SUMMER INTERNSHIP PROJECT REPORT ON

HAS THE COVID-19 PANDEMIC AFFECTED THE DEMAND FOR CURRENCY? AN ANALYSIS

IN PARTIAL FULFILLMENT OF THE REQUIREMENT OF MASTER OF BUSINESS ADMINISTRATION

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PROJECT TITLE	HAS THE COVID-19 PANDEMIC AFFECTED THE DEMAND FOR CURRENCY? AN ANALYSIS
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EXECUTIVE SUMMARY / ABSTRACT

The demand for currency has always been affected by several factors, directly or indirectly, personal or impersonal. This ultimately has an effect on the currency in circulation, both the notes and coins. The central bank, Reserve Bank of India whose primary responsibility is to maintain the issue of currency in the country has to keep a track of all these factors to be able to predict the demand accurately in order to be able to supply adequate number of fresh notes as well as remove the soiled notes from circulation, thereby maintaining the quality of the currency.

The topic of the research is to analyze how the Covid-19 pandemic has affected the demand for currency in India. It is mainly a qualitative research, and involves carrying out the literature review of relevant research papers, collecting the authentic data related to the currency in circulation, understanding the factors that have been affecting the demand and also analyzing the trend of the currency in circulation during the pandemic. Additionally, the trend of the total digital payments is also studied to analyze whether it affects the demand for currency and to know how well the digital payment mechanisms are being accepted and used by the public.

The research report has been divided into three parts, that is, part A: profile of the organization, that is, the Reserve Bank of India; part B: the main body of the project work which includes the nature of problem, objectives and utility of the study, literature review, methodology of data collection and analysis, context of industry problem, presentation of data, analysis and discussion, conclusion and the recommendations for further action; and part C: the learning derived from the research conducted during the summer internship for a period of two months.

PART A: PROFILE OF THE ORGANISATION

The Reserve Bank of India (RBI) is the central bank and has the regulatory authority to manage and control the issue and supply of the Indian currency notes. It also manages and regulates the banking system and the payment systems in India in order to foster the economic development in the country. It works under the jurisdiction of Ministry of Finance, Government of India.

ESTABLISHMENT

The Reserve Bank of India was established in India on 1st April, 1935 through the Reserve Bank of India Act, 1934. Initially the bank was privately owned, but was later nationalized in 1949, after which it was entirely owned by the Government of India.

The former central office of the Reserve Bank of India was set up in Kolkata, and was later permanently shifted to Mumbai in 1937. The Governor operates from this central office and facilitates the formulation of all the key policies and decisions.

ORGANISATION HISTORY

The Hilton Young Commission had suggested the establishment of the Reserve Bank of India in the year 1926. Then eventually the central bank of India came into existence on 1st April, 1935 with the aim to resolve the economic problems being faced by the country after the First World War. The bank was launched as a shareholders' bank with an authorized capital of worth Rs. 5 crore, out of which only Rs. 20 to 22 lakh was contributed by the government.

The Reserve Bank of India had also acted as a central bank for Burma (now Myanmar) until 1947, except during the tenure of 1942 to 1945. It continued to act as a central bank for Pakistan until June, 1948; even after the partition of India in August, 1947.

After the bank became nationalized in 1949, a centrally planned economic policy was set up in the 1950s by the government of India, to emphasize on the agricultural sector, which was supported by the Reserve Bank of India. In 1961, the deposit insurance system came into existence to gain the confidence of public in nationalized banking, which required the Reserve Bank of India to control and monitor the banking sector. From the starting of 1970s,

the central bank had started gaining more importance and continued increasing its policies significantly.

In July, 1991, when the Indian rupee was devalued, it lost 18% against the US dollar. This had made it imperative for the central bank to bring changes in the financial system by modifying the reserve ratio and the statutory liquidity ratio. It also gave rise to private banking system in 1993. Later in 2000, the Foreign Exchange Management Act, 1999 was also brought into practice.

In 2016, the Reserve Bank of India Act, 1934 was amended by the government of India to set up Monetary Policy Committee (MPC). This ultimately revised the powers of the central bank to set the interest rates and frame policies for the same.

The Reserve Bank of India was set up in Ahmedabad on 2nd February, 1950. Its operations commenced with the setting up of a small cell known as the Note Cancellation Section, in State Bank of India's building at Lal Darwaja. Slowly and subsequently, the operations started expanding, and so the Ahmedabad office of the bank shifted to La-Gajjar Chambers building except the note cancellation section. Finally, a new building was allocated to the Ahmedabad office, known as the Main Office Building, which was near Gandhi Bridge. This office became operational on 14th June, 1982, although some departments carried on working in the La-Gajjar Chambers. The jurisdiction that lies under this office includes Gujarat and the union territories of Dadra and Nagar Haveli and also Daman and Diu.

VISION AND OBJECTIVE

- **Vision** – The Reserve Bank of India has a vision to promote the efficiency and integrity of the financial systems, thereby ensuring the public interest by adopting adequate financial policies.
- **Objective** – The primary objective of the Reserve Bank of India is to ensure adequate issue and supply of currency notes in the Indian economy and manage the credit policies of the country, thereby maintaining the financial stability which would ultimately foster economic growth and development in the country.

ORGANISATION STRUCTURE

The organisation structure of the Reserve Bank of India comprises of the central board of directors which is responsible for governing, managing and controlling the affairs of the bank. The central board at present consists of one governor, four deputy governors and twelve executive directors which are appointed by the central government.

The central board is assisted by four local boards appointed by the central government, one from each of the four areas, namely, Northern, Eastern, Western and Southern regions. These local boards advise the Central board on various matters and perform their own respective duties as well.

The central board is also assisted by three main committees which are led by the governor and five sub-committees which are led by an external director. These committees are mentioned below.

The three main committees are:

- The Committee of the Central Board (CCB)
- The Board for Financial Supervision (BFS)
- The Board for Regulation and Supervision of Payment and Settlement Systems (BPSS)

The other five sub-committees are:

- The Audit and Risk Management Sub-Committee (ARMS)
- The Human Resource Management Sub-Committee (HRM-SC)
- The Building Sub-Committee (B-SC)
- The Information Technology Sub-Committee (IT-SC)
- The Strategy Sub-Committee (S-SC)

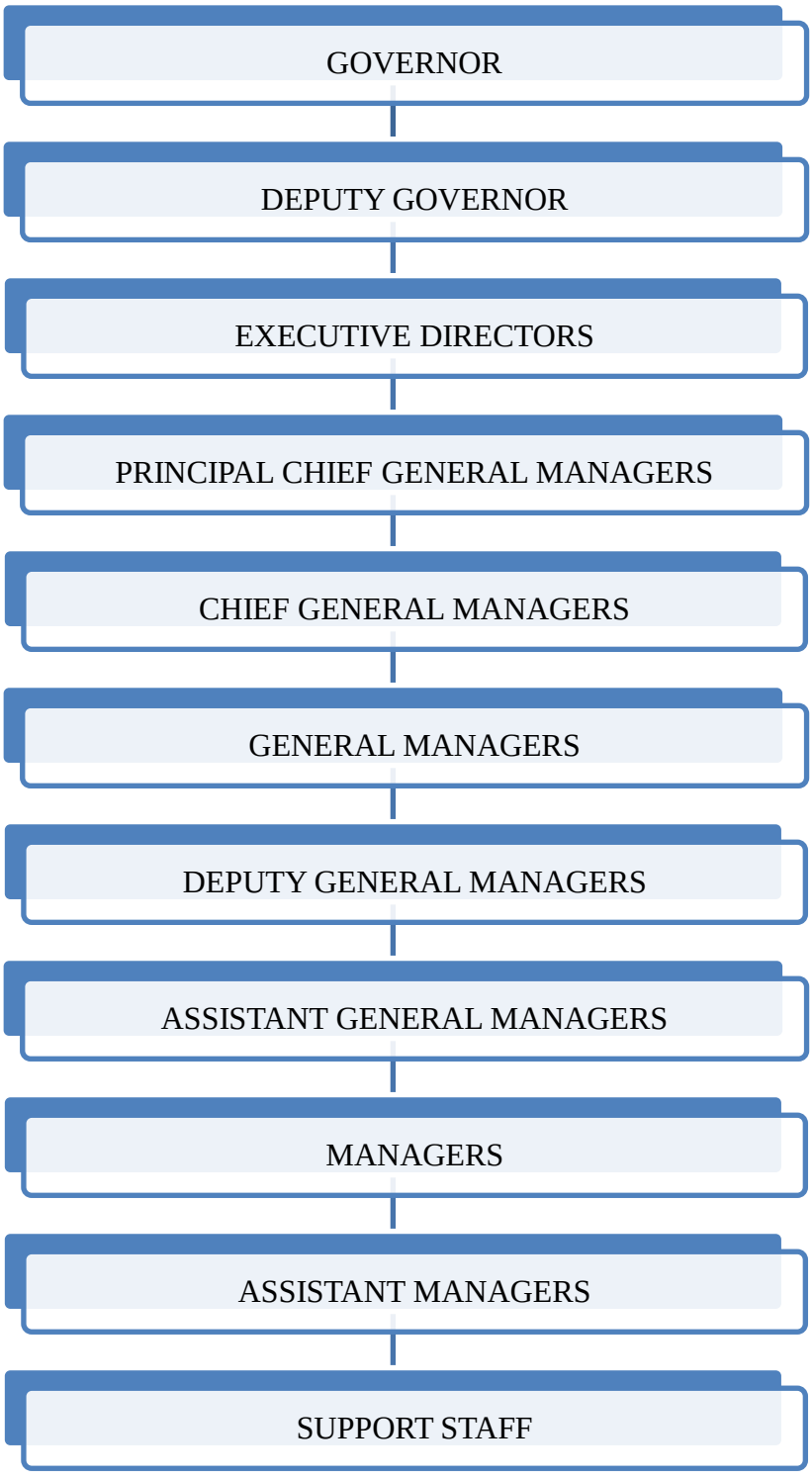

Figure 1: Hierarchy of the Central Board of Directors

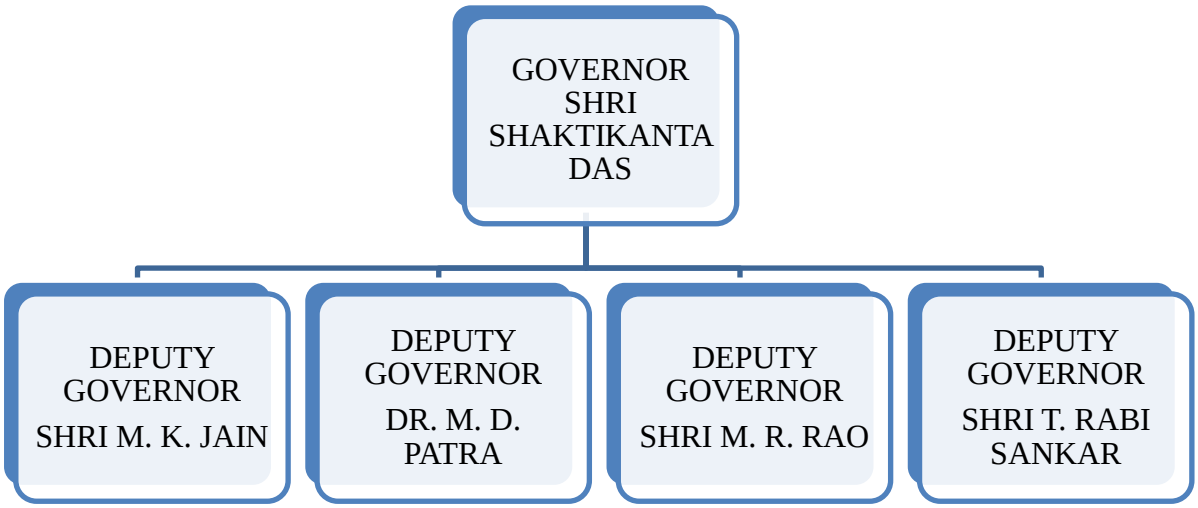

Figure 2: Current Governor and the Four Deputy Governors

SIZE OF THE ORGANISATION

The Reserve Bank of India consists of total staff strength of 12,276 as on 31st December, 2020, which was 8.8% less as compared to the previous year that had strength of 13,456 as on 31st December, 2019. The total staff strength consisted of 17.66% people from the SC category, 6.95% people from ST category and 21.97% people from OBC category. The total staff strength as on 31st March, 2021 was reported to be 12,406, which was slightly higher than that compared to 12,276 as on 31st December, 2020.

The bank has its regional offices in 31 locations all over India, which are, Srinagar, Jammu, Shimla, Chandigarh, Dehradun, New Delhi, Jaipur, Lucknow, Kanpur, Patna, Gangtok, Guwahati, Imphal, Aizawl, Agartala, Shillong, Ranchi, Kolkata, Bhopal, Ahmedabad, Mumbai, Belapur, Nagpur, Raipur, Bhubaneswar, Hyderabad, Panaji, Bengaluru, Chennai, Kochi and Thiruvananthapuram.

Moreover, it comprises of 29 departments which work together to facilitate smooth transactions and operations throughout the year in order to achieve the set goals and objectives efficiently.

FUNCTIONS

Following are the functions performed by the Reserve Bank of India:

- **Monetary Authority** – The Reserve Bank of India is responsible for articulating, executing and monitoring the monetary policy with the aim to maintain the price stability in the market.

- **Manages Foreign Exchange** – The foreign exchange is managed by the bank with the view to stimulate faster development of foreign exchange market in India by promoting foreign trade.

- **Supervises Financial System** – The financial system is monitored and supervised by the bank in order to ensure the public the safety of their deposits and interests on the same.

- **Currency Management** – The primary role of the bank is to keep a track of the currency in circulation, by timely supplying new currency and removing and disposing the soiled currency. The main aim is to ensure that sufficient quantity and good quality notes remain in circulation.

- **Bankers' Bank** – The Reserve Bank of India acts as a banker of the other banks by continuous monitoring and supervision. It allows commercial banks and scheduled banks to maintain their accounts with it.

- **Banker to the Government** – The Reserve Bank of India acts as a banker to both the State and Central Governments and also helps them maintain their accounts and manage their debt.

- **Regulates Payment and Settlement Systems** – This is another important function being performed by the bank to provide the public with various payment choices and options to choose from while making payments in order to facilitate ease of transactions.

PRODUCTS AND SERVICES

The Reserve Bank of India offers the following products and services:

- **Currency** – The Indian currency notes are issued by Reserve Bank of India. This issue is managed by the department of currency management.

- **Deposits** – Reserve Bank of India can accept deposits from both the state and central governments without any interest.
- **Loans and Advances** – Reserve Bank of India can give loans and advances to both state and central governments, and other banks mentioned in sub-section 17 and 18 of Reserve Bank of India Act, 1934.
- **Bills of Exchange and Promissory Notes** – Reserve Bank of India can purchase as well as discount the bills of exchange and promissory notes of commercial banks.
- **Foreign Exchange** – The foreign exchange can be purchased from banks by Reserve Bank of India and can also be sold to them.
- **Government Securities** – Reserve Bank of India can buy and sell government securities such as:
    - **8% Savings (Taxable) Bonds** – These bonds were launched by the government of India in 2003. The individuals including joint holdings, Hindu Undivided Families, universities and charitable institutions can invest in these bonds without a monetary ceiling.
    - **Sovereign Gold Bonds** – This bond is issued by Reserve Bank of India on behalf of the government of India. The individuals including joint holdings, Hindu Undivided Families, trusts, universities and charitable institutions can invest in these bonds.
- **Current Account** – The entities such as commercial banks, Indian financial institutions, insurance companies, mutual funds foreign institutions and other such entities which are authorized by the bank can open a single current account with the Reserve Bank of India.
- **Special Purpose Accounts** – These accounts such as Line of Credit account, CCIL Multi Modal account etc., can be opened with Reserve Bank of India on the approval of the central office.
- **RTGS Settlement Accounts** – These accounts are for the purpose of managing the RTGS transactions and are centrally maintained by Mumbai Regional Office.

- **Accounts of institutions incorporated outside India** – These accounts can be opened in the Mumbai Regional Office for the institutions incorporated outside India.
- **Personal Ledger Account, Drawing Account and Assignment Account** – These accounts can be opened for the government departments with the Reserve Bank of India.

ISSUE DEPARTMENT

The issue department of the Reserve Bank of India deals with management of the issue of currency notes as well as coins. This includes the designing and printing of the notes along with maintaining the regular supply, withdrawal and disposal of the soiled and mutilated currency notes and coins from circulation. The demand for currency is also assessed by this department and accordingly the fresh notes are issued and proper allocation of the currency notes to various issue offices is ensured in order to facilitate smooth operations. The security features of the currency notes are evaluated and decided by the department. In addition, the department provides currency exchange facility and also ensures the removal of counterfeit currency notes from circulation.

PART B: PROJECT WORK

INTRODUCTION

The demand for currency depends upon several factors and hence, differs from year to year. The unexpected and unprecedented COVID-19 pandemic has caused various disruptions in the economy, and an enormous increase in the notes in circulation has also been observed during the pandemic. This increase has also been accompanied by a subtle increase in the use of digital payments instruments. So, this research aims to find out whether the COVID pandemic has affected the demand for currency pan India or not, and if it has, then what are the factors affecting this demand, and what has been the impact.

Nature of the Problem, Gap in Knowledge / Information

India has witnessed a tremendous surge in the value of notes in circulation since the onset of covid pandemic, but whether the reasons for this increase in demand for currency are due to the pandemic or not is yet to be studied. Moreover, although the digital payments instruments have increased and people have started availing its benefits, but still there exists an increasing demand for cash, and hence, there is a need to study the reasons behind the same.

Objectives of the Study

The objectives of this research project have been enumerated below:

- To find out whether the currency in circulation and its demand has been affected by the COVID-19 pandemic and what has been its impact
- To discover the common factors which have been driving the demand for currency in India, and also those key factors that have affected the demand during the COVID-19 pandemic
- To analyze the trend of volume and value of notes in circulation as compared to the pre-COVID times
- To understand how the availability and acceptance of alternative payment instruments has affected the demand for currency during COVID

Utility of the Study

This study will help understand how the demand for money has been affected by COVID pandemic, and what have been the driving forces behind it. It will also help in understanding how the acceptance of alternative payment instruments affects the demand for currency. This would ultimately help in devising solution to increase the acceptance of digital payment, as it is one of the controllable factors, whereas the other economic related factors that have been affecting the demand for money are uncontrollable.

LITERATURE REVIEW

The literature review has been done for this research to understand through the previous researches that how has the demand for Indian currency been affected in the past, what have been the factors driving this demand and what has been its impact. It also helps in identifying how the various digital payments instruments have affected the demand for currency in the recent years.

Kishore G. Kulkarni and Mei Yuan (January, 2006). "Demand for Money in an Open Economy Setting: A Case of India".

The various external variables or the factors affecting the demand for money in India have been discussed in this paper, citing the arguments and explanations proposed by John M. Keynes, monetarists and their leader, Milton Friedman and Cambridge economists.

According to John M. Keynes, the following three motives behind the demand for money have been explained in his book General Theory of Employment, Interest and Money (1936):

- **Transactions Demand for Money** – The transactions demand for money is the most basic motive which creates a demand among the individuals. It is primarily determined by the national income. It creates a need to have money in its liquid form, that is, cash, to be able to meet the daily and frequent requirements.
- **Precautionary Demand for Money** – The precautionary demand for money exists for the purpose of meeting the need for cash in emergencies, contingencies and unforeseen circumstances.

- **Speculative Demand for Money** – The speculative demand for money is the most significant one and plays a major role in driving the demand. The interest rate mainly helps in determining this type of demand, and is by and large used for investing purposes.

Thus, according to Keynes, interest rate and national income are the key determinants of demand for money. Moreover, the liquidity trap also affects the demand for money. When the interest rates become extremely low, and people expect it to raise in the future, the demand for money leads to infinity; this situation is known as the liquidity trap. This altogether creates an unstable demand for money.

Financial innovation has been cited as one of the reasons for unstable demand for money. This is so because the financial innovations meant lower transaction costs for the purpose of converting financial assets into money and vice versa, which ultimately meant the people could keep even smaller balance of cash with them; hence, leading to instability in demand for money.

According to Friedman, following are the determinants of demand for money:

- Permanent level of Gross Domestic Product (GDP)
- Wealth
- Human capital
- Interest rate on bonds
- Interest rate on equities
- Expected or actual inflation in terms of general price level

According to Friedman and the monetarists, among all the above determinants, the two key determinants were: the general price level and the permanent level of GDP. Also, these variables would lead to a stable demand for money. Hence, the interest rate was now being considered an insignificant factor in affecting the demand.

Moreover, it has also been stated that the foreign reserves and the exchange rate do not affect the demand for money significantly in India. Eventually it was concluded that the key determinants of demand for money continue to be the inflation rate and the real GDP.

Yamden Pandok Bitrus (November, 2011). "The Determinants of the Demand for Money in Developed and Developing Countries".

This research paper focuses on identifying the determinants of demand for money in the developing as well as developed countries. The determinants' effectiveness was also compared and analyzed for both developing and developed countries.

The demand for money is primarily the amount of cash an individual desires to possess. And for the business firms, it could also include the money in the form of assets, preferably current assets that would be converted into cash within a year, as it helps increasing the liquidity of a business firm.

According to both, Black and Jhingan, the two important functions of money that give rise to the demand for money are:

- Medium of exchange
- Store of value

Markets such as money market, capital market, commodity market and foreign exchange market, help in studying the demand for money.

Three theories of demand for money, which usually acts as a driving force behind the demand, are as follows:

- **The Classical Approach**

  This approach consists of the Fisher's equation of exchange and the Cambridge approach related to the cash balance. The classical approach mainly focuses on the transactions demand for money.

  According to the Fisher's equation of exchange, price level and the total output affect the demand for money. Whereas, according to the Cambridge approach, price level, aggregate real income and the fraction of money that the people desire to possess in the form of cash, are the factors that affect the demand for money.

- **The Keynesian Approach**

  According to this approach, there are three motives for demand for money, that is, transactions, precautionary and speculative.

- The transactions demand for money is directly proportional to the level of income; and interest rate may be considered to have a minor influence on the transactions demand.
- The precautionary demand for money is directly proportional to the level of income; and interest rate may be considered to have a minor influence on the precautionary demand.
- The speculative demand for money is inversely proportional to the measure of interest rate. This is because of the uncertainty in predicting the future flow of interest rate accurately, which affected the individual's demand for money and bonds.

- **The Post Keynesian Approach**

  The Keynesian approach's limitation, that the people would not diversify their portfolio and either possesses their wealth in the form of money or bonds, was resolved by the post Keynesian approach. Also, it was proved by James Tobin and William Baumol that the transactions and precautionary demand depends on the interest rate as well along with the level of income. Moreover, Milton Friedman stated that the demand for money is inversely proportional to the expected rate of inflation and with the increase in the expected inflation rate, the demand for commodities also tends to increase, keeping all other things/variables constant.

Following are the factors affecting the demand for money in developing and developed countries:

- **Level of Income** – It is directly proportional to the demand for money. In the developed countries, it has a lesser impact on the demand for money, whereas in the developing countries, it has a significant impact.
- **Interest Rate** – It is inversely related to the demand for money, since as the interest rate level increases, it also leads to an increase the opportunity cost of holding cash in comparison to the interest bearing assets, so, in order to reduce their cost, people demand less money and more assets. The interest rate has a high impact on the

demand for money in the developed countries as compared to the developing countries.

- **Deposit Rate** – It is inversely proportional to the demand for money, as the demand for deposits increase with a lower deposit rate. The deposit rate has a higher impact on the developed countries in comparison to the developing countries.
- **Wealth** – It is a significant factor affecting the demand for money and is directly proportional to the demand for money. It has a much less impact on the demand for money in developed countries and a greater impact in the developing countries.
- **Inflation** – It is inversely proportional to the demand for money balances, since once the inflation rises, it induces in people a demand to buy more goods. Inflation's impact on the demand for money is lower in developed countries in comparison to the developed countries.
- **Exchange Rate** – The demand for money is affected by the exchange rate as well.
- Stock Market – The variations in the stock market too have an effect on the demand for money.
- **Individual Preferences** – The money demanded by different individuals varies significantly according to the importance they attach to cash balances, opportunity costs foregone by the interest bearing assets and their needs in varying situations.
- **Brokerage Fees and Risk** – Both the brokerage fees and the appetite for risk are directly proportional to the demand for money.
- **Reserve Required** – It is inversely proportional to the demand for money.
- **Payment Habits** – The payment habits refer to the frequency of receiving one's salary or income. It is inversely proportional to the demand for money.

It has been observed that mainly the differences between the determinants' impact on the demand for money in developed and developing countries are due to the presence of an organized financial market in the developed countries.

Anirudh Tagat and Pushpa L. Trivedi (February, 2020). "Demand for Cash: An Econometric Model of Currency Demand in India".

The demand for cash has been the prime area of focus in this research article. It highlights the findings about how the currency in circulation remains unaffected by the availability and usage of the other payment mechanisms.

The demonetization policy had been brought in India with the aim to reduce counterfeit currency, black money and also to enable India to transition from cash based economy to cash less one, thereby wanting to reduce the currency in circulation. However, it was observed that not only did the currency in circulation reach its original level as it was before the demonetization but also it was hardly affected by the other payment instruments, such as, debit and credit cards, electronic wallets, cheques and mobile banking, that were being used extensively, thereby boosting digitalization. The reason cited for the increase in currency demand is that people had lost faith in the financial institutions and had fear of incurring losses in unforeseen circumstances.

The factors that have been basically affecting the demand for currency include interest rate, income level and the financial innovations such as the alternate payment instruments. Also, the lower the degree of industrialization, lower is the demand for cash.

The currency in demand has been observed to have different motives denomination wise, like the low value currency is mostly being used for transaction purposes, whereas the higher value denomination is being used for precautionary purposes. With the increase in usage of the other payment mechanisms, it was noticed that the cash being demanded earlier for transactions motive had now been reduced to a great extent, but the usage of other payment instruments still continues to be less while compared to the usage of cash. However, the total currency demanded or the currency in circulation still remained significantly high, as the people believed that it would help them keep a track of their liquidity and at the same time even avoid the need to remember data pertaining to the different payment instruments.

It was also found that the value of currency in circulation was affected directly by the direct tax compliance. Furthermore, even the unemployment rate of the country affected the demand for currency, as higher the unemployment rate, lower is the income, which eventually leads to reduced levels of demand for currency. Additionally, it is worth to note that only the high denomination currency is extremely sensitive to the interest rates. Though

most often neglected, but the quality of the notes in circulation and continuous removal of the soiled notes also play a role in affecting the demand for currency.

Raphael Auer, Giulio Cornelli and Jon Frost (April, 2020). "Covid-19, Cash, and the Future of Payments".

Covid-19's effects on the demand for cash and the future of payments have been analyzed in this research article.

Covid-19 has also played a role in affecting the usage of cash to an extent, since people believed that currency notes could also be a carrier of the Coronavirus, thereby putting them at a risk if they use currency notes extensively without taking proper precautions. But, till date there have been no such cases where the virus has been transmitted by the currency notes.

Some of the central banks around the world have taken an initiative to make the public aware that the currency notes were being quarantined and even sterilized to ensure safety by getting rid of the virus from those infected notes. The central bank in India along with the government of India even encouraged people to choose the option of availing the benefits of contactless and cashless payments. Moreover, scientific study suggested that Coronavirus could be more easily spread by debit / credit card terminals or other such often touched surfaces or objects, like stainless steel or plastic, as compared to the currency notes.

The payment systems have also been affected due to the fear of Coronavirus being spread through currency notes. People have started preferring other alternatives to cash for making payments, like via cards, net banking and the like ones. Moreover, online payments, payment via QR codes and other such contactless payments were being encouraged as these methods would surely not lead to transmission of the virus. However, at the same time, the demand for currency notes too increased as individuals wanted to safeguard cash for precautionary purpose and uncertain situations during the pandemic. Also, accessibility to other payment mechanisms was creating a hindrance for some to be able to use it; hence, the demand for cash gained importance.

Therefore, Covid-19 did affect both cash and digital payments. The demand for both of them increased, though for different reasons. Also, it is expected that need for central bank digital

currency (CBDC) may gradually gain importance due to the pandemic, as this currency would give everyone a fair chance to transact digitally.

Dr. Nirmala M. and Parvathi Subranami (February, 2021). "The Impact of Pandemic on Digital Payments in India".

This research paper analyzes the impact of the Covid-19 pandemic on the digital payments which in turn also affects the usage of cash to an extent. Although it was expected that the digital payments would significantly increase due to the unforeseen pandemic and thereby move India towards digitalization, but it has been observed that the average transaction volume has reduced due to the imposition of lockdown. Also, the article highlights the growth that has been observed in the digital payments transaction in the last three years, and the future of the same.

At the start of the pandemic, the digital payments had considerably increased largely, since people were afraid of being infected by the virus through the currency notes, and also as they were unable to get cash. But, as and when the notes in circulation increased, people gradually shifted to the former way of transacting through cash instead of digitally. Despite of the shift to cash, it has been noticed that the level of digitalization India has achieved in these three months due to the pandemic, would have otherwise taken five years or more.

Demonetization had earlier aimed at the shift from cash-based to cashless payments and transactions, thereby focusing on Digital India, which can now be seen due to the pandemic, mainly because of the social distancing norms and precautionary purposes. Moreover, people have now started taking loans also digitally, irrespective of whether they reside in a metro city or small towns. A spike in the digital payments transactions from Unified Payment Interface (UPI) to the Aadhar enabled Payment System (AePS) was also registered. The compound annual growth rate (CAGR) for digital payments was recorded to be 55.1% for the duration of five years from 2015-16 FY to 2019-20 FY.

It is anticipated that the post Covid-19 era would be highly driven by the digital transactions as most of the businesses and even the small merchants have now started transacting through the digital payments platforms due to its convenience and accessibility. Additionally, NPCI and all the banks have also encouraged its users to avail the digital payment, digital banking

services and make use of NEFT, BBPS and IMPS facilities which are accessible round the clock.

METHODOLOGY

Approach

The research project is based on both qualitative and quantitative research approach. Qualitative research approach is used as the project is predominantly an exploratory research project which focuses on exploring the various ways in which the COVID-19 pandemic has affected the demand for currency, as compared to the pre-COVID times, and also studying the other several factors that have been affecting the demand for currency and determining its impact. Quantitative research approach is used for interpretation and analysis of the data on volume and value of notes in circulation and the volume of digital payment transactions.

Sources of Data

The data used for this research has been collected from various secondary sources like: the Database on the Indian Economy (DBIE) available on Reserve Bank of India's website and its annual reports, website of National Payments Corporation of India (NPCI) and newspaper articles from Economic Times and others. These secondary sources include both internal and external data. Data such as volume and value of notes in circulation and digital payments transactions have been collected from Reserve Bank of India's website and NPCI's website.

Method of Data Collection

The data was collected by reading, interpreting and analyzing the secondary sources of data as mentioned above.

Size of Samples and Method of Sampling

The sample for data collection has been selected as India, as the data for value and volume of notes in circulation and the volume of digital payments transaction is available collectively for the country instead of states or cities.

The data has been collected for a period of ten financial years.

The non-probability method of sampling was used to collect the secondary data, as it was pre-decided that the recent ten year data would be used for interpretation and trend analysis.

Method of Data Analysis

The quantitative data collected from secondary sources has been analyzed by way of observation, interpretation and establishing a trend across years. Whereas the qualitative data collected from secondary sources has been analyzed by reading, observing, identifying and classifying the data as required in order to make it useful to arrive at the findings and conclusions.

CONTEXT OF INDUSTRY PROBLEM

The Banking, Financial Services and Insurance industry, commonly known as BFSI industry comprises of all the insurance, banking and non-banking financial institutions like stock brokers, mutual funds, venture capitalists, and merger and acquisition companies; and the central bank as well.

The industry is gradually shifting towards the digitalization of transactions; however, the demand for currency has been on the rise since a couple of years. Moreover, the covid-19 pandemic has also caused disruptions in the industry. Hence, the research aims to find the causes for increase in the demand for currency and assess its impact.

PRESENTATION OF DATA

Currency in Circulation

	Notes		Coins	
Year ended 31st March	**Volume (in lakh)**	**Value (in INR crore)**	**Volume (in lakh)**	**Value (in INR crore)**
2012	6,93,840	10,52,800	7,80,290	13,300
2013	7,35,170	11,64,800	8,47,270	15,300

2014	7,73,300	12,82,900	9,16,290	17,300
2015	8,35,790	14,28,900	9,89,640	19,400
2016	9,02,660	16,41,500	10,70,880	21,800
2017	10,02,930	13,10,200	11,61,820	25,000
2018	10,23,951	18,03,709	11,89,780	25,609
2019	10,87,594	21,10,892	12,03,240	25,844
2020	11,59,768	24,20,975	12,18,038	26,305
2021	12,43,671	28,26,863	12,29,988	26,870

Table 1: Volume and Value of Currency in Circulation

Source: RBI's Annual Reports

The above table shows the volume and value of the currency, notes and coins, that has been in circulation in India for a period of ten financial years, that is, from 2011 – 2012 FY to 2020 – 2021 FY.

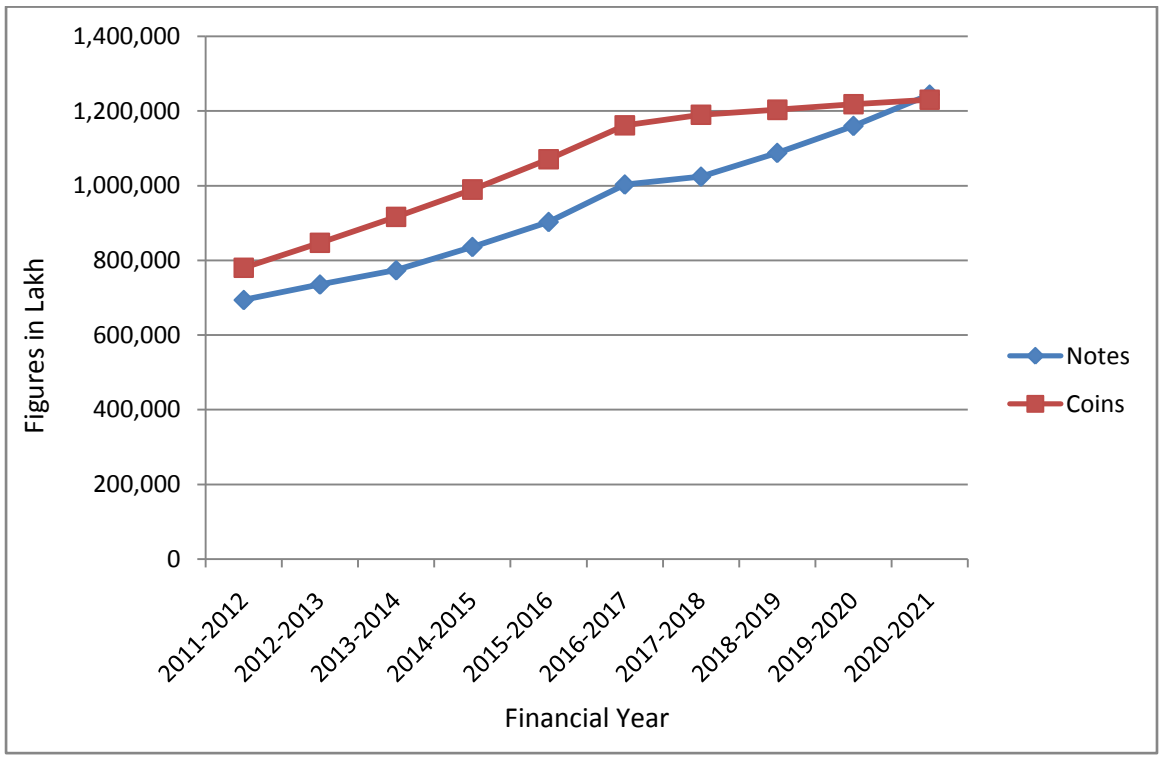

Figure 3: Volume of Notes and Coins in Lakh

The above graph shows the upward trend in the volume of currency in circulation in India. It can be seen that, both notes and coins circulation have been increasing since 2011. However, the rate of increase since 2017 for the coins has been less as compared to the rate of increase

observed in the notes in circulation. Also, a sharp increase can be seen in the volume of notes in circulation from 2020 to 2021 due to the pandemic. This means that the currency in circulation has increased during the pandemic as well despite of the encouragement of digital payments.

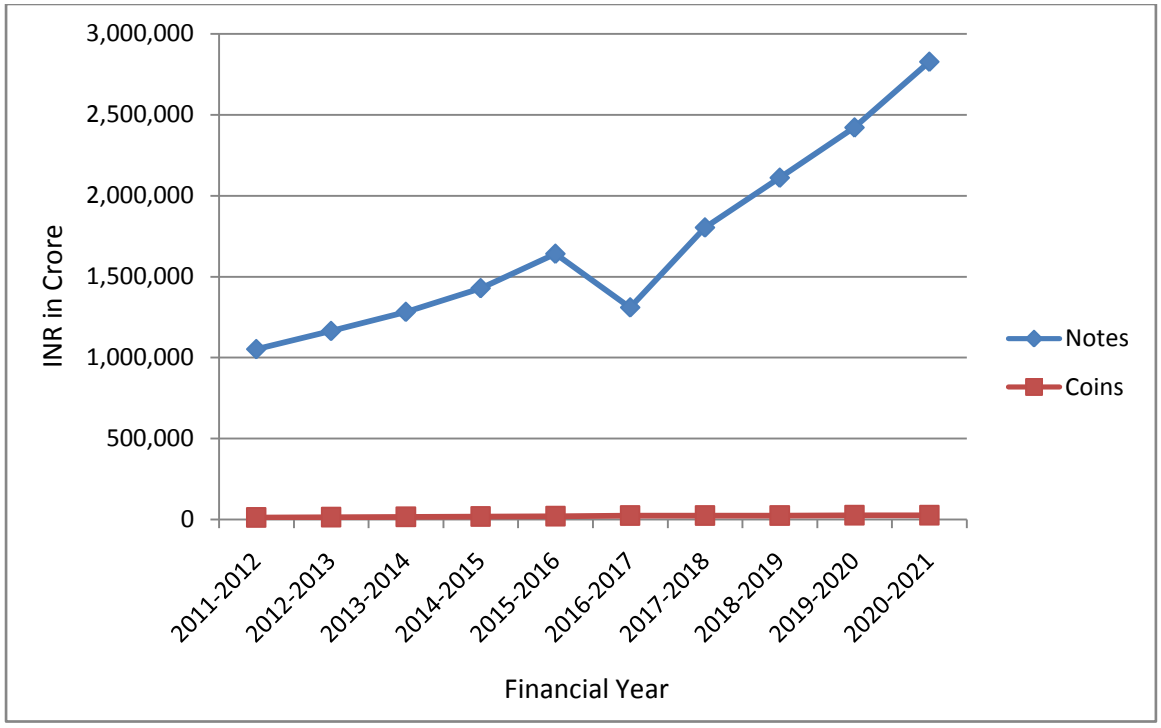

Figure 4: Value of Notes and Coins in Crore

The above graph shows the trend in the value of currency in circulation in India. The value of coins has been increasingly steadily, though at a much lower pace in comparison to the value of notes. After a continuous increase in the value of notes from 2012 to 2016, a major downfall has been noticed by the end of the year 2017, which can be primarily related to the effect of demonetization, as the two higher denomination currency notes, Rs. 500 and Rs. 1000, had been removed from circulation.

Thereafter, with the launch of new Rs. 500 and Rs. 2000 notes, it can be observed that the notes in circulation have increased in value at a steady pace since 2017. There has been a tremendous increase of around Rs. 7,00,000 crore in the value of notes from 2019 to 2021, which was earlier seen during the period 2015 to 2019. This means that the notes in circulation have now increased at almost double the pace as compared to the pre-covid pandemic times.

Hence, it can be said that the COVID-19 pandemic has also affected the demand for currency along with the other factors like the transaction, precautionary and speculative motives, which have been affecting the demand for currency since years.

Total Digital Payments

Year ended 31st March	Volume (in lakh)	Value (in INR crore)
2018	1,45,902	13,69,86,734
2019	2,32,602	16,37,13,425
2020	3,41,240	16,20,89,413
2021	4,37,118	14,14,85,173

Table 2: Volume and Value of Total Digital Payments

Source: RBI's Annual Reports

The above table shows the volume and value of total digital payments for a period of four financial years, that is, from 2017 – 2018 FY to 2020 – 2021 FY.

The total digital payments comprises of the transactions from:

- Clearing Corporation of India Ltd. (CCIL) Operated Systems (Settlement Systems)
- Payment Systems
    - Large value credit transfers – RTGS
    - Credit transfers (Retail Segment)
        - AePS (Fund transfers)
        - APBS
        - ECS Cr
        - IMPS
        - NACH Cr
        - NEFT

    - UPI
- Debit transfers and direct debits
    - BHIM Aadhaar Pay
    - ECS Dr
    - NACH Dr
    - NETC (Linked to bank account)
- Card payments
    - Credit cards
    - Debit cards
- Prepaid payment instruments
- Paper based payment instruments

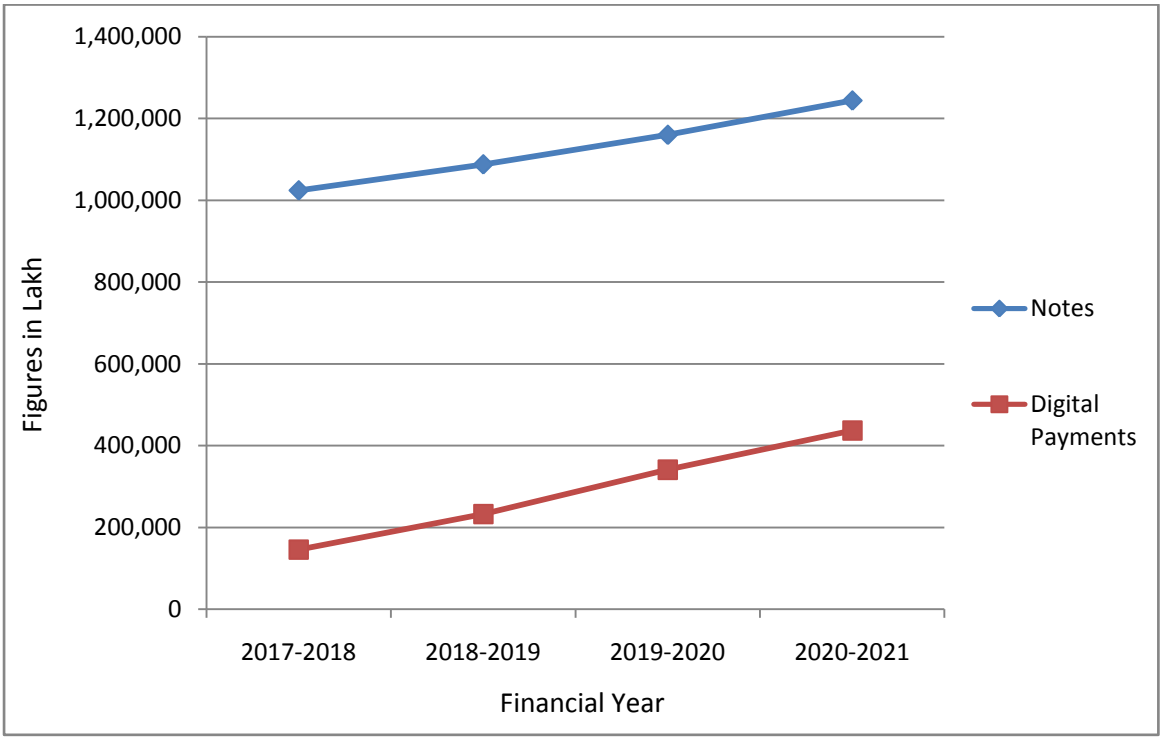

Figure 5: Volume of Notes and Digital Payments in Lakh

The above graph shows the rising trend in volume of notes in circulation and the total digital payments in India for the past four financial years. It can be noted that the volume of notes in circulation is much higher in comparison to the volume of digital payment transactions, which means that even though people have gradually started accepting the digital mode of payments, but they still prefer to have cash in hand for various reasons. However, it is worth noting that the rise in the volume of digital payments is steeper than the rise in the volume of notes in circulation. Analyzing and comparing the trend during the pandemic from the end of 2019 till now, reveals that the demand for both notes as well as digital payments mechanisms has increased together, and the digital payments transaction did not have any adverse effect on the notes in circulation.

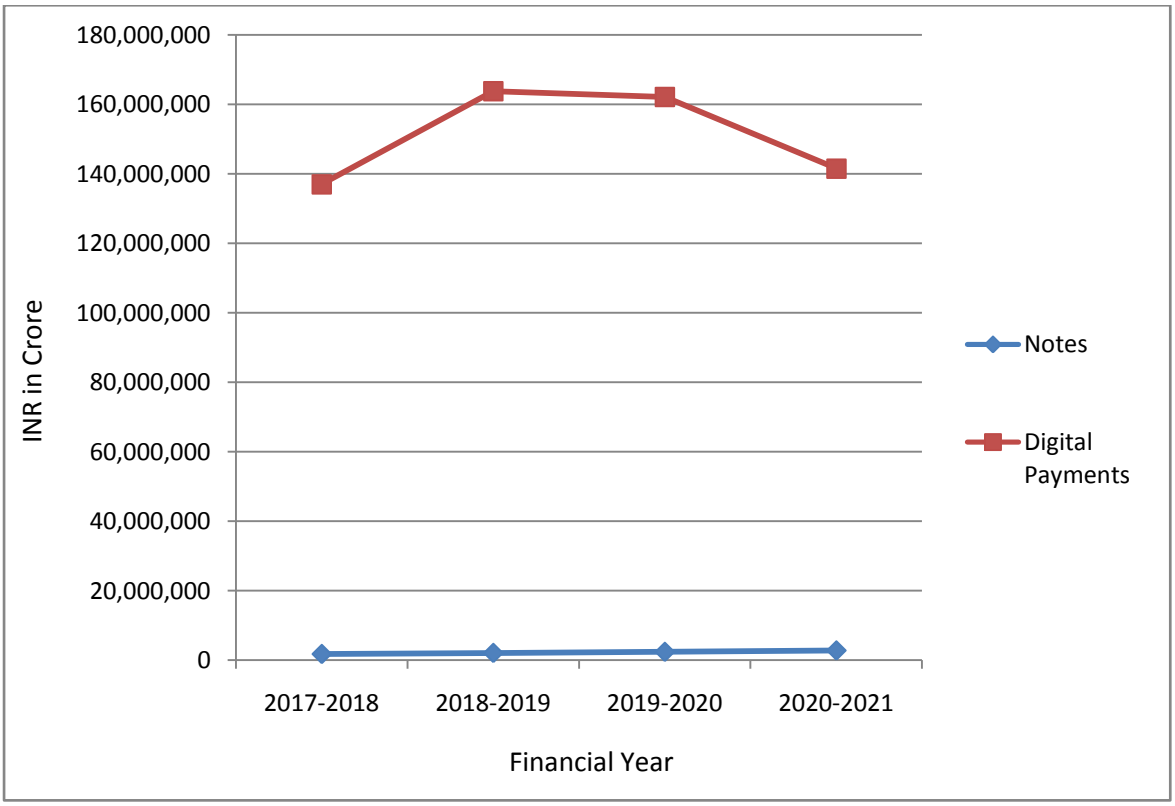

Figure 6: Value of Notes and Digital Payments in Crore

The above graph shows the trend in value of notes in circulation and the total digital payments in India for the past four financial years. In contrast to the volume of notes in circulation and the digital payments, the value of the digital payments is significantly higher than the value of notes in circulation. This means that people prefer carrying out transactions of higher values digitally and transact for low values using cash. Also, it is worth noting that although the value of digital payments is much higher than the value of notes in circulation,

but the trend of notes in circulation has been constantly increasing steadily since 2018 continuing till the pandemic, whereas, the trend of digital payments has not been stable. The value of digital payments increased hugely from 31st March, 2018 to 31st March, 2019, then, it slightly decreased from 31st March, 2019 to 31st March, 2020 during the initial phase of the pandemic, and then witnessed a major downfall from 31st March, 2020 to 31st March, 2021; thereby reaching to almost the same level as the pre-covid times, as observed at the end of FY 2018.

Hence, it can be said that even though the volume of digital payments continuously increased, but the value of transactions had suffered a downfall in the Covid-19 era.

ANALYSIS AND DISCUSSION

The demand for currency in India has been affected to a great extent since the onset of the Coronavirus pandemic in 2019. Covid-19 had resulted in the increase of the currency in circulation by around 13% from April, 2020 to December, 2020, as the people had started keeping cash with them for emergency situations and unforeseen circumstances. This ultimately meant that the precautionary demand for cash had seen major surge during the covid pandemic.

The Reserve Bank of India had also stated in May, that the currency notes in circulation this year 2020 – 2021, has undergone a great escalation, almost more than the average increase that was witnessed last year. The main reason behind this increase was cited as the elongated continuance of the Covid pandemic, and the people's fear contingent situations in the near future. In order to meet the rising demand for currency, the Reserve Bank of India had ensured that the currency chests had adequate and timely supply of the fresh currency notes of all the denominations.

The currency in circulation comprises of both notes and coins. At present, the currency notes in circulation are in the denominations of Rs. 2, Rs. 5, Rs. 10, Rs. 20, Rs. 50, Rs. 100, Rs. 200, Rs. 500 and Rs. 2000. And, the coins in circulation are in the denominations of 50 paise, Re. 1, Rs. 2, Rs. 5, Rs. 10 and Rs. 20.

In addition to the increase in currency in circulation, the other ways in which the Covid-19 pandemic has affected the currency in circulation according to the Reserve Bank of India's annual report for the year 2020 – 2021, published in May, are as follows:

- The indent of the currency notes had reduced by 9.7% as compared to the previous year.
- The supply of the currency notes had also slightly reduced by 0.3% as compared to the previous year.
- The counterfeit notes detected were less this year, that is, 2,08,625 as compared to previous two years, that was 2,96,695 during 2019 – 2020 and 3,17,384 during 2018 – 2019. Out of the counterfeit notes detected this year, the Reserve Bank of India had detected 3.9%, whereas the other 96.1% were detected by the other banks.
- The expenses incurred on the security printing this year, Rs. 4012.10 crore was less than what was spent the previous year, Rs. 4377.80 crore.

Currency Notes in Circulation

	Volume		**Value**	
Year ended 31st March	**Pieces (in lakh)**	**Increase %**	**Figures (in INR crore)**	**Increase %**
2011	645,770	-	935,800	-
2012	693,840	7.44	1,052,800	12.50
2013	735,170	5.96	1,164,800	10.64
2014	773,300	5.19	1,282,900	10.14
2015	835,790	8.08	1,428,900	11.38
2016	902,660	8.00	1,641,500	14.88
2017	1,002,930	11.11	1,310,200	-20.18
2018	1,023,951	2.10	1,803,709	37.67
2019	1,087,594	6.22	2,110,892	17.03
2020	1,159,768	6.64	2,420,975	14.69
2021	1,243,671	7.23	2,826,863	16.77

Table 3: Volume, Value and Increase % of Currency Notes in Circulation

The above table shows the increase percentage in the volume and value of the currency notes in circulation for a period of last ten years. It can be observed that the increase in both value and volume of currency notes in circulation has been more as compared to the previous year, that is, the volume has increased by 7.23% against 6.64% last year, whereas the value has increased by 16.77% against 14.69% last year.

While comparing the value of notes in circulation during the pandemic to the pre-covid times, it can be said that there is almost a balance between the two, as the trend has been upward ever since, except for the decline in the year ended 31st March, 2017.

Total Digital Payments

	Volume		Value	
Year ended 31st March	**Transactions (in lakh)**	**Increase %**	**Figures (in INR crore)**	**Increase %**
2018	145,902	-	136,986,734	-
2019	232,602	59.42	163,713,425	19.51
2020	341,240	46.71	162,089,413	-0.99
2021	437,118	28.10	141,485,173	-12.71

Table 4: Volume, Value and Increase % of Total Digital Payments

The above table shows the increase percentage in the volume and value of the total digital payments for a period of last four years. When we compare the increase in volume and value of currency notes in circulation with the total digital payment transactions over the previous year, it shall be noted that the increase in volume of digital payments is 28.1% which is much higher than 7.23% for notes. But the increase in value of notes in circulation is 16.77% whereas there has been a decline in the value of digital payment transactions by 12.71%.

Moreover, in addition to the sharp decline in the value of digital payments, according to the data released by National Payments Corporation of India (NPCI), there has also been a decline in the cash withdrawals from the automated teller machines (ATMs), and decline in the payments made by mobile during the Covid pandemic. The decline in the cash withdrawals from ATMs could be due to imposition of lockdown for a prolonged duration. However, it even depicts that some people still prefer cash over the digital methods, and so,

the people need to be encouraged to make use of these digital mechanisms without any apprehensions.

Factors Affecting the Demand for Currency in India

Several factors have been affecting the demand for currency since years. The factors that have majorly impacted the demand for currency during the Covid-19 pandemic are as follows:

- The reduction in the transactional demand for cash has been a factor, since people have begun using the digital payment mechanisms because of the fear of being infected by the virus through the currency notes.
- The increase in precautionary demand for cash too affect the demand for currency, since people prefer to keep some cash at their home to meet the sudden need for cash in these unprecedented times.
- The changing preferences of people and the sudden need to save more rather than spending has also increased the demand for cash.
- The payment habits of people also affect the demand for cash. Since if they prefer the physical mode, they would demand more of the physical currency, whereas if they prefer the online mode of making payments then they would demand less of the physical currency.

In addition to the above mentioned factors, other factors that affect the demand for currency include the level of income, interest rate, inflation rate, wealth, deposit rate and exchange rate.

Moving from Cash to Cashless Payments during Covid-19 Pandemic and the Way Ahead

The Covid-19 pandemic had caused the world to go through prolonged duration of lockdown, and India was no different. This pandemic situation together with the lockdown had caused people to adopt the digital methods of making payments.

Following are the reasons people shifted from cash based transactions to the cashless ones during the Covid-19 pandemic:

- The lockdown had reduced people's mobility, which gave rise to online shopping and e-commerce business rather than the in-store shopping. This ultimately meant that the people had to make payments digitally as well.

- The consumption pattern had also declined due to the decline in income levels, and people's need to save cash for unforeseen circumstances. This meant that the cash based transactions were also impacted, as people focused now on saving rather than spending.

- The fear among people about the spread of the virus via the currency notes and coins had also discouraged them from transacting in cash. Therefore, they started exploring other digital mechanisms to carry out transactions. Although efforts were made to make people realize that there were little chances of the virus being spread through physical currency, but still the cautious and risk-averse ones still preferred staying away from cash based transactions. This applied to both, the customers making the payments as well as the merchants receiving the same.

- The transition from onsite working to work from home also led to a shift from receiving the cash payments to accepting digital payments.

- The payments of miscellaneous bills like electricity bill, water bill, and expenses like mobile recharges, internet expenses, grocery charges and others are now being made digitally due to the restrictions imposed by the Covid-19 pandemic.

Thus, it means that mainly the transactions demand for money had significantly shifted from cash based to cashless. These changed payment habits may even become the norm of the future, thereby reducing the demand for physical currency in the times to come. However, since the precautionary holdings of cash had increased during the pandemic, it did not have an adverse effect on the notes in circulation; rather the demand for cash had increased. Furthermore, the demand for digital currency could gain even more importance in the future, which may affect the demand for cash as well.

Other common factors which encourage people to adopt the digital and cashless payment methods are as follows:

- The fast speed of digital transactions through secure payment gateways or via the mobile applications for PayTM, Google Pay attracts people towards the digital mechanism.
- It also helps people keep a track of their budget and maintain a list of their transactions at one place.
- The fear of cash being stolen or burnt down in case of fire is also eliminated.
- People mostly prefer carrying out transactions of huge amounts digitally rather than making payments in cash.
- The habits and changing preferences of people and the urge to try new online payment applications makes them shift to the digital payments.
- The need of the people to be at par with others and the dynamic environment also creates the urge in them to use the digital payment methods.
- The convenience of carrying out transactions digitally also attracts people towards it.

Therefore, all these factors will eventually affect the demand for currency in the long run as the people might form new habits of making payments and may want to continue with the same due to its convenience and ease of usage at anytime and from anywhere.

Impact of the Shift from Cash-based to Cashless and Digital Payments

The covid-19 pandemic has forced people to move from physical payments to the cashless payments, ultimately affecting the demand for physical currency. This is bound to have an impact on other things as well in the future if the situation continues to persist in the same way ahead. Following could be the impact of the same:

- The profitability of the banking sectors would be affected to an extent since, they earned money by way of charging interest on the loans and deposits, and also the income that they earned by clearing payment transactions or by charging interest on the scheduled regular payments like fees and other bills, may be eliminated altogether

in case people continue to choose the digital payment mechanisms for all their transactions.

- In case the banks also adopt the digital payment mechanisms, it can gain income from the reduced operating expenses of cashless and online payments in comparison to the cash-based payments. This would ultimately lead to economies of scale.
- The Paytech firms would gain popularity as well as profits that would enable them to flourish and prosper in the future.
- The products provided by the Fintech and the Paytech firms could also gain popularity, thereby increasing its demand.
- Those merchants who have still not shifted to the cashless way of accepting payments may face trouble in the future if most of its customers shift to the digital mode, since this would mean that their customers may shift to their rivals and other competitor firms offering the same products.

Therefore, the Covid-19 pandemic is capable of having an impact on several things in addition to the demand for currency. The impact may be favourable or even unfavourable in some cases. But, it is imperative for the people to change and the businesses to adapt to the new way of life in order to survive in this dynamic environment and achieve success.

Inferences and Conclusion

From this research, it can be fairly concluded that the Coronavirus pandemic has indeed affected the demand for currency in numerous ways that have been discussed earlier. Consequently, this has also had an impact on the banks, merchants and those people who are still not comfortable with the digital payment mechanisms. Moreover, the apprehension of the people that the virus may spread via the currency notes has also induced people to move away from the cash-based transactions towards the digital payments. In fact, the preferences of people and their payment habits played a significant role in deciding whether they would opt for the cash-based or the digital transactions. Despite of all these effects, the notes in circulation did continue to rise, whereas the total digital transactions faced a downturn instead.

Therefore, the unexpected and the unprecedented disease outbreak did affect the demand for currency as well as the digital payment transactions.

Managerial Implications and Recommendations for Action

Following are the managerial implications and recommendations for action for the bank:

- As it has been concluded that several factors affect the demand for currency and one of them is the digital payment mechanisms, steps must be taken by the central bank as well all the other banks to promote the acceptance and usage of digital payment platforms, as this is one factor that can be easily controlled, which could help stabilize the demand for currency to an extent. Moreover, it also an important factor, as it is capable of driving the future.

- The central bank must also consider the option of launching its own digital currency since it is the demand of the future and also the way forward. It would ultimately help in reducing the need for cash and eventually the counterfeit currency in circulation and the black money would also decline.

- Now that the bank has witnessed a pandemic like this, it must be better prepared in the future for other similar kind of circumstances. It must ensure that adequate and timely supply of new currency notes is maintained in such crucial times, as the demand for currency is expected to rise in unforeseen situations.

- The unbanked customers must be incentivized so that they too adapt to the digital world and do not feel left out merely because of lower literacy levels or being unaware about such digital mechanisms.

- The retail merchants, who have still not accepted the digitalization method, must be educated about the benefits of the same.

PART C: LEARNING FROM THE SUMMER TRAINING PROJECT

Following are the learning that I derived from the summer training internship with the Reserve Bank of India:

- I gained experience on how to conduct a full-fledged research based on the secondary sources of data, past literature and research articles / papers. It gave me the opportunity to put the theoretical learning from the course Business Research Methods into practical application.

- Inculcating soft skills was an added benefit, as the duration of the internship required me to search patiently for the relevant literature, and then go through the entire research article to find out the key points required for my research topic.

- I got a chance to enhance and hone other skills like time management, planning, organizing and communication skills, both oral as well as written.

- I learnt the importance of past surveys and researches, as they form the building blocks of the future researches and moreover, even aid in conducting other researches by highlighting the points that were left to be resolved in those researches.

- This research taught me that the in-depth study on a topic is extremely essential before we figure out the actual research problem.

- I learnt how to develop the research problem and narrow down its scope to make it realistic so that the objectives of the research can be completed within the stipulated time as well as with full justice being done to the same.

- It enhanced my skills to find authentic research papers and to obtain authentic data from authentic data sources. Moreover, it honed my abilities to extract and use the required data from the huge data sources and annual reports. Furthermore, I learnt how to analyze, present and communicate the findings of the data collected during the research.

- Moreover, I realized that it extremely important for any organization to be prepared to transform and adapt to the dynamic environment to be able to function efficiently, especially in such unprecedented times like the Covid-19 pandemic.
- I also learnt about the importance of maintain the confidentiality of information while working in the corporate world, especially in a government organization like the Reserve Bank of India.

The above-mentioned learning and takeaways would definitely help me perform better in the corporate world.

The specific learning outcomes derived from successful completion of this summer internship project report are as follows:

- I learnt about the different functions that are performed by the issue department of the central bank in addition to the primary function of issuing and managing the currency in circulation.
- I got to know about the various factors that have been affecting the currency in demand since years and the theories that are being used to determine the same; and also, about the impact that these factors have on demand for currency. Additionally, I learnt about those factors which had a major impact in determining the demand for currency in the unforeseen situation like the Covid-19 pandemic.
- This research enlightened me about the various apprehensions that people have while transacting digitally and while carrying out the same transactions physically. There are pros and cons of both the scenarios. And, even though there are several digital payment mechanisms, but still the demand for physical currency will never go out of trend for myriad reasons.

These learning have surely helped me enhance my understanding about the central bank and its functioning, especially that of the issue department.

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ANNEXURES

Table VIII.1: Banknotes in Circulation (As at end-March)						
Denomination	Volume (Million pieces)			Value (` billion)		
	2011	2012	2013	2011	2012	2013
1	2	3	4	5	6	7
` 2 and ` 5	11,116	11,540	11,624	43	45	46
	(17.2)	(16.6)	(15.8)	(0.5)	(0.4)	(0.4)
` 10	21,288	23,002	25,168	213	230	252
	(33.0)	(33.2)	(34.2)	(2.3)	(2.2)	(2.2)
` 20	3,020	3,510	3,825	60	70	77
	(4.7)	(5.1)	(5.2)	(0.7)	(0.7)	(0.6)
` 50	3196	3,488	3,461	160	174	173
	(5.0)	(5.0)	(4.7)	(1.7)	(1.6)	(1.5)
` 100	14024	14,119	14,421	1,402	1,412	1,442
	(21.7)	(20.3)	(19.6)	(15.0)	(13.4)	(12.4)
` 500	8,906	10,256	10,719	4,453	5,128	5,359
	(13.8)	(14.8)	(14.6)	(47.6)	(48.7)	(46.0)
` 1,000	3027	3,469	4,299	3,027	3,469	4,299
	(4.7)	(5.0)	(5.9)	(32.4)	(33.0)	(36.9)
Total	64,577	69,384	73,517	9,358	10,528	11,648
Note: Figures in parentheses represent the percentage share in total.						

Annexure 1: Details of Banknotes in Circulation from 2011 to 2013

Table VIII.1: Banknotes in Circulation						
Denomination (□)	Volume (million pieces)			Value (□ billion)		
	Mar 2013	Mar 2014	Mar 2015	Mar 2013	Mar 2014	Mar 2015
1	2	3	4	5	6	7
2 and 5	11,624	11,698	11,672	46	46	46
	(15.8)	(15.1)	(13.9)	(0.4)	(0.4)	(0.3)
10	25,168	26,648	30,304	252	266	303
	(34.2)	(34.5)	(36.3)	(2.2)	(2.1)	(2.1)
20	3,825	4,285	4,350	77	86	87
	(5.2)	(5.5)	(5.2)	(0.6)	(0.7)	(0.6)
50	3,461	3,448	3,487	173	172	174
	(4.7)	(4.5)	(4.2)	(1.5)	(1.3)	(1.2)
100	14,421	14,765	15,026	1,442	1,476	1,503
	(19.6)	(19.1)	(18.0)	(12.4)	(11.5)	(10.5)
500	10,719	11,405	13,128	5,359	5,702	6,564
	(14.6)	(14.7)	(15.7)	(46.0)	(44.4)	(46.0)
1,000	4,299	5,081	5,612	4,299	5,081	5,612
	(5.9)	(6.6)	(6.7)	(36.9)	(39.6)	(39.3)
Total	73,517	77,330	83,579	11,648	12,829	14,289
Note: Figures in parentheses represent share in total volume/value.						

Annexure 2: Details of Banknotes in Circulation from 2013 to 2015

Table VIII.1: Banknotes in Circulation						
Denomination (□)	Volume (million pieces)			Value (□ billion)		
	Mar-15	Mar-16	Mar-17	Mar-15	Mar-16	Mar-17
1	2	3	4	5	6	7
2 and 5	11,672	11,626	11,557	46	45	45
	(13.9)	(12.9)	(11.5)	(0.3)	(0.3)	(0.3)
10	30,304	32,015	36,929	303	320	369
	(36.3)	(35.5)	(36.8)	(2.1)	(1.9)	(2.8)
20	4,350	4,924	10,158	87	98	203
	(5.2)	(5.4)	(10.2)	(0.6)	(0.6)	(1.5)
50	3,487	3,890	7,113	174	194	356
	(4.2)	(4.3)	(7.1)	(1.2)	(1.2)	(2.7)
100	15,026	15,778	25,280	1,503	1,578	2,528
	(18.0)	(17.5)	(25.2)	(10.5)	(9.6)	(19.3)
500	13,128	15,707	5,882	6,564	7,854	2,941
	(15.7)	(17.4)	(5.9)	(46.0)	(47.8)	(22.5)
1,000	5,612	6,326	89	5,612	6,326	89
	(6.7)	(7.0)	(0.0)	(39.3)	(38.6)	(0.7)
2,000	-	-	3,285	-	-	6,571
	-	-	(3.3)	-	-	(50.2)
Total	83,579	90,266	100,293	14,289	16,415	13,102
Note: Figures in parentheses represent the percentage share in total volume/value.						

Annexure 3: Details of Banknotes in Circulation from 2015 to 2017

Table VIII.1: Banknotes in Circulation (end-March)						
Denomination (□)	Volume (million pieces)			Value (□ billion)		
	2017	2018	2019	2017	2018	2019
1	2	3	4	5	6	7
2 and 5	11,557	11,425	11,302	45	44	44
	(11.5)	(11.2)	(10.4)	(0.3)	(0.2)	(0.2)
10	36,929	30,645	31,260	369	307	313
	(36.8)	(29.9)	(28.7)	(2.8)	(1.7)	(1.5)
20	10,158	10,016	8,713	203	200	174
	(10.2)	(9.8)	(8.0)	(1.5)	(1.1)	(0.8)
50	7,113	7,343	8,601	356	367	430
	(7.1)	(7.2)	(7.9)	(2.7)	(2.0)	(2.0)
100	25,280	22,215	20,074	2,528	2,222	2,007
	(25.2)	(21.7)	(18.5)	(19.3)	(12.3)	(9.5)
200	-	1,853	4,000	-	371	800
	-	(1.8)	(3.7)	-	(2.1)	(3.8)
500	5,882	15,469	21,518	2,941	7,734	10,759
	(5.9)	(15.1)	(19.8)	(22.5)	(42.9)	(51.0)
1000	89	66	-	89	66	-
	(…)	(…)	-	(0.7)	(0.4)	-
2000	3,285	3,363	3,291	6,571	6,726	6,582
	(3.3)	(3.3)	(3.0)	(50.2)	(37.3)	(31.2)
Total	100,293	102,395	108,759	13,102	18,037	21,109
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
- : Not applicable. … : Negligible.						
Note: Figures in parentheses represent the percentage share in total volume/value.						
Source: RBI.						

Annexure 4: Details of Banknotes in Circulation from 2017 to 2019

Table VIII.1: Banknotes in Circulation (end-March)						
Denomination (₹)	Volume (pieces in lakh)			Value (₹ crore)		
	2019	2020	2021	2019	2020	2021
1	2	3	4	5	6	7
2 and 5	1,13,025	1,12,203	1,11,728	4,372	4,331	4,307
	(10.4)	(9.7)	(9.0)	(0.2)	(0.2)	(0.2)
10	3,12,598	3,04,022	2,93,681	31,260	30,402	29,368
	(28.7)	(26.2)	(23.6)	(1.5)	(1.3)	(1.0)
20	87,127	82,994	90,579	17,425	16,599	18,116
	(8.0)	(7.2)	(7.3)	(0.8)	(0.7)	(0.6)
50	86,015	86,009	87,524	43,007	43,004	43,762
	(7.9)	(7.4)	(7.0)	(2.0)	(1.8)	(1.5)
100	2,00,738	1,99,021	1,90,555	2,00,738	1,99,021	1,90,555
	(18.5)	(17.2)	(15.3)	(9.5)	(8.2)	(6.7)
200	40,005	53,646	58,304	80,010	1,07,293	1,16,608
	(3.7)	(4.6)	(4.7)	(3.8)	(4.4)	(4.1)
500	2,15,176	2,94,475	3,86,790	10,75,881	14,72,373	19,33,951
	(19.8)	(25.4)	(31.1)	(51.0)	(60.8)	(68.4)
2,000	32,910	27,398	24,510	6,58,199	5,47,952	4,90,195
	(3.0)	(2.4)	(2.0)	(31.2)	(22.6)	(17.3)
Total	10,87,594	11,59,768	12,43,671	21,10,892	24,20,975	28,26,863

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

Annexure 5: Details of Banknotes in Circulation from 2019 to 2021

Table VIII.2: Coins in Circulation (As at end-March)						
Denomination	Volume (Million pieces)			Value (` billion)		
	2011	2012	2013	2011	2012	2013
1	2	3	4	5	6	7
Small coin*	54,797	14785	14788	15	7	7
	(48.8)	(18.9)	(17.5)	(11.8)	(5.3)	(4.6)
` 1	32,675	34414	35884	33	34	36
	(29.1)	(44.1)	(42.4)	(26.0)	(25.6)	(23.5)
` 2	15,342	18201	22113	31	36	44
	(13.7)	(23.3)	(26.1)	(24.4)	(27.1)	(28.8)
` 5	9,070	9981	10675	45	50	53
	(8.1)	(12.8)	(12.6)	(35.4)	(37.2)	(34.6)
` 10	300	648	1267	3	6	13
	(0.3)	(0.8)	(1.5)	(2.4)	(4.8)	(8.5)
Total	1,12,184	78,029	84,727	127	133	153

*: Coins of denomination of 25 paise and below ceased to be legal tender from June 30, 2011.
Note: Figures in parentheses represent the percentage share in total.

Annexure 6: Details of Coins in Circulation from 2011 to 2013

Table VIII.2: Coins in Circulation						
Denomination	Volume (million pieces)			Value (□ billion)		
	Mar 2013	Mar 2014	Mar 2015	Mar 2013	Mar 2014	Mar 2015
1	2	3	4	5	6	7
Small Coin	14,788	14,788	14,788	7	7	7
	(17.4)	(16.1)	(14.9)	(4.6)	(4.1)	(3.6)
□1	35,884	38,424	41,627	36	38	42
	(42.4)	(41.9)	(42.1)	(23.5)	(21.9)	(21.7)
□2	22,113	24,823	27,038	44	50	54
	(26.1)	(27.1)	(27.3)	(28.8)	(28.9)	(27.8)
□5	10,675	11,577	12,761	53	58	64
	(12.6)	(12.7)	(12.9)	(34.6)	(33.5)	(33.0)
□10	1,267	2,017	2,750	13	20	27
	(1.5)	(2.2)	(2.8)	(8.5)	(11.6)	(13.9)
Total	84,727	91,629	98,964	153	173	194
Note: Figures in parentheses represent the percentage share in total..						

Annexure 7: Details of Coins in Circulation from 2013 to 2015

Table VIII.2: Coins in Circulation						
Denomination (□)	Volume (million pieces)			Value (□ billion)		
	Mar-15	Mar-16	Mar-17	Mar-15	Mar-16	Mar-17
1	2	3	4	5	6	7
Small coins	14,788	14,788	14,788	7	7	7
	(14.9)	(13.8)	(12.7)	(3.6)	(3.2)	(2.8)
1	41,627	44,876	48,347	42	45	48
	(42.2)	(41.9)	(41.6)	(21.7)	(20.6)	(19.2)
2	27,038	29,632	32,059	54	59	64
	(27.3)	(27.7)	(27.6)	(27.8)	(27.1)	(25.6)
5	12,761	14,089	15,783	64	70	79
	(12.9)	(13.2)	(13.6)	(33.0)	(32.1)	(31.6)
10	2,750	3,703	5,205	27	37	52
	(2.7)	(3.4)	(4.5)	(13.9)	(17.0)	(20.8)
Total	98,964	107,088	116,182	194	218	250
Note: Figures in parentheses represent the percentage share in total volume/value.						

Annexure 8: Details of Coins in Circulation from 2015 to 2017

Table VIII.2: Coins in Circulation (end-March)						
Denomination (□)	Volume (million pieces)			Value (□ billion)		
	2017	2018	2019	2017	2018	2019
1	2	3	4	5	6	7
Small coins	14,788	14,788	14,788	7	7	7
	(12.7)	(12.4)	(12.3)	(2.8)	(2.7)	(2.7)
1	48,347	49,636	50,326	48	50	50
	(41.6)	(41.7)	(41.8)	(19.2)	(19.5)	(19.4)
2	32,059	32,855	33,154	64	66	66
	(27.6)	(27.6)	(27.6)	(25.6)	(25.8)	(25.6)
5	15,783	16,650	17,151	79	83	86
	(13.6)	(14.0)	(14.2)	(31.6)	(32.4)	(33.3)
10	5,205	5,049	4,905	52	50	49
	(4.5)	(4.2)	(4.1)	(20.8)	(19.5)	(19.0)
Total	116,182	118,978	120,324	250	256	258
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
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.						

Annexure 9: Details of Coins in Circulation from 2017 to 2019

Table VIII.2: Coins in Circulation (end-March)						
Denomination (₹)	Volume (pieces in lakh)			Value (₹crore)		
	2019	2020	2021	2019	2020	2021
1	2	3	4	5	6	7
Small coins	1,47,880	1,47,880	1,47,880	700	700	700
	(12.3)	(12.1)	(12.0)	(2.7)	(2.7)	(2.6)
1	5,03,260	5,08,878	5,12,597	5,033	5,089	5,126
	(41.8)	(41.8)	(41.7)	(19.5)	(19.3)	(19.1)
2	3,31,540	3,35,158	3,37,863	6,631	6,703	6,757
	(27.6)	(27.5)	(27.5)	(25.6)	(25.5)	(25.1)
5	1,71,510	1,75,992	1,79,360	8,575	8,800	8,968
	(14.2)	(14.4)	(14.6)	(33.2)	(33.5)	(33.4)
10	49,050	50,130	51,391	4,905	5,013	5,139
	(4.1)	(4.1)	(4.2)	(19.0)	(19.1)	(19.1)
20	-	-	896	-	-	179
	-	-	(0.1)	-	-	(0.7)
Total	12,03,240	12,18,038	12,29,988	25,844	26,305	26,870

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

Annexure 10: Details of Coins in Circulation from 2019 to 2021

Table IX.1: Payment System Indicators – Annual Turnover (April-March)						
Item	Volume (Lakh)			Value (₹ Crore)		
	2017-18	2018-19	2019-20	2017-18	2018-19	2019-20
1	2	3	4	5	6	7
A. Settlement Systems						
CCIL Operated Systems	35	36	36	10,74,80,202	11,65,51,038	13,41,50,192
B. Payment Systems						
1. Large Value Credit Transfers – RTGS	1,244	1,366	1,507	11,67,12,478	13,56,88,187	13,11,56,475
Retail Segment						
2. Credit Transfers	58,793	1,18,750	2,06,661	1,88,14,287	2,60,97,655	2,85,72,100
2.1 AePS (Fund Transfers)	6	11	10	300	501	469
2.2 APBS	12,980	15,032	16,805	55,949	86,734	99,448
2.3 ECS Cr	61	54	18	11,864	13,235	5,145
2.4 IMPS	10,098	17,529	25,792	8,92,498	15,90,257	23,37,541
2.5 NACH Cr	7,031	9,021	11,406	5,20,992	7,36,349	10,52,187
2.6 NEFT	19,464	23,189	27,445	1,72,22,852	2,27,93,608	2,29,45,580
2.7 UPI	9,152	53,915	1,25,186	1,09,832	8,76,971	21,31,730
3. Debit Transfers and Direct Debits	3,788	6,382	8,957	3,99,300	6,56,232	8,26,036
3.1 BHIM Aadhaar Pay	20	68	91	78	815	1,303
3.2 ECS Dr	15	9	1	972	1,260	39
3.3 NACH Dr	3,738	6,299	8,768	3,98,211	6,54,138	8,24,491
3.4 NETC (Linked to Bank Account)	15	6	97	39	20	203
4. Card Payments	47,486	61,769	73,012	9,19,035	11,96,888	15,35,765
4.1 Credit Cards	14,052	17,626	21,773	4,58,965	6,03,413	7,30,895
4.2 Debit Cards	33,434	44,143	51,239	4,60,070	5,93,475	8,04,870
5. Prepaid Payment Instruments	34,591	46,072	53,318	1,41,634	2,13,323	2,15,558
6. Paper-based Instruments	11,713	11,238	10,414	81,93,493	82,46,065	78,24,821
Total – Retail Payments (2+3+4+5+6)	1,56,371	2,44,211	3,52,362	2,84,67,748	3,64,10,163	3,89,74,281
Total Payments (1+2+3+4+5+6)	1,57,615	2,45,577	3,53,869	14,51,80,226	17,20,98,350	17,01,30,756
Total Digital Payments (1+2+3+4+5)	1,45,902	2,34,339	3,43,455	13,69,86,734	16,38,52,285	16,23,05,934

Note: 1. RTGS system includes customer and inter-bank transactions only.
2. Settlements of CBLO, government securities and forex transactions are through the Clearing Corporation of India Ltd. (CCIL). Government Securities include outright trades and both legs of repo transactions and triparty repo transactions. With effect from November 5, 2018, CCIL discontinued CBLO and operationalised triparty repo under securities segment.
3. The figures for cards are for payment transactions at point of sale (POS) terminals and online.
4. Figures in the columns might not add up to the total due to rounding off of numbers.
Source: RBI.

Annexure 11: Details of Payment Systems from 2018 to 2020

Table IX.1: Payment System Indicators – Annual Turnover (April-March)						
Item	Volume (Lakh)			Value (₹ Crore)		
	2018-19	2019-20	2020-21	2018-19	2019-20	2020-21
1	2	3	4	5	6	7
A. Settlement Systems						
CCIL Operated Systems	36	36	28	11,65,51,038	13,41,50,192	16,19,43,141
B. Payment Systems						
1. Large Value Credit Transfers – RTGS	1,366	1,507	1,592	13,56,88,187	13,11,56,475	10,55,99,849
Retail Segment						
2. Credit Transfers	1,18,481	2,06,506	3,17,852	2,60,90,471	2,85,62,857	3,35,22,150
2.1 AePS (Fund Transfers)	11	10	11	501	469	623
2.2 APBS	14,949	16,766	14,373	86,226	99,179	1,12,747
2.3 ECS Cr	54	18	0	13,235	5,145	0
2.4 IMPS	17,529	25,792	32,783	15,90,257	23,37,541	29,41,500
2.5 NACH Cr	8,834	11,290	16,450	7,29,673	10,43,212	12,32,714
2.6 NEFT	23,189	27,445	30,928	2,27,93,608	2,29,45,580	2,51,30,910
2.7 UPI	53,915	1,25,186	2,23,307	8,76,971	21,31,730	41,03,658
3. Debit Transfers and Direct Debits	4,914	7,525	10,456	5,24,556	7,19,708	8,72,552
3.1 BHIM Aadhaar Pay	68	91	161	815	1,303	2,580
3.2 ECS Dr	9	1	0	1,260	39	0
3.3 NACH Dr	4,830	7,340	9,630	5,22,461	7,18,166	8,68,906
3.4 NETC (Linked to Bank Account)	6	93	650	20	200	913
4. Card Payments	61,769	72,384	57,841	11,96,888	14,34,814	12,93,822
4.1 Credit Cards	17,626	21,773	17,641	6,03,413	7,30,895	6,30,414
4.2 Debit Cards	44,143	50,611	40,200	5,93,475	7,03,920	6,62,667
5. Prepaid Payment Instruments	46,072	53,318	49,392	2,13,323	2,15,558	1,97,695
6. Paper-based Instruments	11,238	10,414	6,704	82,46,065	78,24,822	56,27,189
Total – Retail Payments (2+3+4+5+6)	2,42,473	3,50,147	4,42,229	3,62,71,303	3,87,57,759	4,15,12,514
Total Payments (1+2+3+4+5+6)	2,43,839	3,51,654	4,43,821	17,19,59,490	16,99,14,234	1471,12,363
Total Digital Payments (1+2+3+4+5)	2,32,602	3,41,240	4,37,118	16,37,13,425	16,20,89,413	14,14,85,173

Note: 1. RTGS system includes customer and inter-bank transactions only.
2. Settlements of CBLO, government securities and forex transactions are through the Clearing Corporation of India Ltd. (CCIL). Government Securities include outright trades and both legs of repo transactions and triparty repo transactions. With effect from November 5, 2018, CCIL discontinued CBLO and operationalised triparty repo under securities segment.
3. The figures for cards are for payment transactions at point of sale (PoS) terminals and online.
4. Figures in the columns might not add up to the total due to rounding off of numbers.
Source: RBI.

Annexure 12: Details of Payment Systems from 2019 to 2021