Currency chests

A lifeline to the Indian economy

April 2018

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Currency management

The Department of Currency Management (DCM) has the responsibility of administering the functions of currency management, a core function of the Reserve Bank of India (RBI) in terms of the Reserve Bank of India Act, 1934. Currency management essentially relates to the issue of notes and coins and retrieval of unfit notes from circulation.

Trends in currency

The value of banknotes in circulation declined by 20.2% over the year to 13,102 billion INR as at end-March 2017 (refer to the table below). The volume of banknotes, however, increased by 11.1%, mainly due to higher infusion of banknotes of lower denomination in circulation following demonetisation. In value terms, the share of 500 INR and above banknotes, which had together accounted for 86.4% of the total value of banknotes in circulation at end-March 2016, stood at 73.4% at end-March 2017. The share of newly introduced 2,000 INR banknotes in the total value of banknotes in circulation was 50.2% at end-March 2017. In volume terms, 10 INR and 100 INR banknotes constituted 62% of the total banknotes in circulation at end-March 2017 as compared with 53% at end-March 2016.

Banknotes in circulation

Denomination (INR)	Volume (million pieces)			Value (billion INR)		
	Mar '15	Mar '16	Mar '17	Mar '15	Mar '16	Mar '17
2 and 5	11,672	11,626	11,557	46	45	45
10	30,304	32,015	36,929	303	320	369
20	4,350	4,924	10,158	87	98	203
50	3,487	3,890	7,113	174	194	356
100	15,026	15,778	25,280	1,503	1,578	2,528
500	13,128	15,707	5,882	6,564	7,854	2,941
1,000	5,612	6,326	89	5,612	6,326	89
2,000	-	-	3,285	-	-	6,571
Total	**83,579**	**90,266**	**1,00,293**	**14,289**	**16,415**	**13,102**

Source: RBI Annual Report 2016–17

Coins in circulation

Denomination (INR)	Volume (million pieces)			Value (billion INR)		
	Mar '15	Mar '16	Mar '17	Mar '15	Mar '16	Mar '17
Small coins	14,788	14,788	14,788	7	7	7
1	41,627	44,876	48,347	42	45	48
2	27,038	29,632	32,059	54	59	64
5	12,761	14,089	15,783	64	70	79
10	2,750	3,703	5,205	27	37	52
Total	**98,964**	**107,088**	**116,182**	**194**	**218**	**250**

Source: RBI Annual Report 2016–17

Currency chest

For the purpose of cash management, the RBI established the institutional framework of currency chests with banks. A currency chest is a receptacle where the RBI keeps all the excess money of banks under custody. Currency chests are branches of selected commercial banks authorised by the RBI to stock and distribute rupee notes and coins. The responsibility for managing the currency in circulation is vested in the RBI. Whenever the RBI prints new currency notes, it first delivers them to currency chests. These chests then deliver the notes to banks. A currency chest is a depository of the RBI. The bank, however, must maintain a separate account independently of the chest which is monitored by the RBI. A deposit into the chest leads to a credit to the commercial bank's account and a withdrawal translates into a debit.

A currency chest is the subdivision of a bank established to store the surplus cash from the branch inward remittance without losing interest earnings and to avoid keeping the money idle in the branches. It also protects cash movement within the set of branches which a currency chest serves. This storage facility helps a bank to maintain its cash reserve ratio (CRR) with the RBI as per the guideline.

A currency chest is usually maintained by designated/appointed branches in a particular city. All the branches of a particular bank or other banks in that region transact with the designated currency chest.

These chests act as the distributor of cash and collects soiled and mutilated notes back from the public. The RBI is the owner of cash deposited in the vault of a currency chest. When the cash is added to the vault, it becomes RBI's cash and when taken out from the vault, it becomes the bank's cash.

Currency management in India

The currency management infrastructure consists of a network of 19 issue offices, 4,034 currency chests (including sub-treasury offices and a currency chest of the Reserve Bank at Kochi), and 3,707 small coin depots of commercial, cooperative and regional rural banks (RRBs) spread across the country. In order to improve the currency distribution system by leveraging technology, the RBI adopted a hub-and-spoke model for the distribution of banknotes across the country. Fresh note remittances are sent to larger currency chests, which meet the currency needs of a designated area (such as a district). These chests are identified as hub chests and, in turn, supply notes to smaller currency chests in their vicinity which act like spokes in the distribution model. Fresh notes are distributed to every issue office of the RBI as per an allocation plan.

Cash processing operations in India have incorporated various new means of increasing efficiency in recent years. Managing currency is one of the important functions of the RBI, India's banking regulator. Section 22 of the RBI Act allows it to issue notes. The objective of the RBI's currency management operations is to ensure an adequate supply of good quality bank notes and coins. In India, the core central banking function of note issue and currency management is performed through 19 issue offices, the sub-office in Lucknow, a currency chest in Kochi and a wide network of currency chests and small coin depots. The RBI has agency arrangements mainly with scheduled commercial banks, under which a currency chest is managed. Banknotes and coins are then distributed through bank branches and automated teller machines (ATMs), in addition to currency vending machines. To help the supply of good quality notes, mechanisation was underway from the year 2007–08 at the currency chests of commercial banks, which resulted in the installation of the high-capacity Currency Verification and Processing System (CVPS), Currency Disintegration and Briquetting System (CDBS) and desktop sorting machines. Commercial banks hire installed note sorting machines (NSMs, desktop note sorters, note-counting machines, ATMs, cash recyclers and note detectors.

The preamble of the RBI makes it responsible for making currency available to the general public. Until the time the currency comes out of the RBI, it is not legal tender and is referred to as note form. Currency notes are issued by the Issue Department of the RBI. The Issue Department and the Banking Department manage currency. The Issue Department supplies currencies to the Banking. Department for day-to-day transactions. The Banking Department also stores a limited amount of currency, which is referred to as box value. Box value can vary from office to office. If the balance of the Banking Department exceeds the box value, then it has to transfer the excess value to the Issue Department.

The volume of currency issued to the general public is significant. The RBI issues cash through the accounts that banks maintain with it. When currency chests were not in existence, banks used to draw currency daily from the RBI. The objective of a currency

Currency chest

chest was to make the operation and management of currency simple and easy. The RBI was careful in allotting the management of currency chest operations to banks on its behalf. Since their inception, currency chests have been managed by public sector banks. Private sector banks entered the space later.

In 1994, HDFC Bank, a private sector bank in India, applied for a currency chest and obtained permission from the RBI in six months. Today, currency chests are managed by foreign banks as well. These currency chests are audited by the RBI on a regular basis. The chest is managed by the officials in the currency chest of the main bank branch or a particular designated branch.

This designated branch is authorised to supply and receive currency. By setting up a currency chest, banks do not require to approach the RBI on a daily basis for deposits or withdrawals. Upon the close of the day, if the bank receives more money than payments, the bank deposits this excess to the currency chest and gets a credit. If payment exceeds receipts, the bank withdraws from the currency chest and informs the RBI.

Currency chests and small coin depots as at end-March 2017:

Category	No. of currency chests	No. of small coin depots
State Bank of India (SBI)	1,893	1,793
SBI associate banks	754	722
Nationalised banks	1,198	1,014
Private sector banks	168	164
Co-operative banks	4	4
Foreign banks	4	4
Regional rural banks	5	5
State treasury offices (STOs)	7	0
RBI	1	1
Total	**4,034**	**3,707**

Source: RBI Annual Report 2016–17

Infrastructure for currency management

According to section 23 of the RBI Act, the issuance of currency and general business affairs of the RBI are carried on through two different specialised departments, the Issue Department and Banking Department.

The Issue Department is responsible for the total value of the currency notes in circulation and to safely maintain total assets of desired value. This department is liable for the issuance of banknotes in exchange of other denominations and against assets, and instrumental in the process of getting currency notes or coins from printing presses or mints and distributing currency among the public across the country. It is also responsible for withdrawing unfit and improper currency from circulation.

The execution of the above-mentioned activities—that is, placing the required currency into circulation and the withdrawal of currency from circulation—is handled by the Banking Department of the RBI.

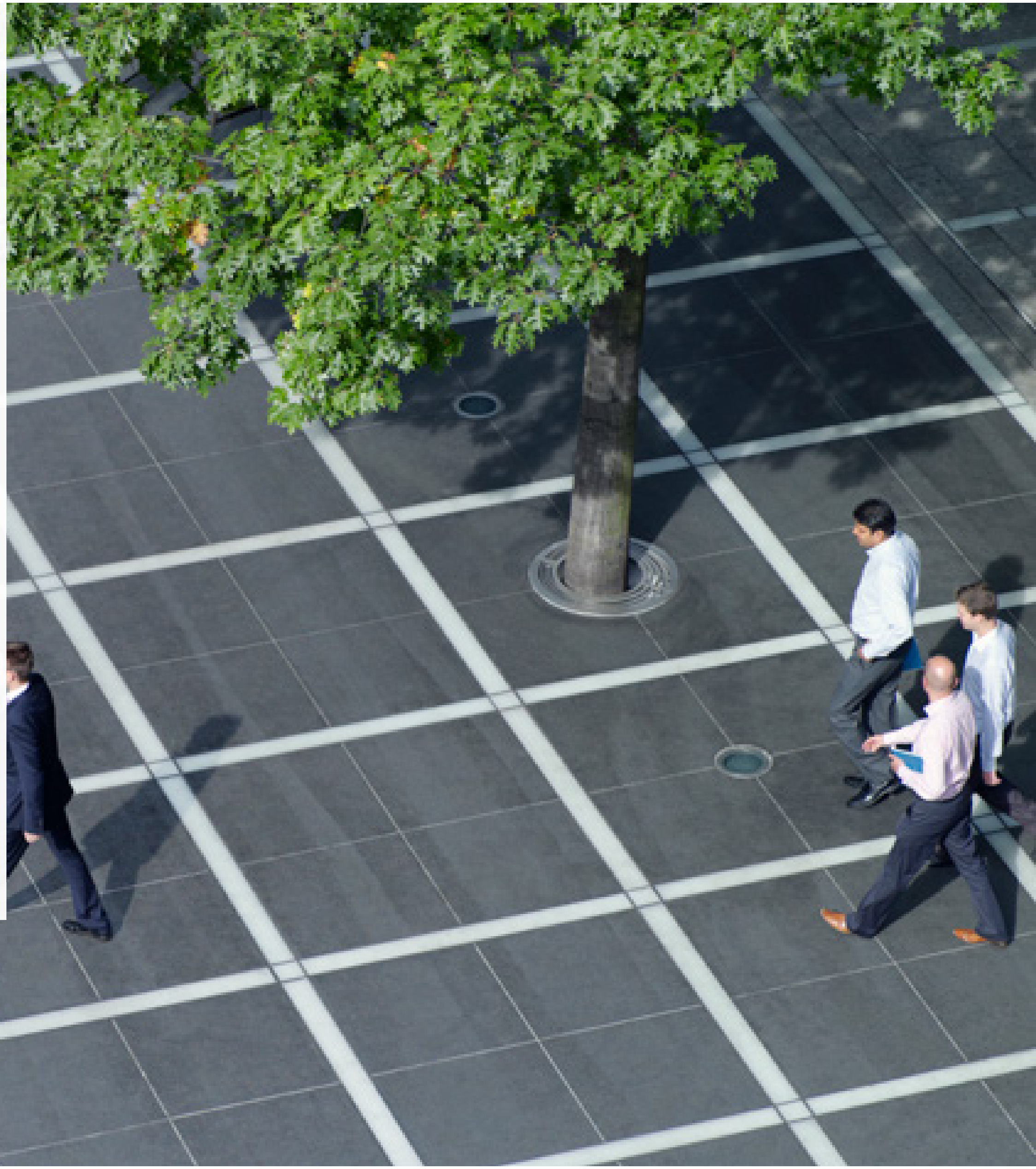
The objectives of currency management are very specific:

- To ensure smooth cash flow by making available sufficient and desirable quality of currency to meet the country's demand.
- To print notes and mint coins from government-owned and self-run note printing presses and mints.
- To distribute and circulate sufficient notes and coins throughout the country by arranging proper and secure infrastructure.
- To maintain notes which are of the desired quality and fit and appropriate for circulation.
- To withdraw unfit and inappropriate notes from circulation and to destroy them and replace them with new currencies without hampering the demand and supply balance of the desired quantity of currency.
- To maintain secure and effective processes for accounting.
- To manage foreign exchange efficiently.

The functions of the DCM

The RBI fulfils the above-mentioned objectives and duties through its well-organised and efficient department called the DCM. The DCM is headed by a Chief General Manager. The department has a planning division, resource management and remittance of treasure division, note processing and data analysis division, inspection follow-up division, currency chest division, note exchange division, forged note vigilance cell, security cell, co-ordination and development division, and administration division. The DCM of the RBI makes monetary policies, addresses operational issues, and takes actions in managing the planning, process of issuance and distribution of currency within the country:

- To design currency notes. It recommends designs of banknotes to the Central Government and prints them accordingly.
- To forecast the demand for currency notes and coins of the country.
- To circulate and distribute currency smoothly throughout the nation.
- To withdraw the dirty, unfit and improper paper notes and uncurrent coins from circulated currency.
- To ensure the integrity of banknotes. To identify, evaluate and manage the security risks of the issuance, circulation and distribution of currency.
- To administer the provisions of the RBI (Notes Refund) Rules, 2009, which deals with the payment of the value of soiled or multilated notes.
- To rationalise the work procedures of the issue offices on a regular basis. To co-ordinate and ensure the protection and safety of the currency management system and assets as a whole.

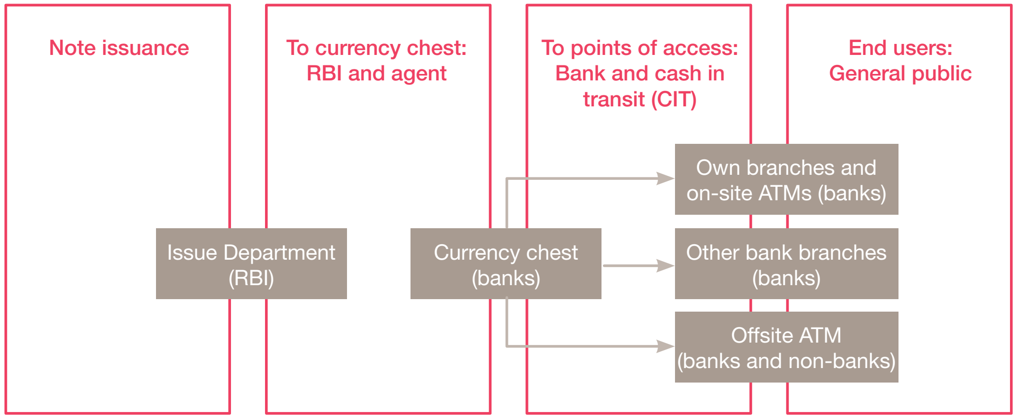


The process of the movement of currency

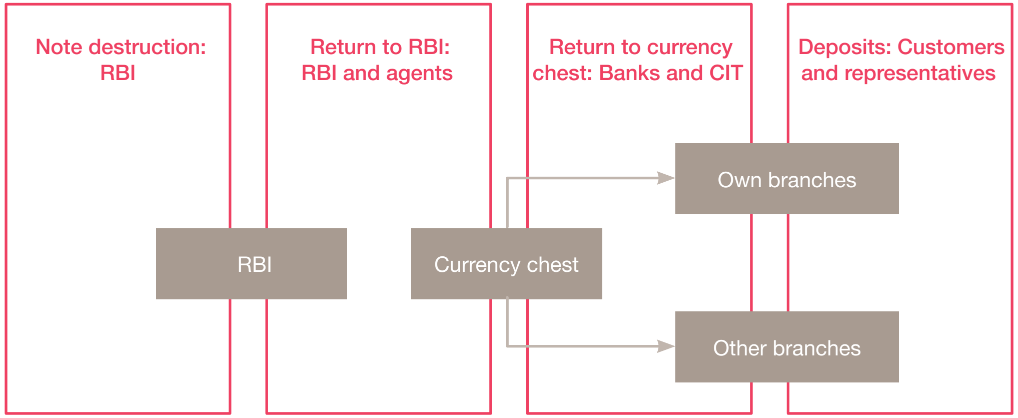
The RBI gets new currency notes from four currency note printing presses and gets coins from mints. Among the four currency note printing presses, two are owned by the Security Printing and Minting Corporation of India Limited (SPMCIL), which is wholly owned by the Indian Government, and situated in Nashik, Maharashtra, and Dewas, Madhya Pradesh. The other two are run by the RBI and owned by its subsidiary named the Bharatiya Reserve Bank Note Mudran Ltd. (BRBNML); they are situated in Mysore in Karnataka and Salboni in West Bengal. There are four mints in India where coins are minted. All mints are owned by the Government of India and they are situated in Mumbai, Hyderabad, Kolkata and Noida. Currency notes move from printing presses to currency chests or from chests to bank branches or vice versa, in specially built secured trucks, accompanied by RBI officials and security. Banks officials are responsible for the movement of currency from currency chests to bank branches. A currency chest distributes currencies to a particular bank branch to fulfil a specific demand based on the business volume created by that particular bank branch in its local business area of operation.

Currency flow

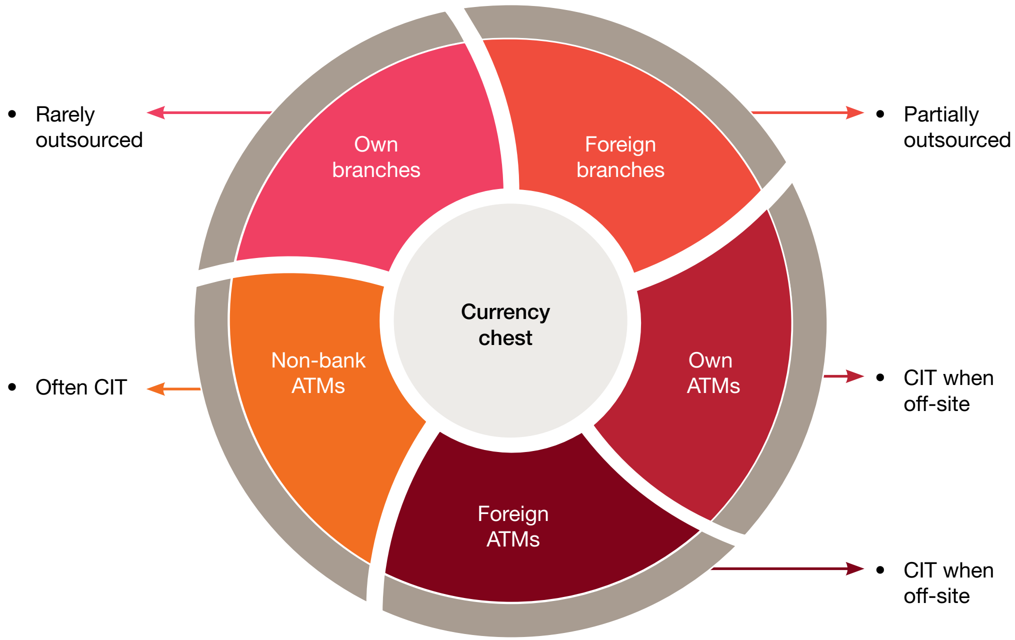
Currency flow for new notes



Currency for soiled notes

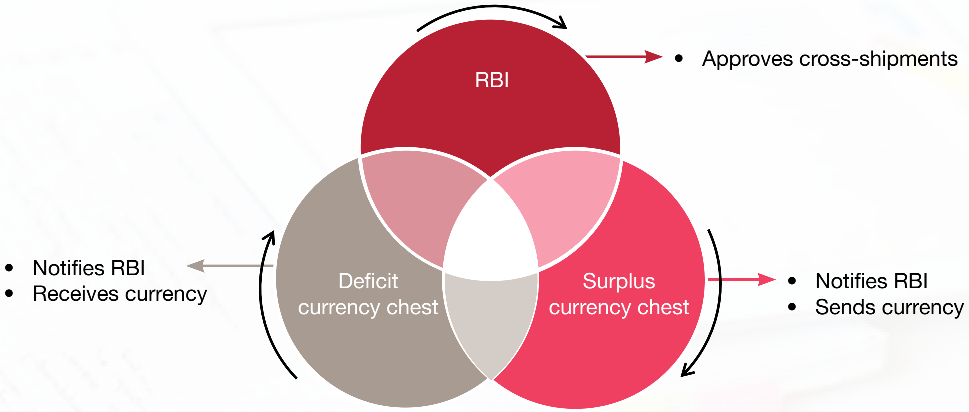


Currency flow for note reissuance



The process of the movement of currency

Currency chest may exchange currency



Many phases of currency operations have been partially or fully outsourced in India. Banks' progress toward full outsourcing is detailed in the table below. Processing refers to the sorting, banding, bundling and shrink wrapping of currency.

Outsourcing of currency operation

	Processing	Machine operation	Cash in transit
Private sector banks	Partly outsourced	Partly outsourced	Fully outsourced
Banks from SBI/nationalised banks	Own	Own	Outsourced
Other nationalised banks	Own	Partly outsourced	Partly outsourced

Source: Cash and currency operation in India

The currency chest mechanism

Currency is managed by the RBI through its interconnected structure of issue offices and currency chests. Once a currency chest starts operating, an inceptive remittance of banknotes and rupee coins is arranged from the issue office under whose control it functions or by diversion from a chest in the circle/outside the circle. From time to time, the RBI issues directorial instructions to currency chests regarding banknotes and coins, new series of banknotes/coins, changes in procedure, etc.

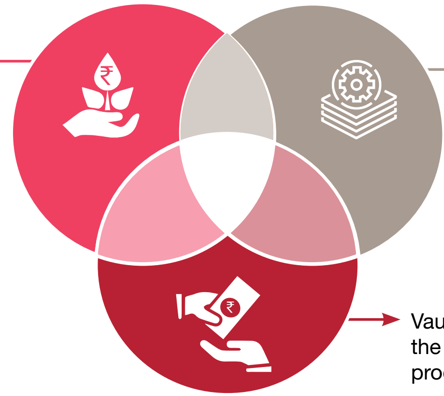
It is the responsibility of each issue office of the RBI to furnish and pull out banknotes and coins to and from the chests in its area. The yearly demand of notes and coins of currency chests is evaluated through indents submitted by the chests through their link offices. The branches of currency chests are required to practically evaluate their requirements and forward their indents for banknotes and coins on an annual basis (April to March) to their respective link offices, who in turn submit a consolidated chest-wise, denomination-wise indent for notes and coins to the concerned issue offices. The currency chests are also required to specify in their indents the excess and soiled banknote balances and the excess and withdrawn coins which are required to be removed.

The banknotes and rupee coins which are out of condition, cannot be issued for further circulation or are not required for instantaneous requirements of the branches are unloaded into the chests. When adequate quantities of non-issuable banknotes are collected, they are remitted to the concerned issue office. A currency chest enable banks/treasuries to work with minimum cash balance of their own by avoiding the periodic physical movement of currency.

At certain times, a currency chest's demand is met by arranging supplies from other chests with an excess by a diversion order from issue offices. The chests with excess funds from which supplies can be drawn and the deficient supply chests to which these can be sent are discovered on the basis of the database of chests maintained at the RBI's issue offices.

The excess cash at the non-chest branches can be deposited with bank branches maintaining currency chests at the same or another centre. Alternatively, they can meet their cash requirements from these chests. This also helps in collecting soiled banknotes accumulated with non-chest bank branches with the chest branches for onward transmission to the issue office in due course. Once the non-chest branches receive the banknotes, non-chest bank branches have a mandate to sort the banknotes into re-issuable and soiled/non-issuable before depositing the same with the chest branch to which they remit their cash.

Core activities of a currency chest



Sub-activities of a currency chest

1. Cash-in-transit logistics: A currency chest is allocated a specific geographical area for its service depending upon its cash holding limit and the normal cash flow trends. The route is to be managed in such a way that the transportation cost must be minimum for the cash need of its branches. Tracking of vehicles is another area to which a currency chest devotes its time.

2. Liaison with branches for co-operation and regulation of all the branches under the currency chest's command area to maintain the required balance in the branch vault at the day end.

3. Processing is a separate wing which is like a production factory. There are huge machines inside the currency chest processing centre. This machine can filter out good notes. All production management theories are applicable to this factory, such as maintaining sufficient raw material (inward cash), tracking the inflow of cash, machine calibration, efficiency of machines and labour, tracking the proportion of quality notes from processing, fake note registry, scientific management of process and procedures, safety issues, security issues, fraud responsiveness and resilience efforts and labour issues.

The currency chest mechanism

4. Vaulting is a major activity of a currency chest and it holds primary accountability and responsibility to the vault custodians. Vaulting is all about mathematics, which means even a fault or error of a single cash bundle may attract disciplinary action of severe intensity and also lead to financial loss. However, the job includes mainly taking out bundles for branch payment in the morning and receipt of bundles from branches before closing. Other functions cover the maintenance of soiled currency (not fit for circulation) within the vault—that is, it must not be accumulated inside the vault and effort must be taken to remit the same to the RBI for destruction (called the shredding process). Therefore, many reports are to be given to the RBI, like verification and balance certification reports.

5. In addition to the above activities, a currency chest needs to share and submit daily/monthly/yearly and ad hoc reports as well.

6. Other important activities that take place inside a currency chest are as follows:

    a. Vendor management: Many vendors who provide a variety of services are involved—for example, armed security services, cash in transit, housekeeping, processing labour , auditors, etc.
    Balanced management is needed as this is the area which needs expertise. A healthy relationship with vendors and vendor staff make the currency chest safe and profitable.

    b. Risk management: Currency chests are high-risk areas as high-value transactions take place hourly. Therefore, risk forecasting and mitigation are needed.

    c. Marketing: Good relations must be maintained with other banks within and outside the command area to regulate the cash stock.

    d. Income generation: The RBI has allowed currency chests to generate income by processing the cash of other banks who do not have the currency chest facility. This make the currency chest a revenue generation unit.

    e. Compliance with all regulators like the RBI, labour laws, etc.

    f. Infrastructure/asset upkeep: This is key to the very existence of a currency chest. It includes security infrastructure like cameras, security ammunition, code, SOPs; physical infrastructures like computers, fire extinguishers, other heavy machineries like note counting machines, bundling machines and ACs.

Infrastructure for distribution and circulation of currency

The RBI has established an Integrated Computerized Currency Operations and Management System (ICCOMS) at its central office, regional Issue Departments and currency chests which consists of three components: Currency Chest Reporting System (CCRS), ICCOMS-Issue Department (ICCOMS-ID) and Currency Management Information System (CMIS). The objectives of this system are to improve operational efficiency, faster and accurate accounting, better MIS and planning, better monitoring and control, and better customer service.

This system enables computerisation and establishes a network connection between Currency Chests and issue offices. This facilitates prompt and accurate reporting and immediate action and creates a seamless flow of information between all the offices. It also helps to detect problems immediately and accurately and to take action accordingly. The scope of this very modern and integrated system is as follows:

1. Planning for currency issue
2. Allocation and distribution of currency
3. Better monitoring of overall processes from currency stock to distribution to accumulation of currency, etc.
4. Infrastructure planning
5. Dissemination of live data on currency in circulation

It should be ensured that necessary infrastructure facilities like ultraviolet lamps, weighing machines, dual display note counting machines and sorting machines for proper sorting/identification of suspect notes are provided at currency chest branches.

Simplified procedure for opening of currency chests

A. Places that are at/near to the international border/insurgency-affected areas

1. If the suggested place for a currency chest is within 80 km from the international border and it is not a state capital or cantonment area, banks may advance towards regional offices (ROs) of the RBI to obtain security clearance. Under no situation can construction be started before receipt of the required clearance.
2. Before commencing the construction of a currency chest, all necessary approvals should be obtained by the bank from other agencies.
3. Banks should strictly follow the technical specifications of construction in terms of circular DCM(CC)G-18/03.39.001/2008-09 dated 14 November 2008.
4. After construction is completed, the final approval from the respective RO of the RBI may be sought. No deviation will be sanctioned or considered, and any construction falling short of specifications will not be approved.

B. All other locations

1. After informing the concerned RO of the RBI under whose jurisdiction it is to be established, banks may construct the new currency chest.
2. Before beginning the construction of a currency chest, the banks need to obtain all necessary approvals from other agencies.
3. Banks should strictly follow the technical specifications of construction in terms of circular DCM(CC)G-18/03.39.001/2008-09 dated 14 November 2008.
4. After construction is completed, the final approval from the respective RO of the RBI may be sought. No deviation will be sanctioned or considered, and any construction falling short of specifications will not be approved.

Approvals for opening of currency chests by public sector banks (PSBs) and private sector banks will continue to be given by our ROs. All other banks (RRBs, cooperative banks and foreign banks) may continue to seek approvals for opening of currency chests from DCM, Mumbai. The approvals will normally be accorded within 30 days, provided the construction conforms to the specifications.

Currency management in India: Major challenges

With an area of approximately 3.3 million sq. km and a population of more than 1.34 billion, India faces a major challenge in ensuring currency reaches people in widely distributed areas and complex territories. As on 31 December 2013, India had a network of 1,10,520 commercial bank branches and 1,37,080 ATMs. The notes in circulation as on the same date were approximately 76.47 billion pieces valued at 12, 468 billon INR, while the coins in circulation were around 89.91 billion pieces valued at 168 billion INR. Diverse socioeconomic, behavioural and other often unpredictable factors influence the demand for notes and coins. Thus, the task of predicting currency demand is an exigent one that is subject to large variations. At present, the system is hampered by many difficulties in terms of capturing the structural and cyclical demand for currency and accurately projecting demand.

Additional challenges in currency management relate to safeguarding perishable banknotes, safeguarding sufficient supply of all denominations, facilitating operational effectiveness in distribution of notes by managing cost of handling, distribution and security in transit/storage, providing a reasonable cost for last mile connectivity, safeguarding equity issuance and repositioning the RBI as an upstream facilitator in the fresh note/coin supply chain, rather than as a retailer with limited reach. The table below highlights the difficulty associated with the durability of the banknotes in India. In India, the number of banknotes collectively produced is less than the withdrawal of banknotes from circulation by all countries taken together (except China). In fact, we are constrained to withdraw over 75% of all notes that we circulate every year.

Supply of banknotes by the RBI to currency chests and disposal of soiled notes

Denomination	Volume (million pieces)					
	2010–11		2011–12		2012–13	
	Supply	Disposal	Supply	Disposal	Supply	Disposal
1,000	706	179	371	375	1,536	450
500	4,347	1,864	5,560	1,994	2,725	2,263
100	4,085	5,227	1,091	5,577	6,348	5,627
50	1,114	2,095	1,522	1,578	1,257	1,357
20	1,296	664	4,237	562	904	609
10	5,580	3,657	3,379	3,584	5,991	3,752
up to 5	549	166	1,440	101	105	72
Total	**17,677**	**13,852**	**17,600**	**13,771**	**18,866**	**14,130**
		78%		78%		75%

Source: Supply of banknotes by RBI

Currency management in India: Major challenges

Huge withdrawals of banknotes from circulation not only lead to a supplementary cost for printing of fresh notes but also the supplementary requirement of various resources used in the production of banknotes. In this context, it becomes crucial that efforts are made to magnify the longevity of the banknotes so that wastage is reduced and resources are exploited in an efficient way, thereby minimising the environmental footprint of our currency management operations.

While increasing capacity, mechanisation of soiled note processing has given rise to new challenges such as ensuring the standardisation of machine parameters, slow progress in the development of processing capacity by commercial banks and security risks on account of manual intervention. Another challenge with the likely potential to evolve into a reputational risk for the RBI is the shortage/perceived shortage of coins and the lack of understanding on the exact role of the Central Bank in their distribution. It needs to be understood that while the responsibility for issue of coins lies with the Government of India (GoI), the RBI's role is restricted to putting into circulation the coins received by it. Then, there are issues arising out of similar shapes and sizes of coins of different denominations. There is a growing menace of forged notes in circulation and public awareness needs to be created about various aspects of banknotes.

Demonetisation effect

All the currency chests in most of the cities still hold the bulk of the scrapped notes, as the RBI has been unable to take them away due to the limited disposal capacity at its offices. Although the notes remain the property of the RBI, they are stored in the chests managed by the concerned banks.

Post-demonetisation conversion of 500 INR and 1,000 INR notes into currency (number, in billion)

	500 INR	1,000 INR	2,000 INR
On 8 November 2016			
(1) In circulation	17.28	6.74	-
(2) With the public (96% of circulation)	16.59	6.47	
Post-demonetisation			
(3) Conservative: 85% deposited or converted			
a. Converted or deposited in accounts	14.10	5.50	-
b. With public in currency	12.98	-	2.53
(4) Aggressive: 80% deposited or converted			
a. Converted or deposited in accounts	3.27	5.17	-
b. With public in currency	2.15	-	2.37

Source: Demonetisation effect on currency

Recent measures in India

a. Constitution of a High Level Committee

To address the significant challenges faced in India and other related issues, a High Level Committee was constituted by GoI (Chairman: Dr. K. C. Chakrabarty) whose members represent GoI, the RBI, note presses and mints. The committee reviewed the forecasting methodology and studied the international best practices in cash distribution by other central banks. It made wide-ranging recommendations, notably: (i) the RBI to focus exclusively on the management and planning of the currency system while passing on the responsibility for the distribution of banknotes and coins entirely to commercial banks; (ii) need to introduce private entrepreneurs for the distribution of banknotes and coins on behalf of banks, if last mile connectivity for distribution has to be achieved; (iii) identification of a bank willing to assume leadership of the currency management function in the district, etc. All these recommendations have been accepted and are at various stages of implementation.

b. Distribution mechanism

The functions relating to the issuance of currency (both banknotes and coins) and its management are performed by the RBI through its issue offices and a network of currency chests and small coin depots spread across the country. Despite the large number of currency chests (extended arms of the RBI's Issue Department), the primary responsibility for reaching currency to the banks rests with RBI because of the currency management structure. Every year, based on the bank's indent for banknotes and coins, the printing presses and mints dispatch notes and coins to the RBI offices. From the RBI offices, the notes and coins are remitted to currency chests operated by commercial banks. The Central Bank arranges for transport and police escort for transfer of treasure and bears all the expenditure related to it, unlike other countries where the commercial banks are responsible for the transport of cash. Thus, distribution of cash in India is the primary responsibility of the Central Bank. The treasure held in the currency chests is the property of the Central Bank and is subject to audit/verification. Any withdrawal from or deposit into the currency chest by the bank holding the chest is reflected as a debit/credit in the bank's account held with the RBI.

To improve last mile connectivity, we have decided to involve private entrepreneurs in the distribution function. Cash-in-transit (CIT) companies/business correspondents have been allowed to process coins and banknotes, including packaging, sorting and delivery to banks' customers, and retrieval. Banks, including urban co-operative banks and regional rural banks, are also being involved to ensure that last mile delivery of cash-related services penetrates the entire country.

c. Direct remittance of banknotes

Remittances of notes from printing presses accompanied by press representatives and police escort are received at issue offices. After these boxes are received, they are subjected to preliminary verification (PV) wherein the contents of the box are verified by the vault joint custodians in the presence of the press representative. Later, at the time of sending remittance to banks, the boxes are packed in the presence of the accompanying RBI staff and vault joint custodians. At the bank, the RBI staff remains stationed till the verification of notes is completed by the bank officials.

The present process has some inherent inefficiency as the currency notes have to be transported several times before they reach the public. This not only reduces productivity but is also cost-inefficient. Accordingly, the RBI has introduced a scheme for direct remittance of banknotes from banknote printing presses to commercial banks instead of routing them through RBI issue offices to save time, efforts and resources. The new process is being given greater impetus by the RBI.

d. Pursuit of 'clean note policy'

Since the year 1999, all banks have been following a clean note policy to ensure a steady supply and circulation of good quality banknotes. Higher denomination notes have mostly achieved the objectives of the clean note policy; however, banks are still facing this problem with the quality of lower denomination notes, possibly due to reluctance/constraints on the part of banks to wipe out such notes from circulation.

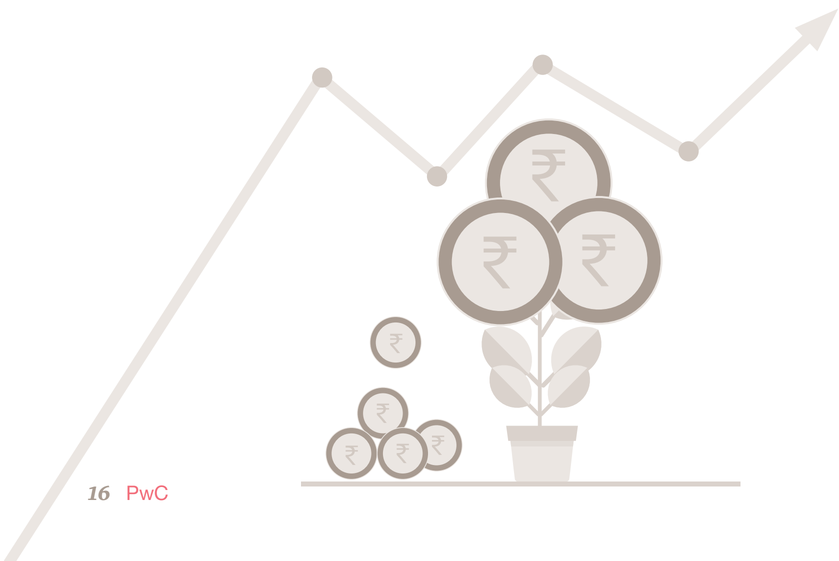
In the banking system, high priority is given to the identification of counterfeit notes system to ensure that real/actual banknotes alone are put into circulation. Towards this end, banks have been urged to enhance the use of technology to re-align their cash management systems so as to ensure that cash receipts in the denominations of 100 INR and above are not put into re-circulation without being machine processed for authenticity. Banks have also been directed to put in place appropriate and satisfactory systems to ensure that the counterfeit notes detected are duly impounded and reported.

Current scenario

In spite of increased use of non-cash modes of transactions due to improvement of technology, the country's demand for currency in circulation for smooth running has increased continuously and proportionately to the constant growth of the Indian economy. To provide good quality and proper banknotes in circulation, the RBI undertook various effective steps, such as continuous supply of fresh banknotes in sufficient amount, quicker disposal of unfit currency and development of a vast mechanised cash-processing system. The RBI has undertaken different actions according to its clean note policy and to counter the threat of fake notes—for instance, (a) creating awareness, (b) raising security features and (c) introducing improved modern technology to detect counterfeit notes.

Clean note policy

The RBI estimates the demand for currency using an econometric model which factors in, inter alia, the expected real GDP growth, rate of inflation and denomination-wise disposal rate of soiled notes. However, 2016–17 was an exceptional year on account of demonetisation and the gradual replenishment of withdrawn notes with new notes of different denominations. Accordingly, the total number of banknotes supplied was higher at 29.0 billion pieces in 2016–17 as compared to 21.2 billion pieces in 2015–16. The total supply of notes was 3.5% higher than the indent placed with the printing presses for 2016–17, while the indent itself was higher by around 17.4% than that of the previous year.



Indent and supply of banknotes by Bharatiya Reserve Bank Note Mudran Private Limited (BRBNMPL) and Security Printing and Minting Corporation of India Limited (SPMCIL) (April–March)

(million pieces)

Denomination (INR)	2014–15		2015–16		2016–17	
	Indent	Supply	Indent	Supply	Indent	Supply
5	-	-	-	-	-	-
10	6,000	9,417	4,000	5,857	3,000	2,785
20	4,000	1,086	5,000	3,252	6,000	4,118
50	2,100	1,615	2,050	1,908	2,125	2,700
100	5,200	5,464	5,350	4,910	5,500	5,738
500 (MG series)	5,400	5,018	5,600	4,291	5,725	2,013
500 (new design)	-	-	-	-	-	7,260
1,000	1,500	1,052	1,900	977	2,200	925
2000	-	-	-	-	3,500	3,504
Total	**24,200**	**23,652**	**23,900**	**21,195**	**28,050**	**29,043**

Source: RBI Annual Report 2016–17

Demand for coins has increased over the years, as reflected in rising indents as well as supply (see table below). During the past three years, however, mints have, on an average, been able to supply 62.3% of the indented quantity due to capacity constraints.

Indent and supply of banknotes by mints (April–March)

(million pieces)

Denomination (INR)	2014–15		2015–16		2016–17	
	Indent	Supply	Indent	Supply	Indent	Supply
50 paise	40	20	40	30	30	30
1	6,000	3,247	6,100	3,753	6,300	3,548
2	4,000	2,367	4,000	2,899	4,200	2,461
5	2,000	1,091	2,100	1,492	2,270	2,429
10	1,800	1,187	2,000	1,084	2,200	1,223
Total	**13,840**	**7,912**	**14,240**	**9,258**	**15,000**	**9,691**

Source: RBI Annual Report 2016–17

Current scenario

Disposal of soiled notes

During 2016–17, 12.5 billion pieces of soiled notes were disposed as against 16.4 billion pieces last year.

Disposal of soiled banknotes (April–March)

(million pieces)

Denomination (INR)	2014–15	2015–16	2016–17
1,000	663	625	1,514
500	2,847	2,800	3,506
100	5,173	5,169	2,586
50	1,271	1,349	778
20	801	849	546
10	4,338	5,530	3,540
Up to 5	44	46	34
Total	**15,137**	**16,368**	**12,504**

Source: RBI Annual Report 2016–17

Note Refund Rule

As per section 28 of the RBI Act, 1934: 'Notwithstanding anything contained in any enactment or rule of law to the contrary, no person shall of right be entitled to recover from the Central Government or the Bank, the value of any lost, stolen, mutilated or imperfect currency note, provided that the Bank may, with the previous sanction of the Central Government, prescribe the circumstances in and the conditions and limitations subject to which the value of such currency notes or bank notes may be refunded as of grace and the rules made under this proviso shall be laid on the table of Parliament.'

Mutilated notes

The payment of claims against mutilated notes shall be made if the area of the single largest undivided piece of the note presented is more than 50% of the area of the respective denomination in the case of one rupee, two rupee, five rupee and ten rupee notes. The full value of the mutilated notes of the denomination of 50 and above shall be payable if the area of the single largest undivided piece of the note presented is more than 65% of the area of the respective denomination rounded off to the next complete square centimetre.

Counterfeit notes and security printing

Trends in the detection of counterfeit notes in the banking system

During 2016–17, 7,62,072 pieces of counterfeit notes were detected in the banking system, of which 95.7% were detected by commercial banks (see table below). Detection of counterfeit notes was 20.4% higher than in the previous year. Barring 100 INR notes, the detection of counterfeit notes increased across denominations, notably that of 500 INR and 1,000 INR notes, during 2016–17.

Number of counterfeit notes detected (April–March)

(no. of pieces)

Denomination (INR)	Detection at RBI	Other banks	Total
2014–15	26,128	5,68,318	**5,94,446**
2015–16	31,765	6,01,161	**6,32,926**
2016–17	32,432	7,29,640	**7,62,072**

Source: RBI Annual Report 2016–17

Denomination-wise detection of counterfeit notes in the banking system (April–March)

(no. of pieces)

Denomination (INR)	2014–15	2015–16	2016–17
2 and 5	-	2	80
10	268	134	523
20	106	96	324
50	7,160	6,453	9,222
100	1,81,799	2,21,447	1,77,195
500 (MG series)	2,73,923	2,61,695	3,17,567
500 (new design)	-	-	199
1,000	1,31,190	1,43,099	2,56,324
2,000	-	-	638
Total	**5,94,446**	**6,32,926**	**7,62,072**

Source: RBI Annual Report 2016–17

Roadmap ahead for currency management due to digitalisation

The ICCOMS used by the RBI for currency management is being brought under the bank's core banking solution (CBS), e-Kuber. The enhancement to e-Kuber would enable the bank to have a near real-time view of the balances in the currency chests and facilitate efficient management of currency. A granular view of the currency chest transactions would also help to optimise the holdings of the currency chests. The system is being designed to facilitate automation of processes and integration with machines like currency verification processing system, note counting machines and kiosks. The system would also be linked with note presses and capable of tracking currency in transit.

The RBI's continued efforts towards migrating to a less-cash society gained momentum during the year with the introduction of newer digital modes of payment. With the rapid advancement of technology and the advent of new developments and innovations in the payment landscape, the bank enhanced its focus on the safety and security of payment systems. Further, the bank aimed to makeits technology infrastructure robust in order to ensure the smooth running of critical and systemically important payment and settlement systems in India.

Every disruption creates opportunities. Demonetisation will offer an opportunity to leapfrog from the millennia-old physical world of currency to the emergent digital world. Digital currencies come in various forms, each offering different benefits and challenges. Swift actions by the Indian government to move us into the world of digital currency can not only reduce the predicted devastating effects of demonetisation on our economy but also put a dent in corruption, the parallel black economy and counterfeiting. It is high time to replace designing, printing, distributing, using, protecting and recycling physical currency with the bits and algorithms of digital currency.

Digital currency comes in four major forms:

1. Algorithm-based cryptocurrencies,
2. Government-issued digital cash,
3. Mobile payment mechanisms,
4. Traditional credit and debit card systems.

The first two completely replace physical currency, while the latter two would drastically minimise its use.

Governments have been minting money for centuries. Government-issued money promises strong backing, but history has proved such promises to be hollow. Governments have flooded markets with currency at their whims to hide their failures. The resulting inflation has eaten away the hard work and savings of their own citizens.

Cryptocurrencies change the whole equation. They are not issued by a government nor backed by gold or other promises; rather, they are based on the 'trust no one' principle both on the supply side and in transactions. Minting (often called mining) of cryptocurrency is regulated by a pre-defined computer algorithm. Unlike the case government currency, the supply of cryptocurrency is known in advance. This allows greater price discovery and inherent inflation hedging.

Authenticated in every transaction through the distributed network, cryptocurrencies are counterfeit-proof. They can be stored in electronic wallets in your mobile phone and easily transferred from one wallet to another. Due to their ability to divide into million parts and almost nil transaction cost, they can be efficiently used in small transactions as a replacement for cash.

Cryptocurrencies traditionally suffer from the drawbacks of volatility, cyber security breaches of wallets, and lower legitimacy compared to fiat currencies. Government-issued digital cash can address these issues to a large extent. They are like cryptocurrencies in terms of electronic wallet-based storage and zero transaction cost; however, their supply and authentication are regulated by the government. In addition, their transactions can be linked to national identity cards, like Aadhaar, and traced for fraudulent or illegal trades.

Mobile payment mechanisms, termed semi-closed prepaid payment instruments, use mobile wallets to digitally store fiat money on smartphones. Money transfers can take place from one mobile wallet to another. In the past few months, these services have attracted millions of new users. Given the quick rise in their demand, the RBI doubled the monthly digital wallet spending limit to 20,000 INR per month after demonetisation.

Since the demonetisation announcement, the RBI and banks have been actively encouraging the use of debit cards (and in effect credit cards) in daily transactions. Unfortunately, little had been done a priori to promote the development of the underlying point of sale (PoS) infrastructure. This deficiency is limiting the use of cards to upper-tier cities and upper-class citizens.

The usage of digital currencies is rapidly increasing each day. Public interest in digital currency and its potential for increasing the financial inclusion of the most marginalised groups should not be underestimated. Today, the user acquisition rate of mobile wallets has increased a lot. Of course, it would be equally necessary to build a proper framework for the legitimate protection of individual privacy and security of transactions. If digitalisation is properly tapped, India can provide global leadership in this area.

Circulars on currency from the RBI

Sr. no.	Circular dated	Description
1	1 July 2004	Detection and Impounding of Forged Notes (2004)
2	31 August 2004	Levy of Penal Interest for Delayed Reporting / Wrong Reporting / Non-Reporting of Currency Chest transactions and cases involving Shortages in Currency Chest Balances
3	30 September 2005	Levy of Penal Interest for Delayed Reporting / Wrong Reporting / Non- Reporting of Currency Chest Transactions and Cases involving Shortages/Inclusion of Counterfeit Banknotes in Chest Balances
4	30 September 2005	Detection and Impounding of Counterfeit Banknotes- Updated Master Circular (2005)
5	1 December 2005	Receipt and Remittance of Treasure
6	14 July 2006	Receipt & Remittance of Treasure
7	31 August 2006	Detection and Impounding of Counterfeit Banknotes- Updated Master Circular (2006)
8	1 July 2008	Detection and Impounding of Counterfeit Note
9	1 July 2008	Levy of Penal Interest for Delayed Reporting/ Wrong Reporting/ Non Reporting of Currency Chest Operations and Cases Involving Shortages/ Inclusion of Counterfeit Bank Notes in Chest Balances/ Chest Remittances
10	3 July 2008	Facility of Exchange of Notes and Coins
11	1 July 2009	Detection and Impounding of Counterfeit Notes
12	1 July 2009	Facility for Exchange of Notes and Coins
13	1 July 2010	Levy of Penal Interest for Delayed Reporting/Wrong Reporting/Non-Reporting of Currency Chest Transactions and Inclusion of Ineligible Amounts in Currency Chest Balances
14	1 July 2010	Detection and Impounding of Counterfeit Notes
15	1 July 2010	Facility for Exchange of Notes and Coins
16	1 July 2011	Levy of Penal Interest for Delayed Reporting/Wrong Reporting/Non-Reporting of Currency Chest Transactions and Inclusion of Ineligible Amounts in Currency Chest Balances
17	1 July 2011	Detection and Impounding of Counterfeit Notes
18	1 July 2011	Facility for Exchange of Notes and Coins
19	2 July 2012	Levy of Penal Interest for Delayed Reporting/Wrong Reporting/Non-Reporting of Currency Chest Transactions and Inclusion of Ineligible Amounts in Currency Chest Balances
20	2 July 2012	Detection and Impounding of Counterfeit Notes
21	1 July 2013	Levy of Penal Interest for Delayed Reporting/Wrong Reporting/Non-Reporting of Currency Chest Transactions and Inclusion of Ineligible Amounts in Currency Chest Balances
22	1 July 2013	Detection and Impounding of Counterfeit Notes

Circulars on currency from the RBI

Sr. no.	Circular dated	Description
23	1 July 2013	Facility for Exchange of Notes and Coins
24	1 July 2013	Scheme of Incentives and Penalties for bank branches based on performance in rendering customer service to the members of public
25	1 July 2014	Levy of Penal Interest for Delayed Reporting/Wrong Reporting/Non-Reporting of Currency Chest Transactions and Inclusion of Ineligible Amounts in Currency Chest Balances
26	1 July 2014	Detection and Impounding of Counterfeit Notes
27	1 July 2014	Facility for Exchange of Notes and Coins
28	1 July 2014	Scheme of Incentives and Penalties for bank branches based on performance in rendering customer service to the members of public
29	1 July 2015	Levy of Penal Interest for Delayed Reporting/Wrong Reporting/Non-Reporting of Currency Chest Transactions and Inclusion of Ineligible Amounts in Currency Chest Balances
30	1 July 2015	Detection and Impounding of Counterfeit Notes
31	1 July 2015	Facility for Exchange of Notes and Coins
32	18 July 2016	Facility for Exchange of Notes and Coins
33	20 July 2016	Detection and Impounding of Counterfeit Notes
34	20 July 2016	Scheme of Penalties for bank branches based on performance in rendering customer service to the members of public
35	3 July 2017	Facility for Exchange of Notes and Coins
36	20 July 2017	Detection and Impounding of Counterfeit Notes
37	12 October 2017	Scheme of Penalties for bank branches based on performance in rendering customer service to the members of public

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Our Team

Vivek Iyer
Partner
vivek.iyer@pwc.com
Mobile: +91 9167745318

Dnyanesh Pandit
Director
dynanesh.pandit@pwc.com
Mobile: +91 9819446928

Vernon D
Director
Vernon.dcosta@pwc.com
Mobile: +91 9920651117

Ramkumar S
Associate Director
ramkumar.subramanian@pwc.com
Mobile: +91 9004644029

Darshan Utekar
Consultant
darshan.utekar@pwc.com
Mobile: +91 8879676422

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GM/April2018-12528