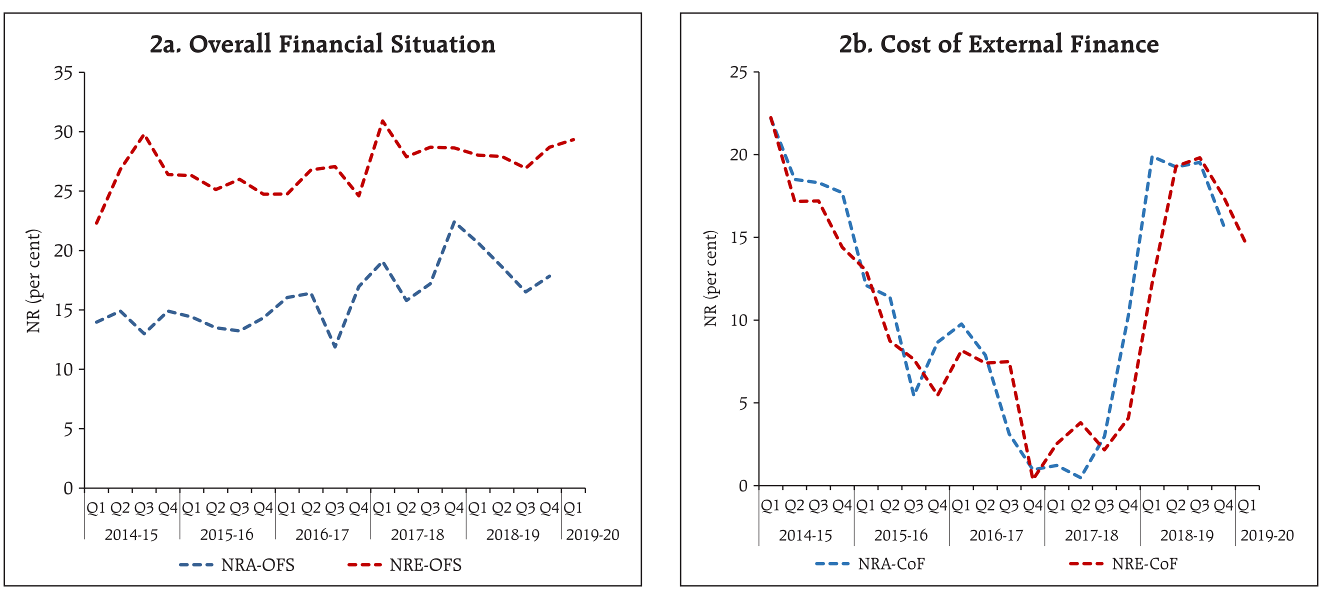
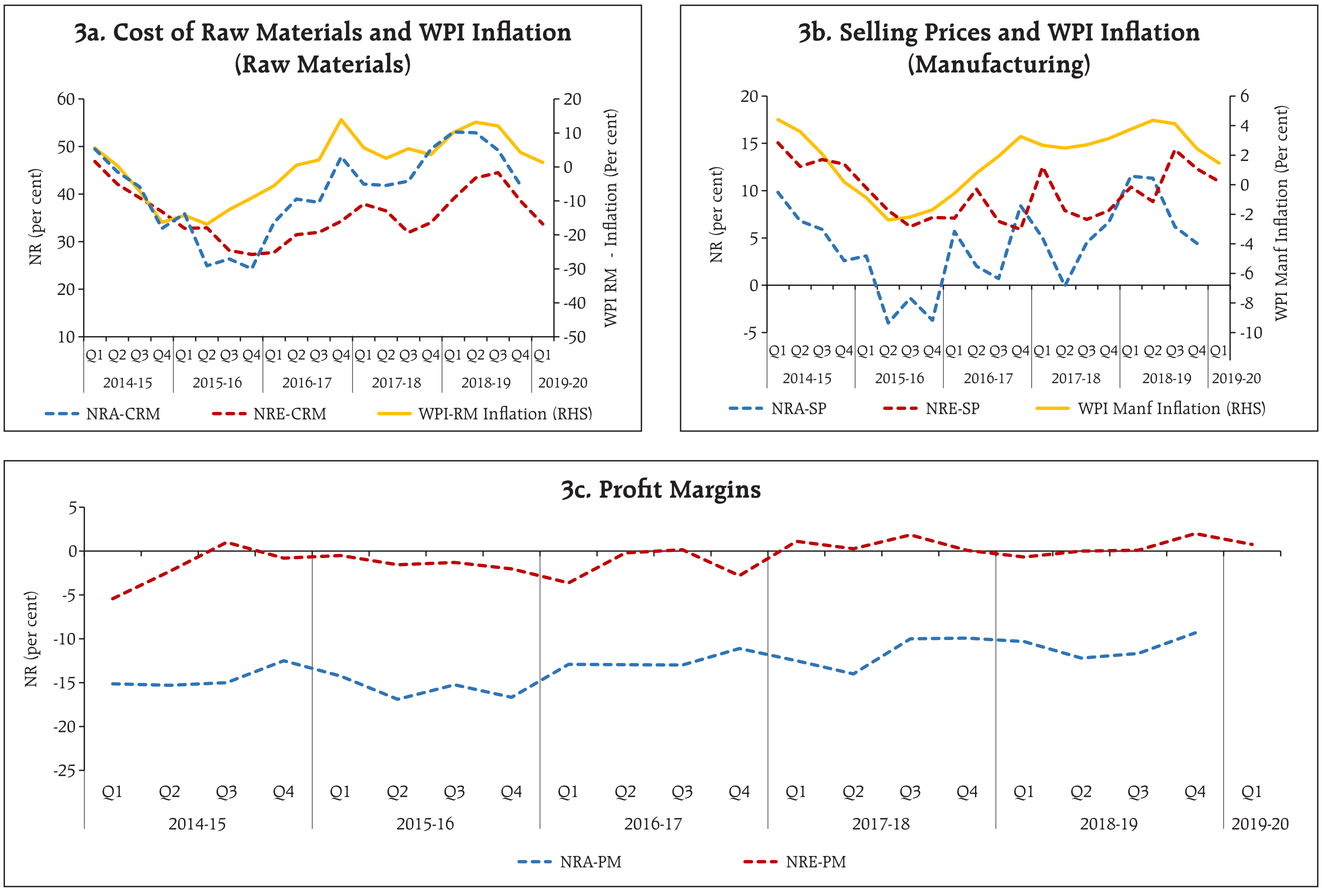


Chart 3: Sentiments on Price Scenario and Profit Margins



profit margins (PM) (gross profits as percentage of net sales) from Q3:2018-19 mostly stemmed from alleviated cost pressures. Expectations on profit margins for Q1:2019-20 continued to be positive (Chart 3c).

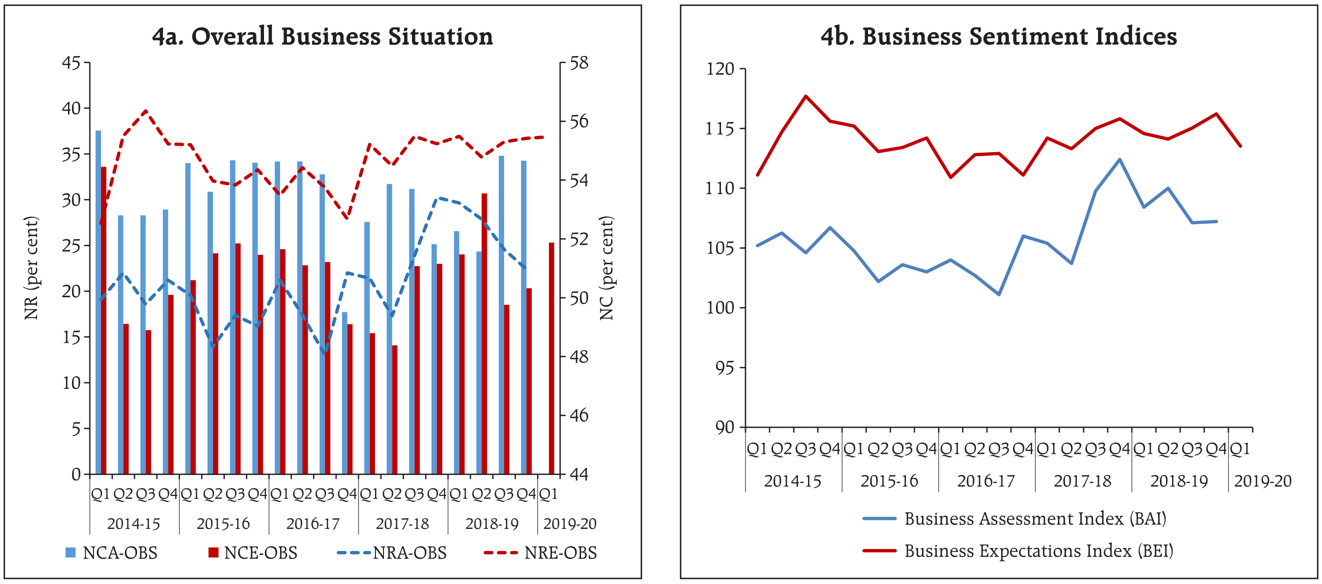
3.5 Overall Business Conditions

Manufacturers also expressed their views about the business ambience, in general. Nearly half of the respondents polled that the overall business conditions were slated to maintain "status quo" through 2018-19. NRs based on the opinion of the rest of the respondents remained positive through the reference period, though there was a marked cautious descent from its level in Q4:2017-18. The outlook for Q1:2019-20 remained steady at a level since Q3:2017-18 (Chart 4a).

The NRs on select business parameters are combined into composite indices[6] namely, business assessment index (BAI) and business expectations index (BEI) to portray the prognosis of business climate in a snapshot. By construction, the index ranges from 0 to 200 with the 100 mark separating expansion from contraction. The index declined slightly from its level in Q4:2017-18, however, remained in the zone of expansion throughout 2018-19. BEI for Q1:2019-20 stood at 113.5, sliding down from 116.2 in Q4:2018-19 (Chart 4b).

[6] The Business Assessment and Expectations Indices are composite indicators derived as weighted average (share of GVA of different industry group) of net response on (1) overall business situation; (2) production; (3) order books; (4) inventory of raw material; (5) inventory of finished goods; (6) profit margins; (7) employment; (8) exports; and (9) capacity utilisation.

Chart 4: Sentiments on Overall Business Conditions



4. Empirical Analysis: An Alternative Approach to Study Dynamics of Manufacturing Activity

In order to evaluate how well the net response (NR) indicators track business cycle, the Hidden Markov Model Regression (HMMR) technique was employed in line with the existing literature (Bardaji, 2009; Bernardelli , 2015; Bellone and Saint-Martin, 2003). With an aim to develop a robust relationship between survey parameters and related macroeconomic indicators, data spanning from Q1:2000-01 to Q1:2019-20 was considered for the purpose of analysis. The entire sample of observations was bifurcated into training and test sets after seasonal adjustment. For exploration purpose, a simple two-regime Markov model was considered. Macroeconomic indicators for manufacturing demand and prices *viz.*, manufacturing IIP growth and manufacturing WPI inflation, were regressed on NRs (expectations) on production and selling prices respectively, to obtain estimates of regression parameters for each state of the underlying Markov process (Annex - I). Out-of-sample predictions corresponding to Q1:2017-18 till Q1:2019-20 for the dependent variables and states of the underlying unobserved Markov chain were made on a rolling basis and an additional data point was incorporated at each successive iteration[7].

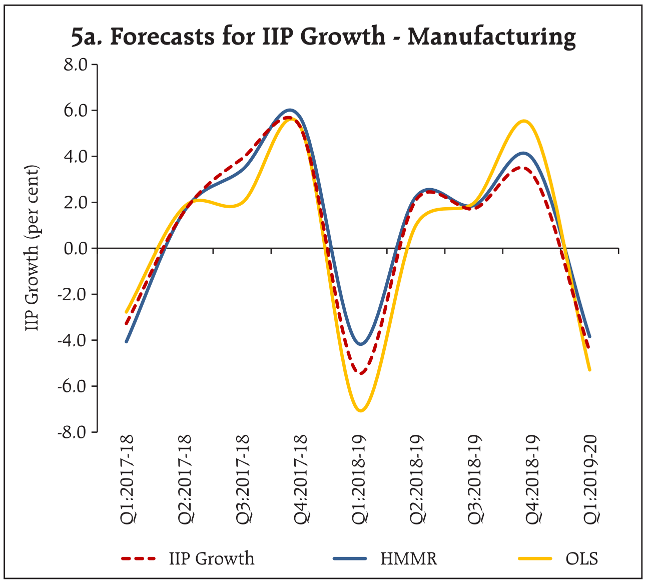
For comparison purpose, ordinary least squares (OLS) regression was performed on the same set of time series observations and out-of-sample forecasts were calculated likewise on a rolling window. The findings suggest that the HMMR model forecasts both macro indicators of demand and prices better as compared to OLS regression model (Table 2). While forecasts based on both HMMR and OLS were found to move in tandem with actual manufacturing IIP growth, HMMR tracked IIP more closely in comparison (Chart 5a). Trajectory of manufacturing WPI inflation, on the other hand, was portended with more accuracy by forecasts based on HMMR (Chart 5b).

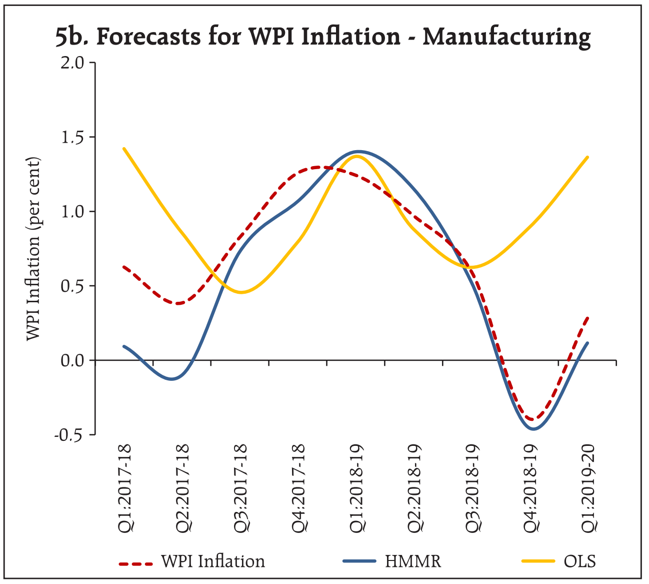
Table 2: Error in Out-of-Sample Forecasts

Parameters	Root mean squared error		Mean absolute error	
	HMMR Model	OLS Model	HMMR Model	OLS Model
Production	0.63	1.19	0.51	0.94
Selling Prices	0.27	0.67	0.22	0.52

7 Forecasts were re-adjusted with corresponding seasonal factors for ease of comparison with the target macro-economic indicators.

Chart 5: Comparison of Out-of-Sample Forecasts





5. Concluding Observations

The four rounds of IOS conducted during the year 2018-19 indicated optimistic demand conditions as evident in sentiments on production, order books, capacity utilisation and employment; though, the outlook for the first quarter of 2019-20 remained subdued. The overall financial situation, though garnered optimism from majority of respondents, waned off gradually during the year with Q1:2019-20 pointing to some improvement. Manufacturers allayed concerns regarding cost of external finance. On the prices front, sentiments on input costs showed softening of pressures on enterprises, especially during the latter half of 2018-19, which translated to reduced burden on consumers in terms of lower selling prices. Forecasts based on HMMR model using responses from the survey were found to track the movements of IIP growth and WPI inflation for the manufacturing sector.

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Annex - I

Hidden Markov Model Regression (HMMR): For an existing homogeneous ergodic Markov chain $\{Q_t\}_{t=1}^{T}$ with matrix of transition probabilities A and state space $\{S_1, S_2, \ldots\ldots, S_N\}$, HMMR model is defined as:

$$Y_t = X_t^T \beta_{Q_t} + \sigma_{Q_t} \varepsilon_t \qquad 1 \le t \le T$$

where, the error terms ε_t are independent and identically distributed as N(0,1).

Y_t = IIP growth/WPI inflation, X_t = NRs on production/selling prices, β_{Q_t} = regression parameters associated with state t.

The parameter estimates in the training sample are presented in Table A1 and A2 for regressions on IIP growth and WPI inflation respectively.

Fundamental assumption of the model is that at any time point, the time dependencies between the observations are due to time-dependencies between the states assumed to follow a first-order Markov process. For hidden Markov models, the marginal log-likelihood of the observations is computed by forward-backward algorithm (Baum *et al.* 1970) and the parameters are estimated by iteratively maximizing the expected log-likelihood.

State Estimation: The Viterbi-algorithm (Zucchini 2005) globally decodes the underlying hidden Markov state and predicts the most probable sequence of Markov states given the observed dataset. This is done by determining the sequence of states $(s_1, s_2, \ldots, s_N)$ which maximises the joint distribution of the hidden states given the entire observation process, *i.e.*, argmax $Pr(S_1 = s_1, S_2 = s_2, \ldots S_N = s_N / y_1, \ldots, y_t, x_{1,\ldots,} x_t)$

For expositional purposes, we have attempted two states, though there is some empirical evidence that three states, representing recession, high growth and normal growth, can lead to improvements (Kim and Murray 2002 for US economy, Artis *et al.* 2004 for the Euro area).

Table A1: In-sample Parameter Estimates for IIP Growth

VARIABLES	HMMR (State 1)	HMMR (State 2)	OLS[8]
NRE-Production	0.010 (0.991)	0.062 (2.425)	0.061 (1.138)
Constant	0.707	-0.210	-0.637
N	68		
RMSE	1.87		1.92

Note: standard errors in parentheses; State 1 associated with period of lower growth and State 2 denotes period of higher growth.

Initial state probabilities assumed State 1 as certain, *i.e.*, probability=1. The transition matrix is given as:

	State 1	State 2
State 1	0.965	0.035
State 2	0.034	0.966

Table A2: In-sample Parameter Estimates for WPI Inflation

VARIABLES	HMMR (State 1)	HMMR (State 2)	OLS
NRE-Selling Prices	-0.015 (0.034)	0.026 (0.007)	0.022 (0.015)
Constant	1.306	-1.674	-1.448
N	68		
RMSE	0.62		0.87

Note: standard errors in parentheses; State 1 associated with period of lower inflation and State 2 denotes period of higher inflation.

Initial state probabilities assumed State 1 as certain, *i.e.*, probability=1. The transition matrix is given as:

	State 1	State 2
State 1	0.632	0.368
State 2	0.063	0.937

[8] OLS regression models were evaluated on one-quarter, two-quarters, three-quarters and four-quarters growth of respective macro-economic variables. Based on lowest error measures of in-sample predictions, one-quarter growth of macro indicators of demand and price were regressed on the corresponding NRs from survey for the purpose of the study.

*Distributed Ledger Technology, Blockchain and Central Banks**

Distributed Ledger Technology (DLT) and blockchain have developed considerably in features and complexity to offer solutions to various industries including the financial sector. Some central banks have undertaken pilot projects to study and understand DLT and explore the potential benefits for their operations and the financial systems. So far most of these projects have been experimental in nature to explore the viability of conducting inter-bank settlements, settlement of digital assets and tokens and cross-border payments across DLT platforms with functionalities of the existing system. In the Indian context, increasing support from the Reserve Bank of India and the Government of India for innovations and emerging technologies through regulatory sandbox and various other schemes would pave the way for the new economy, enriched with technology-centric growth momentum.

Introduction

From the ashes of global financial crisis (GFC) emerged a white paper titled, 'Bitcoin: A Peer-To-Peer Electronic Cash System' (Nakamoto, 2008), providing a guide-path to revolutionise the financial system. Since then, the world has rapidly evolved from Bitcoin and initial designs of blockchain to customised blockchains to suit the demands of various industries. At present, there are more than 2,000 cryptocurrencies[1] listed on major cryptocurrency exchanges, and numerous start-ups on blockchain across the world. Blockchain has become a catchword and no discussion on FinTech is complete without its reference. Such increase in popularity in the span of a decade reflects the innate revolutionary features that blockchain offers and its appeal to the technically proficient entrepreneurs. Despite several instances of bubble bursts involving cryptocurrencies, their valuation at present stands around $255 billion[2]. Blockchain and DLT have gained popularity in recent years, following the rally in the valuation of cryptocurrencies witnessed during late 2017, recovery in June 2019 and recent gains in the wake of the coronavirus outbreak. Due to the heightened interest in cryptocurrencies, even BigTech firms are increasingly occupying the space in FinTech, which had been primarily the domain of start-ups.

The FinTech firms offering blockchain technology based solutions to remittances and international payments are rapidly disrupting and challenging market players. Central banks and other authorities are increasingly realising that they could reap benefits from this technology in terms of reducing risk, preventing fraud and executing monetary policy more effectively (De Meijer, 2018). Accordingly, some central banks have embarked on an ambitious journey to facilitate and guide the industry in a non-disruptive manner while preserving financial stability and ensuring the development of financial market infrastructure using DLT. Despite the huge interest among public in blockchain and DLT, there appears to be a gap in the information about these emerging technologies. Several central banks and other regulatory authorities have shown caution in embracing this technology due to various regulatory challenges associated with the complexity of this technology primarily arising from "the fast-moving vocabulary around blockchain technology and the challenges this unstable verbal terrain poses for regulators" (Walch, 2016). Here, it is useful to consider the proverbial statement of Charles Kettering, 'a problem well stated is half resolved'. It is from this perspective that this study is motivated to provide a simplified understanding of DLT and blockchain and their applications by central banks; the learnings from the study may also be useful in the Indian context.

The remainder of the article is organised in six sections comprising fundamentals of DLT and

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1 As of January 2020. Available at: *https://www.investopedia.com/tech/most-important-cryptocurrencies-other-than-bitcoin/*

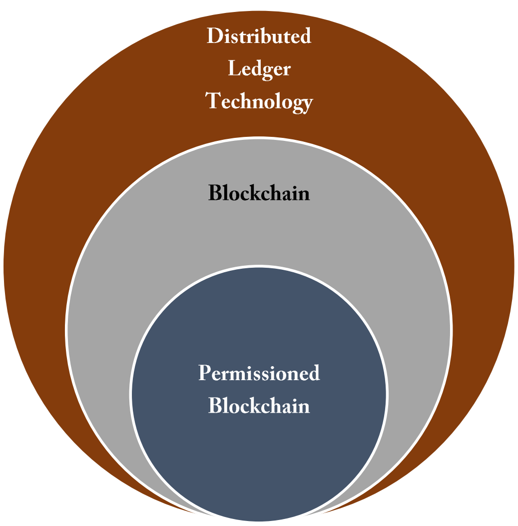
2 As on January 31, 2020. Available at: *www.coinmarketcap.com*

blockchain, recent developments and issues in DLT, the DLT projects implemented by various central banks, central bank digital currencies (CBDCs), the potential applications of DLT in Indian financial space and conclusion.

II. Fundamentals of DLT and Blockchain – Key Concepts

The terms DLT and blockchain are often used interchangeably. However, it is important to understand the distinction. Blockchain, a linearly connected chain of blocks, is a specific type of DLT, whereas DLT is a decentralised ledger, which may not be a linear chain, among various participants who agree on a common state of the ledger and validates the new information/transactions and updates the ledger. Thus, all blockchains are DLT; however, all DLT platforms are not blockchains (Chart 1). A DLT is not a blockchain if the distributed ledger is not in the form of linearly connected blocks. To illustrate, Hedera Hashgraph[3] developed by Leemon Baird in 2016 is not a blockchain but comes under the DLT umbrella.

Chart 1: Blockchain as type of DLT



Source: Cambridge Centre for Alternative Finance (2017), "Global Blockchain Benchmarking Study"

[3] Hedera Hashgraph is a distributed ledger platform that aims to achieve high transaction throughput along with enhanced security features through hashgraph consensus algorithm. Hashgraph data structure, unlike blockchain, does not prune the branches of tree but are embedded in the body of the ledger.

DLT, as the name suggests, is distribution of a common ledger to all the participants of the network, and it is important to ensure that everybody has the same ledger with specific conditions and process for updating the ledger with information related to ownership of tokens. In other words, it is inherently a publicly shared ledger of who owns what. In contrast to centralised systems where a single entity maintains the database, DLT allows multiple entities to store a copy of the ledger and compete to update the ledger independently while following the rules of the system. A valid update to the ledger by a node becomes the new ledger for all other nodes of the system. Participants of the network agree to specific rules for changing the ledger and the process through which all participants validate transactions or modify the ledger is called consensus algorithm. Blockchain can be considered as a form of DLT where linearly connected information-containing blocks, secured by cryptography, are shared between participants. It is this fundamental difference that allows participants to engage in digital transactions without the need of a centralised trusted party that makes DLT a remarkable innovation. DLT is not a completely new technology but a combination of known technologies such as cryptography, peer-to-peer (P2P) networks, and consensus mechanisms/algorithms.

II.1 Cryptographic hash functions

As the most important building block of blockchain, a cryptographic hash function is a special type of function which takes input of any size and converts it to a small and fixed size output, called hash. The same input will always give the same hash, thus making it deterministic. It is practically irreversible in nature, implying that one cannot estimate the input data from a given hash value and most importantly it is collision free, *i.e.*, no two inputs will give the same hash. Also, even a small change in the input generates a very different output, which makes cracking the output very difficult (Table 1).

Table 1: Different Hash Outputs of Similar Inputs

Hash Function	Hash Value
SHA256('India')	abd149214539d9f222d25de6358735b9fa0efd3956f66102b2c119ae2d9f6348
SHA256('india')	fb54e9062429a93785559529beda15c55f62c29be22267811c0e8346c14846d3

Source: Computed using *sha256* function of *hashlib* library in Python.

II.2 Public-Private key cryptography

In public key cryptography, every individual has own unique set of public-private key pair. To ensure transfer of messages without eavesdropping on the contents, one can encrypt the message using the public key of the intended recipient, who on receiving the encrypted message/document can decrypt it using own private key (public key is used for encryption and private key used for decryption, though it can work in reverse also). *Public key* cryptography is used to send the message to the right recipient in a secured manner, whereas *private key* cryptography can securely determine the source of the message/transaction.

II.3 Nodes

Nodes are the points in a network through which an individual or an entity interacts with the network. In a DLT platform, nodes interact with each other to pass on information or conduct transactions. There can be different types of nodes with different functions in a DLT platform. For example, in blockchain based on Delegated Proof-of-Stake consensus protocol, there are two types of nodes, regular users and witnesses. In a permissionless system, anybody can join the network and become a node. However, in a permissioned system, one can become a node only after satisfying the predefined conditions.

II.4 Tokens

Tokens are units of objects, physical or virtual, which can also express ownership of an object. In principle, anything can be tokenised which results in different type of tokens such as payment and utility tokens, based on intended function. Tokenisation refers to the generation of tokens which is a digital representation of an object in DLT. Native token for a blockchain can be used as payment token. For example, Bitcoin blockchain has Bitcoin token as the native payment token, where the blockchain records the transactions of their Bitcoin tokens. An example of utility token is Filecoin which allows the token owners to store data on the network (Protocol Labs, 2017).

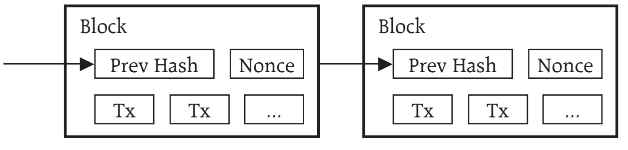
II.5 Blocks in a blockchain

The main purpose of blocks is to record transactions. Use of cryptographic hash functions ensures that the blocks are valid and tamper-proof. A block's validity is defined by a blockchain protocol or consensus protocol/mechanism. In a blockchain, blocks are connected linearly like a chain using cryptographic hash functions, where contents of each block in the chain begins with the hash value of its previous block (Chart 2), thus forming a chain of blocks connected through hash value (Nakamoto, 2008).

II.6 Proof-of-Work (PoW)

It is a type of consensus mechanism for nodes to agree on validity of transactions in blockchain. Other categories of consensus algorithm are discussed subsequently. Under the PoW protocol, the process of creation of new blocks is referred to as mining and nodes which engage in mining as miners. It is one of

Chart 2: Chain of Blocks



Source: Bitcoin: A Peer-to-Peer Electronic Cash System, Available at: www.bitcoin.org the many consensus mechanisms and is being used in many blockchains such as Bitcoin and Ethereum[4]. It requires nodes to solve a mathematical puzzle (find hash value of the block which is less than a threshold value by changing *nonce*, a variable in the block) which can only be solved through trial and error basis and hence it requires significant computation power to create valid blocks in the blockchain. Bitcoin blockchain limits the number of blocks to be added in a given time which is one block per 10 minutes by adjusting the difficulty threshold. A major drawback with PoW is that with rising prices of Bitcoin, huge computation power is put to Bitcoin mining, thus resulting in substantial electricity consumption.

II.7 Why use DLT?

In real life, to provide for ownership of an object such as housing, cars, *etc.*, there is a physical document issued by an authorised institution which is accepted by the public. Some of the major issues with this form of proof of ownership is the verification process and proliferation of counterfeit certificates. In DLT, every account has a digital *public key* and *private key* pair which is used to sign and encrypt blocks, using hash functions. This mechanism forms the backbone of the DLT structure. Here, the ownership is mentioned in a publicly shared electronic ledger which is made tamper-proof through cryptography. The authenticity of transactions is ensured through use of *private key*, which is used to sign transactions and thus providing proof that it came from the owner which can be verified easily by using its *public key* pair.

III. Recent Developments and Issues in DLT

Blockchain has come a long way from its conception with Satoshi Nakamoto's paper of 2008. While cryptocurrency was the first of its applications, currently different applications have gained momentum. Initial shortcomings of first generation of blockchains include limited applications, slow transaction confirmations, limited throughput, no privacy and large energy consumption. These shortcomings are being resolved using new techniques such as sharding, alternative consensus mechanisms such as Proof-of-Stake, and permissioned blockchains for special applications, such as wholesale interbank settlements (Proof-of-Concept projects by Bank of Canada and Monetary Authority of Singapore). Interoperability between blockchains are being developed for cross-platform functionality. Increased demand for different solutions have led the development of other DLT platforms, such as Quorum, Corda, Hyperledger, *etc.*

III.1 Proof-of-Stake (PoS)

To overcome the limitations of 'proof-of-work', *i.e.,* wastage of energy and slow confirmation of transactions, researchers have developed PoS-based consensus algorithms where anyone holding tokens can participate in the process of creation of new blocks. In PoS, blocks are not mined but forged. The influence of nodes on the blockchain is proportional to their amount of stake in the system. This is substantially efficient than the mining process in PoW (Buterin & Griffith, 2017).

III.2 Permissioned versus Permissionless DLT

Based on the ability to authenticate transactions, a DLT can be classified as permissioned (prior approval to participate necessary) or permissionless (anyone can participate). Most of the first generation blockchains are permissionless such as Bitcoin and Ethereum. Permissionless DLT systems are highly transparent, as everyone can see all the transaction on the ledger. However, they are also time consuming to operate, and not fit for solutions which require privacy of transactions. To overcome the limitations of permissionless systems and fulfil the specific needs of certain groups like banks and companies, permissioned DLT platforms were started. By its nature, the access to validate transaction are given to select agents. To solve for the requirements of privacy, DLT can be designed so that an agent can see only its own transactions and not of others. This is an important requirement by business and financial agents.

[4] Proposed to shift to Proof-of-Stake protocol

III.3 Smart Contracts

These contracts are basically lines of code or logic on DLT that execute themselves after the predetermined conditions are met. These can be interpreted as digital agreements where once the terms of the agreement are met, then the smart contract verifies it and transfers the tokens as per the terms (Buterin, 2013). A simple example of a smart contract is that once a payment is received it is automatically split and sent to the predetermined individuals. A smart contract can interact with other smart contracts and, thus, grow in terms of complexity. Smart contracts have been applied in various pilot projects of the central banks and other institutions in services like trade finance, settlement of securities, *etc.*

III.4 Blockchain Interoperability

There are many blockchains and DLT platforms operational in the world. These DLT platforms are made for specific use cases and can communicate with each other to deliver desired services. This feature of the DLT is often compared with Internet, which is a network of networks. Interoperability implies that based on a transaction occurring in a single DLT platform, another transaction will occur in a different DLT platform. Such interoperability is useful in cross-border payment transactions as demonstrated by Bank of Canada's Project Jasper and Monetary Authority of Singapore's Project Ubin (Bank of Canada *et al*, 2018)

III.5 DLT and Blockchain Platforms

DLT and blockchains should not be construed only as means to send cryptocurrencies but also as platforms to build larger applications. Each DLT platform is, by construct, unique with its own sets of features and associated advantages and disadvantages. Thus, it is important to select the right platform for the application in hand. Development of such platforms are depicted in the timeline starting from Bitcoin (Chart 3).

IV. DLT in Central Banks

Blockchain gained its popularity from Bitcoin, a cryptocurrency. Since it was infringing the domain of the central bank, which is the sole issuer of currency in an economy, by offering an alternative form of private currency, central banks across the world began to monitor the risks posed by cryptocurrencies. However, while monitoring these developments, central banks exhibited an optimism and interest in blockchain-based applications apart from cryptocurrencies.

In August 2016, the World Economic Forum (WEF) published a report 'The future of financial infrastructure', which provided details of the possible ways in which blockchain can reshape financial services with applications ranging from payments

Chart 3: Development of Several DLT Platforms

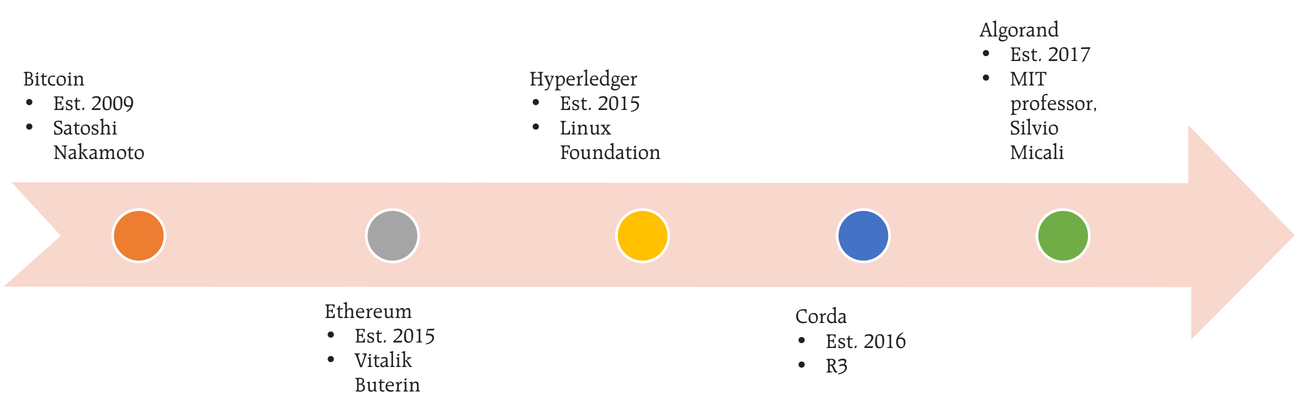
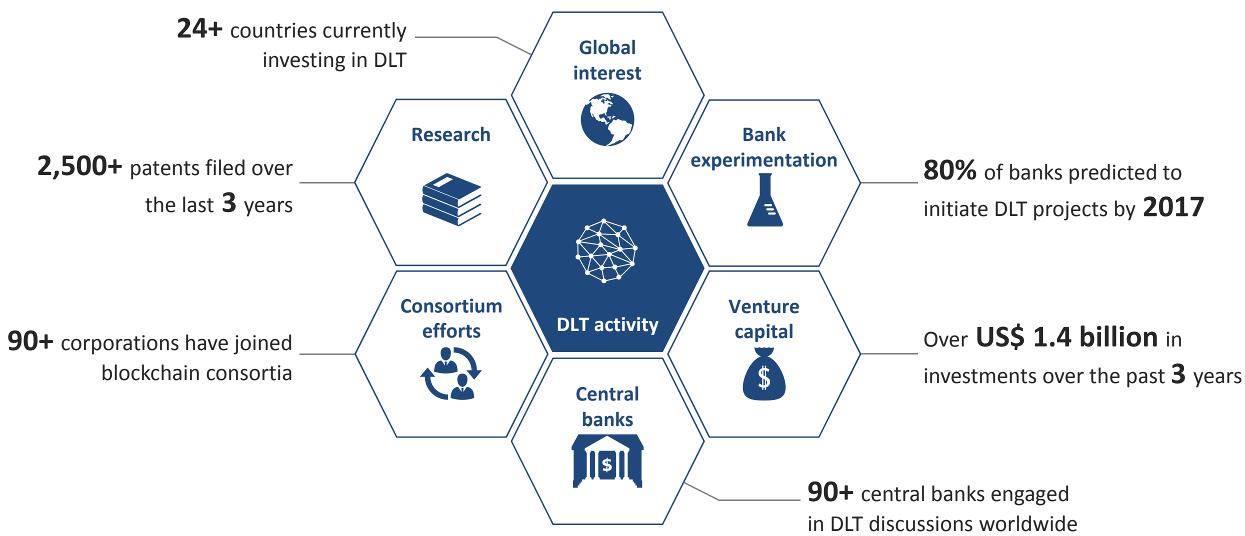


Chart 4: Increased DLT Adoption in Institutions



Source: World Economic Forum, Future of Finance 2016

to equities settlements (Chart 4). Central banks, entrusted with the responsibility of developing financial infrastructure, realised that they could facilitate innovations in a rapidly evolving digital landscape. Moreover, it was also acknowledged that the participation of central banks could bolster the security and stability of these platforms, while enhancing the resulting efficiencies for the financial sector.

Recently, Bank of Canada and Monetary Authority of Singapore in their projects tried cross-border payments across their respective blockchain network. The interest of central banks in DLT was heightened further in second half of 2019, as the proposed launch of Libra by Facebook was announced in a white paper in June 2019.

In the last five years, several central banks have initiated projects (Annex) to study and use DLT technology so as to assess the potential applications of DLT in financial infrastructure. The objective of most of the projects is not to replace existing financial infrastructure, but an investigative one which is to study the viability of existing systems on a new decentralised platform. Such projects are primarily aimed at improving the understanding of DLT among central banks and explore the feasibility of implementing CBDC in financial infrastructure in a phased manner.

IV.1 Bank of Canada (BoC): Project Jasper

Bank of Canada started Project Jasper in March 2016 in collaboration with Payments Canada, R3 and canadian commercial Banks to study and understand DLT and its application in the financial ecosystem. It developed proof-of-concept (PoC)[5] of DLT-based wholesale inter-bank payment system in phase 1 using Ethereum platform. Members of the network use digital depository receipts (DDRs) issued by Bank of Canada to transact and settle interbank payments, which would be settled finally against deposits of banks with the Bank of Canada. In phase 2, more functions were added such as Liquidity Saving Mechanism (LSM) on Corda platform, where privacy of transactions was ensured between financial institutions. In phase 3, the project extended the application of DLT to settlement of securities against DDRs on the distributed ledger. In phase 4, the project collaborated with other central banks to use DLT for cross-border and cross-currency

[5] Proof-of-Concept (PoC) is meant to determine the feasibility of an idea or to verify that the idea will function as envisioned.

settlement system. Overall, the project concludes that DLT-based applications may lead to efficiency gains and cost savings. However, to realise such benefits, it is important to expand the coverage of assets on distributed ledger along with participants in the network.

IV.2 Monetary Authority of Singapore (MAS): Project Ubin

Monetary Authority of Singapore (MAS) along with other financial institutions and R3 started Project Ubin in November 2016 to develop and produce a PoC to conduct inter-bank payments using DLT-based digital cash-on-ledger. This project leveraged the experience gained by R3 in Project Jasper and applied it to Project Ubin in the context of Singapore. In phase 1 of the project, a prototype for wholesale interbank payment was developed on Ethereum blockchain. In the second phase, based on the experience gained, advanced feature of LSM was added in the original PoC which was analysed and developed in other DLT platforms such as Hyperledger Fabric, Corda, and Quorum and was completed and published in November 2017. In phase 3, MAS and Singapore Exchange collaborated to develop Delivery versus Payment (DvP) functionalities for settlement of tokenised assets, such as of securities, on DLT platforms. In phase 4, MAS and BoC collaborated to enable cross-border interbank payments across different DLT platforms and published the Jasper-Ubin design paper in May 2019. Currently, phase 5 of the project is in progress, which would enable payments in different currencies on the same network.

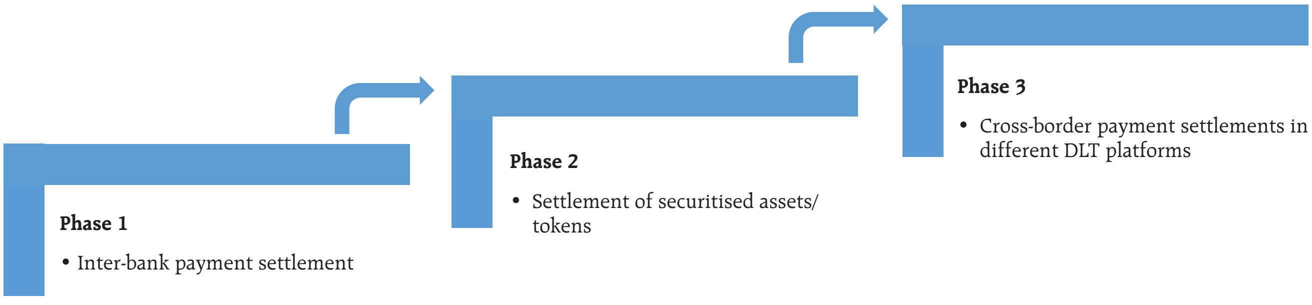
IV.3 Other Initiatives

The interest of central banks in DLT rose substantially in recent years as they set up special units to monitor developments in this area and engaged in projects to improve the understanding of new technologies which can have a lasting impact on financial infrastructure. So far, the experimental studies of central banks with DLT projects have followed a similar pattern (Chart 5), starting with application in wholesale inter-bank payments, then testing with transactions in tokenised assets in Delivery-versus-Payment settlement and later moving to cross-border payments.

Some of the central banks who have taken similar projects are European Central Bank in collaboration with Bank of Japan, Central Bank of Brazil, Bank of Thailand, *etc.* National Bank of Cambodia under its Project Bakong has developed a blockchain-based retail payment system, one of the first central banks to launch blockchain-based P2P system for public use.

Apart from central banks, several private banks have also joined efforts in reaping benefits of blockchain and DLT. Illustratively, J.P Morgan has developed Quorum in 2017, a permissioned variant of Ethereum blockchain for enterprise solutions, which it uses to support the company's Interbank Information Network (IIN). IIN aims to provide secure and fast exchange of information to facilitate cross-border payments in minimum time. The IIN has 365 banks globally on its network, including seven banks from India.

Chart 5: Common stages of Central Banks' DLT



V. Central Bank Digital Currency

Central banks are not only exploring DLT for its application in improving financial market infrastructure but also considering it as a potential technological solution in implementing central bank digital currency (CBDC). Results from a recent survey of central banks conducted by Bank for International Settlements, conclude that some 80 per cent of the 66 responding central banks have started projects to explore the use of central bank-issued digital currency (CBDC) in some form (Boar *et al*, 2020). These central banks are contemplating and studying the potential benefits and implications of CBDC in the economy. We discuss below the efforts being made in central banks of China and Sweden in this regard.

V.1 The People's Bank of China (PBoC)

PBoC has established Digital Currency Research Institute to study and undertake research in digital currency and explore technologies through which a central bank digital currency could be implemented. DLT and blockchain have been explored extensively by the PBoC as a possible technology for launching of CBDC (PBoC, 2016). Apart from CBDC, PBoC is supporting research on using blockchain for trade finance, especially after the support from the President of China for the blockchain technology, as an important breakthrough for innovations[6].

V.2 Sveriges Riksbank: E-Krona project

With the declining usage of cash in Sweden, the Riksbank, the central bank of Sweden, has been researching on CBDC and analysing the implications of launching a digital currency, e-krona, from various perspectives such as monetary policy and financial stability. To implement e-krona, the Riksbank has explored various technical solutions including DLT. However, the bank has stated that, presently, DLT is not developed enough to provide the desired application of e-krona. Hence, e-krona would not be based on DLT in the short term. However, given the pace of technological development in DLT, it can become a relevant solution for CBDC in long term. Therefore, interaction with DLT applications is desirable for e-krona (Sveriges Riksbank, 2018).

VI. DLT Applications in India

Following Bitcoin, there have been various start-ups dealing with cryptocurrency in India such as Unocoin in 2013 and Zebpay in 2014 (Tracxn, 2019). However, the volatility in Bitcoin prices and the instances of frauds have brought to the fore regulatory concerns over the risks of cryptocurrencies. Both the Government of India and the Reserve Bank have indicated that they have not authorised or issued regulation for any entity to deal with cryptocurrencies and, hence, individuals have no legal protection in dealing with cryptocurrencies and would bear all the risks associated with it. In fact, the Reserve Bank has issued several press releases (Dec 24, 2013, Feb 01, 2017, Dec 05, 2017) warning against dealing in cryptocurrencies.

Sensing the rising risks caused by speculative dealings in cryptocurrencies and to safeguard domestic depositors and financial institutions, the Reserve Bank in April 2018 prohibited its regulated entities from offering its services to companies dealing with cryptocurrencies or virtual currencies (VCs). However, the authorities have recognised the usefulness of blockchain and DLT (Table 2). Against this backdrop, it is critical for institutions in India to understand the potential benefits and risks associated with DLT to reap the benefits of digital innovation.

In recent years, adoption of DLT and blockchain in India has progressed in both public and private sectors, although most of the projects are in the proof-of-concept phase. In fact, the public sector is emerging as a big user of blockchain-based solutions. Some state governments like Andhra Pradesh and Telangana have started blockchain-related solutions in the areas of land registry, digital certificates, electronic health records, *etc.*, (Government of Andhra Pradesh,

[6] Available at: https://www.coindesk.com/president-xi-says-china-should-seize-opportunity-to-adopt-blockchain

Table 2: Major Developments related to DLT in India

Report	Released	Select Takeaways related to DLT and Blockchain
White Paper: Applications of Blockchain Technology to Banking and Financial Sector in India, IDBRT.	January 2017	To explore the feasibility of blockchain technology in banking and financial sector, PoC of two use cases was developed: Domestic Trade Finance with a sight Letter of Credit and Enhanced Information Payments.
RBI Inter-Regulatory Working Group on FinTech and Digital Banking (Chariman: Sudarshan Sen).	February 2018	"There is a need to develop a deeper understanding of various FinTech products and their interaction with the financial sector and thereby their implications on the financial system, before actively regulating this space."
Finance Minister's speech in Budget 2018-19.	February 2018	"The Government will explore use of block chain technology proactively for ushering in digital economy."
Blueprint of Blockchain Platform for Banking Sector and beyond, IDBRT.	January 2019	The report discusses how to build a useful blockchain that can serve as a platform to launch varied applications.
Report of the Committee to propose specific actions to be taken in relation to Virtual Currencies (Chairman: Subhash Chandra Garg).	July 2019	"The Committee recommends that the RBI examine the utility of using DLT based systems for enabling faster and more secure payment infrastructure, especially for cross-border payments."
Report of the Steering Committee on FinTech Related Issues (Chairman: Subhash Chandra Garg).	September 2019	In the context of public sector blockchain-based trade finance, "the Committee accordingly recommends that the Ministry of MSME should work with DFS and RBI for testing and implementing block-chain solutions in trade finance for MSMEs in public sector banks as well."
Enabling Framework for Regulatory Sandbox, RBI.	August 2019	Innovative products/technologies such as Smart contracts and applications under Blockchain technology could be considered for testing under the regulatory sandbox cohorts. RBI invited applications with the theme of 'Retail Payments' in its first cohort of Regulatory Sandbox on November 04, 2019.

September 2018). In the private sector, banking and financial services sector is leading in adoption of blockchain-based solutions. Illustratively, these initiatives include: Yes Bank implementing issuance of commercial papers on blockchain (Yes Bank, July 2019); Axis Bank launching international payment service using Ripple's enterprise blockchain technology (Axis Bank, November 2017); and HSBC India and Reliance Industries Ltd. executing blockchain-based trade finance transaction (HSBC India, November 2018).

Start-ups are also leveraging blockchain to provide solutions across different industries such as healthcare, retail, government services and human resource. Investment in blockchain-based startups in India through venture capitalists is estimated to be around US$ 8.5 million (NASSCOM, 2019). However, as per this report, compared to the rise in venture capital investments in blockchain start-ups globally, Indian start-ups were able to capture only about 0.2 per cent of those investments. The Reserve Bank of India has been pro-active in providing guidance for development of blockchain-based application through its new regulatory sandbox environment. Start-ups and financial institutions using blockchain-based application can be included in the cohorts of regulatory sandbox for testing their products for a stipulated period.

Recently, the Government of India in the Union Budget 2020-21 proposed various measures, emphasising on the new economy based on emerging technologies such as artificial intelligence, machine learning, internet of things, etc. It proposed to bring out a policy to enable private sector to build Data Centre parks throughout the country and allocated ₹6,000 crore for improving digital connectivity at grassroot level by connecting 1 lakh Gram Panchayats under Bharatnet programme and ₹8,000 crore over the five-year period for the National Mission on Quantum Technologies and Applications. Furthermore, it was proposed to defer the tax payment on shares allotted by the start-ups to their employees under the employee stock option plans (ESOPs). Thus, these measures would not only provide new avenues for start-ups to grow and flourish but also generate new investment and employment opportunities. Going forward, as regulatory environment around DLT and blockchain technology matures with the implementation of regulatory sandbox, more start-ups and investments are expected.

VII. Conclusion

In the span of a decade, DLT and blockchain have developed considerably in features and complexity to offer solutions to various industries including the financial sector. Initially, the understanding of DLT was confined to computer scientists and few other curious individuals due to their complexity. However, with applications in finance and other areas, there is widespread interest in DLT. Some central banks, in collaboration with other institutions, have undertaken pilot projects to study and understand DLT and explore the potential benefits to their operations and the financial systems. So far, most of these projects have been experimental in nature to explore the viability of conducting inter-bank settlements, settlement of digital assets and tokens and cross-border payments across DLT platforms with functionalities of the existing system. It is important to note that most of these central banks have not yet expressed the intent to deploy the DLT-based applications into production. Even in the case of CBDC, the Riksbank, *inter alia,* has stated that DLT in its present forms is immature to be used for implementation of e-krona. Nevertheless, such projects with their consequential benefits add to the ability of central banks and regulators in guiding development of DLT-based financial market infrastructure. This also enables the central banks in providing productive guidance to start-ups and institutions as they embark on adoption of new technologies for providing effective and efficient solutions to business problems. In the Indian context, increasing support from the Reserve Bank of India and the Government of India to innovations and emerging technologies through regulatory sandbox and various other schemes would pave the way for the new economy enriched with technology-centric growth momentum.

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Annex: Central Banks' DLT Projects

Phase	Project Objectives	DLT Platforms	Published/Completed
1. Bank of Canada – Project Jasper			
Phase 1	Create a wholesale interbank payment proof-of-concept (PoC) on DLT	Ethereum	February 2017
Phase 2	Build additional functionalities such as Liquidity Saving Mechanism (LSM)	Corda	September 2017
Phase 3	Examine Delivery versus Payment (DvP) solutions for security settlement	Corda	October 2018
Phase 4	Collaborate with other central banks to use DLT for cross-border and cross-currency settlement system	Quorum and Corda	May 2019
2. Monetary Authority of Singapore – Project Ubin			
Phase 1	Proof-of-concept project to conduct inter-bank payments using Blockchain technology	Ethereum	March 2017
Phase 2	Three different models for decentralised inter-bank payment and settlements with liquidity saving mechanisms.	Quorum, Hyperledger Fabric, Corda	November 2017
Phase 3	Delivery versus Payment (DvP) capabilities for settlement of tokenised assets across DLT platforms.	Ethereum, Quorum, Hyperledger Fabric, Chain, Anquan	November 2018
Phase 4	Cross-border payment versus payment across different DLT platforms.	Quorum and Corda	May 2019
Phase 5	Enabling broad system collaboration for different currencies in the same network	-	In Progress
3. European Central Bank and Bank of Japan – Project Stella			
Phase 1	Payment systems: liquidity saving mechanisms in a distributed ledger environment,	Hyperledger Fabric	September 2017
Phase 2	Securities settlement systems: delivery-versus-payment in a distributed ledger environment,	Hyperledger Fabric, Corda, Elements	March 2018
Phase 3	Synchronised cross border payments	Hyperledger Fabric	June 2019
4. Bank of Thailand – Project Inthanon			
Phase 1	Building the Fundamental: Decentralised RTGS for interbank settlement	Corda	January 2019
Phase 2	Lifecycle of bond tokens, Bond DvP, inter-bank repurchase agreement	Corda	July 2019
Phase 3	Cross border payment with DLT interoperability, collaboration with HKMA's project Lionrock	Corda	December 2019

(Contd.)

Annex: Central Banks' DLT Projects *(Concld.)*

Phase	Project Objectives	DLT Platforms	Published/Completed
5. Central Bank of Brazil			
Phase 1	Identified four use cases and among them, selected Alternative System for Transactions Settlement for protyping the proof of concept using it;	Ethereum	November 2016
Phase 2	Improved on the features of inter-bank settlement prototype and analysed this with competing blockchain platforms	Hyperledger Fabric, Corda, Quorum,	March 2017
6. South Africa Reserve Bank – Project Khokha			
Single Phase	Built an RTGS PoC on DLT, expanding on privacy and scalability in a 'realistic' environment	Quorum	June 2018
7. Bank of England in collaboration with			
PwC	Assess the potential of DLT, gain in-house capabilities and knowledge in PoC use case of transfer of ownership of a fictional asset among several participants.	Ethereum	2016
Ripple	PoC to explore the synchronised movement of two different currencies in two different simulated Real Time Gross Settlement (RTGS) systems.	Interledger Protocol	July 2017
Baton Systems, Clearmatics Technologies Ltd, R3 and Token	PoC to understand how a renewed RTGS service could be capable of supporting settlement in systems operating on innovative payment technologies, such as DLT	Corda	July 2018

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

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

No. 1: Select Economic Indicators

Item	2018-19	2018-19 Q1	2018-19 Q2	2019-20 Q1	2019-20 Q2
	1	2	3	4	5
1 Real Sector (% Change)					
1.1 GVA at Basic Prices	6.6	7.7	6.9	4.9	4.3
1.1.1 Agriculture	2.9	5.1	4.9	2.0	2.1
1.1.2 Industry	6.2	9.9	6.1	1.7	-0.5
1.1.3 Services	7.7	7.5	7.5	6.7	6.4
1.1a Final Consumption Expenditure	8.3	7.2	10.0	4.1	6.9
1.1b Gross Fixed Capital Formation	10.0	13.3	11.8	4.0	1.0

	2018-19	2018 Nov.	2018 Dec.	2019 Nov.	2019 Dec.
	1	2	3	4	5
1.2 Index of Industrial Production	3.8	0.2	2.5	1.8	-
2 Money and Banking (% Change)					
2.1 Scheduled Commercial Banks					
2.1.1 Deposits	10.0	10.8	8.9	9.5	9.7
2.1.2 Credit	13.3	16.2	13.9	7.2	7.0
2.1.2.1 Non-food Credit	13.4	16.3	13.8	7.2	6.9
2.1.3 Investment in Govt. Securities	1.9	2.0	-0.5	8.6	12.9
2.2 Money Stock Measures					
2.2.1 Reserve Money (M0)	14.5	18.9	17.0	12.4	10.2
2.2.2 Broad Money (M3)	10.5	10.4	10.2	9.8	10.4
3 Ratios (%)					
3.1 Cash Reserve Ratio	4.00	4.00	4.00	4.00	4.00
3.2 Statutory Liquidity Ratio	19.25	19.50	19.50	18.50	18.50
3.3 Cash-Deposit Ratio	5.1	4.8	5.1	4.8	4.8
3.4 Credit-Deposit Ratio	77.7	77.1	78.2	75.5	76.2
3.5 Incremental Credit-Deposit Ratio	99.9	111.6	139.2	22.5	39.3
3.6 Investment-Deposit Ratio	26.9	28.5	27.9	28.3	28.7
3.7 Incremental Investment-Deposit Ratio	5.4	17.8	1.1	62.4	74.1
4 Interest Rates (%)					
4.1 Policy Repo Rate	6.25	6.50	6.50	5.15	5.15
4.2 Reverse Repo Rate	6.00	6.25	6.25	4.90	4.90
4.3 Marginal Standing Facility (MSF) Rate	6.50	6.75	6.75	5.40	5.40
4.4 Bank Rate	6.50	6.75	6.75	5.40	5.40
4.5 Base Rate	8.95/9.40	8.95/9.45	8.95/9.45	8.95/9.40	8.45/9.40
4.6 MCLR (Overnight)	8.05/8.55	8.15/8.45	8.15/8.55	7.65/8.10	7.65/8.00
4.7 Term Deposit Rate >1 Year	6.25/7.50	6.25/7.50	6.25/7.50	6.25/6.60	6.20/6.40
4.8 Savings Deposit Rate	3.50/4.00	3.50/4.00	3.50/4.00	3.25/3.50	3.25/3.50
4.9 Call Money Rate (Weighted Average)	6.35	6.39	6.57	5.03	5.11
4.10 91-Day Treasury Bill (Primary) Yield	6.31	6.77	6.65	4.99	5.03
4.11 182-Day Treasury Bill (Primary) Yield	6.35	7.06	6.84	5.12	5.22
4.12 364-Day Treasury Bill (Primary) Yield	6.39	7.22	6.94	5.14	5.30
4.13 10-Year G-Sec Par Yield (FBIL)	7.34	7.64	7.36	6.65	6.78
5 Reference Rate and Forward Premia					
5.1 INR-US$ Spot Rate (Rs. Per Foreign Currency)	69.17	69.66	69.98	71.73	71.22
5.2 INR-Euro Spot Rate (Rs. Per Foreign Currency)	77.70	79.36	80.18	78.98	79.19
5.3 Forward Premia of US$ 1-month (%)	6.07	4.31	4.37	3.35	3.96
3-month (%)	4.80	4.02	3.97	3.35	3.90
6-month (%)	4.16	4.13	4.09	3.76	4.38
6 Inflation (%)					
6.1 All India Consumer Price Index	3.4	2.3	2.1	5.5	7.4
6.2 Consumer Price Index for Industrial Workers	5.4	4.9	5.2	8.6	9.6
6.3 Wholesale Price Index	4.3	4.5	3.5	0.6	2.6
6.3.1 Primary Articles	2.7	0.6	1.4	7.7	11.5
6.3.2 Fuel and Power	11.5	15.5	7.6	-7.3	-1.5
6.3.3 Manufactured Products	3.7	4.2	3.6	-0.8	-0.3
7 Foreign Trade (% Change)					
7.1 Imports	10.4	5.5	0.8	-12.7	-8.8
7.2 Exports	8.7	-1.1	0.1	-0.3	-1.8

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

Reserve Bank of India

No. 2: RBI - Liabilities and Assets *

(₹ Crore)

Item	As on the Last Friday/ Friday						
	2018-19	2019	2020				
		Jan.	Jan. 3	Jan. 10	Jan. 17	Jan. 24	Jan. 31
	1	2	3	4	5	6	7
1 Issue Department							
1.1 Liabilities							
1.1.1 Notes in Circulation	2113764	2035957	2242671	2271523	2278414	2280962	2284695
1.1.2 Notes held in Banking Department	11	12	12	13	12	12	11
1.1/1.2 Total Liabilities (Total Notes Issued) or Assets	**2113775**	**2035969**	**2242683**	**2271536**	**2278426**	**2280974**	**2284706**
1.2 Assets							
1.2.1 Gold Coin and Bullion	79481	73693	92739	93061	93475	94284	95254
1.2.2 Foreign Securities	2033559	1961475	2149191	2177731	2184217	2185962	2188733
1.2.3 Rupee Coin	735	801	753	744	735	728	719
1.2.4 Government of India Rupee Securities	–	–	–	–	–	–	–
2 Banking Department							
2.1 Liabilities							
2.1.1 Deposits	806012	618526	1051975	955428	959038	921029	994030
2.1.1.1 Central Government	101	100	101	101	100	100	101
2.1.1.2 Market Stabilisation Scheme							
2.1.1.3 State Governments	43	42	42	42	42	42	42
2.1.1.4 Scheduled Commercial Banks	565707	493114	542465	539538	547082	540629	550704
2.1.1.5 Scheduled State Co-operative Banks	4197	3445	6925	6681	7110	6647	6841
2.1.1.6 Non-Scheduled State Co-operative Banks	3494	2254	3092	3014	3011	2958	3002
2.1.1.7 Other Banks	32036	28325	31364	31264	31141	31725	31707
2.1.1.8 Others	199734	91246	467985	374788	369122	338210	400909
2.1.1.9 Financial Institution Outside India	700				1430	718	724
2.1.2 Other Liabilities	1087686	1143107	1170393	1129506	1140304	1152701	1161436
2.1/2.2 Total Liabilities or Assets	**1893698**	**1761633**	**2222368**	**2084934**	**2099342**	**2073730**	**2155466**
2.2 Assets							
2.2.1 Notes and Coins	11	12	13	13	12	12	11
2.2.2 Balances held Abroad	646640	710752	947990	880176	885950	926095	955641
2.2.3 Loans and Advances							
2.2.3.1 Central Government	–	–	130171	60605	87735	24184	73545
2.2.3.2 State Governments	10	919	5304	7589	7499	3234	1210
2.2.3.3 Scheduled Commercial Banks	180688	99949	18165	15176	21159	15315	16915
2.2.3.4 Scheduled State Co-op.Banks		–	–	–	–	–	–
2.2.3.5 Industrial Dev. Bank of India	–	–	–	–	–	–	–
2.2.3.6 NABARD	–	–	–	–	–	–	–
2.2.3.7 EXIM Bank	–	–	–	–	–	–	–
2.2.3.8 Others	13463	4798	4309	4247	4272	4050	4416
2.2.3.9 Financial Institution Outside India	700						724
2.2.4 Bills Purchased and Discounted							
2.2.4.1 Internal	–	–	–	–	–	–	–
2.2.4.2 Government Treasury Bills	–	–	–	–	–	–	
2.2.5 Investments	923080	854194	1001087	1001327	976156	983230	983670
2.2.6 Other Assets	129106	91009	115329	115800	116559	117609	119334
2.2.6.1 Gold	87169	79312	108717	109094	109579	110528	111665

* Data are provisional

No. 3: Liquidity Operations by RBI

(₹ Crore)

Date	Liquidity Adjustment Facility				MSF	Standing Liquidity Facilities	Market Stabilisation Scheme	OMO (Outright)		Net Injection (+)/ Absorption (-) (1+3+5+6+9-2-4-7-8)
	Repo	Reverse Repo	Variable Rate Repo	Variable Rate Reverse Repo				Sale	Purchase	
	1	2	3	4	5	6	7	8	9	10
Dec. 2, 2019	3577	18466	-	237836	5352	217	-	5	220	-246941
Dec. 3, 2019	3577	21277	-	239517	6310	-1	-	-	-	-250908
Dec. 4, 2019	3482	18088	-	238407	3950	-204	-	-	-	-249267
Dec. 5, 2019	3577	25045	-	259407	4780	–	-	-	-	-276095
Dec. 6, 2019	3739	42550	10400	219609	3838	–	-	-	-	-244182
Dec. 7, 2019	1500	6200	-	-	238	–	-	-	-	-4462
Dec. 9, 2019	3527	12678	-	244448	3251	–	-	-	-	-250348
Dec. 10, 2019	3272	18905	5000	245236	4505	–	-	-	-	-251364
Dec. 11, 2019	3362	17292	-	246477	3100	–	-	-	-	-257307
Dec. 12, 2019	3129	17205	-	269837	5800	–	-	-	-	-278113
Dec. 13, 2019	3322	34654	2200	244008	3600	–	-	210	280	-269470
Dec. 16, 2019	4119	42669	-	194387	7652	–	-	1065	645	-225705
Dec. 17, 2019	3144	23150	4000	240017	3300	–	-	200	-	-252923
Dec. 18, 2019	3644	28107	-	240292	4405	–	-	545	-	-260895
Dec. 19, 2019	5034	25972	-	251168	4495	–	-	-	-	-267611
Dec. 20, 2019	3644	49421	10175	179128	3856	212	-	-	-	-210662
Dec. 21, 2019	9953	7816	-	-	5436	–	-	-	-	7573
Dec. 22, 2019	-	414	-	-	-	-	-	-	-	-414
Dec. 23, 2019	5029	27641	-	210353	3753	–	-	-	-	-229212
Dec. 24, 2019	6319	34368	12050	207089	2765	–	-	6825	10000	-217148
Dec. 25, 2019	-	23	-	-	-	–	-	-	-	-23
Dec. 26, 2019	5135	39163	-	233586	3128	–	-	-	-	-264486
Dec. 27, 2019	2894	36582	1350	239769	2822	–	-	-	-	-269285
Dec. 28, 2019	-	24	-	-	-	–	-	-	-	-24
Dec. 29, 2019	-	318	-	-	-	–	-	-	-	-318
Dec. 30, 2019	4279	52933	-	230914	7217	-82	-	-	-	-272433
Dec. 31, 2019	4654	114551	80	224538	4279	82	-	8501	10000	-328495

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

i) Operations in onshore / offshore OTC segment

Item	2018-19	2018	2019	
		Dec.	Nov.	Dec.
	1	2	3	4
1 Net Purchase/ Sale of Foreign Currency (US $ Million) (1.1–1.2)	-15377	607	6928	4360
1.1 Purchase (+)	40804	837	7458	5374
1.2 Sale (–)	56181	230	530	1014
2 ₹ equivalent at contract rate (₹ Crores)	-111946	4009	49142	30894
3 Cumulative (over end-March) (US $ Million)	-15377	-25903	25381	29741
(₹ Crores)	-111945	-184076	174408	205303
4 Outstanding Net Forward Sales (–)/ Purchase (+) at the end of month (US $ Million)	-13774	-2426	-6143	-1875

ii) Operations in currency futures segment

Item	2018-19	2018	2019	
		Dec.	Nov.	Dec.
	1	2	3	4
1 Net Purchase/ Sale of Foreign Currency (US $ Million) (1.1–1.2)	0	0	0	0
1.1 Purchase (+)	13935	0	0	1690
1.2 Sale (–)	13935	0	0	1690
2 Outstanding Net Currency Futures Sales (–)/ Purchase (+) at the end of month (US $ Million)	0	0	0	400

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

Item	As on December 31, 2019		
	Long (+)	Short (-)	Net (1-2)
	1	2	3
1. Upto 1 month	1220	1120	100
2. More than 1 month and upto 3 months	3634	1460	2174
3. More than 3 months and upto 1 year	7576	1705	5871
4. More than 1 year	0	10020	-10020
Total (1+2+3+4)	**12430**	**14305**	**-1875**

No. 5: RBI's Standing Facilities

(₹ Crore)

Item	As on the Last Reporting Friday							
	2018-19	2019						2020
		Jan. 18	Aug. 30	Sep. 27	Oct. 25	Nov. 22	Dec. 20	Jan. 31
	1	2	3	4	5	6	7	8
1 MSF	12882	504	55	48	4373	3231	3856	2340
2 Export Credit Refinance for Scheduled Banks								
2.1 Limit	–	-	-	–	-	-	-	-
2.2 Outstanding	–	-	-	–	-	-	-	-
3 Liquidity Facility for PDs								
3.1 Limit	2800	2800	2800	2800	2800	2800	2800	2800
3.2 Outstanding	2678	1704	1879	2372	1884	1604	1615	1872
4 Others								
4.1 Limit	–	-	-	–	-	-	-	-
4.2 Outstanding	–	-	-	–	-	-	-	-
5 Total Outstanding (1+2.2+3.2+4.2)	15560	2208	1934	2420	6257	4835	5471	4212

Money and Banking

No. 6: Money Stock Measures

(₹ Crore)

Item	Outstanding as on March 31/last reporting Fridays of the month/reporting Fridays				
	2018-19	2018	2019		
		Dec. 21	Nov. 22	Dec. 6	Dec. 20
	1	2	3	4	5
1 Currency with the Public (1.1 + 1.2 + 1.3 – 1.4)	2052209	1950995	2172488	2184545	2180612
1.1 Notes in Circulation	2110883	2004183	2241262	2248925	2245888
1.2 Circulation of Rupee Coin	25144	25043	25380	25435	25435
1.3 Circulation of Small Coins	743	743	743	743	743
1.4 Cash on Hand with Banks	84561	78974	94897	90558	91454
2 Deposit Money of the Public	1658254	1327673	1480272	1533018	1507735
2.1 Demand Deposits with Banks	1626512	1302600	1447960	1500659	1473756
2.2 'Other' Deposits with Reserve Bank	31742	25073	32312	32359	33979
3 M_1 (1 + 2)	**3710464**	**3278668**	**3652760**	**3717563**	**3688348**
4 Post Office Saving Bank Deposits	140599	130185	139385	139385	139385
5 M_2 (3 + 4)	**3851063**	**3408853**	**3792145**	**3856948**	**3827733**
6 Time Deposits with Banks	11721603	11271027	12292989	12447209	12370541
7 M_3 (3 + 6)	**15432067**	**14549695**	**15945749**	**16164772**	**16058889**
8 Total Post Office Deposits	367287	348696	395361	395361	395361
9 M_4 (7 + 8)	**15799354**	**14898391**	**16341110**	**16560133**	**16454250**

No. 7: Sources of Money Stock (M_3)

(₹ Crore)

Sources	Outstanding as on March 31/last reporting Fridays of the month/reporting Fridays				
	2018-19	2018	2019		
		Dec. 21	Nov. 22	Dec. 6	Dec. 20
	1	2	3	4	5
1 Net Bank Credit to Government	**4388490**	**4234658**	**4890841**	**5038571**	**4918791**
1.1 RBI's net credit to Government (1.1.1–1.1.2)	801951	683006	965438	1064368	979921
1.1.1 Claims on Government	929686	789902	1001006	1064511	1002864
1.1.1.1 Central Government	928166	789335	1000408	1055439	1001608
1.1.1.2 State Governments	1520	567	598	9072	1256
1.1.2 Government deposits with RBI	127735	106896	35568	143	22943
1.1.2.1 Central Government	127693	106854	35526	100	22901
1.1.2.2 State Governments	42	42	42	43	42
1.2 Other Banks' Credit to Government	3586539	3551652	3925403	3974203	3938870
2 Bank Credit to Commercial Sector	**10382719**	**9877043**	**10468270**	**10582274**	**10597315**
2.1 RBI's credit to commercial sector	15363	9281	7144	6894	6702
2.2 Other banks' credit to commercial sector	10367356	9867762	10461126	10575380	10590613
2.2.1 Bank credit by commercial banks	9771722	9287636	9860303	9934684	9945118
2.2.2 Bank credit by co-operative banks	585931	571234	588692	622085	625750
2.2.3 Investments by commercial and co-operative banks in other securities	9703	8892	12132	18612	19746
3 Net Foreign Exchange Assets of Banking Sector (3.1 + 3.2)	**3070841**	**2879672**	**3425222**	**3440660**	**3440836**
3.1 RBI's net foreign exchange assets (3.1.1–3.1.2)	2848587	2750402	3207225	3222663	3222839
3.1.1 Gross foreign assets	2848800	2750631	3207434	3222884	3223060
3.1.2 Foreign liabilities	213	229	209	221	221
3.2 Other banks' net foreign exchange assets	222254	129271	217997	217997	217997
4 Government's Currency Liabilities to the Public	**25887**	**25786**	**26123**	**26178**	**26178**
5 Banking Sector's Net Non-monetary Liabilities	**2435870**	**2467464**	**2864707**	**2922911**	**2924232**
5.1 Net non-monetary liabilities of RBI	1058795	1050344	1137091	1132917	1123096
5.2 Net non-monetary liabilities of other banks (residual)	1377075	1417120	1727616	1789994	1801136
M_3 (1+2+3+4–5)	**15432067**	**14549695**	**15945749**	**16164772**	**16058889**

No. 8: Monetary Survey

(₹ Crore)

Item	Outstanding as on March 31/last reporting Fridays of the month/reporting Fridays				
	2018-19	2018	2019		
		Dec. 21	Nov. 22	Dec. 6	Dec. 20
	1	2	3	4	5
Monetary Aggregates					
NM_1 (1.1 + 1.2.1+1.3)	3710464	3278668	3652760	3717563	3688348
NM_2 (NM_1+ 1.2.2.1)	8911512	8283659	9103488	9238836	9176532
NM_3 (NM_2 + 1.2.2.2 + 1.4 = 2.1 + 2.2 + 2.3 – 2.4 – 2.5)	15646602	14758368	16087659	16316115	16203315
1 Components					
1.1 Currency with the Public	2052209	1950995	2172488	2184545	2180612
1.2 Aggregate Deposits of Residents	13184397	12424803	13560689	13770154	13669723
1.2.1 Demand Deposits	1626512	1302600	1447960	1500659	1473756
1.2.2 Time Deposits of Residents	11557885	11122203	12112729	12269495	12195966
1.2.2.1 Short-term Time Deposits	5201048	5004991	5450728	5521273	5488185
1.2.2.1.1 Certificates of Deposit (CDs)	284993	183544	158123	159779	156633
1.2.2.2 Long-term Time Deposits	6356837	6117212	6662001	6748223	6707782
1.3 'Other' Deposits with RBI	31742	25073	32312	32359	33979
1.4 Call/Term Funding from Financial Institutions	378254	357497	322170	329057	319001
2 Sources					
2.1 Domestic Credit	15659336	14945228	16251859	16514854	16396664
2.1.1 Net Bank Credit to the Government	4388490	4234658	4890841	5038571	4918791
2.1.1.1 Net RBI credit to the Government	801951	683006	965438	1064368	979921
2.1.1.2 Credit to the Government by the Banking System	3586539	3551652	3925403	3974203	3938870
2.1.2 Bank Credit to the Commercial Sector	11270846	10710570	11361017	11476283	11477872
2.1.2.1 RBI Credit to the Commercial Sector	15363	9281	7144	6894	6702
2.1.2.2 Credit to the Commercial Sector by the Banking System	11255483	10701289	11353873	11469389	11471170
2.1.2.2.1 Other Investments (Non-SLR Securities)	879849	824236	883989	884605	871958
2.2 Government's Currency Liabilities to the Public	25887	25786	26123	26178	26178
2.3 Net Foreign Exchange Assets of the Banking Sector	2801726	2649028	3141351	3155743	3207853
2.3.1 Net Foreign Exchange Assets of the RBI	2848587	2750402	3207225	3222663	3222839
2.3.2 Net Foreign Currency Assets of the Banking System	-46861	-101374	-65874	-66920	-14986
2.4 Capital Account	2346743	2295356	2482957	2487889	2465133
2.5 Other items (net)	493605	566318	848715	892770	962246

No. 9: Liquidity Aggregates

(₹ Crore)

Aggregates	2018-19	2018	2019		
		Dec.	Oct.	Nov.	Dec.
	1	2	3	4	5
1 NM_3	**15646602**	**14758370**	**16111023**	**16087659**	**16203315**
2 Postal Deposits	367287	348696	395359	401111	401111
3 L_1 (1 + 2)	**16013889**	**15107066**	**16506382**	**16488770**	**16604426**
4 Liabilities of Financial Institutions	2932	2932	2932	56839	54287
4.1 Term Money Borrowings	2656	2656	2656	3262	3078
4.2 Certificates of Deposit	31	31	31	49162	46887
4.3 Term Deposits	245	245	245	4415	4322
5 L_2 (3 + 4)	**16016821**	**15109998**	**16509314**	**16545609**	**16658713**
6 Public Deposits with Non-Banking Financial Companies	31905	31905	..	..	31905
7 L_3 (5 + 6)	**16048726**	**15141903**	..	..	**16690618**

Note : Since November 2019, updated data on liabilities of financial institutions have been incorporated in this table , and hence, are not comparable with past data

No. 10: Reserve Bank of India Survey

(₹ Crore)

Item	Outstanding as on March 31/last reporting Fridays of the month/reporting Fridays				
	2018-19	2018	2019		
		Dec. 21	Nov. 22	Dec. 6	Dec. 20
	1	2	3	4	5
1 Components					
1.1 Currency in Circulation	2136770	2029969	2267385	2275103	2272066
1.2 Bankers' Deposits with the RBI	601969	515563	555408	578361	603702
1.2.1 Scheduled Commercial Banks	558496	482114	517462	540118	562488
1.3 'Other' Deposits with the RBI	31742	25073	32312	32359	33979
Reserve Money (1.1 + 1.2 + 1.3 = 2.1 + 2.2 + 2.3 – 2.4 – 2.5)	2770481	2570605	2855104	2885823	2909747
2 Sources					
2.1 RBI's Domestic Credit	954802	844761	758848	769899	783826
2.1.1 Net RBI credit to the Government	801951	683006	965438	1064368	979921
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)	800473	682481	964882	1055339	978707
2.1.1.1.1 Loans and Advances to the Central Government	–	–	–	52575	–
2.1.1.1.2 Investments in Treasury Bills	–	–	–	–	–
2.1.1.1.3 Investments in dated Government Securities	927427	788507	999581	1002053	1000832
2.1.1.1.3.1 Central Government Securities	927427	788507	999581	1002053	1000832
2.1.1.1.4 Rupee Coins	739	828	827	811	776
2.1.1.1.5 Deposits of the Central Government	127693	106854	35526	100	22901
2.1.1.2 Net RBI credit to State Governments	1478	525	556	9029	1214
2.1.2 RBI's Claims on Banks	137488	152474	-213734	-301363	-202797
2.1.2.1 Loans and Advances to Scheduled Commercial Banks	137488	152474	-213734	-301363	-202797
2.1.3 RBI's Credit to Commercial Sector	15363	9281	7144	6894	6702
2.1.3.1 Loans and Advances to Primary Dealers	2678	2082	1604	1403	1615
2.1.3.2 Loans and Advances to NABARD	–	–	–	–	–
2.2 Government's Currency Liabilities to the Public	25887	25786	26123	26178	26178
2.3 Net Foreign Exchange Assets of the RBI	2848587	2750402	3207225	3222663	3222839
2.3.1 Gold	159585	147854	192307	193186	192925
2.3.2 Foreign Currency Assets	2689019	2602565	3014935	3029494	3029931
2.4 Capital Account	970265	987131	1012649	1003505	992085
2.5 Other Items (net)	88530	63213	124442	129412	131011

No. 11: Reserve Money - Components and Sources

(₹ Crore)

Item	2018-19	Outstanding as on March 31/ last Fridays of the month/ Fridays					
		2018	2019				
		Dec. 28	Nov. 29	Dec. 6	Dec. 13	Dec. 20	Dec. 27
	1	2	3	4	5	6	7
Reserve Money (1.1 + 1.2 + 1.3 = 2.1 + 2.2 + 2.3 + 2.4 + 2.5 – 2.6)	2770481	2618017	2874296	2885823	2885589	2909747	2884942
1 Components							
1.1 Currency in Circulation	2136770	2025039	2256875	2275103	2284891	2272066	2270344
1.2 Bankers' Deposits with RBI	601969	567369	581895	578361	568922	603702	581929
1.3 'Other' Deposits with RBI	31742	25609	35526	32359	31776	33979	32669
2 Sources							
2.1 Net Reserve Bank Credit to Government	801951	738285	1001249	1064368	1044279	979921	989412
2.2 Reserve Bank Credit to Banks	137488	147998	-247355	-301363	-282176	-202797	-245924
2.3 Reserve Bank Credit to Commercial Sector	15363	9321	6877	6894	6397	6702	6443
2.4 Net Foreign Exchange Assets of RBI	2848587	2749018	3222285	3222663	3207160	3222839	3252164
2.5 Government's Currency Liabilities to the Public	25887	25798	26178	26178	26178	26178	26238
2.6 Net Non- Monetary Liabilities of RBI	1058795	1052403	1134938	1132917	1116249	1123096	1143391

No. 12: Commercial Bank Survey

(₹ Crore)

Item	Outstanding as on last reporting Fridays of the month/ reporting Fridays of the month				
	2018-19	2018	2019		
		Dec. 21	Nov. 22	Dec. 6	Dec. 20
	1	2	3	4	5
1 Components					
1.1 Aggregate Deposits of Residents	12410053	11667449	12778214	12928338	12830205
1.1.1 Demand Deposits	1511287	1189913	1331740	1379987	1354601
1.1.2 Time Deposits of Residents	10898766	10477536	11446474	11548352	11475605
1.1.2.1 Short-term Time Deposits	4904445	4714891	5150913	5196758	5164022
1.1.2.1.1 Certificates of Deposits (CDs)	284993	183544	158123	159779	156633
1.1.2.2 Long-term Time Deposits	5994321	5762645	6295561	6351593	6311583
1.2 Call/Term Funding from Financial Institutions	378254	357497	322170	329057	319001
2 Sources					
2.1 Domestic Credit	14032206	13460375	14463919	14579790	14540311
2.1.1 Credit to the Government	3379001	3346558	3715868	3749880	3712006
2.1.2 Credit to the Commercial Sector	10653205	10113816	10748051	10829911	10828305
2.1.2.1 Bank Credit	9771722	9287636	9860303	9934684	9945118
2.1.2.1.1 Non-food Credit	9730112	9210294	9768999	9810020	9859975
2.1.2.2 Net Credit to Primary Dealers	8542	9554	9021	9667	8862
2.1.2.3 Investments in Other Approved Securities	2055	1353	3700	9918	11330
2.1.2.4 Other Investments (in non-SLR Securities)	870886	815274	875027	875642	862996
2.2 Net Foreign Currency Assets of Commercial Banks (2.2.1–2.2.2–2.2.3)	-46861	-101374	-65874	-66920	-14986
2.2.1 Foreign Currency Assets	262383	178362	236374	232728	278216
2.2.2 Non-resident Foreign Currency Repatriable Fixed Deposits	163719	148824	180260	177713	174575
2.2.3 Overseas Foreign Currency Borrowings	145526	130912	121989	121935	118628
2.3 Net Bank Reserves (2.3.1+2.3.2–2.3.3)	538104	398859	816180	921646	846390
2.3.1 Balances with the RBI	565707	482114	517462	540118	562488
2.3.2 Cash in Hand	74877	69219	84984	80165	81105
2.3.3 Loans and Advances from the RBI	102480	152474	-213734	-301363	-202797
2.4 Capital Account	1352307	1284054	1446137	1460214	1448878
2.5 Other items (net) (2.1+2.2+2.3–2.4–1.1–1.2)	382835	448860	667703	716907	773631
2.5.1 Other Demand and Time Liabilities (net of 2.2.3)	398120	406180	385783	439556	441282
2.5.2 Net Inter-Bank Liabilities (other than to PDs)	-47846	-47158	-45368	49375	47417

No. 13: Scheduled Commercial Banks' Investments

(₹ Crore)

Item	As on March 29, 2019	2018	2019		
		Dec. 21	Nov. 22	Dec. 6	Dec. 20
	1	2	3	4	5
1 SLR Securities	3381056	3347911	3719568	3759797	3723336
2 Commercial Paper	90362	94824	99328	98735	94810
3 Shares issued by					
3.1 PSUs	11535	11704	11286	11385	11409
3.2 Private Corporate Sector	69592	72363	66368	66331	66237
3.3 Others	6379	6424	5515	5568	5515
4 Bonds/Debentures issued by					
4.1 PSUs	134819	126795	123067	120976	124372
4.2 Private Corporate Sector	268783	228418	239223	238348	232706
4.3 Others	170047	126643	199063	187027	184531
5 Instruments issued by					
5.1 Mutual funds	20988	56463	48279	48568	46020
5.2 Financial institutions	98382	91913	82173	81153	79867

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			
	2018-19	2018	2019		2018-19	2018	2019	
		Dec.	Nov.	Dec.		Dec.	Nov.	Dec.
	1	2	3	4	5	6	7	8
Number of Reporting Banks	222	224	219	219	147	150	142	142
1 Liabilities to the Banking System	**276350**	**263040**	**249308**	**272074**	**271426**	**258328**	**244433**	**267197**
1.1 Demand and Time Deposits from Banks	181651	163281	187449	196859	176828	159009	182731	192163
1.2 Borrowings from Banks	79487	91213	49892	62874	79459	90926	49866	62839
1.3 Other Demand and Time Liabilities	15212	8546	11967	12341	15139	8393	11836	12196
2 Liabilities to Others	**13835976**	**13127730**	**14314792**	**14366281**	**13495672**	**12809813**	**13953219**	**13950581**
2.1 Aggregate Deposits	12901579	12229298	13447567	13474861	12573772	11924904	13098829	13076544
2.1.1 Demand	1542554	1290130	1448683	1424617	1511287	1261728	1416506	1390559
2.1.2 Time	11359025	10939168	11998884	12050244	11062484	10663176	11682323	11685985
2.2 Borrowings	381864	370274	335569	331812	378254	366094	331841	327452
2.3 Other Demand and Time Liabilities	552533	528159	531656	559608	543646	518815	522549	546584
3 Borrowings from Reserve Bank	**180688**	**188109**	**23012**	**30427**	**180688**	**188109**	**23012**	**30427**
3.1 Against Usance Bills /Promissory Notes	–	–	–	–	–	–	–	–
3.2 Others	180688	188109	23012	30427	180688	188109	23012	30427
4 Cash in Hand and Balances with Reserve Bank	657555	621750	642086	646512	640584	607287	626159	628412
4.1 Cash in Hand	76554	76274	85089	89276	74877	74114	83184	86995
4.2 Balances with Reserve Bank	581001	545476	556997	557235	565707	533173	542975	541417
5 Assets with the Banking System	**372670**	**368802**	**262359**	**289777**	**327814**	**329671**	**207281**	**230031**
5.1 Balances with Other Banks	245880	258171	168690	177938	223048	236956	142276	151727
5.1.1 In Current Account	17216	17858	14405	18374	13329	15339	12215	16207
5.1.2 In Other Accounts	228663	240313	154285	159563	209719	221618	130062	135521
5.2 Money at Call and Short Notice	47047	45101	24263	37565	32252	31974	7015	16753
5.3 Advances to Banks	32950	31823	28990	33214	29635	31190	24968	27449
5.4 Other Assets	46793	33708	40416	41060	42879	29551	33022	34102
6 Investment	**3475607**	**3416210**	**3814598**	**3880315**	**3381056**	**3323755**	**3716854**	**3765269**
6.1 Government Securities	3467845	3409882	3797839	3859977	3379001	3322998	3706537	3751590
6.2 Other Approved Securities	7762	6329	16759	20338	2055	757	10317	13678
7 Bank Credit	**10047125**	**9594587**	**10176213**	**10288941**	**9771722**	**9319765**	**9890071**	**9969432**
7a Food Credit	64636	98712	117556	112463	41610	75685	90526	85433
7.1 Loans, Cash-credits and Overdrafts	9792287	9367741	9969053	10074707	9521994	9097647	9686695	9758702
7.2 Inland Bills-Purchased	27641	21791	24641	25081	26223	20433	23902	24405
7.3 Inland Bills-Discounted	160984	142277	126309	132527	158296	139808	124288	130702
7.4 Foreign Bills-Purchased	24914	22738	23182	24270	24588	22415	22762	23872
7.5 Foreign Bills-Discounted	41299	40039	33028	32357	40622	39463	32424	31750

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

(₹ Crore)

Item	Outstanding as on				Growth (%)	
	Mar. 29, 2019	2018	2019		Financial year so far	Y-o-Y
		Dec. 21	Nov. 22	Dec. 20	2019-20	2019
	1	2	3	4	5	6
1 Gross Bank Credit	**8674892**	**8241267**	**8764913**	**8822209**	**1.7**	**7.0**
1.1 Food Credit	**41474**	**77092**	**91005**	**84863**	**104.6**	**10.1**
1.2 Non-food Credit	**8633418**	**8164175**	**8673908**	**8737346**	**1.2**	**7.0**
1.2.1 Agriculture & Allied Activities	**1111300**	**1082111**	**1134004**	**1139092**	**2.5**	**5.3**
1.2.2 Industry	**2885778**	**2749375**	**2772248**	**2794372**	**–3.2**	**1.6**
1.2.2.1 Micro & Small	375505	365002	362758	365398	–2.7	0.1
1.2.2.2 Medium	106395	104570	102601	107166	0.7	2.5
1.2.2.3 Large	2403878	2279803	2306889	2321808	–3.4	1.8
1.2.3 Services	**2415609**	**2232987**	**2362956**	**2370600**	**–1.9**	**6.2**
1.2.3.1 Transport Operators	138524	130312	139754	140438	1.4	7.8
1.2.3.2 Computer Software	18535	19124	19052	18597	0.3	-2.8
1.2.3.3 Tourism, Hotels & Restaurants	39005	38792	43468	44745	14.7	15.3
1.2.3.4 Shipping	7748	6236	6704	6548	–15.5	5.0
1.2.3.5 Professional Services	171517	171662	170660	172553	0.6	0.5
1.2.3.6 Trade	528158	485990	501677	513987	–2.7	5.8
1.2.3.6.1 Wholesale Trade	250528	214041	217567	228558	–8.8	6.8
1.2.3.6.2 Retail Trade	277630	271949	284109	285429	2.8	5.0
1.2.3.7 Commercial Real Estate	202291	189929	220685	219585	8.5	15.6
1.2.3.8 Non-Banking Financial Companies (NBFCs)	641208	570946	730907	728561	13.6	27.6
1.2.3.9 Other Services	668623	619996	530048	525586	–21.4	-15.2
1.2.4 Personal Loans	**2220732**	**2099699**	**2404701**	**2433282**	**9.6**	**15.9**
1.2.4.1 Consumer Durables	6299	3280	5499	5450	–13.5	66.2
1.2.4.2 Housing	1160111	1096614	1274747	1289637	11.2	17.6
1.2.4.3 Advances against Fixed Deposits	82873	69324	62892	64441	–22.2	-7.0
1.2.4.4 Advances to Individuals against share & bond	6265	6170	4982	5072	–19.0	-17.8
1.2.4.5 Credit Card Outstanding	88262	84519	105860	105905	20.0	25.3
1.2.4.6 Education	67988	69115	66902	66895	–1.6	-3.2
1.2.4.7 Vehicle Loans	202154	199235	207996	213601	5.7	7.2
1.2.4.8 Other Personal Loans	606780	571442	675823	682281	12.4	19.4
1.2A Priority Sector	**2739021**	**2627870**	**2694733**	**2787852**	**1.8**	**6.1**
1.2A.1 Agriculture & Allied Activities	1104988	1074992	1125474	1133239	2.6	5.4
1.2A.2 Micro & Small Enterprises	1067175	1004744	1057378	1061953	–0.5	5.7
1.2A.2.1 Manufacturing	375505	365002	362758	365398	–2.7	0.1
1.2A.2.2 Services	691670	639742	694620	696555	0.7	8.9
1.2A.3 Housing	432703	408457	454000	456989	5.6	11.9
1.2A.4 Micro-Credit	24101	23877	33526	35104	45.7	47.0
1.2A.5 Education Loans	53950	56694	53410	53215	–1.4	-6.1
1.2A.6 State-Sponsored Orgs. for SC/ST	397	338	387	395	–0.5	16.9
1.2A.7 Weaker Sections	662628	601915	698449	711799	7.4	18.3
1.2A.8 Export Credit	15566	18495	13219	15152	–2.7	-18.1

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

(₹ Crore)

Industry	Outstanding as on				Growth (%)	
	Mar. 29, 2019	2018	2019		Financial year so far	Y-o-Y
		Dec. 21	Nov. 22	Dec. 20	2019-20	2019
	1	2	3	4	5	6
1 Industry	**2885778**	**2749375**	**2772248**	**2794372**	**–3.2**	**1.6**
1.1 Mining & Quarrying (incl. Coal)	**41752**	**41664**	**41372**	**42741**	**2.4**	**2.6**
1.2 Food Processing	**157058**	**147840**	**136930**	**145578**	**–7.3**	**–1.5**
1.2.1 Sugar	29705	24875	24624	24541	–17.4	–1.3
1.2.2 Edible Oils & Vanaspati	21343	21395	17430	20071	–6.0	–6.2
1.2.3 Tea	4966	5294	5832	5458	9.9	3.1
1.2.4 Others	101044	96276	89044	95508	–5.5	–0.8
1.3 Beverage & Tobacco	**14662**	**14214**	**14030**	**15034**	**2.5**	**5.8**
1.4 Textiles	**203549**	**199888**	**186323**	**189152**	**–7.1**	**–5.4**
1.4.1 Cotton Textiles	97726	99982	83448	85688	–12.3	–14.3
1.4.2 Jute Textiles	2119	2095	2181	2215	4.5	5.7
1.4.3 Man-Made Textiles	26748	24141	25820	26170	–2.2	8.4
1.4.4 Other Textiles	76956	73670	74874	75079	–2.4	1.9
1.5 Leather & Leather Products	**11071**	**10749**	**10813**	**10949**	**–1.1**	**1.9**
1.6 Wood & Wood Products	**11968**	**11478**	**11968**	**12067**	**0.8**	**5.1**
1.7 Paper & Paper Products	**30319**	**29968**	**30230**	**30697**	**1.2**	**2.4**
1.8 Petroleum, Coal Products & Nuclear Fuels	**63136**	**56812**	**52466**	**53536**	**–15.2**	**–5.8**
1.9 Chemicals & Chemical Products	**191484**	**177377**	**173231**	**177427**	**–7.3**	**0.0**
1.9.1 Fertiliser	40043	27249	34112	34375	–14.2	26.2
1.9.2 Drugs & Pharmaceuticals	50500	50954	48501	49839	–1.3	–2.2
1.9.3 Petro Chemicals	46717	46271	37445	39154	–16.2	–15.4
1.9.4 Others	54224	52903	53173	54059	–0.3	2.2
1.10 Rubber, Plastic & their Products	**45803**	**44658**	**47029**	**49164**	**7.3**	**10.1**
1.11 Glass & Glassware	**9887**	**10119**	**8686**	**8784**	**–11.2**	**–13.2**
1.12 Cement & Cement Products	**55683**	**55013**	**59309**	**58502**	**5.1**	**6.3**
1.13 Basic Metal & Metal Product	**371564**	**379892**	**347906**	**337587**	**–9.1**	**–11.1**
1.13.1 Iron & Steel	282878	292174	265599	254848	–9.9	–12.8
1.13.2 Other Metal & Metal Product	88686	87718	82307	82739	–6.7	–5.7
1.14 All Engineering	**168621**	**161480**	**162680**	**158648**	**–5.9**	**–1.8**
1.14.1 Electronics	37856	37398	32895	33145	–12.4	–11.4
1.14.2 Others	130765	124082	129785	125503	–4.0	1.1
1.15 Vehicles, Vehicle Parts & Transport Equipment	**79859**	**80816**	**81472**	**82840**	**3.7**	**2.5**
1.16 Gems & Jewellery	**72014**	**67978**	**61310**	**60452**	**–16.1**	**–11.1**
1.17 Construction	**99473**	**92838**	**100091**	**102579**	**3.1**	**10.5**
1.18 Infrastructure	**1055921**	**971924**	**1025154**	**1029417**	**–2.5**	**5.9**
1.18.1 Power	568966	547618	562711	562025	–1.2	2.6
1.18.2 Telecommunications	115585	90603	130960	134310	16.2	48.2
1.18.3 Roads	186852	186983	186529	186870	0.0	–0.1
1.18.4 Other Infrastructure	184518	146720	144954	146212	–20.8	–0.3
1.19 Other Industries	**201954**	**194667**	**221247**	**229218**	**13.5**	**17.7**

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								
	2018-19	2018	2019						
		Nov, 30	Sep, 13	Sep, 27	Oct, 11	Oct, 25	Nov, 08	Nov, 22	Nov, 29
	1	2	3	4	5	6	7	8	9
Number of Reporting Banks	32	31	30	30	30	30	29	30	30
1 Aggregate Deposits (2.1.1.2+2.2.1.2)	**62003.4**	**54000.2**	**63423.7**	**62908.4**	**62777.3**	**63217.0**	**62705.3**	**64039.0**	**65921.6**
2 Demand and Time Liabilities									
2.1 Demand Liabilities	**18241.3**	**16400.1**	**18611.6**	**18621.8**	**18129.1**	**18067.8**	**17776.6**	**18086.2**	**18502.7**
2.1.1 Deposits									
2.1.1.1 Inter-Bank	5842.3	4908.8	5229.1	5430.0	5159.1	5177.4	4984.9	5157.7	5353.2
2.1.1.2 Others	9,808.6	8473.5	9467.8	9639.3	9385.4	9439.3	9232.9	9891.0	9997.5
2.1.2 Borrowings from Banks	0.0	0.0	0.0	20.0	20.0	20.0	0.0	20.0	0.0
2.1.3 Other Demand Liabilities	2590.5	3017.8	3914.6	3532.4	3564.6	3431.1	3558.8	3017.5	3152.0
2.2 Time Liabilities	**98531.4**	**85664.6**	**106990.8**	**107416.5**	**108105.1**	**109131.6**	**109411.3**	**110399.6**	**113574.2**
2.2.1 Deposits									
2.2.1.1 Inter-Bank	45655.9	39373.0	52259.6	53251.8	53846.0	54502.9	55098.0	55354.5	56770.2
2.2.1.2 Others	52194.8	45526.7	53955.9	53269.0	53391.9	53777.6	53472.4	54148.0	55924.1
2.2.2 Borrowings from Banks	0.0	0.6	0.0	0.0	34.9	0.0	5.0	0.0	0.0
2.2.3 Other Time Liabilities	680.7	764.3	775.3	895.6	832.2	851.0	835.9	897.1	879.8
3 Borrowing from Reserve Bank	0.0	0.0	0.0	0.0	0.0	0.0	35.0	0.0	0.0
4 Borrowings from a notified bank / Government	50375.4	52266.2	44323.7	44794.9	41809.7	45180.3	43499.4	42985.4	46581.3
4.1 Demand	16826.7	16834.2	13879.2	13568.4	12371.6	12636.9	12842.2	12591.5	13300.6
4.2 Time	33548.7	35432.0	30444.5	31226.5	29438.0	32543.4	30657.2	30393.9	33280.7
5 Cash in Hand and Balances with Reserve Bank	**5721.0**	**4258.8**	**5927.0**	**5487.0**	**5619.6**	**6010.5**	**5213.4**	**5418.8**	**6014.5**
5.1 Cash in Hand	319.1	315.2	296.8	286.7	297.4	289.4	300.1	311.1	307.9
5.2 Balance with Reserve Bank	5401.9	3943.6	5630.3	5200.3	5322.2	5721.0	4913.3	5107.7	5706.7
6 Balances with Other Banks in Current Account	**1543.2**	**1127.3**	**1005.7**	**796.9**	**685.0**	**695.9**	**740.1**	**974.0**	**716.0**
7 Investments in Government Securities	**30885.3**	**31000.1**	**30656.8**	**31724.0**	**31460.3**	**32366.1**	**33174.3**	**33051.2**	**32995.3**
8 Money at Call and Short Notice	**16190.2**	**16683.6**	**18098.5**	**20083.3**	**17754.6**	**18708.5**	**17643.3**	**17282.6**	**20094.5**
9 Bank Credit (10.1+11)	**60089.8**	**55325.3**	**61037.6**	**62865.8**	**61797.8**	**62515.4**	**61915.1**	**74721.2**	**63337.3**
10 Advances									
10.1 Loans, Cash-Credits and Overdrafts	**60086.2**	**55322.3**	**61037.1**	**62865.3**	**61797.3**	**62514.9**	**61914.6**	**74720.6**	**63336.8**
10.2 Due from Banks	82610.9	81237.1	75750.4	74965.4	75841.0	78322.8	77988.3	78925.3	80806.6
11 Bills Purchased and Discounted	3.7	3.0	0.5	0.6	0.6	0.6	0.6	0.6	0.6

Prices and Production

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

Group/Sub group	2018-19			Rural			Urban			Combined		
	Rural	Urban	Combined	Dec. 18	Nov. 19	Dec. 19	Dec. 18	Nov. 19	Dec. 19	Dec. 18	Nov. 19	Dec. 19
	1	2	3	4	5	6	7	8	9	10	11	12
1 Food and beverages	**139.5**	**138.4**	**139.1**	**138.5**	**150.9**	**154.3**	**137.6**	**153.6**	**156.3**	**138.2**	**151.9**	**155.0**
1.1 Cereals and products	137.7	137.2	137.5	137.1	141.8	142.8	138.5	144.1	144.9	137.5	142.5	143.5
1.2 Meat and fish	149.5	147.5	148.8	151.9	163.7	165.2	147.8	162.4	164.4	150.5	163.2	164.9
1.3 Egg	137.3	137.3	137.3	137.4	143.8	149.3	141.1	148.4	153.6	138.8	145.6	151.0
1.4 Milk and products	142.7	141.3	142.2	142.4	147.1	148.5	141.6	145.9	147.3	142.1	146.7	148.1
1.5 Oils and fats	124.0	117.6	121.6	124.2	126.0	127.5	118.1	121.5	122.8	122.0	124.3	125.8
1.6 Fruits	146.8	143.4	145.2	140.2	146.2	144.3	138.5	148.8	147.1	139.4	147.4	145.6
1.7 Vegetables	141.4	142.1	141.6	136.6	191.4	209.5	132.4	215.7	231.7	135.2	199.6	217.0
1.8 Pulses and products	124.1	115.3	121.1	120.9	136.2	138.8	117.5	134.6	137.2	119.8	135.7	138.3
1.9 Sugar and confectionery	111.9	110.8	111.5	109.9	113.8	113.6	111.0	115.0	114.7	110.3	114.2	114.0
1.10 Spices	138.8	140.7	139.4	140.2	147.3	149.1	141.5	146.3	148.0	140.6	147.0	148.7
1.11 Non-alcoholic beverages	134.9	127.5	131.8	137.8	138.7	139.3	128.1	130.5	130.7	133.8	135.3	135.7
1.12 Prepared meals, snacks, sweets	155.3	151.3	153.4	156.0	157.7	158.3	152.9	157.2	157.7	154.6	157.5	158.0
2 Pan, tobacco and intoxicants	**159.4**	**162.9**	**160.4**	**162.4**	**167.2**	**167.8**	**164.6**	**169.9**	**170.4**	**163.0**	**167.9**	**168.5**
3 Clothing and footwear	**150.3**	**139.3**	**145.9**	**150.8**	**151.5**	**151.9**	**140.8**	**144.2**	**144.6**	**146.8**	**148.6**	**149.0**
3.1 Clothing	151.2	141.0	147.2	151.6	152.3	152.6	142.7	146.3	146.8	148.1	149.9	150.3
3.2 Footwear	145.2	129.5	138.7	145.9	147.0	147.3	130.3	132.6	132.8	139.4	141.0	141.3
4 Housing	**--**	**145.6**	**145.6**	**--**	**--**	**--**	**146.5**	**153.5**	**152.8**	**146.5**	**153.5**	**152.8**
5 Fuel and light	**147.0**	**129.3**	**140.3**	**149.0**	**148.4**	**149.8**	**132.4**	**132.2**	**133.6**	**142.7**	**142.3**	**143.7**
6 Miscellaneous	**138.6**	**131.1**	**134.9**	**141.6**	**146.1**	**147.0**	**131.7**	**136.3**	**137.6**	**136.8**	**141.3**	**142.4**
6.1 Household goods and services	145.9	134.8	140.6	149.5	150.9	151.1	136.2	139.1	139.7	143.2	145.3	145.7
6.2 Health	143.5	135.5	140.5	149.6	154.3	154.8	137.3	142.8	143.2	144.9	149.9	150.4
6.3 Transport and communication	128.5	120.3	124.2	128.9	132.1	134.6	118.8	121.7	125.0	123.6	126.6	129.5
6.4 Recreation and amusement	140.4	130.3	134.7	143.3	149.1	149.5	131.7	136.7	136.8	136.8	142.1	142.3
6.5 Education	149.4	144.5	146.5	155.1	160.8	161.1	146.5	151.8	151.9	150.1	155.5	155.7
6.6 Personal care and effects	132.6	129.9	131.5	133.2	140.6	140.7	130.8	139.8	140.2	132.2	140.3	140.5
General Index (All Groups)	**141.3**	**137.7**	**139.6**	**141.9**	**149.9**	**152.2**	**138.0**	**147.0**	**148.3**	**140.1**	**148.6**	**150.4**

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

No. 19: Other Consumer Price Indices

Item	Base Year	Linking Factor	2018-19	2018	2019	
				Dec.	Nov.	Dec.
	1	2	3	4	5	6
1 Consumer Price Index for Industrial Workers	2001	4.63	300	301	328	330
2 Consumer Price Index for Agricultural Labourers	1986-87	5.89	907	913	1000	1014
3 Consumer Price Index for Rural Labourers	1986-87	–	915	921	1006	1019

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

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

Item	2018-19	2018	2019	
		Dec.	Nov.	Dec.
	1	2	3	4
1 Standard Gold (₹ per 10 grams)	31193	31251	38122	38092
2 Silver (₹ per kilogram)	38404	37095	44938	44576

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	2018-19	2018	2019		
			Dec.	Oct.	Nov. (P)	Dec. (P)
	1	2	3	4	5	6
1 ALL COMMODITIES	**100.000**	**119.8**	**119.7**	**122.0**	**122.3**	**122.8**
1.1 PRIMARY ARTICLES	**22.618**	**134.2**	**133.5**	**145.5**	**147.3**	**148.8**
1.1.1 FOOD ARTICLES	**15.256**	**143.7**	**143.5**	**160.2**	**162.4**	**162.5**
1.1.1.1 Food Grains (Cereals+Pulses)	3.462	146.7	150.4	160.8	162.5	163.4
1.1.1.2 Fruits & Vegetables	3.475	147.3	140.4	194.2	199.4	196.6
1.1.1.3 Milk	4.440	143.1	143.7	146.2	146.4	147.5
1.1.1.4 Eggs,Meat & Fish	2.402	138.0	140.1	145.6	148.6	148.8
1.1.1.5 Condiments & Spices	0.529	129.6	129.1	148.8	153.0	154.1
1.1.1.6 Other Food Articles	0.948	144.4	145.9	142.9	142.5	143.5
1.1.2 NON-FOOD ARTICLES	**4.119**	**123.1**	**124.4**	**126.1**	**127.0**	**134.0**
1.1.2.1 Fibres	0.839	127.0	128.6	126.4	123.5	123.7
1.1.2.2 Oil Seeds	1.115	140.5	140.9	151.4	149.6	152.9
1.1.2.3 Other non-food Articles	1.960	107.3	107.8	103.1	104.1	105.4
1.1.2.4 Floriculture	0.204	164.1	176.4	207.4	238.5	348.3
1.1.3 MINERALS	**0.833**	**136.5**	**139.3**	**153.6**	**154.8**	**153.6**
1.1.3.1 Metallic Minerals	0.648	123.0	126.2	147.3	149.8	147.3
1.1.3.2 Other Minerals	0.185	183.5	185.0	176.0	172.3	176.0
1.1.4 CRUDE PETROLEUM & NATURAL GAS	**2.410**	**92.4**	**83.3**	**82.8**	**83.1**	**86.0**
1.2 FUEL & POWER	**13.152**	**104.1**	**102.8**	**102.3**	**101.3**	**101.3**
1.2.1 COAL	**2.138**	**123.3**	**123.4**	**126.5**	**124.8**	**126.5**
1.2.1.1 Coking Coal	0.647	132.9	133.3	141.9	136.5	141.9
1.2.1.2 Non-Coking Coal	1.401	119.0	119.0	119.0	119.0	119.0
1.2.1.3 Lignite	0.090	120.3	120.0	131.1	131.1	131.1
1.2.2 MINERAL OILS	**7.950**	**96.7**	**94.2**	**92.8**	**91.6**	**91.2**
1.2.3 ELECTRICITY	**3.064**	**109.6**	**110.7**	**110.0**	**110.0**	**110.0**
1.3 MANUFACTURED PRODUCTS	**64.231**	**117.9**	**118.3**	**117.8**	**117.8**	**118.0**
1.3.1 MANUFACTURE OF FOOD PRODUCTS	**9.122**	**128.6**	**127.8**	**134.6**	**135.3**	**136.6**
1.3.1.1 Processing and Preserving of meat	0.134	136.7	136.4	139.6	137.5	135.0
1.3.1.2 Processing and Preserving of fish, Crustaceans, Molluscs and products thereof	0.204	132.1	134.8	139.3	138.9	136.6
1.3.1.3 Processing and Preserving of fruit and Vegetables	0.138	114.3	113.4	113.5	114.6	115.0
1.3.1.4 Vegetable and Animal oils and Fats	2.643	117.6	113.9	116.6	119.0	124.9
1.3.1.5 Dairy products	1.165	136.2	133.3	145.8	147.0	149.1
1.3.1.6 Grain mill products	2.010	141.6	144.0	148.3	148.3	147.6
1.3.1.7 Starches and Starch products	0.110	116.6	120.1	136.8	135.2	136.3
1.3.1.8 Bakery products	0.215	129.3	129.7	133.3	133.9	134.4
1.3.1.9 Sugar, Molasses & honey	1.163	111.2	110.2	119.9	119.8	119.1
1.3.1.10 Cocoa, Chocolate and Sugar confectionery	0.175	126.7	126.6	128.5	126.8	128.0
1.3.1.11 Macaroni, Noodles, Couscous and Similar farinaceous products	0.026	134.5	137.0	135.8	132.6	123.4
1.3.1.12 Tea & Coffee products	0.371	137.7	136.5	142.8	142.7	138.4
1.3.1.13 Processed condiments & salt	0.163	122.2	123.4	134.4	135.5	134.8
1.3.1.14 Processed ready to eat food	0.024	127.0	127.3	126.7	126.7	127.8
1.3.1.15 Health supplements	0.225	143.6	145.9	167.5	167.5	165.2
1.3.1.16 Prepared animal feeds	0.356	157.5	159.2	180.1	178.6	175.2
1.3.2 MANUFACTURE OF BEVERAGES	**0.909**	**120.7**	**121.8**	**123.2**	**123.8**	**123.4**
1.3.2.1 Wines & spirits	0.408	113.8	115.3	117.9	118.4	118.3
1.3.2.2 Malt liquors and Malt	0.225	120.5	121.4	126.4	125.8	125.1
1.3.2.3 Soft drinks; Production of mineral waters and Other bottled waters	0.275	131.2	131.9	128.6	130.0	129.5
1.3.3 MANUFACTURE OF TOBACCO PRODUCTS	**0.514**	**150.4**	**149.2**	**154.4**	**153.2**	**152.9**
1.3.3.1 Tobacco products	0.514	150.4	149.2	154.4	153.2	152.9

No. 21: Wholesale Price Index (Contd.)

(Base: 2011-12 = 100)

Commodities		Weight	2018-19	2018	2019		
				Dec.	Oct.	Nov. (P)	Dec. (P)
1.3.4	**MANUFACTURE OF TEXTILES**	**4.881**	**117.9**	**118.9**	**117.3**	**117.1**	**116.9**
1.3.4.1	Preparation and Spinning of textile fibres	2.582	110.6	110.9	107.4	106.5	106.2
1.3.4.2	Weaving & Finishing of textiles	1.509	127.3	128.4	129.3	130.1	129.8
1.3.4.3	Knitted and Crocheted fabrics	0.193	112.9	113.8	115.2	114.5	114.6
1.3.4.4	Made-up textile articles, Except apparel	0.299	130.3	134.6	135.2	135.4	135.0
1.3.4.5	Cordage, Rope, Twine and Netting	0.098	138.7	139.4	143.0	146.0	146.5
1.3.4.6	Other textiles	0.201	118.3	120.5	117.8	118.0	116.8
1.3.5	**MANUFACTURE OF WEARING APPAREL**	**0.814**	**138.8**	**138.7**	**138.4**	**138.9**	**139.1**
1.3.5.1	Manufacture of Wearing Apparel (woven), Except fur Apparel	0.593	139.4	139.3	138.9	139.6	140.1
1.3.5.2	Knitted and Crocheted apparel	0.221	137.0	137.2	136.8	137.2	136.6
1.3.6	**MANUFACTURE OF LEATHER AND RELATED PRODUCTS**	**0.535**	**121.8**	**120.8**	**118.5**	**118.7**	**118.9**
1.3.6.1	Tanning and Dressing of leather; Dressing and Dyeing of fur	0.142	111.0	108.2	105.5	106.0	104.4
1.3.6.2	Luggage, HandbAgs, Saddlery and Harness	0.075	134.7	134.2	136.4	135.9	136.4
1.3.6.3	Footwear	0.318	123.5	123.2	120.0	120.3	121.2
1.3.7	**MANUFACTURE OF WOOD AND PRODUCTS OF WOOD AND CORK**	**0.772**	**133.5**	**134.4**	**133.7**	**133.7**	**133.1**
1.3.7.1	Saw milling and Planing of wood	0.124	124.5	127.3	120.9	120.2	120.5
1.3.7.2	Veneer sheets; Manufacture of plywood, Laminboard, Particle board and Other panels and Boards	0.493	136.3	137.4	135.8	134.9	135.2
1.3.7.3	Builder's carpentry and Joinery	0.036	158.7	157.0	176.1	176.3	177.8
1.3.7.4	Wooden containers	0.119	124.1	122.7	125.9	130.2	123.7
1.3.8	**MANUFACTURE OF PAPER AND PAPER PRODUCTS**	**1.113**	**123.3**	**125.3**	**120.1**	**119.7**	**119.5**
1.3.8.1	Pulp, Paper and Paperboard	0.493	129.3	132.3	123.0	122.5	123.0
1.3.8.2	Corrugated paper and Paperboard and Containers of paper and Paperboard	0.314	116.5	118.5	114.7	114.1	112.9
1.3.8.3	Other articles of paper and Paperboard	0.306	120.6	120.8	120.9	120.9	120.6
1.3.9	**PRINTING AND REPRODUCTION OF RECORDED MEDIA**	**0.676**	**146.6**	**146.6**	**152.1**	**152.3**	**150.3**
1.3.9.1	Printing	0.676	146.6	146.6	152.1	152.3	150.3
1.3.10	**MANUFACTURE OF CHEMICALS AND CHEMICAL PRODUCTS**	**6.465**	**119.1**	**120.0**	**117.1**	**116.8**	**116.2**
1.3.10.1	Basic chemicals	1.433	125.0	126.7	118.9	117.7	116.8
1.3.10.2	Fertilizers and Nitrogen compounds	1.485	121.1	123.6	122.9	123.4	123.8
1.3.10.3	Plastic and Synthetic rubber in primary form	1.001	117.6	116.9	112.1	111.8	109.0
1.3.10.4	Pesticides and Other agrochemical products	0.454	120.2	119.7	123.0	122.7	121.4
1.3.10.5	Paints, Varnishes and Similar coatings, Printing ink and Mastics	0.491	112.7	113.1	113.8	114.0	114.0
1.3.10.6	Soap and Detergents, Cleaning and Polishing preparations, Perfumes and Toilet preparations	0.612	116.8	117.5	118.4	117.9	118.6
1.3.10.7	Other chemical products	0.692	116.6	117.4	113.7	113.8	113.7
1.3.10.8	Man-made fibres	0.296	104.0	103.3	97.3	96.7	96.2
1.3.11	**MANUFACTURE OF PHARMACEUTICALS, MEDICINAL CHEMICAL AND BOTANICAL PRODUCTS**	**1.993**	**123.5**	**123.4**	**126.8**	**126.6**	**127.9**
1.3.11.1	Pharmaceuticals, Medicinal chemical and Botanical products	1.993	123.5	123.4	126.8	126.6	127.9
1.3.12	**MANUFACTURE OF RUBBER AND PLASTICS PRODUCTS**	**2.299**	**109.6**	**110.2**	**108.4**	**107.7**	**108.3**
1.3.12.1	Rubber Tyres and Tubes; Retreading and Rebuilding of Rubber Tyres	0.609	98.9	99.8	98.0	98.3	98.4
1.3.12.2	Other Rubber Products	0.272	91.7	91.8	94.1	94.0	93.9
1.3.12.3	Plastics products	1.418	117.6	118.3	115.5	114.4	115.2
1.3.13	**MANUFACTURE OF OTHER NON-METALLIC MINERAL PRODUCTS**	**3.202**	**115.9**	**115.3**	**115.4**	**115.4**	**115.8**
1.3.13.1	Glass and Glass products	0.295	121.4	122.6	121.0	120.8	125.3
1.3.13.2	Refractory products	0.223	111.1	110.8	109.3	108.5	106.9
1.3.13.3	Clay Building Materials	0.121	98.0	96.4	102.5	100.1	105.6
1.3.13.4	Other Porcelain and Ceramic Products	0.222	112.7	112.3	112.7	112.5	113.3
1.3.13.5	Cement, Lime and Plaster	1.645	114.3	112.9	118.2	118.6	118.3

No. 21: Wholesale Price Index (Contd.)

(Base: 2011-12 = 100)

Commodities	Weight	2018-19	2018	2019		
			Dec.	Oct.	Nov. (P)	Dec. (P)
1.3.13.6 Articles of Concrete, Cement and Plaster	0.292	121.5	120.6	121.3	121.4	122.5
1.3.13.7 Cutting, Shaping and Finishing of Stone	0.234	118.8	118.5	119.0	118.2	119.0
1.3.13.8 Other Non-Metallic Mineral Products	0.169	130.4	135.9	84.9	84.9	80.6
1.3.14 MANUFACTURE OF BASIC METALS	**9.646**	**112.2**	**112.3**	**103.4**	**103.3**	**103.5**
1.3.14.1 Inputs into steel making	1.411	113.0	113.3	95.1	96.1	96.5
1.3.14.2 Metallic Iron	0.653	117.8	117.5	102.1	101.8	102.8
1.3.14.3 Mild Steel - Semi Finished Steel	1.274	99.5	98.7	92.8	92.5	93.6
1.3.14.4 Mild Steel -Long Products	1.081	110.2	110.3	102.6	101.8	103.1
1.3.14.5 Mild Steel - Flat products	1.144	119.6	119.7	103.3	102.3	103.4
1.3.14.6 Alloy steel other than Stainless Steel- Shapes	0.067	111.7	110.3	98.9	99.4	97.8
1.3.14.7 Stainless Steel - Semi Finished	0.924	112.7	112.8	98.8	99.7	98.7
1.3.14.8 Pipes & tubes	0.205	126.6	127.3	125.1	123.1	123.4
1.3.14.9 Non-ferrous metals incl. precious metals	1.693	112.2	111.3	106.4	106.6	106.3
1.3.14.10 Castings	0.925	109.8	109.8	113.5	112.4	111.4
1.3.14.11 Forgings of steel	0.271	126.8	136.8	148.5	150.4	149.7
1.3.15 MANUFACTURE OF FABRICATED METAL PRODUCTS, EXCEPT MACHINERY AND EQUIPMENT	**3.155**	**115.1**	**115.7**	**115.1**	**115.5**	**115.6**
1.3.15.1 Structural Metal Products	1.031	112.8	114.1	113.6	113.5	113.5
1.3.15.2 Tanks, Reservoirs and Containers of Metal	0.660	127.3	127.3	125.0	125.6	124.9
1.3.15.3 Steam generators, Except Central Heating Hot Water Boilers	0.145	105.9	103.8	106.3	106.3	106.3
1.3.15.4 Forging, Pressing, Stamping and Roll-Forming of Metal; Powder Metallurgy	0.383	96.3	96.8	100.2	99.6	100.3
1.3.15.5 Cutlery, Hand Tools and General Hardware	0.208	99.7	100.2	100.5	100.3	100.0
1.3.15.6 Other Fabricated Metal Products	0.728	123.1	124.3	121.9	123.6	124.3
1.3.16 MANUFACTURE OF COMPUTER, ELECTRONIC AND OPTICAL PRODUCTS	**2.009**	**111.8**	**111.6**	**109.8**	**109.5**	**110.0**
1.3.16.1 Electronic Components	0.402	100.9	100.9	98.3	97.7	97.6
1.3.16.2 Computers and Peripheral Equipment	0.336	132.5	135.1	135.1	135.0	135.0
1.3.16.3 Communication Equipment	0.310	116.7	116.8	117.5	118.4	118.9
1.3.16.4 Consumer Electronics	0.641	103.8	102.6	97.2	95.3	96.7
1.3.16.5 Measuring, Testing, Navigating and Control equipment	0.181	109.1	105.4	110.3	112.5	113.5
1.3.16.6 Watches and Clocks	0.076	137.9	138.6	138.7	139.7	139.7
1.3.16.7 Irradiation, Electromedical and Electrotherapeutic equipment	0.055	103.2	105.4	102.5	103.1	101.4
1.3.16.8 Optical instruments and Photographic equipment	0.008	108.7	107.4	109.4	109.4	111.0
1.3.17 MANUFACTURE OF ELECTRICAL EQUIPMENT	**2.930**	**111.7**	**112.2**	**111.2**	**110.9**	**110.6**
1.3.17.1 Electric motors, Generators, Transformers and Electricity distribution and Control apparatus	1.298	107.7	108.8	108.5	108.8	108.1
1.3.17.2 Batteries and Accumulators	0.236	117.7	117.7	117.0	117.3	115.8
1.3.17.3 Fibre optic cables for data transmission or live transmission of images	0.133	126.1	128.7	108.4	105.2	108.1
1.3.17.4 Other electronic and Electric wires and Cables	0.428	111.2	111.5	110.0	110.1	110.0
1.3.17.5 Wiring devices, Electric lighting & display equipment	0.263	108.6	106.4	112.6	111.8	110.4
1.3.17.6 Domestic appliances	0.366	121.6	120.8	120.5	120.1	120.3
1.3.17.7 Other electrical equipment	0.206	108.6	109.8	107.6	105.0	106.9
1.3.18 MANUFACTURE OF MACHINERY AND EQUIPMENT	**4.789**	**111.3**	**111.8**	**112.7**	**112.6**	**113.0**
1.3.18.1 Engines and Turbines, Except aircraft, Vehicle and Two wheeler engines	0.638	103.0	102.9	103.4	104.1	105.0
1.3.18.2 Fluid power equipment	0.162	118.2	118.7	120.2	120.2	120.1
1.3.18.3 Other pumps, Compressors, Taps and Valves	0.552	108.9	109.2	111.0	110.9	111.1
1.3.18.4 Bearings, Gears, Gearing and Driving elements	0.340	111.2	110.7	109.9	107.2	109.1
1.3.18.5 Ovens, Furnaces and Furnace burners	0.008	78.2	77.7	80.1	80.4	80.6
1.3.18.6 Lifting and Handling equipment	0.285	110.4	112.2	110.8	111.3	112.0

No. 21: Wholesale Price Index (Concld.)

(Base: 2011-12 = 100)

Commodities	Weight	2018-19	2018	2019		
			Dec.	Oct.	Nov. (P)	Dec. (P)
1.3.18.7 Office machinery and Equipment	0.006	130.2	130.2	130.2	130.2	130.2
1.3.18.8 Other general-purpose machinery	0.437	129.6	129.9	130.2	128.6	130.5
1.3.18.9 Agricultural and Forestry machinery	0.833	116.9	118.0	121.3	120.9	121.1
1.3.18.10 Metal-forming machinery and Machine tools	0.224	101.8	103.3	107.9	107.9	109.0
1.3.18.11 Machinery for mining, Quarrying and Construction	0.371	75.7	75.5	74.2	74.1	74.3
1.3.18.12 Machinery for food, Beverage and Tobacco processing	0.228	124.7	127.5	125.7	125.7	124.2
1.3.18.13 Machinery for textile, Apparel and Leather production	0.192	119.9	118.0	117.7	117.7	117.2
1.3.18.14 Other special-purpose machinery	0.468	123.8	124.3	126.2	127.6	127.0
1.3.18.15 Renewable electricity generating equipment	0.046	67.3	67.0	65.8	66.6	65.4
1.3.19 MANUFACTURE OF MOTOR VEHICLES, TRAILERS AND SEMI-TRAILERS	**4.969**	**112.8**	**112.9**	**114.7**	**115.7**	**114.9**
1.3.19.1 Motor vehicles	2.600	113.3	114.3	115.2	115.2	115.0
1.3.19.2 Parts and Accessories for motor vehicles	2.368	112.2	111.4	114.2	116.3	114.8
1.3.20 MANUFACTURE OF OTHER TRANSPORT EQUIPMENT	**1.648**	**111.7**	**112.5**	**118.0**	**118.3**	**118.4**
1.3.20.1 Building of ships and Floating structures	0.117	158.8	158.8	158.8	158.8	158.8
1.3.20.2 Railway locomotives and Rolling stock	0.110	104.7	104.3	106.6	106.6	106.6
1.3.20.3 Motor cycles	1.302	106.6	107.5	114.4	114.7	114.7
1.3.20.4 Bicycles and Invalid carriages	0.117	127.8	129.2	128.1	128.1	130.5
1.3.20.5 Other transport equipment	0.002	123.5	124.9	125.9	126.9	127.0
1.3.21 MANUFACTURE OF FURNITURE	**0.727**	**127.3**	**129.7**	**131.6**	**131.2**	**129.9**
1.3.21.1 Furniture	0.727	127.3	129.7	131.6	131.2	129.9
1.3.22 OTHER MANUFACTURING	**1.064**	**107.0**	**114.5**	**116.7**	**113.6**	**114.1**
1.3.22.1 Jewellery and Related articles	0.996	103.9	111.9	114.1	110.7	111.3
1.3.22.2 Musical instruments	0.001	174.1	172.0	166.4	175.9	172.7
1.3.22.3 Sports goods	0.012	127.4	128.9	129.8	130.9	131.4
1.3.22.4 Games and Toys	0.005	132.2	132.4	135.9	137.0	138.7
1.3.22.5 Medical and Dental instruments and Supplies	0.049	159.2	160.3	162.5	162.5	162.5
2 FOOD INDEX	**24.378**	**138.1**	**137.6**	**150.6**	**152.3**	**152.8**

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

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

Industry	Weight	2017-18	2018-19	April-November		November	
				2018-19	2019-20	2018	2019
	1	2	3	4	5	6	7
General Index	100.00	125.3	130.1	127.7	128.5	126.1	128.4
1 Sectoral Classification							
1.1 Mining	14.37	104.9	107.9	102.0	101.9	110.6	112.5
1.2 Manufacturing	77.63	126.6	131.5	129.0	130.1	126.8	130.2
1.3 Electricity	7.99	149.2	156.9	160.5	161.8	147.3	139.9
2 Use-Based Classification							
2.1 Primary Goods	34.05	121.8	126.1	124.3	124.4	124.8	124.4
2.2 Capital Goods	8.22	105.6	108.4	106.7	94.3	100.0	91.4
2.3 Intermediate Goods	17.22	125.1	126.2	123.1	138.1	120.2	140.7
2.4 Infrastructure/ Construction Goods	12.34	132.0	141.7	138.8	135.0	135.5	130.8
2.5 Consumer Durables	12.84	123.6	130.4	131.9	123.3	118.3	116.5
2.6 Consumer Non-Durables	15.33	139.9	145.5	139.1	144.5	148.6	151.6

Source : National Statistical 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 - December			
	2019-20 (Revised Estimates)	2019-20 (Actuals)	2018-19 (Actuals)	Percentage to Revised Estimates	
				2019-20	2018-19
	1	2	3	4	5
1 Revenue Receipts	**1850101**	**1146897**	**1084044**	**62.0**	**62.7**
1.1 Tax Revenue (Net)	1504587	904944	936333	60.1	63.1
1.2 Non-Tax Revenue	345514	241953	147711	70.0	60.2
2 Non-Debt Capital Receipt	**81605**	**31025**	**46532**	**38.0**	**50.0**
2.1 Recovery of Loans	16605	12925	12317	77.8	93.6
2.2 Other Receipts	65000	18100	34215	27.8	42.8
3 Total Receipts (excluding borrowings) (1+2)	**1931706**	**1177922**	**1130576**	**61.0**	**62.0**
4 Revenue Expenditure	2349645	1854125	1620211	78.9	75.7
4.1 Interest Payments	625105	424314	421193	67.9	71.7
5 Capital Expenditure	348907	255522	211822	73.2	66.9
6 Total Expenditure (4+5)	**2698552**	**2109647**	**1832033**	**78.2**	**74.6**
7 Revenue Deficit (4-1)	**499544**	**707228**	**536167**	**141.6**	**130.5**
8 Fiscal Deficit (6-3)	**766846**	**931725**	**701457**	**121.5**	**110.6**
9 Gross Primary Deficit (8-4.1)	**141741**	**507411**	**280264**	**358.0**	**598.5**

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

No. 24: Treasury Bills – Ownership Pattern

(₹ Crore)

Item	2018-19	2018	2019					
		Dec. 28	Nov. 22	Nov. 29	Dec. 6	Dec. 13	Dec. 20	Dec. 27
	1	2	3	4	5	6	7	8
1 91-day								
1.1 Banks	18521	38010	16907	15658	16420	16035	15169	15629
1.2 Primary Dealers	17878	17327	16006	14558	16936	13869	15432	13566
1.3 State Governments	26999	74831	58739	62729	51324	50324	53449	55446
1.4 Others	27747	48183	87989	93697	93862	100260	101107	105392
2 182-day								
2.1 Banks	31953	40399	73881	72356	71077	70225	70248	69389
2.2 Primary Dealers	38738	42813	26258	27263	28448	27728	25631	26616
2.3 State Governments	28036	34448	6087	6078	7078	7068	6945	6945
2.4 Others	18567	18781	28958	26531	23730	22444	22582	19404
3 364-day								
3.1 Banks	48811	52933	62867	61801	61997	59819	60357	58261
3.2 Primary Dealers	74170	81546	59216	61512	60150	59822	57387	58889
3.3 State Governments	18892	18092	17920	17890	21790	21790	21790	21790
3.4 Others	62393	62439	55177	53155	53410	54816	55663	55247
4 14-day Intermediate								
4.1 Banks								
4.2 Primary Dealers								
4.3 State Governments	165605	140624	141900	129972	78618	62470	137981	140863
4.4 Others	252	483	333	243	253	478	377	372
Total Treasury Bills (Excluding 14 day Intermediate T Bills) #	412704	529801	510007	513228	506222	504199	505762	506574

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

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										
2019-20										
Nov. 27	10000	79	69336	8001	11	9999	8001	18000	98.77	4.9896
Dec. 4	10000	74	44134	4842	25	9989	4842	14831	98.80	4.8901
Dec. 11	10000	95	54019	1123	28	9998	1123	11121	98.77	4.9982
Dec. 18	10000	79	43980	8995	31	9981	8995	18976	98.77	5.0073
Dec. 24	10000	72	33660	6005	34	10000	6005	16005	98.76	5.0258
182-day Treasury Bills										
2019-20										
Nov. 27	4000	49	12578	17	8	3983	17	4000	97.51	5.1197
Dec. 4	4000	75	20040	1011	15	3989	1011	5000	97.53	5.0695
Dec. 11	4000	69	10943	7	37	3993	7	4000	97.48	5.1866
Dec. 18	4000	54	10261	10	26	3990	10	4000	97.48	5.1938
Dec. 24	4000	59	14126	9	23	3991	9	4000	97.46	5.2197
364-day Treasury Bills										
2019-20										
Nov. 27	3000	57	11882	0	4	3000	0	3000	95.13	5.1389
Dec. 4	3000	88	13487	4001	15	2999	4001	7000	95.16	5.0990
Dec. 11	3000	72	11092	0	32	3000	0	3000	95.03	5.2476
Dec. 18	3000	56	7327	1	35	2999	1	3000	95.01	5.2665
Dec. 24	3000	61	10704	0	21	3000	0	3000	94.98	5.3000

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
December	2,	2019	3.60-5.25	4.99
December	3,	2019	3.60-5.25	5.05
December	4,	2019	3.70-5.30	5.02
December	5,	2019	3.50-5.25	5.03
December	6,	2019	3.70-5.25	5.02
December	7,	2019	3.50-5.20	4.69
December	9,	2019	3.70-5.25	5.01
December	10,	2019	3.70-5.25	4.99
December	11,	2019	3.70-5.25	5.00
December	12,	2019	3.50-5.25	4.95
December	13,	2019	3.60-5.25	4.97
December	16,	2019	3.60-5.30	5.08
December	17,	2019	3.60-5.25	5.06
December	18,	2019	3.60-5.25	5.06
December	19,	2019	3.60-5.25	4.99
December	20,	2019	3.70-5.25	5.07
December	21,	2019	4.30-5.25	4.89
December	23,	2019	3.70-5.30	5.11
December	24,	2019	3.70-5.25	5.12
December	26,	2019	3.60-5.30	5.12
December	27,	2019	3.40-5.30	5.11
December	30,	2019	3.40-5.25	5.09
December	31,	2019	3.70-5.30	5.10
January	1,	2020	3.60-5.25	5.12
January	2,	2020	3.00-5.25	5.01
January	3,	2020	2.75-5.25	4.89
January	4,	2020	4.15-5.15	4.69
January	6,	2020	2.75-5.25	4.89
January	7,	2020	3.00-5.25	4.92
January	8,	2020	3.40-5.25	4.91
January	9,	2020	3.50-5.25	4.96
January	10,	2020	3.60-5.25	4.98
January	13,	2020	3.60-5.25	4.97
January	14,	2020	3.60-5.25	4.97
January	15,	2020	3.60-5.25	4.94

Note: Includes Notice Money.

No. 27: Certificates of Deposit

Item	2018	2019			
	Dec. 21	Nov. 8	Nov. 22	Dec. 6	Dec. 20
	1	2	3	4	5
1 Amount Outstanding (₹ Crore)	180664.01	171696.00	162443.00	163198.00	160669.00
1.1 Issued during the fortnight (₹ Crore)	32220.22	10862.41	15649.53	14847.44	13837.13
2 Rate of Interest (per cent)	6.83-9.02	5.15-7.31	5.04-7.24	4.96-6.80	4.97-5.84

No. 28: Commercial Paper

Item	2018	2019			
	Dec. 31	Nov. 15	Nov. 30	Dec. 15	Dec. 31
	1	2	3	4	5
1 Amount Outstanding (₹ Crore)	498728.65	461813.40	458415.60	457213.55	414906.30
1.1 Reported during the fortnight (₹ Crore)	95777.10	94360.65	80022.90	97114.00	83567.75
2 Rate of Interest (per cent)	6.78-10.29	4.78-13.23	5.01-13.30	4.88-12.65	4.99-13.18

No. 29: Average Daily Turnover in Select Financial Markets

(₹ Crore)

Item	2018-19	2018	2019					
		Dec. 21	Nov. 22	Nov. 29	Dec. 6	Dec. 13	Dec. 20	Dec. 27
	1	2	3	4	5	6	7	8
1 Call Money	31280	37204	21914	18304	17179	20606	22788	27553
2 Notice Money	4930	6006	196	3595	5338	202	7194	238
3 Term Money	740	201	743	757	642	479	510	939
4 CBLO/TRIPARTY REPO	213010	251875	308704	379116	325120	352328	413105	339731
5 Market Repo	200970	173304	189037	259645	229520	234024	270854	230092
6 Repo in Corporate Bond		5924	2074	2953	1554	4158	98	1528
7 Forex (US $ million)	67793	65507	59361	70279	53349	64953	62050	66546
8 Govt. of India Dated Securities	65800	88458	95305	70233	82536	61668	59986	70654
9 State Govt. Securities	4320	7933	5598	4846	6775	5274	2512	5891
10 Treasury Bills								
10.1 91-Day	3380	6924	4035	2223	6653	3746	4766	6094
10.2 182-Day	1450	2191	1683	1505	2156	1457	1942	1577
10.3 364-Day	1620	4746	1700	1901	3381	1601	1970	1019
10.4 Cash Management Bills	1400		90	6	996	530	122	
11 Total Govt. Securities (8+9+10)	77970	110252	108411	80714	102496	74277	71298	85234
11.1 RBI	–	3065	29	240	285	81	3393	4670

Note : Collateralised Borrowing and Lending Obligation (CBLO) segment of the money market has been discontinued and replaced with Triparty Repo with effect from November 05, 2018.

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

(Amount in ₹ Crore)

Security & Type of Issue	2018-19		2018-19 (Apr.-Dec.)		2019-20 (Apr.-Dec.) *		Dec. 2018		Dec. 2019 *	
	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	**129**	**16754**	**106**	**14519**	**56**	**61035**	**4**	**765**	**4**	**1264**
1A Premium	124	16085	104	14015	55	39411	4	702	4	1033
1.1 Public	119	14605	100	12677	45	9780	2	49	4	1264
1.1.1 Premium	115	14123	98	12307	44	9373	2	44	4	1033
1.2 Rights	10	2149	6	1843	11	51255	2	715	–	–
1.2.1 Premium	9	1962	6	1708	11	30038	2	659	–	–
2 Preference Shares	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**
2.1 Public	–	–	–	–	–	–	–	–	–	–
2.2 Rights	–	–	–	–	–	–	–	–	–	–
3 Bonds & Debentures	**25**	**36680**	**15**	**28565**	**27**	**11746**	**1**	**264**	**3**	**2519**
3.1 Convertible	–	–	–	–	–	–	–	–	–	–
3.1.1 Public	–	–	–	–	–	–	–	–	–	–
3.1.2 Rights	–	–	–	–	–	–	–	–	–	–
3.2 Non-Convertible	25	36680	15	28565	27	11746	1	264	3	2519
3.2.1 Public	25	36680	15	28565	27	11746	1	264	3	2519
3.2.2 Rights	–	–	–	–	–	–	–	–	–	–
4 Total(1+2+3)	**154**	**53433**	**121**	**43085**	**83**	**72781**	**5**	**1028**	**7**	**3783**
4.1 Public	144	51284	115	41242	72	21526	3	313	7	3783
4.2 Rights	10	2149	6	1843	11	51255	2	715	–	–

Note : Since April 2018, monthly data is compiled on the basis of closing date of issues as against the earlier practice of compilation on the basis of opening date.

Source : Securities and Exchange Board of India.

* : Data is Provisional

External Sector

No. 31: Foreign Trade

Item	Unit	2018-19	2018	2019				
			Dec.	Aug.	Sep.	Oct.	Nov.	Dec.
		1	2	3	4	5	6	7
1 Exports	₹ Crore	2307726	197045	185276	186202	188126	185360	194765
	US $ Million	330078	27858	26042	26103	26482	25942	27357
1.1 Oil	₹ Crore	325929	28777	22777	24735	26042	29177	27743
	US $ Million	46554	4069	3202	3468	3666	4083	3897
1.2 Non-oil	₹ Crore	1981797	168268	162499	161467	162085	156183	167022
	US $ Million	283525	23790	22840	22635	22816	21859	23461
2 Imports	₹ Crore	3594675	299553	283351	268472	265727	272273	274884
	US $ Million	512793	42351	39827	37636	37406	38106	38611
2.1 Oil	₹ Crore	986275	76276	78049	64374	68781	79038	76137
	US $ Million	140921	10784	10970	9024	9682	11062	10694
2.2 Non-oil	₹ Crore	2608400	223278	205302	204098	196946	193235	198747
	US $ Million	371872	31567	28857	28612	27723	27044	27917
3 Trade Balance	₹ Crore	-1286948	-102509	-98075	-82269	-77601	-86913	-80119
	US $ Million	-182714	-14493	-13785	-11533	-10924	-12164	-11254
3.1 Oil	₹ Crore	-660346	-47498	-55272	-39639	-42740	-49861	-48394
	US $ Million	-94367	-6715	-7769	-5557	-6016	-6978	-6798
3.2 Non-oil	₹ Crore	-626602	-55010	-42804	-42631	-34861	-37052	-31725
	US $ Million	-88347	-7777	-6016	-5976	-4907	-5186	-4456

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

No. 32: Foreign Exchange Reserves

Item	Unit	2019					2020	
		Jan. 11	Dec. 6	Dec. 13	Dec. 20	Dec. 27	Jan. 3	Jan. 10
		1	2	3	4	5	6	7
1 Total Reserves	**₹ Crore**	**2798800**	**3234873**	**3219350**	**3235017**	**3264729**	**3311099**	**3272431**
	US $ Million	**397352**	**453422**	**454492**	**454948**	**457468**	**461157**	**461214**
1.1 Foreign Currency Assets	₹ Crore	2617250	3005418	2992223	3005923	3032614	3072705	3033747
	US $ Million	371379	421258	422422	422732	424936	427949	427582
1.2 Gold	₹ Crore	152460	193185	191029	192925	195484	201456	202156
	US $ Million	21844	27078	26968	27132	27392	28058	28492
1.3 SDRs	SDRs Million	1052	1046	1046	1046	1046	1046	1046
	₹ Crore	10370	10282	10226	10257	10281	10392	10235
	US $ Million	1472	1441	1444	1443	1441	1447	1442
1.4 Reserve Tranche Position in IMF	₹ Crore	18720	25989	25872	25912	26349	26545	26294
	US $ Million	2656	3644	3658	3642	3700	3703	3697

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

No. 33: NRI Deposits

(US$ Million)

Scheme	Outstanding				Flows	
	2018-19	2018	2019		2018-19	2019-20
		Dec.	Nov.	Dec.	Apr.-Dec.	Apr.-Dec.
	1	2	3	4	5	6
1 NRI Deposits	**130423**	**125773**	**132699**	**133135**	**6977**	**5859**
1.1 FCNR(B)	23170	20840	24326	24018	-1186	848
1.2 NR(E)RA	92017	90254	92325	92889	6604	3562
1.3 NRO	15236	14680	16049	16228	1558	1449

No. 34: Foreign Investment Inflows

(US$ Million)

Item	2018-19	2018-19	2019-20	2018	2019	
		Apr.-Dec.	Apr.-Dec.	Dec.	Nov.	Dec.
	1	2	3	4	5	6
1.1 Net Foreign Direct Investment (1.1.1–1.1.2)	**30712**	**24292**	**27589**	**3112**	**1068**	**3016**
1.1.1 Direct Investment to India (1.1.1.1–1. 1.1.2)	**43302**	**33512**	**36151**	**4237**	**1720**	**4046**
1.1.1.1 Gross Inflows/Gross Investments	**62001**	**46540**	**51429**	**5950**	**4440**	**6766**
1.1.1.1.1 Equity	45055	33997	37274	4449	2862	4717
1.1.1.1.1.1 Government (SIA/FIPB)	2429	2033	3028	1	58	45
1.1.1.1.1.2 RBI	36315	27820	28460	4264	2210	3646
1.1.1.1.1.3 Acquisition of shares	5622	3640	5281	126	536	967
1.1.1.1.1.4 Equity capital of unincorporated bodies	689	505	505	58	58	58
1.1.1.1.2 Reinvested earnings	13672	10022	9953	1150	1150	1150
1.1.1.1.3 Other capital	3274	2521	4202	351	428	899
1.1.1.2 Repatriation/Disinvestment	**18699**	**13028**	**15278**	**1713**	**2720**	**2720**
1.1.1.2.1 Equity	18452	12816	15117	1700	2719	2719
1.1.1.2.2 Other capital	247	212	161	13	1	1
1.1.2 Foreign Direct Investment by India (1.1.2.1+1.1.2.2+1.1.2.3–1.1.2.4)	**12590**	**9220**	**8562**	**1124**	**652**	**1030**
1.1.2.1 Equity capital	7201	5519	4382	766	331	324
1.1.2.2 Reinvested Earnings	3032	2274	2319	253	253	253
1.1.2.3 Other Capital	5202	3079	3709	313	341	726
1.1.2.4 Repatriation/Disinvestment	2845	1652	1848	208	272	272
1.2 Net Portfolio Investment (1.2.1+1.2.2+1.2.3–1.2.4)	**-618**	**-10054**	**12153**	**-1344**	**2120**	**-496**
1.2.1 GDRs/ADRs	1820	1820	–	–	–	–
1.2.2 FIIs	-2225	-13693	12777	-1370	2726	109
1.2.3 Offshore funds and others	–	–	–	–	–	–
1.2.4 Portfolio investment by India	213	-1820	624	-26	606	606
1 Foreign Investment Inflows	**30094**	**14238**	**39743**	**1769**	**3188**	**2519**

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

(US$ Million)

Item	2018-19	2018	2019		
		Dec.	Oct.	Nov.	Dec.
	1	2	3	4	5
1 Outward Remittances under the LRS	**13787.58**	**1093.10**	**1523.77**	**1482.00**	**1563.72**
1.1 Deposit	455.94	31.62	39.57	39.42	42.38
1.2 Purchase of immovable property	84.53	5.38	8.65	7.14	4.85
1.3 Investment in equity/debt	422.90	34.29	38.80	73.99	27.57
1.4 Gift	1370.24	110.36	148.39	153.02	150.90
1.5 Donations	8.67	1.32	0.71	0.48	0.89
1.6 Travel	4803.81	386.18	578.97	522.28	620.32
1.7 Maintenance of close relatives	2800.88	223.27	256.77	262.96	276.74
1.8 Medical Treatment	28.59	1.86	3.18	3.04	2.68
1.9 Studies Abroad	3569.87	277.88	432.66	400.98	420.45
1.10 Others	242.15	20.97	16.08	18.69	16.93

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

Item	2017-18	2018-19	2019		2020
			January	December	January
	1	2	3	4	5
36-Currency Export and Trade Based Weights (Base: 2004-05=100)					
1 Trade-Based Weights					
1.1 NEER	76.94	72.64	72.23	72.67	72.26
1.2 REER	119.71	114.01	113.29	117.85	117.18
2 Export-Based Weights					
2.1 NEER	78.89	74.18	73.81	74.00	73.72
2.2 REER	121.94	116.32	115.55	120.35	119.90
6-Currency Trade Based Weights					
1 Base: 2004-05 (April-March) =100					
1.1 NEER	67.91	63.07	62.76	63.35	62.98
1.2 REER	129.19	121.70	120.67	128.72	127.22
2 Base: 2017-18 (April-March) =100					
2.1 NEER	100.00	92.88	92.42	93.28	92.74
2.2 REER	100.00	94.20	93.41	99.64	98.47

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

(Amount in US$ Million)

Item	2018-19	2018	2019	
		Dec.	Nov.	Dec.
	1	2	3	4
1 Automatic Route				
1.1 Number	999	66	122	109
1.2 Amount	28387	3332	2116	1257
2 Approval Route				
2.1 Number	21	1	-	4
2.2 Amount	13537	474	-	840
3 Total (1+2)				
3.1 Number	1020	67	122	113
3.2 Amount	41924	3806	2116	2097
4 Weighted Average Maturity (in years)	5.20	5.50	7.10	4.70
5 Interest Rate (per cent)				
5.1 Weighted Average Margin over 6-month LIBOR or reference rate for Floating Rate Loans	1.20	1.15	2.03	1.41
5.2 Interest rate range for Fixed Rate Loans	0.00-15.00	0.00-12.00	0.00-15.00	0.00-25.00

No. 38: India's Overall Balance of Payments

(US $ Million)

Item	Jul-Sep 2018			Jul-Sep 2019 (P)		
	Credit	Debit	Net	Credit	Debit	Net
	1	2	3	4	5	6
Overall Balance of Payments(1+2+3)	**290140**	**292008**	**-1868**	**301536**	**296418**	**5118**
1 CURRENT ACCOUNT (1.1+ 1.2)	**160019**	**179073**	**-19054**	**161210**	**167487**	**-6276**
1.1 MERCHANDISE	**83399**	**133436**	**-50037**	**80014**	**118097**	**-38083**
1.2 INVISIBLES (1.2.1+1.2.2+1.2.3)	**76620**	**45637**	**30984**	**81196**	**49390**	**31806**
1.2.1 Services	50094	29839	20256	52380	31937	20443
1.2.1.1 Travel	7038	5813	1225	7643	6031	1611
1.2.1.2 Transportation	4641	5086	-446	5183	6009	-826
1.2.1.3 Insurance	646	396	250	603	354	249
1.2.1.4 G.n.i.e.	140	261	-122	169	298	-128
1.2.1.5 Miscellaneous	37629	18282	19348	38782	19245	19537
1.2.1.5.1 Software Services	20757	1472	19286	23247	2182	21064
1.2.1.5.2 Business Services	9408	9690	-282	10878	11211	-333
1.2.1.5.3 Financial Services	1311	1132	180	1239	594	645
1.2.1.5.4 Communication Services	606	278	328	635	354	281
1.2.2 Transfers	20891	1560	19331	21986	1999	19986
1.2.2.1 Official	35	215	-180	50	251	-202
1.2.2.2 Private	20856	1346	19511	21936	1748	20188
1.2.3 Income	5635	14238	-8603	6831	15454	-8623
1.2.3.1 Investment Income	4560	13646	-9086	5426	14791	-9364
1.2.3.2 Compensation of Employees	1074	592	482	1404	663	741
2 CAPITAL ACCOUNT (2.1+2.2+2.3+2.4+2.5)	**129539**	**112935**	**16604**	**140326**	**128273**	**12053**
2.1 Foreign Investment (2.1.1+2.1.2)	**77035**	**69423**	**7612**	**85399**	**75487**	**9913**
2.1.1 Foreign Direct Investment	14827	7417	7410	15298	7862	7436
2.1.1.1 In India	14076	4055	10021	14523	4482	10041
2.1.1.1.1 Equity	10081	3894	6187	9935	4446	5489
2.1.1.1.2 Reinvested Earnings	3344		3344	3310		3310
2.1.1.1.3 Other Capital	652	161	490	1279	37	1242
2.1.1.2 Abroad	751	3361	-2610	775	3380	-2605
2.1.1.2.1 Equity	751	1376	-625	775	1478	-703
2.1.1.2.2 Reinvested Earnings	0	758	-758	0	780	-780
2.1.1.2.3 Other Capital	0	1228	-1228	0	1122	-1122
2.1.2 Portfolio Investment	62208	62006	202	70101	67625	2476
2.1.2.1 In India	61036	61616	-580	68312	66307	2005
2.1.2.1.1 FIIs	59216	61616	-2400	68312	66307	2005
2.1.2.1.1.1 Equity	50860	52179	-1319	48252	51608	-3355
2.1.2.1.1.2 Debt	8356	9436	-1081	20059	14699	5361
2.1.2.1.2 ADR/GDRs	1820	0	1820	0	0	0
2.1.2.2 Abroad	1173	391	782	1789	1318	471
2.2 Loans (2.2.1+2.2.2+2.2.3)	**23578**	**16652**	**6926**	**21567**	**18396**	**3171**
2.2.1 External Assistance	1216	1264	-48	1805	1362	443
2.2.1.1 By India	12	30	-18	5	24	-19
2.2.1.2 To India	1204	1234	-30	1800	1338	462
2.2.2 Commercial Borrowings	8951	6766	2185	9030	5656	3374
2.2.2.1 By India	1515	1349	166	1287	1082	205
2.2.2.2 To India	7436	5417	2019	7743	4574	3169
2.2.3 Short Term to India	13411	8622	4789	10731	11378	-646
2.2.3.1 Buyers' credit & Suppliers' Credit >180 days	7392	8622	-1230	10731	10940	-209
2.2.3.2 Suppliers' Credit up to 180 days	6019	0	6019	0	437	-437
2.3 Banking Capital (2.3.1+2.3.2)	**21194**	**20672**	**522**	**23881**	**25699**	**-1818**
2.3.1 Commercial Banks	21194	20670	524	23881	25364	-1483
2.3.1.1 Assets	5370	5638	-268	9914	10148	-235
2.3.1.2 Liabilities	15823	15031	792	13967	15216	-1249
2.3.1.2.1 Non-Resident Deposits	15402	12075	3326	13458	11178	2280
2.3.2 Others	0	2	-2	0	335	-335
2.4 Rupee Debt Service	0	1	-1	0	2	-2
2.5 Other Capital	7732	6187	1545	9479	8689	790
3 Errors & Omissions	**582**		**582**		**658**	**-658**
4 Monetary Movements (4.1+ 4.2)	**1868**	0	**1868**	0	**5118**	**-5118**
4.1 I.M.F.	0	0	0			
4.2 Foreign Exchange Reserves (Increase - / Decrease +)	1868	0	1868		5118	-5118

Note : P : Preliminary

No. 39: India's Overall Balance of Payments

(₹ Crore)

Item	Jul-Sep 2018			Jul-Sep 2019 (P)		
	Credit	Debit	Net	Credit	Debit	Net
	1	2	3	4	5	6
Overall Balance of Payments(1+2+3)	**2035381**	**2048484**	**-13103**	**2123697**	**2087648**	**36049**
1 CURRENT ACCOUNT (1.1+ 1.2)	**1122561**	**1256224**	**-133664**	**1135391**	**1179595**	**-44204**
1.1 MERCHANDISE	**585056**	**936075**	**-351019**	**563533**	**831746**	**-268213**
1.2 INVISIBLES (1.2.1+1.2.2+1.2.3)	**537505**	**320150**	**217355**	**571858**	**347850**	**224009**
1.2.1 Services	351421	209324	142097	368905	224927	143978
1.2.1.1 Travel	49373	40780	8593	53826	42478	11348
1.2.1.2 Transportation	32556	35682	-3126	36504	42320	-5817
1.2.1.3 Insurance	4534	2780	1755	4245	2494	1751
1.2.1.4 G.n.i.e.	981	1834	-853	1193	2096	-904
1.2.1.5 Miscellaneous	263977	128249	135728	273138	135539	137599
1.2.1.5.1 Software Services	145615	10323	135292	163725	15370	148355
1.2.1.5.2 Business Services	65998	67978	-1981	76611	78960	-2348
1.2.1.5.3 Financial Services	9200	7939	1261	8729	4187	4543
1.2.1.5.4 Communication Services	4252	1951	2302	4475	2494	1981
1.2.2 Transfers	146556	10945	135611	154844	14081	140763
1.2.2.1 Official	246	1506	-1260	349	1768	-1419
1.2.2.2 Private	146310	9439	136871	154495	12313	142182
1.2.3 Income	39528	99881	-60353	48109	108842	-60733
1.2.3.1 Investment Income	31992	95729	-63736	38218	104171	-65953
1.2.3.2 Compensation of Employees	7535	4152	3383	9891	4671	5220
2 CAPITAL ACCOUNT (2.1+2.2+2.3+2.4+2.5)	**908738**	**792260**	**116478**	**988305**	**903419**	**84886**
2.1 Foreign Investment (2.1.1+2.1.2)	540417	487014	53403	601461	531648	69814
2.1.1 Foreign Direct Investment	104014	52029	51985	107745	55373	52372
2.1.1.1 In India	98746	28449	70297	102287	31568	70719
2.1.1.1.1 Equity	70719	27316	43403	69970	31310	38661
2.1.1.1.2 Reinvested Earnings	23456	0	23456	23309	0	23309
2.1.1.1.3 Other Capital	4570	1132	3438	9007	258	8749
2.1.1.2 Abroad	5268	23581	-18313	5458	23805	-18346
2.1.1.2.1 Equity	5268	9650	-4382	5458	10409	-4950
2.1.1.2.2 Reinvested Earnings	0	5318	-5318	0	5496	-5496
2.1.1.2.3 Other Capital	0	8613	-8613	0	7900	-7900
2.1.2 Portfolio Investment	436403	434985	1418	493716	476275	17441
2.1.2.1 In India	428177	432244	-4067	481114	466993	14122
2.1.2.1.1 FIIs	415410	432244	-16834	481114	466993	14122
2.1.2.1.1.1 Equity	356793	366047	-9253	339837	363469	-23632
2.1.2.1.1.2 Debt	58616	66197	-7581	141277	103523	37754
2.1.2.1.2 ADR/GDRs	12768	0	12768	0	0	0
2.1.2.2 Abroad	8226	2741	5485	12602	9283	3320
2.2 Loans (2.2.1+2.2.2+2.2.3)	**165403**	**116817**	**48586**	**151892**	**129560**	**22332**
2.2.1 External Assistance	8528	8864	-336	12711	9592	3120
2.2.1.1 By India	81	209	-128	36	169	-132
2.2.1.2 To India	8447	8655	-208	12675	9423	3252
2.2.2 Commercial Borrowings	62796	47467	15329	63600	39837	23764
2.2.2.1 By India	10627	9465	1162	9066	7623	1444
2.2.2.2 To India	52168	38001	14167	54534	32214	22320
2.2.3 Short Term to India	94079	60487	33592	75580	80132	-4551
2.2.3.1 Buyers' credit & Suppliers' Credit >180 days	51855	60487	-8632	75580	77050	-1470
2.2.3.2 Suppliers' Credit up to 180 days	42224	0	42224	0	3081	-3081
2.3 Banking Capital (2.3.1+2.3.2)	**148677**	**145018**	**3659**	**168191**	**180998**	**-12807**
2.3.1 Commercial Banks	148677	145002	3675	168191	178639	-10448
2.3.1.1 Assets	37674	39555	-1881	69820	71474	-1654
2.3.1.2 Liabilities	111003	105447	5556	98370	107165	-8794
2.3.1.2.1 Non-Resident Deposits	108045	84711	23334	94785	78728	16056
2.3.2 Others	0	16	0	0	2359	-2359
2.4 Rupee Debt Service	0	9	-9	0	15	-15
2.5 Other Capital	54241	43401	10840	66761	61198	5563
3 Errors & Omissions	**4083**	0	**4083**	0	**4633**	**-4633**
4 Monetary Movements (4.1+ 4.2)	**13103**	0	**13103**	0	**36049**	**-36049**
4.1 I.M.F.	0	0	0			
4.2 Foreign Exchange Reserves (Increase - / Decrease +)	13103	0	13103	0	36049	-36049

Note : P: Preliminary

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

(US $ Million)

Item	Jul-Sep 2018			Jul-Sep 2019 (P)		
	Credit	Debit	Net	Credit	Debit	Net
	1	2	3	4	5	6
1 Current Account (1.A+1.B+1.C)	**160019**	**179051**	**-19033**	**161208**	**167462**	**-6254**
1.A Goods and Services (1.A.a+1.A.b)	**133493**	**163275**	**-29781**	**132394**	**150033**	**-17640**
1.A.a Goods (1.A.a.1 to 1.A.a.3)	**83399**	**133436**	**-50037**	**80014**	**118097**	**-38083**
1.A.a.1 General merchandise on a BOP basis	83400	124239	-40839	79356	113743	-34388
1.A.a.2 Net exports of goods under merchanting	-1	0	-1	658	0	658
1.A.a.3 Nonmonetary gold		9197	-9197		4353	-4353
1.A.b Services (1.A.b.1 to 1.A.b.13)	**50094**	**29839**	**20256**	**52380**	**31937**	**20443**
1.A.b.1 Manufacturing services on physical inputs owned by others	58	8	50	58	33	25
1.A.b.2 Maintenance and repair services n.i.e.	43	259	-216	44	253	-208
1.A.b.3 Transport	4641	5086	-446	5183	6009	-826
1.A.b.4 Travel	7038	5813	1225	7643	6031	1611
1.A.b.5 Construction	766	635	131	677	714	-37
1.A.b.6 Insurance and pension services	646	396	250	603	354	249
1.A.b.7 Financial services	1311	1132	180	1239	594	645
1.A.b.8 Charges for the use of intellectual property n.i.e.	162	1942	-1780	248	1776	-1528
1.A.b.9 Telecommunications, computer, and information services	21428	1869	19559	23947	2654	21293
1.A.b.10 Other business services	9408	9690	-282	10878	11211	-333
1.A.b.11 Personal, cultural, and recreational services	447	774	-328	551	923	-372
1.A.b.12 Government goods and services n.i.e.	140	261	-122	169	298	-128
1.A.b.13 Others n.i.e.	4007	1972	2035	1139	1085	54
1.B Primary Income (1.B.1 to 1.B.3)	**5635**	**14238**	**-8603**	**6831**	**15454**	**-8623**
1.B.1 Compensation of employees	1074	592	482	1404	663	741
1.B.2 Investment income	3486	13340	-9854	4372	14576	-10204
1.B.2.1 Direct investment	1788	6108	-4320	1756	6902	-5146
1.B.2.2 Portfolio investment	53	3525	-3471	54	3760	-3706
1.B.2.3 Other investment	135	3694	-3559	602	3899	-3297
1.B.2.4 Reserve assets	1508	13	1495	1960	15	1945
1.B.3 Other primary income	1075	306	769	1055	215	840
1.C Secondary Income (1.C.1+1.C.2)	**20891**	**1539**	**19352**	**21984**	**1975**	**20009**
1.C.1 Financial corporations, nonfinancial corporations, households, and NPISHs	20856	1346	19511	21936	1748	20188
1.C.1.1 Personal transfers (Current transfers between resident and/	20224	991	19233	21291	1336	19955
1.C.1.2 Other current transfers	633	354	278	645	412	233
1.C.2 General government	35	193	-159	48	227	-179
2 Capital Account (2.1+2.2)	**75**	**96**	**-21**	**90**	**186**	**-97**
2.1 Gross acquisitions (DR.)/disposals (CR.) of non-produced nonfinancial assets	2	4	-2	9	93	-84
2.2 Capital transfers	72	92	-19	81	93	-12
3 Financial Account (3.1 to 3.5)	**131333**	**112861**	**18472**	**140238**	**133230**	**7008**
3.1 Direct Investment (3.1A+3.1B)	**14827**	**7417**	**7410**	**15298**	**7862**	**7436**
3.1.A Direct Investment in India	14076	4055	10021	14523	4482	10041
3.1.A.1 Equity and investment fund shares	13425	3894	9531	13244	4446	8799
3.1.A.1.1 Equity other than reinvestment of earnings	10081	3894	6187	9935	4446	5489
3.1.A.1.2 Reinvestment of earnings	3344		3344	3310		3310
3.1.A.2 Debt instruments	652	161	490	1279	37	1242
3.1.A.2.1 Direct investor in direct investment enterprises	652	161	490	1279	37	1242
3.1.B Direct Investment by India	751	3361	-2610	775	3380	-2605
3.1.B.1 Equity and investment fund shares	751	2134	-1383	775	2258	-1483
3.1.B.1.1 Equity other than reinvestment of earnings	751	1376	-625	775	1478	-703
3.1.B.1.2 Reinvestment of earnings		758	-758		780	-780
3.1.B.2 Debt instruments	0	1228	-1228	0	1122	-1122
3.1.B.2.1 Direct investor in direct investment enterprises		1228	-1228		1122	-1122
3.2 Portfolio Investment	**60388**	**62006**	**-1618**	**70101**	**67625**	**2476**
3.2.A Portfolio Investment in India	59216	61616	-2400	68312	66307	2005
3.2.1 Equity and investment fund shares	50860	52179	-1319	48252	51608	-3355
3.2.2 Debt securities	8356	9436	-1081	20059	14699	5361
3.2.B Portfolio Investment by India	1173	391	782	1789	1318	471
3.3 Financial derivatives (other than reserves) and employee stock options	**5623**	**4344**	**1278**	**7395**	**7138**	**257**
3.4 Other investment	**48627**	**39093**	**9534**	**47444**	**45487**	**1957**
3.4.1 Other equity (ADRs/GDRs)	1820	0	1820	0	0	0
3.4.2 Currency and deposits	15402	12078	3324	13458	11513	1945
3.4.2.1 Central bank (Rupee Debt Movements; NRG)	0	2	-2	0	335	-335
3.4.2.2 Deposit-taking corporations, except the central bank (NRI Deposits)	15402	12075	3326	13458	11178	2280
3.4.2.3 General government						
3.4.2.4 Other sectors						
3.4.3 Loans (External Assistance, ECBs and Banking Capital)	15959	16624	-665	21258	21204	54
3.4.3.A Loans to India	14433	15245	-812	19965	20098	-132
3.4.3.B Loans by India	1527	1379	147	1292	1106	186
3.4.4 Insurance, pension, and standardized guarantee schemes	36	142	-106	54	71	-17
3.4.5 Trade credit and advances	13411	8622	4789	10731	11378	-646
3.4.6 Other accounts receivable/payable - other	1999	1626	373	1942	1321	621
3.4.7 Special drawing rights				0	0	0
3.5 Reserve assets	**1868**	0	**1868**	0	**5118**	**-5118**
3.5.1 Monetary gold						
3.5.2 Special drawing rights n.a.						
3.5.3 Reserve position in the IMF n.a.						
3.5.4 Other reserve assets (Foreign Currency Assets)	1868	0	1868	0	5118	-5118
4 Total assets/liabilities	**131333**	**112861**	**18472**	**140238**	**133230**	**7008**
4.1 Equity and investment fund shares	71867	63085	8782	71511	66838	4672
4.2 Debt instruments	53779	48150	5629	66786	59952	6833
4.3 Other financial assets and liabilities	5687	1626	4060	1942	6439	-4498
5 Net errors and omissions	**582**		**582**	0	**658**	**-658**

Note : P : Preliminary

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

(₹ Crore)

Item	Jul-Sep 2018			Jul-Sep 2019 (P)		
	Credit	Debit	Net	Credit	Debit	Net
	1	2	3	4	5	6
1 Current Account (1.A+1.B+1.C)	**1122558**	**1256075**	**-133518**	**1135379**	**1179423**	**-44044**
1.A Goods and Services (1.A.a+1.A.b)	**936477**	**1145399**	**-208922**	**932438**	**1056673**	**-124234**
1.A.a Goods (1.A.a.1 to 1.A.a.3)	**585056**	**936075**	**-351019**	**563533**	**831746**	**-268213**
1.A.a.1 General merchandise on a BOP basis	585065	871555	-286490	558895	801084	-242189
1.A.a.2 Net exports of goods under merchanting	-10	0	-10	4638	0	4638
1.A.a.3 Nonmonetary gold	0	64520	-64520	0	30661	-30661
1.A.b Services (1.A.b.1 to 1.A.b.13)	**351421**	**209324**	**142097**	**368905**	**224927**	**143978**
1.A.b.1 Manufacturing services on physical inputs owned by others	408	56	351	408	235	173
1.A.b.2 Maintenance and repair services n.i.e.	305	1818	-1513	310	1779	-1468
1.A.b.3 Transport	32556	35682	-3126	36504	42320	-5817
1.A.b.4 Travel	49373	40780	8593	53826	42478	11348
1.A.b.5 Construction	5373	4456	917	4770	5031	-261
1.A.b.6 Insurance and pension services	4534	2780	1755	4245	2494	1751
1.A.b.7 Financial services	9200	7939	1261	8729	4187	4543
1.A.b.8 Charges for the use of intellectual property n.i.e.	1137	13626	-12489	1749	12511	-10762
1.A.b.9 Telecommunications, computer, and information services	150318	13109	137210	168656	18693	149963
1.A.b.10 Other business services	65998	67978	-1981	76611	78960	-2348
1.A.b.11 Personal, cultural, and recreational services	3133	5433	-2300	3882	6503	-2621
1.A.b.12 Government goods and services n.i.e.	981	1834	-853	1193	2096	-904
1.A.b.13 Others n.i.e.	28107	13834	14273	8021	7641	380
1.B Primary Income (1.B.1 to 1.B.3)	**39528**	**99881**	**-60353**	**48109**	**108842**	**-60733**
1.B.1 Compensation of employees	7535	4152	3383	9891	4671	5220
1.B.2 Investment income	24452	93582	-69130	30790	102655	-71866
1.B.2.1 Direct investment	12545	42849	-30304	12365	48608	-36243
1.B.2.2 Portfolio investment	375	24727	-24352	380	26481	-26100
1.B.2.3 Other investment	950	25914	-24964	4241	27463	-23223
1.B.2.4 Reserve assets	10581	92	10489	13803	103	13700
1.B.3 Other primary income	7540	2147	5394	7428	1515	5913
1.C Secondary Income (1.C.1+1.C.2)	**146553**	**10796**	**135757**	**154831**	**13908**	**140923**
1.C.1 Financial corporations, nonfinancial corporations, households, and NPISHs	146310	9439	136871	154495	12313	142182
1.C.1.1 Personal transfers (Current transfers between resident and/	141872	6953	134920	149953	9410	140544
1.C.1.2 Other current transfers	4438	2486	1951	4542	2903	1639
1.C.2 General government	243	1357	-1113	336	1596	-1260
2 Capital Account (2.1+2.2)	**523**	**672**	**-150**	**632**	**1312**	**-680**
2.1 Gross acquisitions (DR.)/disposals (CR.) of non-produced nonfinancial assets	14	28	-14	63	656	-593
2.2 Capital transfers	509	644	-135	569	656	-87
3 Financial Account (3.1 to 3.5)	**921321**	**791737**	**129585**	**987686**	**938328**	**49358**
3.1 Direct Investment (3.1A+3.1B)	**104014**	**52029**	**51985**	**107745**	**55373**	**52372**
3.1.A Direct Investment in India	98746	28449	70297	102287	31568	70719
3.1.A.1 Equity and investment fund shares	94175	27316	66859	93280	31310	61970
3.1.A.1.1 Equity other than reinvestment of earnings	70719	27316	43403	69970	31310	38661
3.1.A.1.2 Reinvestment of earnings	23456	0	23456	23309	0	23309
3.1.A.2 Debt instruments	4570	1132	3438	9007	258	8749
3.1.A.2.1 Direct investor in direct investment enterprises	4570	1132	3438	9007	258	8749
3.1.B Direct Investment by India	5268	23581	-18313	5458	23805	-18346
3.1.B.1 Equity and investment fund shares	5268	14968	-9700	5458	15904	-10446
3.1.B.1.1 Equity other than reinvestment of earnings	5268	9650	-4382	5458	10409	-4950
3.1.B.1.2 Reinvestment of earnings	0	5318	-5318	0	5496	-5496
3.1.B.2 Debt instruments	0	8613	-8613	0	7900	-7900
3.1.B.2.1 Direct investor in direct investment enterprises	0	8613	-8613	0	7900	-7900
3.2 Portfolio Investment	**423635**	**434985**	**-11350**	**493716**	**476275**	**17441**
3.2.A Portfolio Investment in India	415410	432244	-16834	481114	466993	14122
3.2.1 Equity and investment fund shares	356793	366047	-9253	339837	363469	-23632
3.2.2 Debt securities	58616	66197	-7581	141277	103523	37754
3.2.B Portfolio Investment by India	8226	2741	5485	12602	9283	3320
3.3 Financial derivatives (other than reserves) and employee stock options	**39443**	**30477**	**8966**	**52083**	**50270**	**1813**
3.4 Other investment	**341126**	**274245**	**66881**	**334142**	**320362**	**13780**
3.4.1 Other equity (ADRs/GDRs)	12768	0	12768	0	0	0
3.4.2 Currency and deposits	108045	84728	23317	94785	81087	13697
3.4.2.1 Central bank (Rupee Debt Movements; NRG)	0	16	-16	0	2359	-2359
3.4.2.2 Deposit-taking corporations, except the central bank (NRI Deposits)	108045	84711	23334	94785	78728	16056
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)	111956	116621	-4665	149718	149339	379
3.4.3.A Loans to India	101248	106947	-5699	140615	141548	-932
3.4.3.B Loans by India	10709	9675	1034	9103	7791	1311
3.4.4 Insurance, pension, and standardized guarantee schemes	253	999	-746	383	501	-117
3.4.5 Trade credit and advances	94079	60487	33592	75580	80132	-4551
3.4.6 Other accounts receivable/payable - other	14024	11410	2614	13676	9303	4373
3.4.7 Special drawing rights	0	0	0	0	0	0
3.5 Reserve assets	**13103**	**0**	**13103**	**0**	**36049**	**-36049**
3.5.1 Monetary gold				0	0	0
3.5.2 Special drawing rights n.a.				0	0	0
3.5.3 Reserve position in the IMF n.a.				0	0	0
3.5.4 Other reserve assets (Foreign Currency Assets)	13103	0	13103	0	36049	-36049
4 Total assets/liabilities	**921321**	**791737**	**129585**	**987686**	**938328**	**49358**
4.1 Equity and investment fund shares	504159	442549	61611	503643	470736	32907
4.2 Debt instruments	377267	337778	39489	470367	422240	48127
4.3 Other financial assets and liabilities	39895	11410	28485	13676	45352	-31676
5 Net errors and omissions	**4083**	**0**	**4083**	**0**	**4633**	**-4633**

Note : P: Preliminary

No. 42: International Investment Position

(US$ Million)

Item	As on Financial Year /Quarter End							
	2018-19		2018		2019			
			Sep.		Jun.		Sep.	
	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
	1	2	3	4	5	6	7	8
1 Direct Investment Abroad/in India	169964	399234	163537	362031	173017	417292	175622	416476
1.1 Equity Capital and Reinvested Earnings	111122	382105	107925	346220	112890	399381	114373	398164
1.2 Other Capital	58841	17129	55613	15811	60127	17911	61249	18312
2 Portfolio Investment	4699	260313	2641	237895	5012	267073	4541	259993
2.1 Equity	590	147479	1804	135249	1806	151162	2344	144039
2.2 Debt	4109	112834	837	102645	3206	115912	2197	115953
3 Other Investment	54538	419279	41541	395576	54511	429560	55904	430051
3.1 Trade Credit	924	105191	904	104340	2140	107224	1707	106581
3.2 Loan	9884	168112	7084	157613	9765	173962	7895	174988
3.3 Currency and Deposits	25158	130644	16628	122137	24169	133846	27563	133105
3.4 Other Assets/Liabilities	18574	15332	16925	11486	18437	14529	18739	15378
4 Reserves	412871		400525		429837		433707	
5 Total Assets/ Liabilities	642072	1078827	608244	995501	662378	1113926	669775	1106520
6 IIP (Assets - Liabilities)		-436755		-387257		-451548		-436745

No.43: Payment System Indicators

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

System	Volume (Lakh)				Value (₹ Crore)			
	FY 2018-19	2018	2019		FY 2018-19	2018	2019	
		Dec.	Nov.	Dec.		Dec.	Nov.	Dec.
	1	2	3	4	5	6	7	8
A. Settlement Systems								
Financial Market Infrastructures (FMIs)								
1 CCIL Operated Systems (1.1 to 1.3)	–	–	2.78	2.83	–	–	10655649	12196681
1.1 Govt. Securities Clearing (1.1.1 to 1.1.3)	–	–	1.01	1.04	–	–	6869045	8085475
1.1.1 Outright	–	–	0.63	0.61	–	–	862104	853262
1.1.2 Repo	–	–	0.19	0.21	–	–	2359755	2950776
1.1.3 Tri-party Repo	–	–	0.19	0.21	–	–	3647186	4281437
1.2 Forex Clearing	–	–	1.74	1.75	–	–	3525359	3831685
1.3 Rupee Derivatives @	–	–	0.04	0.04	–	–	261245	279520
B. Payment Systems								
I Financial Market Infrastructures (FMIs)	–	–	–	–	–	–	–	–
1 Credit Transfers - RTGS (1.1 to 1.2)	–	–	133.87	136.02	–	–	8679806	10316937
1.1 Customer Transactions	–	–	131.61	133.82	–	–	7469569	8847761
1.2 Interbank Transactions	–	–	2.27	2.20	–	–	1210237	1469176
II Retail								
2 Credit Transfers - Retail (2.1 to 2.7)	–	–	18750.48	20029.92	–	–	2226348	2440803
2.1 AePS (Fund Transfers) @	–	–	0.64	0.84	–	–	33	35
2.2 APBS $	–	–	1364.56	1369.14	–	–	6908	6000
2.3 ECS Cr	–	–	0.17	0.10	–	–	61	53
2.4 IMPS	–	–	2280.75	2564.67	–	–	202904	210934
2.5 NACH Cr $	–	–	722.06	674.26	–	–	92562	79028
2.6 NEFT	–	–	2194.59	2336.88	–	–	1734651	1942231
2.7 UPI @	–	–	12187.71	13084.02	–	–	189229	202521
2.7.1 of which USSD @	–	–	0.74	0.80	–	–	13	14
3 Debit Transfers and Direct Debits (3.1 to 3.4)	–	–	766.41	790.71	–	–	70199	72455
3.1 BHIM Aadhaar Pay @	–	–	6.46	7.37	–	–	97	112
3.2 ECS Dr	–	–	0.00	0.00	–	–	–	–
3.3 NACH Dr $	–	–	758.18	769.31	–	–	70097	72306
3.4 NETC (linked to bank account) @	–	–	1.77	14.02	–	–	5	37
4 Card Payments (4.1 to 4.2)	–	–	6062.09	6615.52	–	–	137707	149688
4.1 Credit Cards (4.1.1 to 4.1.2)	–	–	1762.12	2036.64	–	–	60130	65736
4.1.1 PoS based $	–	–	1033.52	1181.09	–	–	31730	35157
4.1.2 Others $	–	–	728.60	855.55	–	–	28401	30579
4.2 Debit Cards (4.2.1 to 4.2.1)	–	–	4299.96	4578.88	–	–	77577	83953
4.2.1 PoS based $	–	–	2483.18	2634.18	–	–	37007	39740
4.2.2 Others $	–	–	1816.79	1944.70	–	–	40570	44213
5 Prepaid Payment Instruments (5.1 to 5.2)	–	–	4672.07	5072.36	–	–	17844	18922
5.1 Wallets	–	–	3354.08	3651.56	–	–	14652	15835
5.2 Cards (5.2.1 to 5.2.2)	–	–	1317.99	1420.80	–	–	3192	3088
5.2.1 PoS based $	–	–	123.86	121.90	–	–	738	1012
5.2.2 Others $	–	–	1194.13	1298.91	–	–	2454	2076
6 Paper-based Instruments (6.1 to 6.2)	–	–	866.12	865.46	–	–	644802	646583
6.1 CTS (NPCI Managed)	–	–	864.86	864.44	–	–	643678	645573
6.2 Others	–	–	1.26	1.02	–	–	1124	1010
Total - Retail Payments (2+3+4+5+6)	–	–	31117.17	33373.97	–	–	3096901	3328451
Total Payments (1+2+3+4+5+6)	–	–	31251.05	33509.98	–	–	11776707	13645388
Total Digital Payments (1+2+3+4+5)	–	–	30384.93	32644.52	–	–	11131905	12998805

PART II - Payment Modes and Channels

System	Volume (Lakh)				Value (₹ Crore)			
	FY 2018-19	2018	2019		FY 2018-19	2018	2019	
		Dec.	Nov.	Dec.		Dec.	Nov.	Dec.
	1	2	3	4	5	6	7	8
A. Other Payment Channels								
1 Mobile Payments (mobile app based) (1.1 to 1.2)	–	–	13534.23	14322.15	–	–	471295	493342
1.1 Intra-bank $	–	–	1234.84	1280.66	–	–	96802	101679
1.2 Inter-bank $	–	–	12299.40	13041.49	–	–	374494	391663
2 Internet Payments (Netbanking / Internet Browser Based) @ (2.1 to 2.2)	–	–	2687.09	2703.04	–	–	2490599	2968937
2.1 Intra-bank @	–	–	581.36	615.70	–	–	1045052	1423294
2.2 Inter-bank @	–	–	2105.73	2087.35	–	–	1445546	1545644
B. ATMs								
3 Cash Withdrawal at ATMs $ (3.1 to 3.3)	–	–	6305.28	6518.97	–	–	285376	293087
3.1 Using Credit Cards $	–	–	7.99	8.91	–	–	381	422
3.2 Using Debit Cards $	–	–	6269.60	6481.81	–	–	284083	291704
3.3 Using Pre-paid Cards $	–	–	27.68	28.25	–	–	912	961
4 Cash Withdrawal at PoS $ (4.1 to 4.2)	–	–	66.63	79.45	–	–	130	176
4.1 Using Debit Cards $	–	–	62.30	72.40	–	–	125	162
4.2 Using Pre-paid Cards $	–	–	4.32	7.05	–	–	5	14
5 Cash Withrawal at Micro ATMs @	–	–	339.83	326.35	–	–	9648	9163
5.1 AePS @	–	–	339.83	326.35	–	–	9648	9163

PART III - Payment Infrastructures (Lakh)

System	FY 2018-19	2018	2019	
		Dec.	Nov.	Dec.
	1	2	3	4
Payment System Infrastructures				
1 Number of Cards (1.1 to 1.2)	–	–	8851.69	8606.57
1.1 Credit Cards	–	–	544.11	553.33
1.2 Debit Cards	–	–	8307.59	8053.24
2 Number of PPIs @ (2.1 to 2.2)	–	–	17253.28	17625.43
2.1 Wallets @	–	–	16243.87	16615.68
2.2 Cards @	–	–	1009.41	1009.75
3 Number of ATMs (3.1 to 3.2)	–	–	2.32	2.32
3.1 Bank owned ATMs $	–	–	2.10	2.10
3.2 White Label ATMs $	–	–	0.22	0.22
4 Number of Micro ATMs @	–	–	2.35	2.42
5 Number of PoS Terminals	–	–	48.83	49.88
6 Bharat QR @	–	–	15.94	18.89

@: New inclusion w.e.f. November 2019
$: Inclusion separately initiated from November 2019 - would have been part of other items hitherto.

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

Occasional Series

No. 44: Small Savings

(₹ Crore)

Scheme		2018-19	2018	2019		
			Aug.	Jun.	Jul.	Aug.
		1	2	3	4	5
1 Small Savings	**Receipts**	**115,714.00**	**8,033.00**	**9,710.00**	**13,705.00**	**11,199.00**
	Outstanding	**918,459.00**	**844,796.00**	**950,909.00**	**964,670.00**	**975,153.00**
1.1 Total Deposits	**Receipts**	**91,108.00**	**7,063.00**	**8,814.00**	**11,517.00**	**7,932.00**
	Outstanding	**618,418.00**	**563,115.00**	**645,908.00**	**657,425.00**	**665,357.00**
1.1.1 Post Office Saving Bank Deposits	Receipts	31,037.00	2,021.00	1,794.00	5,044.00	1,460.00
	Outstanding	140,247.00	120,658.00	146,573.00	151,617.00	153,077.00
1.1.2 MGNREG	Receipts	0.00	0.00	0.00	0.00	0.00
	Outstanding	0.00	0.00	0.00	0.00	0.00
1.1.3 National Saving Scheme, 1987	Receipts	–31.00	–36.00	–31.00	–28.00	–10.00
	Outstanding	3,107.00	2,943.00	3,004.00	2,976.00	2,966.00
1.1.4 National Saving Scheme, 1992	Receipts	53.00	–6.00	–3.00	–3.00	–2.00
	Outstanding	10.00	–6.00	–2.00	–5.00	–7.00
1.1.5 Monthly Income Scheme	Receipts	10,967.00	1,008.00	1,121.00	1,111.00	1,133.00
	Outstanding	192,658.00	186,089.00	195,547.00	196,658.00	197,791.00
1.1.6 Senior Citizen Scheme 2004	Receipts	13,990.00	1,120.00	1,480.00	1,537.00	1,459.00
	Outstanding	55,708.00	47,414.00	59,763.00	61,300.00	62,759.00
1.1.7 Post Office Time Deposits	Receipts	25,000.00	1,983.00	3,120.00	3,045.00	2,933.00
	Outstanding	124,292.00	108,621.00	132,888.00	135,933.00	138,866.00
1.1.7.1 1 year Time Deposits	Outstanding	71,534.00	64,025.00	76,196.00	77,868.00	79,433.00
1.1.7.2 2 year Time Deposits	Outstanding	5,910.00	5,106.00	6,178.00	6,269.00	6,359.00
1.1.7.3 3 year Time Deposits	Outstanding	6,901.00	6,591.00	7,000.00	7,054.00	7,104.00
1.1.7.4 5 year Time Deposits	Outstanding	39,947.00	32,899.00	43,514.00	44,742.00	45,970.00
1.1.8 Post Office Recurring Deposits	Receipts	10,081.00	973.00	1,333.00	811.00	959.00
	Outstanding	102,401.00	97,412.00	108,139.00	108,950.00	109,909.00
1.1.9 Post Office Cumulative Time Deposits	Receipts	11.00	0.00	0.00	0.00	0.00
	Outstanding	–26.00	–37.00	–25.00	–25.00	–25.00
1.1.10 Other Deposits	Receipts	0.00	0.00	0.00	0.00	0.00
	Outstanding	21.00	21.00	21.00	21.00	21.00
1.2 Saving Certificates	**Receipts**	**16,067.00**	**789.00**	**746.00**	**1,944.00**	**2,965.00**
	Outstanding	**221,517.00**	**211,175.00**	**226,229.00**	**228,229.00**	**230,478.00**
1.2.1 National Savings Certificate VIII issue	Receipts	11,318.00	542.00	–	1,165.00	2,103.00
	Outstanding	98,492.00	89,037.00	100,584.00	101,749.00	103,852.00
1.2.2 Indira Vikas Patras	Receipts	334.00	1.00	–104.00	–81.00	–74.00
	Outstanding	263.00	261.00	–80.00	–161.00	–235.00
1.2.3 Kisan Vikas Patras	Receipts	–18,678.00	–1,565.00	–1,639.00	–1,684.00	–1,344.00
	Outstanding	19,303.00	31,232.00	13,828.00	12,144.00	10,800.00
1.2.4 Kisan Vikas Patras - 2014	Receipts	23,018.00	1,801.00	2,492.00	2,563.00	2,280.00
	Outstanding	93,630.00	79,423.00	100,780.00	103,343.00	105,623.00
1.2.5 National Saving Certificate VI issue	Receipts	93.00	10.00	–3.00	–19.00	0.00
	Outstanding	2.00	–115.00	–154.00	–173.00	–173.00
1.2.6 National Saving Certificate VII issue	Receipts	–18.00	0.00	0.00	0.00	0.00
	Outstanding	–80.00	–80.00	–82.00	–82.00	–82.00
1.2.7 Other Certificates	Outstanding	9,907.00	11,417.00	11,353.00	11,409.00	10,693.00
1.3 Public Provident Fund	**Receipts**	**8,539.00**	**181.00**	**150.00**	**244.00**	**302.00**
	Outstanding	**78,524.00**	**70,506.00**	**78,772.00**	**79,016.00**	**79,318.00**

Source: Accountant General, Post and Telegraphs.

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

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

(Per cent)

Central Government Dated Securities					
Category	2018		2019		
	Sep.	Dec.	Mar.	Jun.	Sep.
	1	2	3	4	5
(A) Total (in ₹. Crore)	**5602830**	**5758103**	**5921026**	**6072243**	**6314426**
1 Commercial Banks	41.41	40.51	40.28	39.05	39.66
2 Non-Bank PDs	0.37	0.33	0.31	0.36	0.42
3 Insurance Companies	24.61	24.57	24.34	24.88	24.86
4 Mutual Funds	1.41	0.64	0.35	0.64	0.77
5 Co-operative Banks	2.51	2.38	2.29	2.17	2.01
6 Financial Institutions	0.97	1.01	1.05	1.05	1.15
7 Corporates	1.01	1.05	0.97	0.99	0.92
8 Foreign Portfolio Investors	3.65	3.60	3.22	3.27	3.31
9 Provident Funds	5.71	5.54	5.47	5.35	4.87
10 RBI	11.76	13.81	15.27	15.67	14.99
11. Others	6.58	6.55	6.46	6.57	7.05
11.1 State Governments	1.99	1.97	2.00	2.02	1.99

State Governments Securities					
Category	2018		2019		
	Sep.	Dec.	Mar.	Jun.	Sep.
	1	2	3	4	5
(B) Total (in ₹. Crore)	**2566833**	**2669393**	**2777229**	**2826935**	**2905169**
1 Commercial Banks	34.66	34.00	33.87	32.57	32.53
2 Non-Bank PDs	0.58	0.60	0.58	0.81	0.72
3 Insurance Companies	33.74	33.90	33.04	33.94	33.39
4 Mutual Funds	1.05	1.23	1.20	1.24	1.12
5 Co-operative Banks	4.75	4.67	4.55	4.65	4.24
6 Financial Institutions	0.43	0.37	0.42	0.44	0.33
7 Corporates	0.17	0.22	0.29	0.32	0.28
8 Foreign Portfolio Investors	0.10	0.09	0.09	0.08	0.05
9 Provident Funds	21.04	21.29	22.15	21.88	22.36
10 RBI	0.00	0.00	0.00	0.00	0.00
11. Others	3.48	3.64	3.81	4.08	4.98
11.1 State Governments	0.07	0.07	0.11	0.14	0.16

Treasury Bills					
Category	2018		2019		
	Sep.	Dec.	Mar.	Jun.	Sep.
	1	2	3	4	5
(C) Total (in ₹. Crore)	**565750**	**529826**	**412704**	**524618**	**538041**
1 Commercial Banks	47.84	53.76	57.56	53.60	50.81
2 Non-Bank PDs	1.86	2.06	2.68	1.85	1.92
3 Insurance Companies	4.55	4.74	6.61	5.13	5.55
4 Mutual Funds	10.69	5.65	2.78	13.00	14.08
5 Co-operative Banks	1.20	1.21	2.48	2.54	2.55
6 Financial Institutions	1.67	1.88	2.49	2.14	1.82
7 Corporates	6.67	1.86	2.23	1.67	1.57
8 Foreign Portfolio Investors	0.00	0.09	0.00	0.00	0.00
9 Provident Funds	0.01	0.02	0.08	0.07	0.01
10 RBI	0.00	0.00	0.00	0.00	0.00
11. Others	25.50	28.72	23.10	19.99	21.70
11.1 State Governments	21.36	24.04	17.91	15.59	17.91

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

(₹ Crore)

Item	2014-15	2015-16	2016-17	2017-18	2018-19 RE	2019-20 BE
	1	2	3	4	5	6
1 Total Disbursements	**3285210**	**3760611**	**4265969**	**4515946**	**5516932**	**6071777**
1.1 Developmental	1872062	2201287	2537905	2635110	3344948	3660857
1.1.1 Revenue	1483018	1668250	1878417	2029044	2543965	2830634
1.1.2 Capital	332262	412069	501213	519356	694352	732102
1.1.3 Loans	56782	120968	158275	86710	106630	98121
1.2 Non-Developmental	1366769	1510810	1672646	1812455	2089516	2315637
1.2.1 Revenue	1269520	1379727	1555239	1741432	2002766	2204742
1.2.1.1 Interest Payments	584542	648091	724448	814757	901783	1009776
1.2.2 Capital	94687	127306	115775	69370	85375	109030
1.2.3 Loans	2563	3777	1632	1654	1375	1865
1.3 Others	46379	48514	55417	68381	82469	95284
2 Total Receipts	**3189737**	**3778049**	**4288432**	**4528422**	**5364245**	**6003162**
2.1 Revenue Receipts	2387693	2748374	3132201	3376416	4205473	4653758
2.1.1 Tax Receipts	2020728	2297101	2622145	2978134	3512454	3910428
2.1.1.1 Taxes on commodities and services	1212348	1440952	1652377	1853859	2186529	2399337
2.1.1.2 Taxes on Income and Property	805176	852271	965622	1121189	1323113	1506912
2.1.1.3 Taxes of Union Territories (Without Legislature)	3204	3878	4146	3086	2812	4179
2.1.2 Non-Tax Receipts	366965	451272	510056	398282	693019	743330
2.1.2.1 Interest Receipts	39622	35779	33220	34224	36739	33619
2.2 Non-debt Capital Receipts	60955	59827	69063	142433	136636	170056
2.2.1 Recovery of Loans & Advances	22072	16561	20942	42213	56398	63131
2.2.2 Disinvestment proceeds	38883	43266	48122	100219	80238	106926
3 Gross Fiscal Deficit [1 - (2.1 + 2.2)]	**836563**	**952410**	**1064704**	**997097**	**1174823**	**1247962**
3A Sources of Financing: Institution-wise						
3A.1 Domestic Financing	823630	939662	1046708	989167	1179716	1250914
3A.1.1 Net Bank Credit to Government	-37476	231090	617123	144792	386389	...
3A.1.1.1 Net RBI Credit to Government	-334185	60472	195816	-144847	325987	...
3A.1.2 Non-Bank Credit to Government	861106	708572	429585	844375	793327	-----
3A.2 External Financing	12933	12748	17997	7931	-4893	-2952
3B Sources of Financing: Instrument-wise						
3B.1 Domestic Financing	823630	939662	1046708	989167	1179716	1250914
3B.1.1 Market Borrowings (net)	664058	673298	689821	794856	831554	959294
3B.1.2 Small Savings (net)	-56580	-78515	-105038	-163222	-217165	-208528
3B.1.3 State Provident Funds (net)	34339	35261	45688	42351	42703	42482
3B.1.4 Reserve Funds	5109	-3322	-6436	18423	-14577	-871
3B.1.5 Deposits and Advances	27545	13470	17792	25138	16011	13706
3B.1.6 Cash Balances	95474	-17438	-22463	-12476	152688	68615
3B.1.7 Others	53684	316908	427343	284095	368504	376216
3B.2 External Financing	12933	12748	17997	7931	-4893	-2952
4 Total Disbursements as per cent of GDP	*26.3*	*27.3*	*27.8*	*26.4*	*29.0*	*28.8*
5 Total Receipts as per cent of GDP	*25.6*	*27.4*	*27.9*	*26.5*	*28.2*	*28.5*
6 Revenue Receipts as per cent of GDP	*19.2*	*20.0*	*20.4*	*19.8*	*22.1*	*22.1*
7 Tax Receipts as per cent of GDP	*16.2*	*16.7*	*17.1*	*17.4*	*18.5*	*18.5*
8 Gross Fiscal Deficit as per cent of GDP	*6.7*	*6.9*	*6.9*	*5.8*	*6.2*	*5.9*

…: 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 December-2019					
		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	1565	19	876	18	-	-
2	Arunachal Pradesh	-	-	-	-	-	-
3	Assam	-	-	-	-	-	-
4	Bihar	-	-	-	-	-	-
5	Chhattisgarh	1096	3	-	-	-	-
6	Goa	74	12	-	-	-	-
7	Gujarat	-	-	-	-	-	-
8	Haryana	-	-	-	-	-	-
9	Himachal Pradesh	-	-	365	9	155	1
10	Jammu & Kashmir	-	-	702	27	119	14
11	Jharkhand	-	-	243	9	-	-
12	Karnataka	-	-	-	-	-	-
13	Kerala	330	19	877	18	688	11
14	Madhya Pradesh	-	-	-	-	-	-
15	Maharashtra	-	-	-	-	-	-
16	Manipur	46	16	18	1	-	-
17	Meghalaya	-	-	-	-	-	-
18	Mizoram	72	1	-	-	-	-
19	Nagaland	477	31	105	10	-	-
20	Odisha	-	-	-	-	-	-
21	Puducherry	-	-	-	-	-	-
22	Punjab	243	23	584	23	126	6
23	Rajasthan	-	-	-	-	-	-
24	Tamil Nadu	-	-	-	-	-	-
25	Telangana	1553	19	260	7	-	-
26	Tripura	-	-	-	-	-	-
27	Uttar Pradesh	-	-	-	-	-	-
28	Uttarakhand	628	15	28	7	-	-
29	West Bengal	-	-	-	-	-	-

Source: Reserve Bank of India.

No. 48: Investments by State Governments

(₹ Crore)

Sr. No	State/Union Territory	As on end of December 2019			
		Consolidated Sinking Fund (CSF)	Guarantee Redemption Fund (GRF)	Government Securities	Auction Treasury Bills (ATBs)
	1	2	3	4	5
1	Andhra Pradesh	7879	775	2	0
2	Arunachal Pradesh	1230	1	--	0
3	Assam	4150	49	--	3000
4	Bihar	7524	--	--	0
5	Chhattisgarh	4213	--	1	5500
6	Goa	567	285	--	0
7	Gujarat	13004	458	--	0
8	Haryana	1981	1141	--	0
9	Himachal Pradesh	--	--	--	0
10	Jammu & Kashmir	--	--	--	0
11	Jharkhand	--	--	--	0
12	Karnataka	4020	--	--	11500
13	Kerala	2045	--	--	0
14	Madhya Pradesh	--	876	--	0
15	Maharashtra	37252	405	--	15000
16	Manipur	360	95	--	0
17	Meghalaya	584	29	9	0
18	Mizoram	524	37	--	0
19	Nagaland	1558	31	--	0
20	Odisha	12759	1378	80	23395
21	Puducherry	305	--	--	898
22	Punjab	227	--	8	0
23	Rajasthan	--	--	129	1800
24	Tamil Nadu	6312	--	45	8632
25	Telangana	5398	1166	1	0
26	Tripura	314	5	--	0
27	Uttar Pradesh	--	--	180	0
28	Uttarakhand	3004	75	--	0
29	West Bengal	10503	505	214	0
	Total	**125712**	**7312**	**668**	**69725**

No. 49: Market Borrowings of State Governments

(₹ Crore)

Sr. No.	State	2017-18		2018-19		2019-20						Total amount raised, so far in 2019-20	
						October		November		December			
		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	22800	18922	30200	23824	4170	3003	4206	4206	513	222	28967	21677
2	Arunachal Pradesh	888	703	719	693	-	-	-	-	-	-	472	472
3	Assam	7760	6797	10595	8089	1000	1000	2000	2000	1900	1900	7600	7600
4	Bihar	10000	8908	14300	10903	3042	2249	-	-600	-	-607	14642	11642
5	Chhattisgarh	8100	8100	12900	12900	-	-	-	-700	2000	2000	4000	3300
6	Goa	1800	1400	2350	1850	200	100	200	200	300	200	1700	1200
7	Gujarat	24000	15785	36971	27457	3500	2000	1000	1000	2500	1500	22900	14900
8	Haryana	16640	15840	21265	17970	3500	3500	-	-	2000	1000	16501	13601
9	Himachal Pradesh	4600	2551	4210	2108	400	400	-	-	-	-900	2000	1100
10	Jammu & Kashmir	6200	3974	6684	4927	334	334	800	800	309	309	4992	4453
11	Jharkhand	6000	4807	5509	4023	-	-252	-	-	500	500	2000	156
12	Karnataka	22098	17348	39600	31383	8200	8200	8200	6200	7700	7700	29100	24350
13	Kerala	20500	16203	19500	14784	1400	550	1000	324	-	-500	14682	10706
14	Madhya Pradesh	15000	13125	20496	14971	-	-	1000	1000	2000	440	9000	5880
15	Maharashtra	45000	36480	20869	3117	8000	6250	-	-	3000	3000	25500	15500
16	Manipur	525	278	970	667	-	-189	-	-	-	-	803	614
17	Meghalaya	1116	920	1122	863	-	-124	-	-	295	295	745	521
18	Mizoram	424	277	0	-123	100	-1	-	-	92	92	450	349
19	Nagaland	1135	766	822	355	-	-	150	61	250	150	650	201
20	Odisha	8438	8438	5500	4500	1000	1000	1000	1000	-	-	4000	4000
21	Puducherry	825	488	825	475	200	200	200	200	200	-300	600	100
22	Punjab	17470	13349	22115	17053	2800	1100	1900	880	2035	1570	19855	11170
23	Rajasthan	24914	16777	33178	20186	1700	430	1750	750	1000	-	26332	17250
24	Sikkim	995	745	1088	795	-	-	-	-	-	-	451	451
25	Tamil Nadu	40965	36023	43125	32278	5500	3300	8700	6700	8000	6000	45390	36190
26	Telangana	24600	21828	26740	22183	3000	2166	3000	3000	1324	1116	23124	17914
27	Tripura	1137	1137	1543	1387	615	465	615	615	-	-100	1680	1430
28	Uttar Pradesh	41600	37178	46000	33307	9000	6524	3000	1694	5500	3922	34500	22640
29	Uttarakhand	6660	5830	6300	5289	-	-	-	-	750	750	2350	1750
30	West Bengal	36911	25304	42828	30431	2500	2407	6500	4169	5000	4000	33010	17700
	Grand Total	419100	340281	478323	348643	60161	44614	45221	33499	47168	34258	377995	268817

- : Nil.

Source : Reserve Bank of India.

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 (including RRBs) and for column Nos. (4) & (5) data are Provisional (excluding RRBs)

Table No. 14

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

Table No. 15 & 16

Data are provisional and relate to select 41 scheduled commercial banks, accounting for about 90 per cent of total non-food credit extended by all scheduled commercial banks (excludes ING Vysya which has been merged with Kotak Mahindra since April 2015).

Export credit under priority sector relates to foreign banks only.

Micro & small under item 2.1 includes credit to micro & small industries in manufacturing sector.

Micro & small enterprises under item 5.2 includes credit to micro & small enterprises in manufacturing as well as services sector.

Priority Sector is as per old definition and does not conform to FIDD Circular FIDD.CO.Plan.BC.54/04.09.01/2014-15 dated April 23, 2015.

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 2016-17 is a moving one, which gets updated every year. REER figures are based on Consumer Price Index (combined). Methodological details are available in December 2005 and April 2014 issues of the 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 –
- 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.

Table No. 45

(-): represents nil or negligible

The revised table format since June 2016, incorporates the ownership pattern of State Governments Securities and Treasury Bills along with the Central Government Securities.

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

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

The category 'Others' comprises State Governments, Pension Funds, PSUs, Trusts, HUF/Individuals *etc.*

Table No. 46

GDP data is based on 2011-12 base. GDP data from 2018-19 pertains to the Provisional Estimates of National Income released by Central Statistics Office on 31st May 2019. GDP for 2019-20 is from Union Budget 2019-20.

Data for 2017-18 onwards also includes NCT of Delhi and Puducherry.

Total receipts and total expenditure exclude National Calamity Contingency Fund expenditure.

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

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

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

3A.1.1: Data as per RBI records.

3B.1.1: Includes borrowings through dated securities.

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

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)

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.

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