FROST & SULLIVAN

ASSESSMENT OF CASH LOGISTICS MARKET IN INDIA

Support for an Initial Public Offering (IPO)

Nov 17th , 2022

Frost & Sullivan

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1 Macroeconomic Overview

8.1 India's Economic Growth – Fastest Growing Economy in The World

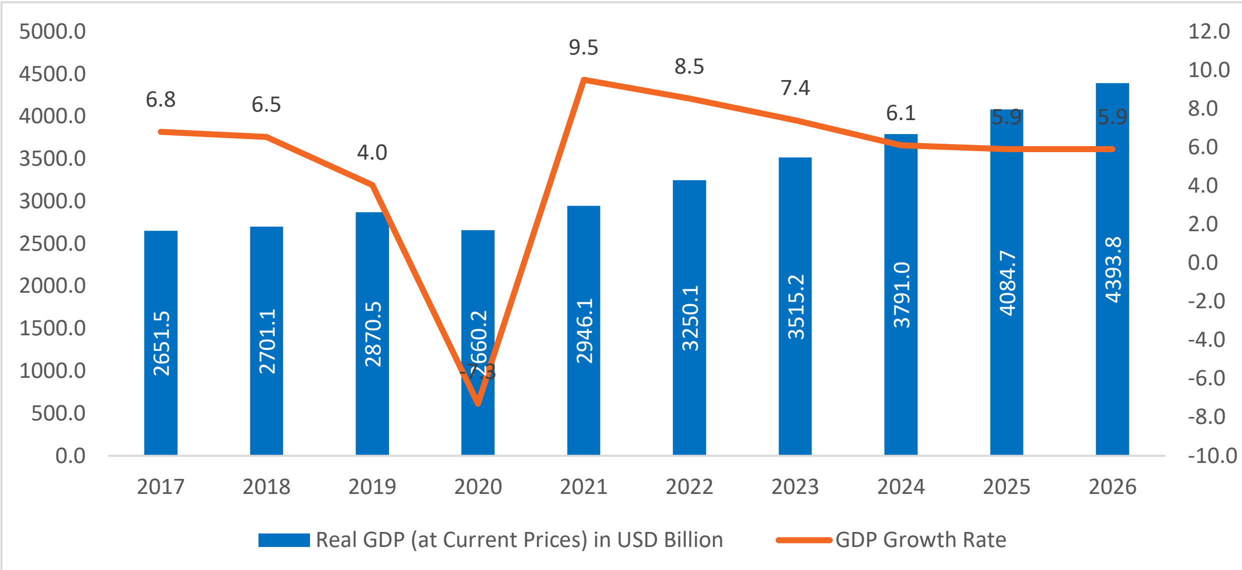
According to the International Monetary Fund's GDP growth predictions, India remains the world's fastest-growing major economy (IMF). The IMF forecasts India's growth to be quite robust in 2022, making it the world's fastest-growing major economy, nearly twice as fast as China's 3.2 percent. In the first quarter of the current fiscal year (Q1 or the months of April, May, and June), India's GDP increased by 14%. According to the data released by IMF, India overtook the UK to take over as the world's fifth-largest economy, trailing only the US, China, Japan, and Germany in terms of GDP total. IMF also predicts the Asian superpower to trail only the US, China, Japan, and Germany this year after surpassing the UK on an annual basis in dollar terms. India was the eleventh-largest economy ten years ago, while the UK was the fifth largest.

Two waves of the Covid-19 pandemic have had a significant impact on the country's economic growth, with the consequences still being felt across multiple industries. The macroeconomic management of the pandemic has resulted in a strong recovery thus far and is expected to continue in the future, until the effects of Covid-19 are diminished. The country has well-defined safety protocols and has made significant progress in managing Covid-19 and maintaining its capacity to operate safely even as infection levels rise. India is now one of the world's most vaccinated countries. However, the possibility of emerging vaccine-resistant mutations remains. And this is something that could have a long-term influence on the nation's economic growth.

The conflict between Russia and Ukraine has also slowed the pace of recovery in 2022, with its effects manifesting in record-high commodity prices, a weakened global GDP outlook, and tighter global financial conditions. A negative trade shock, rising oil prices, and the impact of geopolitical concerns on business confidence are all weighing on the country's GDP projection in the short term. The Russia-Ukraine crisis has had a significant economic impact, driving up crude prices and pushing retail inflation in India, the world's third-largest oil importer, to its highest level in 17 months. Owing to this, the 2023 IMF projections for India's GDP is expected to witness a slight decline to 6.1 per cent, but the country's growth is still expected to be higher than that of other global nations affected by the geopolitical conflict.

Despite recent economic setbacks, India is expected to see an increase in pent-up demand. As trade circumstances improve and India exports its agricultural products to newer markets in the Middle East and Africa, rural consumption is expected to stay high. The country has been able to recover strongly from the economic effects of the last several years thanks to targeted monetary and macro-financial policies. The development of a single national market; an expansion of industry as a result of the renewable-energy transition; a change in supply chains away from China; and sustained dominance in information technology (IT) are some of the primary variables projected to catalyze the Indian economy's growth.

Exhibit 1: GDP Growth of India, USD Billions, FY 2017-26

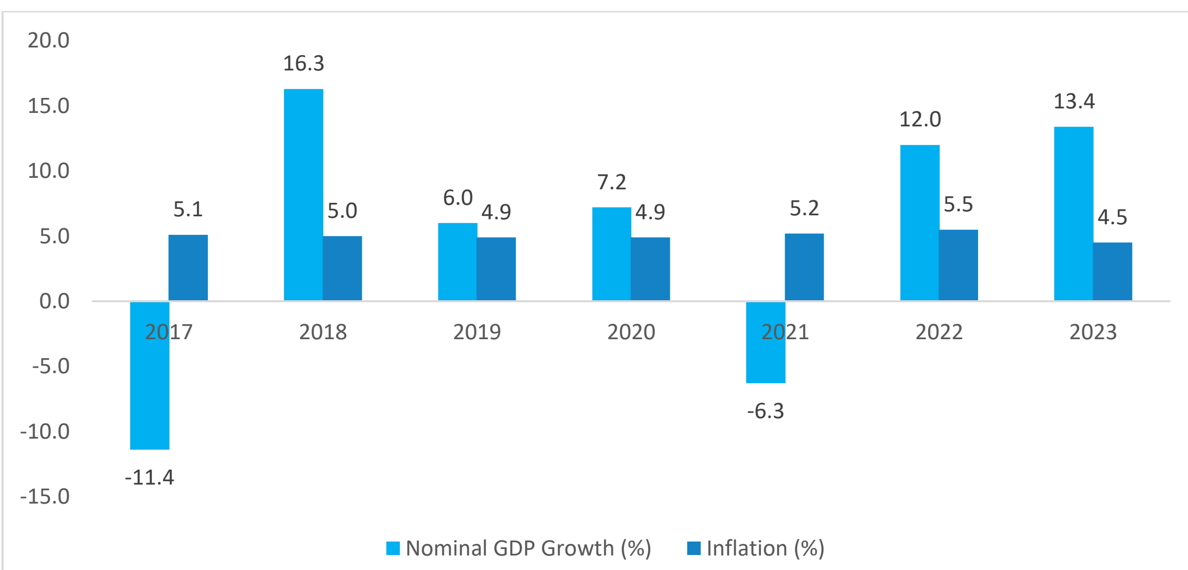


Data published as per IMF World Economic Outlook,2022

Source: IMF, Frost & Sullivan Analysis

Inflation has remained stable at ~5.0% between FY16 – FY21 while Nominal GDP saw a decline during demonetization phase (FY 2016-17) and during the peak COVID-19 period (March 2020-September 2020). The high rate of inflation in 2022 at 5.5% and projected rate for 2023 at 4.5%, is mostly due to increases in the prices of crude petroleum and natural gas, mineral oils, and basic metals as a result of the global supply chain disruption induced by the Russia-Ukraine conflict.

Exhibit 2: Nominal GDP & Inflation Growth (in %), FY 2017-23



Source: RBI, Secondary Sources

8.2 Key Growth Drivers

a. Demographic trends in India - Rising Middle Class Income Levels

In the decade ahead, India's middle-class population will continue to grow, boosting consumer demand and spending. By CY 2030, the upper and lower middle classes are estimated to account for 43.5% and 34.2% of the population, respectively. Discretionary spending will rise as disposable income rises, resulting in an increase in transactions, cash volume, and so on.

Exhibit 3: Share of Households by income Group, India, CY 2005, CY 2018, and CY 2030

Annual Income and Income Grouping	219 million households	293 million households	386 million households
Above $40,000 (Rs. 2.8 million) Upper middle income	High 0.5%	High 2.7%	High 7.5%
$8,500 - $40,000 (Rs. 595.5 thousand - Rs. 2.8 million) Upper middle income	Upper Mid 7.5%	Upper Mid 20.8%	Upper Mid 43.5%
$4,000 - $8,500 (Rs. 280.3 - Rs. 595.6 thousand) Lowe middle income	Lower Mid 23.3%	Lower Mid 33.1%	Lower Mid 34.2%
Below $4,000 (Rs. 280.3 thousand) Low income	Low 68.9%	Low 43.3%	Low 14.8%
	2005	**2018**	**2030**

Source: Frost & Sullivan, Secondary Sources

b. Increase in Working-Age Population

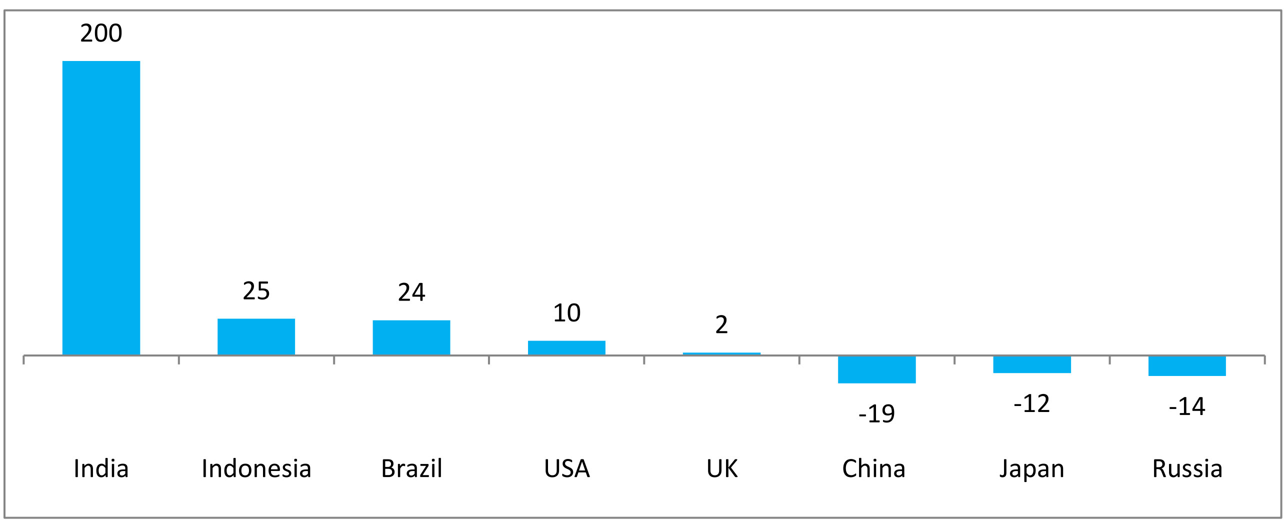
In contrast to China's decline, India's working-age population is predicted to rise between CY 2018 and CY 2030. India is in the midst of a demographic shift, with youth accounting for a sizable portion of the population. With India adding 12 million individuals to the working population each year, the share of the working-age population is predicted to rise from 66.77 % in CY 2018 to 68.4% in CY 2030.

Exhibit 4: Population age structure analysis, India, CY 2005-2030 (%)

	2005	2018	2030
0-14 Years of Age (Children)	32.73%	27.05%	23.00%
15-64 Years of Age (Working Age)	62.53%	66.77%	68.4%
65 and Above Years of Age (Elderly)	4.74%	6.18%	8.6%
Country Population	1.1 Billion	1.33 Billion	1.5 Billion

Source: Frost & Sullivan, Secondary Sources

Exhibit 5: Addition to working age population (15-64), in millions, CY 2020

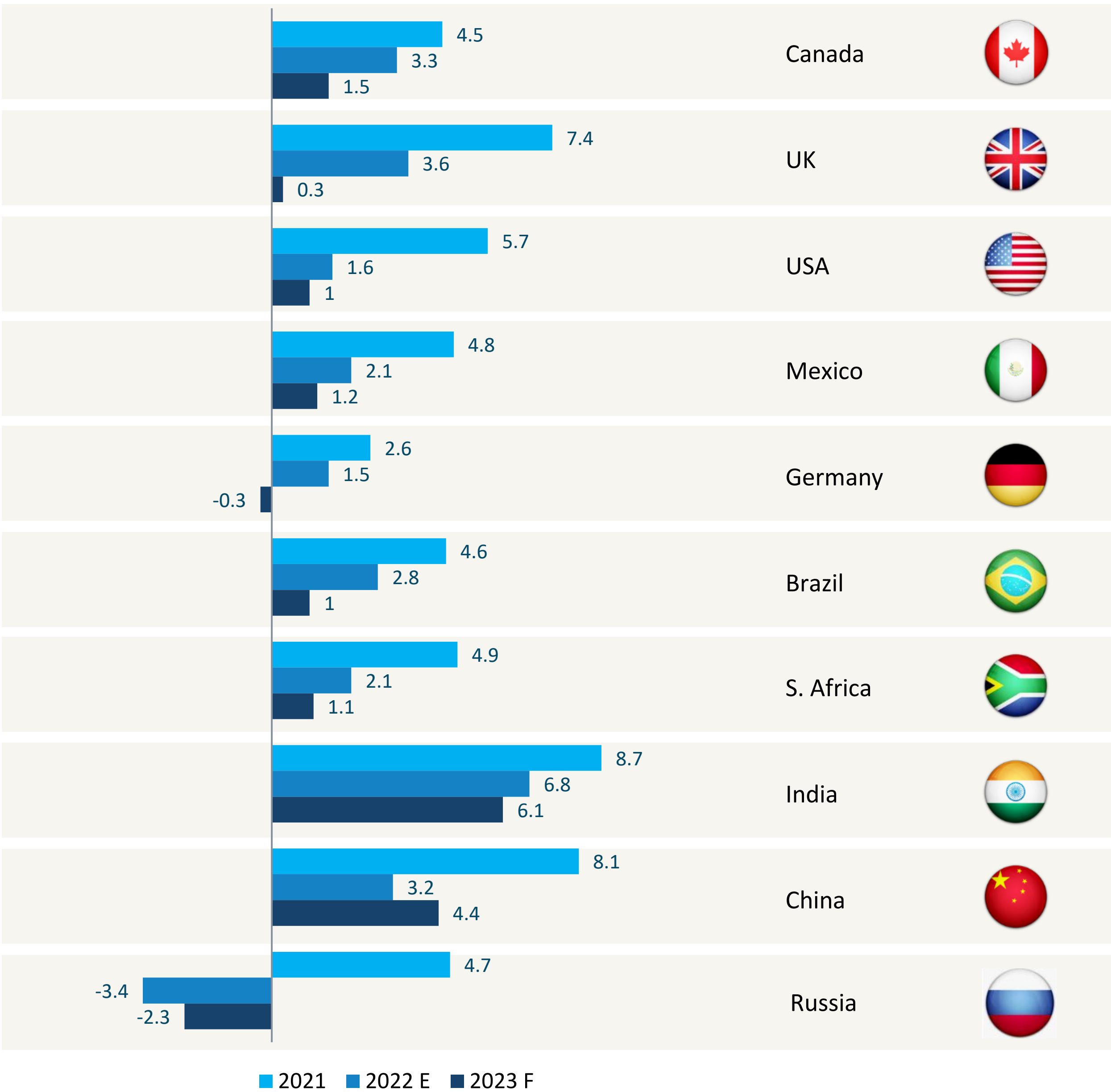


Source: IMF, World Bank

8.3 India Accelerated Economic Rebound

In CY 2020, the COVID-19 crisis had a significant impact on all major economies, including India's GDP growth. India is anticipated to become one of the world's fastest growing economies in the medium future, thanks to enhanced immunization efforts and economic recovery brought on by economic liberalization.

Exhibit 6: GDP Growth, Key Countries, Global (CY 2021, CY 2022, CY 2023 (F))



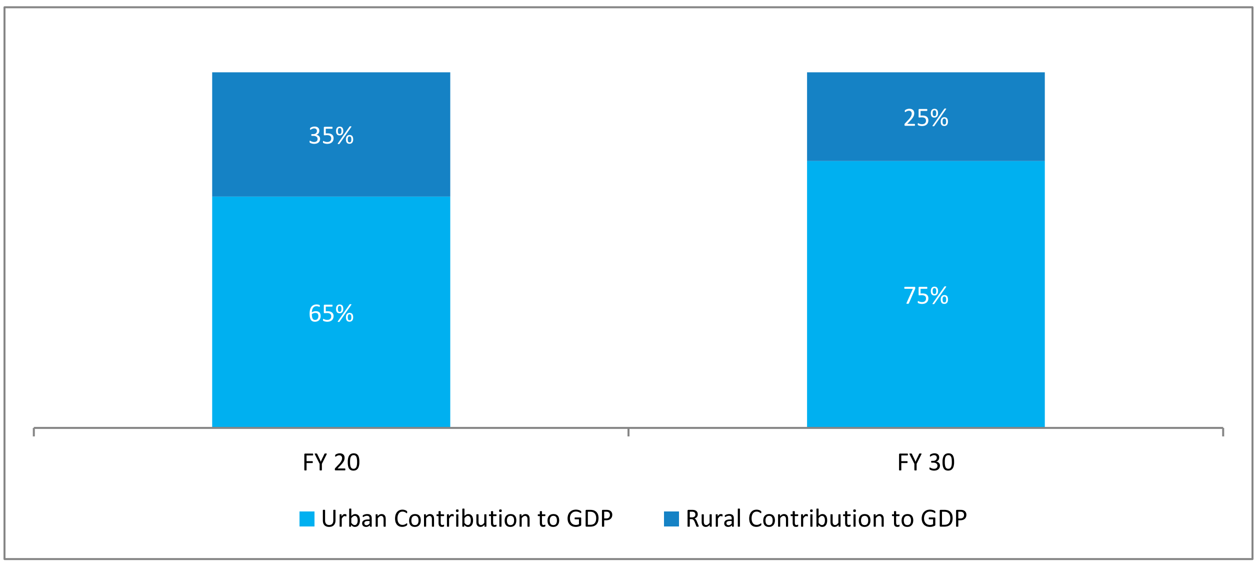
Note: GDP Growth rates are expressed in percentage; E- Estimates. F- Forecast

SOURCE: IMF, October, 2022 World Economic Report

8.4 Importance of Rural Contribution to GDP

India is aiming to become a USD 5-trillion economy by FY 2024-25[1]. The Government's focus towards improving the economic conditions in the rural areas is critical to achieving such an objective. With a 35% contribution to the nation's GDP and backed by a transformative approach from the Indian Government, the rural regions are expected to be major drivers for India's economic rebound. While urbanization is expected to continue gaining traction, rural areas will remain significant in terms of economic contribution, even in FY 2030, with estimates suggesting that by FY 2030, rural areas would still contribute to 25% of the overall GDP in the country[2]. On account of the government's financial inclusion programs, including Pradhan Mantri Jan Dhan Yojana and other direct benefit transfers, providing direct benefits and subsidies to populations in semi-urban and rural areas, people in the rural areas will have more access to banking and ATM services. Owing to such increase in accessibility, cash utilization and circulation in Tier 2 and 3+ towns and cities are expected to grow by FY 2030.

Exhibit 7: Urban and Rural Contribution to India's GDP (FY 2020-30)



Source: Frost & Sullivan, Secondary Sources

a. Financial Inclusion in India

The acceleration of financial inclusion in India over the last decade has been largely attributed to political will, as well as high-impact government initiatives such as the Pradhan Mantri Jan Dhan Yojana (PMJDY), Direct Benefit Transfer (DBT), and the introduction of RuPay cards, among others. To attain its goal of financial inclusion, the government has taken a three-step method. For starters, it has enabled widespread access to banking services by establishing "no frills" accounts for the general public. Second, through efforts such as digital payments and promoting the use of RuPay cards, it has attracted and retained people in the financial system. Third, the Government has concentrated on establishing the essential infrastructure through expanding financial services' reach and accessibility. As a result, the

[1] Livemint, Economictimes

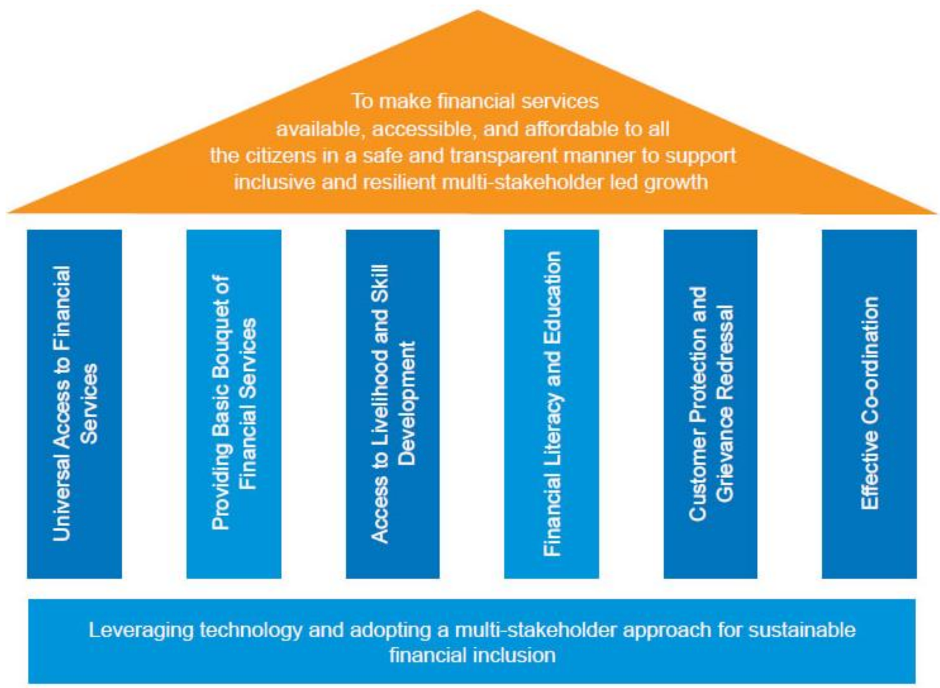
[2] Weforum

country has seen the emergence of a new generation of financial services accessible via mobile phones and the internet.

Other than PMJDY, there are several other financial inclusion schemes in India — Jeevan Suraksha Bandhan Yojana, Pradhan Mantri Vaya Vandana Yojana, Pradhan Mantri Mudra Yojana, Stand Up India scheme, Venture Capital Fund for Scheduled Castes under the social-sector initiatives, Pradhan Mantri Suraksha Bima Yojana (PMSBY), Atal Pension Yojana (APY), Varishtha Pension Bima Yojana (VPBY), Credit Enhancement Guarantee Scheme (CEGS) for scheduled castes, and Sukanya Samriddhi Yojana.

On 07 April 2021, the Reserve Bank of India (RBI) announced that it has constructed a composite Financial Inclusion Index (FI-Index) based on multiple parameters to reflect the broadening and deepening of financial inclusion in the country. The FI Index will be published annually in July for the financial year ending previous March. The annual FI-Index for the period ending March 2022 is 56.4 as against 43.4 for the period ending March 2017 [3]

Exhibit 8: Strategic Pillars of National Strategy for Financial Inclusion



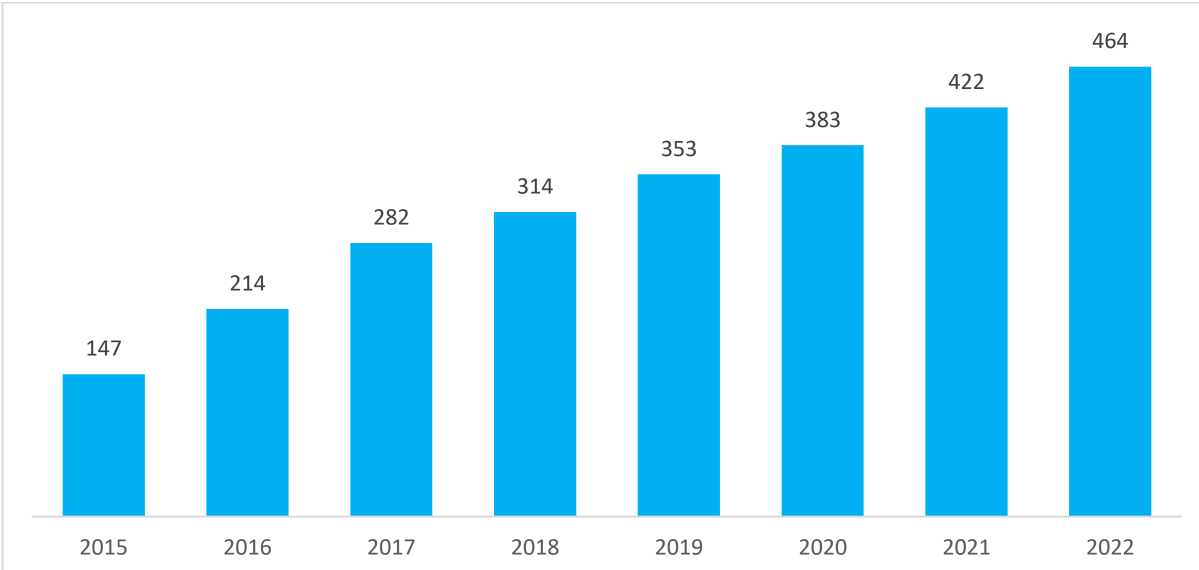
Source: RBI, Secondary Sources

b. Role of PMJDY in Improving Financial Inclusion and Banking Cycle

Pradhan Mantri Jan Dhan Yojana has provided perhaps the most significant boost to financial inclusion initiatives in recent years. It was founded in the year 2015 with the goal of providing no-frills bank accounts to everyone over the age of ten in the country, even in the most rural areas. The introduction of the Aadhaar, a unique identifying number, has also aided financial inclusion in the country. Aadhaar has drastically altered the concept of individual identification, resulting in a secure and easily verified system that is also simple to obtain, assisting in the financial inclusion process.

[3] RBI

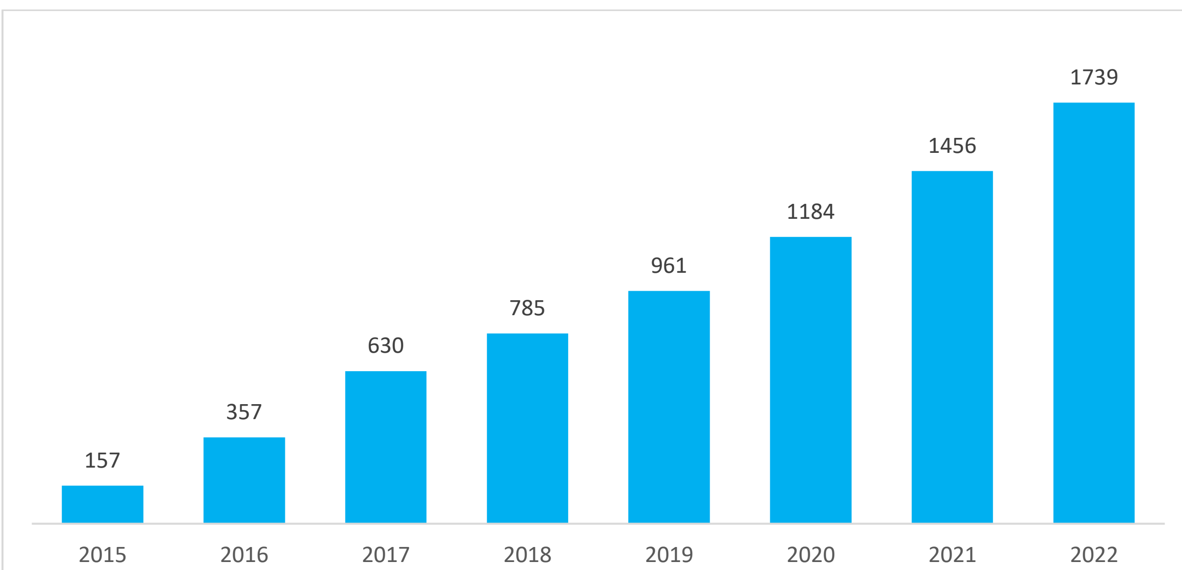
Exhibit 9: Number of PMJD Accounts in India (FY 2015-22), (in INR Millions)



Data published as of August, 2022
Source: Frost & Sullivan, Secondary Sources

As against an average balance of Rs. 1,065 in accounts opened under PMJDY in March 2015, the average balance has grown to Rs. 3,761 as on August 2022 with an overall balance of Rs 1,739 billion[4].

Exhibit 10: Deposits under PMJD Accounts in India (FY 2015-22) (in INR Billions)



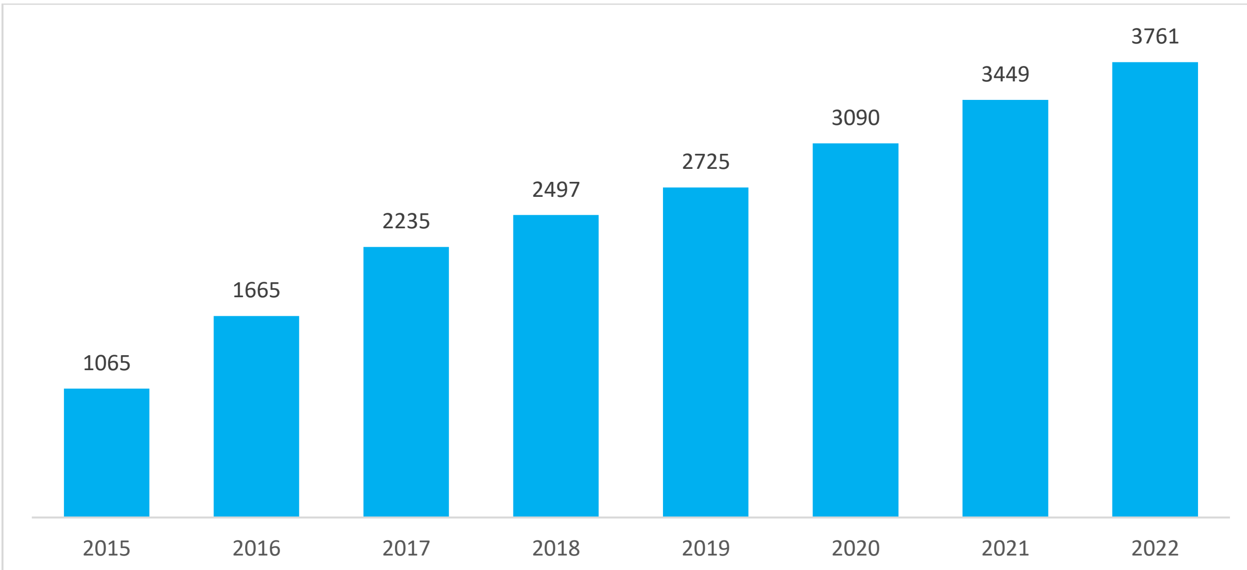
Data published as of August, 2022

Source: Frost & Sullivan, Secondary Sources

[4] PMJDY

A clear indication of PMJDY as a financial inclusion indicator is the rise in the deposit per account that has seen an increase from INR 1065 in FY 15 to INR 3761 in FY 22.

Exhibit 11: Average deposit per PMJD Account in India (FY 2015-22) (in INR)



Data published as of August, 2022
Source: Frost & Sullivan, Secondary Sources

2 Overview of Currency Cycle in India

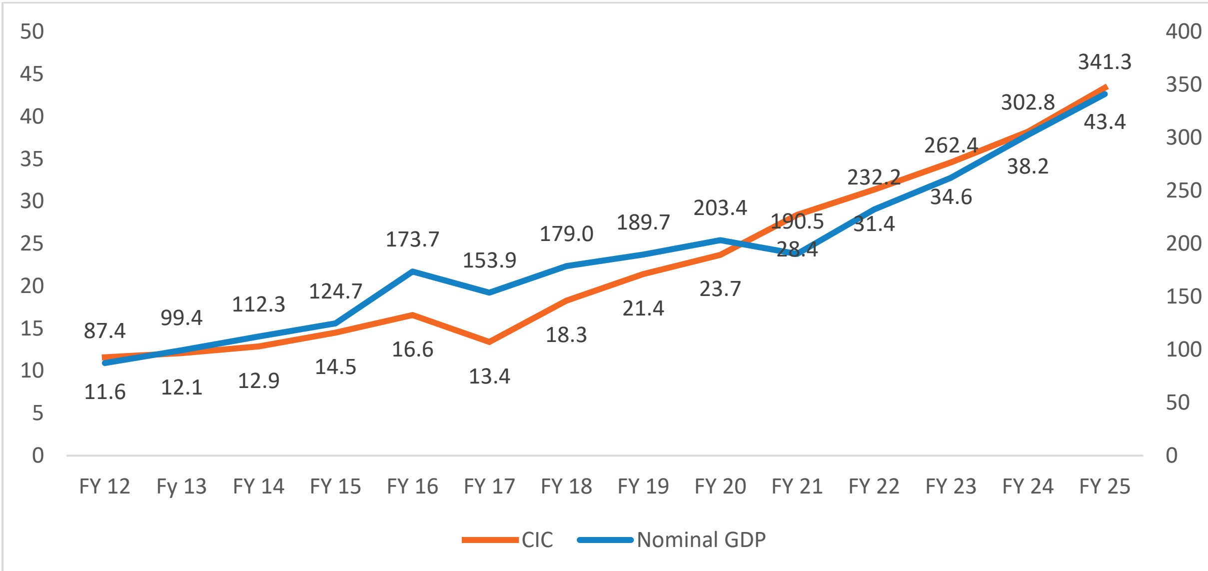
8.5 Currency in circulation (CIC) and its impact on economy

Cash in Circulation (CIC) is the sum of cash held by banks and currency held by the general public. As per the below chart, currency in circulation has been witnessing an increasing trend along with the nominal GDP. In the last decade (FY 12-FY 22), CIC has almost increased three folds (at a CAGR of 10.5%)[5], showing a positive growth rate for the period. A growth in CIC is essential for higher economic activity in the country and augurs well for the companies engaged in cash management industry. While demonetization had a significant impact on CIC, the release of pent-up demand after re-monetization, wealth redistribution, and lower lending rates, led to a v-shaped recovery of the total cash in circulation, which has since then almost doubled (in FY 21). Despite Covid, India's CIC grew by around 32.5% between March 2020 and March 2022[6]. As on October 31, 2022, CIC in India stood at a value of INR 30.8 trillion. CIC is predicted to reach INR 43.4 trillion by FY25, growing at a CAGR of 11.4%.

[5] RBI, Secondary Sources

[6] RBI

Exhibit 12: Nominal GDP vs. Cash in Circulation, (INR Trillion) FY 2012-2025



Data published as of October, 2022
Source: RBI, Secondary Sources

a. Role of RBI in Currency Management & Circulation

The Reserve Bank of India's (RBI) primary responsibility is to manage the issuance of currency notes in the economy and to maintain appropriate reserves in order to ensure the country's financial stability. The responsibility of the RBI in this regard is to establish and implement a regulatory framework in the form of policy for all banking and non-banking financial firms. Except for one-rupee notes and coins, which are issued by the Government of India, the RBI is the exclusive authority for the issue of money in India. The RBI's Banking Department is in charge of issuing currency into circulation and withdrawing it from circulation (i.e., growth and contraction of currency, respectively).

Following are the activities performed under the function of managing currency notes –

- Currency Management
- Currency Distribution
- Coin Distribution
- Exchange of Notes
- Combating Counterfeiting

8.6 Overview of Currency Chests in India

A currency chest is a receptacle in a commercial bank where the Reserve Bank of India stores notes and coins on its behalf. The RBI has given permission to select bank branches to set up currency chests in order to expedite the distribution of notes and coins. There are currently around 2,878 currency chests and

2,296 small coin depots dispersed across the country as of March 2022[7]. In Fiscal Year 2021, the currency chest market was worth over INR 5 billion. The Bank that handles currency chests on behalf of the RBI is mandated to have safety protocols set by the RBI such as the utilization of vaults and safes for effective currency management.

Exhibit 13: Overview of Currency Chests in India, (as on March 2022)

Category	No. of Currency Chest	No. of Small Coin Depot
SBI	1,544	1,291
Nationalized Banks	1,067	832
Private Sector Banks	253	160
Co-operative Banks	5	4
Foreign Banks	4	3
Regional Rural Banks	4	5
RBI	1	1
Total	**2,878**	**2,296**

`Source: RBI
Data published as of March, 2022

The RBI is responsible for issuing, managing, and distributing currency notes and coins in India under the Reserve Bank of India Act, 1934. The currency management process can be explained in the following steps:

- Government of India in collaboration with RBI decides on the denominations of the notes and coins, designing of the notes and the security features for the same.
- The RBI then estimates the quantity of the notes which are needed, denomination wise and places the indent with various presses through government. Then the demand estimation is taken from Indian Statistical Institute which forecasts the demand of currency. And depending on those statistics actual supply of notes as per the denominations is finalized and sent for printing at the designated presses across the country. (Refer to the Exhibit below)

[7] RBI

Exhibit 14: Currency Distribution Types, (Pieces in Millions). FY 2019, 20, 21,22

	2018-19		2019-20		2020-21		2021-22	
Denomination (₹)	Indent	Supply	Indent	Supply	Indent	Supply	Indent	Supply
5				6				
10	3920	4289.2	1470	1470.2	284	284.6	750	751
20	46	209.6	1250	1339	4875	3852	2000	2000
50	4233	4040.1	2400	2343.1	1400	1388.7	1500	1500
100	6330	6407.5	3300	3270.8	4000	3727	4000	4000.2
200	2615	2730.1			1500	1510.6	1200	1199.1
500	11692	11467.9	50	1958.8	10600	11567.2	12800	12800
2,000	47	46.7	14630	11999.6				
Total	**28883**	**29191.1**	**25100**	**22381.5**	**22659**	**22330.1**	**22250**	**22250.5**

Source: RBI, Secondary Sources

- The notes received from the presses are issued and reserved by the RBI offices, which distributes those notes and coins through the specific bank currency chests and coin depots, which are managed by the commercial, co-operative and regional rural banks across the country.
- Bank notes and rupee coins are deposited as well as withdrawn simultaneously in the currency chests on everyday basis to meet the requirement of the bank branch and these types of transactions are called currency transfer transactions.
- Each deposit of currency to the chest reduces the liability and increases the assets of the currency chest. Notes in circulation being the liability of RBI, is adjusted against its asset-liability position centrally for such expansion or contraction.
- Similar process is followed by the authorized coin depots, which are established with certain bank branches. Small coins are minted in government owned mints and issued by Government of India and are distributed by RBI as an authorized agency of the Central Government.

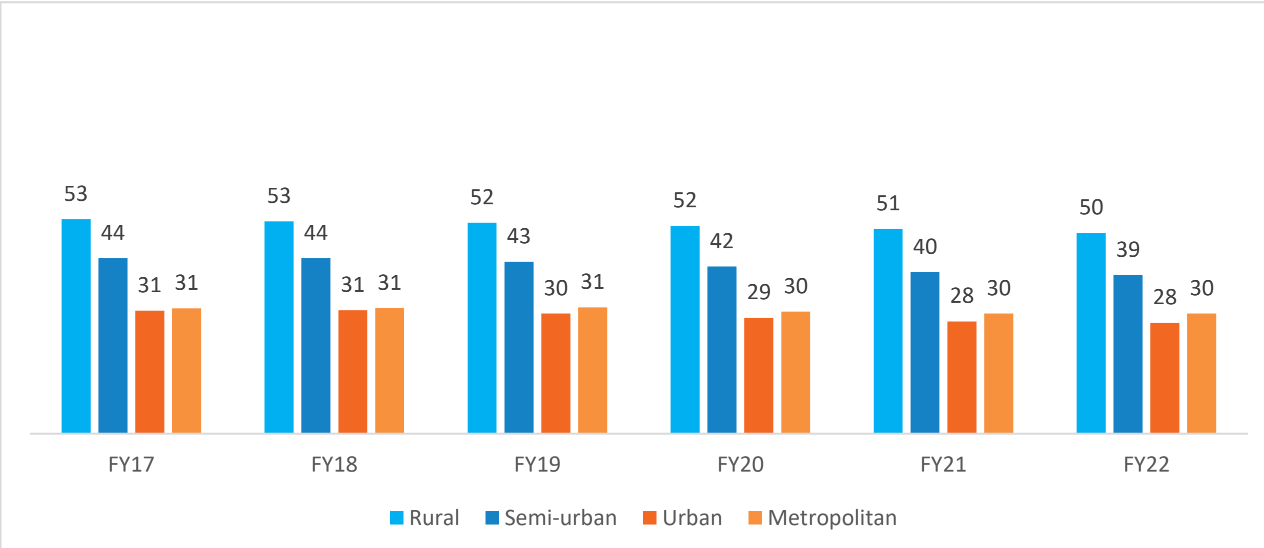
8.7 Growth of Bank Branches in India

The last 5 years have witnessed a growth of 1.8% in the number of branches of SCBs across the country[8]. The increase in branches, especially in rural and semi-urban areas has been an enabler for instilling banking practices in these areas. The RBI anticipates the Indian banking sector's financial performance to improve progressively in the short term, owing to the country's strong economic growth and regulatory

[8] RBI data

leniency in the face of pandemic-related stress.Also The performance of Indian non-bank financial institutions (NBFIs) should be boosted by a stronger economy and expanded government support.

Exhibit 15: Number of Bank Branches (in 000s), FY 2017-22

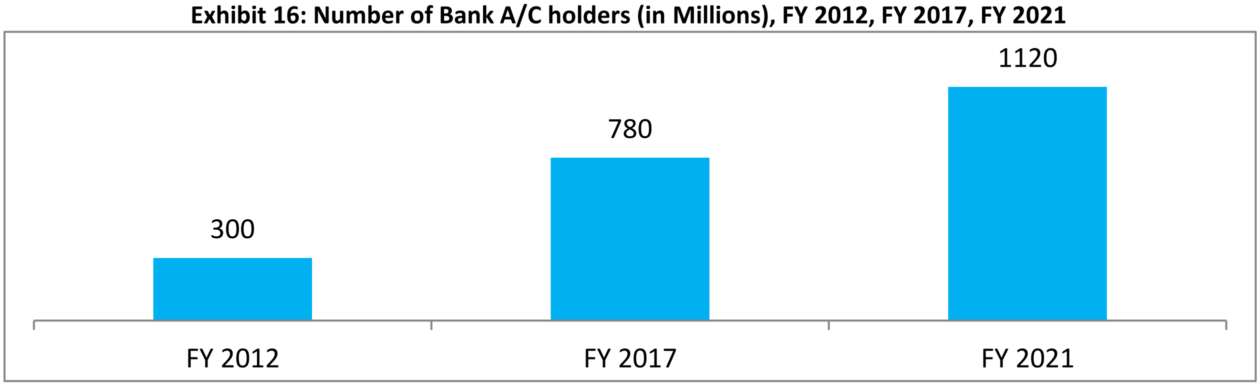


Data as of March, 2022
Source: RBI, Secondary Sources

8.8 Total Bank Account Holders in India

Nearly 80%[9] of Indians now have a bank account, the same proportion that has a mobile phone. Between FY 2012 and FY 2021*, the number of bank account holders has increased from 300 million to 1.1 billion. The financial inclusion measures taken by the Government in the form of PMJDY is one of the key reasons for the high growth rate for bank accounts in the country.

Exhibit 16: Number of Bank A/C holders (in Millions), FY 2012, FY 2017, FY 2021



Note:
Source: RBI, Secondary Sources

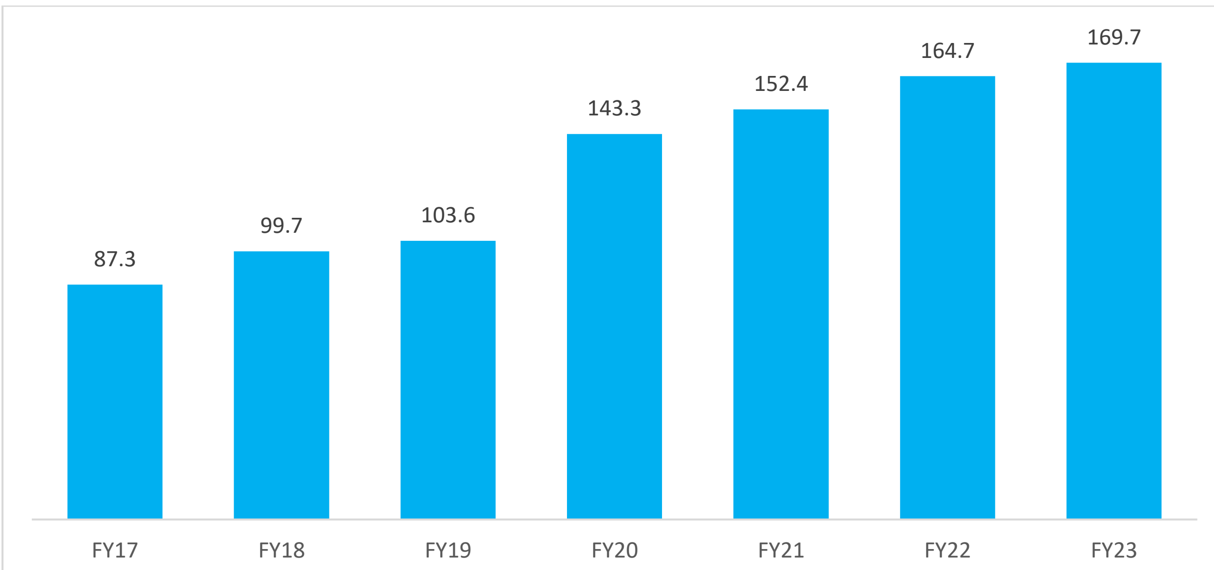
* *Data as of March, 2022*

[9] Economictimes

8.9 Growth in Bank Deposits

India's banking sector has remained stable despite global upheavals, thereby retaining public confidence over the years. Strong growth in savings amid rising disposable income levels are the major factors influencing deposit growth. The Indian banking sector has shown a significantly healthy performance after the impact of Covid-19. According to the government's Economic Survey presented in Parliament on Jan. 31, 2022, the gross nonperforming loans ratio of India's scheduled commercial banks fell to 6.9% at the end of September 2021, down from 7.5 percent the previous year. Over the same year, banks' aggregate capital to risk-weighted asset ratio, or CRAR, increased to 16.54 percent from 15.84 percent, owing to improvements at both state-owned and private-sector banks.

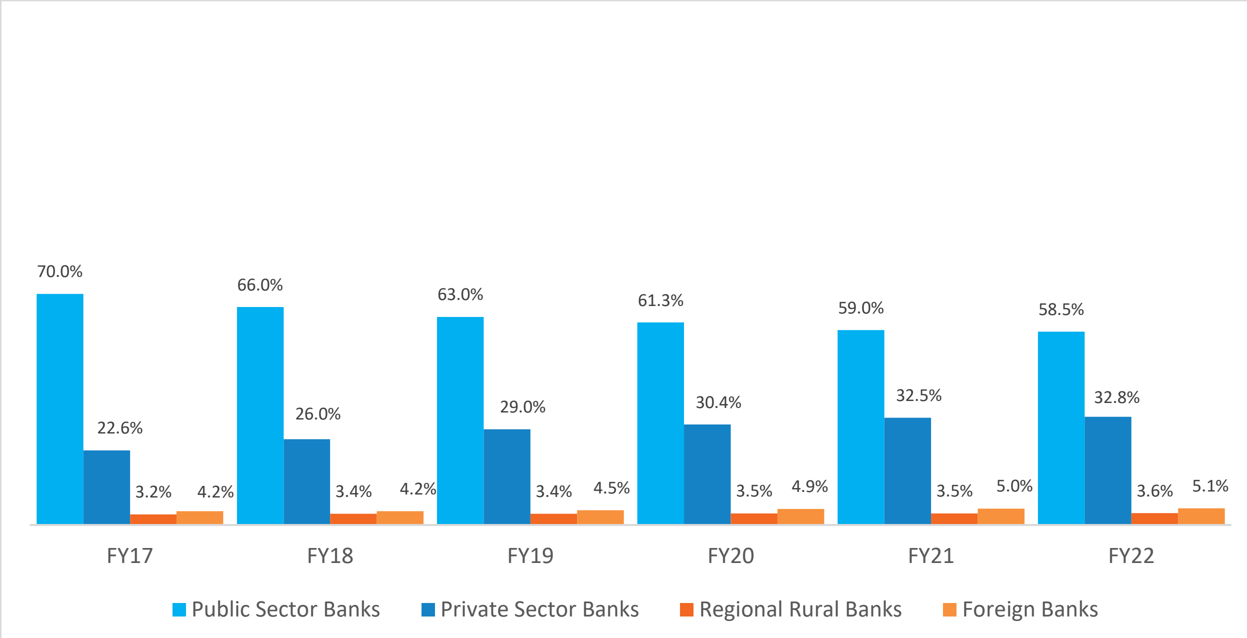
Exhibit 17: Growth in Bank Deposits (in INR Trillions), FY 2017-23



Source: Frost & Sullivan, Secondary Sources

In terms of deposits, the gap between public and private sector banks has decreased dramatically in the last five years. Several new licenses have been awarded to private players throughout this time. The RBI attributes the decline in public sector banks' market share in the last five years to the ballooning of bad loans. The PSBs have been steadily losing market share to private banks over the last five years, a trend that has accelerated. The fundamental cause for this has been PSBs' ailing balance sheets because of the post-global financial crisis non-performing asset (NPA) overhang.

Exhibit 18: Split of Bank Deposits, by Bank Type (in %), FY 2017-22

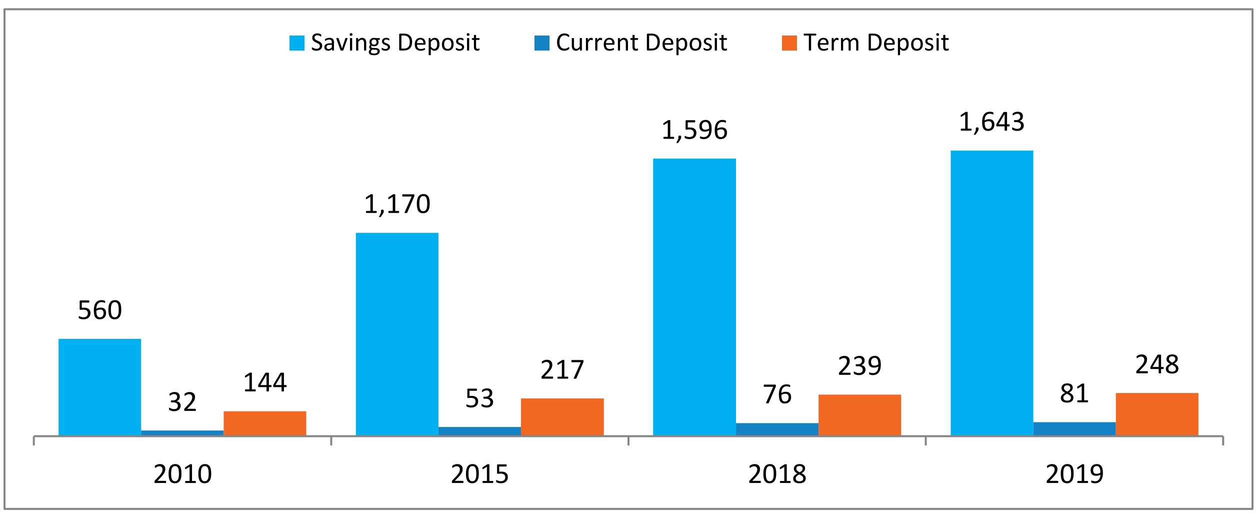


Source: Frost & Sullivan, Secondary Sources

8.10 Distribution of Deposit Accounts

The number of deposit accounts grew at a CAGR of 12% between FY 2010 and FY 2019, with savings accounts contributing to an equal growth rate (12%). The rising working population and the PM's Jan Dhan scheme have contributed largely to the growth in deposit accounts.

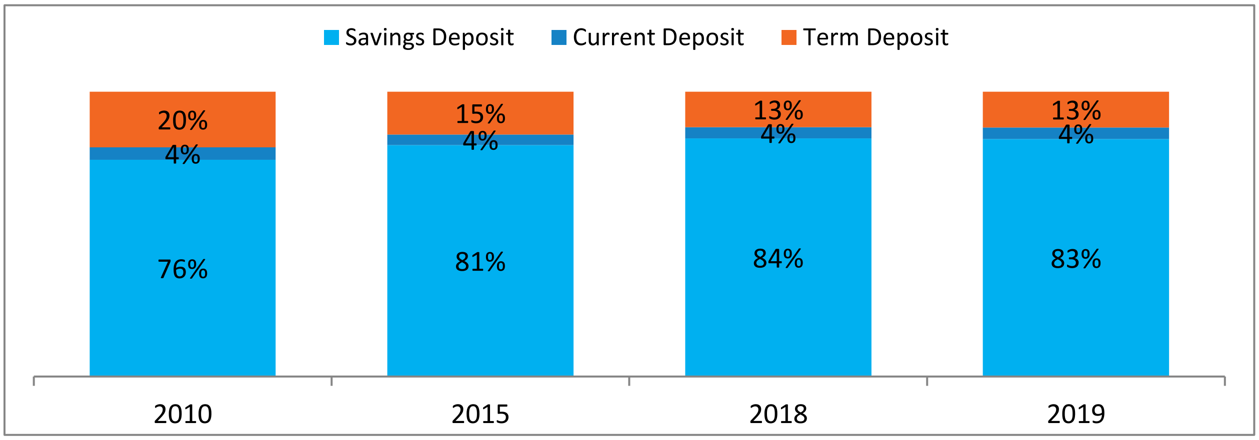
Exhibit 19: Distribution of Deposit Accounts (in Millions), FY 2010, FY 2015, FY 2018, FY 2019



Source: Frost & Sullivan, Secondary Sources

Savings account contributes to a major share of all deposit accounts rising from 76% in FY 2010 to 83% in FY 2019. Term deposits accounted for 20% of the total deposit accounts in FY 2010 and held a share of 13% of the total deposit accounts in FY 2019. Current deposit accounts remained at a same share of 4% of the total deposit accounts over the period from FY 2010 to FY 2019.

Exhibit 20: Deposit Accounts (as % of Total Deposit Accounts). FY 2010, FY 2015, FY 2018, FY 2019

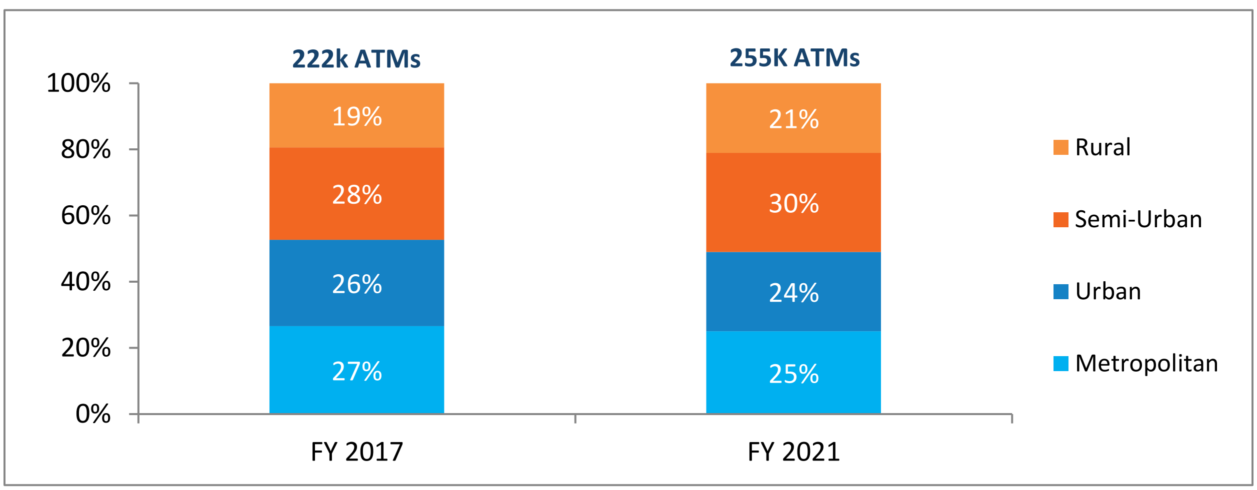


Source: Frost & Sullivan, Secondary Sources

8.11 ATM Penetration in India – By Geographical Mix

In India, urban areas have disproportionately higher ATM penetration than rural areas. For example, rural areas account for 65 percent of the population, yet only 51 percent of ATMs are located in semi-urban and rural areas, with the balance concentrated in metropolitan districts. In rural and semi-urban parts of India, the existing demand-supply mismatch presents a high potential for the banking industry. Due to the rapid growth in Jan Dhan Yojana accounts and RuPay cards, millions of rural consumers now have a debit card and a bank account, yet many lack basic infrastructure such as an ATM to successfully use them. Such drivers are expected to contribute to the growth of ATMs in the rural regions in India.

Exhibit 21: ATM distribution by Geo mix, FY 2017-2021

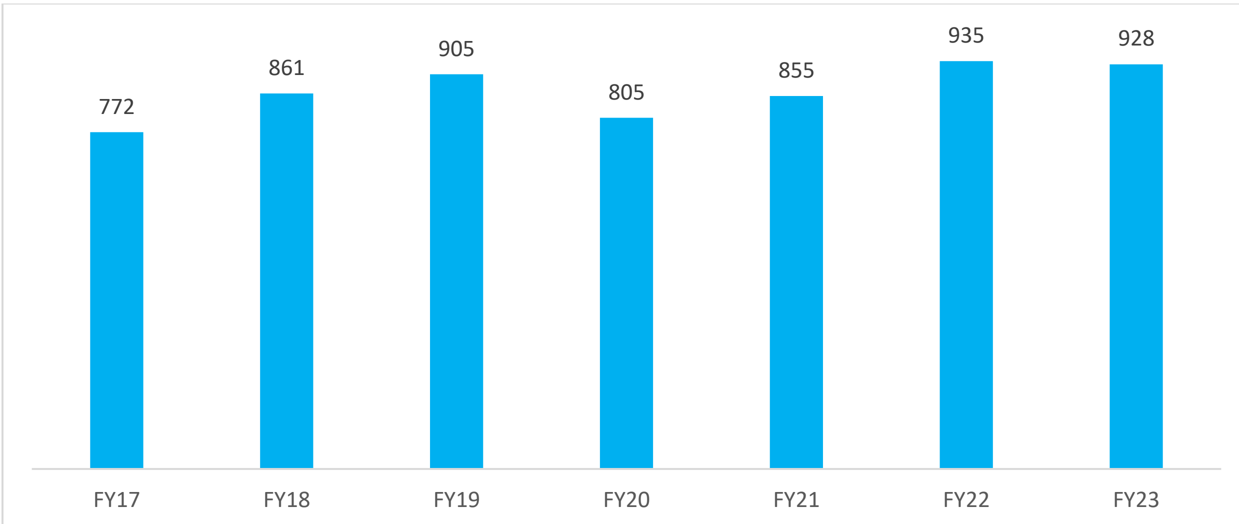


Source: RBI

8.12 Debit Card Penetration in India

Post the demonetization phase, the usage of debit cards increased significantly, but saw a decline in growth in FY 20, owing to the RBI's directive to banks to replace obsolete magstripe debit and credit cards with the more secure, chip-based EMV cards. While COVID-19 presented a challenge in utilizing debit cards, due to lockdowns, the number of debit cards have once again started to increase as the nation is recovering back to normal economic levels and people are increasingly making use of debit cards for transactions.

Exhibit 22: Debit Cards Issued in India (in Millions), FY 2017-2023

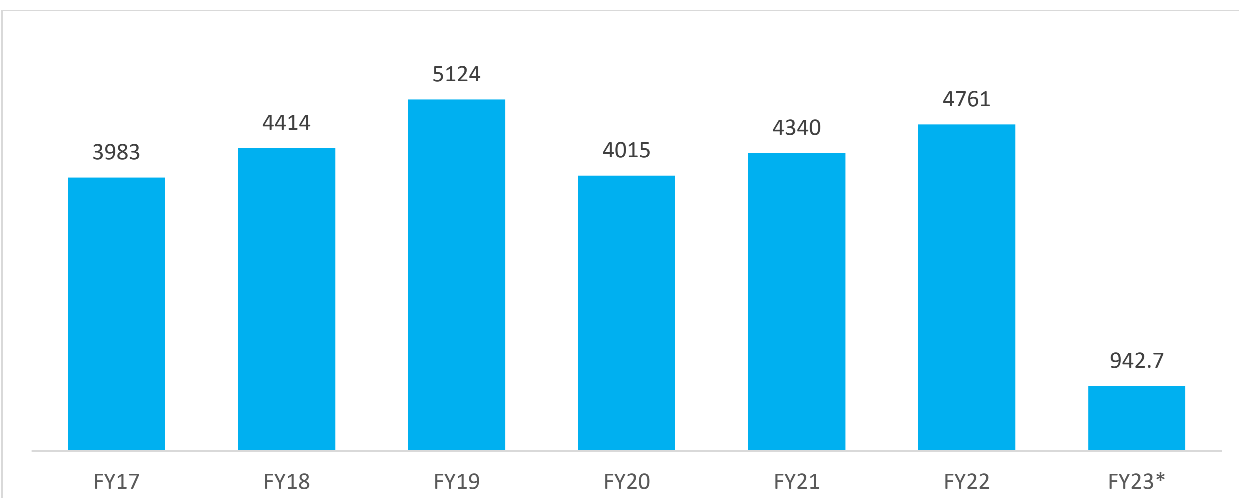


Data as of July, 2022

Source: RBI, Secondary Sources

The adverse effect of the COVID-19 pandemic on various sectors of the Indian economy, including auto, electronic and consumer durables, hotels and restaurants, physical retail stores, non-essential e-commerce, tourism and hospitality, had slowed the rise of debit card transactions during the initial phase of COVID-19 in FY 2020. However, consumer spending has begun to rise since then, and has reached pre-COVID-19 levels by the end of fiscal year 2022.

Exhibit 23: Debit Card Transactions by Volume (in Millions), FY 2017-23

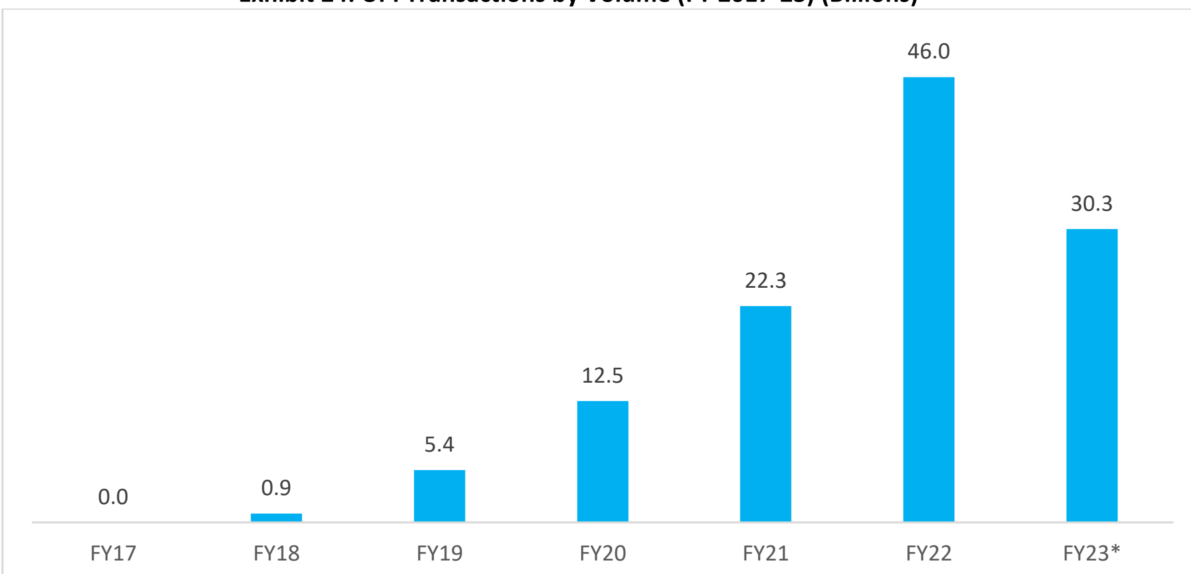


Data represents the transaction volume for Q1 (April – June), FY2022-23
Source: NPCI, Secondary Sources

8.13 Growth of UPI Transactions

The number of transactions processed over the Unified Payments Interface (UPI) more than doubled in a year, reaching 46 billion in FY 22, up from 22.3 billion in FY 21. UPI transactions increased by double digits during the lockdown months as the pandemic spread and customers began to prefer digital payments. The increase in UPI transactions could also signal resurgence in business activity following the pandemic-induced lockdowns. In August 2022, UPI achieved another significant milestone—it processed 6 billion transactions for the first time, according to the National Payments Corporation of India (NPCI). In FY23, at the end of August, UPI has recorded over 30 billion transactions worth Rs 51.74 trillion so far. The next target for UPI is to process a billion transactions a day in the next 3-5 years.

Exhibit 24: UPI Transactions by Volume (FY 2017-23) (Billions)



Note:

FY 23 Data as of August, 2022

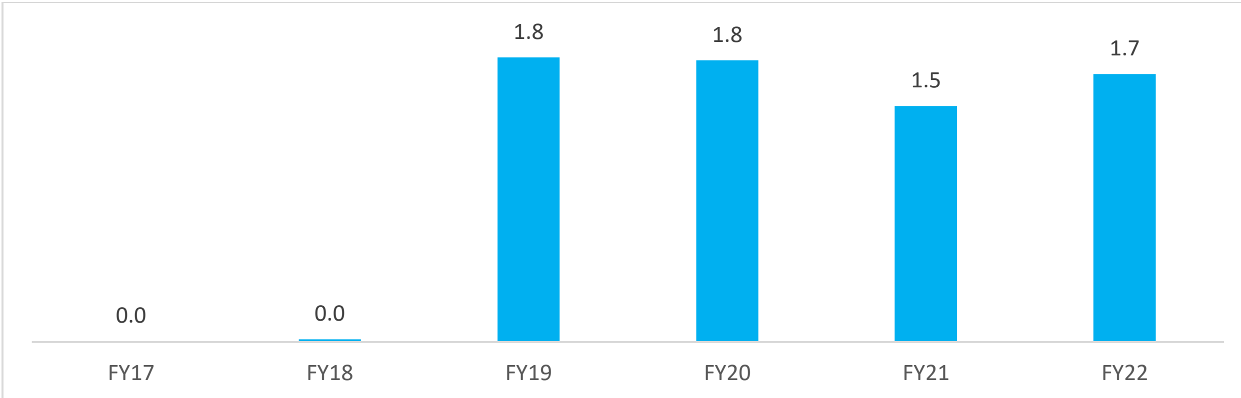
Source: NPCI, Secondary Sources

8.14 Cash as the Leading Transaction Medium in India

8.15 Growth of Mobile Wallet Transactions

Like UPI payments, mobile wallets have gained significant traction in India, predominantly owing to the affordability and increase in penetration of smartphones. The COVID-19 pandemic has accelerated the mobile wallet payment system, as mobile payment has emerged as one of the few areas in the payments industry where the pandemic has had a positive impact. This trend will be accelerated by increased smartphone adoption, extensive QR code infrastructure, the advent of instant payments, and rising consumer and merchant preference for electronic payments.

Exhibit 25: Mobile Wallet Transactions by Value, INR Trillions, (FY 2017-22)



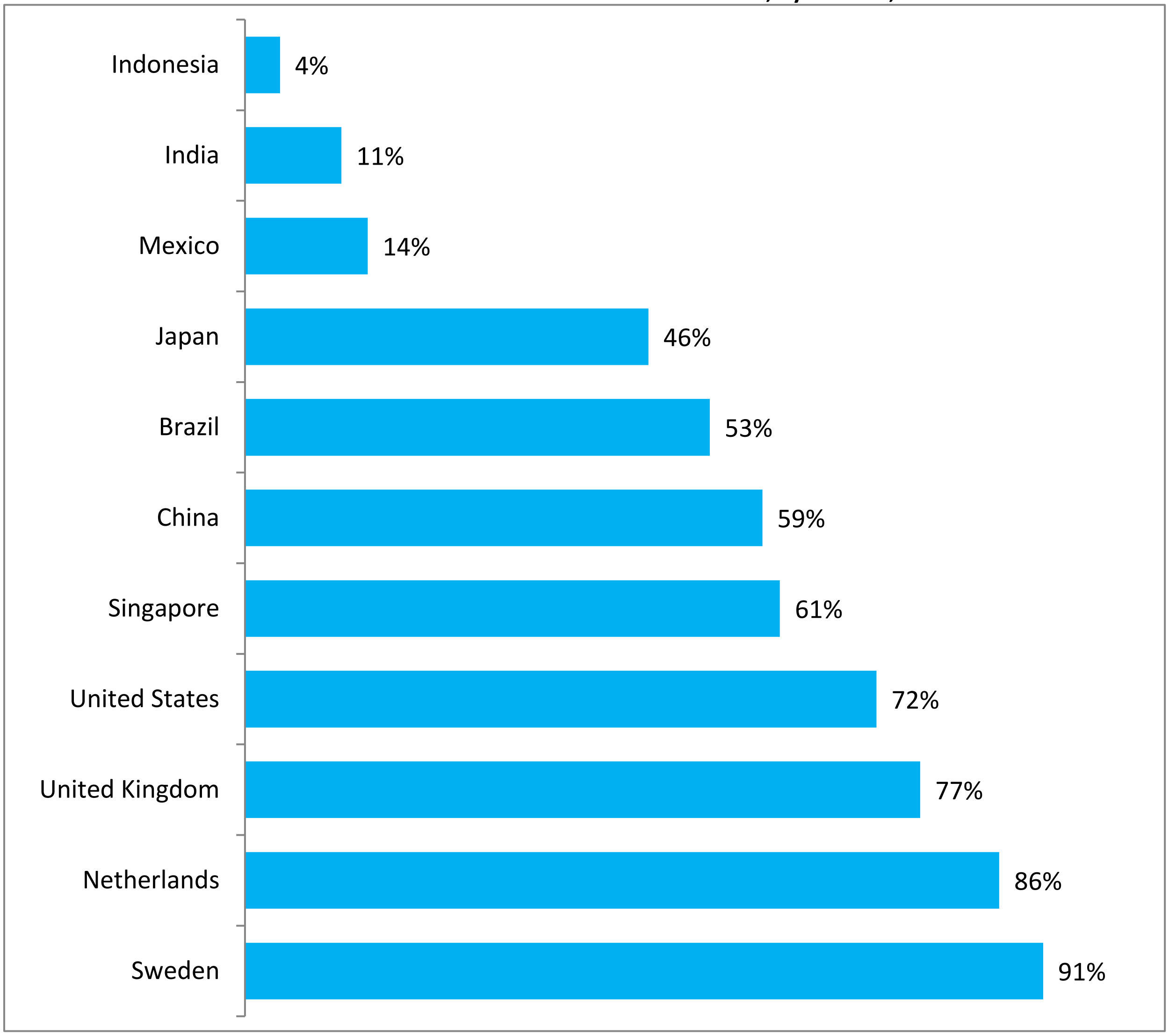
Data as of March, 2022

Source: NPCI, Secondary Sources

3 Importance of cash as a medium of Transaction in the Indian economy

In comparison with countries that have transitioned into a non-cash method for payments and other transactions, India is still highly reliant on cash as witnessed by the fact that of the total transactions made in the country, only 11% are non-cash related transactions. While Government initiatives such as financial inclusion and digital banking etc. are focusing towards a cashless economy, the country is still a long way from being non-reliant on cash, at least for a foreseeable future.

Exhibit 26: % of Non-Cash Transactions across Countries, by Volume, CY 2020



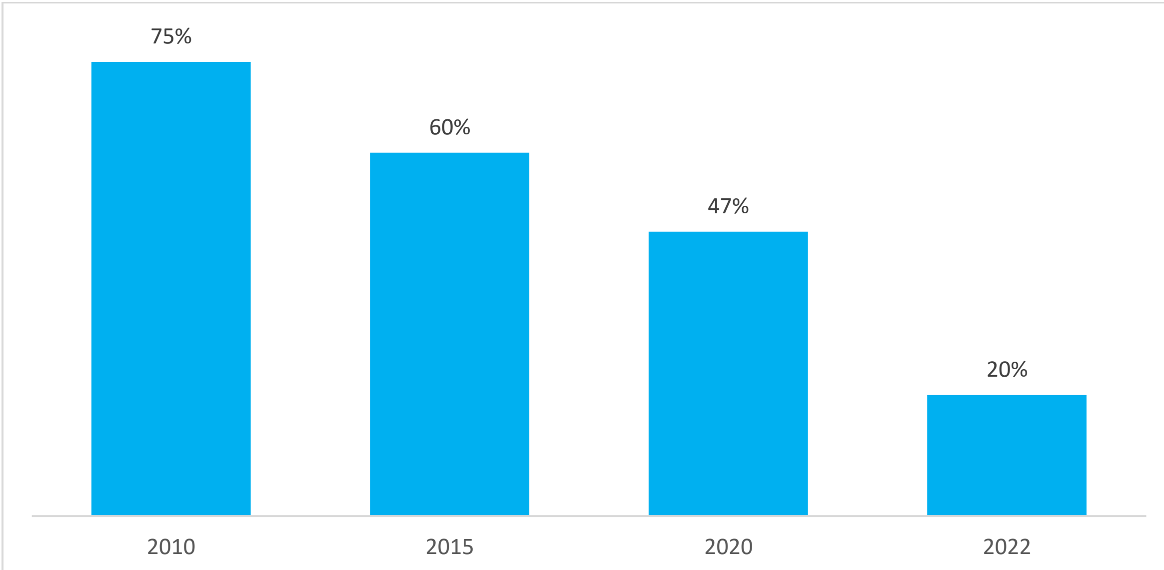
Source: Frost & Sullivan, Secondary Sources

Regardless of the effects of Demonetization and Covid, cash remains the most preferred mode of payment when compared to alternative payment options. While digitalization attempts have resulted in an increase in card and UPI payments, cash payments are likely to continue to dominate, with 61 percent of transactions conducted via cash by FY 2025[11].

8.16 Importance of Cash in the Indian Context

Cash is still a common and widely accepted payment option in India, which has been a cash economy for decades. While the government's efforts to raise awareness about digital payments, as well as banks' ongoing efforts to register merchants to join the digital payments ecosystem, have resulted in an increase in the number of digital transactions, cash remains the preferred mode of transaction in India because of its convenience for citizens in semi-urban and rural areas. It is the bedrock of daily life due to a lack of alternatives, widespread acceptance, and low transaction costs.

Exhibit 27: Contribution of India's GDP by the Informal Economy, in %, FY 2010, FY 2015, FY 2020, FY 2022



Source: Economictime

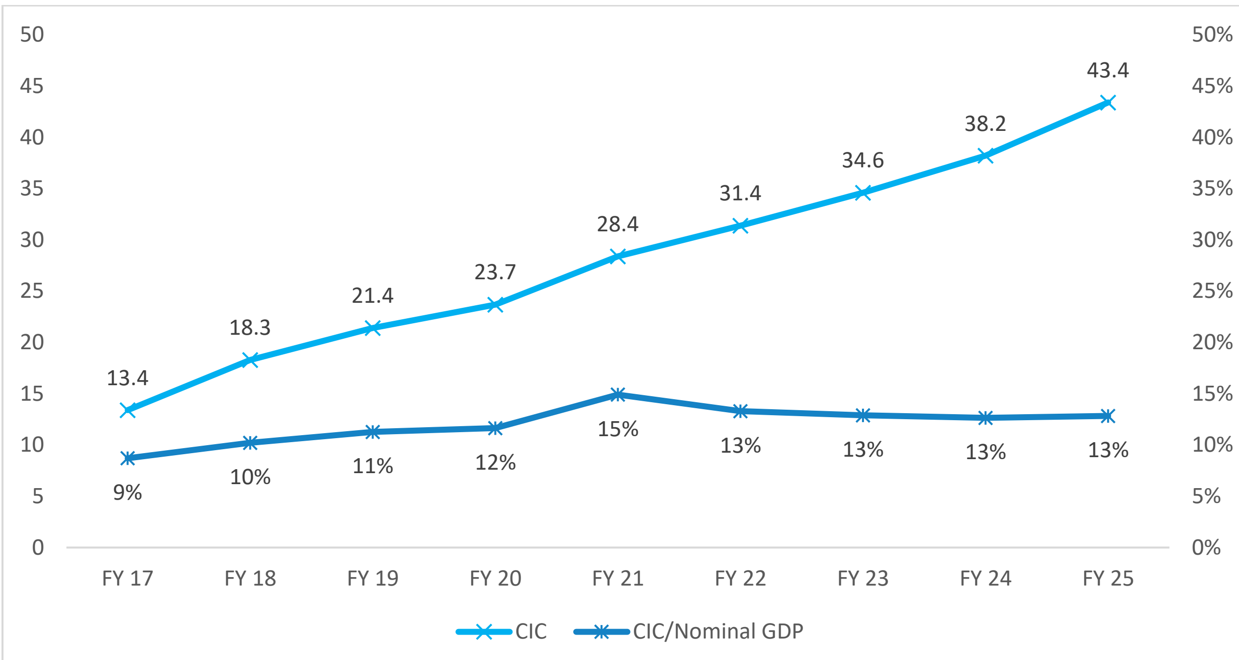
- Lower-income groups, tier3+ cities, and a large number of micro and small businesses that exclusively accept cash account for 70% of India's consumption.
- The currency-to-bank-deposit ratio increased from 16.3% in FY 21 to 17.5% in FY 22 compared to 15% on a decennial basis[10].
- Cash consumption is closely linked to the growth of the informal economy, and this is a major reason for India's continued reliance on cash (the informal economy contributes 15-20% percent of GDP).
- Rural areas are seeing a surge in cash withdrawals, showing a reliance on cash and cash as the engine of economic growth. This, in turn, helps to increase financial inclusion by expanding banking services' reach, particularly in semi-urban and rural areas.
- Cash also has some inherent advantages over other forms of payment, particularly for small-value transactions (e.g., store of value, availability, legal tender, etc.) and continues to account for 40% or more of all transactions (by value) even in advanced economies with well-developed digital payment infrastructure.

[10] Financialexpress

8.17 Cash in Circulation & Comparison with Nominal GDP

The Government of India expects nominal GDP to grow at a healthy 12%[11] in the long run (8% real growth with 5% inflation), which is positively related to CIC, due to strong macroeconomic fundamentals. CIC is expected to reach 50 trillion rupees by FY 2027[12]. As of October 31, 2022, CIC in India stood at INR 30.8 trillion. Long-term statistical association has yet to be shown conclusively in order to prove that CIC will decrease with the increase in digital payments.

Exhibit 28: Growth of cash in circulation (CIC in INR Billions), FY 2017-25



Data as of March, 2022
Source: RBI, Secondary Sources

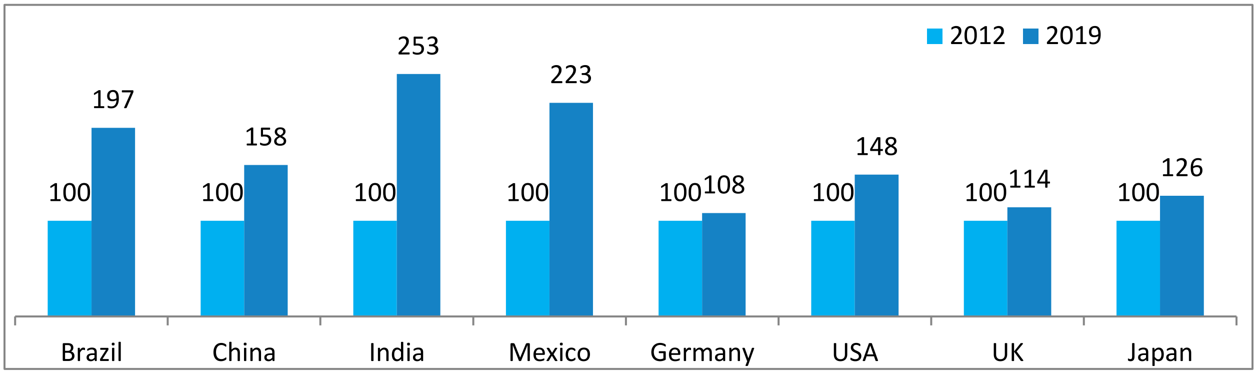
8.18 Benchmarking of Volume of Cash in Circulation with Other Countries

CIC has increased on a per capita basis in both developing and developed markets, despite the rise of digital payments. Regardless of whether digital payments are used, CIC has expanded in emerging and developing countries in lockstep with GDP growth. Cash is widely used over the world because of its importance in financial sovereignty, as a safe fallback option, and so on. Low interest rates (expected to encourage borrowing-led investment to raise GDP following COVID) will cut the opportunity cost of retaining capital, which will drive CIC.

[11] Businesstoday.in

[12] RBI

Exhibit 29: Benchmarking of cash in circulation per capita with other countries (adjusted for PPP), CY 2019



Note: Base year is 2012, which is nominated to 100

Source: Frost & Sullivan, Secondary Sources

8.19 Impact of Macroeconomic Disruptions on CIC

During the demonetization phase, the government announced the removal of INR 500 and INR 1,000 notes from the economy which almost constituted 86% of the cash in the economy. This had a huge impact in reducing the cash in circulation and increasing the number of non-cash transactions such as credit and debit cards, mobile wallets, mobile banking and UPI in the economy. But there was a strong bounce-back post the demonetization (By the end of FY 2017, almost 82% of the currency was remonetized[13]) phase as witnessed by a growth rate similar to that of pre-demonetization levels[14].

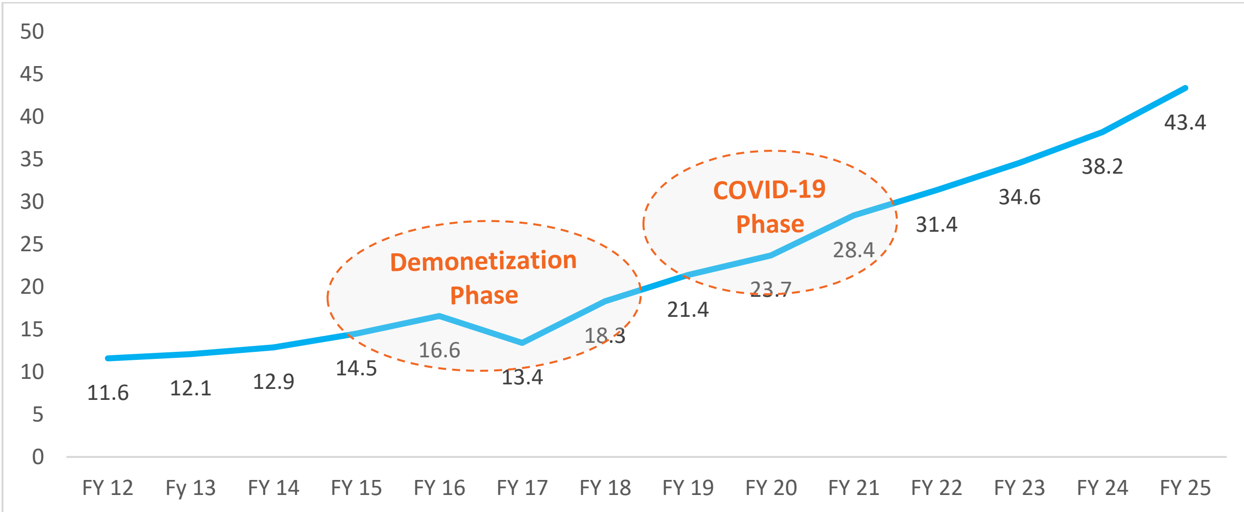
While COVID-19 presented as another macroeconomic disruption to the economy, subsequent lockdowns and the general cautious approach of the public towards hoarding cash for future transactions and to meet unprecedented demands, saw an increased use of cash payments and the high volume of cash withdrawals also led to an increase in CIC. CIC in India has grown at approximately 10-12% year-on-year over the last 10 years to reach INR 31.4 trillion in FY 22. India's CIC/GDP ratio in FY 2021, which stood at ~ 15%[15], is the country's largest since Independence.

[13] Financial Express

[14] RBI data, Frost & Sullivan Analysis

[15] RBI

Exhibit 30 : Growth of CIC & Impact of Macroeconomic Disruptions, INR Trillions, FY 2012-2025,

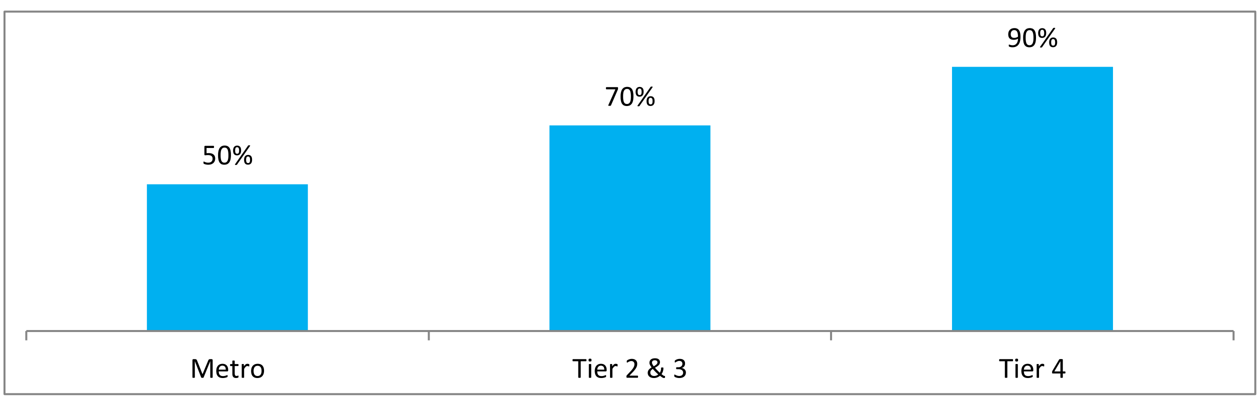


Data as of March, 2022 *Source: RBI, Secondary Sources*

8.20 Importance of Cash Payments in Smaller Cities

An important indicator of rising cash transactions is the prevalence of Cash on Delivery (COD) as a medium for making payments. In India, COD is the most popular way of payment for e-commerce retailers. COD accounted for more than 60 percent of all e-commerce payments in FY 2022[16], demonstrating the importance of cash in terms of payments, which is expanding as a result of expansion into Tier 2 to 4 cities. As we travel from metros (50 percent COD) to lower tiers such as tier 2 (70 percent COD) and tier 4 regions (90 percent COD), the share of COD payments increases. As e-commerce penetration rises in these lower tiers, the percentage of COD payments is likely to rise in lockstep.

Exhibit 31: COD as % of E-commerce Transactions, By Tiers (FY 2020)



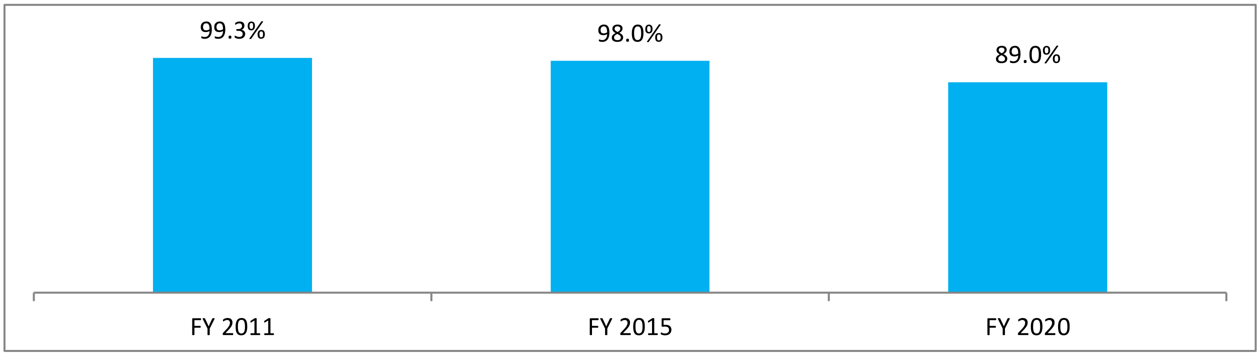
Source: Frost & Sullivan

[16] FortuneIndia, Frost & Sullivan

8.21 Cash intensity in India

Despite a growth in digital transactions, cash still accounts for the majority of payment transactions (at point of sale) in India. In FY 2020, approximately 89[17] percent of all transactions in India by volume were cash-based, down from 99.3% in FY 2011. While new payment methods have begun to compete with cash, a considerable section of the country still prefers cash.

Exhibit 32: Cash Transactions by Volume of Total Transactions (FY 2011, FY 2015, FY 2020), (%)

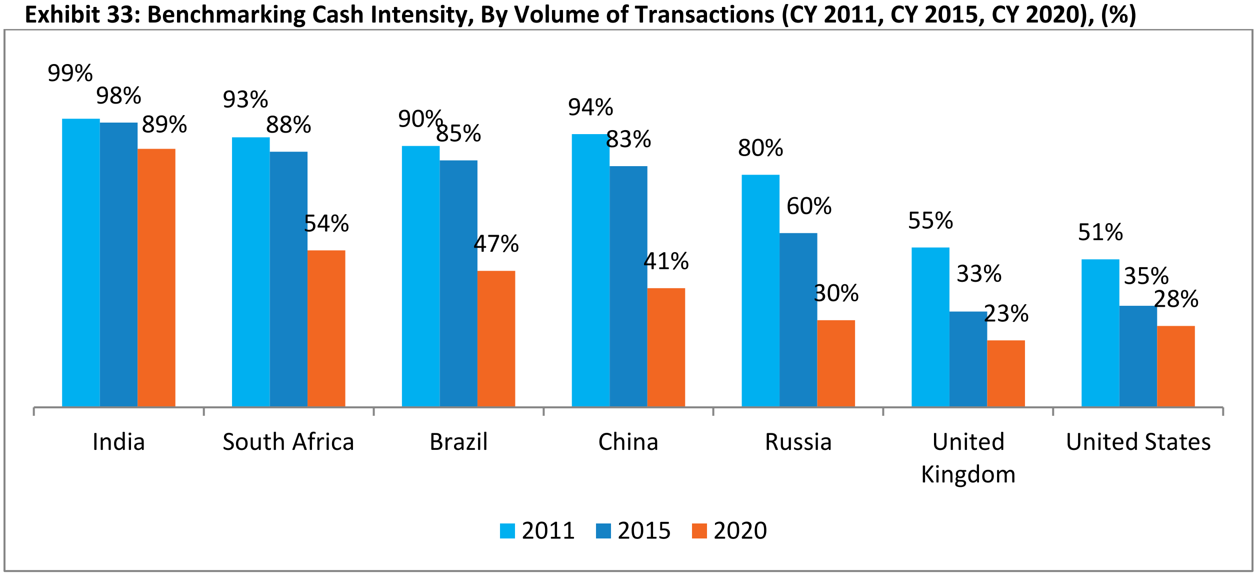


Source: Frost & Sullivan, Secondary Sources

8.22 Benchmarking Cash Transactions as % of Total Transaction Volume

In comparison with the other BRICS nations, the percentage of cash transactions by volume is highest for India, standing at 89% in CY 2020. While most of the other countries have had a significant increase in digital transactions/cashless payments, India still remains a cash-dominant country when it comes to consumer transactions. While digitization has made a dent in the overall cash transactions, the Indian consumers continue to prefer using cash transactions for a variety of reasons including convenience, ease of use and exactness associated with cash as a mode of transaction.

Exhibit 33: Benchmarking Cash Intensity, By Volume of Transactions (CY 2011, CY 2015, CY 2020), (%)



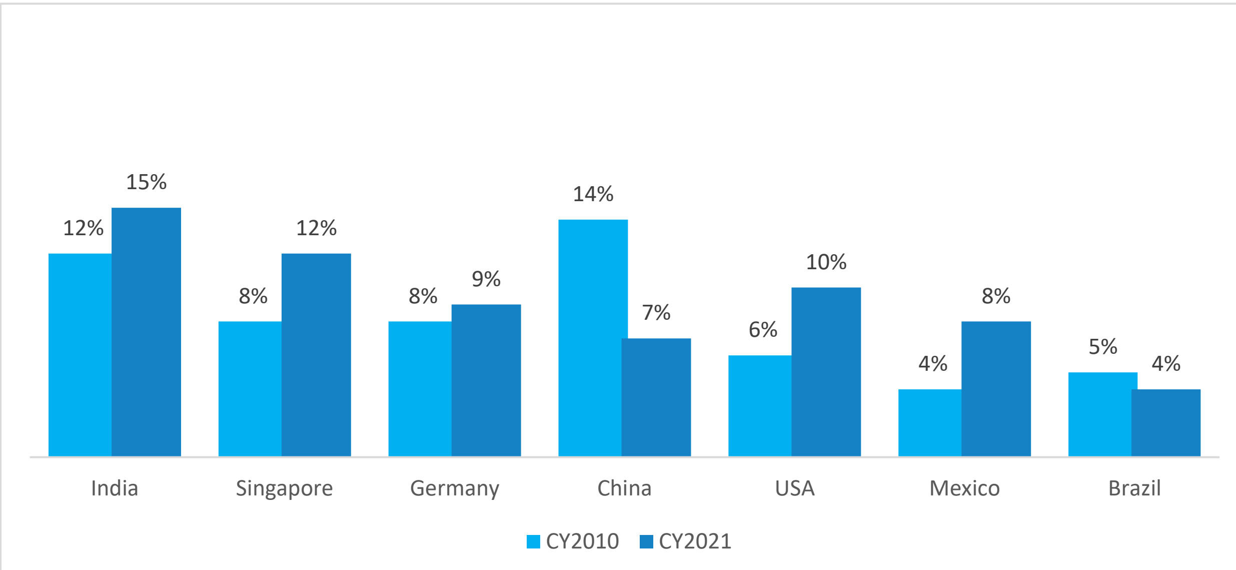
Source: Frost & Sullivan, Secondary Sources

[17] Cashmatters, Moneycontrol, Frost & Sullivan

8.23 CIC to GDP ratio across major economies

Despite greater use of digital payments, the CIC to GDP ratio has increased in most major economies during the recent decade. Despite the rise of digital payments, the CIC to GDP ratio has climbed by 3 to 5 percentage points in emerging and developed nations. In comparison to other major developed and developing economies, India has one of the highest CIC to GDP ratios (at 12 percent).

Exhibit 34: CIC to GDP Comparison (in %), CY 2010 – CY 2021



Data as of December, 2021

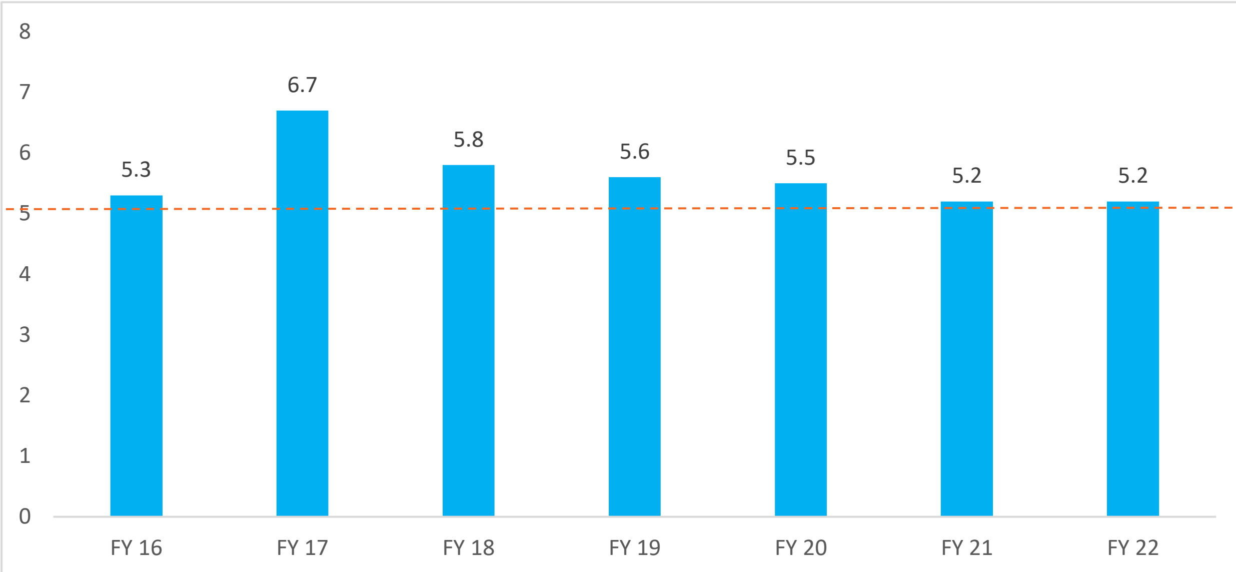
Note: China is an exception owing to the country's aggressive central bank actions. However, CIC has grown in China at approximately 5% in absolute value.
Source: Frost & Sullivan, Secondary Sources

8.24 Money Multiplier Ratio

Banks can increase the money supply in the financial system by expanding loans from the deposits they receive. Commercial banks receive deposits, which are included in base money. Banks produce money by extending loan and check operations after receiving deposits. Through deposit acceptance and loan disbursal, the banking sector can generate additional money impact. The money multiplier is the factor by which the banking system can grow deposits received in the form of base money into broad money. Money multiplier, in a practical sense, indicates the percentage of broad money(M3) to base money (M0 – which is the sum of Currency in Circulation and Bankers' Deposits with RBI).

The Indian government's financial inclusion objective has resulted in an increase in the number of bank accounts. As a result, more money is being saved and deposited in banks. Furthermore, banks have been able to transform RBI money more efficiently into money for commercial activity in the economy. This has cumulatively led to the money multiplier ratio holding a ratio of over 5.0 historically.

Exhibit 35: Money Multiplier Ratio, FY 2016-22

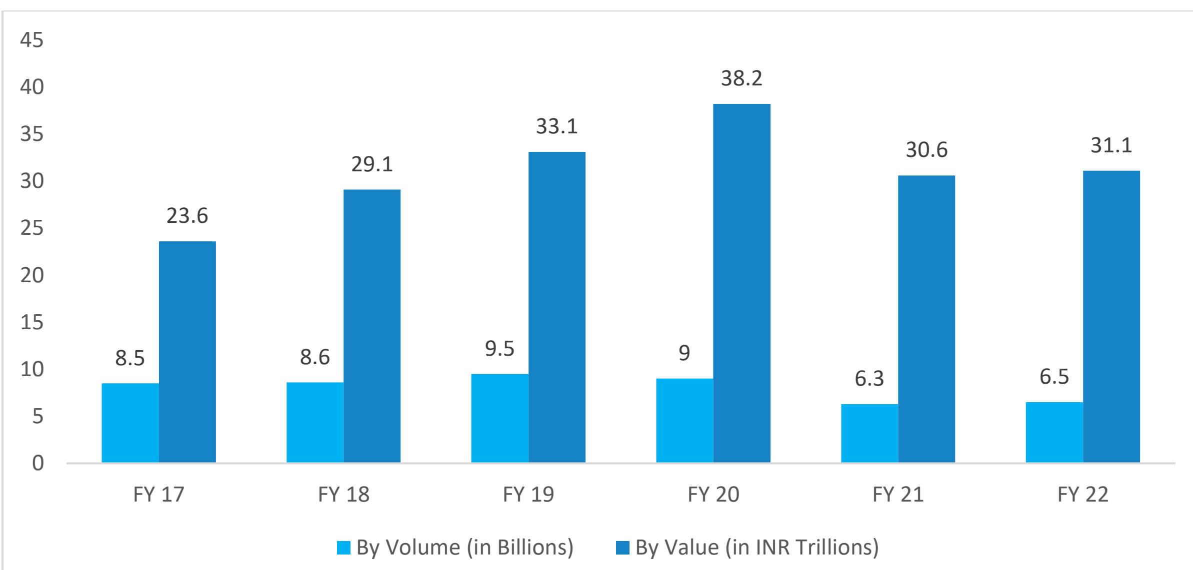


Data as of March, 2022 *Source: RBI, Secondary Sources*

8.25 ATM Transactions (By Volume and Value)

Between FY 2017 and FY 2022, ATM transactions by value grew at a CAGR of 5.7%. The COVID-19 issue has had a substantial impact on the economy, and the decreased disposable incomes and consumer expenditures resulted in a lower transaction volume in FY 2021. With the gradual economic recovery in in the post-Covid era, ATM transactions are likely to resume and continue to expand.

Exhibit 36: ATM Transactions, by Volume and Value, FY 2017-22

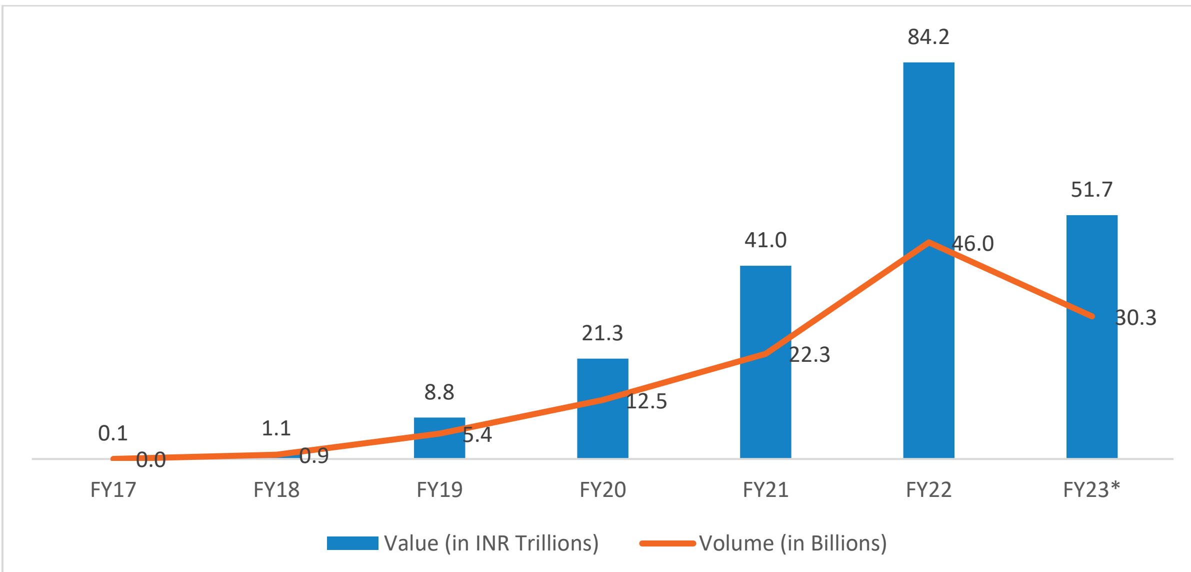


Data as of March, 2022 *Source: RBI, BusinessInsider, Secondary Sources*

8.26 UPI Transactions (By Volume and Value)

Since its inception in FY 2016, UPI has grown at a 183 % CAGR through FY21–22, making it the most popular payment method in terms of volume. Person-to-merchant (P2M) payments, which account for over 40% of all UPI transactions, have become the preferred method of payment for both online and offline businesses. By FY 2025, it is estimated that the amount of UPI transactions will have increased by sevenfold.

Exhibit 37: UPI Transactions by Volume and Value (FY 2017-23*)

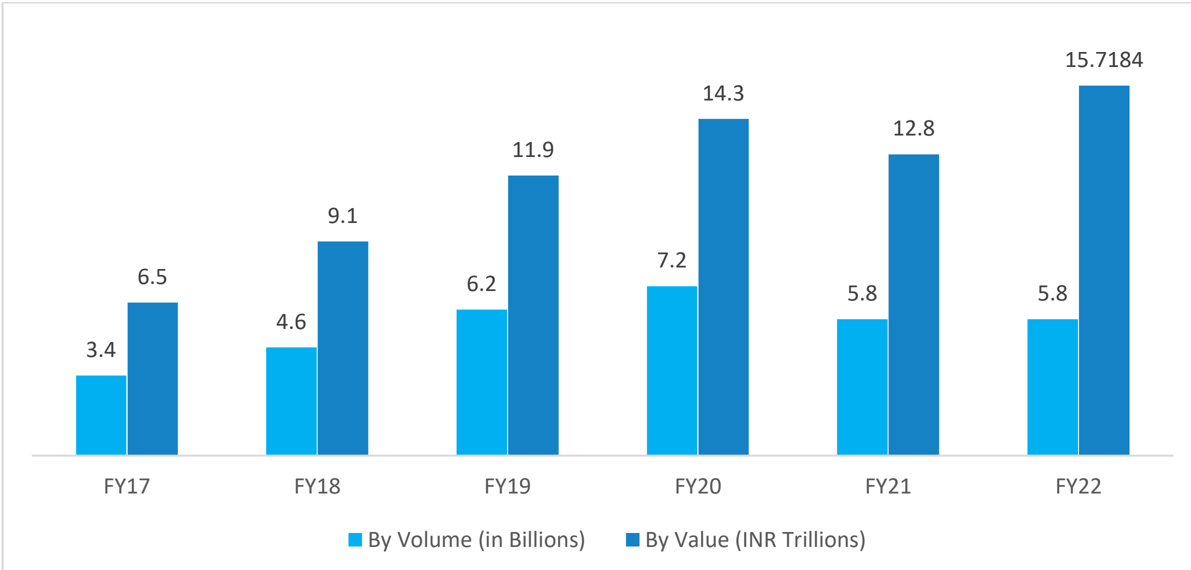


FY 23 Data as of August, 2022 *Source: NPCI, Secondary Sources*

8.27 POS Transactions (By Volume and Value)

As of FY22, the country's total number of debit and credit cards is 1006.7 million, while the number of point-of-sale terminals is little over 4.5 million. The average number of debit card transactions per year for a POS terminal is only six, which is exceedingly low. This shows that debit cards are still mostly used to withdraw cash from ATMs. POS transaction growth had slowed in FY21 as a result of the Covid-19 pandemic-induced lockdowns, which had resulted in lesser use of PoS terminals. During the first half of FY22, the second wave had an impact on transaction volumes and value in April and May. However, there was a recovery in August, with transaction volumes of around 2.3 billion in April to August 2021.

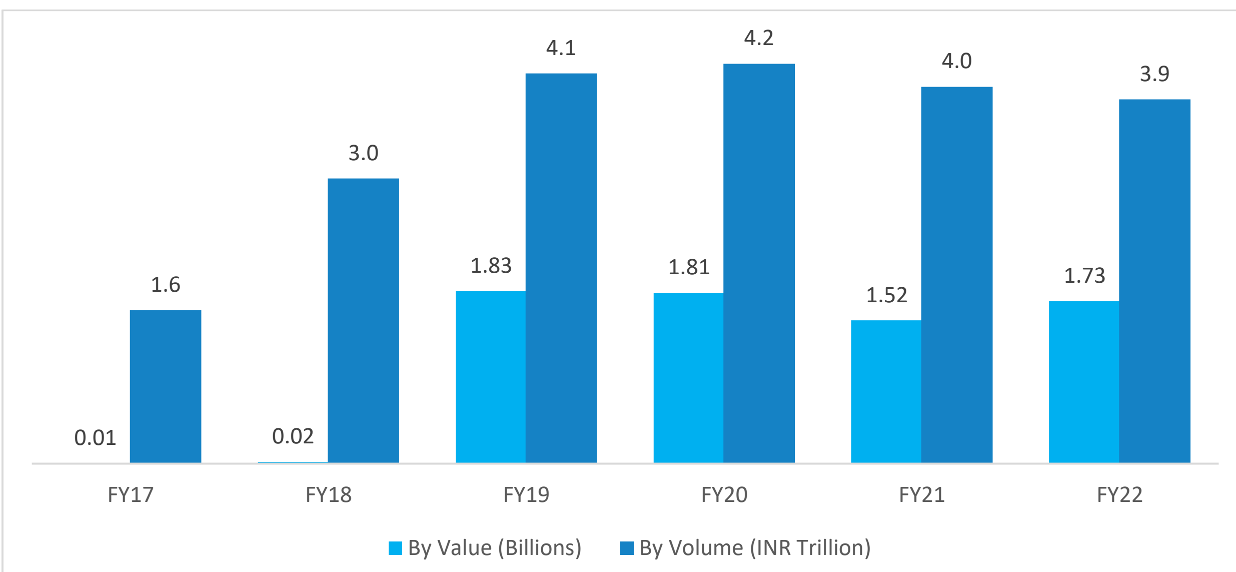
Exhibit 38: POS Transactions by Volume and Value (FY 2017-22)



Data as of March, 2022 *Source: NPCI BusinessInsider, Secondary Sources*

8.28 Mobile Wallet Transactions (By Value and Volume)

Exhibit 39: Mobile Wallet Transactions by Volume and Value (FY 2017-22)



Data as of March, 2022 *Source: NPCI, Secondary Sources*

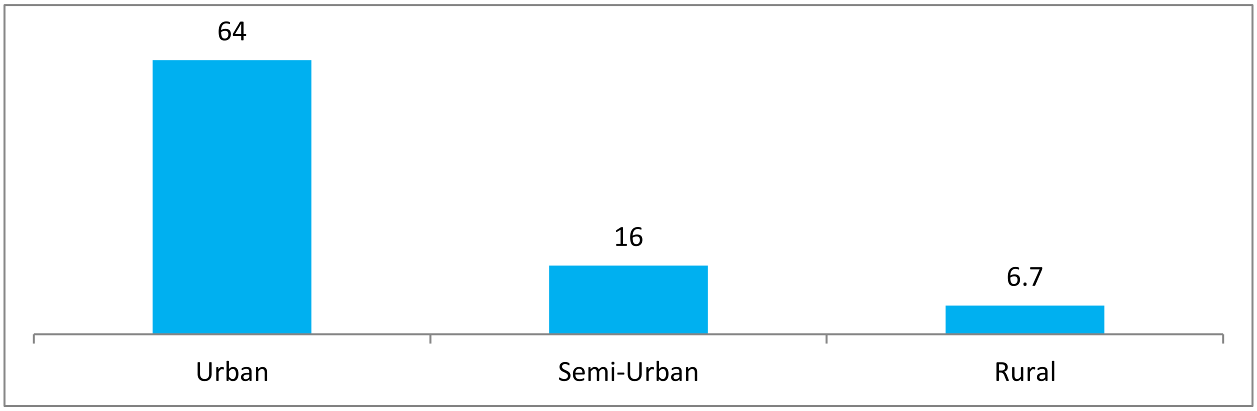
The mobile wallet transactions stood at a value of INR 1.7 trillion in FY 2017 and have grown significantly in the recent years to reach a value of INR 1.73 trillion in FY 22. While there has been a constant rise in mobile wallet adoption in the past few years, the recent COVID-19 outbreak has further accelerated this trend as consumers are increasingly using wallets to avoid physical contact with POS machines.

4 Why cash will continue to be the leading transaction medium

a. Low bank branch penetration in Tier III+ areas

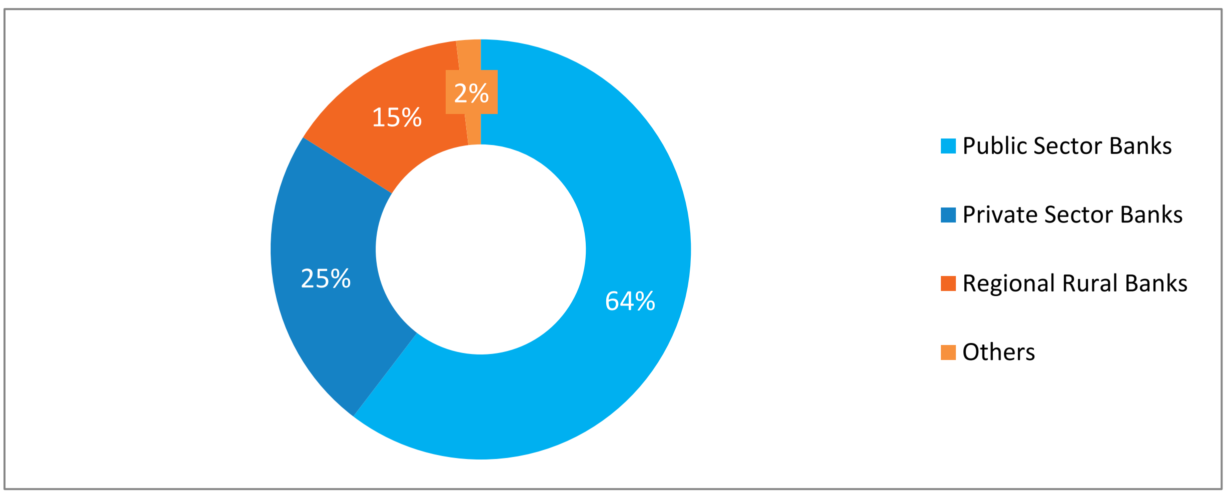
One of the key reasons why cash has dominated in India is the lack of access to infrastructure such as banks and ATMs in the lower tiers such as semi-urban and rural areas. There are only 6.7 bank branches in rural areas for every lakh adult individuals. In comparison, this figure stands at 64 in the metro regions. Without adequate access to digital and cashless infrastructure, and because most of the Indian population resides in these lower tiers, cash is still expected to be the most sought-after mode for making payment transactions.

Exhibit 40: Commercial Bank Branches per Lakh Population, FY 2021



Source: Frost & Sullivan, Secondary Sources

Exhibit 41: Commercial Bank Branches, by Type, FY 2021

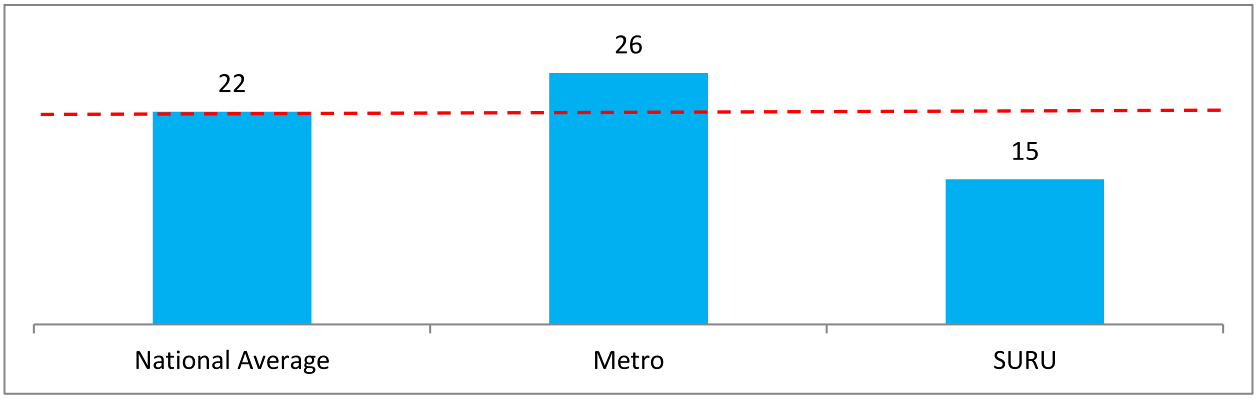


Source: Frost & Sullivan, Secondary Sources

b. Low Penetration of ATMs

The ATM penetration is uneven across tier 1 metro cities/urban areas and the lower tiers (semi-urban and rural regions). Compared to the national average of 22 ATMs per lakh population, metro regions have a higher ATM penetration of 26 per lakh population as of FY 2021. But the SURU (semi-urban and rural) region is severely underpenetrated with a rate of 15 ATMs per lakh population as of FY 2021. The current demand-supply mismatch in India creates a big opportunity for the banking industry in rural and semi-urban areas. Millions of rural consumers now have a debit card and a bank account thanks to the rapid rise of Jan Dhan Yojana accounts and RuPay cards and hence with a focus on such rural areas, ATM penetration across Indian states is expected to increase in the upcoming years.

Exhibit 42: ATM Penetration in India by Geo mix (Number of ATMs per lakh population), FY 2021

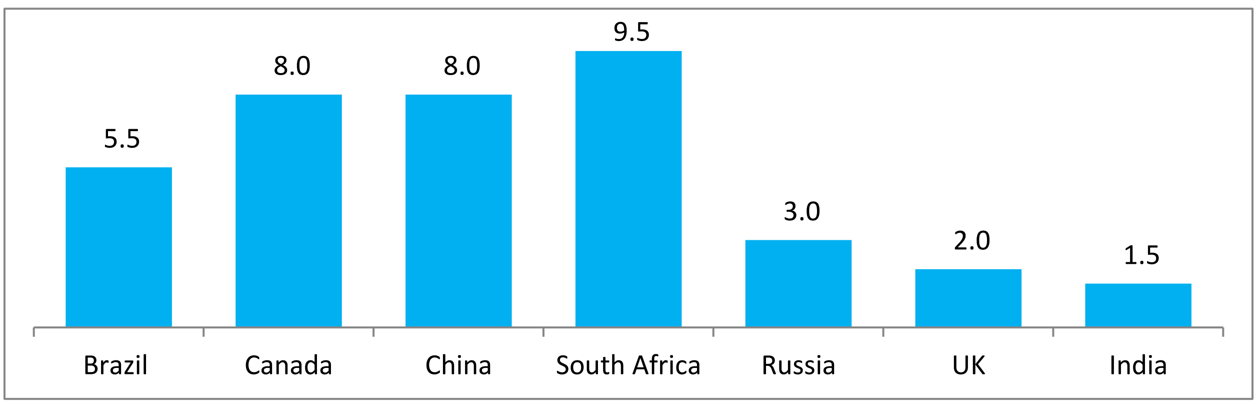


Source: RBI

c. Cash Velocity (ATM Withdrawal) / CIC in India and Comparison across Countries

A substantial portion of cash does not move through ATM/banking systems due to the strong informal sector, low ATM penetration, and currency's importance as a store of value. Furthermore, cash velocity, as measured by ATM withdrawals, is 17 percent of GDP or 1.5 times that of CIC as of FY 2022, which is significantly lower than in other nations, implying that there is tremendous room for development in cash circulating through ATM / banking systems.

Exhibit 43: ATM Withdrawals to Cash in Circulation Ratio Comparison across Countries, CY 2020

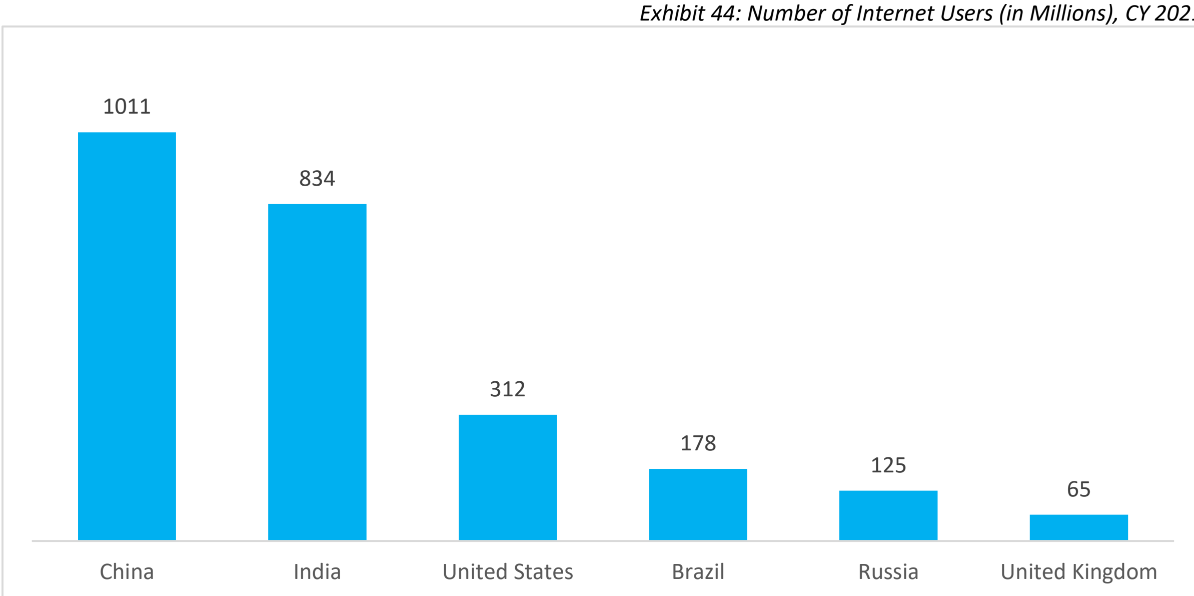


Source: IMF, Other Secondary Sources

d. Limited Network Connectivity

Access to the internet is critical to the growth of emerging economies. The world's two most populous countries, India and China, have emerged as significant economic powers. China had 1011 million internet users as of CY2021 compared to 834 million internet users in India as of April 2022.

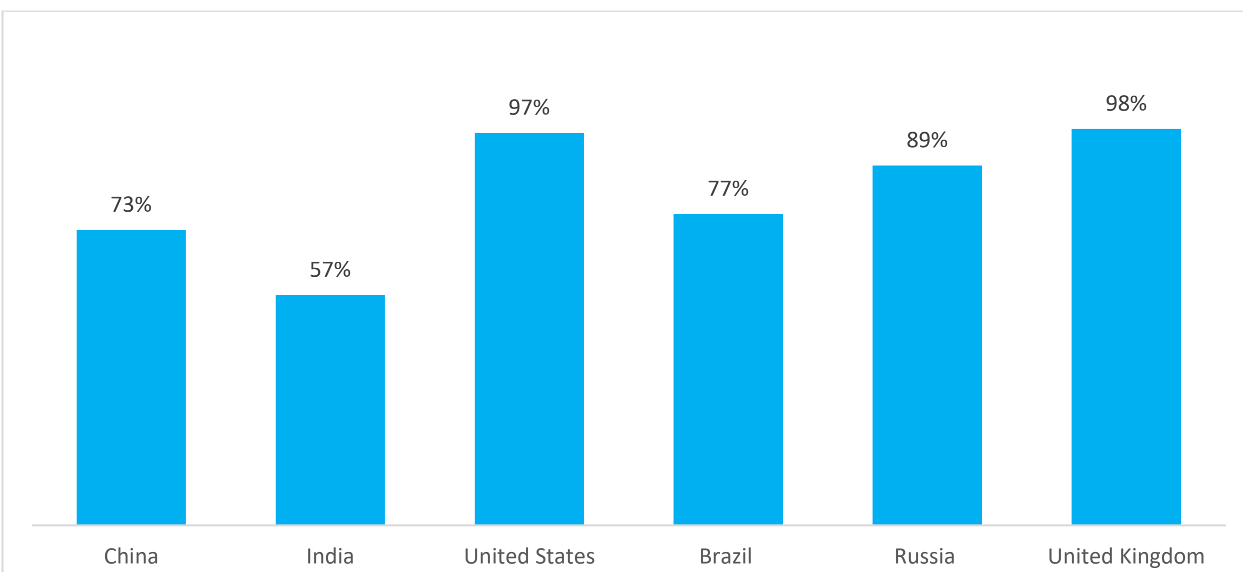
Exhibit 44: Number of Internet Users (in Millions), CY 2021



Data as of April, 2022 for India *Source: World Bank, Internetworld, Globedata*

The current internet penetration rate in India stands at 57% and this largely corresponds to the metro and semi-urban internet users. Majority of the population in the rural areas lack basic network connectivity and hence do not have access to digital banking/online payment systems. People in these areas rely predominantly on cash owing to a lack of network support for cashless transactions.

Exhibit 45: Internet Penetration (in %), CY 2021

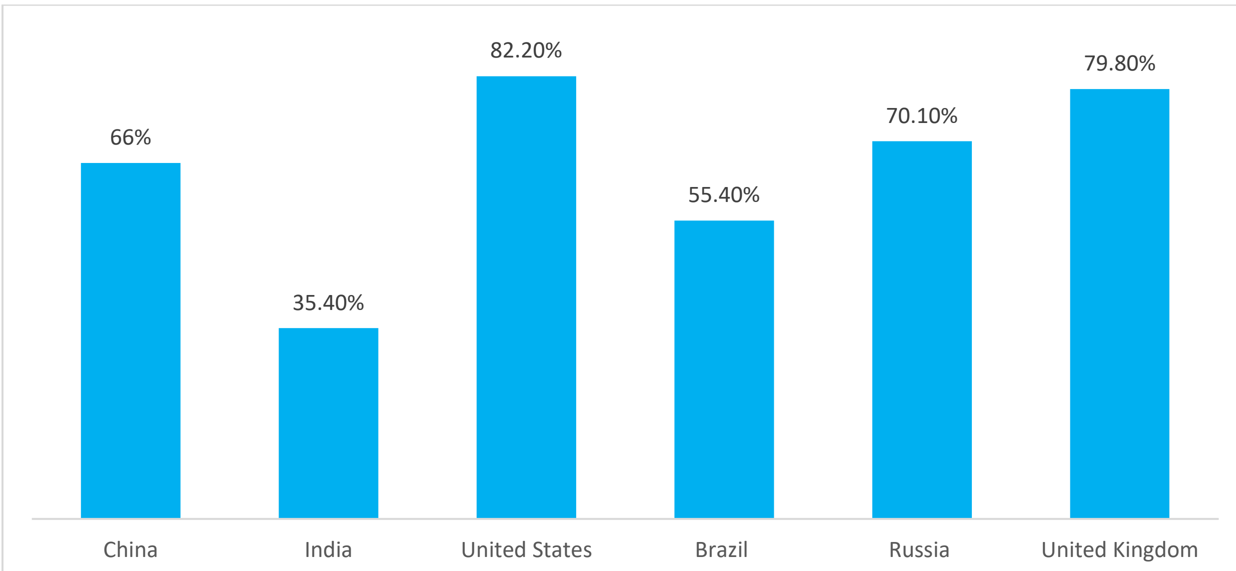


Data as of April 2022 for India *Source: Globaltimes, World Bank, Secondary Sources*

e. Smartphone Penetration in India – Comparison with other countries

The growth of smartphones is directly proportional to the increase of digital payments. Smartphones have recently been regarded as the major device for accessing the internet, owing to their widespread availability and low cost. India has a lower smartphone penetration and usage rate, owing to the lack of affordability in rural areas and the high cost of smartphones in general.

Exhibit 46: Smartphone Owners (%), CY 2021



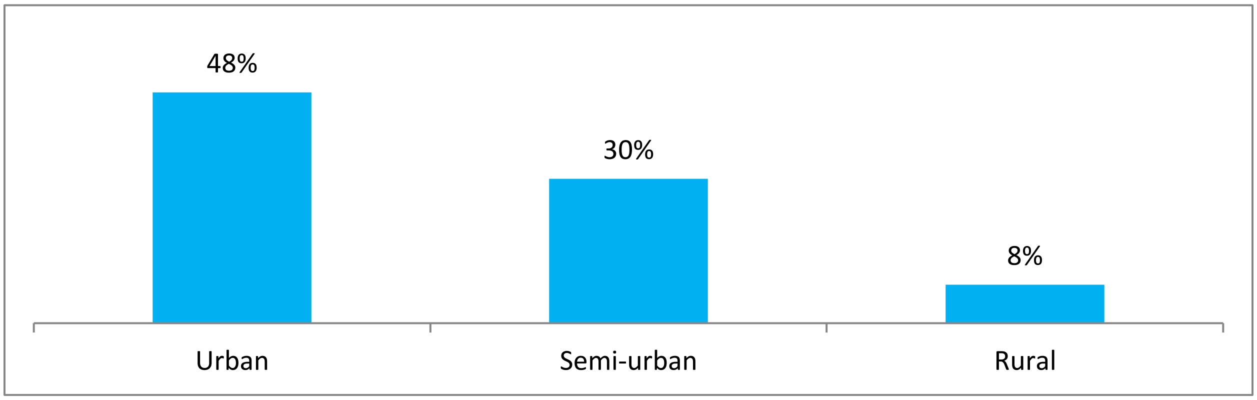
Data as of April 2022 for India *Source: IBEF, TRAI, Secondary Sources*

f. Fewer Retail Outlets Accepting Digital Payments

Following demonetization, digital payments exploded in India, with companies like Paytm capitalizing on the government's action to become household names. However, as of March 2020, more than half of India's urban merchants did not accept digital payments[18]. The reluctance to accept digital payments is more pronounced as we move to the lower tiers and rural areas. Even in rural India, merchants do not prefer digital payments due to expensive and unreliable infrastructure, lack of awareness among customers, lack of interoperability, transaction failures, and costs incurred with digital payments.

[18] Businessinsider

Exhibit 47: Organized Retail Outlets across Tiers That Accept Digital Payments (in %), FY 2020

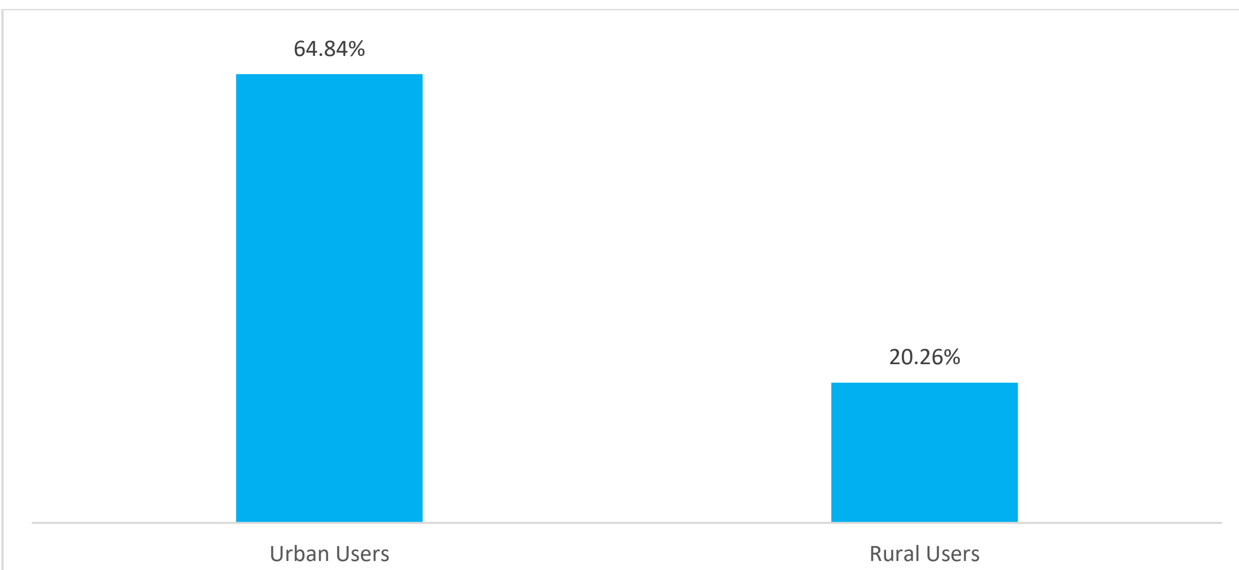


Source: Frost & Sullivan, Secondary Sources

g. Lack of Financial and Digital Literacy in Rural Areas

Financial inclusion in India is centered on digital financial services (DFS). Despite the government's attempts to build an integrated digital infrastructure, rural areas' adoption of DFS is hampered by digital illiteracy, which has a direct impact on digital product acceptance. People with low digital proficiency are deterred from using e-banking services due to a lack of trust in technology, difficulty to operate smartphones, and inadequate network access. As a result, in rural India, cash is still the favored method of payment. Another factor is language as most Banks and fintechs do not incorporate local languages into their products in order for users to have easy access to them.

Exhibit 48: Proportion of Users Accessing Digital Transactions, FY 2022



Data as of April, 2022 *Source: IAMAI, Frost & Sullivan Analysis*

5 Challenges with UPI payments

- **UPI Transaction Failure Rates**: Due to their complicated structure and various failure points, UPI transactions are vulnerable to transaction failures. Ten of the top 30 banks using the country's UPI network recorded failure rates of over 3% (in September 2020) sparking an alert with respect to UPI transactions. Such failures can potentially undermine client confidence in SURU areas.
  - In SURU regions, a single unsuccessful transaction can spark a widespread resistance to digital payments
  - The SURU areas and low/lower-middle income sectors will drive the next wave of digital payment growth.
- Due to infrastructural challenges (e.g., internet connectivity, transaction failure) with digital payments, 55 percent of merchants across India, concentrated in Tier 2+ cities, accept only cash
- Tax liabilities arising off bank receipts can deter future usage for both P2P and P2M transactions
- Investments in technological innovations for the next wave of growth curtailed by a few factors
  - Companies operating in the digital payments space have limited incentive to invest/innovate due to the RBI's 0 percent MDR mandate
  - NPCI, India's largest digital payments operator, is a not-for-profit entity, resulting in limited investment in driving digital payments
  - RBI's fluctuating regulations around recurring payments, invitation for competition to NPCI through the New Umbrella Entity
- Even with increasing smartphone penetration), digital payments for feature phone users (for ~ 400 million feature phone users in India) are untested and have had limited success; in the medium term, this population will continue to be a big part of how India pays.

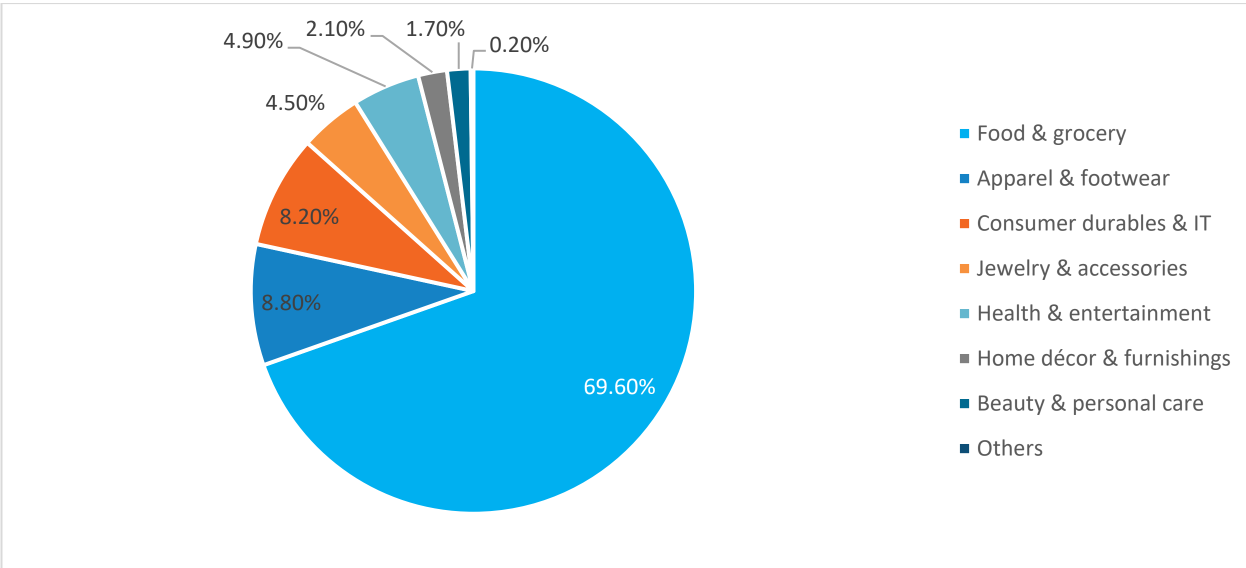
6 Key risks of cash as a medium for transacting business/payments in India

- Using and accepting cash involves certain costs to consumers and businesses. Consumers may have to pay fees to withdraw cash from automated teller machines, for example (ATMs).
- Because online e-commerce is moving away from cash, having a means of paying for online transactions, such as bank debit cards or prepaid credit cards, is convenient for users.
- In order to return or exchange a product, consumers usually need a receipt of purchase. Many businesses can access a credit or debit card transaction simply entering the buyer's card number into their system and proceeding with the transaction; cash transactions have no reference information.
- Customers can deactivate their credit and debit cards as soon as they realize they've been lost or stolen. There is, however, no accountability for cash that is lost or stolen.
- Some businesses, especially those that deal with large sums of money, dislike dealing with cash. Because their transactions are relatively large, they would desire to be able to pay at a later period.

7 Overview of Indian retail market

The Indian retail industry has become one of the most dynamic and fast-paced industries as a result of the entry of enterprises with unique business strategies. It accounts for more than 10% of the country's GDP and employs roughly 8% of the workforce[19]. India is the world's fifth largest retail destination, ranking 63rd in the World Bank's Ease of Doing Business 2020 report, up 14 places from the previous year.

Exhibit 49: Total Market Share of Retail Market by Segment, FY 2022 (%)



Data as of April, 2022 *Source: CRISIL, Frost & Sullivan, Secondary Sources*

The Indian retail market is estimated to have a market size of over USD 1170 billion in FY 2022. Food and grocery has the largest portion of the organized retail business in India, accounting for 69.6 percent in the fiscal year 2022. Apparel and footwear, as well as consumer durables and IT, are ranked second and third, respectively. Only approximately 1.7% of the total was spent on beauty and personal care.

Cash-based transactions are common in the gold retail industry. India consumes between 850 and 900 tonnes of gold every year, with rural India accounting for 60% of overall consumption.

7.1 Overview on Retail Outlets and Organized Retail Outlets in India

Currently there are over 3 million retail touch points in India. Of these, only 15% are in the organized sector. The break-up of the different retail sectors by the number of outlets and the proportion of organized retail outlets are presented in the table below:

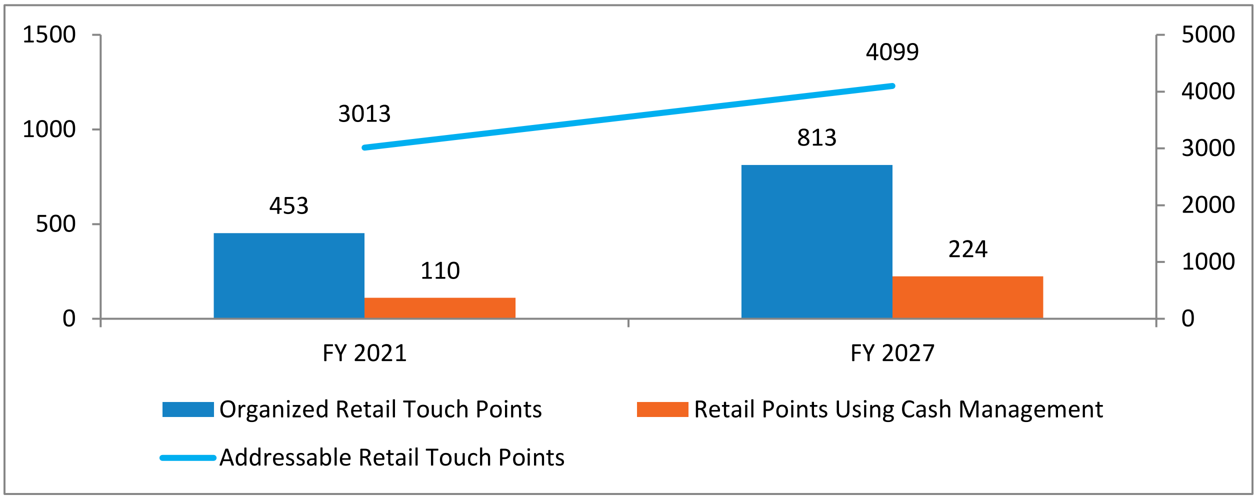
[19] IBEF

Exhibit 50: Retail Outlets and Proportion of Organized Retail, in Thousands (000), FY 2021

Sectors	No. of Outlets	% Organized Outlets	No. of Organized Retail Outlets
Healthcare	970	4%	39
Jewelry	500	1%	5
NBFC	106	60%	64
Petrol Pumps	80	100%	80
Hospitality	55	25%	14
Large Retail	37	100%	37
Automobile	30	100%	30
Insurance	20	100%	20
E-commerce Logistics	15	100%	15
Railway Stations	8	100%	8
Others	1,192	12%	142
Total	**3,013**		**453**

Source: Frost & Sullivan, Secondary Sources

Exhibit 51: Growth of Retail Touch Points for Cash Management (in 000s)[20]



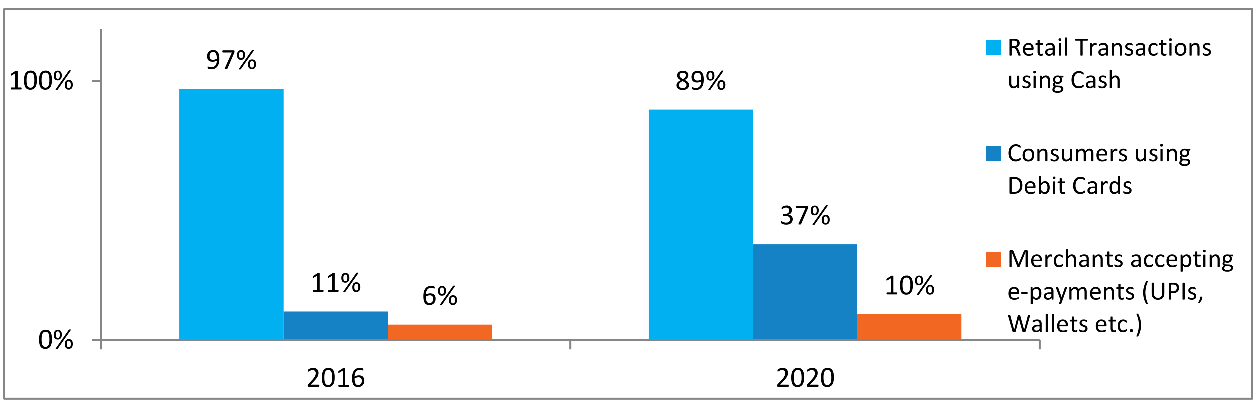
Source: Frost & Sullivan, Secondary Sources

8 Reliance of Cash as The Primary Medium of Transactions in India

8.1 Importance of Cash Payments for Retail Business in India

Because most non-cash payments are not available to the majority of the Indian population living in rural areas where net banking and other non-cash payment modes have not yet penetrated, cash retail payments continue to dominate the Indian retail sector. For retail purchases, cash remains the most popular mode of payment.

Exhibit 52: Preferred Payment Methods from Retail Merchants, (in %), FY 2016-2020



Source: Frost & Sullivan Analysis,

Consumers prefer cash for a variety of reasons, which are unlikely to change as digital payment infrastructure improves. The following are some of the main reasons why cash transactions are preferred over alternative payment methods:

[20] Addressable Retail Touch Points – Includes the number of retail touch points addressable from an RCM perspective. Excludes kirana stores and microenterprises that don't consume RCM services

Cash is anonymous: Unlike electronic money, cash does not leave a digital trail. Despite the fact that banks and governments demand this traceability, individuals value anonymity while making routine purchases.

Simplicity: Employees and customers might both benefit from a discount program. Because all things in the store are priced with a built-in service fee that is deducted if customers pay with cash, pricing conflicts, interest rates, processing fees, charge backs, and other complicated accounting concerns can be considerably reduced for all parties.

Reduced Fees: The decrease or elimination of costs associated with the usage of credit cards is the most evident benefit. Merchants can avoid paying processing costs, which cut into profit margins, while consumers can avoid paying credit interest rates on small purchases.

Minimum Purchases: Before taking a credit card, smaller establishments would commonly require a minimum purchase quantity, such as INR 100. This can include buying unnecessary items just to be able to pay with a credit card. People who pay with cash are less likely to make impulse purchases.

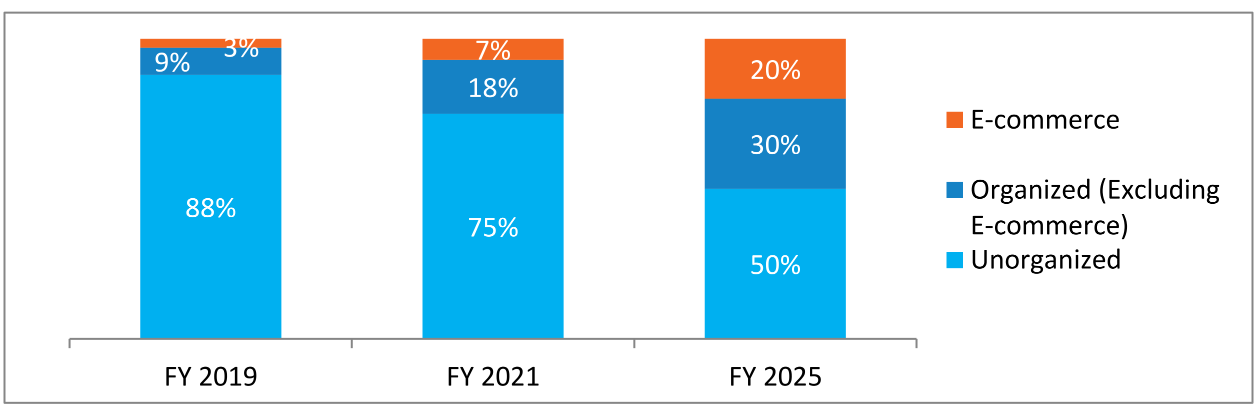
Reduced Debts: Because they have less debt, merchants are able to keep more earnings and have fewer credit card charge-offs. Customers are less likely to rack up significant credit card debt when given a discounted cash option.

Cash is a tangible and aids in budgeting: Cash facilitates budgeting and encourages a wide range of people to be more fiscally responsible. When consumers utilize cash, they have more control over their finances because they can see how much money they have.

8.2 Distribution of Retail Sector – By Type

In FY19, unorganized retail, organized retail, and e-commerce took up 88%, 9%, and 3% of the market, respectively. In FY 2021, the market share for unorganized, organized, and e-commerce retail was 75%, 18%, and 7%, respectively. The organized retail market in India is growing at a rate of 20% per year and is predicted to account for 30% of the market by FY 2025.

Exhibit 53: Segment-wise Contribution in Retail Industry, in %, FY 2019, FY 2021, FY 2025

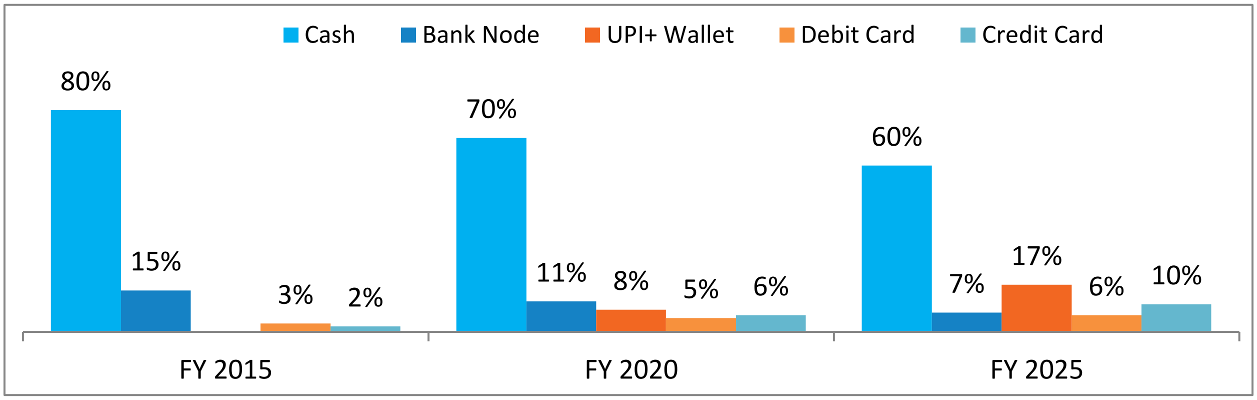


Source: IBEF, Frost & Sullivan, Secondary Sources

8.3 Break-up of payment methods in retail

Cash is still the most preferred payment option compared to other methods, notwithstanding the effect of demonetization and COVID-19. While digitalization attempts have resulted in a rise in card and UPI payments, cash payments are likely to continue to dominate, with cash accounting for 60 percent of all transactions by FY 2025[21].

Exhibit 54: Break Up of Retail Payments in India, in %, FY 2015-2025

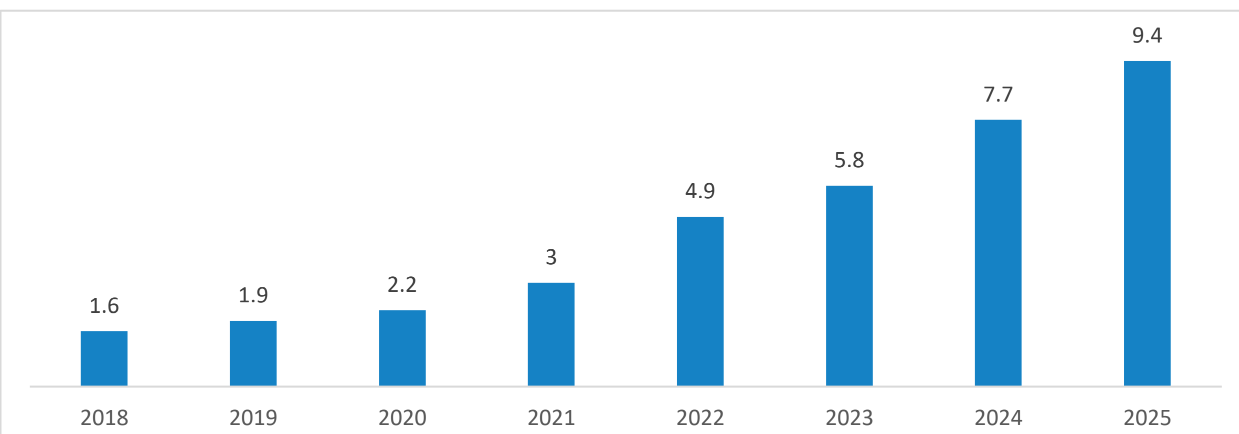


Source: RBI, Frost & Sullivan, Secondary Sources

8.4 Growth of E-Commerce Industry in India

In FY 2018, the Indian e-commerce market was worth INR 1.6 Trillion, and by FY 2025, it is predicted to be worth INR 9.4 Trillion. The Indian E-commerce industry has been on an upward growth trajectory and is expected to surpass the US to become the second largest E-commerce market in the world by FY 2034. Because of the predominance of online shopping giants such as Amazon, Flipkart, Reliance Jio, and others, the market has more than doubled in value between FY 2015 and FY 2020.

Exhibit 55: E-commerce Market Growth, FY 2018-2025, INR Trillions



[21] Frost & Sullivan Analysis

Data as of August, 2022

Note: Exchange rate 1 USD = 79.8 INR *Source: Frost & Sullivan, FIS – Global Payments,*

8.5 Factors Driving Growth of E-Commerce in India

1. Growth of logistics and warehouses

- With logistics and warehouses attracting an estimated investment of nearly US$ 1.5 billionin FY 2022, the reach of online retailers to remote locations is set to increase.
- E-commerce logistics companies have also seen a growth in volumes with revenues rising from USD 0.5 billion (FY 2016) to USD 5.3 billion (FY 2022) in the past five years. The revenue for E-commerce logistics companies is expected to continue at a CAGR of 18.8% to reach USD 9.7 billion by FY 2026.

2. Internet content in local languages

- Online retailers see this segment as the new growth driver with significant influx of mobile subscribers, who are now comfortable with languages other than English.
- Indian language users on the internet are estimated to be 560 million in FY 2022.

3. Mobile Commerce

- Online retailers' growing reach in town and cities beyond metros is driven by an increased usage of mobile internet. Increased ownership of smartphones is helping more Indians access shopping websites easily.
- Number of smartphone users in India is estimated at 845 million in FY 2022.

4. Increased Investments

- In October 2020, Amazon India invested over USD 95.40 million into its payment unit, Amazon Pay.
- In October 2020, Flipkart acquired a 140 -acre land at USD 58 .87 million to establish their largest fulfilling centre in Asia, in Manesar, Gurgaon, in a bid to scale their fulfillment infrastructure to cater to increased demand post COVID -19 .

5. Increased Penetration in Lower Tiers

- Ecommerce companies in India reported a 55 % increase in sales at US $ 4.1 billion across platforms in the first week of festive sales in October 2020 driven by increased demand for smartphones and rise in demand from Tier 2 and Tier 3 cities.

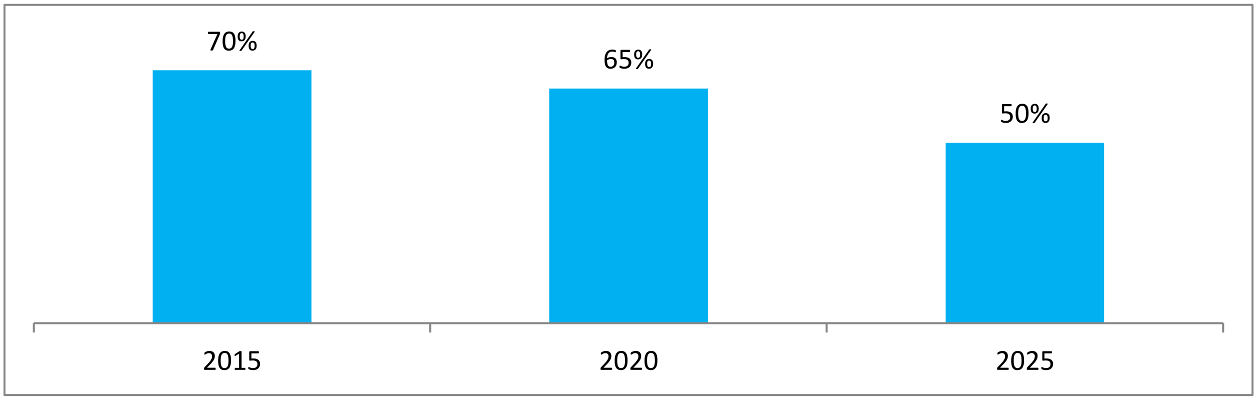
8.6 Growth of Cash-on-Delivery in E-Commerce

In India, cash on delivery (COD) is the most popular way of payment for e-commerce retailers. COD accounted for more than 60 percent of all e-commerce payments in FY 2022[22], demonstrating the

[22] Economictimes

importance of cash in terms of payments, which is expanding as a result of expansion into Tier 2 to 4 cities. As we travel from metros (50 percent COD) to lower tiers such as tier 2 (70 percent COD) and tier 4 regions (90 percent COD), the share of COD payments increases. As e-commerce penetration rises in these lower tiers, the percentage of COD payments is likely to rise in lockstep.

Exhibit 56: COD as % of E-Commerce Transactions, FY 2015-2025



Source: Frost & Sullivan, Economictimes,

8.7 GST and Its Impact on Cash Transactions & Retail Sector

In India, more than 90% of the retail business is unorganized and predominantly relies on cash payments. GST has had a favorable impact on small shops as it is an internet tax system that is levied at every point where value is added to products or services. One of the key benefits of GST for retailers has been the ability to claim input tax credits and the ease with which they can enter new markets.

Following the adoption of GST, every taxpayer in the retail sector is responsible for correct accounting and bookkeeping, and GST implementation may help India's Retail Cash Management expand. In addition, GST acts as a spur for unorganized sector sellers to join the mainstream tax-paying system. As a result, the unorganized retail industry is transitioning to the organized retail sector. Furthermore, the government is discouraging the purchase of goods from unregistered dealers because the tax on such purchases must be paid by the registered dealer via reverse charge.

GST’s had a considerable impact on cash transactions, some of which are described below:

1. Holders of cash were forced to deposit it in banks after demonetization. Due to the large amount of cash deposited, 17.42 lakh account holders were suspected, and responses were gathered online using a non-invasive approach. Punitive measures were taken against the violators. Larger deposits in banks increased the banks' lending capability. A significant portion of this sum was redirected to mutual funds for additional investment, which was incorporated into the formal system.

2. Wholesalers were better connected to retailers and suppliers because the entire supply value chain, including tax flows, shifted to GST records. This made it easier for traders to handle cash payments and get tax returns on time, boosting their cash flow. By making working capital available and assisting prospects for growth, a consistent positive cash flow helped to develop confidence.

3. Small retailers, who dealt in cash transactions, often did not have complete visibility into their stock receipts, payments, etc. and were forced to blindly rely on the word of the supplier. GST helped to

streamline these supply and cost challenges and empower the retailer with readily available information.

4. A major impact of GST on cash transactions is that GST is based on “transaction value” rather than MRP. In the old system, CVD (Countervailing duty) was charged as a percentage of the MRP. Under GST, IGST was charged as a percentage of the transaction value. This affected the cash reserves of retailers and wholesalers, and they were required to reassess their working capital needs.

Some of the key areas where GST has impacted the retail sector are outlined below:

1. Retailers can re-evaluate their goods sourcing patterns and strive to take advantage of tax neutrality and economies of scale by centralizing procurement from the best vendors, regardless of their location.
2. In addition, given the increased credits that may be available to suppliers under the GST regime, retailers may have to negotiate/discuss their suppliers' pricing policies.
3. GST benefits e-commerce players because they were dealing with a slew of regulatory and tax issues, including entry tax, interstate movement of goods, and whether they should be classified as goods sellers (subject to VAT) or mere service providers (subject to service tax), as the majority of e-commerce players did.
4. Small merchants doing business through e-commerce channels will be required to keep records and will be subject to a 2% tax collection at source by the e-commerce corporation, which will be deducted from the tax payment made by these small retailers.
5. Small merchants having an income of up to INR 5 million (50 lakhs) can benefit from the composition plan, which will see a tax of 1% of sales paid coupled with a relaxation in account and record keeping.
6. Due to the homogeneity of tax rates across the country, the availability of tax credit on all transactions will benefit both organized and unorganized sector retailers.

9 Cash Logistics Services – Global overview

Cash logistics solutions include cash-in-transit, cash management services, ATM replenishment & services, money processing, vault outsourcing, international transportation of valuables, intelligent safe services, and payment services, among others. A safe is a secure lockable box used for securing valuable objects against theft and/or damage from fire. A vault is a secure space where money, valuables, records, and documents are stored. It is intended to protect their contents from theft, unauthorized use, fire, natural disasters, and other threats, much like a safe. Unlike safes, vaults are an integral part of the building within which they are built, using armored walls and a tightly fashioned door closed with a complex lock. Retailers, financial institutions, government agencies (central banks), jewelers, mints, and other commercial activities use cash logistics services extensively around the world. The growing security concerns among banks and business organizations, which require secure cash movement and management services, have had a favorable impact on the global market for cash logistics services. The rising demand for cash in emerging economies, as well as the growing number of fully automated cash-in-transit equipment in developing countries, is likely to propel the cash logistics market forward.

In markets such as the US and Western Europe, the degree of outsourcing of cash handling is strong due to the maturity and high awareness with banks and large retailers to reduce their cash management costs and focus on their core business activities. Cash management industry rivalry is typically limited to two or three market participants globally, especially in developed markets.

Cash handling is in its early phases in developing economies like India. Global players have been providing Retail Cash Management services for several decades now – Brinks since 1859, Loomis since 1918, Group 4 since 1960s and Prosegur since 1976. RCM is a relatively new sector in India – market leaders Radiant and CMS have been offering these services only since FY 2005 and FY 2001 respectively. The cash management services market has a tremendous potential to be exploited in areas like retail cash management, as well as other value-added sectors like ATM cash management and automation solutions. The amount of cash in circulation and the number of cash transactions that occur on a daily basis are two significant influencing factors that influence users such as banks and shops to outsource cash operations. High cash usage appears to have a net positive impact on bank and merchant demand for cash management services.

Despite the rise of digital transactions in developed countries, cash usage continues to rise, which is more typical of the market scenario in an emerging economy like India. Companies are developing smart business strategies to supplement margins in mature markets, such as enhancing operations and offering more value-added products and services. Reduced cash usage and a shift to non-cash payment modalities, on the other hand, enhance banks' readiness to outsource because the cost of handling increases when banks try to do it themselves. As a result, it is seen as a win-win situation in both circumstances, as cash management firms can handle it in a cost-effective and secure manner.

a. How Global Players Are Leveraging Market Opportunities

Businesses worldwide are concentrating their efforts on areas other than cash replenishment in order to diversify their revenue streams and increase earnings, while also reducing client cash cycle expenses. Furthermore, regardless of whether cash usage is increasing or decreasing, many banks and retailers have significant fixed expenses associated with cash processing. Banks are under pressure to improve customer service, and cash management service providers are better positioned to do it for a lower cost while maintaining high levels of fraud and cyber-attack protection. This means that banks and businesses will have to outsource in order to save money, which is good news for structured cash management and handling service providers at a time when cash transactions are declining.

Newer areas of expansion and strategies implemented by multinational corporations include, but are not limited to:

- Transporting high-value items including diamonds, jewelry, precious metals, stocks, high-tech electrical gadgets, and medications in a secure manner.
- Providing banks and major merchants with unique cash management services such as currency processing and selling cash management technologies such as cash dispensers, cash recyclers, and smart-safes.

- Front and back office cash management and cash recycling, encompassing end-to-end currency management, including coin and banknote counting, verification, and quality control, analysis of cash flow and cash forecasts for various ATMs, cash change required by shops, and vault outsourcing.
- Expanding into the enormous untapped retail market to provide cash management technology.
- Operation of mobile bank branches, where customers from several banks can deposit and withdraw funds at the same location.

9.1 Global Cash Management Competitive Landscape

The industry environment is extremely concentrated globally due to high entry barriers, governmental supervision, and technology advancements. In developed markets such as the United Kingdom, banks have raised entry barriers for their Note Circulation Scheme (NCS) by imposing strict regulations (for example, only allowing registered commercial entities to manage wholesale distribution), making it difficult for new companies to enter the market while also forcing existing service providers to rethink their strategy and service differentiation. Brinks (US), Loomis (Sweden), Prosegur (Spain), GardaWorld (Canada), and ALSOK (Japan) are all multinational companies that dominate the global market. Increasing profitability and growth through stronger value-added offerings is a primary priority for these companies.

Exhibit 57: Cash Management Competitive Landscape, CY 2021

Company Name	Employees	ATMs Served	Cash Vans	Revenues	EBITDA	PAT	ROCE
Loomis	23,300	85,000		SEK 19723 MN/USD 1888 MN	SEK 3862 MN/USD 369.6 MN	SEK 1104 MN/USD 105.7 MN	11%
Prosegur Cash	43,042	100,000+	10,000	EUR 1519 MN/USD 1547.5 MN	EUR 300 MN/USD 305.6 MN	EUR 33 MN/USD 33.6 MN	17%
Brinks	72,200	131,500	16,300	USD 4200 MN	USD 455 MN	USD 22.7 MN	7.4%
Garda	120,000		6,000	Canadian Dollars 3770 MN/USD 2904 MN	NA	NA	NA
Alsok	38192	73500		489 Billion Yen/ USD 3.43Billion	59.3 Billion YEN/USD 415.3 MN	30.7 Billion YEN/USD 215.1 MN	NA

Note: 1) The following exchange rates were used to convert currencies to USD

1 SEK = 0.096 USD, 1 EUR = 1.02 USD, 1 YEN = 0.007 USD, 1 Pound = 1.38 USD, 1 INR = 0.0135 USD, 1 Canadian Dollar = 0.77 USD

2) All financial values are indicative of the respective company's overall financial performance and includes all business /segmental units.

3) Data as on Dec 31st 2021 for Loomis, Brinks and Prosegur Cash

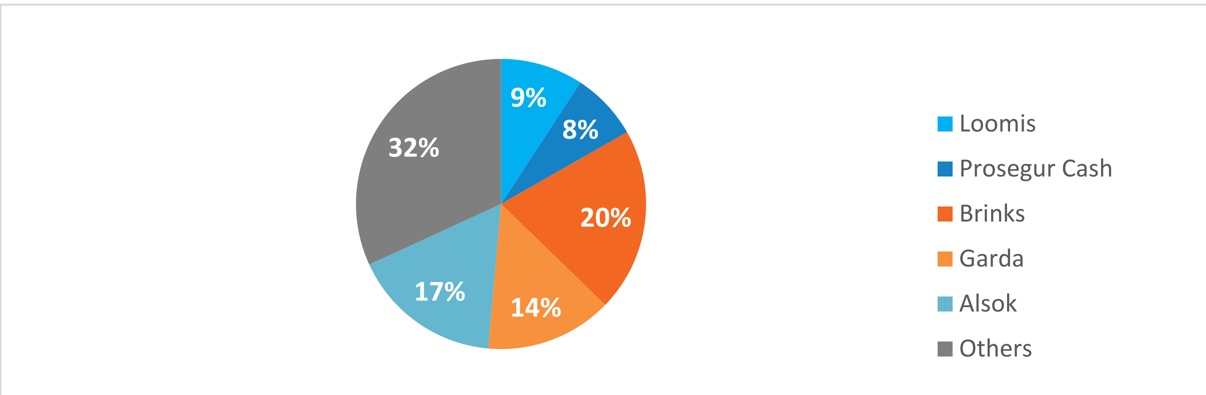
4) Data as on March 31st, 2022 for Alsok and Jan 31st 2021 for Gardaworld

Source: Annual Reports and official publications of respective companies

Loomis and Brinks, for example, are attempting to raise their income share from greater value added services. Brinks' core services, for example, amounted for about 53% of revenue in CY 2016, while high-value services accounted for 40%. In CY 21, Brinks' core services amounted to 50% of the overall revenue and high value services accounted for 45% of the overall revenue.

In CY 2021, cash-in-transit services accounted for 58% of Loomis' total revenue, while cash management accounted for 25%. The revenue from unit sales in the US market segment (corresponding to Safepoint) accounted for around 18% of the total revenue.

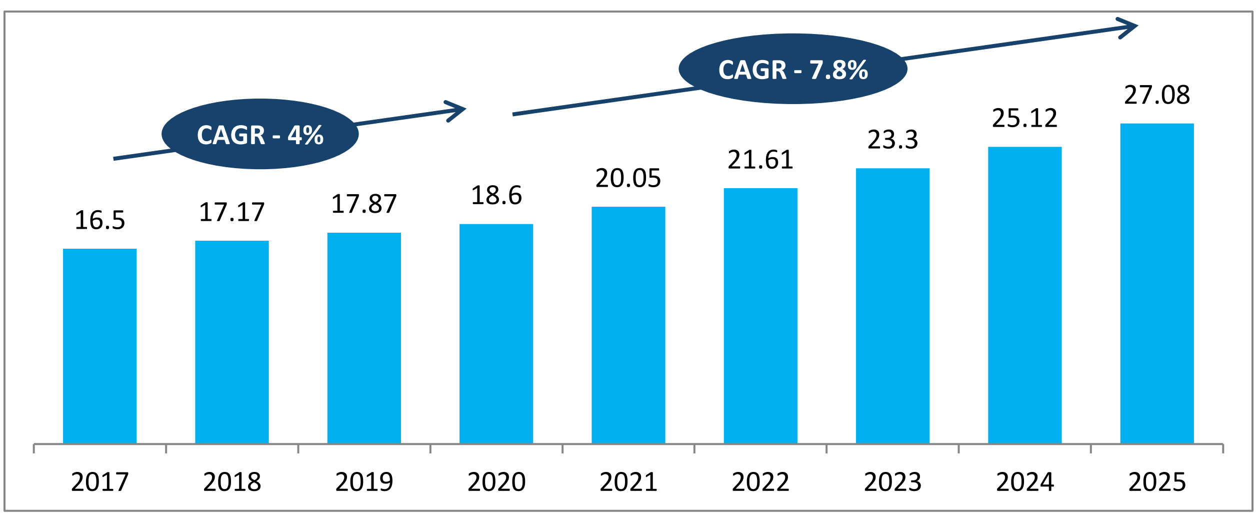
Exhibit 58: Global Market Share Distribution of Key Companies in the Cash Management Industry, by Revenues, CY 2021



Source: Company Annual Reports, Frost & Sullivan, Secondary Sources

The global cash logistics market stood at USD 16.5 billion in CY 2017 and reached a size of USD 20.5billion in CY 2021, growing at a CAGR of 5.58%. Owing to the accelerated adoption of cash management services and rapid outsourcing of CIT services, the market is expected to grow at a CAGR of 7.8% between CY 2020 and CY 2025, to reach a potential market size of USD 27.08 billion.

Exhibit 59: Market Size & Forecast of Global Cash Logistics Sector, (in USD Billions), (CY 2017-25)



Source: Frost & Sullivan, Secondary Sources

9.2 Key transactions in the global cash management industry:

- CY 2015 - Loomis acquires US based Dunbar's global logistics division, which handles shipments and storage of valuables
- CY 2017 - The Brink's Company has agreed to a cash purchase of Argentina's CIT and money processing company, Maco Transportadora de Caudales S.A. ("Maco"), for approximately US$ 209 million.
- CY 2017 – The Brink's Company in exclusive negotiations to purchase France's cash-in-transit, money processing and cash management services company called Temis.
- CY 2017 - In the second quarter of 2017, The Brink's Company acquired PagFacil, a payments business in Brazil, and LGS, a cash-in-transit business in Chile.
- CY 2018 – Brink's acquired Dunbar Armored Inc. for $520 million in cash, boosting the reach of the global leader in cash management and secure transportation logistics — also known as armored cars.
- CY 2019 – Loomis announced the agreement to acquire 100 percent of Ziemann Sicherheit Holding, a German domestic cash handling service for 160 million Euros. In addition, Ziemann also carried out security services as well as trading activities within the wholesale and retail market for currencies and precious metals.
- CY 2020- Brinks announced it had reach an agreement to acquire the majority of G4S's remaining cash management businesses for approximately US$860 million
- CY 2021 – NCR acquired Cardtronics- a trusted leader in financial self-service, enabling cash transactions at over 285,000 ATMs across 10 countries, for an enterprise value of USD 2.5 billion
- CY 2021 – Brinks acquired PAI (Payment Alliance International) the largest privately-held provider of ATM services in the U.S., for USD 213 million.
- CY 2022 – Through PAI, Brinks acquired Texas-based TouchPoint 21, a leader in ATM and cash management outsourcing for financial institutions

9.3 Conclusive Remarks

To fulfill the increased needs of banks and shops seeking efficiency in their operations, cash management service providers around the world are investing in technology, IT systems, people training, and smart safe system development. Smaller service providers have either been acquired by larger companies, resulting in consolidation, or have left the market due to low margins, stricter regulations, and a lack of cash to invest in technology and innovation.

Banks and merchants in industrialized countries such as the United States and the United Kingdom are increasingly willing to outsource their whole cash management systems, signaling that India may soon follow suit. Despite the surge in digital payment transactions, cash usage is increasing in both developed and developing countries, putting banks and retailers at a cost disadvantage. Industry participants are introducing differentiated services such as end-to-end cash cycle, virtual vaults, secure transit of valuables, accretive acquisitions, and aggressive development in the large under-penetrated retail sector.

10 Cash Management Market in India

10.1 Market Overview

Cash-based transactions dominate the Indian payments industry today in areas such as Retail (both organized and unorganized), COD in e-commerce, petroleum outlets, insurance premium payments, railways, NBFCs, microfinance, restaurants, etc. As a result, one of the primary service deliverables for the banking business in India is cash management. The RBI, State & Private Banks, Foreign Banks, ATM Equipment Manufacturers, Retail Cash Management (RCM) Service Providers, Cash Van Operators, and a few companies that offer other cash logistics services make up India's Cash Management Ecosystem. Each of these parties serves as a point of contact for the economy's smooth financial flow. The banks are the main orchestrators for cash management in the country, with the RBI as the controlling authority. Cash-in-transit services provide generic cash logistics solutions such as cash transportation and cash storage during transit.

An increase in cash circulation and growth in outsourcing cash-related activities by financial and business institutions will have a positive impact on this market. The increasing number of ATMs and ATM transactions, the growth in debit card transactions, growth in e-commerce , the growing number of organized retail shops, NBFCs, restaurants, pharmacy chains, jewelers, gold loan companies, and hospital chains, and the positive economic outlook and continued use of cash in the country are all key demand drivers for the cash logistics business.

ATM cash management, **Retail Cash Management** (RCM), and **Dedicated Cash-in-Transit Vans** (DCV) — vehicles utilized for cash transportation and replenishment activities – are the three primary components of cash management services in India. Other services provided by cash management service providers include transportation of jewels, art works, valuables, and bullion, as well as cash processing and vaulting.

The Indian cash management services market revenue grew at a CAGR of ~10% during the period FY 2010 - FY2021, from ~INR 10 billion to INR 27.7 billion, majorly due to the outsourcing of these activities by the Banking sector to specialized service providers, as stringent requirements such as armed guards with fire-arm license, specialized vehicles, GPS monitoring, etc. to ensure safety of the cash transported, has necessitated such outsourcing.

Due to the impact of demonetization on the financial sector, the cash management market experienced a fall in growth rate from FY 2016 to FY 2017. This had a negative impact on the profitability of cash management organizations. However, following demonetization, cash management gained traction and has continued to develop at a healthy growth rate.

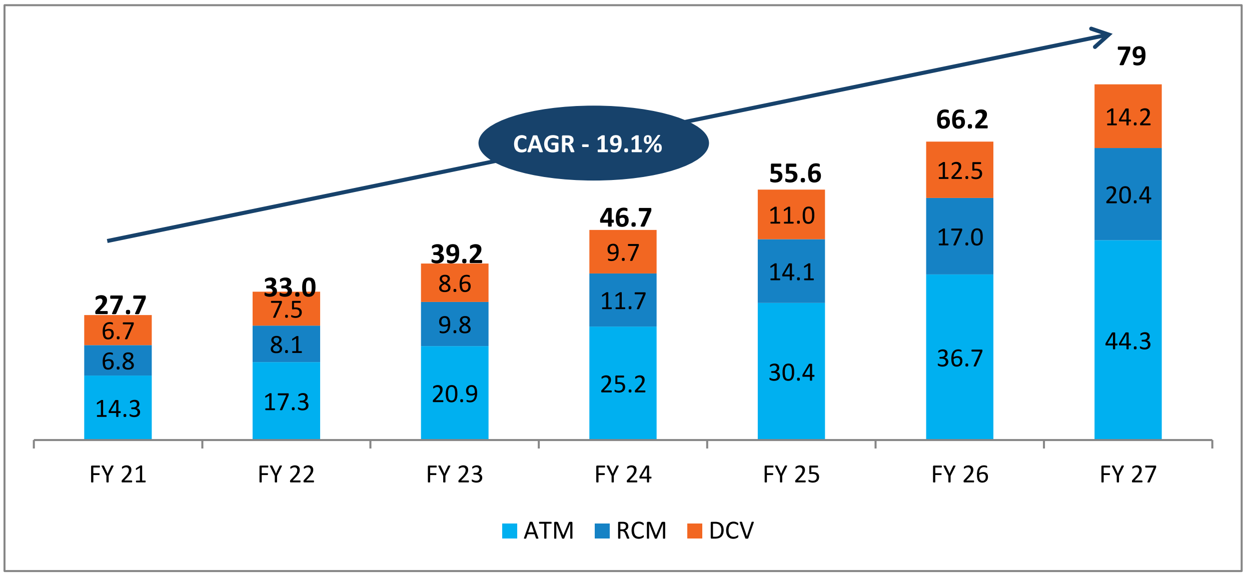
COVID-19 had an influence on the cash management business, although its impact was much short-lived as compared to the demonetization period. Because of the increase in economic activity and the vaccination effort, the situation has eventually reversed, resulting in the return of major industries that were heavily depended on cash (e.g. travel & hospitality, retail shops, restaurants etc.). Also, while most retail shops were closed during multiple lockdowns, the e-commerce sector saw an increased traction owing to the same. As a consequence, the COD component within e-commerce saw a proportionate increase – one that has aided the growth of cash management companies during the COVID-19 period.

BFSI, NBFCs, malls, fashion stores, food and beverage stores, pharmacy chains, and hospitals are all boosting the cash management market in India, especially the RCM business. These industries deal with enormous amounts of cash and need the help of private cash management companies. The organized retail market in India is growing at a rate of 20% per year (FY 2020-25) and is predicted to account for 30 percent of the market by FY 2025. The RCM segment of the cash management sector is projected to grow as organized retail expands.

The Indian cash management market is consolidating, mostly as a result of smaller/unorganized players quitting the market due to stringent compliance requirements and a growing trust among scale players. The consolidation trend is expected to continue in India, as is the case in most worldwide economies where cash management is a duopoly.

The cash management market in India grew at a CAGR of more than 10% from approximately INR 10 billion in Fiscal Year 2010 to approximately INR 27.7 billion in Fiscal Year 2021, and primarily consists of ATM replenishment services, retail cash management services, and cash-in-transit services, which are expected to grow at CAGRs of 20.7 percent, 20.3 percent, and 13.4 percent, respectively. In the last decade, the market experienced a slowdown in its growth owing to a decreased level of outsourcing, macroeconomic disruptions (e.g. Demonetization, GST etc.) and so on. The cash management services market in India is expected to continue to grow at a healthy pace of 19.1%, on account of several factors such as the recovery in the banking sector in India which is positioned for a growth phase with CIC having grown in the past five years at a rate of 14%. The projected increase in cash-related services such as ATM cash management and retail cash management services are also expected to contribute to a healthy growth of the sector in the future.

Exhibit 60: Cash Management Market, INR Billions, FY 2021-27

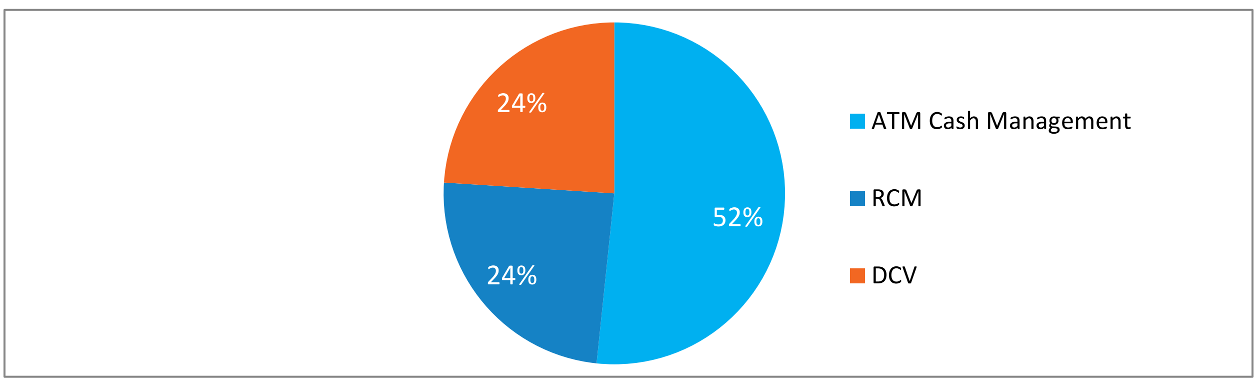


Source: Frost & Sullivan, Secondary Sources

10.2 Market Split by Segments

ATM Cash Management business (INR 14.3 Billion) is the biggest segment holding about 52% of the market share in Cash management services market. Retail Cash Management (INR 6.8 Billion) contributes to about 24% of the market revenue while Dedicated Cash-in-transit Vans (INR 6.7 Billion) contributes to the remaining 24% of the market.

Exhibit 61: Cash Management Services, Market Revenue by Major Service Types, FY 2021 (in %)



Note: Excludes auxiliary services such as CC management, bullion, vault and other auxiliary services as they form only a minor portion of the market share

Source: RBI, Frost & Sullivan, Secondary Sources

10.3 Market Segment: Retail Cash Management

The transportation of cash and valuables to and from retail or other private entities that deal in large amounts of cash and valuables is referred to as Retail Cash Management (RCM). Depending on the client and bank agreement, the service may additionally include cash processing and overnight vaulting. Cash and valuables are delivered on behalf of retailers or private businesses, either to be deposited in a bank or to be distributed among the retailer's or corporate office's various branches. Cash pickup and cheque collection services, demand draft and travellers' cheque delivery services etc., are available as per the customer’s requirement.

Cash is used extensively in India's retail transactions. There has been a significant increase in demand due to the expansion/proliferation of NBFCs, e-commerce, and other enterprises, as well as their expansion into Tier 2+ cities, leading to far greater share of cash on delivery. In FY 2022 COD constituted more than 60% of all e-commerce payments, indicating the significance of cash with respect to payments. Also the share of COD payments is more pronounced as we move from metros (~50% COD) to lower tiers such as tier 2 (~70% COD) and tier 4 regions (~90% COD). As the e-commerce penetration increases in these lower tiers, the share of COD payments is also expected to increase correspondingly.

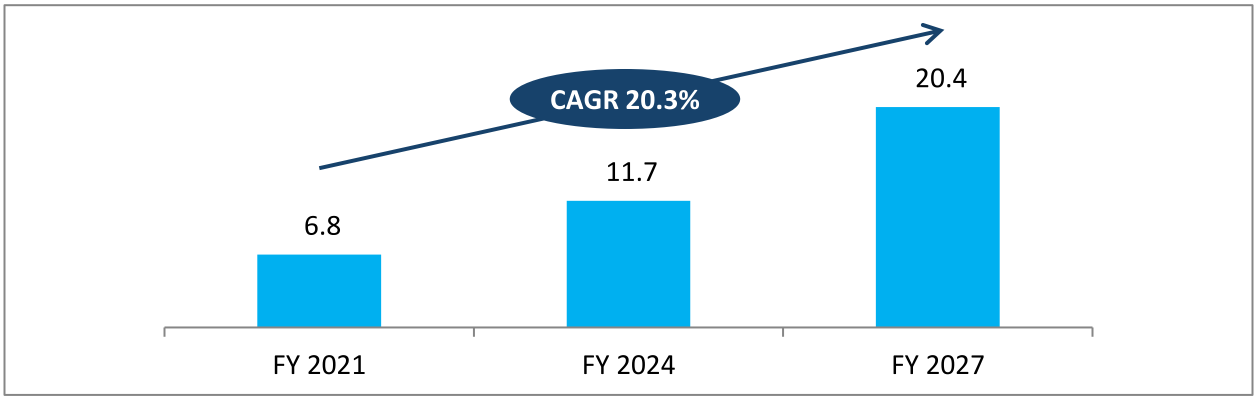
In India, retail cash management remains relatively untapped. Although the country has over 30 million retailers, only 10% of them are members of the organized sector. Approximately 15% of retailers in the organized sector use retail cash management services. As the unorganized sector exempts itself from consuming RCM services, the market for retail cash management is significantly underpenetrated in India as compared to advanced economies. For instance, in the United States, two-thirds of the total retailers avail some form of cash management solutions. This is because more than 85% of the retail market in the United States is organized. Hence there is a latent potential for RCM to be used as doorstep banking for retailers in India.

Until recently, banks facilitated the majority of the RCM market. Banks used to allow retailers to create accounts at their branches, and as part of their other banking services, they would provide cash management services. Various banks actively pursue cash management services and provide services such as escrow, other services, and door-to-door banking. For the most part, cash management firms make only one visit or pick up for each touch point. As cash quantities rise, some merchants may require two pick-ups in one day. RCM's main segments are BFSI, malls, fashion stores, food and beverage stores, and hospitals. Because of the cost and maintenance advantages, an increasing number of retailers are opting for RCM services. This tendency is expected to expand RCM market penetration in India over time.

In addition, the outsourcing of cash management services is expected to also be driven by public sector banks which are, after the recent consolidation, looking for measures to stem the erosion of the market share to the private sector banks.

CMS, Radiant, and Writer Safeguard (WSG) dominate the Retail Cash Management market, accounting for more than 75% of the total market share. Owing to regulatory mandates and profitability concerns within the cash management sector, companies like WSG have decided to focus more on the ATM Cash management business, thereby leading to a consolidation of the RCM market which consists of CMS and Radiant as the two key players. While CMS has a differentiated offering across the cash management services market (including ATM cash management, RCM and DCV), Radiant has established itself as an integrated cash logistics player with leading presence in retail cash management (RCM) segment.

Exhibit 62: Retail Cash Management Market, INR Billions, India, FY21-27



Source: Frost & Sullivan, Secondary Sources

The RCM market is estimated at INR 6.8 billion in FY 2021 and is projected to reach a market size of INR 20.4 Billion by FY 2027, growing at a CAGR of 20.3%. The growth in the organized retail sector as well as the corresponding outsourcing potential is expected to be prime factors for the development of the RCM market in India.

10.4 Market Drivers

a. **Growth in currency-in-circulation:**

In the future, CIC is expected to increase at a pace, roughly in line with or slightly slower than long-term nominal GDP growth. In India, CIC has almost increased three folds in the last decade. Despite demonetization, in FY 2021, CIC had doubled as compared to FY 2017 (period of Demonetization). CIC is expected to reach INR 50 trillion rupees by FY 2027. Regardless of whether or not digital payments are used, CIC has expanded in developing countries in lockstep with GDP development.

b. Rise in the Number of Key Retail Touch Points

A positive economic outlook has paved way for the organized retail movement in India. Organized retail sector is growing at an annual rate of 20%[23]. Increasing customer base in the form of rising number of retail outlets(both organized and unorganized), COD in ecommerce, petroleum outlets, insurance premium payments, railways, NBFCs, microfinance, restaurants, etc. are positively driving the cash management market, especially the RCM business in India. These three sectors handle large volumes of cash and use the services of private cash management companies. There is a positive outlook for all these three sectors. While traditional or unorganized retailing arrangements continue to flood the retail market, organized retail is growing at a faster rate and engulfing traditional retailing.

c. Demonstrated Efficiencies Drives RCM Adoption

Retailers benefit from cost and operational efficiencies by outsourcing the time-consuming yet basic activities of cash management. As a result, merchants may free up their cashiers to focus on more

[23] Equitymaster

customer-facing tasks. In general, merchants delegate cash room management to their trusted, more tenured and well-respected staff, who excel at transforming customer-facing time into higher sales and profit. Cost efficiencies manifest through the improvement of payroll, cash variation, cost of cash, cost of armored services, GPS devices, CCTVs, bank service fees and other KPIs related to retail cash management. In a price sensitive market like India, retail merchants opt for RCM services as it is much cheaper to avail an RCM service over credit card charges or self-deposit charges.

d. Higher Penetration of Cash-on-Delivery in Lower Tiers

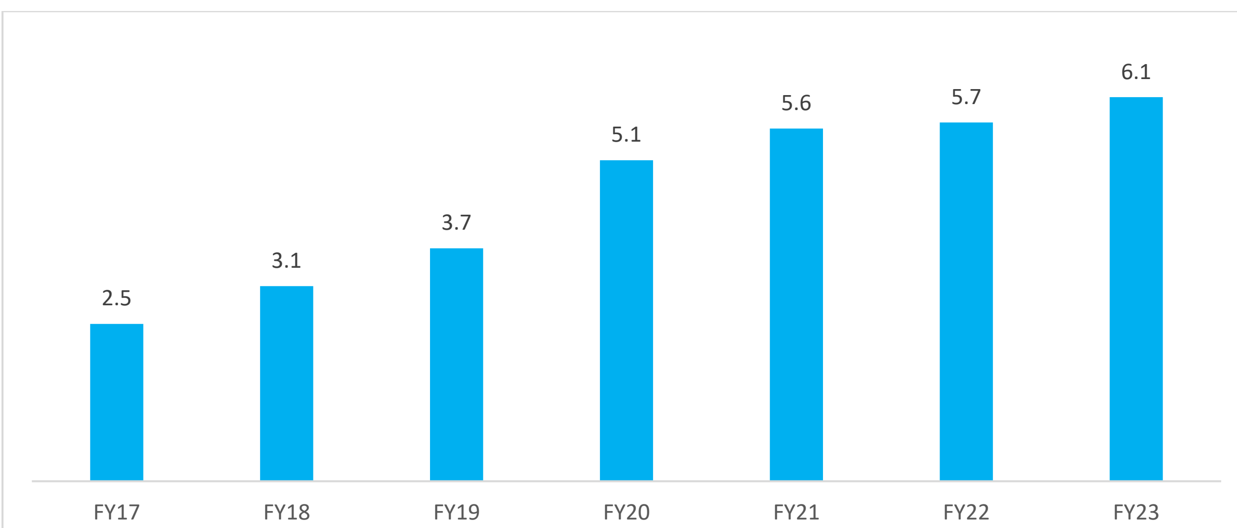
Contrary to the idea that e-commerce could hamper the growth of cash management companies; it is fuelling the growth momentum for RCM. About 60% of the e-commerce transactions are based on COD indicating a strong presence of cash transactions in India. While prepaid orders have increased significantly in larger cities such as Mumbai, Delhi, Bangalore, and others, the vast majority of purchasers in tier 2 and tier 3 cities (90%) still prefer to pay in cash. Due to the availability of COD, many states are seeing increased e-commerce adoption rates. In the North-eastern states and other semi-urban and rural regions, COD is on the rise, making e-commerce last-mile penetration easier. As the penetration of organized retail increases in the lower tier regions, the potential for cash management services also increases correspondingly.

10.5 Market Restraints

a. Increase in Penetration of POS Terminals/Devices in the Retail Sector

The deployment of POS terminals or devices is increasing as part of a continuing push by public sector banks to discourage the usage of cash and increase the penetration of card infrastructure in the retail sector. Given the growing use of digital payments, merchant acquiring banks have installed a total of 6.07 million point-of-sale (POS) terminals, with over half of which were done so in the first quarter of the current fiscal year. Comparing the first quarter to the previous year, POS deployment increased by almost 28%.

Exhibit 63: Number of POS Terminals, in millions, FY 2017-23



Data as of April, 2022
Source: RBI, Frost & Sullivan, Secondary Sources

b. Rising Mobile Wallets and Digital Transactions

In the long run, increasing payments via mobile wallets and other digital alternatives is likely to diminish the volume of cash transactions in urban areas. Such a decline in demand could drive competitive pressure within these regions. However, as the opportunity increases in the lower tiers, owing to the market penetration in such regions, the impact of digital transactions is not expected to be severe for cash management companies.

10.6 Outsourcing Drivers for Retail Cash Management

The number of retail touch points currently addressable for cash management is over 3 million. By FY 27, another one million retail touch points will become addressable; both from the addition of touch points as well as from the increase in the outsourcing of retail touch points. The number of organized retail touch points available for outsourced cash management is expected to double between FY 21 and FY 27.

Exhibit 64: Growth of Outsourcing across Retail Touch Points, in 000s, FY 21-27

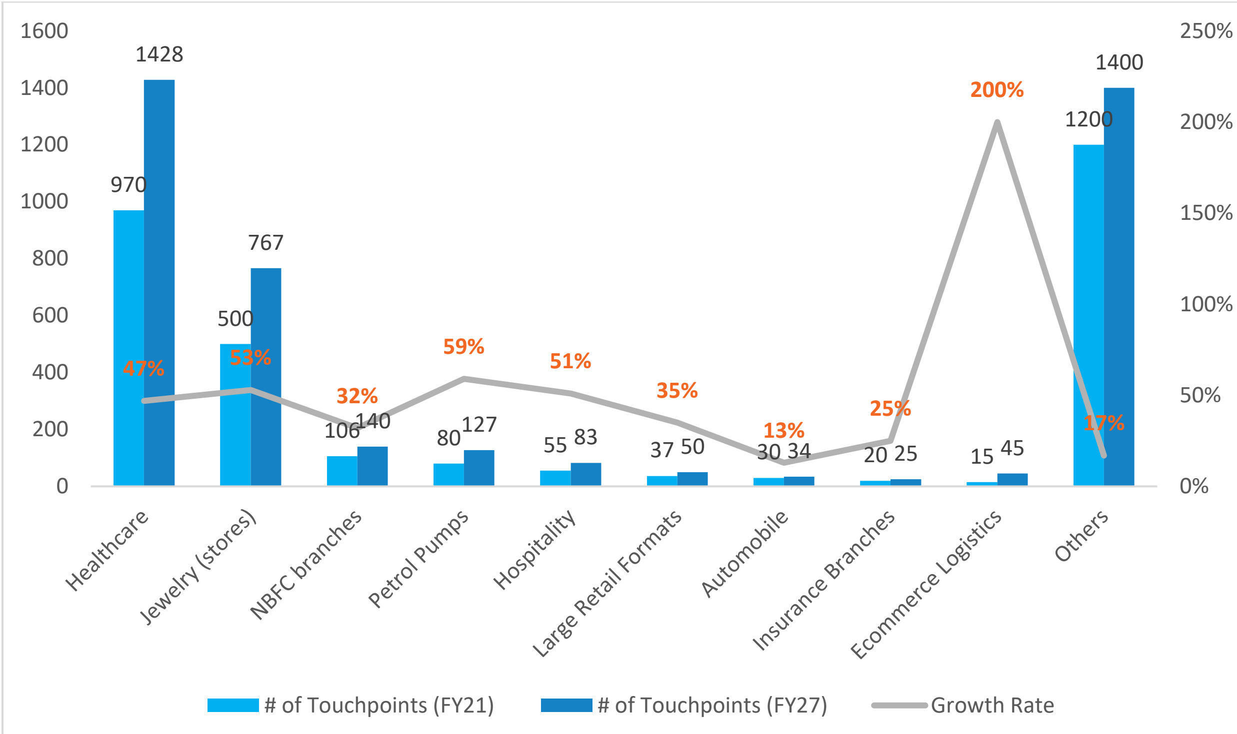
	Industries	FY 21	FY 27
Retail Touch Points	Healthcare	970	1,428
	Jewelry (stores)	500	767
	NBFC branches	106	140
	Petroleum Industry (petrol pumps)	80	127
	Hospitality (HoReCa)	55	83
	Large Retail Formats	37	50
	Automobile (dealer showrooms, service centers)	30	34
	Insurance branches	20	25
	Ecommerce Logistics (distribution centers, 3PL points)	15	45
	Others (railway stations, utility offices etc.)	1,200	1,400
	Number of addressable retail touch points	3013	4099
% of Organized		13%	20%
	Number of organized retail touch points	453	813
% of Outsourcing		24%	28%
	Retail touch points available for cash management	110[24]	224[25]

Source: Frost & Sullivan, Secondary Sources

[24] Variable outsourcing percentage applied to different retail touch points in FY 21

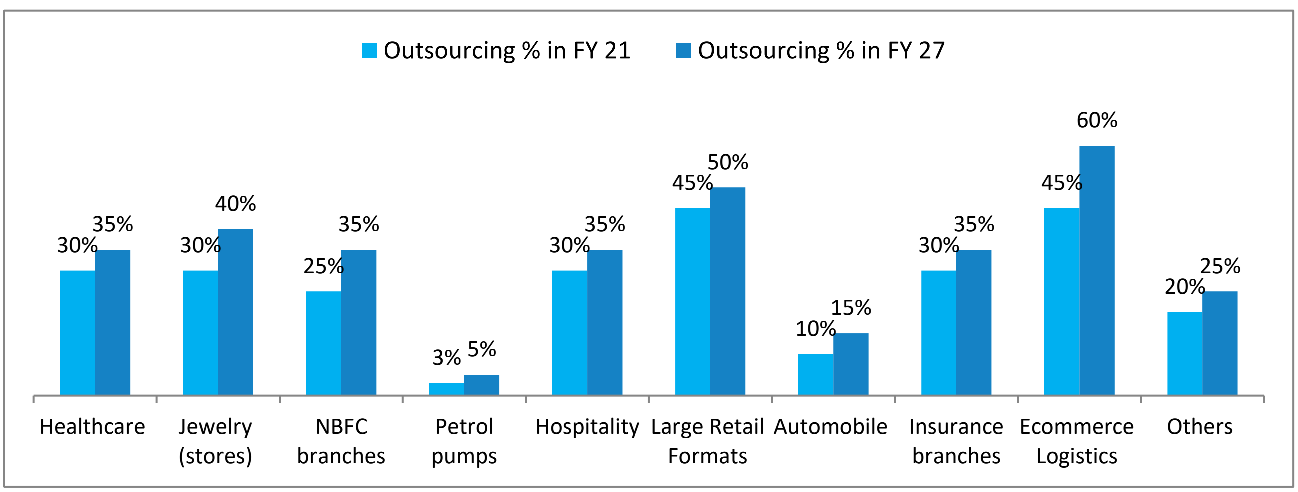
[25] Variable outsourcing percentage applied to different retail touch points in FY 27

Exhibit 65: Growth of Retail Touch Points, in 000s, FY 21-27



Source: Frost & Sullivan, Secondary Sources

Exhibit 66: Increase in Outsourcing across Retail Touch Points, in %, FY 21-27



Source: Frost & Sullivan, Secondary Sources

Key Outsourcing Drivers for RCM

- Increasing preference for cash mgmt. services among retailers, NBFCs, restaurants, Insurance companies, railways and focus from the government towards outsourcing of cash management
- Market driven by convenience as rather than spending own resources (e.g., sending staff to banks for cash deposits) retailers chose to pay for bank services (incl. retail cash vaults) driving higher convenience

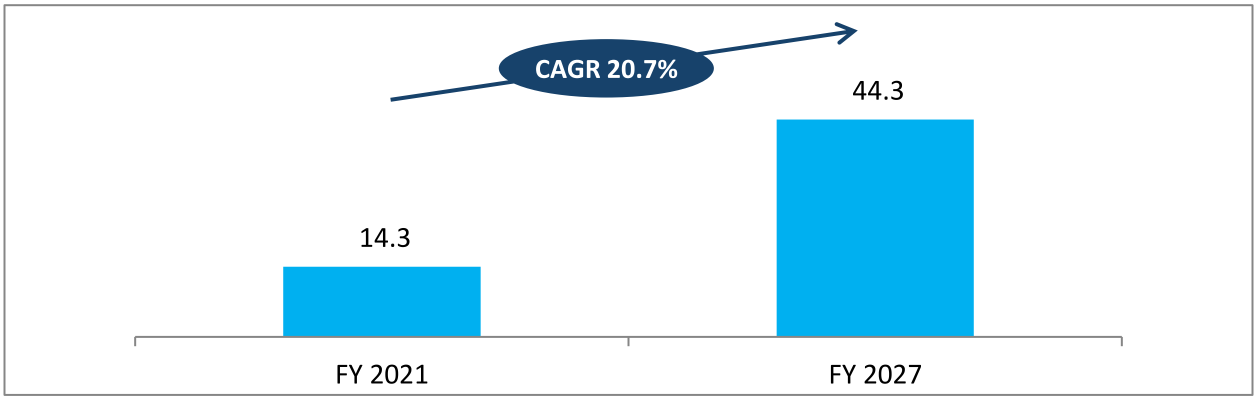
- Increasing organized retail outlets lead to increase in demand for ancillary services like retail cash vaults
- Increasing number of retail outlets crossing threshold of volume of cash collections – making it viable to avail cash mgmt. services
- High demand from T2+ cities driven by select industries and increasing reach
- As E-commerce logistics expands into Tier 2+ cities (having higher share of COD) it can potentially lead to a huge increase in demand for cash mgmt. services
- NBFCs are expected to have high concentration of branches in rural areas
- Expected entry of organized retailers in smaller towns

10.7 Market Segment: ATM Cash Management

ATM cash replenishment and first-line maintenance are included in ATM cash management services. Offsite ATM servicing is outsourced to cash management services providers, whereas cash replenishment for onsite ATMs (ATMs on bank premises) is sometimes done by the bank itself. Around 60% of India's ATMs have been outsourced as of March 2021. Revenue is often connected to the number of replenishments on a monthly basis, which includes first line maintenance (FLM) services. Effective route design is crucial since an increase in the number of ATMs covered each day directly translates to higher profits for cash management service providers. Apart from cash replenishment, managed service providers / cash management firms are obliged to respond to FLM calls relating to ATM-related issues such as currency jams, stationery jams, card jams, and so on. The ATM officers are expected to report to the ATM location within 24 hours of receiving the FLM call.

The ATM cash management market size in India is estimated at a size of INR 14.3 Billion in FY 2021. This is expected to grow at a CAGR of 20.7% to reach a potential market size of INR 44.3 Billion by FY 2027. The projected growth in the number of ATMs and the potential for increased outsourcing in the upcoming years are key factors to the growth in this market.

Exhibit 67: ATM Cash Management - Market Forecast, in INR Billion, FY 2021-27



Source: Frost & Sullivan, Secondary Sources

Market Drivers

a. Low ATM Density Indicating a Vast Scope for Growth

ATM cash management market in India is estimated to grow at a rapid pace, owing to efforts aimed at bridging the demand-supply gap prevailing in ATM usage in India. It still falls short of the world average with 22 ATMs per 100,000 adults in the country as of FY 22. As the country is making progress in terms of inclusion of population into banking sector, there are several initiatives undertaken by the RBI to increase the ATM density in the country. Even developed economies that have a strong mobile and electronic banking system have far higher densities. This indicates the scope for growth of ATM penetration in India.

b. Increase in Number of ATMs

Because the growth of the ATM Cash Management market is inextricably linked to the growth of the ATM industry, an increase in ATM deployments would have a substantial impact on the ATM cash management market's growth. The Demand in Tier II and III regions, as well as replacement demand for ATMs, are projected to drive the market forward. The recent increase in ATM interchange is likely to drive ATM deployments, particularly WLAs. The pent-up demand for ATMs in India is expected to be addressed as bank mergers and balance sheet cleanups have largely materialized, and as PSBs return to expansion mode - as evidenced by recent RFPs for ATM deployment.

Market Restraints

a. Rising Mobile Wallets and Digital Transactions

In the long run, increasing payments via mobile wallets and other digital alternatives is likely to diminish the volume of cash transactions in cities. Such a decline in demand will put even more pressure on cash management firms to compete.

b. Security Challenges and Compliance Risk

Service providers always carry a risk during cash transfers and ATM Cash Management usually involves the transfer of large amounts of cash. Hence security challenges during unprecedented times (such as

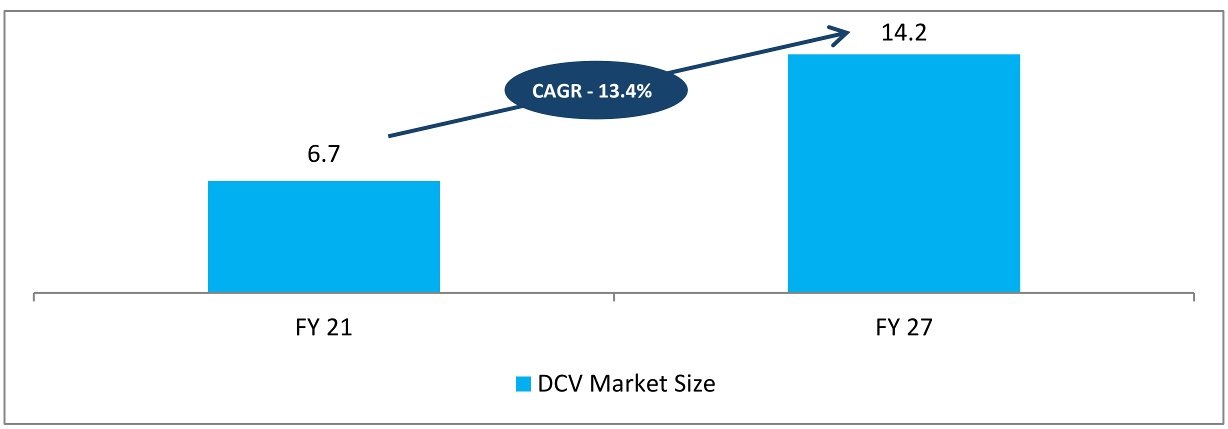
COVID-19), could become hotspots for service providers to address from a risk standpoint. Similarly, they also have to adapt to changing compliance landscape and requirements from RBI.

10.8 Market Segment: Dedicated Cash Vans (DCV)

Dedicated cash-in-transit business involves leasing out of cash vans along with armed guards, drivers, custodians and fitted with CCTV/GPS etc., for movement of cash and other valuables between bank branches, bank vaults and RBI. DCVs help in the physical transfer of banknotes, coins and items of value from the currency chests of banks to its branches or from branches to branches. It also involves bulk transits of currency for inter-city and inter-branch. DCV business is influenced by the expansion of bank branches. Although there is an increase in technology-driven transactions, banks are expanding their branch networks. CIT business pricing is subjective in nature. Cash management companies provide banks with vehicles being dedicated to a particular bank branch, currency chest or head office for particular time period in a day for cash transit between different cash points.

The DCV market in India is estimated at a value of INR 6.7 Billion in FY 2021 and is projected to reach a market size of INR 14.2 Billion by FY 2027. The number of DCVs in India is also expected to increase from 6720 in FY 2021 to 7500 by FY 2027, growing at a CAGR of 13.4%. With respect to DCVs, compliant vans have a higher realization rate per van per month (at approximately INR 185k), and with the potential increase in compliant vans, owing to regulatory push, the DCV market is expected to increase by 13% between FY 21 and FY 27.

Exhibit 68: Dedicated Cash Vans Market in India, INR Billion, FY 21-27



Source: RBI, Frost & Sullivan, Secondary Sources

Market Drivers

a. Increase in Bank Branches

The number of bank branches in India was estimated to be at 125,000 in FY 2021. This number is predicted to increase to 180,000 by FY 2027. Bank branch expansion in India is expected to be driven by the growth of banking services in rural areas and the formation of innovative models within the cash management services sector. In addition, the RBI requires that at least 25% of any new branches that Indian banks open in a given year be in rural areas that do not have access to banking services, and private sector banks have been independently expanding their bank branches in the rural and semi-urban areas as a result of the opportunities created by rural economic growth being created by government initiatives in those areas.

b. Increase in outsourcing of dedicated cash vans:

The number of compliant vans for cash transfers is projected to rise as a result of RBI directives. Banks may write off current van expenditures and outsource the DCV business to specialized companies due to the high costs of addressing new regulatory standards.

c. Shift from unorganized to organized service providers:

Banks will progressively outsource their DCV operations to compliance players rather than to unorganized companies as the need for compliant vans grows, hence increasing the proportion of outsourcing.

Market Restraints

a. Increasing Digital Payments:

The DCV market could be adversely affected by the rise in mobile and digital payments (such as digi-wallets and fund transfers). Banks are considering digital transformation to reduce cash-related costs, as well as to connect with a bigger client base and deliver low-cost services.

b. Security Concerns

Theft of DCVs is a widespread occurrence that poses a security challenge; as a result, DCV operators must spend more on security-related issues and are accountable for any cash lost in transit.

c. Other Related Segments Within Cash Logistics

Other services like bullion management, vaulting services and cash processing are seeing gradual increase in importance. India has been the largest gold importer worldwide, with China. Bullion management is also witnessing increasing penetration as the gold and bullion market is becoming organized. Bullion management refers to outsourcing activities related to custom clearance, vaulting and local deliveries. Vaulting services have to be compliant with RBI norms for vaults classified as Class A, Class B and Class C.

Cash processing includes cash collection, counting, sorting process (sorting of notes to identify to fit, usable, mutilated, counterfeit, etc.). Cash processing services are usually carried out on behalf of banks and few large users of cash. These services, which currently form a small portion of the market is estimated to witness increased penetration in the market as more and more customers outsource their cash handling activities to third party service providers. Banks are also running pilot studies to understand the cost benefits of outsourcing currency chests, especially in an era of NPAs. Industry experts opine that banks can save 35 – 50% of costs through outsourcing currency chests operations to cash management companies, which can efficiently deliver services by using the same infrastructure for several banks thus abating costs for each bank.

The steady flow of cash in and out of the hands of customers and retailers is critical to economic progress, resulting in a "win-win" situation for all parties involved. Most retail firms rely on cash, and in today's retail environment, when business transactions are on the rise, an efficient cash management algorithm is a must to properly execute payments, recover receivables, and manage surplus cash. Due to delayed credit off-take and poor margins, retail stores are increasingly outsourcing Cash Management. In particular, the retail industry is becoming more inventive in its customer service and is on the lookout for cash management pioneers who can give consistent service and real-time reporting to help clients manage their cash effectively. Also, bottlenecks such as high operational expenses, lack of process automation leading in dilution of controls, and lack of Real-Time Information availability, to name a few, must be removed.

RCM has evolved from a cost center for banks to a revenue center as retailers are increasingly prepared to pay for these services (before, these activities were either performed by merchants themselves or for which banks charged a small fee). While banks make the majority of CIT vendor selection decisions, merchants are increasingly playing a role as an influencer. Some of the key trends seen in the cash logistics space, particularly with respect to the RCM business are listed below:

- **Adoption Driven By Ease of Access**: Rather than using internal resources (such as sending employees to banks to make cash deposits), shops elected to pay for bank services, resulting in increased convenience.
- **Cost-efficiencies of Outsourcing:** For retailers, it is extremely cost-efficient to outsource their cash management activities as RCM players use same infrastructure to service multiple clients and hence cost per point is lower than cost of employee. Also, it is much more safe to outsource (gunmen, CCTV, GPS, etc.).
- **Demand expansion**: The advent of NBFCs, e-commerce, and other enterprises, as well as their expansion into Tier 2+ cities (with a considerably higher share of COD), has resulted in a significant increase in demand.
- **Ancillary service demand**: Retailers have shown a desire for more services. Retailers prefer banks to direct CIT players because they have historically had more faith in banks and prefer to have only one point of reconciliation.
- **Operational Efficiencies**: For retailer satisfaction, RCM time and cost efficiencies are crucial, since prompt pick-up and recon will provide them with needed operating cash. RCVs (Retail Cash Vans) are growing more popular as a result of their ease.
- **Improved Relationships**: RCM is being actively offered by banks to retailers in order to enhance relationships, increase share of wallet, and increase retention. The floating interest rate (discounted or sometimes free) offered by banks who consume their services also serve as an attractive option to retailers. Banks also gain visibility into their customers' receivables by collecting cash on a daily basis.

11 Competitive Analysis

The market for cash management services is very competitive, and this trend is expected to continue in the future as well. A significant number of companies are offering dedicated services within the cash management sector. Most players have substantial competitive advantages in terms of their focus on specific areas within the market, the ability to strengthen relationships with their strategic partners and strong presence across key geographical regions. Owing to the inherent trust factor present within the market, potential customers may also prefer to engage with their existing providers rather than new providers regardless of service features. CMS Info Systems Ltd. (CMS), Radiant Cash Management Services Limited, Writer Safeguard Private Limited (WSG), SIS Cash Services Private Limited (SIS), Brinks India Private Limited, and Securevalue India Limited are the leading players in the organized cash management services sector in India. As the market consolidation intensifies, these top players stand to benefit from the aforementioned customer engagement. Radiant is one of the largest players in the RCM segment in terms of network locations or touch points served as of March 31, 2022.

Exhibit 69: Competitive Landscape – Comparison of Top Players, (as of March 31, 2022)

Company	Total Workforce	ATM Cash Management (# of ATMs)	Retail Touch Points (RCM)	RCV (# of vaults s)	DCV (# of vans)
CMS Info Systems Ltd.*	20,000	63,000	40,000	400	900
Securevalue Cash Services Pvt. Ltd.	8,716	46,214	Data Not Available	45 locations	232
Writer Safeguard Private Limited	6,000+	18,000	12,000	60+	Not Applicable
SIS Prosegur Holdings Private Limited	Data Not Available	14,000	5,000	59	1,000
Brinks India Private Limited	7,000	<5000	Data Not Available	Data Not Available	Not Applicable
Radiant Cash Management Services Limited	8,470	Not Applicable	49,980	55	739

Source: Frost & Sullivan, Company Websites, Industry and Secondary Sources

*Note: *- Data for CMS is as of Oct 31st, 2021*

Exhibit 70: Competitive Landscape – Financial Metrics, FY 2017-21

	CMS Info Systems Ltd		Radiant Cash **Management** Services **Limited**		Securevalue India Limited		Writer Safeguard Private Limited		SIS Cash Services Pvt. Ltd.		Brinks India Private Limited	
Headquarters	Mumbai		Chennai		Mumbai		Mumbai		Delhi		Mumbai	
Key Area of Focus within Cash Management	Presence across ATM cash management, RCM, DCV and Managed Services		Key focus on RCM and DCV		Key focus on ATM cash management with limited presence in RCM and DCV		Mostly focused on ATM cash management and RCM.		Key focus on ATM cash management and DCV. Limited presence in RCM		Presence across all segments with increasing focus on RCM	
Financial Metrics												
	FY 17	**FY 21**	**FY 17**	**FY 21**	**FY 17**	**FY 21**	**FY 17**	**FY 21**	**FY 17**	**FY 21**	**FY 17**	**FY 21**
Revenues (INR MN)	10,116	13,219	1,793	2,242	2,114	4,065	2769	1091	3,381	3,334	2,246	2,145
Revenue CAGR (%)	6.9%		5.7%		17.8%		-20.8%		-0.3%		-1.1%	
EBITDA (INR MN)	1598	3094	253	498	349	507	173	-2	50	315	155	181
EBITDA CAGR (%)	18%		18.4%		9.8%		NA		58.6%		3.9%	
PAT (INR MN)	787	1685	32	324	83	17	-180	-3	-107	-2	36	74
PAT CAGR (%)	21%		78.2%		-33.3%		64.7%		-65.1%		19.6%	
CAPEX (INR MN)	142	551	30	31	0	168	-513	NA	94	8.3	53	10
CAPEX CAGR (%)	40.3%		0.1%		NA		NA		-45.5%		-33.3%	
ROE (%)	14%	17%	6%	26%	51%	1%	-64%	-1%	-8%	-0%	4%	6%
ROCE (%)	22%	23%	37%	36%	42%	9%	-7%	-1%	-4%	8%	11%	9%
EBITDA Margin (%)	15.8%	23.4%	14%	22.2%	16.5%	12.5%	6.2%	-0.2%	1.5%	9.4	6.9%	8.4%
CAPEX / Sales	1.4%	4.2%	1.7%	1.4%	NA	4.1%	19%	NA	2.8%	0.2	2.3%	0.5%
PAT Margin	8%	13%	1.8%	14.5%	3.9%	0.4%	-6.5%	-0.3%	-3.2%	-0.05%	1.6%	3.5%

Source: Frost & Sullivan, Company Reports, Secondary Sources

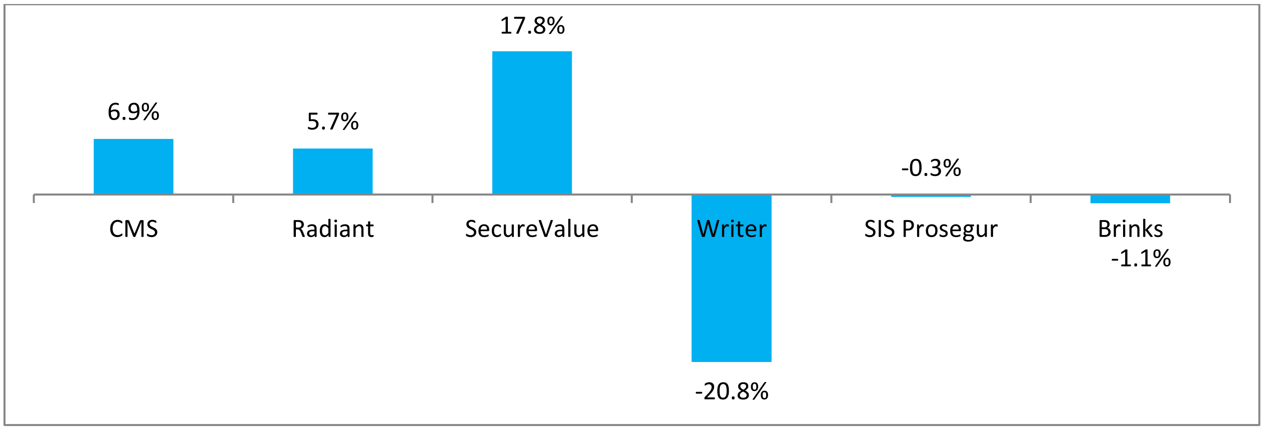
ROE: PAT / Shareholder's Funds

ROCE: EBIT / (Shareholder's Funds + Total Debt + Deferred Tax Liability)

Total Debt for the purpose of ROCE is inclusive of Long & Short Term borrowings only

While players such as Writer Safeguard (WSG) witnessed a relatively lower growth rate for revenues between FY 2017 and FY 2021, SecureValue, CMS, and Radiant demonstrated higher revenue growth as compared to their industry peers.

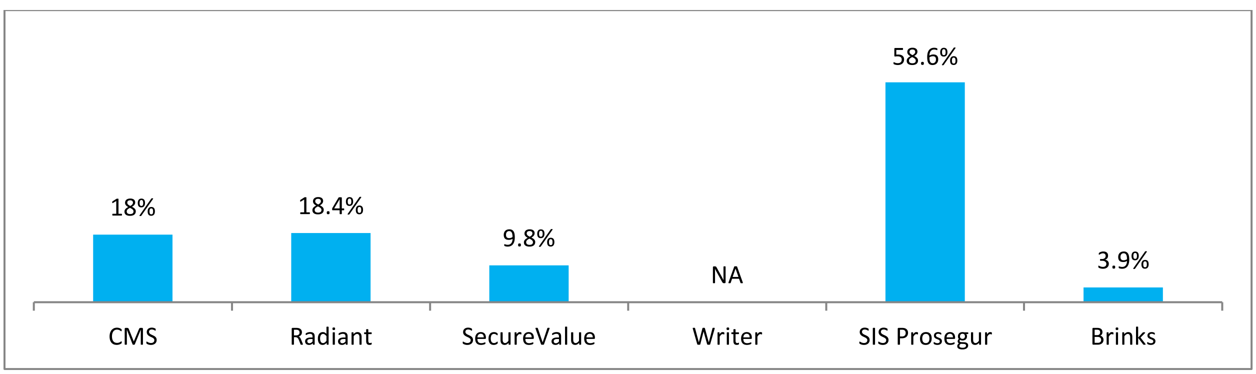
Exhibit 71: Revenues CAGR (FY17-FY21)



Source: Frost & Sullivan, Company Reports, Secondary Sources

Although companies such as CMS, SecureValue and Brinks demonstrated a positive growth rate, SIS Cash Services and Radiant stand out with 58.6% and 18.4% as their respective EBITDA CAGRs, underscoring their operating profitability.

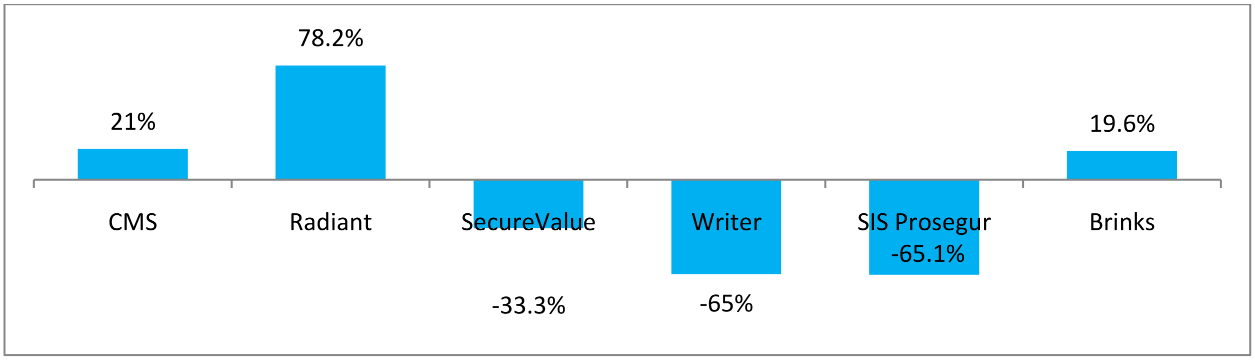
Exhibit 72: EBITDA CAGR (FY17-FY21)



Source: Frost & Sullivan, Company reports, Secondary Sources

PAT CAGR is an indicator of how well a company can deliver operational efficiency while controlling costs. In this regard, Radiant has the highest PAT CAGR as compared to its industry peers. CMS comes a distant second with a CAGR of 21% and the remaining players have a relatively lower growth rate

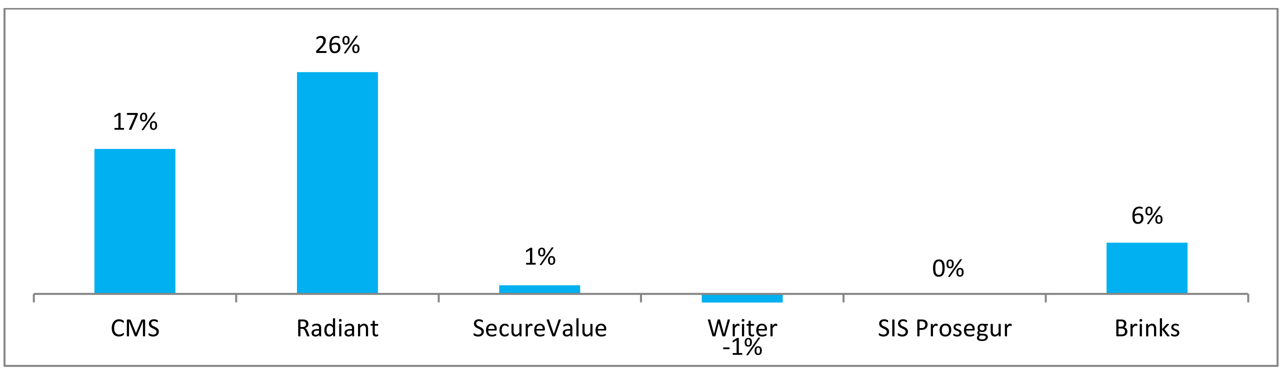
Exhibit 73: PAT CAGR (FY17-FY21)



Source: Frost & Sullivan, Company Reports, Secondary Sources

Companies such as Writer Safeguard (WSG) had a negative ROE for FY 2021. Effective capital management and focus towards profitable business areas has seen Radiant deliver the highest ROE (26%) in the organized cash management space.

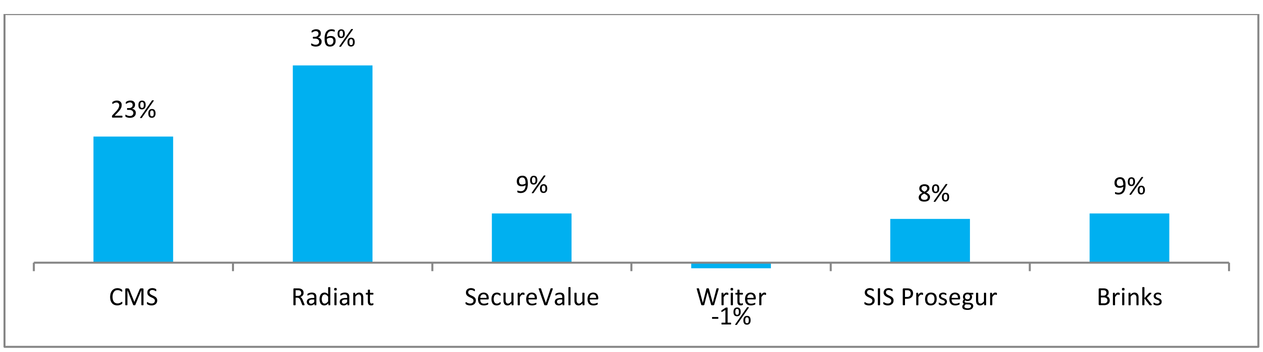
Exhibit 74: ROE FY21



Source: Frost & Sullivan, Company reports, Secondary Sources

Radiant has the highest ROCE amongst industry peers owing to the company shifting its focus towards RCM and DCV businesses and exiting the highly competitive ATM business.

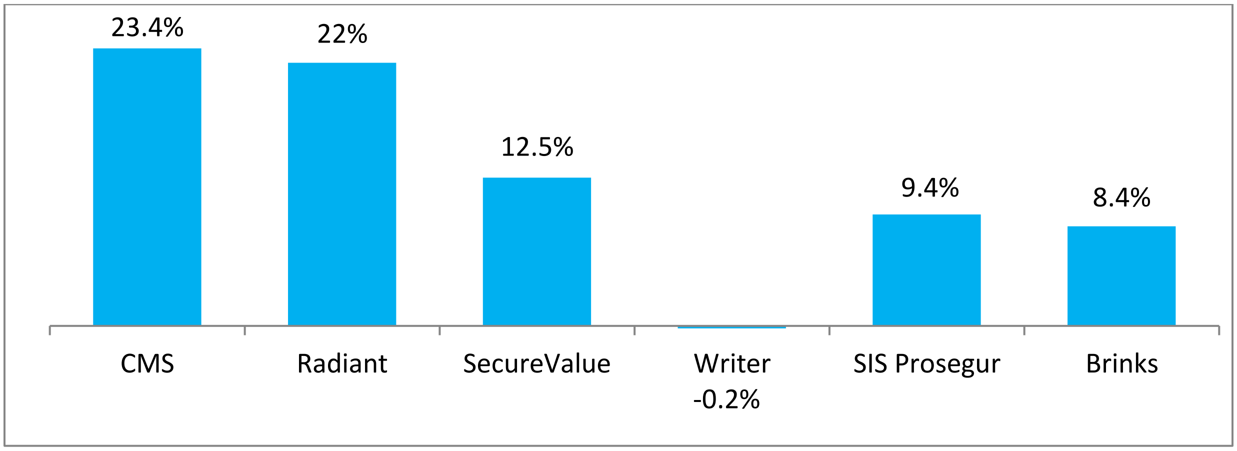
Exhibit 75: ROCE FY21



Source: Frost & Sullivan, Company Reports, Secondary Sources

Radiant has delivered some of the best-in-class EBITDA margins owing to its strong presence in the high-margin RCM segment and its ability to deliver profits using automation, resulting in the second highest EBITDA margin (22%) for FY 2021 amongst industry peers.

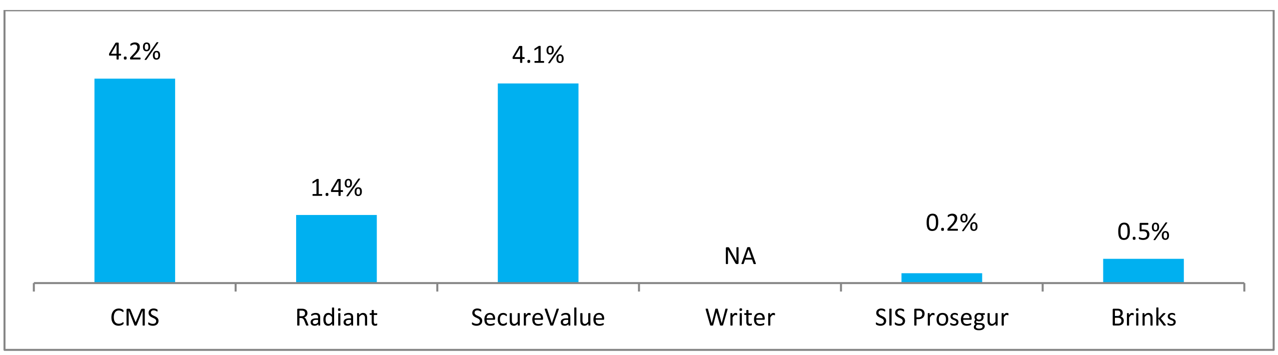
Exhibit 76: EBITDA Margin FY21



Source: Frost & Sullivan, Company reports, Secondary Sources

Asset-light business model: SIS Cash Services, Brinks and Radiant with low CAPEX/Sales ratio as compared to industry peers.

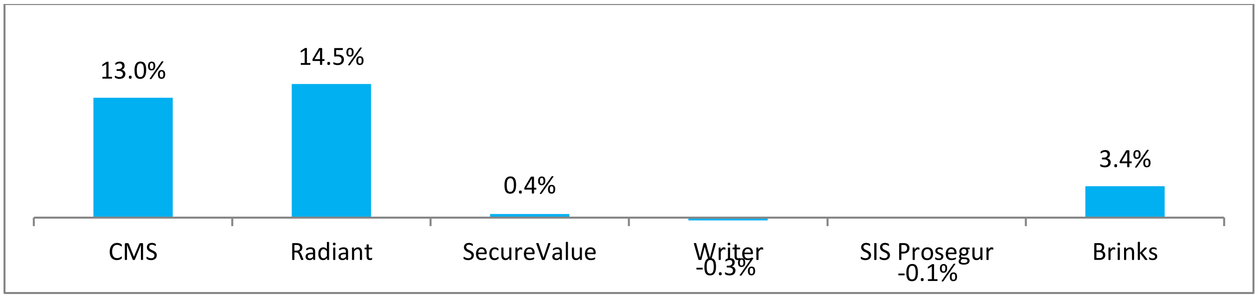
Exhibit 77: CAPEX / Sales FY21



Source: Frost & Sullivan, Company Reports, Secondary Sources

SIS Cash Services and WSG had a negative PAT margin for FY 21. Radiant and CMS witnessing a higher PAT margin as compared to their industry peers, bears testimony to the fact that these businesses are being run efficiently while delivering value in the form of profits to the shareholders

Exhibit 78: PAT Margin FY21



Source: Frost & Sullivan, Company Reports, Secondary Sources

12 Key Trends in Cash Management Services Market in India

12.1 Impact of RBI Regulations on Market Consolidation

In view of the increasing reliance of the banks on outsourced service providers and their sub-contractors in cash management logistics, certain minimum standards were prescribed by the RBI for the cash management companies engaged by the service provided within the cash logistics space. Accordingly, it was mandated that the banks should put in place certain minimum standards in their arrangements with the service providers for cash management related activities as outlined below:

A. Eligibility Criteria

- Minimum net worth of the cash management company should be INR 1 billion. The net worth of at least INR 1 billion should be maintained at all times.

B. Physical / Security Infrastructure

- Minimum fleet size of 300 specifically fabricated cash vans (owned / leased).
- Cash should be transported only in the owned / leased security cash vans of the Service Provider or its first level sub-contractors. Each cash van should be a specially designed and fabricated Light Commercial Vehicle (LCV) having separate passenger and cash compartments, with a CCTV covering both compartments.
- The passenger compartment should accommodate two custodians and two armed security guards (gunmen) besides the driver.
- No cash van should move without armed guards. The gunmen must carry their weapons in a functional condition along with valid gun licenses. The Service Provider should also furnish the list of its employed gunmen to the police authorities concerned.
- Each cash van should be GPS enabled and monitored live with geo-fencing mapping with the additional indication of the nearest police station in the corridor for emergency.
- Each cash van should have tubeless tires, wireless communication and hooters. The vans should not follow the same route and timing repeatedly so as to become predictable. Staff should be rotated and assigned only on the day of the trip.

- Night movement of cash vans should be discouraged. All cash movements should be carried out during daylight. There can be some relaxation in metro and urban areas though depending on the law and order situation specific to the place or the guideline.
- The staff associated with cash handling should be adequately trained and duly certified through an accreditation process. Certification could be carried out through the SRO or other designated agencies.

Prior to 2018, there was minimal compliance; however, RBI compliance rules in 2018 proved to be a significant economic burden (both MSPs and banks refused to share the responsibility). Recent RFPs, however, reveal a shift in the norm, with banks agreeing to pay more for CIT services if MSPs subcontract CIT business to compliant players.

Compliance is now at 1%, although it is predicted to increase to roughly 50% by FY 27. The RBI's current focus on getting the ATM Cash management sector 100 percent compliant before moving on to RCM is one of the main reasons for the slower adoption of compliance in the RCM space. Additionally, banks are hesitant to pass on compliance costs because many retailers have suffered significantly as a result of COVID, and banks are hesitant to impose compliance norms for RCM players because doing so would result in price increases, potentially rendering the business unviable for retailers.

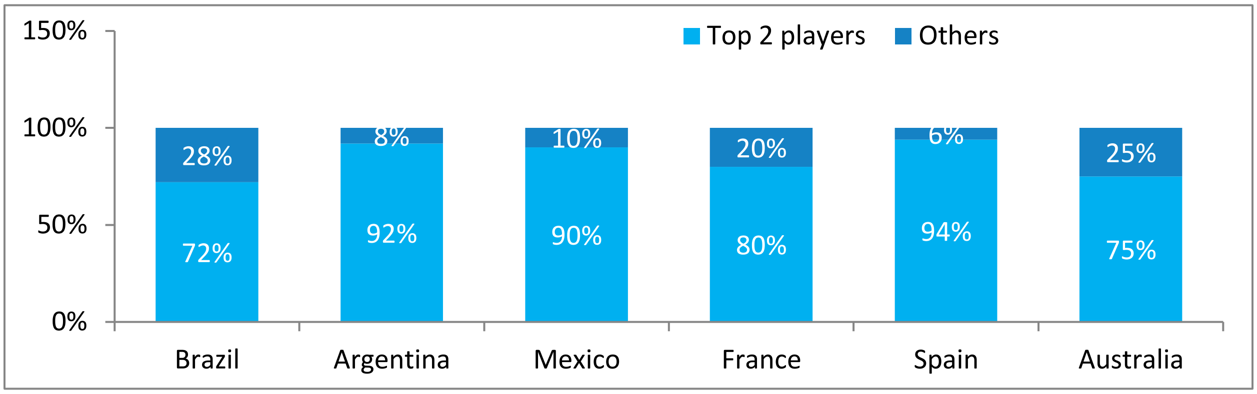
Owing to such mandates, a number of players have either exited the cash logistics space or have started to focus on specific segments to boost their revenue potential and profitability. Examples from the past include, Logicash selling its ATM CIT business to CMS, while Checkmate exited its loss-making RCM business. Brinks also decided to scale down its loss making ATM CIT business to focus on RCM vertical and other businesses. Consolidation of MSP customers is also taking place as a result of players either exiting the cash management market or selling parts of the business due to challenges in operations and profitability, particularly for sub-scale businesses and also focus by other players on their core businesses.

Customers increasingly prefer scaled players as the industry consolidates, as they have a stronger track record and reliable operations, as well as a greater ability to meet regulatory standards to assure business continuity. Consequentially, there exists an entry barrier in the market for new participants as they have to not only be in a position to compete with the scaled players, but also establish a high net worth and compliance in accordance with the RBI standards – the costs of which could deter from vying to compete in the RCM and DCV business, particularly.

12.2 Consolidation resulting in the Reduction of the number of Market Participants

Between FY 21 and FY 27, the cash management market in India is expected to develop at a CAGR of 19.1 %. The financial industry, as well as the organized retail sector, will drive the majority of this expansion. As the economy transitions to a cashless one, competition is projected to heat up, resulting in more market consolidation, as seen in mature markets. While maintaining organic growth, participants want to seek inorganic expansion as well as capitalize on the experience garnered through earlier acquisitions.

Exhibit 79: Consolidation in Global Cash Management Market (%), FY 2020



Source: Industry Reports, Frost & Sullivan, Secondary Sources

Top two companies in the worldwide cash management space, in countries like Spain, Mexico, and Argentina, account for more than 90% of the overall market share in their respective regions. Consolidation aids business propulsion through a variety of variables, including the following:

- Improved financials through scale, when small companies are bought by larger players without adding much cost base to the big players, ensuring that the big players' revenue will fall primarily to profit before tax (PBT)
- Geographic growth via boosting presence in underserved populations both across countries and within a single country (rural, Tier 2 cities)
- Increased operational efficiency as a result of scale

The market is entering a duopoly across India as well, similar to the global market, with only a few players able to meet market requirements and maintain profitability. As the cost of operations and adhering to strict RBI mandates rises, and players look to shift their operations to more profitable sectors, the market is entering a duopoly across the different key segments within the cash management sector.

Owing to the RBI mandates on meeting a defined net worth criteria and other compliance norms, there has been a significant decline in the number of Industry participants – both at an overall and segment level. The cash management industry has witnessed changes in regulations which have favored consolidation. Since FY 2018, this has led to a decrease in the overall number of players in the retail cash management industry from 17 as of FY 2015 to six major players as on December 31st, 2021[26]. Industry participants are expecting the market competition to shrink to 3 to 4 companies with the ability to provide services across India and mobilize cash cost-effectively, and this would also ease pricing pressures.

12.3 Outsourcing vs. In-House Cash Management in Banks

Banks in India have traditionally handled the majority of their cash management services in-house. Internally managing these procedures, results in significant labor, transportation, and facility overhead costs, not to mention lost time and efficiency. It's no surprise, however, that there's been a huge trend

[26] Frost & Sullivan Analysis

toward outsourced cash management services in the last five years, with Indian banks electing to engage with either a cash management partner or a service provider in the cash logistics space.

The Reserve Bank of India (RBI) created the "Outsourcing" policy in 2005, which refers to the use of third parties in the Indian banking industry. An associated body within a corporate group or an external company that can conduct operations on a continuous basis is classified as a "third party." Banks can reduce their risk by delegating cash management activities to those that have superior expertise and scale to manage the associated risk. Since then, Indian banks have begun outsourcing their cash management services in order to stay ahead of the competition.

a. In-house Cash Management:

Some banks have in-house cash management solutions that cater to fulfilling their cash management requirements such as internal staff for ATM cash replenishment, gunmen drivers etc. on rolls, having vans as assets etc.

The most obvious benefit of in-house cash management solutions is that the bank maintains complete control over all cash management activities. When a bank retains its cash management systems in-house, it may be easier to ensure information security and confidentiality.

The most significant downside of in-house cash management solutions is that they pull resources away from more vital tasks, such as generating revenue and serving customers. This may result in client unhappiness, which a bank cannot afford. In-house cash management also costs the bank money, not just in terms of installing cash management services, but also in terms of missed chances like developing new products and activities.

b. Outsourced Cash Management Services:

Banks may focus on critical services such as securing retail and commercial deposits—by outsourcing cash management to a trusted, technologically sophisticated partner organization. Outsourcing cash management services frees up valuable time and labor for banks that handle and process cash in-house, making operations more efficient and profitable, reducing potential liabilities and security risks, and allowing tellers and treasury management professionals to be more customer-centric. In markets where the financial institution does not have a physical presence, a trusted cash management partner serves as the institution's brick-and-mortar presence. For the bank's commercial customers, the partner handles transportation, processing, and cash reconciliation, simplifying the cash-flow process and lowering overhead expenses.

c. Outsourced cash management challenges:

Despite the fact that India has a large number of third-party cash management service providers, only a small number of players have adopted new technology, trained staff, or invested in infrastructure to effectively and securely deliver quality processing services. Uncertainties in the evolving regulatory landscape and the inherent trust factor when it comes to outsourcing serve as restraints to outsourcing of cash management activities.

12.4 Impact of Market Consolidation on Pricing

Owing to the headroom afforded by market consolidation, base pricing in the ATM Cash management space is projected to increase. COVID-19 has impacted retailers significantly, and banks are reluctant to enforce compliance requirements on RCM players as doing so would result in pricing increases, which might make the business unviable for retailers. In today's scenario, price disparities between companies in the retail cash management area are modest. RCM realization will rise as demand for value added services such as cash processing (verification and validation) and retail cash vaults increases.

As the number of players in the market has significantly reduced - owing to the aforementioned costs of complying with the RBI's mandates for cash management service providers, market competition has transitioned into a regulated and stable stage, wherein larger investments in the cash management network is no longer possible by small players. When there are fewer service providers, the easier it is to focus on building relationships with financial institutions and retail outlets. By consolidating the number of industry participants, the core players will get a larger piece of the market share. With the smaller players exiting the market space, the key cash management infrastructure such as cash vans, security personnel etc., will be available at an affordable leasing rate for the core players as they look to capitalize on the opportunities left behind by those that leave the market.

Cash-handling technology is constantly evolving for the future, since cash remains a favored payment option for consumers of all ages. As a result, both retailers and banks are constantly exploring new services and technologies to better fulfill their consumers' demands. With the advancement of innovative cash technology, businesses of all types may serve their clients with more personalized experiences and speedier transactions.

Some of the key tools and technologies utilized by the cash management service providers in India are summarized below:

Exhibit 80: Tools/Technologies used for Cash Management Services, India. FY 21

Tool/Technology	Company	Use Case	Efficiency
Algo	CMS	Prevents ATM Fraud	Full control on access with Geo fencing and GPS enabled application. User restriction basis lock proximity, time of operations, user location I AI enabled, Face recognition, ID verification software etc.
ATM Indent	CMS	Automation	Automatically reads 30k+ mails daily and processes each mail information. Downloads attached pdf files and extracts relevant data from forms and tables in PDF files on real-time basis.
RMS Automation	CMS	RPA (Automation)	RMS automation system provides capabilities to automate service functions using Email Bot , Ticket Bot and Rule Engine.
Radiant RADMUS App	Radiant	Process Improvement	Converts inbound documents like deposit slips, pickup and delivery slips into scanned images for digitized information

Radiant SANDESH App	Radiant	Process Improvement	Real time updates to customers on cash pickup and delivery and sends MIS to the customer
QR Code Scan	Radiant	Automation	Record cash collected thereby avoiding any manual intervention while picking up cash and possible errors.
API Integration	Radiant	Automation	Allows near real-time reports for clients and improves client's access to information faster thereby improving customer loyalty.
Core Banking Solutions (CBS	WSG	Automation	Reducing Manual Efforts and Processing Time, Automated documentation of delivery receipts, reports, and ATM slips, automate security monitoring as well as application availability
Pinpoint (Amazon)	WSG	Secure Access	One-time passwords via SMS that are used to open ATM vaults.
AMEYO	WSG	Process Improvement	Direct communication between the Command centre agents and the field engineers or custodians for better call management, serviceability and Turn Around Time (TAT).
Handheld Terminals	WSG	Process Improvement	Track and trace all assets on each route.
Cash Optimizing Solutions	WSG	Automation	Cash forecasting, automated incident management, automated asset monitoring
Digital Signage	Securevalue	Process Improvement	Software for managing digital signage, scheduling and customized information delivery.
Cash Billing Terminals	Securevalue	Process Improvement	Customized terminals for supermarkets, single-branded retail stores or multiplexes
Beetle M-III	Securevalue	Process Improvement	High performance POS systems with next-gen architecture
Intelligent Cash Deposit	Securevalue	Process Improvement	AI-enabled cash deposit
Cash Room Automation	Brinks	Automation	Real time visibility of cash operations, automated register cash flows and reducing backroom costs.
Compusafe	Brinks	Automation	Eliminates discrepancies, reduces theft and shrinkage and saves staff from time-consuming tasks such as counting and auditing cash.
CompuSafe Check Imaging	Brinks	Process Improvement	Turns currency and checks into digital payment streams to give retailers accelerated access to their cash flow

Outsourced Lockbox Solution	Brinks	Process Improvement	Gives financial institutions the ability to service commercial customers without the capital outlay of acquiring new facilities.
Smart Reconciliation	SIS	Automation	PAN-India consolidated reports and automated status reports
Automated FLM Portal	SIS	Automation	Used to create tickets, manpower assignment and closure of each ticket raised by crew or clients
Intelligent Alerts	SIS	AI/Automation	Intelligent vehicle tracking system allowing the configuration of different type of alerts which minimize risk.

Source: Frost & Sullivan, Company Reports

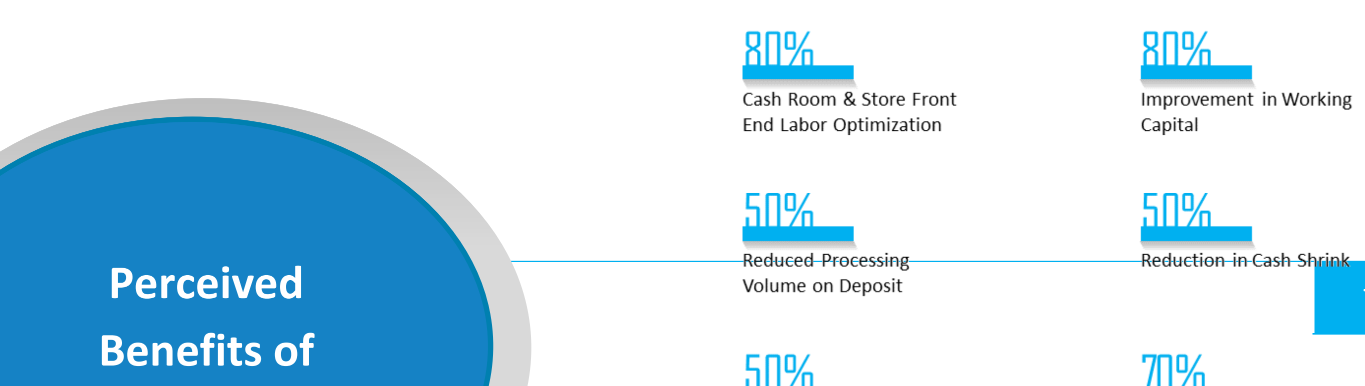
13 Role of technology and automation to scale up cash logistics services

13.1 Benefits of Technology Adoption

Cash-related expenditures can account for up to 30% of the cost of running an ATM network, according to industry estimates. Banks and retail merchants suffer a plethora of risks if they do not implement technology, including such as the cost of cash itself, cash-in-transit expenditures, variable insurance premiums, and security costs, to mention a few. In other words, cash handling can account for 5–10% of a bank's operating expenditures and 1–2% of total retail sales. By moving from manual cash management systems to technology enabling automation of the forecasting and ordering process, banks and retailers will benefit from decreased cash-in-transit and interest costs, greater security and satisfied customers, who are able to make convenient transactions.

Customers of cash management service providers (eg. Retailer merchants) can better manage their inventory when cash is stored in cash-recyclers and smart vaults. According to Diebold Nixdorf, automating manual operations and replacing them with automated cash cycle management systems can save more than 20% on cash handling costs. As cash moves from the branch to the cash management service provider and back, administrative costs for controlling and monitoring the cash supply chain decrease. Because branch employees are no longer responsible for cash processing, they have more time to sell higher-value services to customers. A good cash management system can predict how much cash will be available to satisfy demand, lowering the quantity of contingency inventory needed and lowering inventory and associated expenses.

Exhibit 81: Benefits of Technology Adoption in Cash Management



Source: Frost & Sullivan

13.2 How technology can result in automation and operating leverage

Businesses have been using technology to improve cash handling and management for years. By introducing machine-like precision to back-end processes, solutions like smart safes and cash recyclers can help eliminate theft and counting errors. New technologies focus on reducing human-to-human contact before, during, and after cash transactions to improve cash handling today as businesses today must be cognizant of changing consumer attitudes. Service providers within the cash management landscape that offer new capabilities on a regular basis to fit with changing preferences and demands will be well-positioned to prosper in the "new normal." In a mobile world, service providers must be continually aware of new technologies that will help boost the relevance of cash. The following are some of the operational advantages of technology adoption:

A. Risk Reduction:

Loss or theft—from both inside and outside the operation—can decimate a quick-serve business, which already has thin margins. Cash management systems, such as smart safes, leverage automation to assist businesses and reduce the risk of loss and theft by removing touch points from their cash-handling procedures. Many cash management companies additionally use a bespoke armored cash-in-transit pickup and delivery schedule to ensure that the business always has enough cash on hand. Businesses that have insufficient funds can face debilitating shortages. Customers and staff may become liable if there is too much money in the safe, which increases the danger of robbery. A secure technology solution not only keeps cash safe, but it also eliminates the need for multiple trips, lowering the risk of internal or external theft.

B. Quicker Access to Cash:

One of the most important advantages of cash management is transparency. Streamlined and automated processes, as well as smart technologies allow businesses to access their cash more quickly. Through online customer portals, more technologically advanced cash management providers also enable real-time access to reporting data and account information. This visibility can help organizations make better decisions and manage and scale their operations more effectively.

C. Process Efficiency:

A reduction in touch points not only reduces risk, but it also improves operational efficiency and saves money. Employees spend less time training or learning difficult, often antiquated cash-handling processes when effective cash management solutions are in place. Most solutions come with built-in tutorials, allowing personnel to focus on duties that are more important (and profitable) to the core business. In addition, built-in diagnostic systems assist personnel in troubleshooting potential faults, reducing maintenance downtime.

D. Ability to Customize Offerings:

There are no two operations that have the same requirements. There is also no such thing as a one-size-fits-all cash management solution. Whether it's a small local chain, a larger regional enterprise, or a nationwide organization, the ideal cash management supplier should be able to meet a company's individual needs. Developing a custom cash-in-transit schedule, providing restaurant units with the correct smart safe configuration, and offering companies better, faster access to their reporting information are all examples of how technology can assist in optimization.

E. Reduction in Downtime

Businesses cannot afford downtime related to cash supply in the fast-paced world, whether it's due to cash shortages, human mistake, or maintenance concerns. With comprehensive monitoring and diagnostics, enhanced cash management capabilities can help eliminate the potential of downtime. Predictive maintenance and remote diagnostics, for example, eliminate the requirement for in-person visits by technicians. Remote system monitoring and built-in wireless connectivity allow the provider to remain on top of any problems and prevent them from occurring. This aids in ensuring that the entire system is up and running at peak performance.