

During the year under review, the Reserve Bank ensured an adequate supply of clean banknotes of various denominations to the public. Other important developments were integration of currency management functions with the Bank's core banking solution (e-Kuber), replacement of Currency Verification and Processing Systems (CVPS) across Regional Offices and a mobile application (MANI) to enable visually impaired persons identify denominations of banknotes. The Reserve Bank maintained adequate supply of clean banknotes to the public in the face of augmented COVID-19 related demand.

VIII.1 The year 2019-20 was marked by strengthening of internal work processes within the Reserve Bank's mandate in the area of currency management. They, *inter alia*, involved upgradation of Currency Verification and Processing Systems (CVPS) across offices of the Reserve Bank and replacement of the Integrated Computerised Currency Operations and Management System (ICCOMS) application with an improved currency management module (CyM) integrated with the Reserve Bank's Core Banking Solution (*e-Kuber*).

VIII.2 The demand for currency started to increase in the wake of heightened uncertainty caused by COVID-19 pandemic. The Reserve Bank took a series of measures in order to meet the enhanced demand. In addition, note printing presses, paper mills and banks were also directed to put in place a business continuity plan/contingency plan to avoid any disruption in continuous supply of currency.

VIII.3 Against this backdrop, the rest of the chapter is organised into four sections. The immediately following section 2 presents the important developments in currency in circulation during the year. Section 3 covers the implementation status of the agenda for 2019-20 and section 4 sets out the agenda for 2020-21. The chapter ends with a conclusion.

2. Developments in Currency in Circulation

VIII.4 Currency in circulation (CiC) includes banknotes and coins. At present, the Reserve Bank issues notes in denominations of ₹2, ₹5, ₹10, ₹20, ₹50, ₹100, ₹200, ₹500 and ₹2,000. Coins in circulation comprise 50 paise and ₹1, ₹2, ₹5, ₹10 and the recently launched coin of ₹20 denomination. In terms of value, banknotes accounted for the major share of the total CiC (around 99 per cent).

Banknotes

VIII.5 The value and volume of banknotes in circulation increased by 14.7 per cent and 6.6 per cent, respectively, during 2019-20. In value terms, the share of ₹500 and ₹2,000 banknotes together accounted for 83.4 per cent of the total value of banknotes in circulation at end-March 2020, with a sharp increase in the share of ₹500 banknotes. In volume terms, ₹10 and ₹100 banknotes constituted 43.4 per cent of total banknotes in circulation at end-March 2020 (Table VIII.1).

Coins

VIII.6 The total value of coins in circulation increased by 1.8 per cent in 2019-20 while the total volume increased by only 1.2 per cent. As on March 31, 2020, coins of ₹1, ₹2 and ₹5 together

Table VIII.1: Banknotes in Circulation (end-March)

Denomination (₹)	Volume (lakh pieces)			Value (₹ crore)		
	2018	2019	2020	2018	2019	2020
1	2	3	4	5	6	7
2 and 5	1,14,253 (11.2)	1,13,025 (10.4)	1,12,203 (9.7)	4,433 (0.2)	4,372 (0.2)	4,331 (0.2)
10	3,06,449 (29.9)	3,12,598 (28.7)	3,04,022 (26.2)	30,645 (1.7)	31,260 (1.5)	30,402 (1.3)
20	1,00,160 (9.8)	87,127 (8.0)	82,994 (7.2)	20,032 (1.1)	17,425 (0.8)	16,599 (0.7)
50	73,430 (7.2)	86,015 (7.9)	86,009 (7.4)	36,715 (2.0)	43,007 (2.0)	43,004 (1.8)
100	2,22,150 (21.7)	2,00,738 (18.5)	1,99,021 (17.2)	2,22,150 (12.3)	2,00,738 (9.5)	1,99,021 (8.2)
200	18,526 (1.8)	40,005 (3.7)	53,646 (4.6)	37,053 (2.1)	80,010 (3.8)	1,07,293 (4.4)
500	1,54,690 (15.1)	2,15,176 (19.8)	2,94,475 (25.4)	7,73,429 (42.9)	10,75,881 (51.0)	14,72,373 (60.8)
1,000	661 (...)	-	-	6610 (0.4)	-	-
2,000	33,632 (3.3)	32,910 (3.0)	27,398 (2.4)	6,72,642 (37.3)	6,58,199 (31.2)	5,47,952 (22.6)
Total	10,23,951	10,87,594	11,59,768	18,03,709	21,10,892	24,20,975

-: Not applicable. ...: Negligible.

Note: 1. Figures in parentheses represent the percentage share in total volume/value.
2. Figures in parentheses may not add up to 100 due to rounding-off of numbers.

Source: RBI.

constituted 83.7 per cent of the total volume of coins in circulation, while in value terms, these

denominations accounted for 78.3 per cent (Table VIII.2).

Table VIII.2: Coins in Circulation (end-March)

Denomination (₹)	Volume (lakh pieces)			Value (₹ crore)		
	2018	2019	2020	2018	2019	2020
1	2	3	4	5	6	7
Small coins	1,47,880 (12.4)	1,47,880 (12.3)	1,47,880 (12.1)	700 (2.7)	700 (2.7)	700 (2.7)
1	4,96,360 (41.7)	5,03,260 (41.8)	5,08,878 (41.8)	4,964 (19.4)	5,033 (19.5)	5,089 (19.3)
2	3,28,550 (27.6)	3,31,540 (27.6)	3,35,158 (27.5)	6,571 (25.7)	6,631 (25.6)	6,703 (25.5)
5	1,66,500 (14.0)	1,71,510 (14.2)	1,75,992 (14.4)	8,325 (32.5)	8,575 (33.2)	8,800 (33.5)
10	50,490 (4.3)	49,050 (4.1)	50,130 (4.1)	5,049 (19.7)	4,905 (19.0)	5,013 (19.1)
Total	11,89,780	12,03,240	12,18,038	25,609	25,844	26,305

Note: 1. Figures in parentheses represent the percentage share in total volume/value.
2. Figures in parentheses may not add up to 100 due to rounding-off of numbers.

Source: RBI.

Currency Management Infrastructure

VIII.7 The functions relating to issuance of currency (both banknotes and coins) and their management are performed by the Reserve Bank through its issue offices, currency chests and small coin depots spread across the country. As on March 31, 2020, the State Bank of India accounted for the highest share (58.3 per cent) of currency chests (Table VIII.3).

Indent and Supply of Currency

VIII.8 The indent of banknotes for 2019-20 was lower by 13.1 per cent than that of a year ago. The supply of banknotes during 2019-20 was also lower by 23.3 per cent than in the previous year mainly due to the disruptions caused by the outbreak of COVID-19 and the ensuing lockdown (Tables VIII.4).

VIII.9 The indent and supply of coins for 2019-20 was lower by 44.5 per cent and 49.3 per cent, respectively, from their levels in the previous year,

Table VIII.3: Currency Chests and Small Coin Depots (as at end-March 2020)

Category	No. of Currency Chests	No. of Small Coin Depots
1	2	3
State Bank of India	1,962	1,689
Nationalised Banks	1,180	908
Private Sector Banks	206	168
Cooperative Banks	8	7
Foreign Banks	4	3
Regional Rural Banks	6	6
Reserve Bank of India	1	1
Total	3,367	2,782

Source: RBI.

reflecting lower demand for coins in the economy (VIII.5).

Disposal of Soiled Notes

VIII.10 The processing of soiled notes was expedited during the year through continuous monitoring and optimal utilisation of the CVPS/ Shredding and Briquetting System (SBS). As a

Table VIII.4: Indent and Supply of Banknotes by BRBNMPL and SPMCIL (April-March)

(pieces in crore)

Denomination (₹)	2017-18		2018-19		2019-20	
	Indent	Supply	Indent	Supply	Indent	Supply
1	2	3	4	5	6	7
5	-	-	-	-	-	1
10	424	431	392	429	147	147
20	246	205	5	21	125	134
50	378	279	423	404	240	234
100	807	317	633	641	330	327
200	269	283	262	273	205	196
500 (new design)	921	969	1,169	1,147	1,463	1,200
2,000	15	15	5	5	-	-
Total	3,060	2,500	2,888	2,919	2,510	2,239

-: Not Applicable.

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

BRBNMPL: Bharatiya Reserve Bank Note Mudran Private Limited.

SPMCIL: Security Printing and Minting Corporation of India Limited.

Source: RBI.

Table VIII.5: Indent and Supply of Coins by Mints (April-March)

(pieces in crore)

Denomination	2017-18		2018-19		2019-20	
	Indent	Supply	Indent	Supply	Indent	Supply
1	2	3	4	5	6	7
₹1	183	201	200	255	10	11
₹2	118	154	100	129	80	80
₹5	170	154	113	68	100	100
₹10	300	76	200	161	120	115
₹20	-	-	-	-	30	5
Total	771	585	613	613	340	311

-: Not Applicable.

Source: RBI.

result, soiled notes processed increased by 18.2 per cent on a year-on-year basis (Table VIII.6).

Counterfeit Notes

VIII.11 During 2019-20, out of the total Fake Indian Currency Notes (FICNs) detected in the banking sector, 4.6 per cent were detected at the Reserve Bank and 95.4 per cent by other banks (Table VIII.7).

VIII.12 Compared to the previous year, there was an increase of 144.6 per cent, 28.7 per cent,

Table VIII.7: Number of Counterfeit Notes Detected (April-March)

(number of pieces)

Year	Detection at the Reserve Bank	Other Banks	Total
1	2	3	4
2017-18	1,88,693 (36.1)	3,34,090 (63.9)	5,22,783 (100.0)
2018-19	17,781 (5.6)	2,99,603 (94.4)	3,17,384 (100.0)
2019-20	13,530 (4.6)	2,83,165 (95.4)	2,96,695 (100.0)

Note: 1. Figures in parentheses represent the percentage share in total.

2. Does not include counterfeit notes seized by the police and other enforcement agencies.

Source: RBI.

Table VIII.6: Disposal of Soiled Banknotes (April-March)

(pieces in lakh)

Denomination (₹)	2017-18	2018-19	2019-20
1	2	3	4
2000	1	6	1,768
1000	68,467	22	0
500	2,00,237	154	1,645
200	-	1	318
100	1,054	37,945	44,793
50	827	8,352	19,070
20	1,137	11,626	21,948
10	4,975	65,239	55,744
Up to 5	83	591	1,244
Total	2,76,782	1,23,935	1,46,530

-: Not Applicable.

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

Source: RBI.

151.2 per cent and 37.5 per cent in counterfeit notes detected in the denominations of ₹10, ₹50, ₹200 and ₹500 [Mahatma Gandhi (New) Series], respectively. Counterfeit notes detected in the denominations of ₹20, ₹100 and ₹2000 declined by 37.7 per cent, 23.7 per cent and 22.1 per cent, respectively (Table VIII.8).

Expenditure on Security Printing

VIII.13 The total expenditure incurred on security printing during July 1, 2019 to June 30, 2020 was ₹4,377.84 crore as against ₹4,810.67 crore in the previous year mainly due to lower indent placed during the year.

Table VIII.8: Denomination-wise Counterfeit Notes Detected in the Banking System (April-March)

Denomination (₹)	2017-18	2018-19	2019-20
1	2	3	4
2 and 5	1	..	22
10	287	345	844
20	437	818	510
50	23,447	36,875	47,454
100	2,39,182	2,21,218	1,68,739
200	79	12,728	31,969
500 (MG Series)	1,27,918	971	11
500 [MG (New) Series]	9,892	21,865	30,054
1,000	1,03,611	717	72
2,000	17,929	21,847	17,020
Total	5,22,783	3,17,384	2,96,695

.. : Nil.
Source: RBI.

3. Agenda for 2019-20: Implementation Status

Goals Set for 2019-20

VIII.14 Last year, the Department had set out the following goals:

- Introduction of Varnished Banknotes - Field Trial (*Utkarsh*) [Para VIII.15];
- Procurement of New Security Features for Indian Banknotes (*Utkarsh*) [Para VIII.16];
- Procurement of Currency Verification and Processing Systems (CVPS) (*Utkarsh*) [Para VIII.17];
- Implementation of the Recommendations of Committees on Currency Management Aspects (*Utkarsh*) [Para VIII.18];
- Integration of Currency Management Functions with Core Banking Solution (*e-Kuber*) (*Utkarsh*) [Para VIII.19];
- Aiding Visually Impaired in Identification of Denomination of Banknotes (Para VIII.20);

- Banknote Survey of Consumers (Para VIII.21);
- Issuance of Visually Impaired Series Coins (Para VIII.22); and
- Other Areas of Focus (Para VIII.23).

Implementation Status of Goals

Introduction of Varnished Banknotes - Field Trial

VIII.15 The Reserve Bank has undertaken several initiatives to introduce varnished banknotes in ₹100 denomination on a field trial basis. However, the process of printing of these notes has been delayed due to disruptions caused by the COVID-19 pandemic and certain other developments.

Procurement of New Security Features for Indian Banknotes

VIII.16 A Global Pre-Qualification Bid Notice was issued in July 2017 incorporating the “Make in India” clause (to the extent feasible) in terms of Government of India’s Public Procurement (Preference to Make in India) Order 2017, for procurement of security features for Banknotes. The Reserve Bank is actively involved in taking the process forward.

Procurement of Currency Verification and Processing Systems (CVPS)

VIII.17 The Reserve Bank procured 50 new CVPS machines through a global tender. The process of supply, installation and commissioning of these new machines in all the 19 Regional Offices has been completed. The Reserve Bank also undertook an exercise to upgrade the infrastructure of CVPS rooms to state-of-the-art/ international norms, creating a risk-free, hygienic and aesthetically designed workplace.

Implementation of the Recommendations of Committees on Currency Management Aspects

VIII.18 Recommendations relating to standardisation of raw material procurement, quality assurance, note printing processes and security features across all presses and paper mills, made by a Group of Experts¹ (Chairman: Shri C. Krishnan) were pursued for implementation during the year. Pursuant to the recommendations of the High Level Committee on Currency Storage and Movement (HLCCSM)² [Chairman: Shri N. S. Vishwanathan] and the Committee on Currency Movement (CCM)³ [Chairman: Shri Deepak Mohanty], the Reserve Bank actively engaged in scaling up direct remittance of banknotes to currency chests, remittance tracking system and standardisation of container fleets for sending treasure in a safe, optimum and secure manner. Recommendations to strengthen the process of mopping up of soiled notes, last mile distribution of banknotes along with other recommendations of the HLCCSM, CCM and Group of Experts are in various stages of implementation.

Integration of Currency Management Functions with Core Banking Solution (e-Kuber)

VIII.19 A currency management module (CyM) in *e-Kuber* is being developed to improve the management information system for currency operations and to ensure that accounting of currency chest transactions are reflected in the Reserve Bank's book in near real time basis. The functionalities of CyM module are being rolled out in 3 phases. Phases I and II involved on-boarding of all 19 Regional Offices (ROs) and all the active currency chests (CCs) in CyM

module and were completed by June 2019. With this new module, the accounting of currency transaction is now being carried out on T+0 basis as against T+1 basis under ICCOMS, the erstwhile currency management application of the Reserve Bank. Phase III of CyM module, which includes development of user reports and certain other functionalities, is in progress.

Aiding Visually Impaired in Identification of Denomination of Banknotes

VIII.20 The Reserve Bank launched MANI (Mobile Aided Note Identifier), a mobile application for aiding visually impaired persons to identify the denomination of Indian banknotes, which was inaugurated by the Governor on January 1, 2020 (Box VIII.1).

Banknote Survey of Consumers

VIII.21 The Department launched a Banknote Survey of Consumers in October 2019 with the objective of (a) assessing the demand for cash as well as denomination preferences at consumer level; (b) measuring the awareness of people about various security features of the banknotes; and (c) gauging the level of satisfaction with the current banknotes and coins for normal as well as visually impaired people. Fieldwork, however, had to be postponed due to the lockdown.

Issuance of Visually Impaired Series Coins

VIII.22 The new series of visually impaired friendly coins, which was introduced in March 2019, was put into circulation over the counter at Issue Offices of the Reserve Bank. This new series was also remitted to currency chests for wider distribution to public.

¹ The Report was submitted to the Reserve Bank in 2018.

² It was an Interim Report.

³ The Report was submitted to the Reserve Bank in 2017.

Box VIII.1**Mobile Aided Note Identifier (MANI) for the Visually Impaired**

Indian banknotes have several features like intaglio printing, tactile mark, variable banknote size, large numerals, variable colour, monochromatic colours and patterns, which enable the visually impaired (colour blind, partially sighted and blind people) to identify them. In its Statement on Developmental and Regulatory Policies of June 6, 2018, the Reserve Bank announced its intention to explore the feasibility of developing a suitable device or mechanism for improving further the identification of Indian banknotes by the visually impaired. Accordingly, the Reserve Bank developed and launched a mobile application called MANI (Mobile Aided Note Identifier) on January 1, 2020 with the following features:

- Capable of identifying the denominations of Mahatma Gandhi Series and Mahatma Gandhi (New) Series banknote by checking front or reverse side/part of the note, including half folded notes at various holding angles and broad range of light conditions (normal light/day light/low light/*etc.*).
- Ability to identify the denomination through audio notification in Hindi/English and non-sonic mode such

as vibration (suitable for those with vision and hearing impairment).

- After installation, the mobile application does not require internet and works in offline mode.
- Ability to navigate the mobile application *via* voice controls for accessing the application features wherever the underlying device and operating system combination supports voice enabled controls.
- The application is free and can be downloaded from the Android Play Store and iOS App Store without any charges/payment.
- The mobile application does not authenticate a note as being either genuine or counterfeit.

In the USA, a similar application called EyeNote was developed by the Bureau of Engraving and Printing (BEP) and was put in place for public for free.

References:

1. RBI press releases.
2. Bureau of Engraving and Printing (BEP), US Department of the Treasury.

Other Areas of Focus

VIII.23 As part of the medium-term strategy framework, the Reserve Bank continued to focus on other areas of currency management like bringing improvements in the processing capabilities and logistics for efficient inventory management of currency and fine-tuning the models for estimation of demand for banknotes and coins.

Bharatiya Reserve Bank Note Mudran Private Ltd. (BRBNMPL)

VIII.24 BRBNMPL is a wholly owned subsidiary of the Reserve Bank, which runs two banknote printing presses in Mysuru and Salboni with a total capacity of printing 16 billion note pieces per year on a two-shift basis. Since its inception, the company has enabled the Reserve Bank to bridge the gap between the supply and demand for

banknotes in the country. BRBNMPL along with Security Printing and Minting Corporation of India Limited (SPMCIL) has set up the Bank Note Paper Mill India Private Limited (BNPMIPL) in Mysuru, an entity producing Cylinder mould VAT made Watermarked Bank Note (CWBN) paper required for banknote production, with a production capacity of 12,000 metric tonnes per annum. BRBNMPL has also set up an ink factory at Mysuru with an annual production capacity of 1,500 metric tonnes, which has started its commercial production from August 2018.

4. Agenda for 2020-21

VIII.25 During the year, the Department will focus on the following:

- Automation of Banknote Handling Process (*Utkarsh*)

- o Upgrade the infrastructure and processes for currency management by inducting modern technology.
- Microsite for Bank notes
 - o Continue the process of designing and developing a microsite to host basic information on features of banknotes and information relating to currency management – information on banknotes will be presented through various multimedia with simple and efficient navigation;
 - o Displaying 360-degree view of the design and security features of banknotes through explanatory videos and animation;

- o Informative materials on exchanging banknotes/Note Refund Rules; and
- o Interactive games and posters.

5. Conclusion

VIII.26 In sum, in spite of challenges caused by COVID-19 pandemic, the Reserve Bank successfully managed to maintain adequate supply of clean currency notes in the economy. The Reserve Bank has also made sustained efforts to combat the menace of forged notes in circulation and to create public awareness about various aspects of banknotes. Going ahead, strengthening the currency management infrastructure, enhancing public awareness on different features of Indian banknotes and fine-tuning the models for estimation of demand for banknotes will be the areas of focus for the Reserve Bank.