Assessment of the Depository System, Database Management and Payments Banks in India

For National Securities Depository Limited

July 2023

Contents

Abbreviations

AA -	Account Aggregator
AEBA -	Aadhaar Enabled Bank Account
AePS -	Aadhaar Enabled Payment System
AMC -	Asset Management Company
AMFI -	Association of Mutual Funds in India
ANBC -	Adjusted Net Bank Credit
ANNA -	Association of National Numbering Agencies
APB -	Aadhaar Payments Bridge
API -	Application Programming Interface
ASBA -	Application Supported by Blocked Amount
ATM -	Automated Teller Machine
AUA -	Authentication User Agency
AUC -	Assets Under Custody
AUM -	Assets Under Management
B2B2C -	Business-to-Business-to-Consumer
BC -	Business Correspondent
BHIM -	Bharat Interface for Money
BSE -	Bombay Stock Exchange
BSETPL -	BSE Technologies Private Limited
CAGR -	Compound Annual Growth Rate
CAS -	Consolidated Account Statement
CASA -	Current Account Savings Account
CBDC -	Central Bank Digital Currency
CBM -	Corporate Bond Market
CCRL -	CDSL Commodity Repository Limited
CD -	Certificate of Deposit
CDP -	Central Depository Private Limited
CDS -	Credit Default Swaps
CDSL -	Central Depository Services (India) Limited
CEBR -	Centre for Economics and Business Research
CFI -	Classification of Financial Instruments
CIRL -	CDSL Insurance Repository Limited
CISPL -	CAMS Investor Services Private Limited
CM -	Clearing Members
CP -	Commercial Paper
CPI -	Consumer Price Index
CRAR -	Capital to Risk Assets Ratio
CRR -	Cash Reserve Ratio
CSD -	Central Securities Depository
CSO -	Central Statistics Office
CUSPA -	Client Unpaid Securities Pledgee Account
CVL -	CDSL Ventures Limited
Demat -	Dematerialized

DII -	Domestic Institutional Investor
DLT -	Distributed Ledger Technology
DP -	Depository Participant
DTC -	Depository Trust Company
DTCC -	Depository Trust Clearing Corporation
EASI -	Electronic Access to Securities Information
EBITDA -	Earnings Before Interest, Taxes, Depreciation, and Amortization
ECS -	Electronic Clearing Systems
e-IA -	e-Insurance Account
ELSS -	Equity-Linked Savings Scheme
EPFO -	Employees' Provident Fund Organization
ESG -	Environmental, Social and Corporate Governance
ETF -	Exchange-Traded Fund
FATF -	Financial Action Task Force
FD -	Fixed Deposit
FDI -	Foreign Direct Investment
FII -	Foreign Institutional Investor
FI-Index -	Financial Inclusion Index
FIP -	Financial Information Provider
FISN -	Financial Instrument Short Name
FIU -	Financial Information User
FPI -	Foreign Portfolio Investor
FPO -	Follow-on Public Offer
G2C -	Government to Customer
GB -	Gigabyte
GDP -	Gross Domestic Product
GDS -	Gross Domestic Savings
GIFT City -	Gujarat International Finance Tec-City
GST -	Goods & Services Tax
HCE -	Host Card Emulation
HUF -	Hindu Undivided Family
IA -	Investor Associations
IBA -	Indian Banks Association
IBC -	Insolvency and Bankruptcy Code
IDeAS -	Internet-based Demat Account Statement
IFSC -	International Financial Services Centre
IIDL -	India International Depository IFSC Limited
IIFA -	The International Investment Funds Association
IMF -	International Monetary Fund
IMPS -	Immediate Payment Service
InvIT	Infrastructure Investment Trusts
IPO -	Initial Public Offering
IPPB -	India Post Payment Bank
IRDAI -	Insurance Regulatory and Development Authority of India
ISIN -	International Securities Identification Number
IT/ITeS -	Information Technology/Information Technology Enabled Services

ITD -	Income Tax Department
ITPIN -	IT Professional Identification Number
ITR -	Income Tax Return
KDMSL -	Karvy Data Management Services Limited
KRA -	KYC Registration Agency
KUA -	E-KYC User Agency
KYC -	Know Your Client
LAS -	Loan Against Securities
MAS -	Monetary Authority of Singapore
MCA -	Ministry of Corporate Affairs
MF -	Mutual Fund
MFI -	Microfinance Institution
MFIN -	Microfinance Institutions Network
MII -	Market Infrastructure Institutions
MNO -	Mobile Network Operator
MOSPI -	Ministry of Statistics and Programme Implementation
MPC -	Monetary Policy Committee
MSF -	Marginal Standing Facility
MSME -	Micro, Small and Medium Enterprise
NACH -	National Automated Clearing House
NBFC -	Non-Banking Financial Company
NCE-FLIS -	National Financial Literacy and Inclusion Survey
NDAL -	NSE Data & Analytics Limited
NDML -	NSDL Database Management Limited
NEFT -	National Electronic Fund Transfer
NERL -	National E-repository Limited
NETC -	National Electronic Toll Collection
NFC -	Near Field Communication
NIR -	NSDL National Insurance Repository
NNA -	National Numbering Agency
NPA -	Non-Performing Asset
NPBL -	NSDL Payments Bank Limited
NPCI -	National Payments Corporation of India
NPS -	National Pension Scheme
NRI -	Non-Resident Indian
NSDL -	National Securities Depository Limited
NSE -	National Stock Exchange
NSR -	National Skills Registry
NSSO -	National Sample Survey Office
P2P -	Peer-to-Peer
PA -	Payment Aggregator
PAN -	Permanent Account Number
PAT -	Profit After Tax
PE -	Private Equity
PLI -	Production-linked Incentive
PMJDY -	Pradhan Mantri Jan-Dhan Yojana

PMJJBY -	Pradhan Mantri Jeevan Jyoti Bima Yojana
PMMY -	Pradhan Mantri MUDRA Yojana
PMS -	Portfolio Management Services
POA -	Power of Attorney
POS -	Point-of-Sale
PPF -	Public Provident Fund
PPI -	Prepaid Payment Instrument
PPP -	Purchasing Power Parity
QFI -	Qualified Foreign Investors
QFI -	Qualified Foreign Investor
QIP -	Qualified Institutional Placement
RBI -	Reserve Bank of India
REIT -	Real Estate Investment Trust
RoE -	Return on Equity
RTGS -	Real Time Gross Settlement
RTI -	Registrars to an Issue
RWA -	Risk Weighted Assets
SAR -	System Audit Report
SARFAESI Act -	Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest Act
SCB -	Scheduled Commercial Bank
SCORES -	SEBI Complaints Redress System
SDF -	Standing Deposit Facility
SEBI -	Securities and Exchange Board of India
SEZ -	Special Economic Zone
SFB -	Small Finance Bank
SGX -	Singapore Exchange Limited
SIMPLE -	Submission of Instruction through Mobile Phone Login Easily
SIP -	Systematic Investment Plan
SLR -	Statutory Liquidity Ratio
SMARTs -	Securities Market Trainers
SPICE -	Submission of Power of attorney-based instructions for Clients Electronically
STA -	Share Transfer Agent
TAT -	Turnaround Time
TM -	Trading Members
TRAI -	Telecom Regulatory Authority of India
UCC -	Unique Client Code
UDR -	Unsecured Depository Receipts
UIDAI -	Unique Identification Authority of India
UPI -	Unified Payments Interface
WDRA -	Warehousing Development and Regulatory Authority
WIR -	World Investment Report

1. Macroeconomic Scenario

World economy fighting inflation surge with Indian economy facing volatile commodity prices & tightening of liquidity

The global economy is witnessing tightening monetary conditions in most regions. According to IMF, we are facing a broad based and sharper than expected slowdown with high inflation across the globe. As per the IMF (*World Economic Outlook Update – April 2023*), global growth prospects are estimated to fall from 3.4% in CY2022 to 2.8% in CY2023 and then see an increase in CY2024 to 3.0%, impact of which is expected to be witnessed in Indian economy as well.

Global trade had reached a record level of ~US$32 trillion for CY2022, but its growth had turned negative during the second half of 2022. The trade outlook for CY2023 is expected to be negatively impacted as a result of geopolitical frictions, persisting inflation and lower global demand.

Despite global slowdown, there is a silver lining for the Indian economy. Recent RBI surveys[1] indicate improving customer sentiments which will be a boost to the consumption demand. Further, rise in capacity utilisation rates in the manufacturing sector is favourable for private capex. This is especially true in case of infrastructure linked sectors (such as steel and cement) and Production Linked Incentive scheme linked sectors. The IMF estimates India's GDP to grow by 6.8% in the fiscal 2023 due to its broad range of fiscal, monetary and health responses. However, IMF projects the growth to slow down to 5.9% in the fiscal 2024.

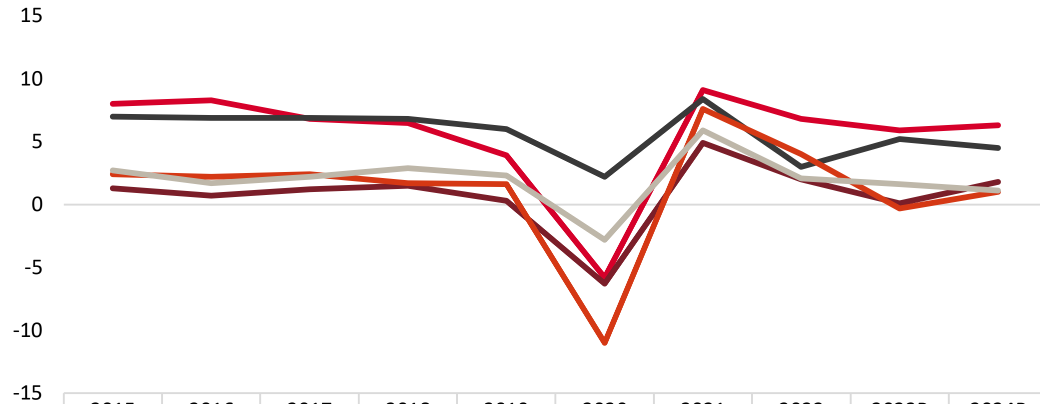
However, domestic demand remains supportive this fiscal, helped by a catch-up in contact-based services, government capital expenditure (capex), relatively accommodative financial conditions, and overall normal monsoon for the fourth time in a row.

The impact is expected to be more in fiscal 2024 as global growth decelerates faster. Additionally, domestic demand could come under pressure as interest rate hikes gets transmitted more to consumers. Consequently, IMF expects India's real GDP growth to slow down to 5.9% in fiscal 2024. The risks to the forecast remain tilted downwards.

India expected to remain one of the fastest growing economies

[1] RBI Consumer Confidence Survey, December 2022

India is expected to be the fastest-growing major economy (GDP growth, % year-on-year)



	2015	2016	2017	2018	2019	2020	2021	2022	2023P	2024P
India	8.0	8.3	6.8	6.5	3.9	-5.8	9.1	6.8	5.9	6.3
China	7.0	6.9	6.9	6.8	6.0	2.2	8.4	3.0	5.2	4.5
South Africa	1.3	0.7	1.2	1.5	0.3	-6.3	4.9	2.0	0.1	1.8
United Kingdom	2.4	2.2	2.4	1.7	1.6	-11.0	7.6	4.0	-0.3	1.0
United States	2.7	1.7	2.2	2.9	2.3	-2.8	5.9	2.1	1.6	1.1

Note: All forecasts refer to IMF forecasts. GDP growth is based on constant prices, ASEAN-5 countries (Indonesia, Malaysia, Philippines, Singapore, Thailand) is projected to slow to 4.5% in 2023 and then pick up to 4.6% in 2024, Data represented is for calendar years except India which is represented in financial year with FY 2022/23 (starting in April 2022) shown in the 2022 column, P: Projected; Source: IMF (World Economic Outlook Update – April 2023)

Indian economy to be a major part of world trade

Along with being one of the fastest growing economies in the world, India ranked fifth in the world in terms of nominal GDP in calendar year 2022 In terms of purchasing power parity (PPP) as of CY2022, India is the third largest economy in the world, only after China and the United States.

GDP Ranking of key economies across the world (2022)

Country	GDP Rank	% Share (World GDP)	PPP Rank	% Share (World GDP, PPP)
United States	1	24.7%	2	15.5%
China	2	18.0%	1	18.6%
Japan	3	4.2%	4	3.8%
Germany	4	4.0%	5	3.3%
India	5	3.4%	3	7.2%
United Kingdom	6	3.2%	7	2.3%
France	7	2.7%	8	2.3%
Canada	8	2.2%	11	1.4%
Russia	9	2.1%	6	2.9%
Italy	10	2.0%	9	1.9%
Korea	11	1.7%	10	1.7%

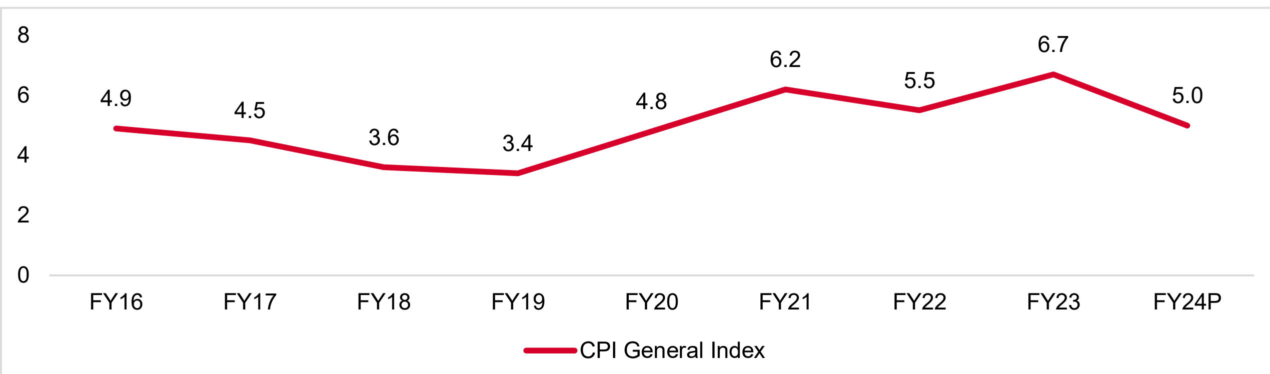
Source: IMF, CRISIL MI&A Research

According to IMF, India with its 5.9% GDP growth forecast for fiscal 2024 and $3.4 trillion economy has surpassed UK's $3.2 trillion economy in terms of size making it the fifth biggest economy in the world. With continuous growth in the GDP, India is expected to become the third largest global economy by 2030, as per the Centre for Economics and Business Research (CEBR). This growth in India's GDP is expected to be driven by rapid urbanisation, rising consumer aspiration and increasing digitalisation coupled with Government support in the form of reforms and policies that are expected to support growth.

CPI inflation to average at 5.0% in fiscal 2024

India remains vulnerable to external shocks as crude prices ruled over $100 per barrel till June 2022, impacting major macroeconomic variables. The Average inflation based on the Consumer Price Index (CPI), for the fourth quarter of fiscal 2023 moderated to 5.7% from 6.4% in February, lower than that the upper limit of inflation tolerance band of RBI of 6%. CRISIL MI&A Research forecasts a downward bias to the fiscal 2023 CPI inflation. The high base of the previous fiscal has helped to lower the inflation for the month of March 2023, which surged due to oil and food prices from the Russia-Ukraine conflict, and due to strengthening demand after the third wave of Covid-19 subsided. A major relief in March 2023 is contributed due to a sharp correction food inflation. The RBI kept its policy rates unchanged – the repo rate at 6.50% which is expected to be the terminal rate for this cycle. In fiscal 2024, inflation is expected to trend down to 5.1% on-year, within the RBI's target range of 4-6%. The decline should sustain due to a combination of factors: base effect, lower international commodity prices, and impact of monetary policy actions (rate hikes and liquidity withdrawal) on inflation – should lead to lower inflation.

Annual Inflation (y-o-y%) trend



Source: CSO, Ministry of Industry and Commerce, CRISIL MI&A Research

Financial conditions begin to tighten with mounting inflation

The Reserve Bank of India's (RBI's) Monetary Policy Committee (MPC) raised policy rates by 40 bps in May 2022. This was followed by a 50 bps in June 2022, 50 bps in August 2022, 50 bps in September 2022, 35 bps in December 2022 and another hike of 25 bps in February 2023, thus bringing the repo rate to 6.5%, standing deposit facility (SDF) to 6.25% and marginal standing facility (MSF) to 6.75%. The rate hike was a response to both domestic elevated inflation and spill over risks arising out of aggressive monetary tightening by major central banks. The MPC expects CPI inflation to remain between the 2-6% tolerance range and above the medium-term target of 4%. The average inflation forecast by RBI for fiscal 2024 is expected to be 5.1%.

The GDP numbers showed India's growth slowing to 4.1% on-year in Q4FY22 compared to 5.4% in the previous quarter. Q1FY23 showed broadening recovery to the extent of 13.5%. However, the growth in Q2FY23 moderated to 6.3% post a double-digit expansion in the previous quarter, supported by ongoing recovery in consumption demand

and government capex. Q3FY23 showed a 4.4% growth in GDP compared to the previous quarter. The real GDP is estimated to have recorded a growth of 7.2% in fiscal 2023, which surpassed the previous estimates of 7.0%. As per MPC, the real GDP growth for fiscal 2024 is projected at 6.5% with Q1FY24 at 8% Q2FY24 at 6.5%, Q3FY24 at 6.0% and Q4FY24 at 5.7% with risks evenly balanced. Further, positive momentum in indicators such as IIP and PMI corroborate the pick-up in contact-based services.

India to remain a growth outperformer globally

Despite the markdown in near-term growth, India is expected to remain a growth outperformer over the medium run. Stronger domestic demand is expected to drive India's growth premium over peers in the medium run. Investment prospects are optimistic given the government's capex push, progress of Production-linked Incentive (PLI) scheme, healthier corporate balance sheets, and a well-capitalised banking sector with low non-performing assets (NPAs). India is also likely to benefit from China-plus-one policy as global supply chains get reconfigured with shifting focus from efficiency towards resilience and friend shoring. Private consumption (~57% of GDP) will play a supportive role in raising GDP growth over the medium run.

Factors that will shape growth in fiscal 2024

The following factors will play a prominent role:

- Some of the highlights of the Union Budget of 2023-24 are as follows **–**

Announcement	Impact
Strong thrust towards capex seeing a 24% increase to ₹ 18.6 trillion to support growth	Highest allocation seen in the infrastructure related sectors such as roads and railways. The allocation of tax-free loan from the Centre to states is also set to increase 30% to 1.3 lakh crore, providing a further boost to the infrastructure sector. As a result of higher investment in the sectors, there is significant scope for job creation which would result in higher income earned thereby paving the way for potential investment in capital markets. On a long-term basis, the thrust towards capex would also encourage new businesses to enter the market leading to higher scope for listing of companies on the market.
Tax rebate for income up to ₹ 7 lakhs (as per the new regime)	Provides the middle-income households mild relief by increasing their disposable income and cushion the impact of the external slowdown by improving domestic demand and consumer confidence. This increase in disposable income would serve as an opportunity for financialising the savings into capital market instruments. Increasing retail participation in the capital market would subsequently increase the level of transaction revenue earned for depositories such as NSDL.
Simplification of the know-your-customer process through an expanded DigiLocker service and National Financial Information Registry	Support in technological advancement would promote financial inclusion, ensure better availability of customer data, enable faster and secure sharing of documents with financial institution and increase rural penetration. The aforesaid will led to improving efficiency in terms of operating and credit cost for financial institutions.
Setting up of three centres of excellence for realising the	The improvement in digital infrastructure will lead to a significant rise in the creation and consumption of digital data, and the demand for data storage and processing

vision of 'Make AI in India and Make AI work for India'	capabilities. This, coupled with the government's initiative of data embassies, is expected to attract private investments in the data centre ecosystem which would benefit NSDL's database management division - NDML. For fiscal 2024, data centre investments are estimated to be $4.8-5.0 billion

- Global slowdown to impact domestic industrial activity via the exports channel
- The one-time lift to contact-based services from domestic demand will abate next fiscal, but government capex will stay supportive
- Tightening domestic financial conditions will hurt growth next fiscal

Key structural reforms: Long-term positives for the Indian economy

GST implementation

Introduced on July 1, 2017, the GST is an indirect tax regime that subsumed multiple cascading taxes levied by the central and state governments. Its implementation has spawned structural changes in the supply chain and logistics network in the country. The crux of the GST mechanism is input tax credit, which ensures more players in the supply chain come under the tax ambit. As supply from only registered taxpayers will get input tax credit, businesses and stakeholders will insist on registration of their suppliers and traders, leading to an increase in the share of organised participants. The GST regime has been stabilising fast and is expected to bring more transparency and increase in formalisation, eventually leading to higher economic growth.

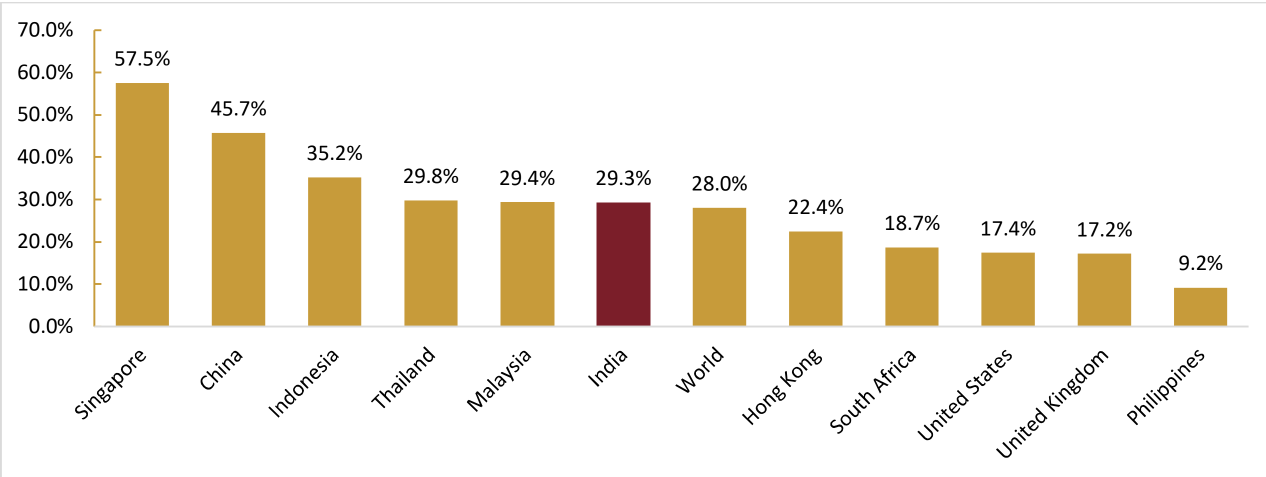
Insolvency and Bankruptcy Code

The Insolvency and Bankruptcy Code (IBC) is a reform that will structurally strengthen the identification and resolution of insolvency in India. It attempts to simplify legal processes, preserve value for creditors and provide them with greater certainty of outcome. With this reform, the RBI has sent a strong signal to borrowers to adhere to credit discipline and encourage banks to break resolution deadlocks by introducing definite timelines. IBC will enhance investors' confidence when investing in India. The IBC during its seven years as of Fiscal 2023, has facilitated the closure of over 2,500 cases of NPAs. Moreover, more than 24,200 applications for initiation of insolvency against companies which were defaulting close to ₹ 7.7 lakh crore were resolved before admission as of December 2022. As per an ASSOCHAM-CRISIL report, the recovery rate through IBC has seen a drop from 46% in Fiscal 2020 to 24% in Fiscal 2022 due to the increasing number of cases admitted under IBC from diverse sectors.

Household savings to increase

The Indian economy has shown strong resilience post the pandemic and as per IMF estimates, the nominal GDP per capita (at current prices) was ₹ 0.21 million in Fiscal 2023 and is expected to reach ₹ 0.24 million as of Fiscal 2025 growing at ~8% CAGR. This would be an important factor in contributing to the increase in household savings. India's domestic savings was higher at 29.3% (an increase from 27.1% in calendar year 2020) as compared to the world average of 28.0% at end of calendar year 2021.

India's domestic savings rate is higher than the world average (calendar year 2021)



Note: The above data pertains to gross domestic savings rate in percentage for calendar year 2021

Source: World Bank, CRISIL Research

CRISIL MI&A Research expects India to continue being a high savings economy at least over the next decade. CRISIL MI&A Research is also sanguine on the savings rate increasing in the medium term, as households become focused on creating a nest egg for the future post the COVID-19 pandemic-induced uncertainty. Further, according to the Securities and Exchange Board of India ("SEBI"), during Fiscal 2021, until the third quarter, the household financial savings deployed in securities market had grown significantly to 1.2% of GDP as compared to 0.3% during each of the previous two fiscals in 2019 and 2020. As of fiscal 2022, the proportion of household savings in equity investments and mutual funds is ~8%, which has increased significantly from ~4% in fiscal 2020 and ~3% in fiscal 2021 and holds significant potential to see an increase given the increasing per capita GDP and rising financial literacy. Going forward, if the amount of savings deployed in securities market sustained, it is expected to boost the capital markets and economy.

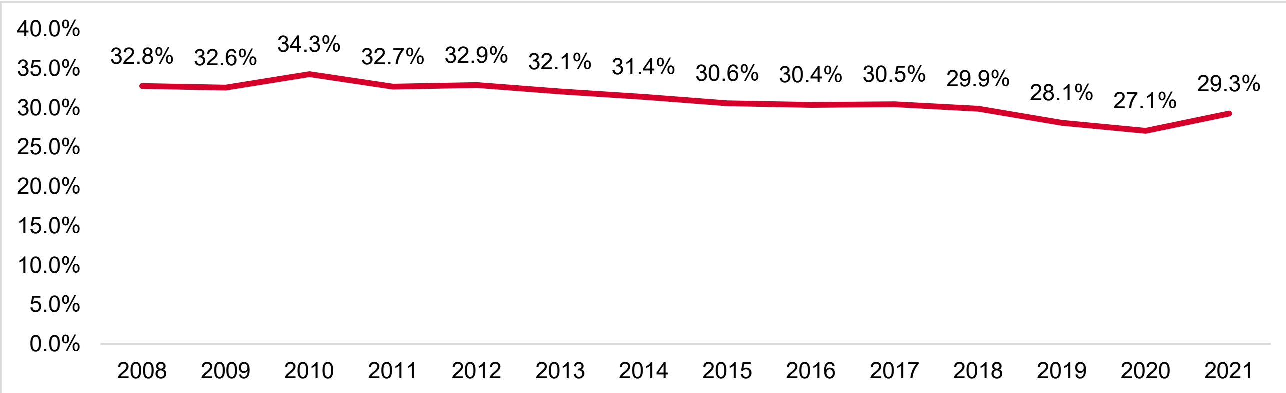
Gross domestic savings trend

Parameters (₹ billion)	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18	Mar-19	Mar-20	Mar-21
GDS	36,082	40,200	42,823	48,251	54,807	60,003	59,959	55,924
Household sector savings (net financial savings, savings in physical assets and in the form of gold and silver ornaments)	22,853	24,391	24,749	27,871	32,966	38,446	39,291	43,906
Gross financial savings	11,908	12,572	14,962	16,147	20,564	22,636	23,991	31,089
Financial liabilities	3,587	3,768	3,854	4,686	7,507	7,712	7,866	8,052
Net financial savings	8,321	8,804	11,108	11,461	13,057	14,924	16,125	23,037
Savings in physical assets	14,164	15,131	13,176	15,946	19,442	23,094	22,735	20,484
Savings in the form of gold and silver ornaments	368	456	465	465	467	427	431	384

Note: The data is for financial year ending March; Physical assets are those held in physical form, such as real estate, etc.

Source: MOSPI, National Accounts Statistics, CRISIL MI&A Research

Gross Domestic Savings as a percentage of GDP has increased to 29.3% in CY2021



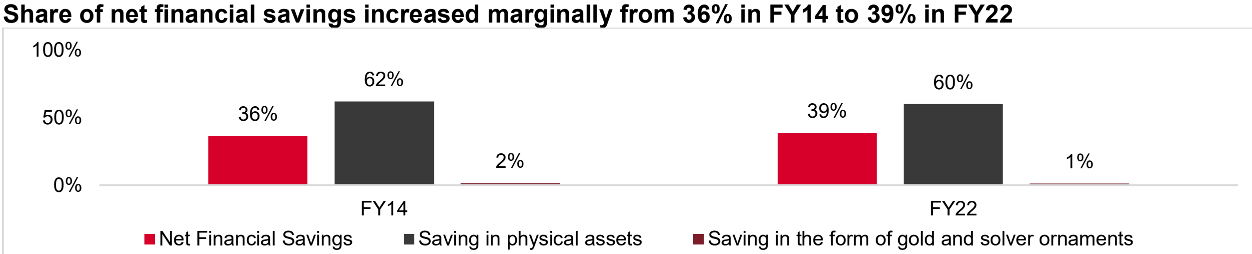
Source: World Bank, CRISIL MI&A Research

Household savings comprised close to two-thirds of gross savings post fiscal 2019 and this proportion shot up in fiscal 2021 to 78.5% touching ₹ 44 trillion and normalised to 65% touching 46 trillion in fiscal 2022. Directed efforts at financial inclusion, digitalisation, rising middle-class disposable incomes and government incentives on financial instruments have propelled this increase and is expected to continue in the future. With rising inflation, households too, are seeking higher returns beyond fixed deposits.

Capital markets to remain attractive part of financial savings

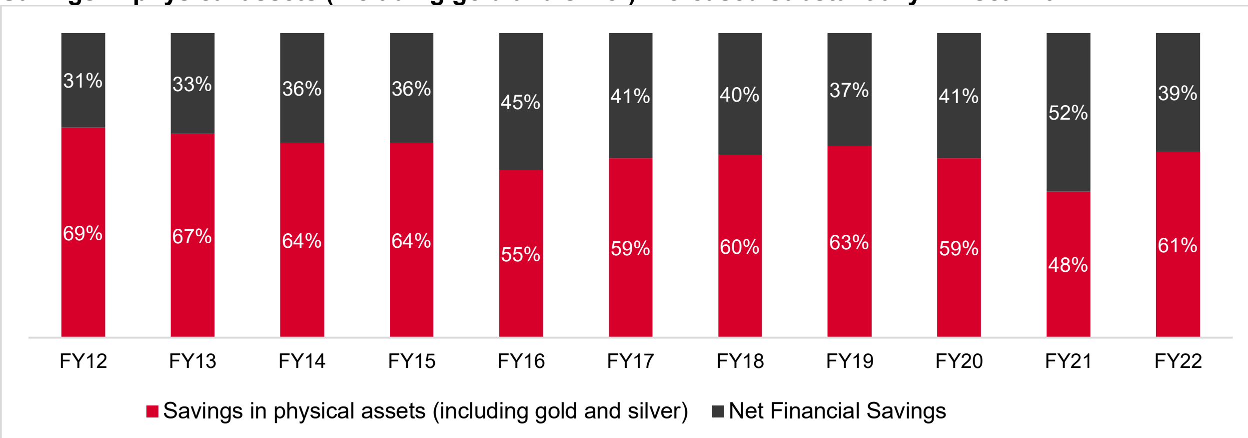
Unlike most other countries, where financial savings account for a significant proportion of savings, physical assets in the form or real estate, gold and silver still account for most household savings in India. Although households' savings in physical assets has declined to 60% in fiscal 2022 from 69% in fiscal 2012, it constitutes a substantial share in overall savings. Between Fiscal 2014 and Fiscal 2022, the net financial savings increased at a CAGR of approximately 11.6% as compared to approximately 10.1% for saving in physical assets between the same period. This led to a modest decline in household savings in physical assets from 62% in Fiscal 2014 to 60% in Fiscal 2022. During the same period, financial savings grew from 36% to 39%. Along with an increase in financial literacy, the relative outperformance of financial assets over recent years, and the Indian government's efforts to fight the shadow economy, CRISIL MI&A Research expects the share of financial assets as a proportion of net household savings to increase over the next five years driven by higher financial literacy, relative outperformance of capital market assets vs bank deposits and the government's efforts to fight the shadow economy. The rise in financial assets is expected to further boost the financial investments under mutual funds, equity, pension schemes, insurance, and alternate assets.

Share of net financial savings increased marginally from 36% in FY14 to 39% in FY22



Note: The data is for financial year ending March; Source: Handbook of Statistics on Indian Economy 2018-19, RBI, MOSPI, CRISIL MI&A Research

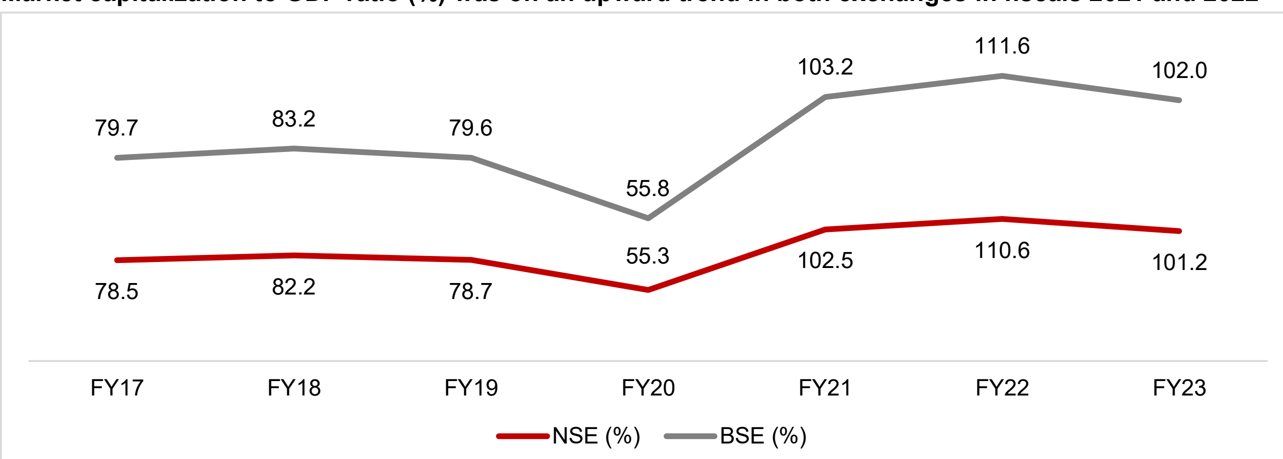
Savings in physical assets (including gold and silver) increased substantially in fiscal 2022



Note: The data is for financial year ending March 31, 2022, Source: Handbook of Statistics on Indian Economy, RBI, MOSPI, CRISIL MI&A Research

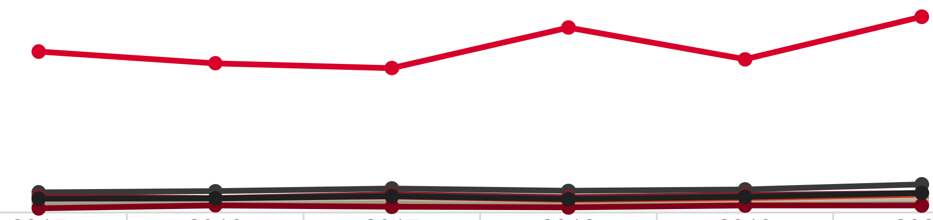
Market capitalization to GDP (m-cap ratio) ratio provides an overview of the developments in the market against the growth of the overall economy. As of fiscal 2022, the markets were buoyant and had moderate volatility and the ratio saw an ~8% y-o-y increase in both exchanges. The ratio stood at 111.6% and 110.6% in BSE and NSE respectively as on 31st March 2022 and saw a marginal dip as on 31st March 2023 to 102.0% and 101.2% respectively.

Market capitalization to GDP ratio (%) was on an upward trend in both exchanges in fiscals 2021 and 2022



Note: Nominal GDP (GDP at current prices) were considered; Source: BSE, NSE, SEBI, CRISIL MI&A Research

Global comparison of market capitalization of listed domestic companies to GDP ratio (%) (CY2020)



	2015	2016	2017	2018	2019	2020
Hong Kong	1109.3	1029.4	995.2	1274.8	1055.8	1349.5
United States	137.7	146.3	164.9	148.2	158.5	193.3
Japan	110.1	99.0	126.2	105.1	120.8	133.3
India	83.0	76.1	96.4	84.4	80.8	97.3
China	74.0	65.2	70.8	45.5	59.6	83.2
Germany	51.1	49.5	61.3	44.2	54.0	58.7
Russia	28.8	48.7	39.6	34.8	46.7	46.6
World	94.3	96.7	110.7	91.5	108.0	133.2

Hong Kong United States Japan India China Germany Russia World

Note: Latest data available as of 2020; Data considered are end of calendar year values
Source: World Bank, CRISIL MI&A Research

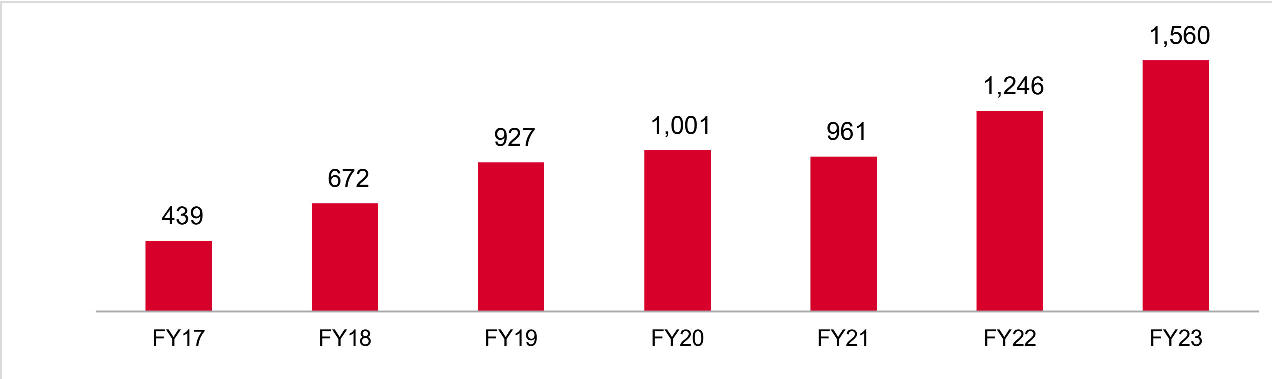
Capital-market related instruments gaining traction

Funds raised through equity and debt have seen a steady growth over the years. Equity capital saw a strong 12.19% CAGR from fiscal 2017 to fiscal 2023. The volume of equity market issuances saw a 29.70% y-o-y increase in fiscal 2023.The total number of equity capital issuances in fiscal 2023, stood at 703 and value at ₹ 1,705.60 billion. Volume of debt issuances was seeing a downward trend over the years de-growing at 12.15% CAGR from fiscal 2017 till fiscal 2023. Volume of debt issuances had seen a sharp de-growth in fiscal 2022 due to uncertainties in geopolitical climate, upward pressures on commodity prices and inflationary pressures that led to lower yields in long term duration funds creating volatility in the debt market. Since the value and volume of debt capital contributed to the lion's share in the capital market, the decreasing trend is reflected on the growth of the overall market as well.

Out of the four modes of raising funds via equity – IPOs, FPOs, Rights Issue and QIPs, the volume of transactions in rights issues recorded the highest CAGR at 33% from fiscal 2017 to fiscal 2023 while value of transactions in FPOs recorded the highest CAGR of 175% during the same period. Resources mobilized through the primary markets were substantially high in fiscal 2023 seeing a 37% y-o-y increase in number of IPOs issued, and 70% increase in rights issues.

RBI flow data suggests that preference for mutual fund is on the rise due to the growing participation from households on the back of financial inclusion, rising awareness and easy access to banking services. This is largely due to the rising awareness among the population about different capital-market related instruments including ELSS, SIPs, ETFs, theme-based investing building customized bucket of stocks as per clients' requirement, etc. SIPs are preferred by individuals who like to invest in equity with a long-term investing horizon. SIP contribution in fiscal 2023 saw a y-o-y increase of 25%. Moreover, the surge in the number of demat accounts opened post Covid-19 indicate the increase in equity investments.

SIP Contribution (in ₹ billion) witnessing a growth over the years



Source: AMFI, CRISIL MI&A Research

Demographically, India is a young country with the median age of its population at ~28 years. Of India's population, more than 60% is in the working age group, which is 19-59 years of age. The participation of this age group with new age fin-tech brokers or discount brokers had constituted the majority and would propel further growth for the overall ecosystem. Investment opportunities in newer asset classes, the need for portfolio diversification, the emergence of new business models (onset of new age fin-tech brokers or discount brokers) and new product structures such as thematic, sectoral, idea-based investing, fractional investing, basket investing, etc. have also encouraged investor participation in non-conventional avenues of investment.

The Association of Mutual Funds in India (AMFI) had reduced renewal fees in May 2021, which could have been a factor that encouraged participation from tier 2 and tier 3 cities and towns to channelize their financial savings into mutual funds. As per data from AMFI, the share of AUM from the tier 2 and tier 3 cities have seen a significant increase over the years from ~19% in fiscal 2017 to ~37% in fiscal 2023. Going forward, CRISIL MI&A Research expects the trend of increasing retail participation in the capital markets to continue considering the increasing internet penetration, financial awareness, the young demographic and the advent of several new age fin-tech brokers or discount brokers that have revolutionized the industry with their low-cost digital business model.

Adoption of digital platforms by Millennials & GenZ[2] population has further supported growth for ecosystem

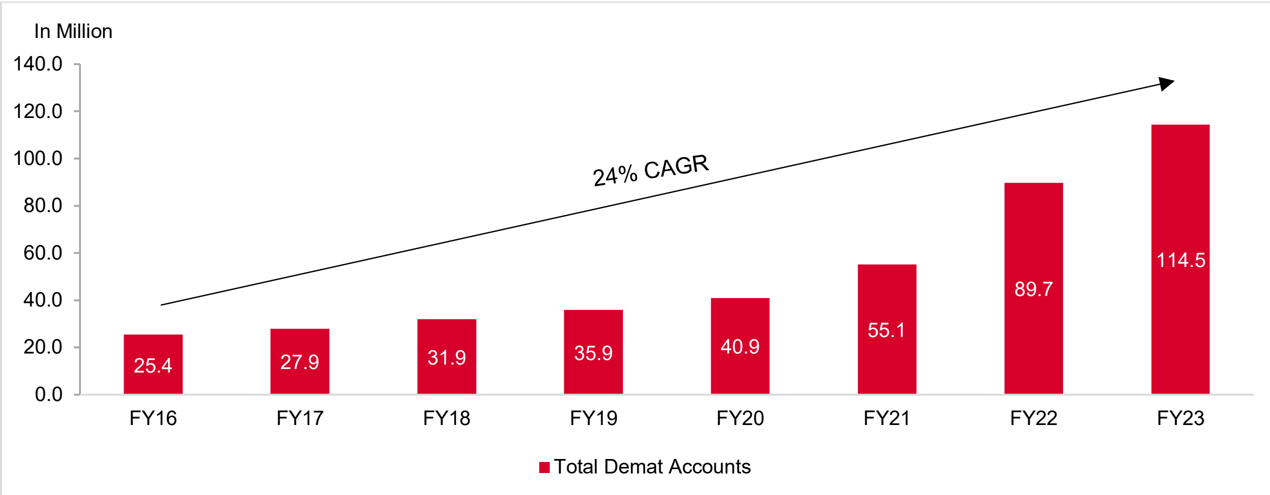
The increasing presence and adoption of technology platforms have resulted in new age fin-tech brokers or discount brokers seeing a rising participation from the millennial and GenZ population. Many of the clients as per company disclosures constituted investors belonging to this age group. Some of the demographic data from new age fin-tech brokers or discount brokers is highlighted below -

- **80% of the clients on-boarded by Upstox – a new age fin-tech broker or discount broker and second-largest broker in India as of March 31, 2021 – were from the age bracket of 18-36 years**
- **80% of investors on Paytm Money – digital wealth management company – are below 35 years of age**
- **For ICICI Securities (third largest broker in the country), 71% of its clients on-boarded during FY19-21 belonged to millennial and Gen Z category**
- **82% of customers on-boarded by NiyoX – a neo bank offering services to customers in partnership with Equitas Small Finance Bank and Visa – were below the age of 35**

Source: Company reports, CRISIL MI&A Research

[2] Millennials - Individuals born between 1981 and 1996, GenZ – Individuals born between 1996 and 2012 as per U.S Bureau of Labor Statistics

Demat accounts grew at CAGR of 24% between March 2016 and March 2023



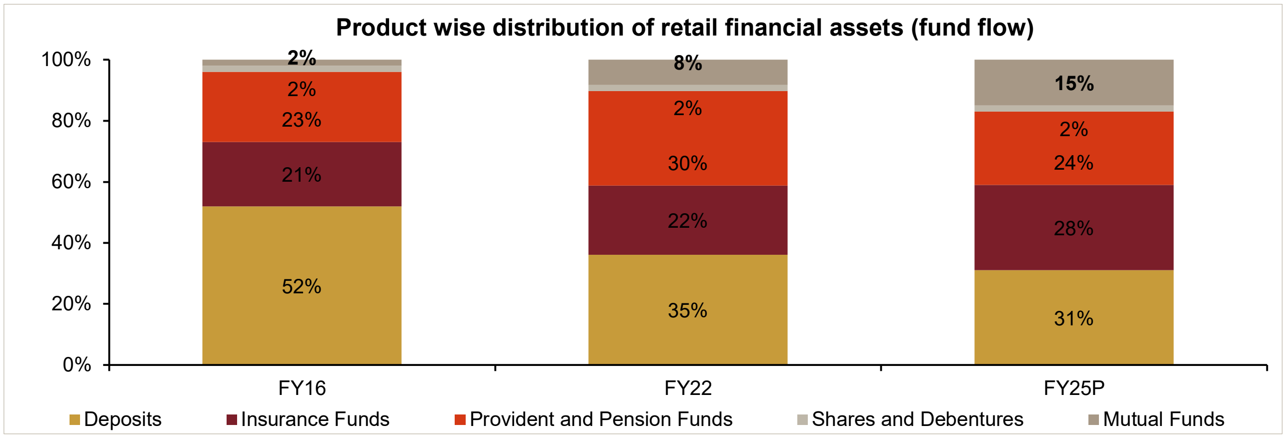
Source: SEBI Bulletin, SEBI Annual Report, CRISIL MI&A Research

The number of demat accounts increased at 24.03% CAGR from FY16 to FY23 and the monumental increase in demat accounts over the past two years has indicated strong growth and increasing investment participation in the industry. As per CRISIL MI&A Research the increase in financial literacy and the reduced cost of investing due to the emergence of new age fin-tech brokers or discount brokers have contributed significantly to this improvement and these factors are expected to contribute to the growth of the industry in the long-term. New age fin-tech brokers or discount brokers have significantly reduced the cost of investing for investors through their low-cost business model which has further increased retail participation in capital markets. Subsequently, all players in the ecosystem including depositories, depository participants, RTAs etc. would benefit from this in the future. However, when compared at a global scale, the Indian equities market is rather underpenetrated. As of fiscal 2023, Indians holding demat accounts were around 8% of the country's population which indicated that India has significant scope for further growth in terms of participation in the capital markets.

The number of mutual fund folios saw an increase from 55.4 million as of fiscal 2017 to 145.7 million as of fiscal 2023 growing at an 18% CAGR during the period. Equity-linked savings scheme (ELSS) and unit-linked insurance plans are popular tax-saving investment option largely favored by individuals with regular and stable income. In fiscal 2023, the total number of folios of ELSS saw a y-o-y increase of 10%.

In mutual funds direct plans are gaining traction as it offers the benefit of lower expense ratios compared with regular plans. The rising popularity of direct plans among individual investors is attributed to various campaigns and investor education initiatives undertaken by the mutual fund industry.

Mutual fund market share has increased to 8% in fiscal 2022 from 2% in fiscal 2016



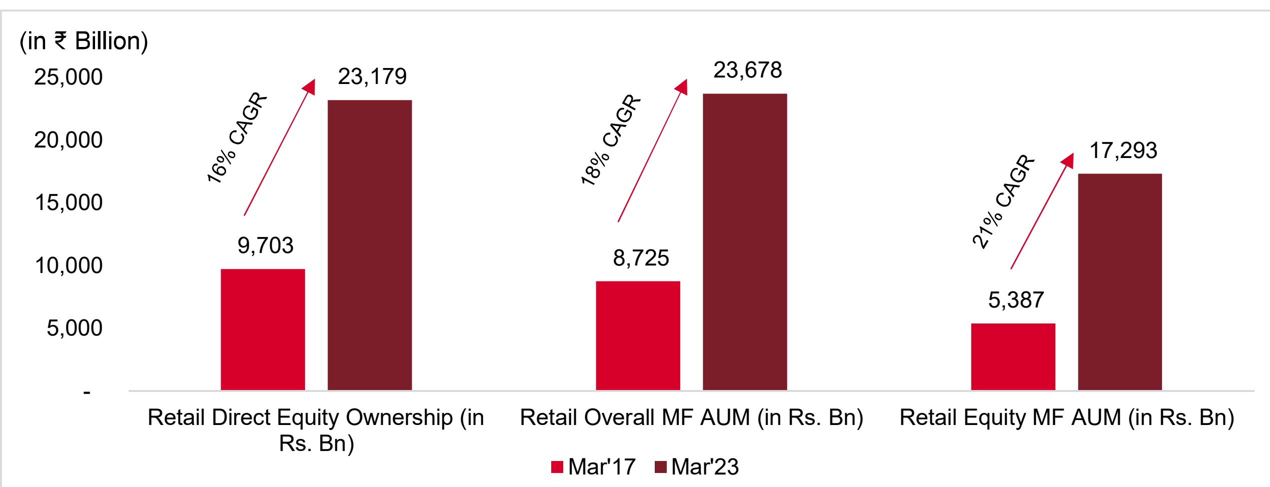
Source: RBI, IRDA, AMFI, EPFO, CRISIL MI&A Research

Retail participation in direct-equity markets and mutual fund continues to grow

Individual investors (i.e., excluding promoters and institutions) ownership in NSE listed companies is estimated to have increased steadily over the years. A steady increase over the years reflects strengthened participation of retail investors in Indian equity markets. In term of market capitalisation, the value of individual investors' direct equity ownership in NSE listed companies have grown at a CAGR of ~16% between March 2017 and March 2023. From March 2017 to March 2023, overall retail mutual fund AUM and retail equity mutual fund AUM has increased at a CAGR of 18% and 21% respectively.

Going forward, CRISIL MI&A Research expects a significant potential for direct equity investments as the total addressable market including mutual fund folios have seen a significant growth in the recent times. Moreover, with the increase in financial literacy of investors, direct equity ownership is expected to see an increase in the future.

Retail participation has increased in direct equity and MFs



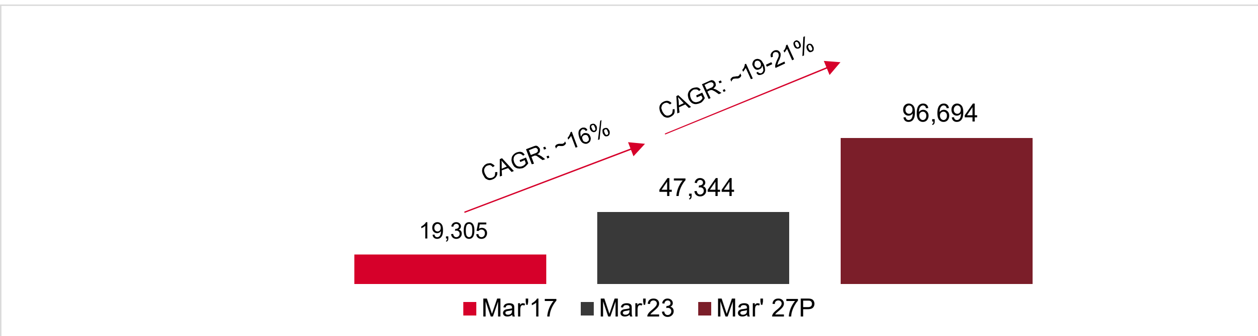
Note: Retail direct equity ownership is computed basis market capitalisation of NSE companies and overall shareholding patterns; Source: NSE Market Pulse, AMFI, India Ownership Tracker (NSE), CRISIL MI&A Research

Direct Equity Investments

Retail participation sees approximately 16% CAGR growth from fiscal 2017 to fiscal 2023

The ownership of individual investors, namely investors excluding promoters and institutions, in NSE listed companies has increased steadily from 8.1% to 9.2% between March 2017 and March 2023. A steady increase over the last couple of years is a reflection of strengthened participation of retail investors in Indian equity markets. In terms of total retail investor participation across BSE and NSE grew at a CAGR of approximately 16% between March 2017 and March 2023. CRISIL MI&A Research projects the value of individual investors' direct equity ownership in all NSE and BSE listed companies to grow at approximately 19-21% CAGR owing to rise in index, listing of new companies and increased participation of retail investors in equity markets.

Value of retail investor in all NSE and BSE listed companies to grow at CAGR of 19-21% between Fiscals 2023 and 2027

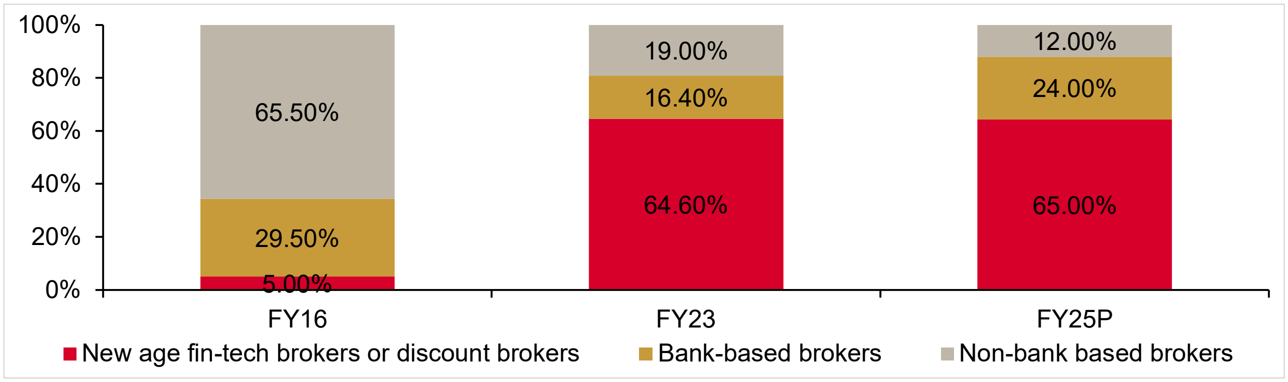


Source: SEBI, NSE Ownership Tracker, NSE Market Pulse, CRISIL MI&A Research Estimates

Share of new age fin-tech brokers or discount brokers to grow to approximately 64-67% by Fiscal 2025 owing to retail participation, bank-based brokers are also considered safe options

The new age fin-tech brokers or discount brokers started gaining prominence from Fiscal 2017 onwards as rising internet and smartphone penetration acted as a tailwind for the segment. As of March 31, 2023, these new age fin-tech brokers or discount brokers had a market share of 64.60% as compared to 60.90% in Financial Year 2022, which was previously 5.00% in fiscal 2016. The mobile and internet-based trading has also witnessed a surge during the period (fiscal 2017 to fiscal 2023) and accordingly, many retail participants chose new age fin-tech brokers or discount brokers over traditional brokers due to low transaction costs. Therefore, rising financial literacy of India's technologically proficient young population coupled with availability of zero brokerage services offered by new age fin-tech brokers or discount brokers and comfort of transacting through digital platforms led to accelerated market share gains for new age fin-tech brokers or discount brokers. Bank-based brokers on the other hand are also considered secure options for investors as the chances for defaulting or misappropriation is low and are less likely to violate SEBI norms. Although, the transaction costs are high for these brokers, they are considered suitable options for those investors who invest for long-term or are new to the market. Moreover, bank-based brokers offer a host of value-added services including portfolio management services, research outlook, advisory services etc. that would attract investors.

Market share of new age fin-tech brokers or discount brokers has increased almost 10x during last five years, bank-based brokers are expected to see an increase in the next two years

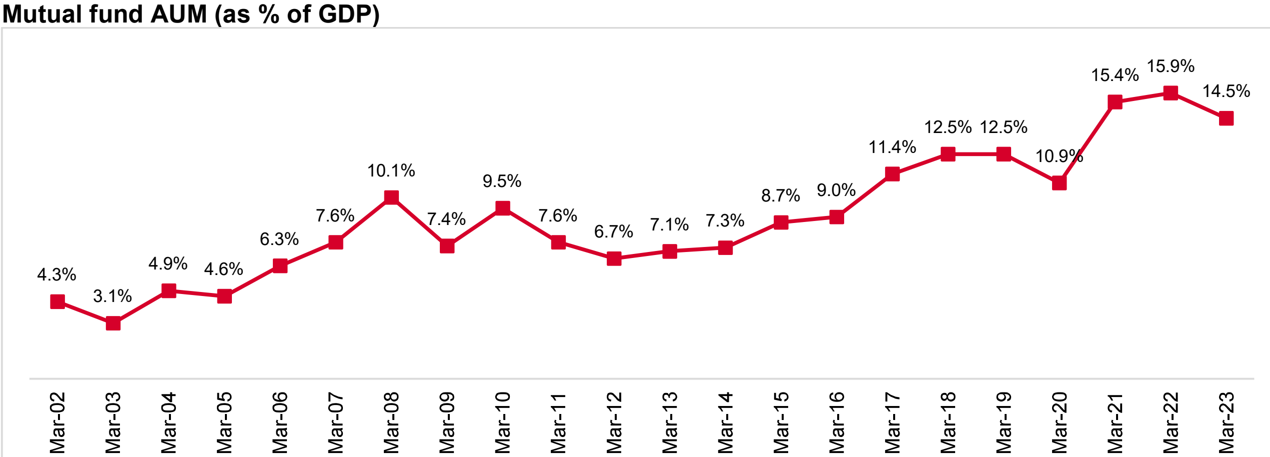


Note: P- Projected, Discount brokers classified basis company disclosures and CRISIL MI&A Research's analysis; Source: NSE, CRISIL MI&A Research

Mutual fund penetration

Mutual fund assets in India have seen robust growth, especially in recent years, driven by a growing investor base. This is due to increasing penetration across geographies, strong growth in capital markets, technological progress, and regulatory efforts aimed at making mutual fund products more transparent and investor friendly. Although mutual fund AUM increased from ₹ 906 billion in Fiscal 2002 to ₹ 39,420 billion at end of Fiscal 2023, and AUM as a percentage of GDP grew from 4.3% in Fiscal 2002 to approximately 14.5% at end of Fiscal 2023, penetration levels remained well below those in other developed and fast-growing peers.

Mutual fund AUM (as % of GDP)



Note: Based on end of Fiscal AUM and GDP at current prices; Source: AMFI, IMF, RBI, CRISIL MI&A Research

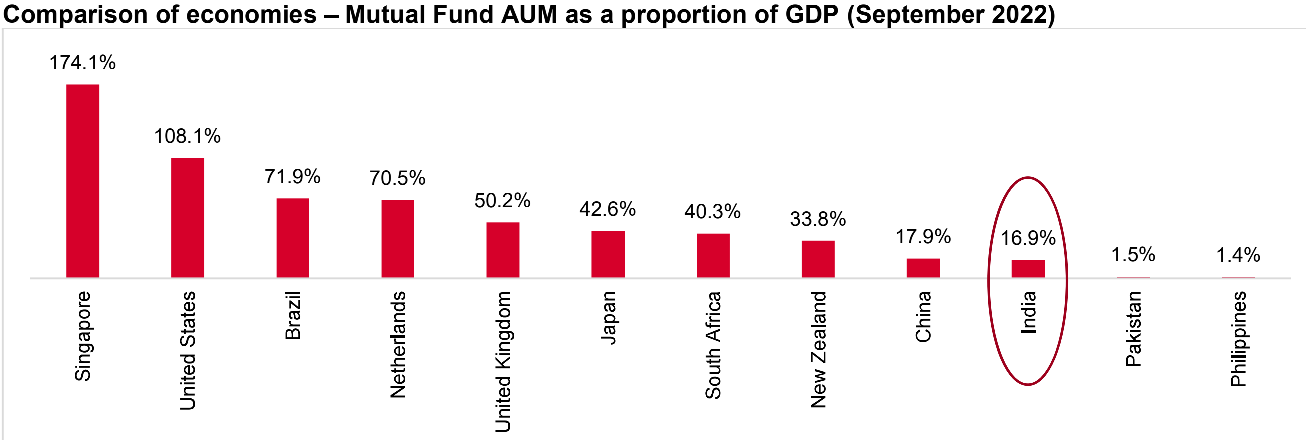
Under penetration of mutual funds in India, increasing financial literacy coupled with favourable demographic and economic prospects provide long growth runway for AMC industry. Therefore, several houses applied for mutual fund license since fiscal 2017, out of which some players like Navi Asset Management Company, NJ Asset Management Private Limited, White Oak Capital Asset Management (acquired Yes Mutual Fund) and Samco Asset Management have already rolled out their mutual fund business. Moreover, applications of Alpha Alternatives, Unifi Capital, Abira Securities and Wizemarkets Analytics are under consideration as of March 2023. Other players such as Bajaj Finserv, Frontline Capital Services, Zerodha Securities, Old Bridge Capital Management, Helios Capital Management, Angel

One and Emkay Global Financial Services have also received in-principal approval from SEBI for setting up a mutual fund business.

Indian mutual fund market is underpenetrated compared to other economies

India's mutual fund penetration (AUM-to-GDP) is significantly lower at 14.5% as of Fiscal 2023 (16.9% as of September 2022), compared to the world average of 55%; and lower than many developed economies such as the U.S. at 108.1% and the United Kingdom ("U.K.") at 50.2%. In Southeast Asian countries, Singapore has the highest mutual fund penetration of 174.1% whereas Pakistan and Philippines have the lowest mutual fund penetration of 1.5% and 1.4%, respectively.

Comparison of economies – Mutual Fund AUM as a proportion of GDP (September 2022)



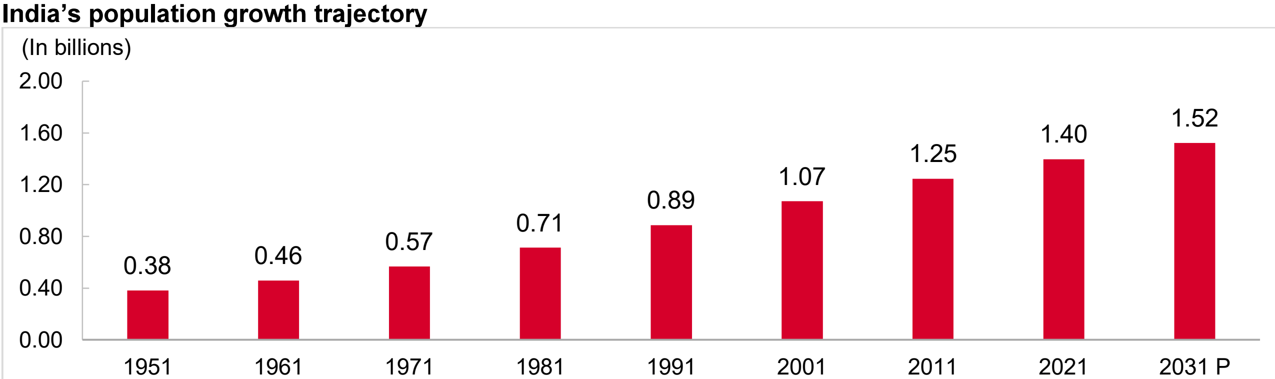
Note: Above charts represent AUM-to-GDP ratio; Nominal GDP and AUM data of USA, Netherlands, Brazil, UK, Japan, India, South Africa, New Zealand, China, Pakistan and Philippines has been taken as of September 2022. Nominal GDP and AUM data of Singapore has been taken as at December 31, 2021. Open-ended funds excluding fund of funds have been considered in the chart, GDP of all the countries is based on current prices estimation by IMF in World Economic Outlook of October 2022; Source: IMF, IIFA, Monetary Authority of Singapore ("MAS"), CRISIL MI&A Research

Key growth drivers

India has world's largest population

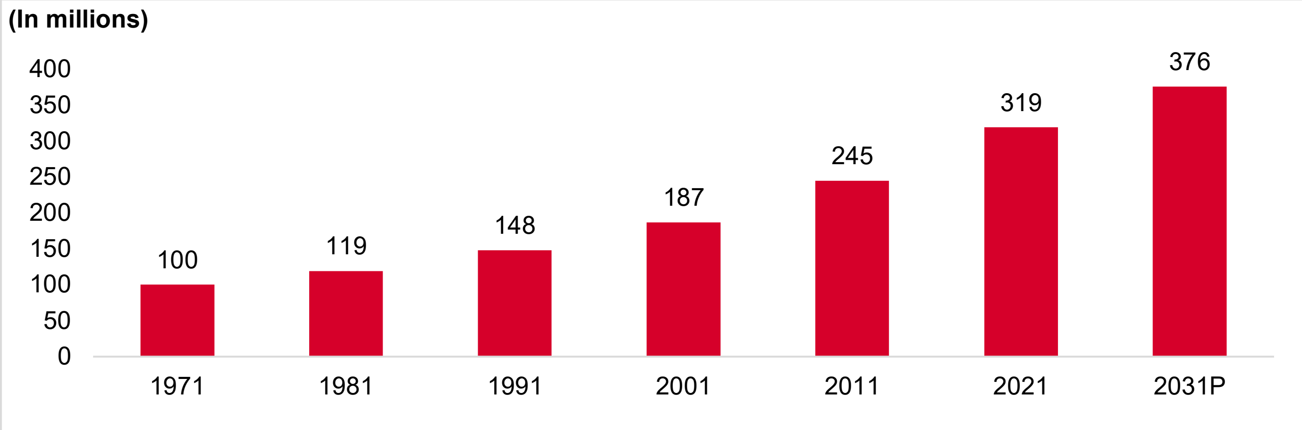
As per Census 2011, India's population was ~1.25 billion, and comprised nearly 245 million households. As of CY2022, the population is more than 1.42 billion and has surpassed China as of January 2023 as the most populous country in the world.

India's population growth trajectory



Note: P: Projected, Source: United Nations Department of Economic and Social affairs, CRISIL MI&A Research

Number of households in India

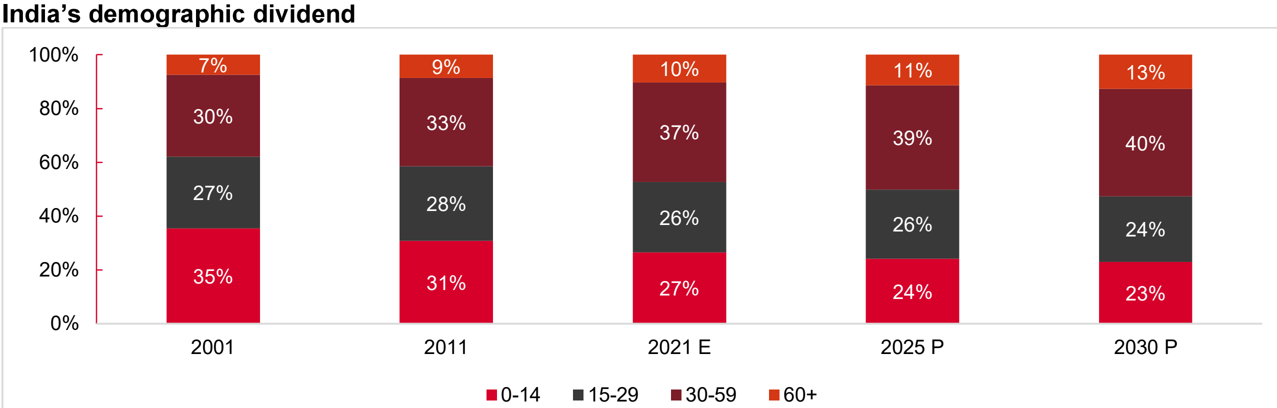


Note: P: Projected, Source: Census India, CRISIL MI&A Research

Favourable demographics

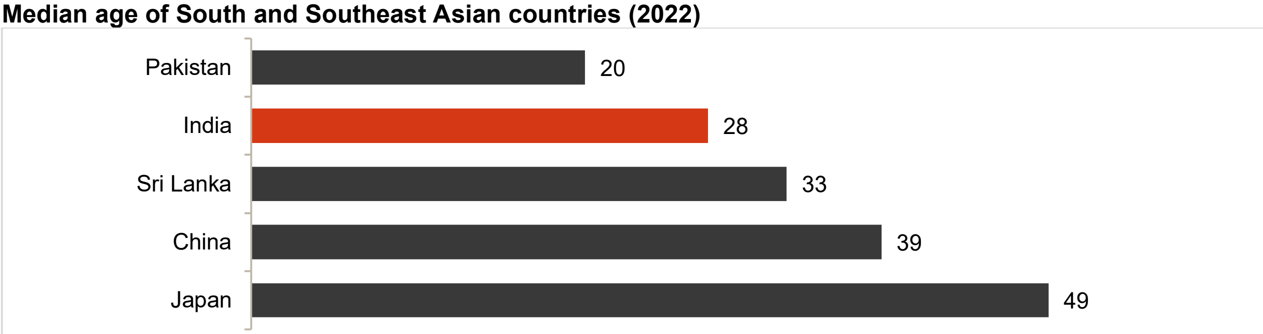
As of calendar year 2022, India has one of the largest young populations in the world, with a median age of 28 years. Of India's population, more than 60% is in the working age group, which is 19-59 years of age, and is expected to remain above 60% for one more decade. CRISIL MI&A Research estimates that approximately 90% of Indians are still below the age of 60 in calendar year 2021 and that 63% of them are between 15 and 59 years. In comparison, in calendar year 2020, the United States (US), China and Brazil had 77%, 83% and 86%, respectively, of their population below the age of 60.

India's demographic dividend



Note: E: Estimated, P: Projected, Source: United Nations Department of Economic and Social affairs, CRISIL MI&A Research

Median age of South and Southeast Asian countries (2022)



Source: United Nations' World Population Prospects 2022, CRISIL MI&A Research

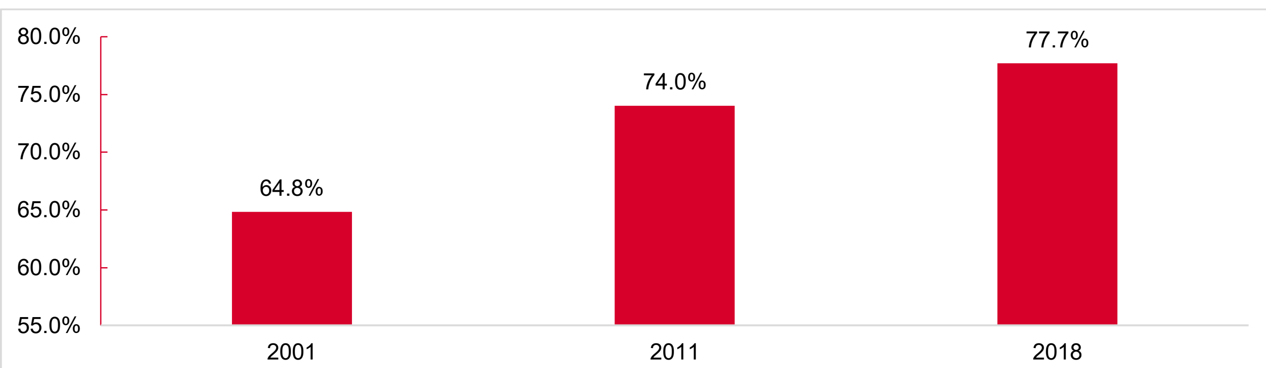
Rise in financial savings and increasing literacy rate will propel capital market growth

The financial savings in India grew at a CAGR of 9% CAGR from fiscal 2017 to fiscal 2022. The increase in financial savings is calculated on a gross flow basis. The increase in financial savings is expected to aid investment in financial products including equity segment. The rising folios in mutual fund industry at a CAGR of 18% from fiscal 2017 to fiscal 2023 further re-emphasis the trend. Further, the favourable demographic profile of the country followed by rising financial literacy and search for high-yielding investment products have led people to look beyond traditional financial products. This is expected to encourage higher participation in capital markets and increase in demat accounts and investment folios.

Financial literacy

Overall literacy in India is at 77.7% as per the results of recent NSSO survey conducted from July 2017 to June 2018 which is still below the world literacy rate of 86.5%. However, according to the National Financial Literacy and Inclusion Survey (NCFE-FLIS) 2019, only 27% of Indian population is financially literate indicating huge gap and potential for financial services industry. The survey defines financial literacy as combination of awareness, knowledge, skill, attitude and behaviour necessary to make sound financial decisions and ultimately achieve individual financial wellbeing. According to the World Bank's Global Findex Database 2021, the global average of adult population with an account opened with a bank, financial institution or mobile money provider, was approximately 69% in calendar year 2017. India's financial inclusion has improved significantly over calendar years 2014 to 2017 as adult population with bank accounts increased from 53% to 78% (Source: Global Findex Database) due to the Indian government's concentrated efforts to promote financial inclusion and the proliferation of supporting institutions.

Overall literacy rate on the rise in India



Source: Census 2011, NSO Survey on household social consumption (2017-18), CRISIL MI&A Research

With increasing financial literacy, mobile penetration, awareness and the Prime Minister's Jan Dhan Yojana bank accounts (scheme aimed at bringing the unbanked under the formal banking system), there has been a rise in the participation of individuals from non-metro cities in banking. With more people attached to the formal banking sector, the demand for financial products in smaller cities has seen a major increase in recent years. Going forward, CRISIL MI&A Research expects financial penetration to increase on account of increasing financial literacy.

Rising demand for corporate debt and equity issuance

Indian Capital market over the years played a pivotal role in development of Indian Economy. As India is surging ahead to become an economic powerhouse, Indian Capital Market is expected to play a greater role and remain in forefront in the days ahead. Funds raised through equity and debt have seen a steady growth over the years with total capital seeing an increase from ₹ 7,555 billion in fiscal 2017 to ₹ 9,345 in fiscal 2023. Further, the number of equity market issuances saw a 30% y-o-y increase in fiscal 2023. One of the crucial elements of Indian Capital Market is Corporate Bond Market. Persistent effort by Government and SEBI in the last few years enabled a nascent Corporate Bond Market to move in the direction of maturity. Also, many companies have equity issuances through IPOs over the last couple of years, primarily due to the impact of the Covid-19 pandemic on business and exuberant stock market activity. This trend in expected to increase going forward as new age companies explore avenues to raise funds from capital markets.

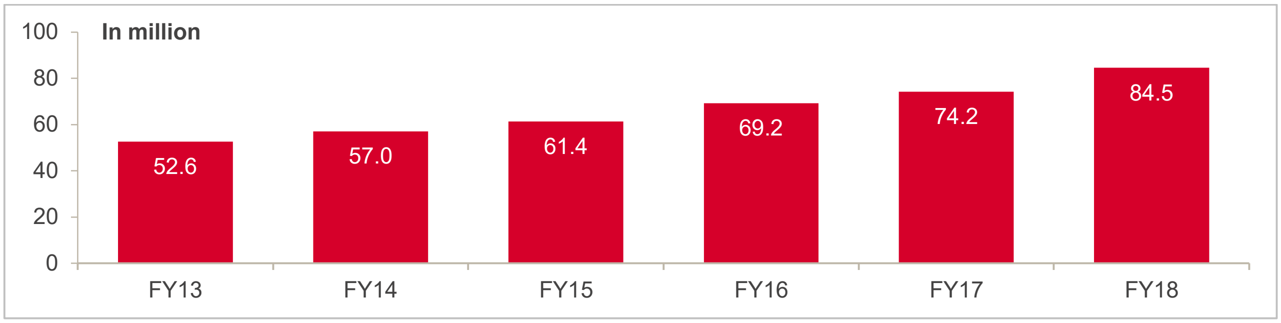
On the demand side, credit default swaps, retail participation, index linked funds, and mechanisms to improve liquidity will be enablers. Besides these, attracting foreign capital is crucial to bridging the emerging supply-demand gap, especially given the crowding-out by gilts stemming from the huge borrowing programme of the government. CRISIL MI&A Research believes that the following measures will enable the Indian debt Capital Market to play an important role:

- Implementing the draft Reserve Bank of India (Credit Derivatives) Directions, 2021, to facilitate the development of the credit default swaps (CDS) market. This will allow banks, NBFCs, insurers, pension funds, mutual funds, alternate investment funds and foreign portfolio investors to write CDS
- Enhancing retail participation via tax sops to investments in debt mutual funds – similar to equity-linked savings schemes – and ensure parity in capital gains tax between equity and debt products.
- Improving liquidity in the market by fast-tracking the setting up of the institution to provide secondary market liquidity to corporate bonds, develop the Limited Purpose Clearance Corporation for corporate bond repos, and allow corporate bonds as collateral under the Reserve Bank of India's liquidity adjustment facility window
- Attracting both domestic and foreign capital through exchange traded funds and other index-linked bond funds, which offer lower costs, more transparency, better liquidity and potential to build diversified portfolios.
- ESG profiling of Indian corporates to attract foreign capital into the Indian debt capital markets

India seeing a wider taxpayer base which would propel growth in formalisation

PAN has been made mandatory for every individual to transact with the ITD of India. The taxpayer base in India has seen a continuous rise over the years. It has grown at a CAGR of 9.9% from FY13 to reach 84.5 million in FY18. Of the total taxpayers, individuals account for a significant share of 95%. The total ITRs filed till July 31, 2022, is 58.3 million. This growth can be attributed to initiatives taken by Government of India such as demonetisation implemented in November 2016 which has brought in new taxpayers into the system leading to increase in number of tax payments In addition to this, implementation of Goods and Service Tax (GST) which has led to increase in compliance and also abolished cascading taxation that has bolstered the growth in number of tax payers.
Other than above mentioned factors, going forward, schemes introduced by the Government of India, such as PMJDY, PMMY, etc, would further increase the tax-paying population. This would lead to greater need for issuance of PAN cards to the untapped population in the country.

Number of taxpayers in India



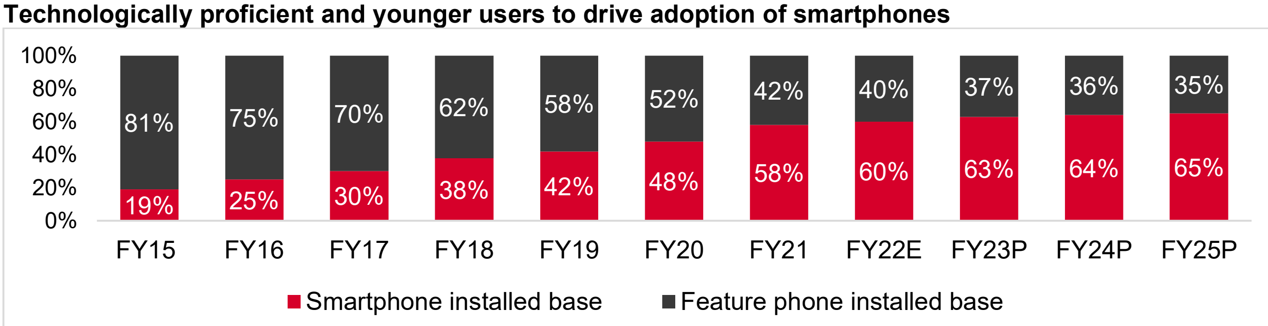
Source: Income Tax Department, CRISIL MI&A Research

Digitisation: Catalyst for the next growth cycle

Technology is expected to play a pivotal role in taking the financial sector to the next level of growth, by helping to surmount challenges stemming from India's vast geography, which makes physical footprints in smaller locations commercially unviable. Technology is conducive for India, considering its demographic structure where the median age is less than 30 years. The young population is technologically proficient and at ease with using it to conduct the entire gamut of financial transactions. With increasing smartphone penetration and faster data speeds, consumers are now encouraging digitisation as they find it more convenient. Digitisation will help improve efficiency and optimise cost. Players with better mobile and digital platforms will draw more customers and emerge as winners in the long term.

Mobile penetration: Higher mobile penetration, improved connectivity, and faster and cheaper data speed, supported by Aadhaar and bank account penetration have led India to shift to a digital economy.

Technologically proficient and younger users to drive adoption of smartphones

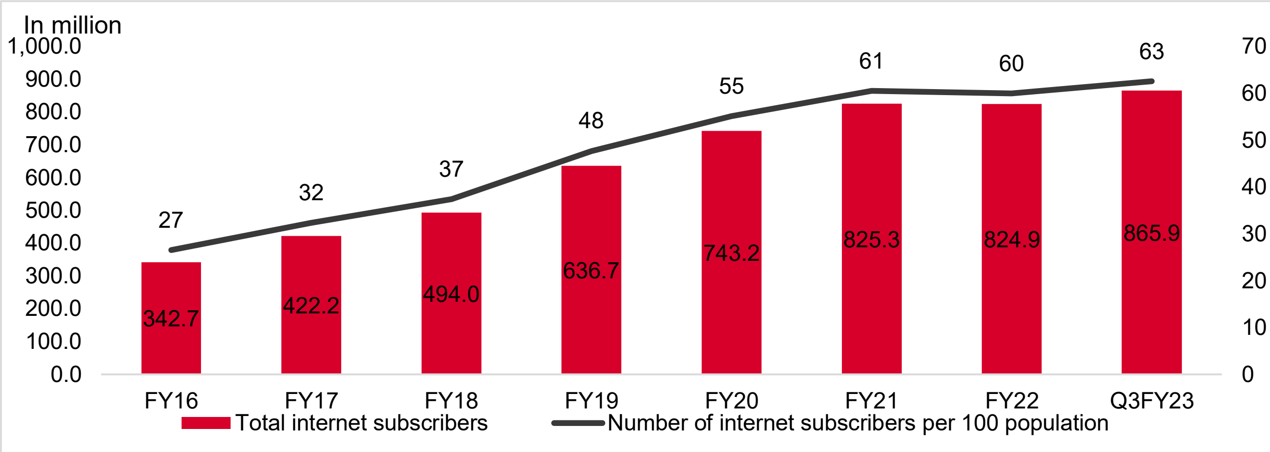


Note: E: Estimated, P: Projected; Source: CRISIL MI&A Research

Rise in internet penetration and smartphone usage

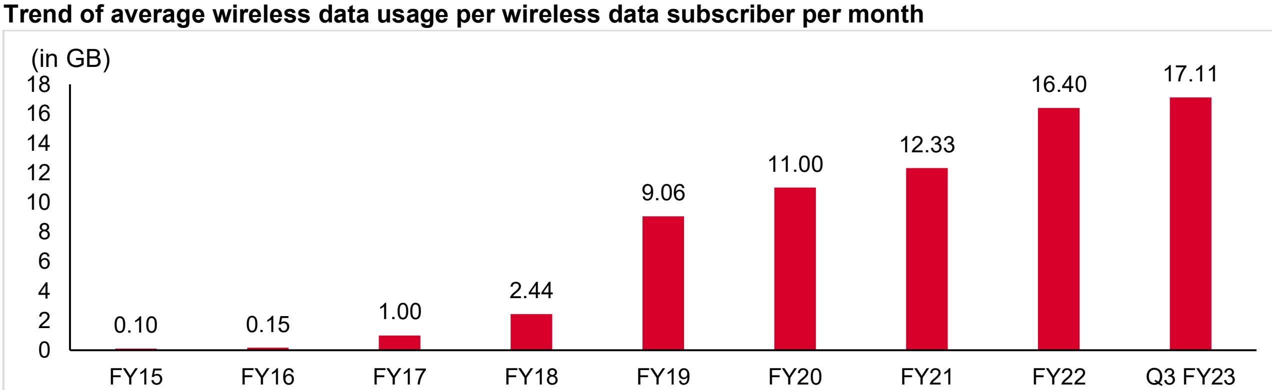
India had 1,144 million wireless subscribers as of March 2023, and the number is growing at a steady pace every year. The reach of mobile network, internet and electricity is continuously expanding the subscriber footprint to remote areas leading to rising smartphone and internet penetration in the country. Internet subscribers have risen sharply in India from 422 million subscribers in fiscal 2017 to 866 million subscribers as of December 2022 growing at a CAGR of 13.3%. In terms of number of internet subscribers per 100 population, number has almost doubled from 33 in fiscal 2017 to 63 in December 2022. Average wireless data usage per month per subscriber has seen an increasing trend over the last eight years. Per subscriber per month data usage was 0.1 GB in FY15 which has increased to 17 GB in December 2022. This is due to increasing internet data penetration in the country.

Trend in internet subscribers in India



Source: TRAI, CRISIL MI&A Research

Trend of average wireless data usage per wireless data subscriber per month



Source: TRAI, CRISIL MI&A Research

Financial Inclusion on a fast path in India

Financial inclusion enables vulnerable households and businesses to increase financial literacy, protect confidence, avail formal credit with more ease, and subsequently bridge the credit gap in the country. Emphasizing on the financial inclusion initiatives would fast-track formalization of credit in the economy.

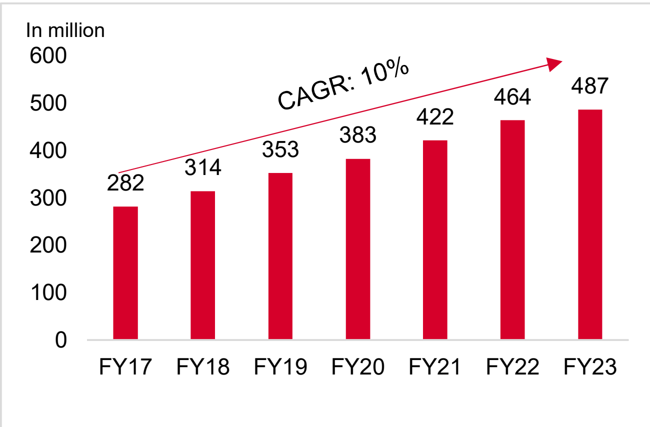
JAM Trinity – Jan Dhan Yojana, Aadhar and Mobile Payments key initiatives undertaken to boost financial inclusion

Jan Dhan Yojana –

The two key initiatives launched by the Government to promote financial inclusion are the Pradhan Mantri Jan Dhan Yojana (“**PMJDY”**) and Pradhan Mantri Jeevan Jyoti Bima Yojana (**“PMJJBY”**). Under the PMJDY, the Government’s aim is to ensure that every household in India has a bank account which they can access from anywhere and avail of all financial services such as savings and deposit accounts, remittances, credit and insurance affordably. PMJJBY is a one-year life insurance scheme that offers a life cover of ₹ 0.2 million at a premium of ₹ 330 per annum per member, which can be renewed every year.

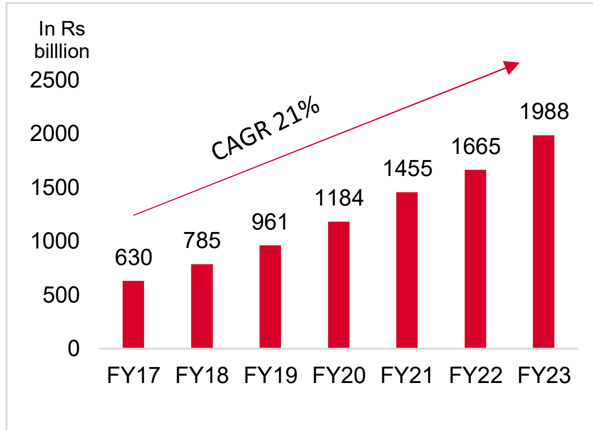
PMJDY launched in August 2014, aims to extend banking facilities to all within a reasonable distance in each sub-service area (consisting of 1,000-1,500 households) across India. As of March 2023, almost 487 million PMJDY accounts had been opened, of which, 67% were in rural and semi-urban areas, with total deposits of around ₹ 1,988 billion.

Number of PMJDY accounts



Source: PMJDY; CRISIL MI&A Research

Total balance in PMJDY accounts



Source: PMJDY; CRISIL MI&A Research

Aadhar Penetration –

Adoption of Aadhaar and Aadhaar authentication in the Indian financial system is expected to transform the financial landscape. To increase financial inclusion, the Unique Identification Authority of India partnered with the RBI, National Payments Corporation of India (NPCI), Indian Banks Association (IBA) and banks to develop:

- Aadhaar Payments Bridge (APB) – The system was launched in 2011 to enable a smooth transfer of all government welfare scheme payments to a beneficiary's Aadhaar Enabled Bank Account (AEBA)
- Aadhaar enabled payment system (AEPS) – A system that leverages Aadhaar online authentication and enables AEBAs to be operated in anytime-anywhere banking mode by the marginalised and financially excluded via micro-ATMs

According to the Ministry of Electronics and IT, Aadhaar-generated unique identity covered over 99% of total estimated adult population of India, as of December 2020. An Aadhaar number is used to verify the identity of a person receiving a subsidy or a service. Disbursements take place through a centralised electronic benefit transfer system using the unique Aadhaar beneficiary numbers.

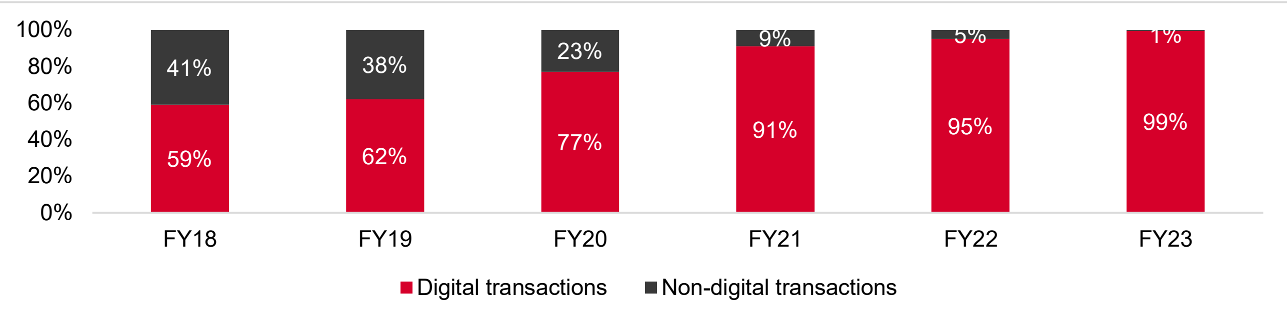
Aadhaar-enabled payments with clear authentication and verification process allow financial institutions to network with village-based BCs. Thus, customers will be able to withdraw money and make deposits at the local BC. UIDAI's authentication will help banks verify residents both in person and remotely. The electronic transfer, backed by UIDAI's authentication, will help residents transact electronically, reducing the cost of transactions. Also, it has helped reduce the KYC approval turnaround time from the previous 10-15 days, when the customer had to submit various documents for identity and address proof, to almost-instant KYC approval.

Mobile Payment Penetration –

Digital payments have witnessed substantial growth

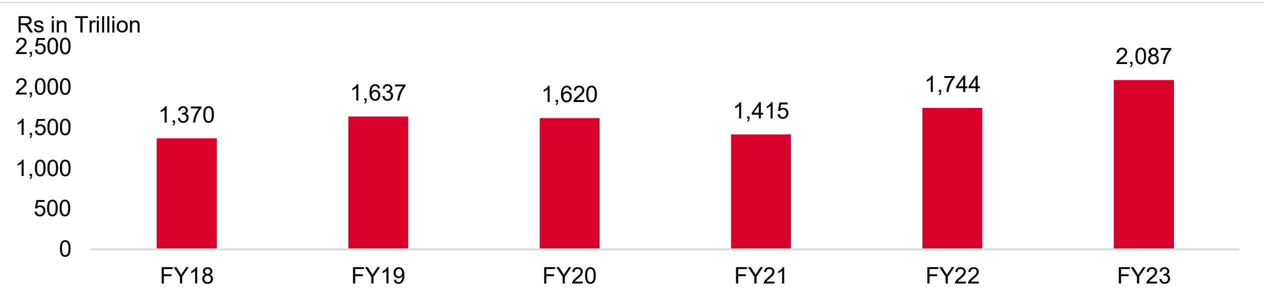
Total digital payments in India have witnessed significant growth over the past few years. Between Fiscal 2018 and 2023, the volume of digital payments transactions has increased from 14.6 billion to 113.9 billion, causing its share in overall payment transactions to increase from 59% in Fiscal 2018 to 99% in Fiscal 2023. During the same period, value of digital transactions has increased from ₹ 1,370 trillion in Fiscal 2018 to ₹ 2,087 trillion in Fiscal 2023.

Trend in volume of digital payments



Note: Digital Payments includes RTGS payments, Credit transfers (AePS, APBS, ECS Cr, IMPS, NACH, NEFT, UPI), Debit Transfers (BHIM, ECS Dr, NACH Dr, NETC), Card Payments (Debit and Credit Cards) and Prepaid Payments Instruments; Source: RBI, CRISIL MI&A Research

Trend in value of digital payments



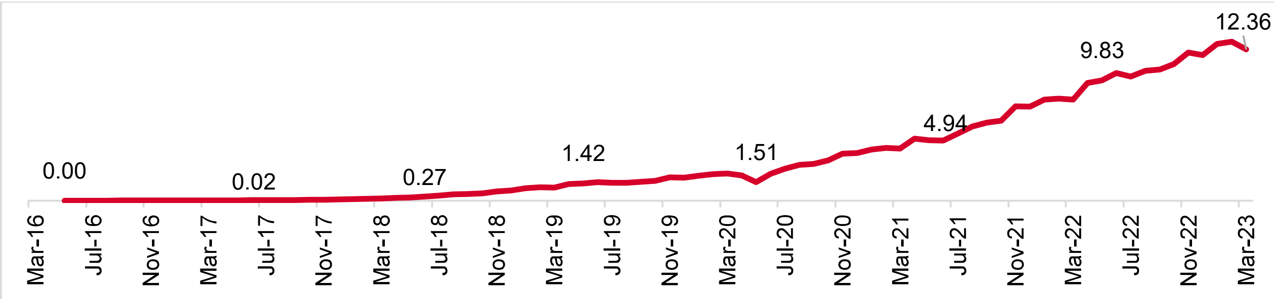
Note: Digital Payments includes RTGS payments, Credit transfers (AePS, APBS, ECS Cr, IMPS, NACH, NEFT, UPI), Debit Transfers (BHIM, ECS Dr, NACH Dr, NETC), Card Payments (Debit and Credit Cards) and Prepaid Payments Instruments; *FY23 includes till February 2023., Source: RBI, CRISIL MI&A Research

Consumers are increasingly finding transacting through mobile convenient. CRISIL MI&A Research expects the share of mobile banking and prepaid payment instruments to increase dramatically over the coming years. In addition, CRISIL MI&A Research expects improved data connectivity, low digital payment penetration and proactive government measures to drive digitalisation in the country, transforming it into a cashless economy.

Unified Payment Interface (UPI) payments have seen a monumental rise since its inception

As per RBI and National Payments Corporation of India (NPCI), the volume of UPI payments since its launch in fiscal 2017, have gained traction pan-India. 17.9 million payments in fiscal 2017 have increased to 83,000 million payments in fiscal 2023. Moreover, the value of payments also saw a significant increase from ₹ 0.07 trillion payments in fiscal 2017 to ₹ 139 trillion in fiscal 2023 indicating the increasing presence of the digital payment mechanism in the country.

Trend in value of UPI payments (in ₹ trillion)



Source: NPCI, CRISIL MI&A Research

Products like contactless and digital cards to enable greater digital transactions

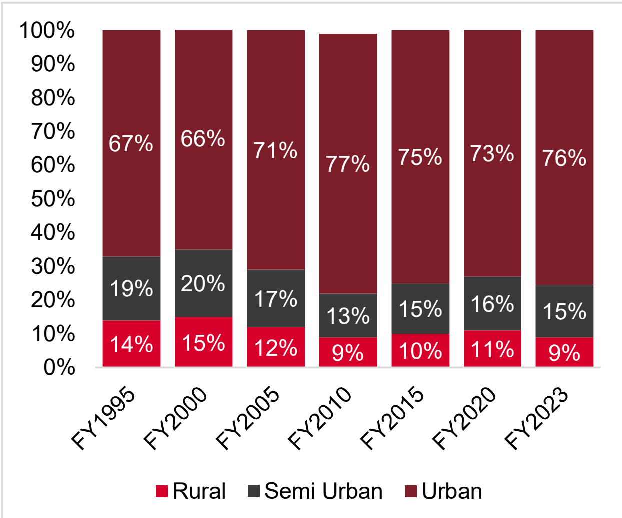
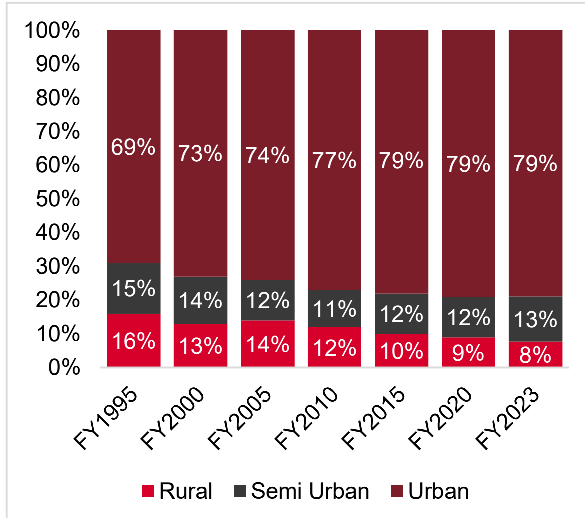
Introduction of contactless cards has enabled users to just tap and pay for transactions under ₹ 2,000 by using the card at a contactless payment machine. Payment service providers are exploring innovative payment infrastructure by leveraging host card emulation (HCE) for secure near field communication (NFC) payment transactions. This will enable customers to easily use their cards on their NFC enabled smartphones to make contactless payments. The card issuers are also innovating and have introduced digital or virtual cards in the last one year. The digital card arrives in the individual's mobile application and has features like Touch ID or Face ID for authentication, which increases the convenience of transactions on e-commerce and other platforms. Further, significant growth in users over the last decade for payment apps and wallets such as PayTM, MobiKwik, and PhonePe are also enabling digital transactions in the ecosystem.

Rural India accounts only about 8% of total credit and 9% of total deposits

The share of total credit outstanding is about 8% in rural areas and 92% in urban and semi-urban areas as of March 2023. The massive divergence in the rural areas' share of India's GDP and banking credit services compared with urban areas is an indicator of the extremely low penetration of banks in rural areas.

The chart below shows the share of deposits and credit outstanding in rural and urban areas:

Low share of banking credit and deposit indicates lower penetration in rural areas

Population group wise share of deposits	Population group wise share of credit
	

Source: RBI, CRISIL MI&A Research

Although the majority of Indian households are located in the rural region, the banking infrastructure in these regions is relatively inferior and, thus, there is a gap in the supply and demand of financial services in the backward regions of the country, which is a pocket of opportunity for the financial services sector.

With increasing financial penetration and access to financial services in the rural and semi-urban areas, the share of deposits in these areas have also increased over the last ten years. While the share of urban areas in the deposits distribution has reduced over the last decade, share of semi-urban and rural areas have seen an increase in share of deposits.

With a high proportion of population in the rural areas across the country, the financial institutions have less competition for banking services here compared with urban areas. Also, since the level of financial inclusion is lower, it presents a significant opportunity for these entities to penetrate these regions.

Key steps taken by the government to boost financial inclusion

To improve financial inclusion, especially in rural areas, the government is focusing on improving the overall rural infrastructure for penetration of financial services as well as empowering the development of parallel supporting institutions. This has provided an opportunity for NBFCs and other financial institutions to cater to the unserved population or act as a channel between the larger financial institutions and other service providers to better serve the underserved customers.

Considerable progress has been made over the past 5-7 years to bring unbanked individuals into the formal banking system. The RBI and the government have taken several measures, such as:

Small Finance Banks (SFBs)

As of March 2023, there are 12 SFBs which aim to service the underserved customers through savings instruments, and supplying credit to small business units, small and marginal farmers, micro and small industries, and other unorganised sector/lending through informal channels. SFBs are also required to dedicate 75% of their Adjusted Net Bank Credit (ANBC) towards priority sector. For the SFBs, approximately 22% of their deposits arise from the rural and semi-urban areas, whereas the credit view shows a geographic skew with 43% of the advances in rural and semi-urban areas as of March 2023. This has led to increasing credit penetration in the rural areas, thereby ensuring financial inclusion.

Microfinance Institutions

Microfinance institutions (MFIs) and non-banking financial companies (NBFCs) are generally present in areas where commercial banks are not able to service customers. MFIs provide door to door service and strong engagement with borrowers, which makes their networks strong and help them open branches in underserved areas. The operating costs is relatively higher for MFIs given the expansive coverage required for financial inclusion in rural parts. Currently, MFIs charge a higher rate of interest to the customers, as most of their loan portfolio is unsecured or given to slightly risky customers. NBFCs rely on strong tailor-made products by continually introducing customised and flexible offerings for the underserved or untapped market after learning about the needs of the locals. MFIs have a significant role to play in furthering financial inclusion. As of 31st March, 2023, 40% of microfinance is held by NBFC-MFIs with a total gross loan portfolio of ₹ 1,383.1 billion.

According to the Microfinance Institutions Network (MFIN), NBFC-MFI had a borrower base of 39 million clients as of 31st March, 2023. NBFC-MFIs had an average loan ticket size of Rs 42,010.

Payment banks

Another step taken towards financial inclusion was the RBI granting in-principle approval on August 19, 2015, to 11 players to launch payment banks, however, currently only 6 payments banks are operating in the country.

Payment banks can accept deposits, subject to a cap of ₹ 200,000 per customer, and provide payment and remittance services through channels, such as the internet, branches, business correspondents (BCs) and mobile banking. However, these banks cannot offer credit facilities directly, but can choose to act as a BC of another bank for credit and other services.

Along with maintaining a cash reserve ratio (CRR) with the RBI, payment banks are required to invest a minimum of 75% of their demand deposit balance in government securities eligible under the statutory liquidity ratio (SLR), with maturity of up to one year, and hold a maximum 25% in current and fixed deposits with Scheduled Commercial Banks (SCBs).

Business Correspondents (BCs)

In one of its foremost measures, the RBI introduced the BC model of banking outreach in January 2006, aimed at leveraging information and communication technology to widen access to the banking system. BCs are retail agents engaged by banks to offer banking services at locations other than a bank branch/ATM. They are authorised to perform a variety of activities including collection of small-value deposits, disbursal of small-value credit, recovery of principal, collection of interest, sale of micro insurance, mutual fund products, pension products, other third-party products, and receipt and delivery of small value remittances/other payment instruments. In July 2014, the RBI allowed NBFC-MFIs to work with banks as BCs.

Digital India

An umbrella programme to transform India into a knowledge economy has supported the financial inclusion initiative. Some of the initiatives under this programme include development of digital infrastructure, delivery of government services digitally and improvement in digital literacy, especially in rural India. Some of the initiatives are Direct benefits transfer, Common service centers 2.0 and BharatNet.

Financial inclusion index

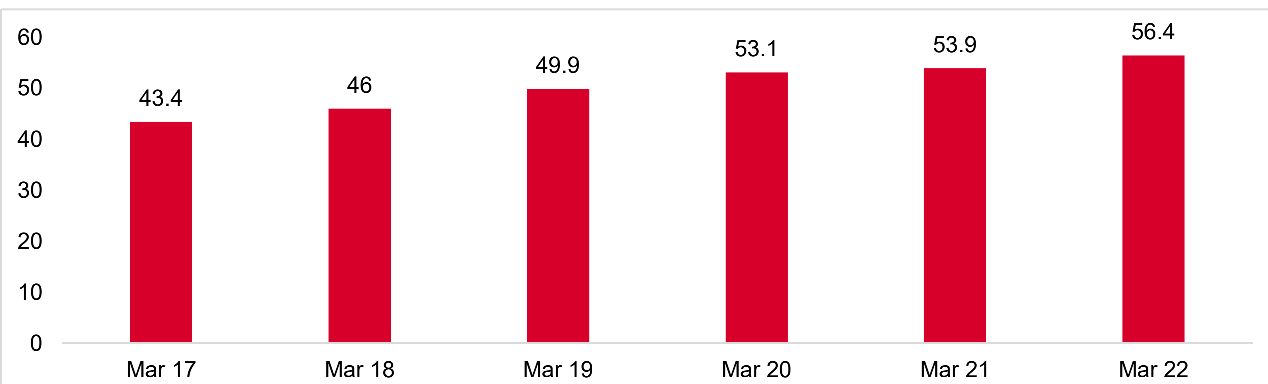
The Reserve Bank of India (RBI) has constructed a composite financial inclusion index (FI-Index) to capture the extent of financial inclusion across the country. The FI-Index has been conceptualized as a comprehensive index incorporating details of banking, investments, insurance, postal and pension sector. The index captures information on various aspects of financial inclusion in a single value ranging between 0 to 100 where 0 represents complete financial exclusion and 100 indicates full financial inclusion.

The FI-Index comprises of three broad parameters – Access (35%), Usage (45%) and Quality (20%) with each of these consisting of various dimensions which are computed based on number of indicators.

The Index is responsive to ease of access, availability and usage of services, and quality of services, comprising in all 97 indicators. A unique feature of the Index is the Quality parameter which captures the quality aspect of financial inclusion as reflected by financial literacy, consumer protection, and inequalities and deficiencies in services.

The FI-Index has been constructed without any 'base year' and as such it reflects cumulative efforts of all stakeholders over the years towards financial inclusion. The value of FI Index for March 2022 stands at 56.4 as against 53.9 in March 2021, with growth witnessed across all the sub-indices.

Financial inclusion has improved over the years

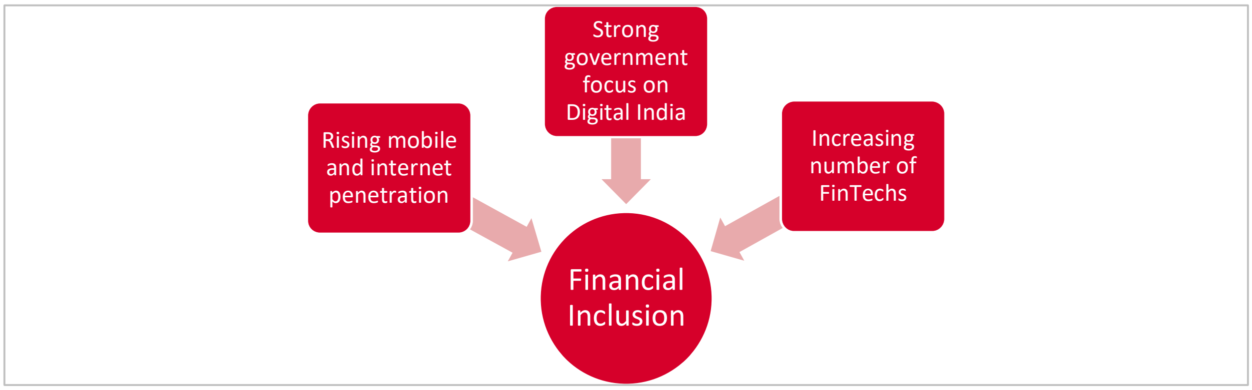


Source: RBI, CRISIL MI&A Research

Technology to aid financial inclusion in India

In India, technology has significantly improved the accessibility and affordability of financial services that were previously inaccessible to the unbanked or underbanked masses. In the past nine years, our country has accelerated the pace of financial inclusion. From 40% of Indian adults with a bank account in 2011, this number has consistently increased to 80% in 2018 according to the Global Findex Data. However, lower levels of financial literacy and lack of awareness, especially in rural India has led to only 48% of these accounts being active.

Conventional banking models are not feasible for low ticket size of transactions, deposits, loans, etc. in rural or remote areas and brick and mortar businesses are proving to be an uneconomical proposition for banks. Improving mobile and smartphone penetration, robust infrastructure laid down by the government to enable digitisation and rising number of financial technology start-ups (FinTechs) in India will help in overcoming the challenges faced by the traditional banking model and lead to higher financial inclusion.



Source: CRISIL MI&A Research

FinTechs have been at the forefront of the growth in digital payments in India. These include payment companies that facilitate P2P and retail payments through mobile wallets or UPI as well as technology companies which provide hardware and POS devices for digital payments. The foundational digital infrastructure laid by Aadhaar, and the India Stack has created the business case for many of these FinTechs. New smartphone users and people exploring digital payments for the first time can be signed up at minimal costs based on their digital identities. For a number of FinTechs, access to the India Stack is fundamental to their business models. Evolving business models of these FinTechs and strong focus of government on digitisation from granting licenses to building the infrastructure for digital payments landscape will lead to improving financial inclusion by tapping the underbanked population of India.

Support financial inclusion

Some of the existing challenges to financial inclusion include limited physical infrastructure - especially in remote areas, poor connectivity, non-availability of customized products, socio-cultural barriers, lack of integration of credit with livelihood activities or other financial services across insurance, pension etc. With suitable design choices, CBDC may provide the public a safe sovereign digital money for meeting various transaction needs. It shall make financial services more accessible to the unbanked and underbanked population. The offline functionality as an option will allow CBDCs to be transacted without the internet and thus enable access in regions with poor or no internet connectivity. It shall also create digital footprints of the unbanked population in the financial system, which shall facilitate the easy availability of credit to them.

Universal access attributes of a CBDC including offline functionality, provision of universal access devices and compatibility across multiple devices, shall prove to be a gamechanger by improving the overall CBDC system for reasons of resilience, reach and financial inclusion.

2. Current scenario of the capital markets in India

Overview of capital markets in India

The Indian Capital Markets have witnessed growth at a very fast pace since fiscal 2017 till fiscal 2023. The market capitalization of shares listed on National Stock Exchange ("NSE") grew at 14% CAGR during March 2017 to March 2023. The number of companies traded on BSE and NSE (Cash Segments) increased from 4,613 in Fiscal 2017 to 6,466 in Fiscal 2023. There has been a significant increase in the participation of retail investors in the last few years, wherein the number of demat accounts, mutual fund folios and SIPs witnessed a stupendous rise. The total demat accounts increased from 27.85 million in March 2017 to 114.50 million in March 2023 growing at 26.57% CAGR during the period. The AUM of mutual funds increased from ₹ 17,456 billion in March 2017 to ₹ 39,420 billion in March 2023 growing at a 14% CAGR from during the period, whereas the total SIP contribution saw a growth at 24% CAGR from March 2017 to March 2023 increasing from ₹ 439 billion to ₹ 1,560 billion.

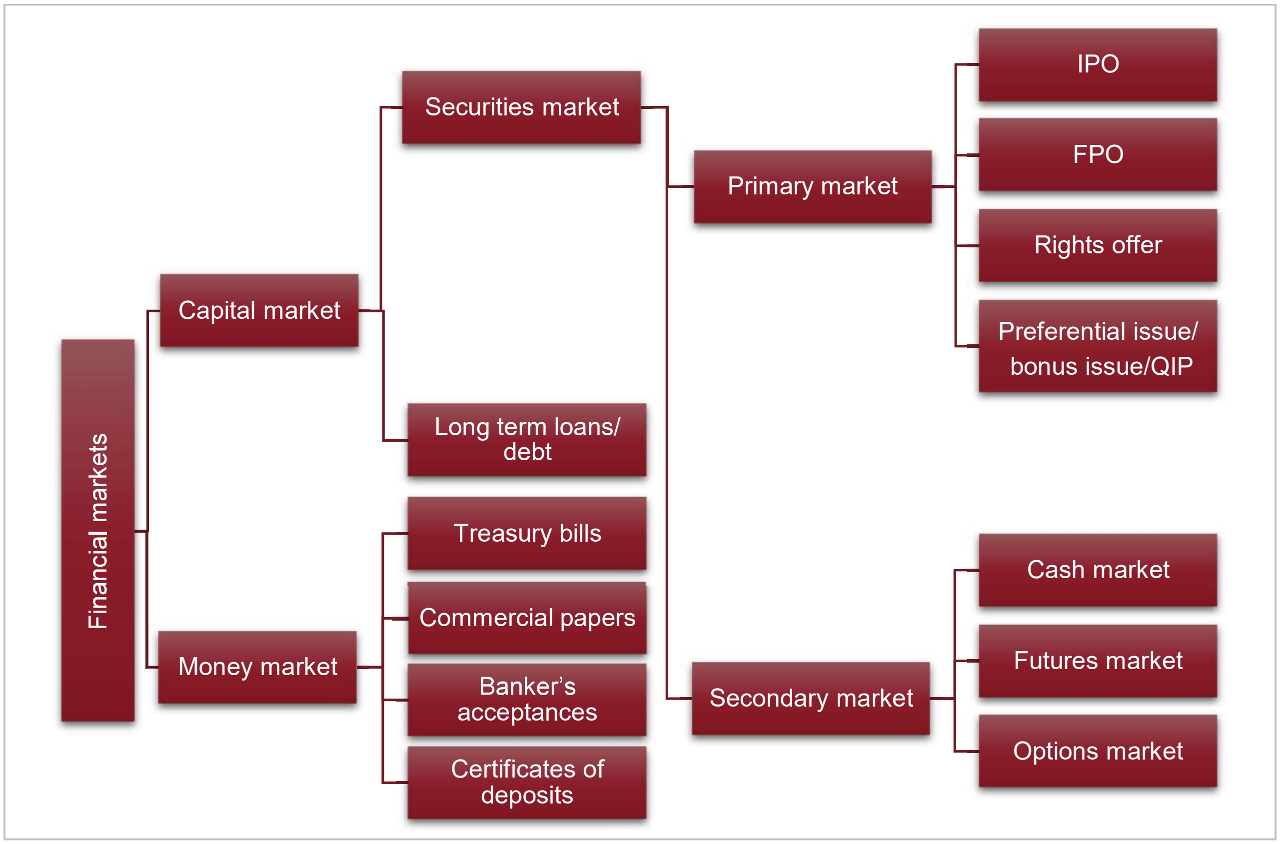
The turnover in the cash market and equity derivatives market at NSE grew at a stupendous 15% CAGR and 85% CAGR respectively during Fiscal 2017 to Fiscal 2023. This was primarily owing to increasing retail participation due to the ease of trading through mobile applications indicating the traction that capital market instruments are gaining.

The dual barometers of Indian stock markets, Sensex and Nifty touched multiyear highs recently with intermittent corrections. BSE Sensex and NSE Nifty increased by 0.7% and decreased by 0.6% respectively at the end of March 2023 form their closing levels in March 2022. As on 31st March 2023, the indices stood at 58,992 and 17,360 respectively.

In fiscal 2022, the fund mobilization through the primary market route were at its highest ever in fiscal 2021. Equity offerings through public and rights issues were at its highest in fiscal 2022 at ₹ 1,388.94 billion compared to ₹ 1,101.19 billion raised in fiscal 2021 and ₹ 658 billion raised in fiscal 2023. In fiscal 2023, the IPO pipeline was strong with 164 companies issuing IPOs as compared to 120 issues in fiscal 2022. The market rally was largely led by flush liquidity, better-than-expected pace of post-pandemic macro recovery, a strong vaccination drive and the increasing awareness & usage of digital technology in the ecosystem.

The RBI increased the repo rate cumulatively since May 2022 till February 2023 by 250 bps to 6.5% which could positively impact the growth prospects of debt funds to an extent. Further, the optimistic stance taken on domestic growth by increasing the GDP forecast for 2024 is likely to augur well for the industry.

Classification of financial markets in India



Source: CRISIL MI&A Research

I. Money market

The money market refers to the market where borrowers and lenders exchange short-term funds to solve their liquidity needs. This market encompasses trading and issuance of short-term, non-equity debt instruments including treasury bills, commercial papers (CPs), banker's acceptance, certificates of deposits, etc.

Features of money market are:

i. Low default risk

ii. Maturities under one year

iii. High marketability

II. Capital market

Capital market is a market for long-term debt and equity shares. In this market, capital funds comprising both equity and debt are issued and traded. This also includes private placement sources of debt, equity or convertible securities, as well as organised markets like stock exchanges. Capital market includes debt financial instruments with more than one year maturity.

Securities market: The securities market refers to markets for those financial instruments that are commonly and readily transferable by sale. This market has two inter-dependent and inseparable segments; the primary (new issues) and secondary (stock) markets.

i. ***Primary market:*** This provides the channel for sale of new securities. The issuer of securities sells securities in the primary market to raise funds for investment and/or to discharge some obligation. The primary market is of great significance to the economy of a country, as it is through this market that funds flow for productive purposes from investors to entrepreneurs. The latter use the funds for various purposes like expansion, creating new products, rendering services to customers in India and abroad etc.

The strength of an economy is gauged by the activities of its stock exchanges. The primary market creates and offers merchandise for the secondary market.

Types of issues in primary market

- Initial public offer (IPO)
- Follow-on public offer (FPO)
- Rights offer, such as securities offered to existing shareholders
- Preferential issue/ bonus issue/qualified institutional buyer placement
- Composite issue, that is, mixture of a rights and public offer, or offer for sale (offer of securities by existing shareholders to the public for subscription)

ii. ***Secondary market:*** This market enables those who hold securities to transact their holdings in response to changes in their assessment of risk and return.

It essentially comprises stock exchanges which provide the platform for purchase and sale of securities by investors. The trading platform of stock exchanges are accessible only through intermediaries. The stock market or secondary market ensures free marketability, negotiability and price discharge. The secondary market has further components:

- **Spot market:** where securities are traded for immediate delivery and payment.
- **Futures market:** where securities are traded for future delivery and payment.
- **Options market:** where securities are traded for conditional future delivery. Generally, two types of options are traded in the options market, i.e., the call and put option. A put option permits the owner to sell a security to the writer of the option at a pre-determined price before a certain date. A call option permits the buyer to purchase a security from the writer of the option at a particular price before a certain date.

Key intermediaries of capital markets in India

I. *Primary market intermediaries*

a) **Merchant bankers:** Any person who is engaged in issue management, either by making arrangements regarding selling, buying or subscribing to securities, or acting as manager, consultant, adviser, or rendering corporate advisory service in relation to such issue management.

b) **Depositories:** A depository is an organisation which holds securities (like shares, debentures, bonds, government securities, mutual fund units etc.) of investors in electronic form at the request of the investors through a registered depository participant. It also provides services related to transactions in securities. At present two Depositories viz. National Securities Depository Limited (NSDL) and Central Depository Services (India) Limited (CDSL) are registered with SEBI.

c) **Registrars and share transfer agents:** Persons appointed by a body corporate or any person or group of persons for:

- Carrying on activities of collecting applications from investors in respect of an issue
- Keeping a proper record of applications and monies received from investors or paid to the seller of the securities
- Assisting body corporate or person or group of persons in determining the basis of allotment of securities in consultation with the stock exchange
- Finalising list of persons entitled to allotment of securities
- Processing and dispatching allotment letters, refund orders or certificates and other related documents in respect of issues

d) **Stock exchanges:** They provide the platform for purchase and sale of securities by investors. The trading platform of stock exchanges are accessible only through brokers, and trading of securities is confined only to stock exchanges.

e) **Underwriters:** An entity that handles sale of new securities which a company or municipality wishes to sell, to raise money. Underwriters will guarantee subscription to securities, say, an issue of equity from the company at a stated price. They are under an obligation to purchase securities up to the amount they have underwritten and are not subscribed by the public.

f) **Bankers to issue:** A scheduled bank carrying on all or any of issue-related activities such as:

- Acceptance of application and application money
- Acceptance of allotment or call money
- Refund of application money

g) **Debenture trustees:** A trustee of a trust deed for securing any issue of debentures of a body corporate.

II. *Secondary market intermediaries*

a) **Stock broker:** Stock broker means a member of the stock exchange. A stock broker plays a very important role in the secondary market, helping both seller and buyer in the securities market to enter into transactions.

b) **Stock Exchanges:** Stock exchanges provide platform for purchase and sale of securities by investors. The trading platform of stock exchanges are accessible only through brokers and trading of securities is confined only to stock exchanges.

c) **Sub-brokers:** Any person who is not a member of a stock exchange, but who acts on behalf of a stockbroker as an agent or otherwise for assisting investors in buying, selling or dealing in securities through such stockbrokers.

d) **Portfolio managers:** Any person who, pursuant to a contract or agreement with a client, advises or directs or undertakes on behalf of the client (whether as discretionary portfolio manager or otherwise), the management or administration of a portfolio of securities, or the funds of the clients

e) **Investment adviser:** Any person, who, for consideration, provides investment advice to clients or other group of persons. It includes any person who holds out himself as an investment adviser, by whatever name called.

Below is the extent of participation of market intermediaries in capital markets as of March 31, 2023

Market Intermediaries as of March 2023

Particulars	March 2023
Stock Exchanges (Cash Market)	3
Stock Exchanges (Derivatives Market)	3
Stock Exchanges (Currency Derivatives)	3
Stock Exchanges (Commodity Derivatives Market)	4
Depositories	2
Foreign Portfolio investors (FPIs)	11,081
Credit Rating Agencies	7
Bankers to an issue	55
Debenture Trustees	26
Venture Capital Funds	183
Foreign Venture Capital Investors	269
Mutual Funds	43
Merchant Bankers	218
Registrar to Issue and Share Transfer Agent	75
Portfolio Managers	402
Approved Intermediaries (Stock Lending Schemes)	2
KYC Registration Agency (KRA)	6
Custodians	17
Proxy Advisors*	4

Alternative Investment Funds	1,088
Investment Advisors	1,312
Research Analysts	855
Collective Investment Schemes	0
Total	**15,658**

*Note: The table represents other intermediaries' presence as of March 2023, *: Data is as of March 2022*
Source: SEBI, CRISIL MI&A Research

Type of asset classes available for dematerialization

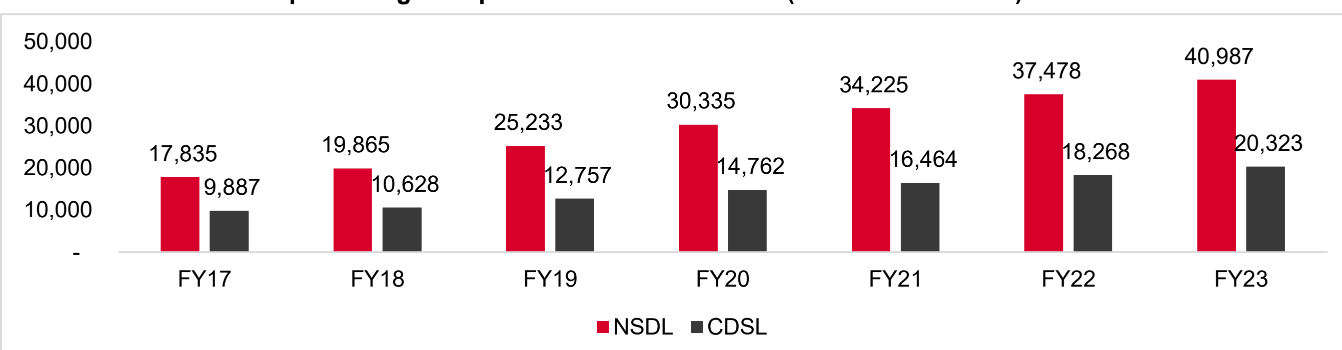
Depository Statistics for NSDL and CDSL witness a steady growth trajectory

Securities such as common equity shares, preferential shares, mutual fund units, debt instruments, government securities, certificates of deposit, commercial papers and others are available to be held in electronic or dematerialized (demat) form by the investors. The number of companies having their securities in demat form have seen an increase from 17,835 in fiscal 2017 to 40,987 in fiscal 2023 seeing a growth at 15% CAGR for NSDL and 9,887 to 20,323 from fiscal 2017 to fiscal 2023 growing at a 13% CAGR for CDSL.

Amongst the depositories, NSDL holds a dominant market share in terms of progress in dematerialisation

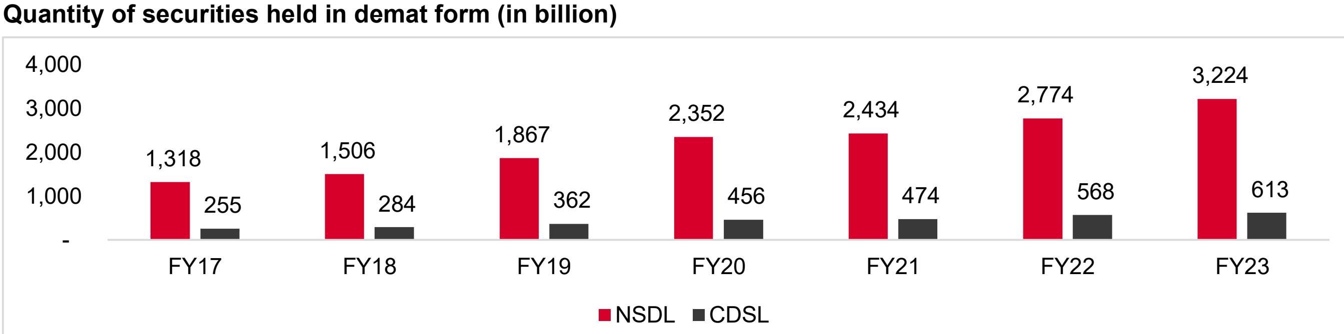
NSDL holds a higher share compared to CDSL amongst the two depositories across the number of companies available for demat, the quantity and value of securities held in demat form.

Trend of number of companies signed up and available for demat (listed and unlisted)



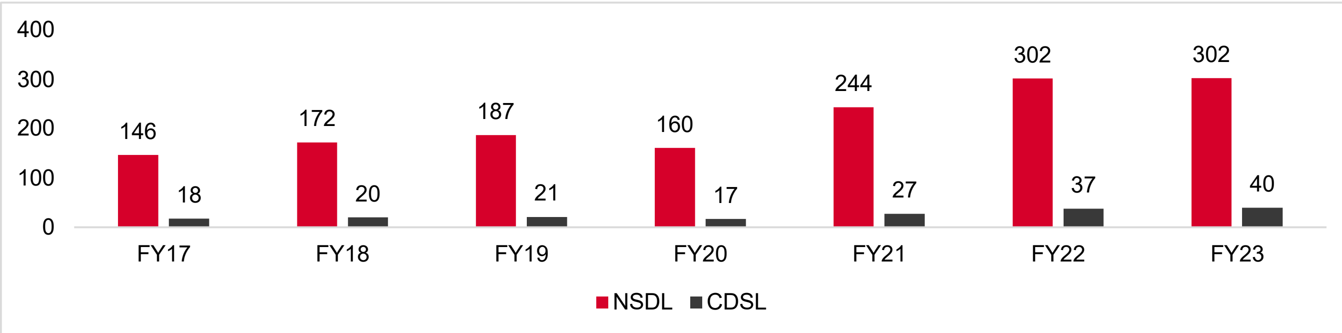
Source: NSDL, CDSL, SEBI Bulletin, CRISIL MI&A Research

Quantity of securities held in demat form (in billion)



Source: NSDL, CDSL, SEBI Bulletin, CRISIL MI&A Research

Value of securities in demat form (₹ in trillion)



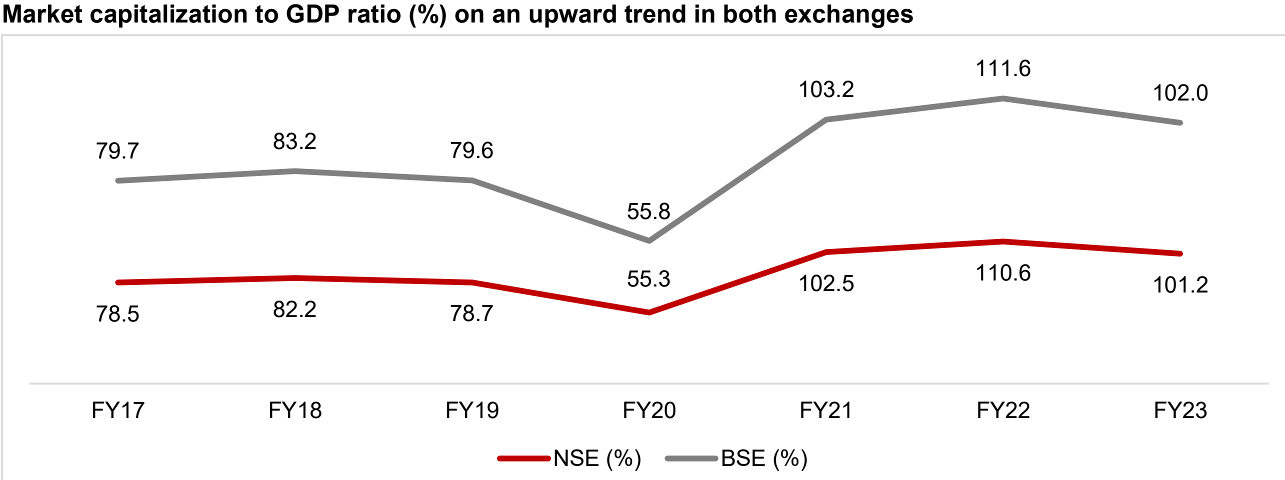
Source: NSDL, CDSL, SEBI Bulletin, CRISIL MI&A Research

Key trends in capital markets

After a meteoric rise in fiscal 2021, market capitalization to GDP stabilized fiscal 2022 onwards

Market capitalization to GDP (m-cap ratio) ratio provides an overview of the developments in the market against the growth of the overall economy. As of fiscal 2022, the markets were buoyant and had moderate volatility and the ratio saw an ~8% y-o-y increase in both exchanges. The ratio stood at 111.6% and 110.6% in BSE and NSE respectively as on 31st March 2022 and 102.0% and 101.2% as on 31st March 2023. Across both exchanges, the total market capitalization saw a 29% y-o-y increase in fiscal 2022 and free float market capitalization saw a 26% y-o-y increase in fiscal 2022. However, in fiscal 2023, the total market capitalization and free float market capitalization saw a 2% and 40% decline respectively.

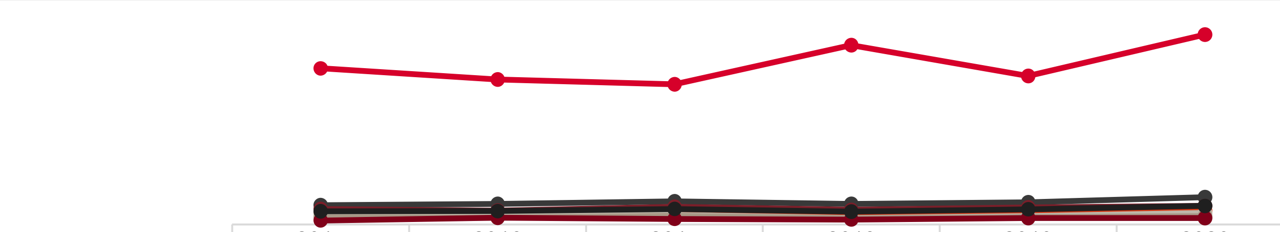
Market capitalization to GDP ratio (%) on an upward trend in both exchanges



Note: Nominal GDP (GDP at current prices) were considered

Source: BSE, NSE, SEBI, CRISIL MI&A Research

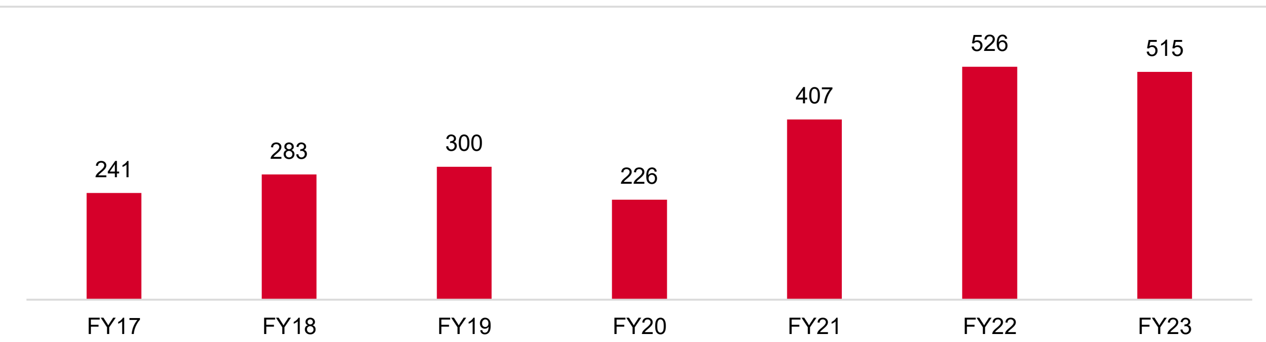
Global comparison of market capitalization of listed domestic companies to GDP ratio (%) (CY2020)



	2015	2016	2017	2018	2019	2020
Hong Kong	1109.3	1029.4	995.2	1274.8	1055.8	1349.5
United States	137.7	146.3	164.9	148.2	158.5	193.3
Japan	110.1	99.0	126.2	105.1	120.8	133.3
India	83.0	76.1	96.4	84.4	80.8	97.3
China	74.0	65.2	70.8	45.5	59.6	83.2
Germany	51.1	49.5	61.3	44.2	54.0	58.7
Russia	28.8	48.7	39.6	34.8	46.7	46.6
World	94.3	96.7	110.7	91.5	108.0	133.2

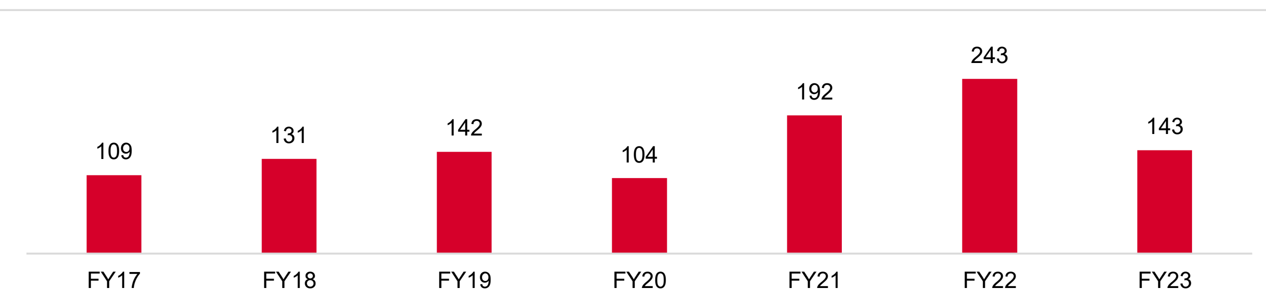
Note: Latest data available as of 2020; Data considered are end of calendar year values
Source: World Bank, CRISIL MI&A Research

Trend in total market capitalization (in ₹ trillion)



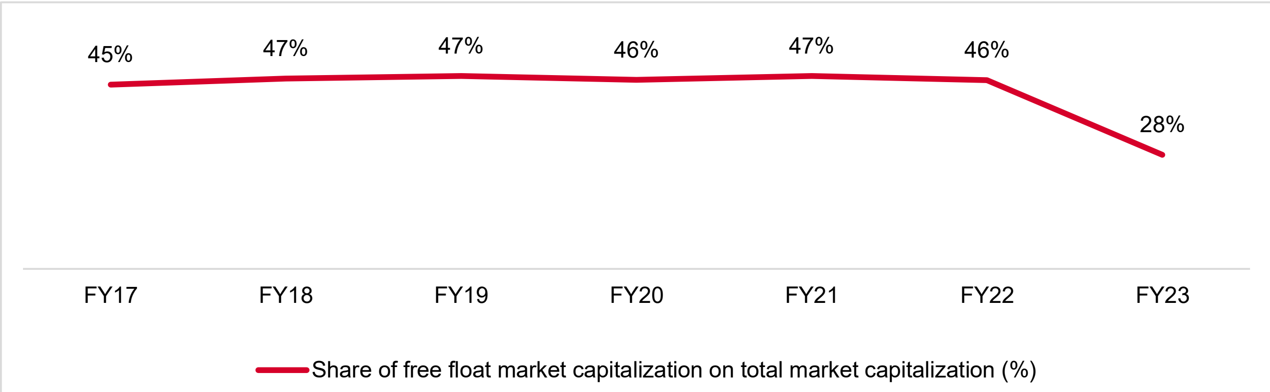
Note: The above chart includes data of BSE and NSE, Source: SEBI, CRISIL MI&A Research

Trend in free float market capitalization (in ₹ trillion)



Note: The above chart includes data of BSE and NSE, Source: SEBI, CRISIL MI&A Research

Free float market capitalization as a percentage of total market capitalization seeing a marginal decrease

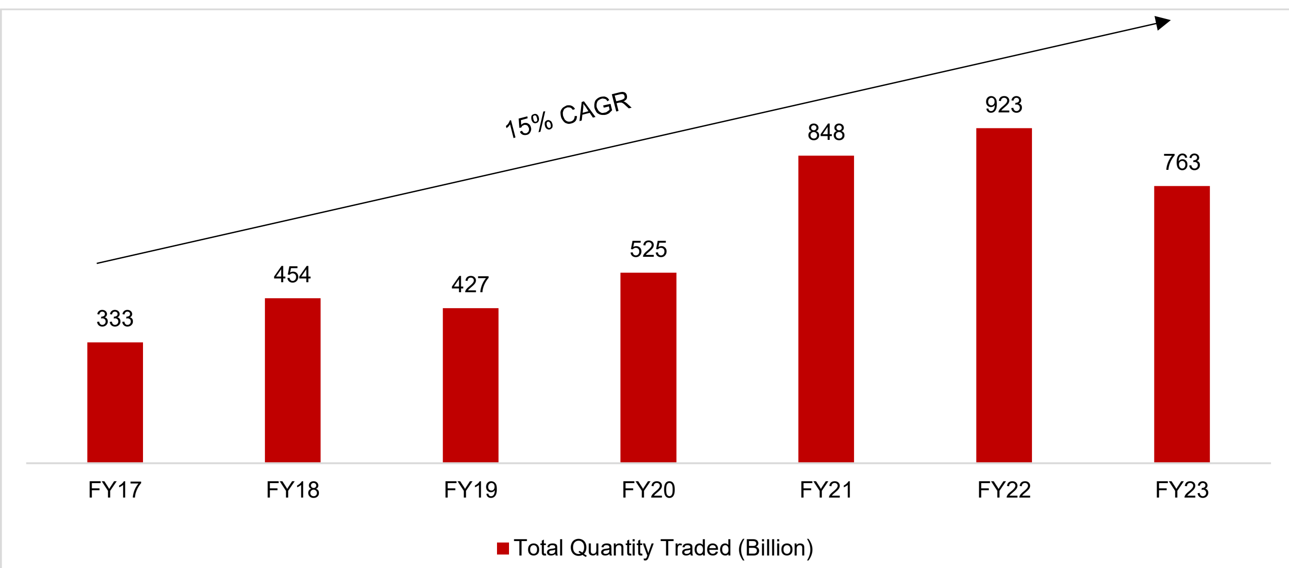


Note: The above chart includes data of BSE and NSE, Source: SEBI, CRISIL MI&A Research

Equities traded in the secondary market have seen a robust growth

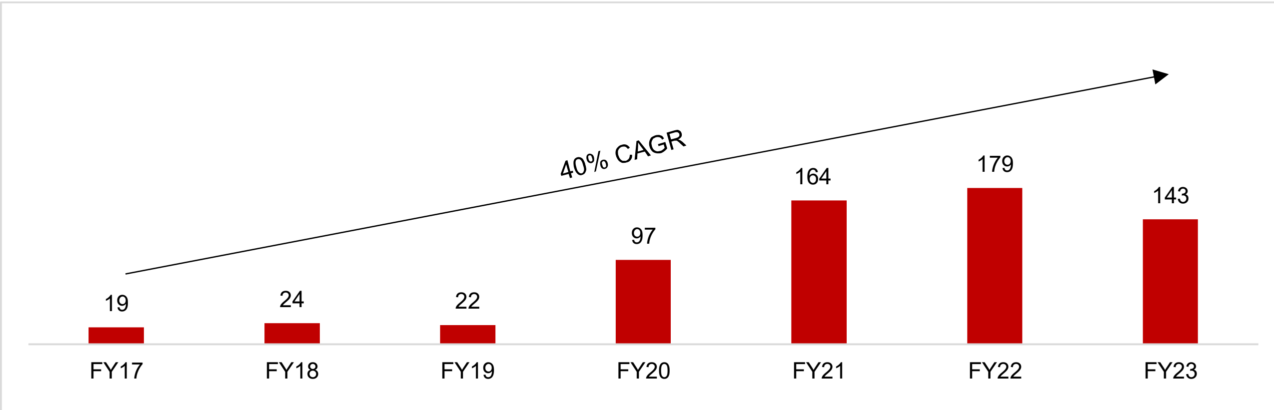
A key trend that had emerged post the Covid-19 pandemic was the substantial rise in secondary market participation. The volume of equity traded in the secondary market saw a meaningful increase reaching record high levels as of fiscal 2022 at 923 billion traded quantities, however, it has decreased in fiscal 2023 to 763 billion traded quantities. The increase in participation was propelled by a multitude of factors including increasing retail investor participation driven by digitalization with higher adoption of mobile and digital investing, financial awareness, increasing participation in IPO subscriptions and the need to invest capital in an asset class yielding high returns amidst a low-interest environment.

Quantity of equities traded in the secondary market reached record high in fiscal 2022



Source: SEBI, CRISIL MI&A Research

Total turnover (in ₹ trillion) of equities in the secondary market saw a sharp increase over the years



Source: SEBI, CRISIL MI&A Research

Capital raised in primary markets showed strong performance in fiscal 2022, experiencing a pause in current fiscal

Funds raised through equity and debt have seen a steady growth over the years. Equity capital saw a strong 12% CAGR from fiscal 2017 to fiscal 2023. The volume of equity market issuances saw a 29.70% y-o-y increase in fiscal 2023.The total volume of equity capital issuances as of fiscal 2023 stood at 703 and value at ₹ 1,705 billion. Volume of debt issuances was seeing a downward trend over the years de-growing at 12.15% CAGR from fiscal 2017 till fiscal 2023. Volume of debt issuances had seen a sharp de-growth in fiscal 2022 due to uncertainties in geopolitical climate, upward pressures on commodity prices and inflationary pressures that led to lower yields in long term duration funds creating volatility in the debt market. Since the value and volume of debt capital contributed to the lion's share in the capital market, the decreasing trend is reflected on the growth of the overall market as well.

Recently however, the debt market has witnessed traction and larger appetite on account of rising interest rates. The value and volume of funds mobilized through debt saw a revival in fiscal 2023 from fiscal 2022 increasing by 27.40% and 8.79% respectively. This trend is also witnessed in FPIs investment patterns, wherein they have been net sellers during the year in the equity markets to the tune of around ₹ 346 billion, while on the other hand the debt market garnered an inflow of around ₹ 90 billion between April 2022 and March 2023. Moreover, with interest rates at their peak and inflation coming under control investors may utilize this opportunity to lock-in bond yields, leading to increased participation in this market.

Capital raised in primary market through equity gained more traction when compared to debt

Particulars	FY17		FY22		FY23		6 Yr. CAGR (FY17-23)	
	Volume (In number)	Value (₹ in Billion)	Volume (In number)	Value (₹ in Billion)	Volume (In number)	Value (₹ in Billion)	Volume	Value
Equity	549	855	542	2,310	703	1,706	4.21%	12.19%
Debt	3,392	6,700	1,433	5,996	1,559	7,639	-12.15%	2.21%
Total	**3,941**	**7,555**	**1,975**	**8,306**	**2,262**	**9,345**	**-8.84%**	**3.61%**

Source: SEBI, CRISIL MI&A Research

Equity offerings through primary markets see stupendous growth

Funds raised through equity offerings (including QIPs) witnessed a 10% CAGR from fiscal 2017 to fiscal 2023. Out of the four modes of raising funds via equity – IPOs, FPOs, Rights Issue and QIPs, the volume of transactions in rights issues recorded the highest CAGR at 33% from fiscal 2017 to fiscal 2023, while value of transactions in FPOs recorded the highest CAGR of 175% during the same period. Resources mobilized through the primary markets were substantially high in fiscal 2023 seeing a 37% y-o-y increase in number of IPOs issued (118% y-o-y increase as of fiscal 2022), and 70% increase in the volume of rights issues (105% increase as of fiscal 2022).

The total volume of equity offerings (including QIPs) during fiscal 2023, in the Indian exchanges were 249 and the total value of the offerings were ₹ 740 billion. Higher primary market offerings, due to the increase in volume of shares issued, would subsequently lead to more income for depositories and other stakeholders in the capital market ecosystem.

Resource mobilization through public and rights issues have seen a notable growth over the years

Particulars	FY17		FY22		FY23		6 Yr. CAGR (FY17-23)	
	Volume (In number)	Value (₹ in Billion)	Volume (In number)	Value (₹ in Billion)	Volume (In number)	Value (₹ in Billion)	Volume	Value
IPOs (A)	105	290	120	1,125	164	548	8%	11%
FPOs (B)	1	0.10	1	0.15	1	43	0%	175%
Public Issues (A+B)	106	290	121	1,125	165	591	8%	13%
Rights Issues	13	37	43	263	73	68	33%	10%
Total	**119**	**328**	**164**	**1,388**	**238**	**659**	**12%**	**12%**

Source: SEBI, CRISIL MI&A Research

Trend of Qualified Institutional Placements (QIPs) issued in volume and value

Particulars	FY17		FY22		FY23		6 Yr CAGR (FY17-22)	
	Volume (In number)	Value (₹ in Billion)	Volume (In number)	Value (₹ in Billion)	Volume (In number)	Value (₹ in Billion)	Volume	Value
QIPs	20	84	29	314	11	82	-9%	-1%

Source: SEBI, CRISIL MI&A Research

Trend of REITs and InvITs issued in volume and value

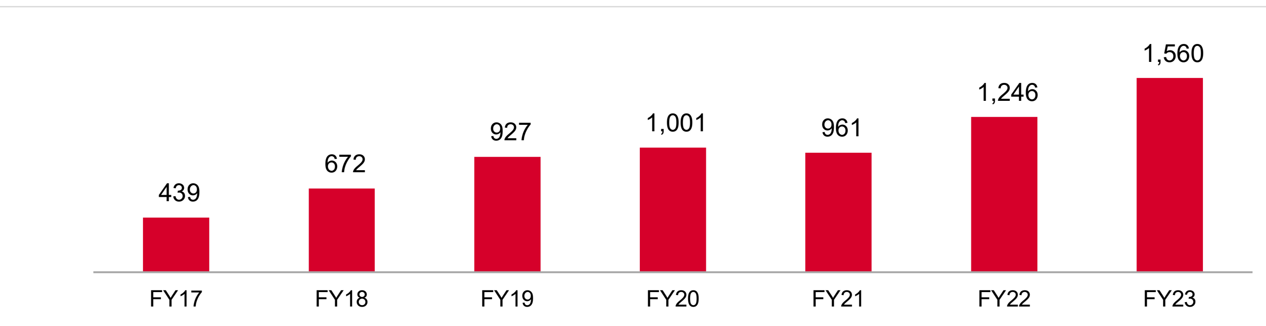
Particulars	FY22		FY23	
	Volume (In number)	Value (₹ in Billion)	Volume (In number)	Value (₹ in Billion)
Real estate investment trust (REITs)	0	0	0	0
Infrastructure Investment Trusts (InvITs)	4	138	2	202

Source: SEBI, CRISIL MI&A Research

Mutual fund penetration is upward bound

In recent years, mutual fund assets in India have seen robust growth, largely driven by a growing investor base. This is due to increasing financial awareness, strong performance of capital markets, technological progress, and regulatory efforts aimed at making mutual fund products more transparent and investor friendly. Moreover, the rising awareness among the population about different capital-market related instruments including ELSS, SIPs, ETFs, theme-based investing building customized bucket of stocks as per clients' requirement, etc. have been a key driver in increasing mutual fund penetration in the market. SIPs are preferred by individuals who like to invest in equity with a long-term investing horizon. SIP contribution in fiscal 2023 saw a 25% y-o-y increase.

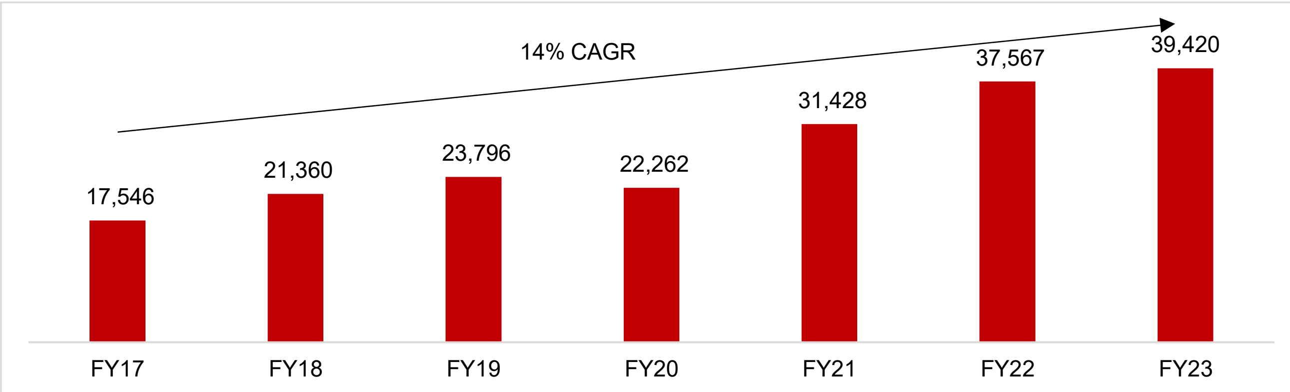
SIP Contribution witnessing a growth over the years (in ₹ billion)



Source: AMFI, CRISIL MI&A Research

Equity-linked savings scheme (ELSS) and unit-linked insurance plans are popular tax-saving investment option largely favoured by individuals with regular and stable income. As of fiscal 2023, the total number of ELSS folios saw a 10% y-o-y increase. ETFs allows investors to build a diversified portfolio with relatively low investment amounts. Recently, Bharat Bond ETFs and Gold ETFs have been gaining significant traction amongst investors. Bharat Bond ETFs which were launched in December 2019 has very nominal expense ratios of 0.0005% and retail investors can buy these Bharat Bond ETFs for a minimum amount of ₹ 1,000. Gold ETFs saw a y-o-y increase to the extent of 11% from 4.2 million as of March 2022 to 4.6 million as of March 2023 in the number of folios.

Growth in overall AUM of mutual funds (in ₹ billion)



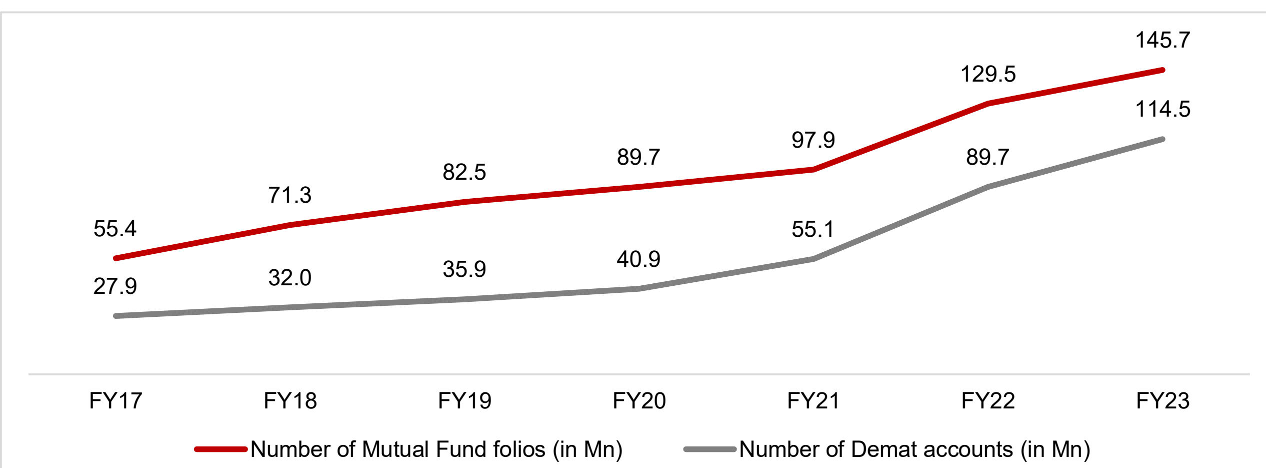
Source: AMFI, CRISIL MI&A Research

Opportunity for direct equity to tap into total addressable market

Participation by retail investors in the capital markets witnessed a strong increase in fiscal 2022 and fiscal 2023 as indicated by the increase in the number of demat accounts held by investors during the period. The same is likely due to a multitude of factors including the improving financial awareness & technological proficiency of individual investors, increasing presence of new age fin-tech brokers or discount brokers and the higher-than-expected returns yielded from capital market instruments than from other modes of investments like bank deposits.

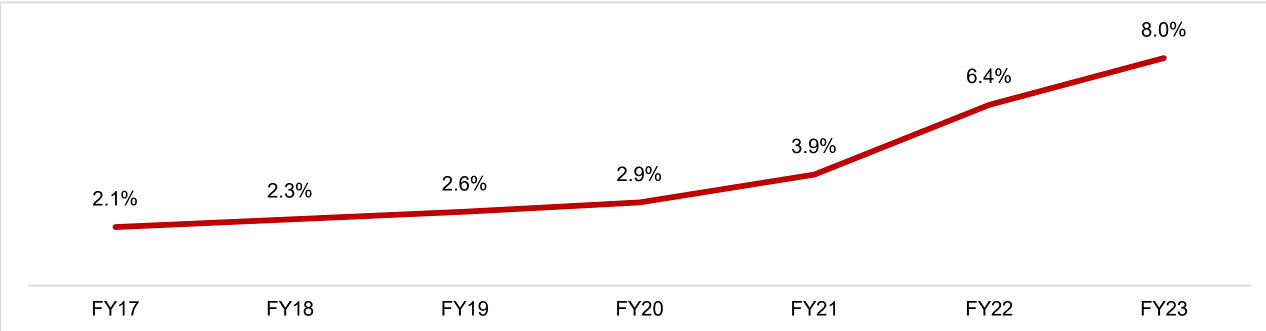
Though the preference for mutual funds is higher than that of direct equity investments, there exists a significant opportunity for direct equity investments to tap into the total addressable market. Demographically, India is a young country with the median age of its population at ~28 years. Of India's population, more than 60% is in the working age group, which is 19-59 years of age. The participation of this age group with new age fin-tech brokers or discount brokers had constituted the majority and would propel further growth for the overall ecosystem. Going forward, CRISIL MI&A Research expects the trend of increasing retail participation in the capital markets to continue considering the increasing internet penetration, financial awareness, the young demographic, and the advent of several new age fin-tech brokers or discount brokers that have revolutionized the industry with their low-cost digital business model.

Mutual fund folios have seen a sharper increase over the years



Source: SEBI, CRISIL MI&A Research

Demat account penetration is low but steadily growing (% of population holding a demat account)

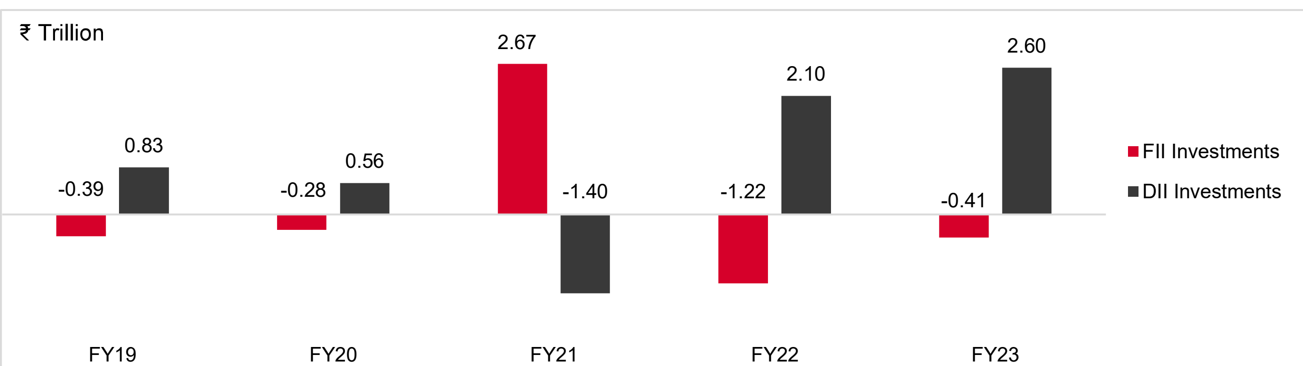


Source: SEBI, World Bank, United Nations, CRISIL MI&A Research

Increasing participation of domestic players in investments

Domestic players such as proprietary traders and domestic institutional investors (DIIs) have seen an increasing trend in terms of participation over the past few years. Proprietary traders generated more than one-fourth of the share of annual cash market turnover in NSE and more than one-third the share in BSE for fiscal 2023. In fiscal 2023 DIIs were net buyers with net investment of ₹ 2.60 trillion; on the other hand, FPI were net sellers during the period recording outflows of ₹ 0.41 trillion. This trend is indicative of the prominence that DIIs are gaining, thus acting as a driving force in the Indian capital market. Increase in participation from domestic players in the market would further improve growth of other stakeholders in the ecosystem including depositories, depository participants, RTAs, investors etc.

Trend of DII/FII Flows in Indian Equity Markets



Source: NSDL, NSE Market Pulse, CRISIL MI&A Research

The table below highlights the share of DIIs in BSE in turnover of equity cash segment from fiscal 2017 to fiscal 2023. Although, proprietary traders constitute the majority share across different categories of players in the market and have seen the highest growth across both exchanges.

Category-wise share of Turnover in Equity Cash Segment (in %)

BSE			
Category	**2016-17**	**2022-23**	**6 Yr. CAGR**
Proprietary	16.03	33.2	12.90%
FPI	14.23	15.5	1.44%
Mutual Funds	5.29	2.4	-12.33%
Banks	0.10	0.1	-0.12%
DIIs	1.59	-	-100%
NPS	0.00	-	-100%
PPFs including EPFO	-	-	-
Others	62.77	49.1	-4.01%

NSE			
Category	**2016-17**	**2022-23**	**6 Yr. CAGR**
Proprietary	16.91	27.4	8.38%
FPI	20.27	14.5	-5.43%
Mutual Funds	6.21	8.0	4.31%
Banks	0.42	0.2	-11.63%
DIIs	0.09	-	-100%
NPS	3.11	-	-100%
PPFs including EPFO	-	-	-
Others	52.89	49.9	-0.97%

Note: Others category constitutes of Individual, HUF, Partnership Firm and Body Corporates; Source: SEBI Handbook of Statistics 2021, BSE, NSE, CRISIL MI&A Research

FPI investments in capital markets

Sustained capital inflows - portfolio and direct - are a prerequisite for any economy. In particular, the challenge is to create favourable conditions for continuous inflow of foreign capital, to retain and utilise it for productive purposes like infrastructure and other investment needs. The foreign portfolio investor (FPI) regime commenced with effect from June 1, 2014, wherein the existing FIIs, sub-accounts, and qualified foreign investors (QFIs) were merged to form a new investor class termed as FPI.

Advantages of FPIs

- Enhanced flow of equity capital
- Improving capital markets
- Improved corporate governance
- Managing uncertainty and controlling risks
- Reduced cost of equity capital
- Deepening of knowledge
- Improvement in market efficiency

Foreign investments in the country can take the form of investments in listed companies (FII investments), investments in listed/unlisted companies other than through stock exchanges (through the foreign direct investment or private equity (PE)/foreign venture capital investment route), investments through American depository receipts/global depository receipts, or investments by non-resident Indians and persons of Indian origin in various forms.

There has been an increase in activity in Indian equity markets by FPIs which has helped in the growth of capital markets. As on March 31, 2023, NSDL serviced 99.99% of the value of equity, debt and other securities held by foreign portfolio investors in dematerialised form in India.

FPI/FII investment details

FY	Gross purchase (₹ Bn)	Gross Sales (₹ Bn)	Net investment (₹ Bn)
FY18	17,283.6	15,836.8	1446.8
FY19	16,408.1	16,797.4	-389.3
FY20	19,055.2	19,330.5	-275.3
FY21	23,202.9	20531.9	2,671.0
FY22	23,873.8	25,096.2	-1,222.4
FY23	23,421.9	23,831.3	-409.4

Source: NSDL, CRISIL MI&A Research

FPI/FII net investment details

FY	₹ Bn				
	Equity	Debt	Debt-VRR	Hybrid	Total
FY18	256.3	1190.4	0.0	0.1	1446.8
FY19	-0.9	-423.6	0.0	35.1	-389.3
FY20	61.5	-487.1	73.3	77.0	-275.3
FY21	2740.3	-504.4	332.6	102.5	2671.0
FY22	-1400.1	16.3	126.4	35.0	-1222.4
FY23	-376.3	-89.4	58.1	-1.8	-409.4

Source: NSDL, CRISIL MI&A Research

FPIs Assets Under Custody (AUC) data

AUC as of Mar'23 (₹ Bn)	Equity	Debt	Debt-VRR	Hybrid	Total
	44,585	**2,405**	**1,407**	**311**	**48,708**

Source: NSDL, CRISIL MI&A Research

Growth drivers for players in the capital market industry

Number of companies incorporated is on the rise

In fiscal 2022, the Ministry of Corporate Affairs (MCA) registered the highest ever number of company incorporations at 0.17 million companies as compared to 0.12 million companies in fiscal 2019 and fiscal 2020. The trend continued in fiscal 2023 at 0.16 million company incorporations during the year. Government initiatives including Ease of Doing Business, Make in India and Start up India have accentuated this trend by building a conducive environment for incorporating businesses and is expected to further improve the start-up climate in the country.

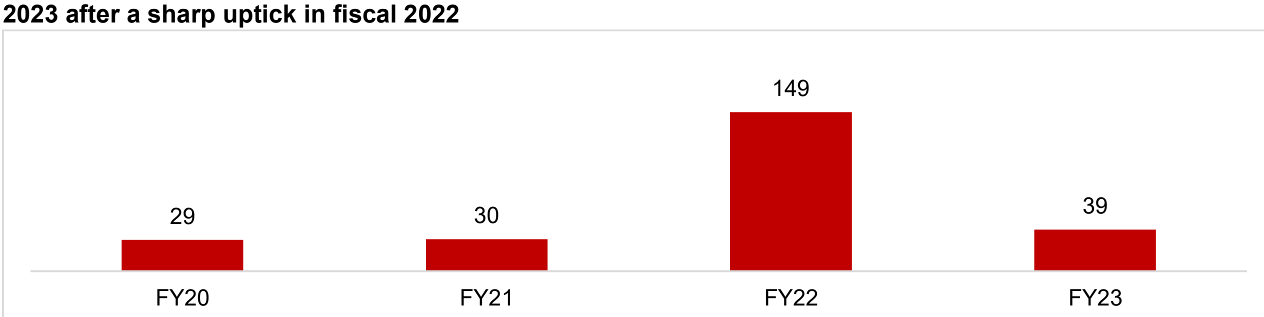
Number of Indian companies incorporated saw a rise

Source: Ministry of Corporate Affairs, CRISIL MI&A Research

Growth of Private Limited Companies to be leveraged by bringing under demat fold

As per the Companies Amendment Act (2019), private limited or unlisted companies may be required to hold or transfer shares in dematerialized form only in the future. This move would unlock a significant opportunity for depositories by earning more issuer charges as well as seeing an increase in the number of promoters demat accounts that would be opened.

Applications for Public Issuance (Equity) on the Main Board of Exchanges returned to normal levels in fiscal 2023 after a sharp uptick in fiscal 2022



Source: SEBI, CRISIL MI&A Research

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Shorter settlement cycle of T+1 leading to faster turnaround of securities and funds

As of January 26th, 2023, India implemented the shorter settlement cycle of T+1 days. This placed India among the select countries to achieve such an efficient settlement system and NSDL's contributions as a depository have been instrumental in realizing this achievement. Being one of the depositories in India, NSDL's scripless book entry system played a pivotal role in enabling the gradual reduction of settlement cycle and subsequent implementation of rolling settlements in India. The T+1 cycle would augur well for the market from a liquidity standpoint furthermore, the reduced settlement cycle is anticipated to protect the stability of the markets while reducing risk and enhancing settlement process efficiency. Faster settlement will free up funds faster thereby enabling the investor to execute more transactions thereby benefitting the depositories. Depositories would benefit as a result of this change and would be generating higher revenue from their operations through transaction charges.

IPO application through UPI and Application Supported by Blocked Amount (ASBA) have hugely benefitted retail investors and increased their participation in IPOs

As India holds high penetration for the usage of UPI, the implementation of the mode of payment as a mechanism while applying to IPOs has enabled higher retail participation in IPOs. This is due to the growing usage & familiarity of digital payments, ease of executing these transactions and the reduction in processing time. Further, the use of ASBA protects investor confidence and ensures seamless execution of transactions while subscribing to IPOs thereby supporting further retail participation. The intermediaries involved namely – depositories, depository participants, RTAs, and registered brokers would see further growth in their operations through higher participations, more number of demat accounts opened and increase in transaction charges. As of April 2022, SEBI has revised the upper limit for retail IPO applications via UPI from ₹ 0.2 million to ₹ 0.5 million, which would further encourage participation and enhance liquidity in the capital markets.

Strengthening governance of Market Infrastructure Institutions (MIIs)

The term 'MIIs' encompasses Stock Exchanges, Clearing Corporations as well as Depositories and these players constitute a key part in the country's economic infrastructure. Well-functioning MIIs are indispensable for economic growth and would contribute positively to the capital market. SEBI is expected to strengthen the regulatory norms governing the MIIs which is bound to bring in more transparency and accountability in the functioning of MIIs. Moreover, the SEBI announced that the internal evaluation of the operations of MIIs would be conducted annually, while an external evaluation would be conducted by an independent entity once in three years. A sharper code of conduct will be implemented to MIIs, the governing board, key managerial persons, directors and the committee members ensuring strong governance.

In order to streamline the process of handling unpaid securities by trading members (TM) and clearing members (CM) and to prevent any misuse of such unpaid securities, SEBI in its circular as of November 2022 released a change in the process of handling unpaid securities wherein, a separate client account titled – "client unpaid securities account" shall be opened by the TM/CM. Unpaid securities shall be transferred to respective client's demat account followed by creation of an auto-pledge (i.e., without any specific instruction from the client) with the reason "unpaid", in favour of a separate account titled – "client unpaid securities pledgee account (CUSPA)", which shall be opened by TM/CM. The pledge will be released if the client pays off the fund obligation within five trading days of the payout, making the securities accessible to the client as free balance. The unpaid securities shall be sold in the market with the Unique Client Code (UCC) of the respective client. Profit/loss on the sale transaction of the unpaid securities, if any, shall be transferred to/adjusted from the respective client account.

Impact of technology on capital markets and its growth

Riding the digital wave – growth of new age fin-tech brokers or discount brokers and increasing mobile penetration to drive retail participation

The emergence of new age fin-tech brokers or discount brokers started gaining prominence from Fiscal 2017 onwards as rising internet and smartphone penetration acted as a tailwind for the segment. These players have revolutionized the industry with their low-cost digital business model. New age fin-tech brokers or discount brokers due to their low cost of operations have been able to transfer this benefit to their clients by significantly bringing down the cost of investing for them with minimal brokerage fees. The mobile and internet-based trading has also witnessed a surge during the period and accordingly, many retail participants chose new age fin-tech brokers or discount brokers over traditional brokers. This was because zero brokerage on equity delivery was a new offering in the industry started by the new age fin-tech brokers or discount brokers. Therefore, rising financial literacy of India's young population (expecting to form a majority of the incremental clients for the brokers), coupled with their technological proficiency, almost zero brokerage feature and comfort of transacting through digital platforms is expected to further supplement the strong impact that technology has on the retail investors thereby enabling them to increase participation in the markets.

Wider offering of value-added services & technological innovation to provide reliable and robust infrastructure

In addition to the core services of electronic custody and trade settlement services, depositories provide other services like pledge & hypothecation of securities, automatic delivery of securities to clearing corporations, webbased services like SPEED-e (submission of delivery instructions, freezing of accounts) and IDeAS (viewing of Instructions and holding), distribution of cash and non-cash corporate benefits (such as bonus, rights, and IPOs), stock lending, etc. Moreover, technological innovation at NSDL has played a pivotal role in driving capital market participation such as **–**

- Introduction of distributed ledger technology (DLT) Blockchain Powered Security & Covenant Monitoring Platform
- Digitization of customer journeys leveraging Mobile First Approach
- Offering B2B2C model to NSDL Partners via APIfication of Services
- Building Platform agnostic, scalable and secure solutions providing high availability

Providing these additional services have added value and have helped depositories such as NSDL, strengthen their position in the capital market ecosystem by endeavouring to redefine the digital journey for capital market participants.

Outlook on Indian capital markets looks encouraging

The Indian stock market recorded a strong performance in CY2022 reaching all-time highs in both indices - Nifty 50 and Sensex in December 2022, despite facing several headwinds such as fluctuations in crude oil prices, supply chain challenges arising due to Covid-19 pandemic, weakness in the rupee and staggering inflationary pressure. Further, CRISIL MI&A Research has a constructive outlook on the capital markets largely driven by:

- Initiatives taken by financial regulators towards financial education would empower investors in making informed decisions and encourage participation in the market
- The push towards the new tax regime as implied in the Union Budget of fiscal 2024 would provide investors with a higher investable surplus, thereby enabling higher investments
- Reduction of fiscal deficit and the market borrowing were in line with market expectations thereby having limited impact on government yields. Moreover, with interest rates at peak, the bond market would be conducive to lock in a yield for debt instruments.

In a bid to grow the bond market, the government is encouraging cities to float municipal bonds. Further, the financial market measures towards market-linked debentures and listed debentures will plug tax loopholes and would attract investor flows in the future.

3. Depository System in India

Emergence of depository system in India

Till early 1990s, ownership of equity shares in Indian companies was represented through share certificates in the physical mode, wherein transactions in securities markets were settled based on physical movement of paper. Clearing and settlement of sale of securities were only on 'accounting period basis'. It used to take roughly 10 to 14 days for a seller to receive payment and for a buyer to receive deliver of securities. Such a longer settlement cycle involved higher market and credit risk and therefore higher transaction cost.

In 1970s and 1980s, the Indian capital market grew rapidly with more and more companies accessing capital markets through public issue, rights and bonus issue, private placement, etc. and hence, the supply of share certificates increased greatly. Till early 1990s, retail and small investors were dominant. In the early 1990s, the market opened with entry of private MFs and foreign institutional investors (FIIs) and the turnover in primary and secondary markets grew manifold. This caused disturbances in clearing and settlement, owing to large movement of paper which made trading a prolonged process. This process used to increase market and credit risk and affected smooth functioning of stock exchanges. Along with this, there were multiple problems in dealing with physical shares such as theft, fake or wrong transfer, delay in transfer of shares due to mismatch in signatures, a lot of paperwork requirements in buying, selling and transfer leading to costs of handling, storage and transportation. Hence, there was an urgent need to shift to electronic method of settlements.

Generally, worldwide, depositories hold securities in two forms:

Immobilization – wherein securities are held in physical form, but transfer is done electronically through book entries

Dematerialization – wherein certificates are destroyed once they are admitted to depository and corresponding credit is given in the account which is maintained electronically.

Dematerialisation is the process by which an investor's physical certificates are converted to an equivalent number of securities in electronic form. A system was devised whereby all securities get stored and only debit and credit entries are passed, representing the status of ownership of securities. To overcome delay in settlement, loss in transit, stolen certificates, litigation, etc. a new system, i.e., a depository system was introduced, which facilitates investors to hold securities in electronic form and trade in these securities.

Thereafter, Depositories Act, 1996 was enacted to provide for regulation of depositories in securities and for other related matters. Consequent to the enactment of Depositories Act, 1996, the first depository in the country, namely, National Securities Depository Limited (NSDL) was set up which pioneered the dematerialization of securities in India in November 1996. NSDL was one of the initial few depositories globally to directly implement dematerialization, bypassing the traditional two-step process of immobilization and subsequent dematerialization. NSDL began the process of dematerialization of securities with 3 participants and 5 securities eligible for dematerialization in November 1996. Currently, there are two depositories in India, NSDL and Central Depository Services Limited (CDSL). CDSL was set up in 1999.

The introduction of the depository system brought about a notable transformation in trade settlement practices on stock exchanges and played a pivotal role in the implementation of rolling settlements in India.

In a rolling settlement, all trades outstanding at the end of day have to be settled, which means that the buyer has to make payments for securities purchased and the seller has to deliver securities sold. In India, we moved from T+5 rolling settlement and uniform settlement cycle to T+1 settlement cycle in which a transaction entered on Day 1 had to be settled on Day 1 + 1 working day. The process of migration to T+1 settlement cycle started in February 2022 and complete migration took place in January 2023.

Key milestones in Indian depository system

Month & Year	Milestones
Aug 1996	Depositories Act published
Oct 1996	NSDL was granted certificate of commencement of business
Nov 1996	NSDL inaugurated
Dec 1996	Trading in Demat Securities on NSE commenced
Dec 1997	Trading in Demat Securities on BSE commenced
Jan 1998	Compulsory trading in demat for 200 scrips T+5 Rolling Settlement introduced in the demat segment of stock exchange
Jan 1999	Compulsory trading in dematerialized securities for all investors
Feb 1999	CDSL was granted certificate of commencement of business
Jul 1999	CDSL starts operations
Apr 2002	Introduction of T+3 rolling settlement
Nov 2002	SEBI mandates the removal of account closure charges
Apr 2003	Introduction of T+2 rolling settlement
Feb 2005	SEBI mandates the removal of charges associated with account opening, credit of securities, and custody of securities payable by the BOs to their DPs.
Jan 2006	SEBI mandates the removal of charges levied by the depository, on the BOs and DPs for shifting of accounts between DPs and depositories
Apr 2006	SEBI mandates the requirement of the PAN card, for all demat account holders, as a Know Your Client (KYC) norm for opening of demat accounts
Sep 2007	Warehousing (Development & Regulation) Act, 2007
Oct 2010	The Warehousing Development and Regulatory Authority (WDRA) was setup
Dec 2011	SEBI releases KYC Registration Agency regulations to grant registrations to KRAs
Sep 2015	SEBI started regulating commodity derivatives market in India
Jun 2017	Warehousing development and regulatory authority (Electronic negotiable warehouse receipts) regulations, 2017
Oct 2018	SEBI introduced amendments related to structuring, shareholding, and governance of depositories in SEBI (Depository and Participants) regulations MCA notified that every unlisted public company shall issue the securities only in demat form and facilitate demat of all existing securities
Jan 2023	Introduction of T+1 rolling settlement

Growth of capital market in India

As discussed in previous sections, capital market has witnessed a growth at a fast pace between fiscal 2017 till fiscal 2023. The total turnover in the cash market was around ₹ 60 trillion in FY17 reached ₹ 143 trillion in FY23, similarly total turnover in equity derivatives was ₹ 943 trillion in FY17 reached ₹ 38,566 trillion in FY23. In case of currency derivatives, total turnover was ₹ 83 trillion reached ₹ 446 trillion in FY23. Total funds mobilized from the primary market in equity segment from FY17 till FY23 is more than ₹ 14 trillion while for debt segment it is more than ₹ 47 trillion.

Highlights on depository market in India

The growth of depository market is linked to several factors such as rising participation from investors, rising digital services which are being provided by brokers and depositories, reducing cost of transactions, rising awareness about capital markets, etc.

The depository market in India is a duopoly with high barriers to entry as each of the current depositories are promoted by large institutions. As the first and leading depository in the country, NSDL introduced the concept of dematerialization of securities, revolutionizing the securities landscape in India. NSDL is the largest depository in India in terms of number of issuers, number of active instruments, market share in demat value of settlement volume and assets under custody value as of March 31, 2023.

The depository market in India grew at rapid pace in past 3 years. Total client accounts grew at 29% CAGR between FY18 to FY23 and is expected to grow at 12% CAGR between FY23 to FY27. Standalone income of depositories in India is around ₹ 10.3 Bn in fiscal 2023 and grew at CAGR ~20% between FY18 to FY23 and is expected to grow at CAGR of 10% to 11% from FY23 to FY27 to reach ₹ 15 Bn to ₹ 15.5 Bn by FY27 assuming there will not be any regulatory impact on pricing of products and services.

Impact of technology in the depository system of India

Technology has transformed the securities business in India. It has helped depositories to provide efficient and time-bound services. The depository system has several benefits over physical trading system due to technology, such as:

1. **Wide DP network and online DP services –** An investor who wants to avail of the services offered by the depository, must open an account with the DP. A DP functions as a bridge between the depository and BO. The number of DPs help to increase the business of any depository. Therefore, every depository tries to increase the depository services across the country. Currently, DPs are located all over the country enabling investors to select DPs of their choice. As of March 2023, there are total 871 DPs registered with depositories and there are more than 78,000 DP service centres across the country. With the help of technology, DPs across different locations are connected to depositories, thereby providing on-line and efficient service to investors. Depository offers the unique facility for the DPs to extend the services directly through their branch network to reach investors even in the remote areas. SEBI has directed DPs to connect electronically all the branches with the centre for the benefit of the investors through faster settlements.
2. **Wide spectrum of securities available for demat –** The equity shares of all companies are available for dematerialisation on the depository, consisting of all listed companies. These securities include equities, bonds, MF units, government securities, CP, CDs; etc. Thus, an investor can hold his securities in one account with a depository. Several unlisted companies are also taking initiative to dematerialize their securities.
3. **Elimination of bad deliveries and risks associated with physical certificates –** Online trading system has improved efficiencies in working of stock markets by means of:

- Elimination of bad deliveries - In the depository system, once holdings of an investor are dematerialised, the question of bad delivery does not arise, i.e., they cannot be held "under objection". In the physical environment, buyer was required to take the risk of transfer & face uncertainty of the assets purchased.
- Elimination of all risks associated with physical certificates - Dealing in physical securities have associated security risks of theft of share certificates, mutilation of certificates, theft/loss of share certificates during movement through and from the registrars, thus exposing the investor to the cost of obtaining duplicate certificates etc. This problem does not arise in the depository environment.

4. **Immediate transfer and registration of securities –** In the depository environment, once the securities are credited to the investors account on pay-out, he becomes the legal owner of the securities. There is no further need to send it to the company's registrar for registration. When securities are purchased in physical form, the investor must send it to the company's registrar so that the change of ownership can be registered. Previously, the process took around three to four months and was rarely completed within the statutory framework thus exposing the investor to opportunity cost of delay in transfer and to risk of loss in transit.
5. **Faster settlement cycle –** Depositories facilitated faster rolling settlement on T+1 (shortened from the previous cycle of T+5, T+3 and T+2). This has enabled faster turnover of stock, more liquidity with less risk to the investor.
6. **Faster disbursement of non-cash corporate benefits like rights, bonus, etc. –** Depository provides for direct credit of non-cash corporate entitlements to an investors account, thereby ensuring faster disbursement and avoiding risk of loss of certificates in transit.
7. **Reduction in handling of huge volumes of paper** - As the ownership gets transferred electronically, there is no need for handling large volumes of paper.
8. Periodic status reports to investors on their holdings and transactions, leading to better controls.
9. **Elimination of problems related to change of address of investor** - In case of change of address, investors are saved from undergoing the entire change procedure with each company or registrar. Investors have to only inform their DP with all relevant documents and the required changes are made in the database of all the companies, where the investor is a registered holder of securities.
10. **Elimination of problems related to transmission of demat shares** - In case of dematerialised holdings, the process of transmission is convenient as the transmission formalities for all securities held in a demat account can be completed by submitting documents to the DP whereas, in case of physical securities, the surviving joint holder(s)/legal heirs/nominee had to correspond independently with each company in which shares are held.
11. **Elimination of problems related to selling securities on behalf of a minor** - A natural guardian is not required to take court approval for selling demat securities on behalf of a minor.
12. **Ease in portfolio monitoring** - since statement of account gives a consolidated position of investments in all instruments.

Indian depositories are continuously evolving in technology

The financial services industry demands latest technology adoption to safeguard and protect data of customers. In line with the industry trend, the depositories in India are continuously not only trying to enrich existing services but also providing new services that can enhance customer convenience and their revenue earning potential. Since depository is a highly regulated industry, compliance and risk management sits at the core of their business, which is being addressed and made more efficient and secure by means of technology adoption.

Central Server

Both NSDL and CDSL have installed its core depository system based on a centralised architecture due to which data is available to the user instantaneously.

Periodic status report and electronic transaction facility

Both NSDL and CDSL provide periodic status report related to their holdings and transactions and also facilitate electronic transaction facility to investors. These can be accessed through websites as well as mobile applications.

Particular	NSDL	CDSL
Online viewing of statements and account balances	IDeAS	EASI (Electronic Access to Securities Information)
Electronic facilitation of Transaction	SPEED-e enables account holders and CM to submit delivery instructions electronically (SPICE: Submission of Power of attorney-based instructions for Clients Electronically)	Easiest (Electronic Access to securities information and execution of secured transaction)
Straight through processing of trade information	STeADY – enables encrypted straight through processing of trade information to market participants electronically	

Comparison with developed countries

The first depository in the world, Depository Trust Company (DTC) was started in USA, in 1973. South Korea established its Central Securities Depository (CSD) in 1974 followed by Japan in 1984, Taiwan & Malaysia in 1990, Thailand 1992, and India & UK in 1996. Many early entrants including USA, Japan and Korea chose to immobilise securities while some preferred to dematerialise them.

India is one of the few countries to achieve a fast pace of dematerialisation. In less than 3 years (1996-1999), India transformed almost 51% of market capitalisation and 94% settlements in demat form. These two indicators as of December 2000, stood at 60% and 99.5%. The accelerated adoption was primarily because dematerialization was being made mandatory in a progressive manner by the SEBI.

Snapshot of depositories in developed economies in comparison with India

USA	UK	Singapore	India
• Depository Trust Company (DTC) was set up on May 11, 1973, to immobilise and settle securities in the US. In 1999-2000, DTC and National Securities Clearing Corporation merged to form Depository Trust Clearing Corporation (DTCC). • Services offered: Institutional trade processing, clearing services, settlement and asset services, services for wealth management companies, repository and derivative services, data services	• In the UK, CRESTCo LTD was established in 1995 and inaugurated on July 15,1996 to undertake activities of central securities depository. • CRESTCo was merged with Euroclear in 2002. Euroclear was the central securities depository for Euronext- the Paris, Amsterdam and Brussels exchanges. • Services offered: Settlement, transaction reporting, stamp duty collection, settlement discipline, corporate actions, securities lending and borrowing, order routing, margin call support, open position management	• The Central Depository Pte Limited (CDP) is a wholly owned subsidiary of the Singapore Exchange Ltd (SGX) established in 1980. • The company provides integrated clearing, settlement and depository facilities in the Singapore Securities Market, including both equities and fixed income instruments. • Services offered: integrated clearing, settlement and depository services, securities borowing and lending, handling of corporate actions, asset safekeeping and administration	• India has a unique model of central securities depository system, featuring 2 depositories - NSDL and CDSL - that became operational in 1996 and 1999 respectively. • Services offered: account maintenance, dematerialization, margin pledge, inter-depository transfer, corporate action, e-voting, CAS, dividend distribution, facilitate securities lending and borrowing, SMS alert, e-delivery instruction slip, depository account validation

One of the key differences between Indian depositories vis-à-vis depositories in some other countries is that Indian depositories (NSDL and CDSL) have a segregated account structure where account of the end investor is opened with the depository as compared to omnibus account structure which is being followed in some other countries.

Growth drivers for depositories in India

Depositories to benefit from rising capital market participation

India's inherent strengths such as large population, growing middle-income households, initiatives taken by the government and SEBI to push for financial literacy, increasing awareness, millennials entering the space for better returns, etc. are benefitting capital markets in India and hence depositories. Details are provided below:

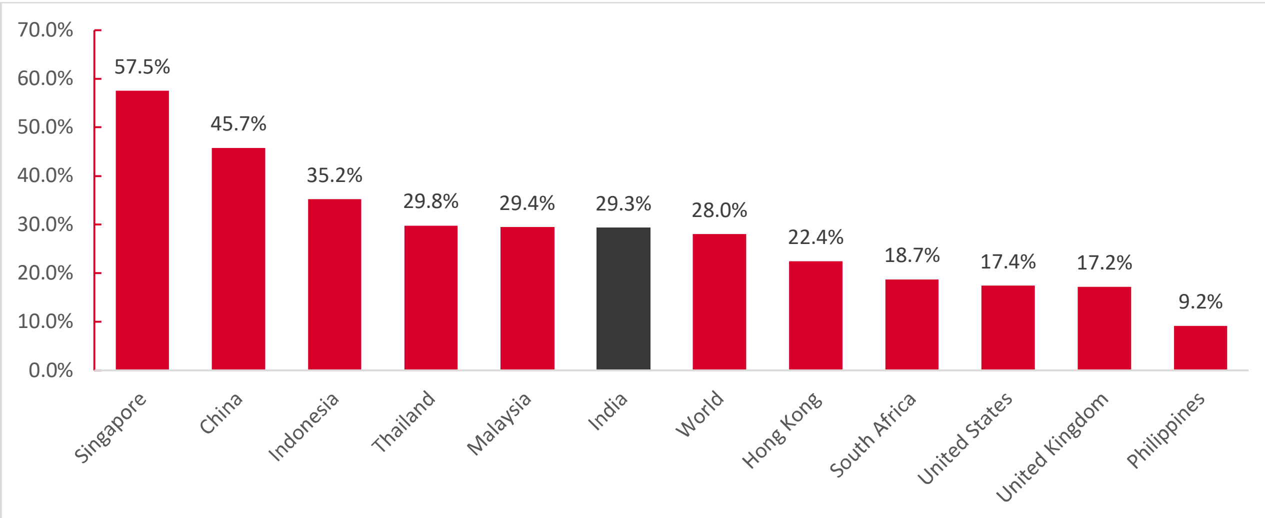
Favourable demographics, increasing per capita GDP and household financial savings

As discussed in the earlier section detailing 'Macro-economic scenario in India', as of calendar year 2020, India has one of the largest young populations in the world, with a median age of 28 years and as per IMF's estimates, India's nominal GDP per capita (at current prices) was ₹ 0.21 million in FY23 and is projected to reach ₹ 0.24 million in FY25 increasing at a CAGR of ~8% from FY23 to FY25. Both these factors could contribute to increase in financial savings and therefore there shall be an increase in demand for depositories.

Household savings to increase

Increase in nominal GDP per capital would be also an important factor in contributing to the increase in household savings. India's domestic savings was higher at 29.3% (an increase from 27.1% in calendar year 2020) as compared to the world average of 28.0% at end of calendar year 2021.

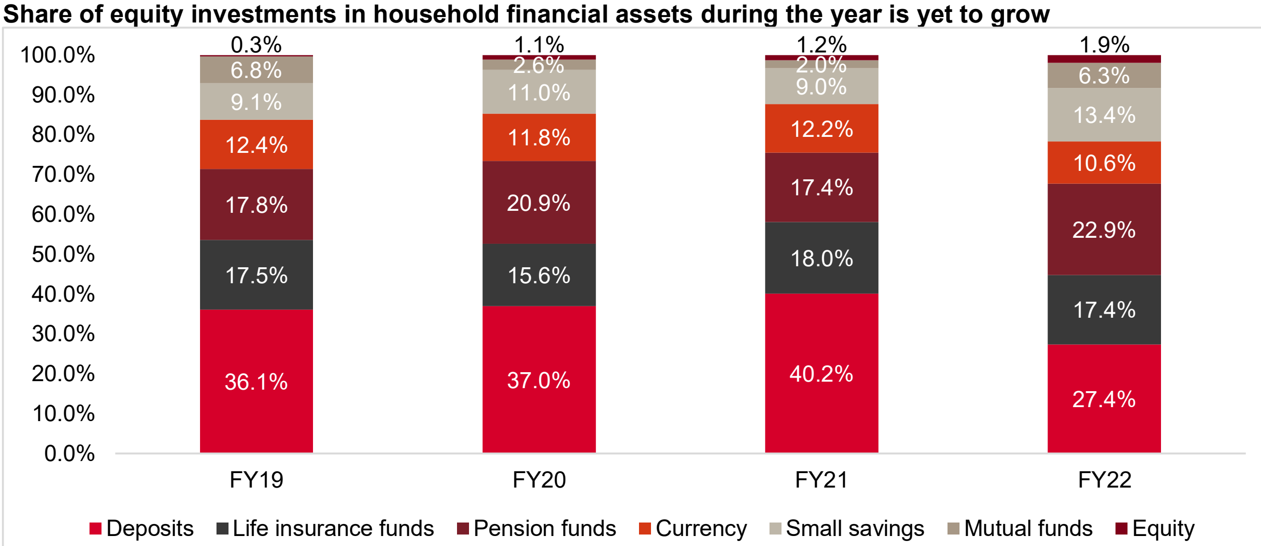
India's domestic savings rate is higher than the world average (calendar year 2021)



Note: The above data pertains to gross domestic savings rate in percentage for calendar year 2021
Source: World Bank, CRISIL Research

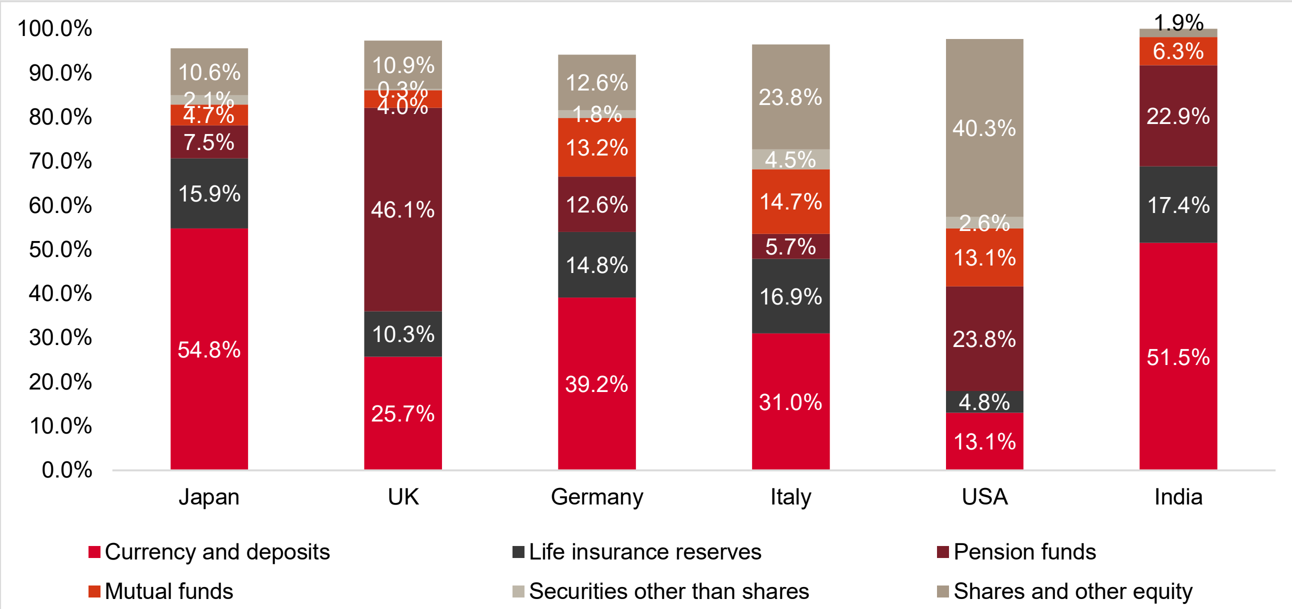
CRISIL MI&A Research expects India to continue being a high savings economy at least over the next decade. CRISIL MI&A Research is also sanguine on the savings rate increasing in the medium term, as households become focused on creating a nest egg for the future post the COVID-19 pandemic-induced uncertainty. Further, according to the Securities and Exchange Board of India ("SEBI"), during Fiscal 2021, until the third quarter, the household financial savings deployed in securities market had grown significantly to 1.2% of GDP as compared to 0.3% during each of the previous two fiscals in 2019 and 2020. As of fiscal 2022, the proportion of household savings in equity investments and mutual funds is ~8.2%, which has increased significantly from ~3.7% in fiscal 2020 and ~3.2% in fiscal 2021 and holds significant potential to see an increase given the increasing per capita GDP and rising financial literacy. Going forward, if the amount of savings deployed in securities market sustained, it is expected to boost the capital markets and economy.

Share of equity investments in household financial assets during the year is yet to grow



Source: RBI, CRISIL MI&A Research

Share of equity investments in household financial assets for some other countries are higher than India



Source: OECD data, CRISIL MI&A Research; Note: FY22 Data for India is considered, for other countries CY21 data is considered. For India, Small savings have been added in Currency and deposits category.

The share of equity investments in household financial assets during fiscal 2022 is still at about 1.9% only which is very low as compared to countries like Japan, UK, Germany, Italy, and USA. Therefore, there is a huge potential for increase in percent of equity investments with increase in financial savings coupled with financial literacy.

Initiatives by SEBI to boost capital market participation

The government, SEBI and other capital market participants are also taking several initiatives such as investor awareness workshops, media campaigns, development of educational materials, etc. As part of promoting investor activity in the capital market, SEBI combines investor education and promotion of financial literacy along with regulatory measures to boost participation in the capital markets. SEBI collaborates with Market infrastructure institutions (MIIs) such as exchanges, depositories, and various trade bodies such as investors' associations to conduct several regional seminars/webinars. These programmes focus on creating awareness among investors/general public about the basic concepts related to securities market, understanding the risks involved, rights and obligations of investors, grievance redressal mechanism in the securities market, etc. These awareness programmes are conducted free of charge for the participants and in various languages besides, Hindi and English.

Besides campaigns, SEBI has embarked on broadcasting important messages to investors through TV, radio, print media and bulk SMSs. These messages are intended to educate people about the SEBI's grievance redress mechanism named SCORES (SEBI Complaints Redress System) and its toll-free helpline. Its main aim is to caution investors about schemes seeking to mobilise capital for speculative purposes by offering unrealistic returns. It also urges investors not to go by hearsay while investing and do proper due diligence.

Adoption of multi-depository system led to faster growth

The multi depository system adopted in India has led to competition among the depositories and resulted in the following advantages:

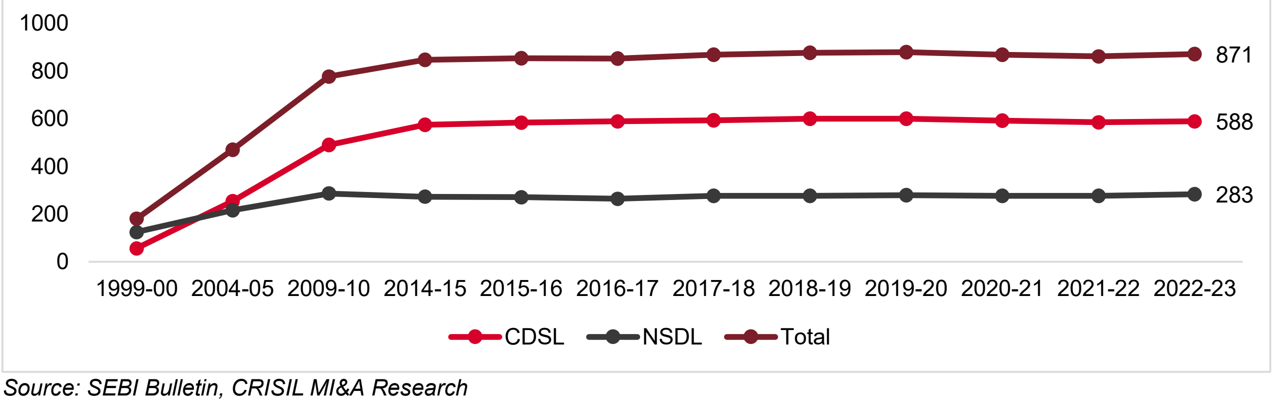
Ease in achieving dematerialisation

Companies admit their securities with depositories to enable security holders to hold and transact them in electronic form. More number of companies available for demat indicates exponential growth of the depository. Therefore, every depository tries to augment its list of securities which is made available for dematerialization.

Increasing number of DP service centres

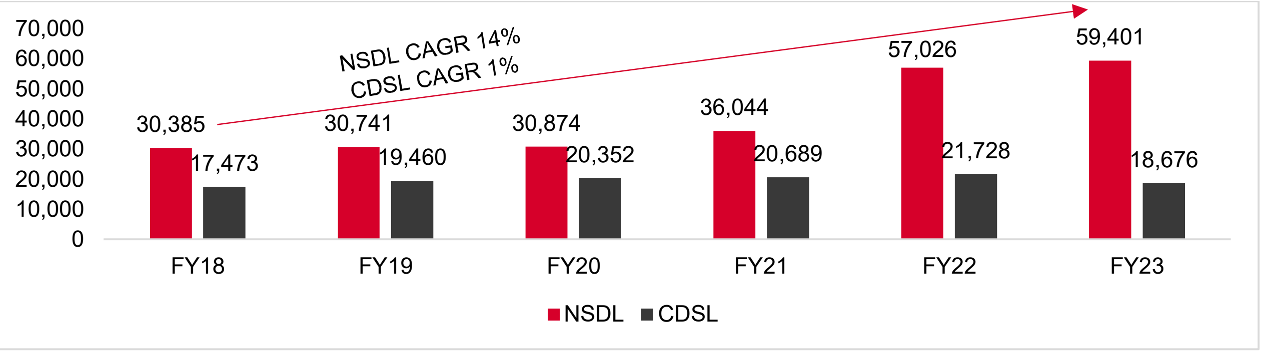
A Depository Participant (DP) is an agent of the depository through which an investor can open a demat account. A DP acts as a link between the company and investor through the depository. The DP maintains securities account balances and intimates' status of holding to account holders from time to time. The number of DPs have increased in the initial years; however, the numbers have stabilized in past few years. Though, the number of DPs with NSDL is lower as compared to CDSL, total number of DP service centres for NSDL is higher than CDSL and grew at 14% CAGR from FY18 to FY23.

Number of DPs increased rapidly in initial years, however, stabilized over past few years



Source: SEBI Bulletin, CRISIL MI&A Research

Number of DP service centres grew at CAGR (FY18-FY23) of 14% and 1% for NSDL and CDSL respectively

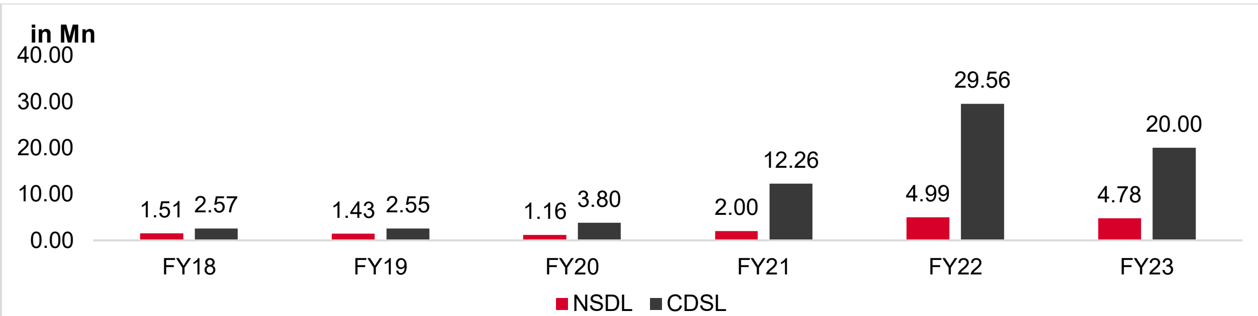


Source: SEBI Bulletin, CRISIL MI&A Research

Rapid growth in investors account in recent years

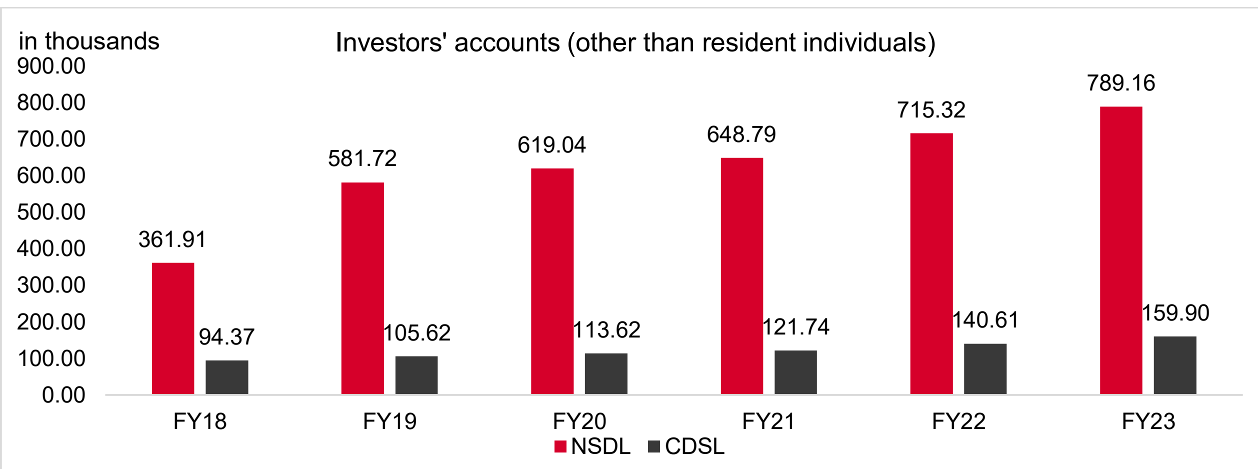
There is a significant scope for the growth of depository business considering that the number of new demat accounts opened with depository participants in India in financial year 2023 was 24.78 million as compared to 4.96 million in financial year 2020. Investors accounts have increased rapidly in FY21 and FY22 due to ease of account opening process and attractive returns the capital market witnessed in these two years. However, the growth moderated in fiscal 2023 largely on account of higher base.

New investors' accounts increased rapidly since FY21, however the growth moderated in FY23



Source: SEBI Bulletin, CRISIL MI&A Research

NSDL has higher share in investors' accounts (Other than resident individuals) than CDSL

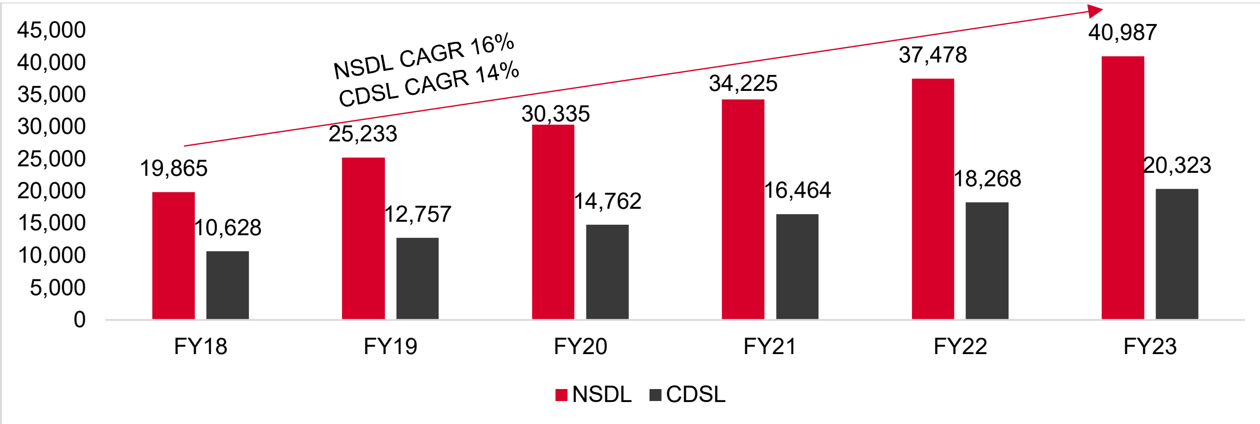


Source: SEBI Bulletin, CRISIL MI&A Research

Increasing number of companies opting for dematerialization

A total of 40,987 and 20,323 listed and unlisted companies are live for dematerialisation at NSDL and CDSL, respectively as of March 2023. The number of companies with securities in dematerialised form grew at a CAGR of about 16% for NSDL and 14% for CDSL from FY18 to FY23.

Number of companies live (Listed + Unlisted) on platforms grew at CAGR (FY18-FY23) 16% and 14% for NSDL and CDSL respectively



Source: SEBI Bulletin, CRISIL MI&A Research

As per Ministry of Corporate Affairs (MCA), the total number of companies registered in the country as on 31st March 2022 was 23,18,063, out of which were 14,38,045 were active. Additionally, as per MCA notification in October 2018, all unlisted public companies (except Government companies, Nidhi companies and wholly owned subsidiaries) have to compulsorily get their securities dematerialized. Therefore, there is immense scope for depositories to increase number of companies on their platforms for dematerialization.

As of March 31, 2023, NSDL had over 31.46 million demat accounts held with 283 depository participants registered with it. Further, NSDL has an aggregate of 40,987 issuers registered with it, and its standalone and consolidated operational revenue per investor account was ₹130.05 and ₹324.82 respectively, being substantially higher than its competitor.

NSDL has a greater number of unlisted companies registered with it as compared to CDSL. The number of unlisted companies at NSDL grew at CAGR 23% between FY18 to FY23.

NSDL has maximum market share in number of unlisted companies (equity) registered with it

Particulars	No. of unlisted companies at NSDL	No. of unlisted companies at CDSL	Market share of NSDL	Market share of CDSL
FY18	11,022	2,905	79.14%	20.86%
FY19	15,816	5,915	72.78%	27.22%
FY20	21,075	7,900	72.74%	27.26%
FY21	24,910	9,397	72.61%	27.39%
FY22	27,920	10,897	71.93%	28.07%
FY23	31,245	12,623	71.23%	28.77%

Source: SEBI Bulletin, CRISIL MI&A Research

The demat value and quantity of unlisted companies at NSDL grew at CAGR of 18% and 19% respectively as compared to CDSL which grew at CAGR of 8% and 15% respectively between FY18 to FY23.

NSDL has maximum market share in demat value (equity) of unlisted companies registered with it

Particulars	Demat value of unlisted companies at NSDL (₹ Bn)	Demat value of unlisted companies at CDSL (₹ Bn)	Market share of NSDL	Market share of CDSL
FY18	6,390.24	1,128.13	85.00%	15.00%
FY19	8,695.01	1,394.08	86.18%	13.82%
FY20	10,121.57	1,285.41	88.73%	11.27%
FY21	10,991.20	1,395.84	88.73%	11.27%
FY22	13,544.98	1,522.46	89.90%	10.10%
FY23	14,840.26	1,648.70	90.00%	10.00%

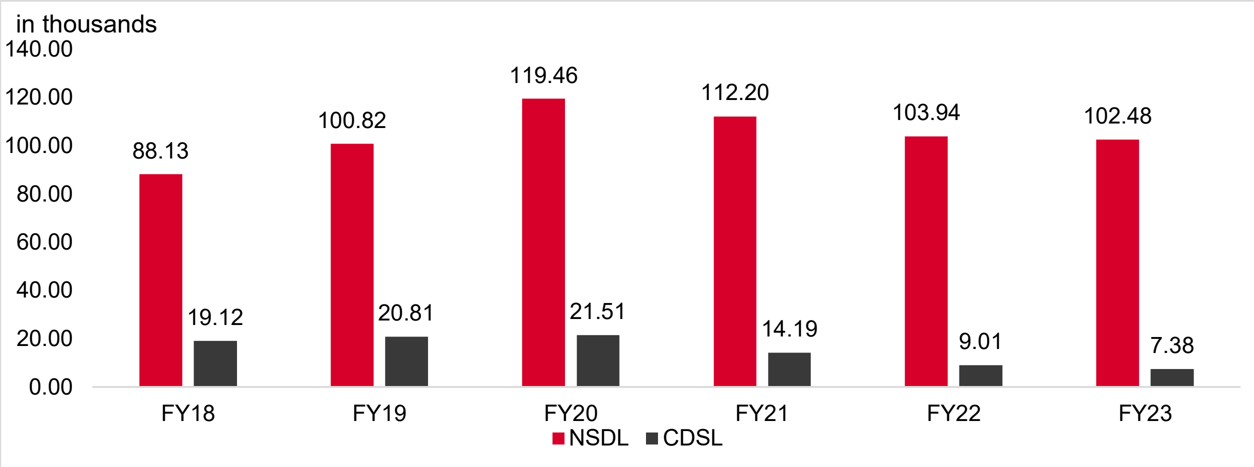
Source: SEBI Bulletin, CRISIL MI&A Research

NSDL has maximum market share in demat quantity (equity) of unlisted companies registered with it

Particulars	Demat quantity of unlisted companies at NSDL (Bn)	Demat quantity of unlisted companies at CDSL (Bn)	Market share of NSDL	Market share of CDSL
FY18	670.64	106.71	86.27%	13.73%
FY19	854.55	143.67	85.61%	14.39%
FY20	1,014.81	162.91	86.17%	13.83%
FY21	1,150.66	175.99	86.73%	13.27%
FY22	1,421.96	206.99	87.29%	12.71%
FY23	1,630.52	210.62	88.56%	11.44%

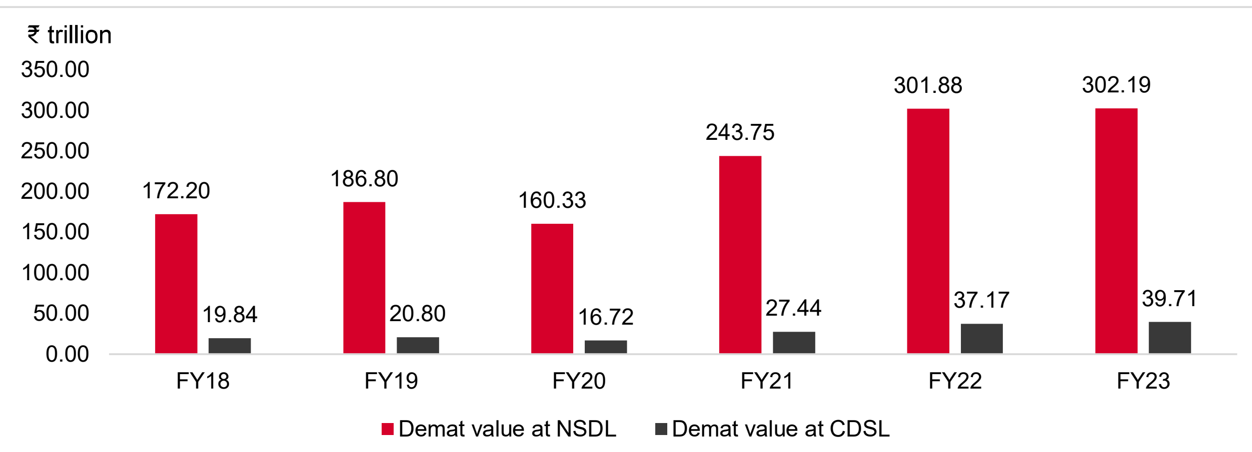
Source: SEBI Bulletin, CRISIL MI&A Research

Demat quantity per investor account for NSDL is much higher than CDSL



Source: SEBI Bulletin, CRISIL MI&A Research

Market share of NSDL in total demat value is 88.39% with demat value amounting to ₹ 302 trillion as of FY23



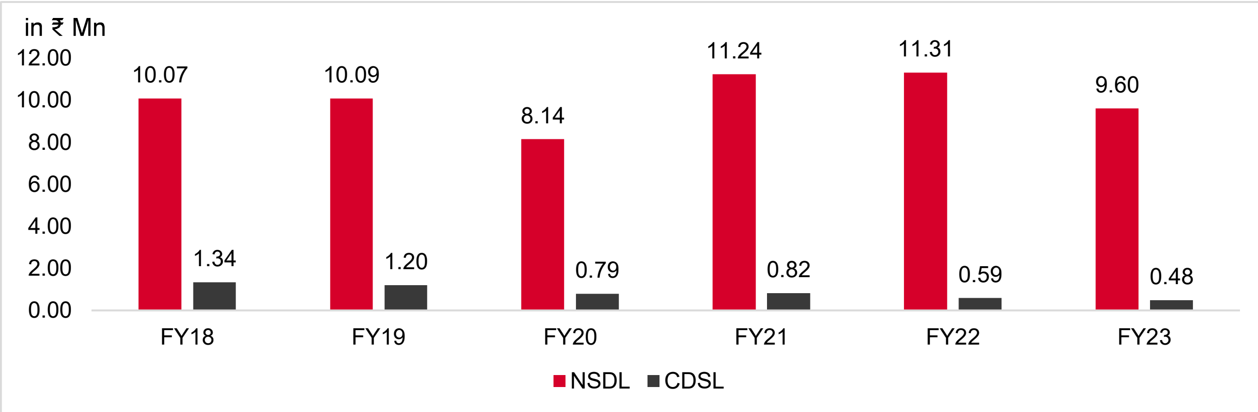
Source: SEBI Bulletin, CRISIL MI&A Research

As of March 31, 2023, NSDL held approximately 84.03% and 88.39% of total securities in terms of numbers and values, respectively.

NSDL achieved the milestone of having assets under custody (demat value of securities) of over ₹ 1,00,000 billion in June 2014 i. e. after 18 years of operations, with the next ₹ 1,00,000 billion assets under custody being achieved in November 2020, and thereafter added another ₹ 1,00,000 billion in December 2021. NSDL also held assets in custody aggregating to ₹ 43,060.50 billion for individuals (including NRIs) and Hindu Undivided Family ("HUF") accounts, which constituted 71.79% of the total value of such assets under custody in dematerialised form as of March 31, 2023. Similarly, As of March 31, 2023, NSDL held assets in custody in relation to non-residents Indians aggregating to ₹ 2,725.62 billion, constituting 88.14% of the total value of such assets held by non-residents Indians under custody held in dematerialised form across depositories.

As of March 31, 2023, out of total securities which NSDL held, approximately 71.68% and 78.58% were equity securities in terms of quantity and value, respectively.

Demat value per investor account for NSDL is much higher than CDSL



Source: SEBI Bulletin, CRISIL MI&A Research

The table below sets forth the average value of assets held in demat accounts with NSDL as compared to the whole industry as of March 31, 2023. The average value of Assets held in Demat Accounts with NSDL as of 31 March 2023 is ₹ 9.61 million, as compared to an overall average of ₹ 2.99 million. In relation to Individuals and HUFs, average value of Assets held in Demat Accounts with NSDL as of March 31, 2023, is ₹ 1.38 million, as compared to an overall average of ₹ 0.53 million held by Individuals and HUFs in a demat account.

NSDL has higher average value of assets held in demat accounts as compared to the industry

Particulars (FY23)	Holding per Demat Account (In ₹ million)	Holding per Demat Account (held by individuals including NRIs and HUFs) (In ₹ million)
Average Value of Assets (held in Demat Accounts with NSDL)	9.61	1.38
Industry average value of assets	2.99	0.53

Source: SEBI Bulletin, Company websites, CRISIL MI&A Research

Settlement volumes

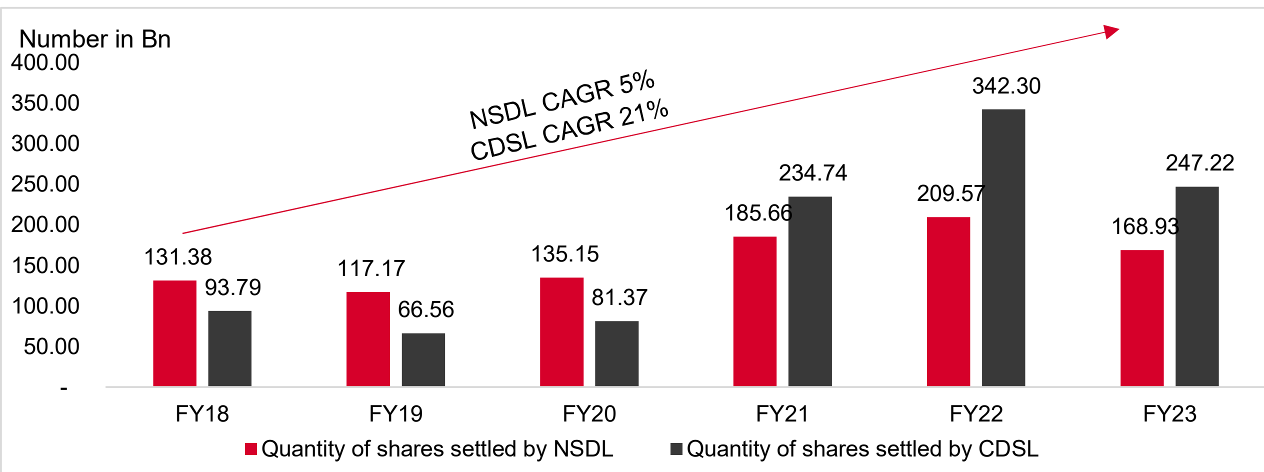
Value of shares settled in demat form at NSDL decreased to ₹ 49,603 Bn in FY23 from ₹ 54,720 Bn in FY22 and quantity of shares settled in demat decreased to 169 Bn in FY23 from 210 Bn in FY22. Similarly, for CDSL, value of shares settled in demat form decreased to ₹ 22,875 Bn in FY23 from ₹ 30,476 Bn in FY22 and quantity of shares settled in demat decreased to 247 Bn in FY23 from 342 Bn in FY22. NSDL has larger market share as compared to CDSL in terms of demat value.

NSDL commands higher market share in value of shares settled in demat form

Particulars	Value of shares settled in demat form at NSDL (₹ Bn)	Value of shares settled in demat form at CDSL (₹ Bn)	Market share of NSDL	Market share of CDSL
FY18	32,537.52	9,391.19	77.60%	22.40%
FY19	31,162.30	6,975.46	81.71%	18.29%
FY20	33,081.13	7,465.80	81.59%	18.41%
FY21	43,221.64	19,332.59	69.09%	30.91%
FY22	54,720.22	30,746.20	64.03%	35.97%
FY23	49,602.93	22,874.86	68.44%	31.56%

Source: SEBI Bulletin, CRISIL MI&A Research

Quantity of shares settled in demat form grew at CAGR 5% between FY18-FY23 for NSDL



Source: SEBI Bulletin, CRISIL MI&A Research

Increased activity by market participants

The companies/issuers have been increasingly tapping the capital market for their fund's requirements through various instruments. Number of debt instruments at NSDL and CDSL increased at ~4% CAGR each between FY18 to FY23. Number of dematerialized equity instruments at NSDL and CDSL increased at ~14% CAGR each during the same period.

Market share of NSDL in total active instruments was 64.17% in FY23

Particulars	Instruments at NSDL				Instruments at CDSL				NSDL market share	CDSL market share
	Debt	Equity	Other	Total	Debt	Equity	Other	Total		
FY18	17,291	23,447	37,225	77,963	10,786	9,938	19,974	40,698	65.70%	34.30%
FY19	17,080	28,979	41,063	87,122	10,402	12,049	21,685	44,136	66.37%	33.63%
FY20	16,747	34,075	41,190	92,012	10,619	14,018	23,392	48,029	65.70%	34.30%
FY21	18,354	38,203	32,278	88,835	11,644	15,619	22,984	50,247	63.87%	36.13%
FY22	19,474	41,771	33,649	94,894	12,147	17,336	23,364	52,847	64.23%	35.77%
FY23	21,170	45,473	34,289	100,932	13,176	19,304	23,871	56,351	64.17%	35.83%

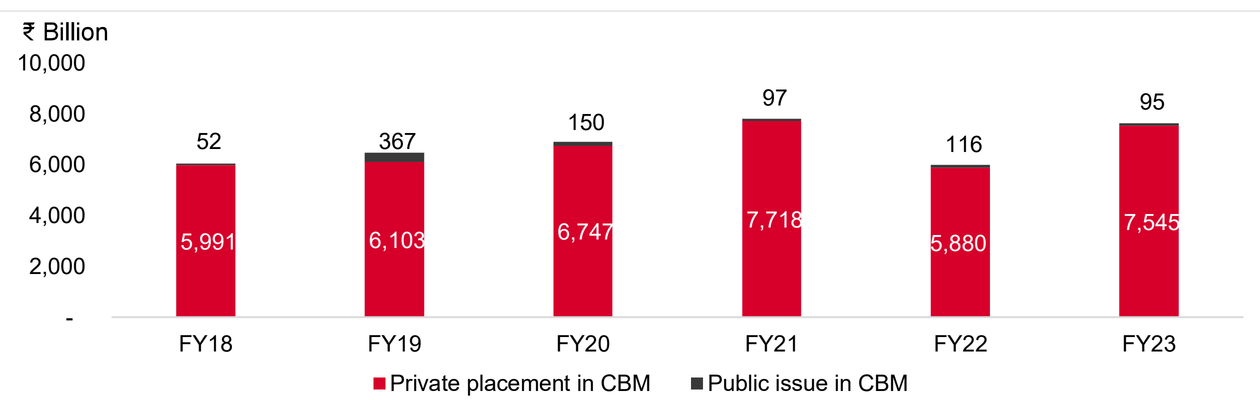
Source: SEBI Bulletin, CRISIL MI&A Research

Deepening of corporate bond market

Development of corporate bond market assumes crucial importance for India, especially in the context of channelling funding to long-term infrastructure and other industry projects. Corporate bond market not only provides an alternative to bank finance but also lower the cost of long-term funding. An efficient bond market with lower costs and quicker issuing time can offer an efficient and cost-effective source of longer-term funds for corporates. Also, it provides institutional investors such as insurance companies and pension funds with long-term financial assets.

Over the last few years, total issue size in corporate bond market increased except in FY22. Further, over the years, there has been a steady increase in mobilization of resources through the corporate bond route.

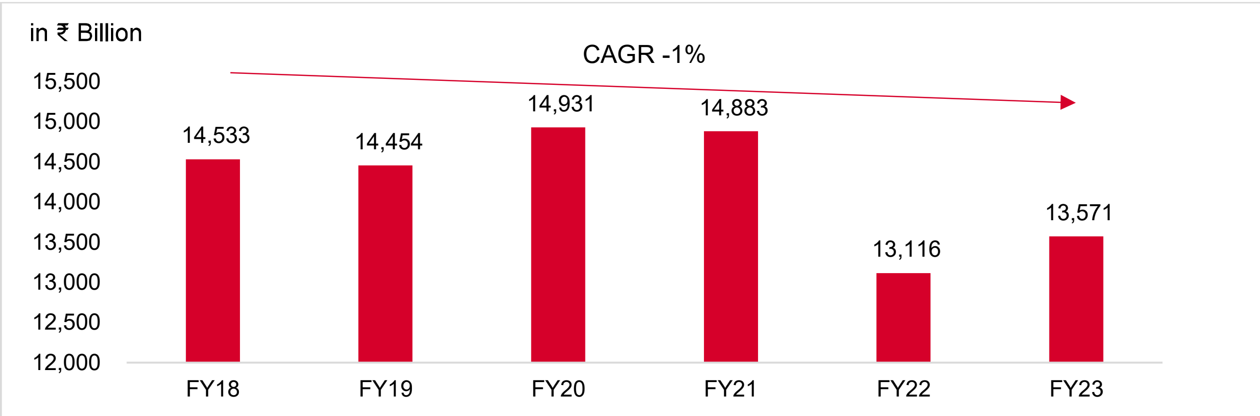
Funds mobilized from corporate bond market (CBM)



Source: SEBI, CRISIL MI&A Research

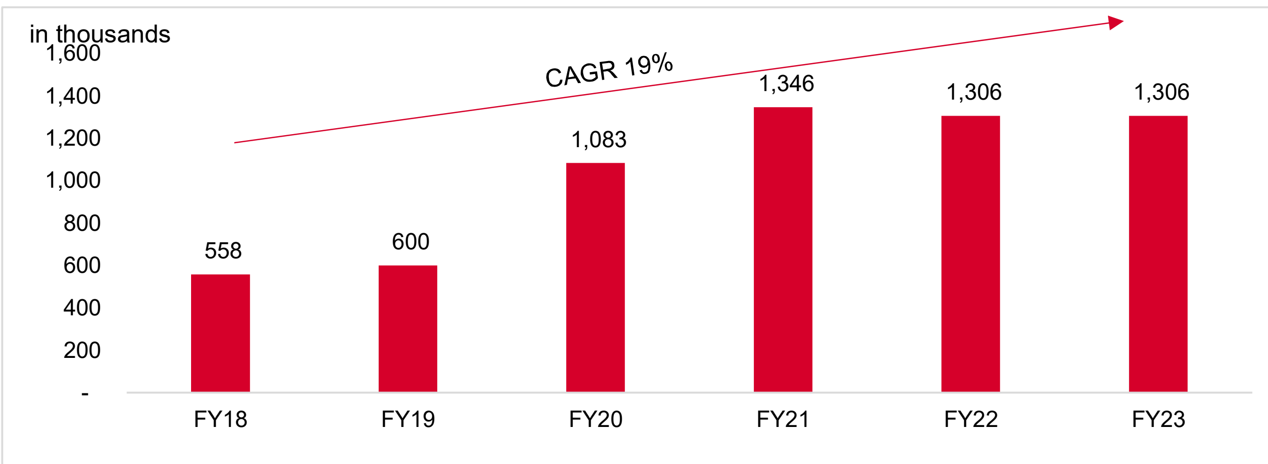
In case of secondary bond markets, the total settled value of secondary market trades was ₹ 14,533 Bn in FY18 and ₹ 13,571 Bn in FY23. On the other side, the number of trades increased from 558 thousand in FY18 to 1,306 thousand in FY23.

Secondary market trading in corporate bond market decreased at CAGR -1% in value of trades terms between FY18-FY23



Source: SEBI, CRISIL MI&A Research

Secondary market trading in corporate bond market grew at CAGR 19% in number of trades terms between FY18-FY23



Source: SEBI, CRISIL MI&A Research

The growing size of corporate bond market is accompanied by growing diversity of issuers and markets. We now have issuances by new types of entities e.g. REITs and InvITs pursuant to the changes made in several Acts including the SEBI Act, 1992, the Securities Contract Regulation Act, 1956 and the SARFAESI Act, 2002 to provide a legal framework for these entities to issue corporate debt securities. The SEBI issuance of regulations on the issue and listing of municipal debt securities has enabled market-based financing of infrastructure projects. These developments have been deepening the corporate bond market in India.

Trend in debt securities

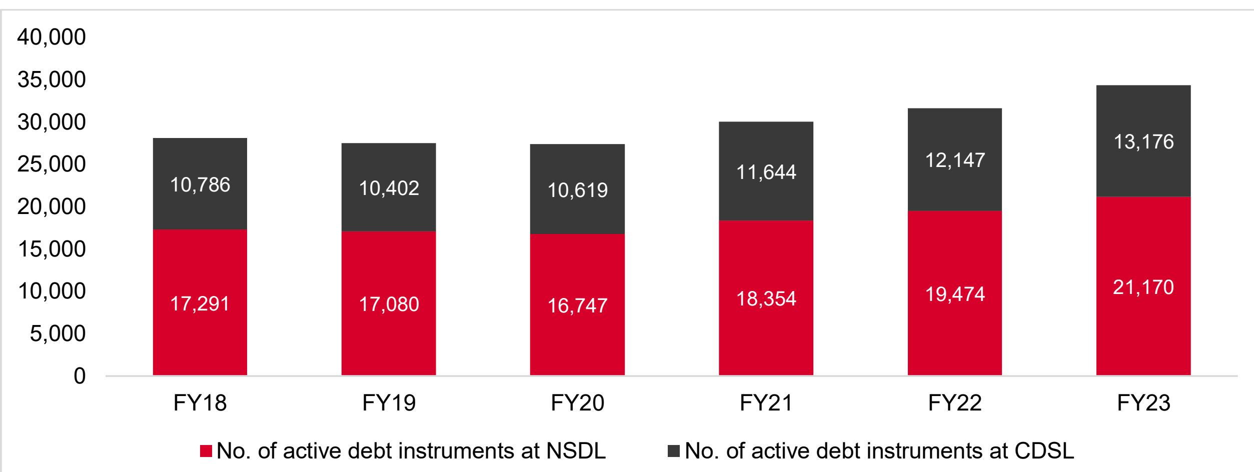
Total demat value of debt securities (at NSDL and CDSL together) was ₹ 29,677 Bn in FY18 and grew at CAGR 8% to reach ₹ 43,486 Bn in FY23. NSDL has almost 97% market share of the industry in demat value of debt securities (listed and unlisted). NSDL also had a market share of 97.84% of the demat value of listed corporate debt securities in custody aggregating to ₹ 32,791.58 billion, as on March 31, 2023. Number of debt issuing companies at NSDL grew at 11% CAGR between FY18 to FY23 while at CDSL number of debt issuing companies increased at CAGR 9% between FY18 to FY23. NSDL accounts for ~74% of market share in number of debt issuing companies. Total number of active debt instruments also increased from 28,077 in FY18 to 34,346 in FY23. NSDL accounts for more than 60% of market share in number of active debt instruments as of FY23.

NSDL has maximum market share in demat value of debt securities and number of debt issuers

Particulars	Total demat value of debt securities at NSDL (₹ Bn)	Total demat value of debt securities at CDSL (₹ Bn)	Market share of NSDL in demat value of debt securities	Market share of CDSL in demat value of debt securities	Number of debt issuers at NSDL	Number of debt issuers at CDSL	Market share of NSDL in number of debt issuers	Market share of CDSL in number of debt issuers
FY18	28,881.26	796.28	97.32%	2.68%	2,238	891	71.52%	28.48%
FY19	31,342.51	982.91	96.96%	3.04%	2,546	963	72.56%	27.44%
FY20	33,101.75	1,078.02	96.85%	3.15%	2,782	1,006	73.44%	26.56%
FY21	37,062.04	1,213.08	96.83%	3.17%	3,192	1,094	74.48%	25.52%
FY22	39,325.67	1,167.45	97.12%	2.88%	3,528	1,241	73.98%	26.02%
FY23	42,144.64	1,341.02	96.92%	3.08%	3,846	1,390	73.45%	26.55%

Source: SEBI, CRISIL MI&A Research

Number of active instruments in debt



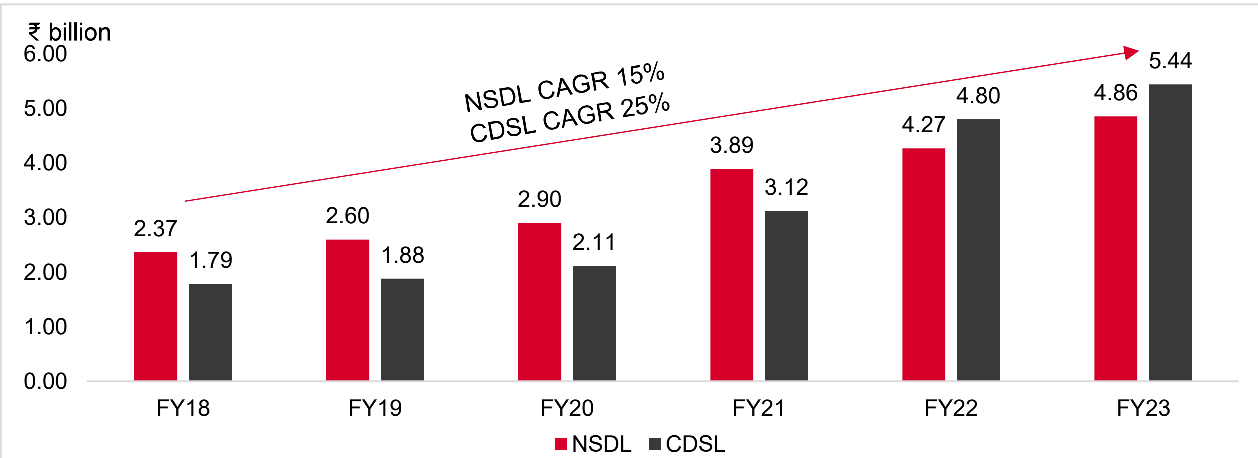
Source: SEBI, CRISIL MI&A Research

Revenue mix of depositories in India

The depositories derive their business mainly from activities in primary and secondary capital markets. Revenue of depositories majorly constitutes transactional charges, custodial charges and annual charges. In addition to the core services of electronic custody and trade settlement services, depositories provide other services like pledge of securities, automatic delivery of securities to CC, distribution of cash and non-cash corporate benefits (such as bonus, rights, and IPOs), stock lending, etc. These services have added value in the whole ecosystem of capital markets and depositories could diversify their revenue streams.

Total standalone income of depositories (NSDL + CDSL) is around ₹ 10.3 bn for fiscal 2023 and is expected to reach around ₹ 15 Bn to ₹ 15.5 Bn by FY27 growing at a CAGR of 10% to 11% assuming that there will not be any major regulatory impact on pricing of products and services offered by depositories.

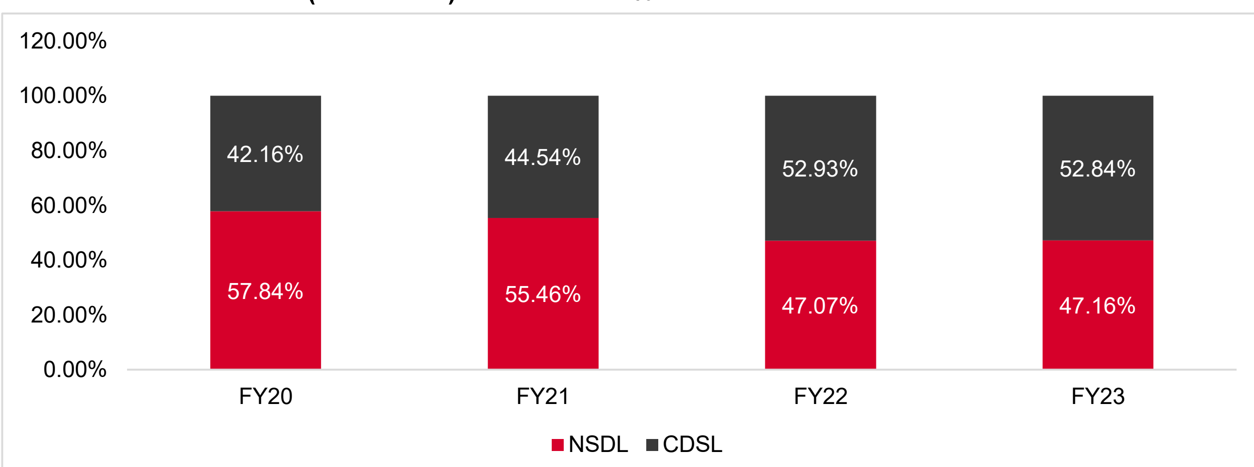
Total income (standalone) of NSDL and CDSL grew at 15% and 25% CAGR respectively between FY18-FY23



Source: Company annual reports and financial statements, CRISIL MI&A Research

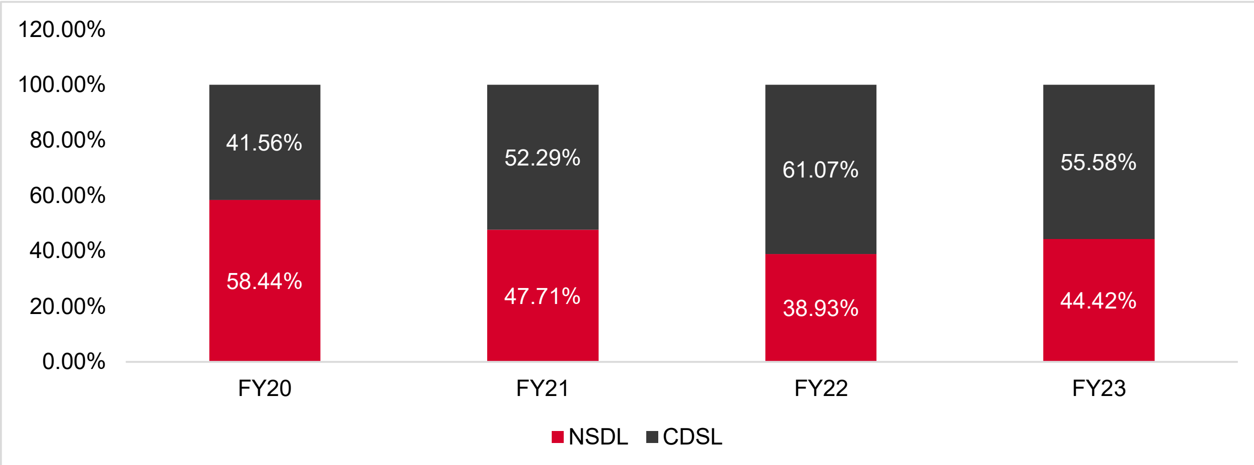
Market share of depositories in India with respect to revenues

Share of NSDL's revenue (standalone) stood at 47.16% in FY23



Source: Company annual reports and financial statements, CRISIL MI&A Research

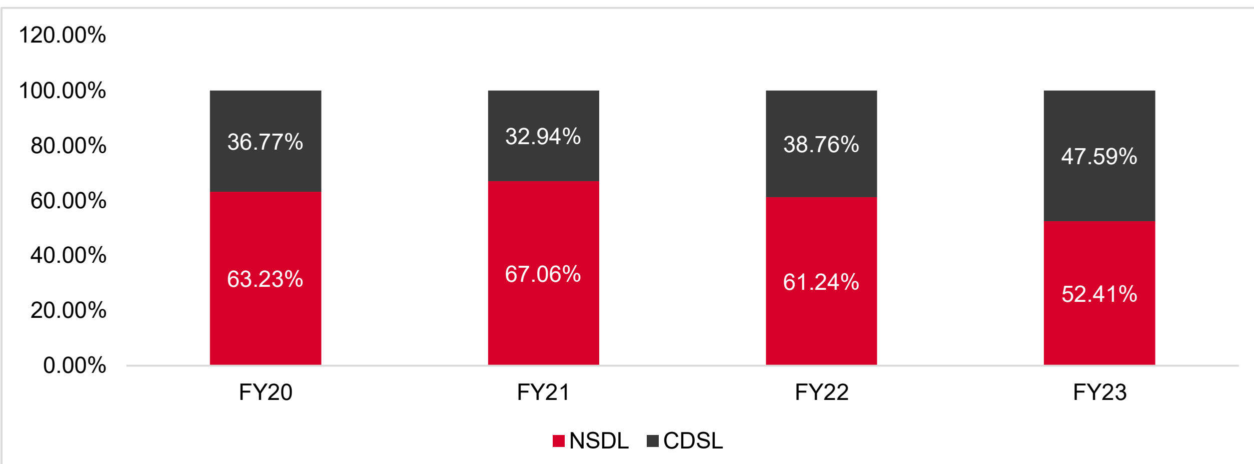
Share of NSDL's transactional revenue in depositories' total transactional revenue stood at ~44.42% in FY23



Note: FY23 numbers for CDSL are calculated approximately.

Source: Company annual reports and financial statements, CRISIL MI&A Research

Share of NSDL's annual charges and custody revenue in depositories' total annual and custody charges stood at 52.41% for FY23



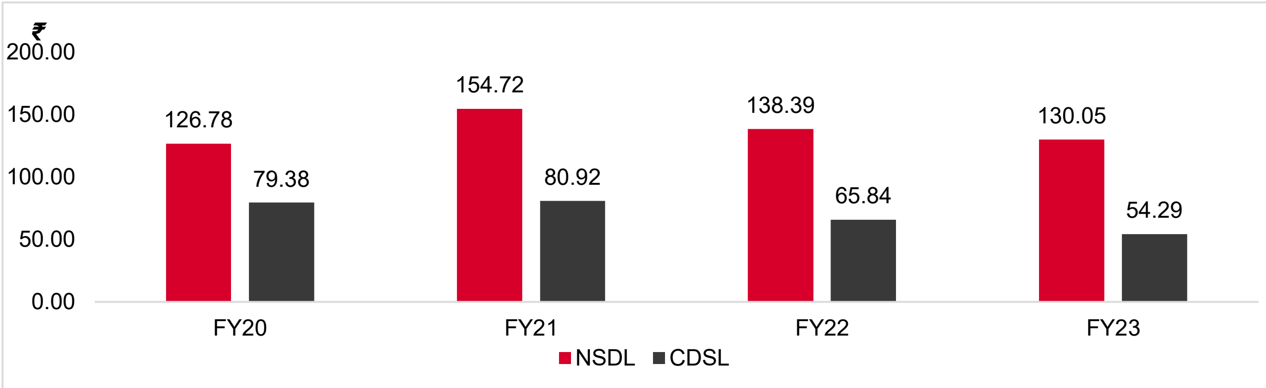
Source: Company annual reports and financial statements, CRISIL MI&A Research

Revenue from annual and custody fee is considered as more stable and recurring kind of revenue source as it is lesser dependent on market cycle as compared to revenue from transaction charges.

Transaction revenue and operational revenue per account

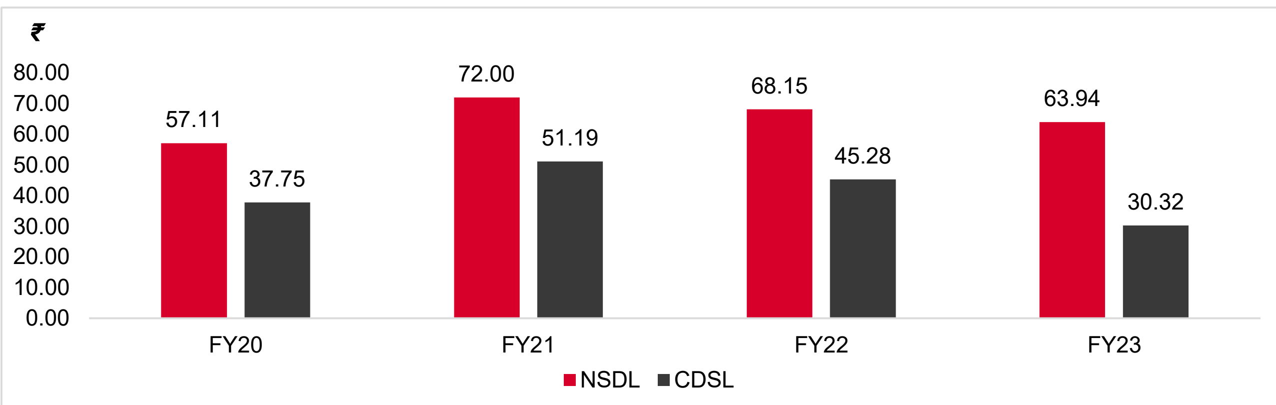
Transaction revenue per account shows the quality of investors accounts depository possesses. As of March 31, 2023, NSDL's standalone operational and transactional revenue per investor account was ₹ 130.05 and ₹ 63.94, respectively, as compared to ₹ 54.29 and ~₹ 30.32, respectively, for CDSL standalone. Similarly, as of March 31, 2023, NSDL's consolidated operational and transactional revenue per investor account was ₹ 324.82 and ₹ 81.17, respectively, as compared to ₹ 66.88 and ~₹ 25.18 for CDSL's operational and transactional consolidated revenue. Recurring revenues from the wide base of market participants lends stability to financial performance.

Standalone operational revenue per investor account of NSDL was higher than CDSL



Source: Company annual reports and financial statements, CRISIL MI&A Research

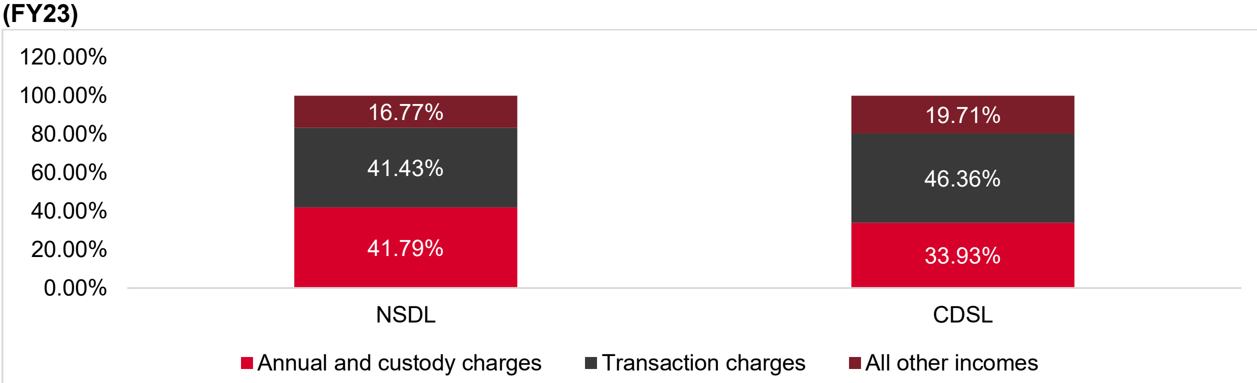
Standalone transaction revenue per account for NSDL was much higher than CDSL



Note: FY23 numbers for CDSL are calculated approximately. Transaction revenue includes transaction charges, pledge fee for margin, E-voting charges, CAS, corporate action/IPO charges.

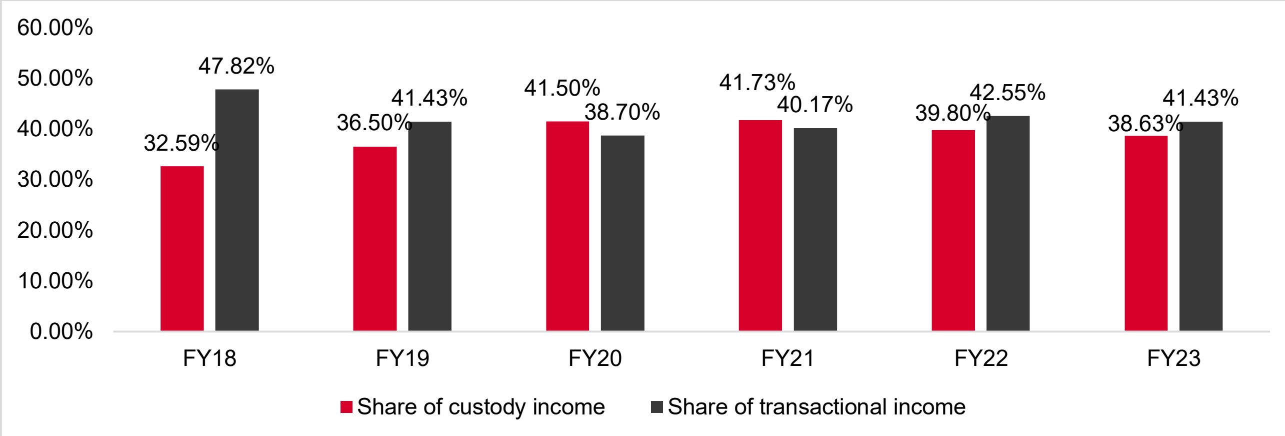
Source: SEBI Bulletin, Company annual reports and financial statements, CRISIL MI&A Research

Share of annual and custody charges (in standalone income) was higher for NSDL as compared to CDSL (FY23)



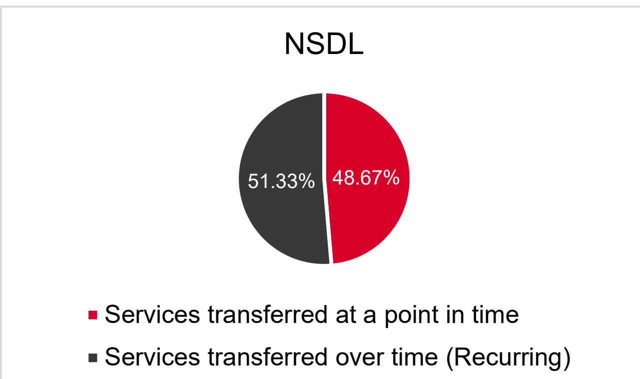
Note: Annual and custody charges include Annual fee and Custody fee, Transaction charges include Transaction fee, E-voting charges, CAS charges and Corporate action/IPO charges. FY23 numbers for CDSL are calculated approximately.
Source: Company annual reports and financial statements, CRISIL MI&A Research

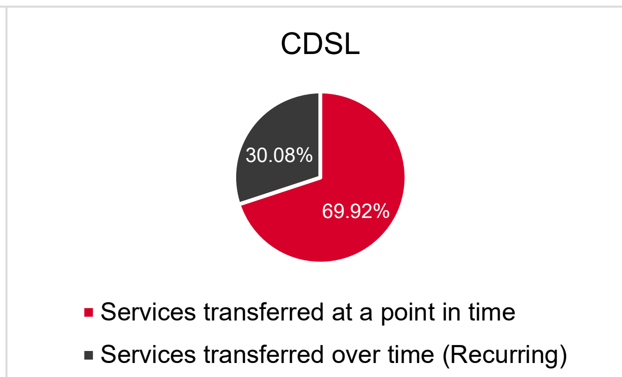
Share of custody income (in standalone income) increased from 32.59% in FY18 to 38.63% in FY23 for NSDL



Source: Company annual reports and financial statements, CRISIL MI&A Research

Share of recurring revenue in standalone operational revenue from contracts with customers for NSDL in FY22 was 51.33%





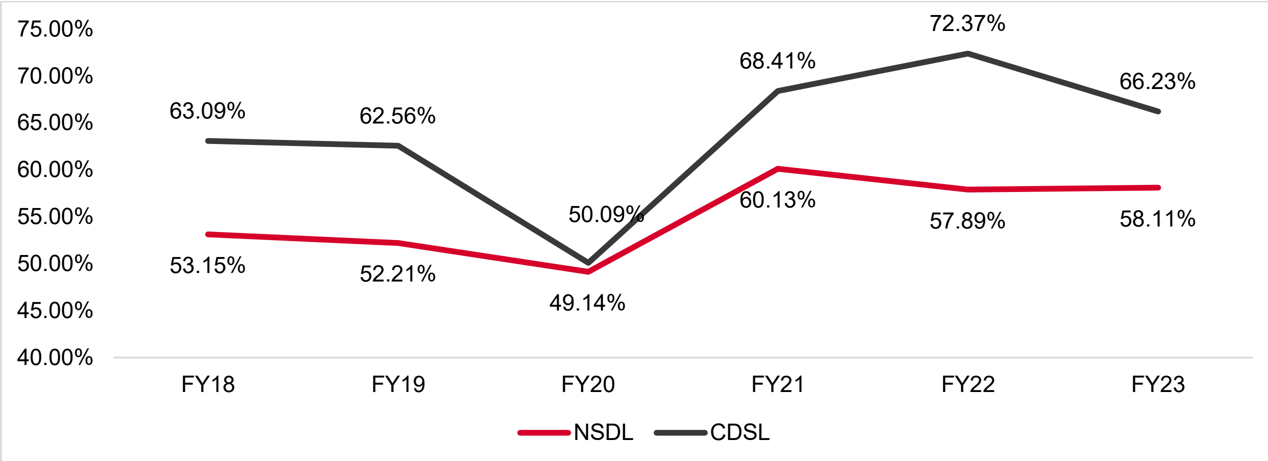
Source: Company annual reports, CRISIL MI&A Research

Share of recurring revenue in standalone operational revenue from contracts with customers for NSDL in FY23 was 50.52%.

Trend in operating margins and profitability (standalone) for depositories

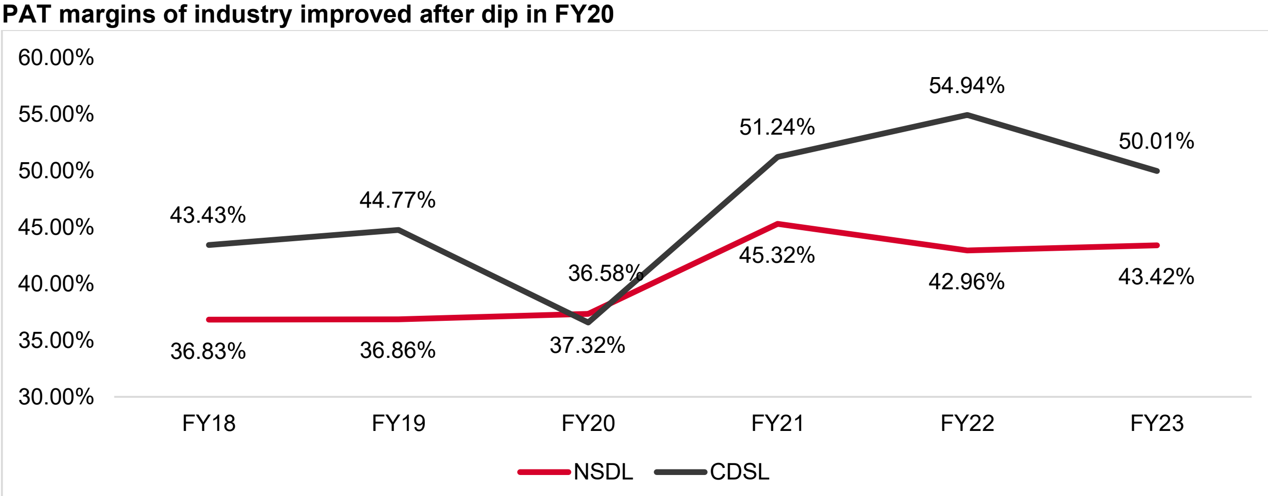
Margins in depository business are dependent on the scale at which they operate. Due to sudden increase in number of investors accounts and their active participation in markets during FY21 and FY22, it can be observed that the margins of depositories have also increased as compared to previous years.

EBIDTA margins of industry improved after dip in FY20



Source: Company annual reports and financial statements, CRISIL MI&A Research

PAT margins of industry improved after dip in FY20



Source: Company annual reports and financial statements, CRISIL MI&A Research

Allied businesses of depositories in India

To facilitate and strengthen capital markets community in India, depositories have introduced a number of products, value-added services and initiatives that have resulted in emerging as key enablers for the securities market in India.

In August 2007, NSDL was the first depository to introduce instant messaging alerts (over SMS) to investors. The full-fledged roll out of this facility for all investors commenced from September 2007. CDSL introduced the SMS facility in October 2007.

NSDL has leveraged their technological infrastructure to cater to the diverse needs of the securities market in India and introduced several additional products, e-services and ancillary value-added services and initiatives through NSDL and its subsidiaries NSDL Database Management Limited (NDML) and NSDL Payments Bank Limited (NPBL) thereby emerging as a key enabler for the financial market in India. Similarly, CDSL has also introduced several products and value-added services through its subsidiaries CDSL Ventures Limited (CVL) and CDSL Insurance Repository Limited.

Allied businesses	Description
Electronic delivery instruction platform	It is a common internet infrastructure that enables Depository Participants to provide depository services to their clients. This facility is used extensively by Depository Participants (DPs) to offer an electronic instruction submission facility to their clients. This brings convenience to investors which reduces the risk for DPs as well as to investors. It also provides customer delight thus enhancing the overall customer experience. Demat account holders (including Clearing Members) subscribing to this service can submit delivery instructions to their participants electronically through website instead of submitting Delivery Instruction Slips in paper form.
Power of attorney-based Instructions	Submission of Power of attorney-based Instructions for Clients Electronically facility is in respect of demat accounts operated on the basis of Power of Attorney (POA). Many investors execute POA in favour of their stockbrokers. Based on the POA, Clearing Members (CMs) submit instructions to the Participants (where clients maintain demat accounts) to debit the demat accounts of the Clients. The facility enables such CMs to submit digitally signed instructions to Participant thereby eliminating the need to give paper-based delivery instructions to Participants. The facility enables Clearing Members to debit Client account and credit CM Pool account. For non-POA accounts, the transaction gets authorized only after providing TPIN and OTP which reduces the risk of frauds.
Electronic voting, Virtual annual general meeting and Electronic notices	The e-Voting platforms of depositories have facilitated many leading companies to offer e-Voting services to their Shareholders and thus, have empowered their Shareholders to exercise voting rights by casting their votes electronically. This has enabled investors to take an active part in the company's overall decision-making process by participating in voting. The platforms offer the companies live-streaming of meeting proceedings and instantaneous results. In addition to this, it also offers tab-based e-Voting services at the AGM venue itself and e-notices service to the companies availing e-Voting platform.

	Number of Companies which entered into agreement with NSDL for availing e-Voting services is 3,640 as on March 31, 2022. Number of E-voting events conducted by NSDL in fiscal 2023 is 3,951. As on March 31, 2022, total 6,145 companies have signed agreements with CDSL to conduct e-Voting.
ISIN Numbering Agency	NSDL issues the International Securities Identification Number (ISIN) for all securities issued in India regardless of the type of security viz., equity, debt, mutual funds, money market instruments, etc. and therefore has extensive experience of issuing ISINs in India. ISIN is a globally accepted unique identifier for securities. SEBI is the National Numbering Agency (NNA) for India and a member of the Association of National Numbering Agencies (ANNA). SEBI has delegated the responsibility to NSDL for issuance and maintenance of ISIN, Financial Instrument Short Name (FISN) and Classification of Financial Instruments (CFI) codes and reporting to ANNA and to undertake other related activities. ISIN, FISN and CFI codes are defined as per ISO standards.
Securities and covenant monitoring using distributed ledger technology	With an intent of strengthening the regulatory framework for corporate bonds in the Indian market infrastructure domain, NSDL upon guidance from SEBI, is the first company in India to develop a DLT blockchain based platform for the debenture security and covenant monitoring system. The platform has received positive response from industry with numerous issuers and securities onboarded since its launch. CDSL is in the process of developing the same. The platform enables issuer and debenture trustees to manage the entire lifecycle of corporate bonds and facilitate the monitoring of the security given and the covenants to bring about greater transparency in this market segment.
Corporate bond market database	Depositories have developed a corporate bond market database which provide information on corporate bonds. NSDL has pioneered the same.

Digital LAS

Loan against securities (LAS) is a loan where anyone can pledge their shares, mutual funds or life insurance policies as collateral to the lender against loan amount. It enables funding against securities without selling securities in the market. It is helpful in getting instant liquidity and in sourcing funds for any personal requirements. Financial institutions in India have started providing digital loan against securities which automates and speeds up the process of getting a loan. This has been made possible due to depositories. Financial institutions collaborate with depositories to create a seamless customer experience. Digital LAS empowers the customers to design their own loan against shares at their convenience and avail of the facility within minutes. Customers with shares in their portfolio can leverage it when there is an urgent need for money, for example a medical emergency.

Depositories receive instructions from investors and process it in electronic form. Integration of depositories and lenders' technology reduce the TAT for getting the loan from the lenders.

NSDL has implemented Collateral Management System for LAS product. The banks which are Depository Participants of NSDL can avail this facility to provide online loan to their customers against securities held by the customers in their respective demat accounts. NSDL has enhanced the product feature, which facilitate investors / demat account holders, having demat account with any DP of NSDL, to avail loan against their securities in a digital form with Banks/NBFCs. Investor can continue to maintain their demat account with their existing DP of NSDL for availing Loan against securities with Banks/NBFCs.

Consolidated account statement for one view of portfolio of investors

As a first step towards creating one record for all financial assets of every individual and as per SEBI's instructions, depositories and asset management companies (AMCs)/MF-RTAs created a system to facilitate generation and dispatch of single consolidated account statement (CAS) for investors having mutual fund investments and holding demat accounts.

A consolidated account statement (CAS) is the single statement of all investments in the securities market and includes investments in equity shares, preference shares, mutual funds, bonds, debentures, securitised instruments, money market instruments and government securities held in demat form. All investments held in single or joint names are mentioned in CAS. CAS is being sent to investors on a monthly basis, however, if there are no transactions during the month, then CAS is being sent on a half-yearly basis. CAS is sent to investors electronically using email primarily.

More number of financial products and features can be added in CAS such as details of dematerialized insurance policies, annualized return to provide information on return on investors' investments, etc.

Benefits of CAS to investors

Investment review: Given that CAS provides comprehensive data on summary of all the investments and financial transactions in mutual funds and other securities held in demat form, it offers convenience to investors in keeping track of their investment portfolio. CAS enables investors to monitor their portfolio effectively and accordingly take informed decisions.

Paperwork reduction: CAS minimizes the paperwork requirements of investors as they can monitor their portfolio under one statement, instead of several separate statements for different investments.

Keeps informed: The CAS summarizes investors' detailed information on investments and ensures that investors stay informed about their investments and their performance.

IFSC GIFT City

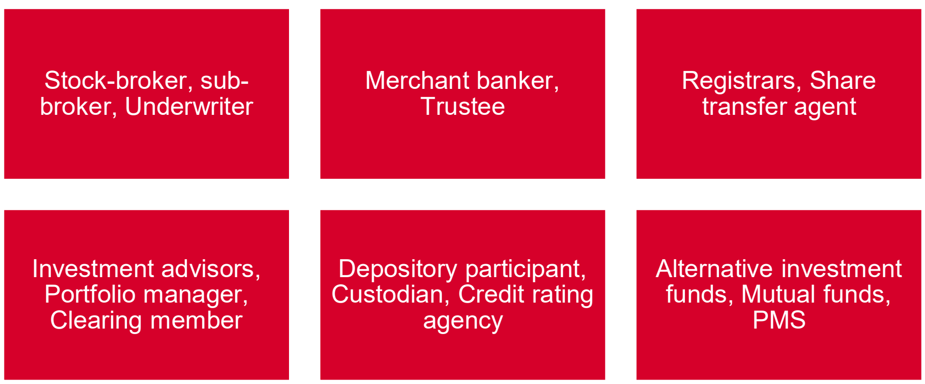
Being one of the fastest growing economies of the world, India is a large user of the international financial services. International Financial Services Centre (IFSC) will provide a platform to expand its economic and strategic activities globally in an efficient manner. The efforts to develop an IFSC at Gujarat International Finance Tec-City (GIFT City) started in April 2015, to help India realize its potential in the international financial services industry.

An IFSC centres deal with the flow of finance, financial products and services across borders. It is set-up to undertake financial services transactions that are currently carried on outside India by overseas financial institutions and overseas branches/subsidiaries of Indian financial institutions.

Potential for IFSC in India

As India is a large purchaser of International financial services, IFSC can be a major contributor for achieving self-reliance in international financial services raising overseas bonds / capital, trading in INR-USD derivatives. It can become India's gateway to world financial market. It also provides opportunity to global investors to set up business in the areas of asset management, banking, investments, insurance and reinsurance.

Participants in IFSC capital markets



List of products traded on IFSC exchanges

BSE and NSE have set up their exchanges in GIFT city – India INX Ltd. and NSE IFSC Ltd. respectively.

Index Futures & Options	Single stock Futures & Options	Commodities futures	Currencies Futures & Options	Debt
NIFTY 50 Index	India INX – 100+ F&O stock	Gold	Euro – USD	Medium term notes
NIFTY Bank Index	NSE IFSC – 200+ F&O stock	Silver	Pound – USD	FCY Bonds
NIFTY IT Index	Global stocks – 5+ F&O stock trading offered	Copper	Japanese Yen – USD	Depository receipts
S&P BSE Sensex		Brent crude oil	Australian Dollar – USD	Green/Social/Sustainable bonds (FCY)
			Switzerland Franc – USD	
S&P BSE India 50		Access through INX Global access platform	Quant – INR	Masala Bonds (INR)
India50			INR – USD	

Other developments

Real estate investment trusts (REITs) and Infrastructure investment trusts (InvITs) incorporated in FATF[3] (Financial Action Task Force) compliant jurisdictions permitted to list on the stock exchanges in IFSC. Also, eligible listed companies permitted to raise capital through issuance and listing of DRs on the stock exchanges in IFSC.

All these developments would lead to a large business opportunity for depositories which can provide wide range of services related to financial securities. Depositories can earn revenue from transaction charges, account maintenance and settlement levy paid by depository participants.

India International Bullion Holding IFSC Limited

NSDL has become a MII consortium partner after taking necessary regulatory approvals. MII consortium promoted India International Bullion Holding IFSC Limited (IIBH), in which NSDL holds 20% stake. IIBH has a wholly owned subsidiary i.e. India International Bullion Exchange IFSC Limited that is undertaking the Exchange business for Bullion and IIBH also owns majority stake in India International Depository IFSC Limited (IIDL) which will be acting as depository for both Equity and Bullion products. NSDL has provided the software system to IIDL for Equity products, which has facilitated it to issue Unsecured Depository Receipts (UDR) on various NASDAQ & NYSE listed companies, which are traded on NSE IFSC in GIFT City.

[3] *FATF is the global money laundering and terrorist financing watchdog. It sets international standards that aim to prevent these illegal activities and the harm they cause to society.*

4. Outlook for Depository System in India

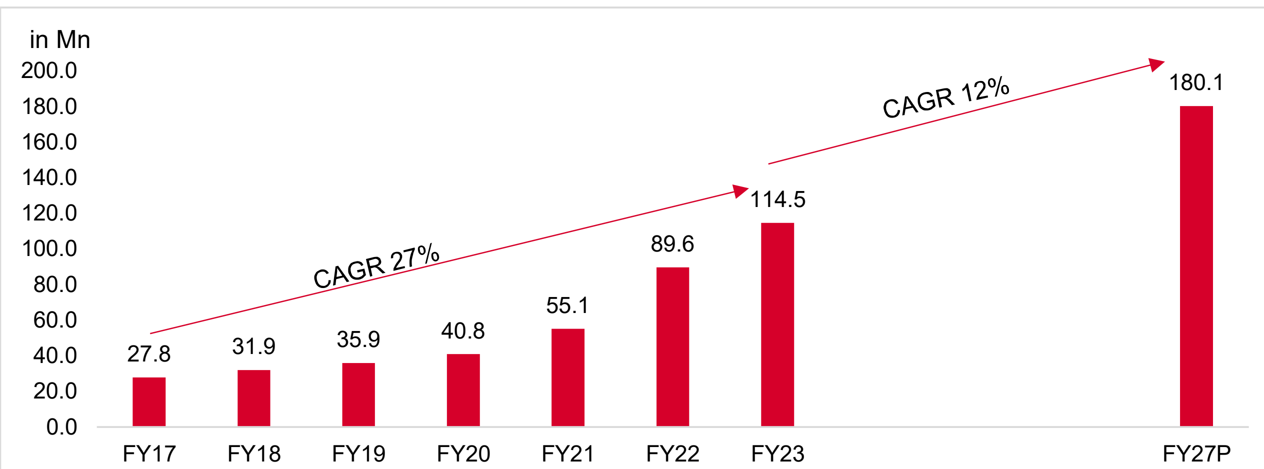
Industry outlook

The growth for the depository system is closely intertwined to the rising penetration and participation from various stakeholders such as investors and brokers. The rise of digital services has made access to capital markets easier and reduce the overall cost of transactions for investors. Additionally, due to increasing financial literacy and rising awareness about capital markets, investments in financial assets are gaining preference. This shift in investment strategies by people is attributable to various programmes which are being undertaken by SEBI, AMFI and other market participants.

Total Client accounts' growth

Total client accounts (demat accounts) grew at 27% CAGR between FY17 to FY23 to reach 114.5 Mn as of March 2023. The number of demat accounts opened with depository participants in India increased at CAGR of 41.05% from FY20 to FY23. The demat accounts increased rapidly during pandemic (FY21 and FY22) due to lockdown, attractive returns delivered by equity market, easier digital onboarding of customers, increase in usage of smartphones, however, the growth rate is expected to moderate in the next few years as some loss of momentum could be there on account of higher base.

Number of total client accounts to grow at ~12% CAGR between FY23-FY27



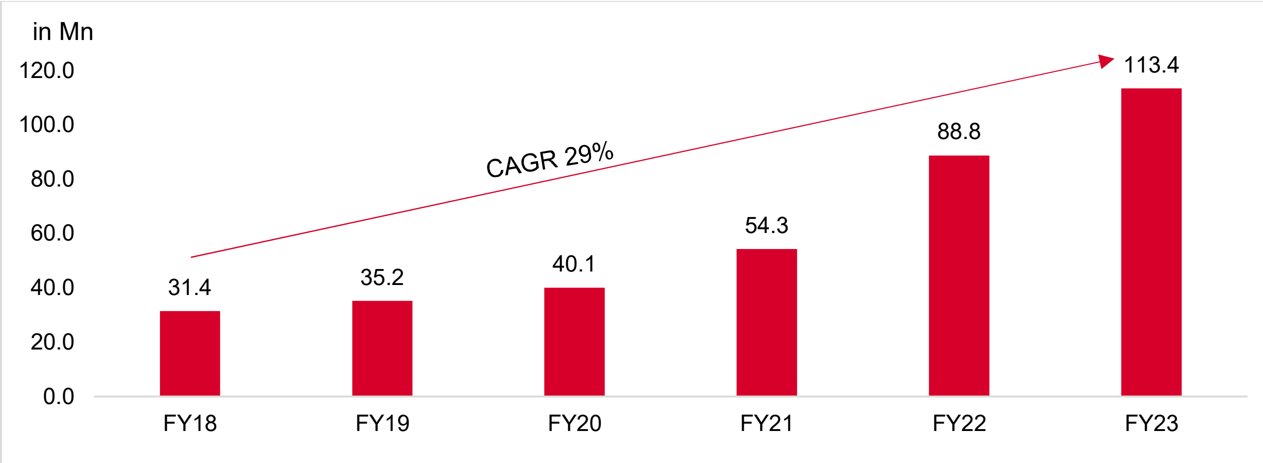
Note: P = Projected
Source: Company websites, CRISIL MI&A Research

Growth Drivers

Retail participation trend in capital markets

The retail participation in capital markets saw significant rise in FY21 primarily due to higher adoption of mobile and digital investing platforms, spread of investment culture in Tier-3 and Tier-4 cities and prominence of equity as an asset class. In FY20, total active individual client accounts were 40.1 Mn which increased to 54.3 Mn in FY21, 88.8 Mn in FY22 and 113.4 Mn in FY23. Additionally, there have been healthy inflows through SIPs which is preferred route for retailers. SIP contribution during a financial year increased from ₹ 672 Bn in FY18 to ₹ 1,560 Bn in FY23.

Number of active individual client accounts grew at 29% CAGR between FY18-FY23

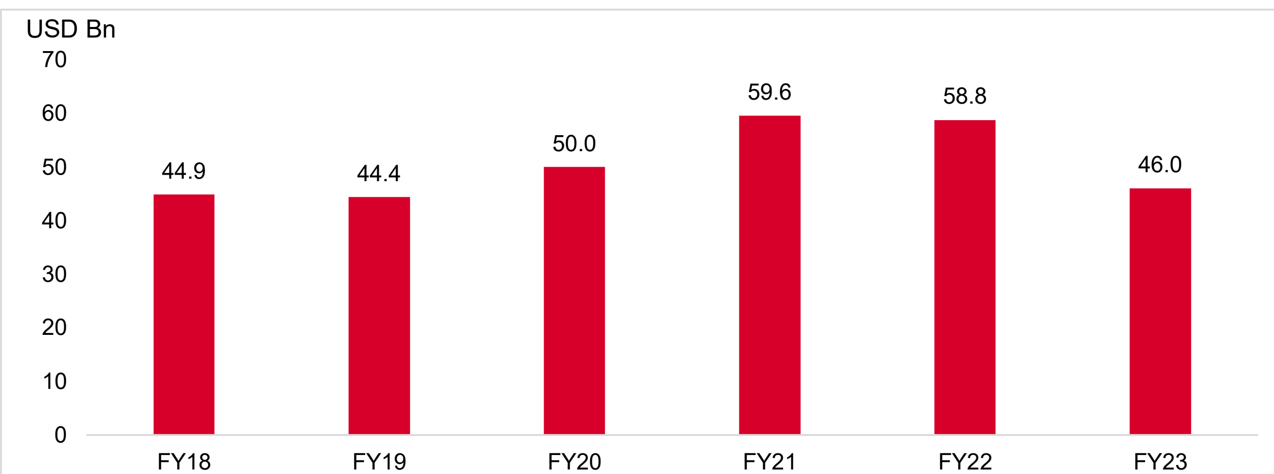


Source: Company websites, CRISIL MI&A Research

Global inflow of funds to India

India has been one of the preferred destinations for global funds. In fiscal 2022, FDI equity inflows to India was around USD 58.8 Bn. In fiscal 2023, FDI equity inflows was around USD 46.0 Bn due to subdued global and market conditions. As per the UNCTAD World Investment Report (WIR) 2022, in its analysis of the global trends in FDI inflows, India has improved one position to 7th rank among the top 20 host economies for 2021.

FDI equity inflows to India during a financial year



Source: DPIIT, CRISIL MI&A Research

Growth in FPI/FII funds invested in India

India is one of the leading countries in attracting foreign investments. Since 1992, India's FPI/FII investments during a financial year have remained positive except for FY09, FY16, FY19, FY20, FY22 and FY23. Total FPI/FII investments in India till March 2023 is more than ₹ 12 trillion.

As on March 31, 2023, NSDL serviced 99.99% of the value of equity, debt and other securities held by foreign portfolio investors in dematerialised form in India.

Initiatives by SEBI for investor education and financial literacy

One of the prime mandated objectives of SEBI is protection of investors' interests. As part of promoting investor activity in the capital market, SEBI combines investor education and promotion of financial literacy along with regulatory measures to boost participation in the capital markets. SEBI' investor education and awareness programmes focus on creating awareness among investors/general public about the basic concepts related to securities market, risks involved, rights and obligations of investors, grievance redressal mechanism, etc. These awareness programmes are conducted free of charge for the participants in different languages. Apart from programmes, SEBI also spreads awareness through modes like mass media, mobile app, etc.

Investor awareness programmes/workshops

Investor education and awareness programmes are conducted through various modes like regional seminars jointly with market infrastructure institutions (MIIs), SEBI recognized investor associations (IAs) and securities market trainers (SMARTs). All five stock and commodity exchanges, namely, NSE, BSE, MSE, MCX and NCDEX and both depositories, NSDL and CDSL, and AMFI are associated with SEBI for conducting regional seminars/webinars.

Regional seminars/webinars in association with MIIs and AMFI

Particulars	2020-21	2021-22
MIIs		
Total regional seminars conducted	652	642
Number of participants in regional seminars	79,583	53,463
AMFI		
Total regional seminars conducted	33	22
Number of participants in regional seminars	15,925	24,555

Source: SEBI, CRISIL MI&A Research

Investor awareness programmes by IAs

Particulars	2020-21	2021-22
Total programmes conducted by IAs	125	380
Total participants of IAs programmes	9,524	22,979

Source: SEBI, CRISIL MI&A Research

Since 2010, IAs have conducted 1,979 awareness programmes covering 97,000 participants.

Awareness programmes by SMARTs

Particulars	2020-21	2021-22
Total programmes conducted by SMARTs	287	1,797
Total participants of SMARTs programmes	15,000	1,81,834

Source: SEBI, CRISIL MI&A Research

As on March 2022, SEBI has empanelled a total of 168 SMARTs across 23 states and union territories. Since its inception in 2020, SMARTs have conducted 2,084 investor awareness programmes covering over 0.2 million participants.

Media campaign by SEBI

In view of the growing market and increasing participation in Initial public offerings (IPOs), several focused media campaigns were carried out to stress on the importance of due diligence while investing in primary and secondary market and risks involved in the securities market before making any investment decisions.

New initiatives by SEBI

During 2021-22, SEBI has undertaken various new initiatives such as SEBI launched Saarthi, mobile app on investor education, SEBI has developed Investor charter for the protection of interests of investors and SEBI has developed educational materials like booklets, presentations, etc. related to Indian securities market for imparting investor education.

Mass media campaigns

Besides campaigns, SEBI has embarked on broadcasting important messages to investors through TV, radio, print media and bulk SMSs. These messages are intended to educate people about the SEBI's grievance redress mechanism named SCORES (SEBI Complaints Redress System) and its toll-free helpline. Its main aim is to caution investors about schemes seeking to mobilise capital for speculative purposes by offering unrealistic returns.

Trends in new income streams for depositories

Depositories have been diversifying their revenue streams such as facilitating instant LAS, providing platform for conducting e-voting and AGM, database management, etc. These are allied services of depositories' business and can be expanded to earn huge revenue. Additionally, depositories also have set-up insurance repositories to facilitate holding of all types of insurance policies in electronic form in a single e-insurance account. All such services are expected to generate good amount of revenue for depositories.

Income streams	Description
Digital LAS	Depositories are facilitating collateral management system for Loan against Securities (LAS) product. The Banks which are DPs of NSDL can avail facility to provide online loan to their customers against securities held by the customers in their respective Demat accounts. NSDL facilitates investors / demat account holders, having demat account with any DP of NSDL, to avail loan against their securities in a digital form with Banks/NBFCs. CDSL provides APIs to DPs to enable demat account holders to pledge shares in their CDSL demat account directly from the website of the DPs.
E-voting and online AGM	The e-Voting platforms of depositories have facilitated many leading companies to offer e-Voting services to their Shareholders and thus, have empowered their Shareholders to exercise voting rights by casting their votes electronically. This has enabled investors to take an active part in the company's overall decision-making process by participating in voting. The platforms offer the companies live-streaming of meeting proceedings and instantaneous results. In addition to this, it also offers tab-based e-Voting services at the AGM venue itself and e-notices service to the companies availing e-Voting platform.
Database management services	Database management services includes services like National Skills Registry to IT / ITeS industry and transactions services like SEZ Online system on behalf of Ministry of Commerce & Industry, KYC registration agency (KRA) for centralization of the KYC records in the securities market and operations pertaining to the Repository of Insurance Policies.

5. Regulatory Framework Guiding the Depository System in India

Key aspects under regulations

Legal framework

The legal framework for establishment of single or multiple depositories is laid down in the Depositories Act, 1996. To be eligible for providing depository services, the company must be formed and registered under the Companies Act, 2013 and seek registration with the SEBI. It also needs to obtain a 'certificate of commencement of businesses' from SEBI, on fulfilment of the prescribed conditions. Investors opting to join the depository are required to enter into an agreement with the depository through DPs, who act as its agent. Agencies such as custodians, banks, financial institutions, large corporate brokerage firms, non-banking financial companies etc. can act as DPs.

A depiction of the regulatory framework for the depository business in India

- The Depositories Act, 1996
- SEBI (Depositories and Participants) Regulations, 1996 now amended to SEBI (Depositories and Participants) (Amendment) Regulations, 2018
- Bye-laws of Depository
- Operating Instructions/ Business Rules of Depository

Depositories are also governed by certain provisions of:

- The Companies Act, 2013
- The SEBI Act, 1992
- The Securities Contracts (Regulation) Act, 1956
- The Benami Transaction (Prohibition) Amendment Act, 2016
- Payment & Settlement Systems Act, 2007

The Depositories Act, 1996

The Depositories Act, 1996 lays down the conditions and eligibility for a depository service to work effectively in the country. It elucidates the objectives behind forming the Act, eligibility and rights of depositories, and aspects of fungibility. Powers of the SEBI, offences, and appeals are also spelt out in detail.

Objectives

The act aims at:

- Providing a legal basis for the establishment of depositories, to conduct the task of maintaining ownership records of securities, and effecting changes in ownership records through book entry;
- Making the securities fungible
- Making the shares, debentures, and any interest thereon of a public limited company freely transferable

Eligibility to provide depository services

According to the Act, in order to be eligible to provide depository services, any company or other institution must:

- Be formed and registered as a company under the Companies Act, 2013.
- Be registered with SEBI as a depository under the SEBI Act, 1992.
- Have framed bye-laws with the previous approval of SEBI.
- Have one or more DPs to render depository services on its behalf.
- Have adequate systems and safeguards to prevent manipulation of records and transactions to the satisfaction of SEBI.
- Comply with the Depositories Act, 1996 and the SEBI (Depositories and Participants) Regulations, 2018.
- Meet eligibility criteria in terms of constitution, network, etc.

Fungibility

Section 9 of the Act states that securities in depositories shall be in fungible form.

That is, it envisages that all certificates of the same security shall become interchangeable. Dematerialised shares do not have any distinctive numbers. Thus, all the holdings of a particular security will be identical and interchangeable. It is akin to withdrawing money from the bank, without bothering about the distinctive numbers of the currencies.

Rights of depositories and Bos

In the depository system, the ownership of securities dematerialised is bifurcated as RO and BO. According to the Act, RO means a depository whose name is entered as such in the register of the issuer. A BO means a person whose name is recorded as such with the depository. Thus, although the securities are registered in the name of the depository holding them, the rights, benefits, and liabilities in respect of the securities held by the depository remain with the BO. For the securities dematerialised, CDSL/NSDL is the RO in the books of the issuer, but ownership rights and liabilities rest with the BO.

Powers of SEBI

Section 18 of the Act provides that, in the public interest or in the interest of investors, the SEBI may by order in writing to call upon any issuer, DP or BO to furnish in writing, such information relating to the securities held in a depository as it may require. It also has powers to authorise any person to make an enquiry or inspection in relation to the affairs of the issuer, BO, depository or DP, who shall submit a report of such enquiry or inspection to it within such period, as may be specified in the order.

Powers of SEBI

Power to give directions

- The SEBI may issue directions to any depository or DP or any person associated with the securities market or to any issuer, as may be appropriate in the interest of investors or the securities market

Power to adjudicate

- The SEBI shall appoint any officer not below the rank of a Division Chief of SEBI to be an adjudicating officer for holding an inquiry in the prescribed manner
- The SEBI is empowered to call for and examine the record of any proceedings

Power to grant immunity

- Section 22B empowers the central government to grant immunity, on recommendation by the SEBI, if the government is satisfied

Power to make regulations

- Section 25 of the Act, read with Section 30 of the SEBI Act, 1992 empowers SEBI to make regulations for carrying out the purposes of the Act, by notification in the Official Gazette

SEBI (Depositories and Participants) Regulations, 2018

The SEBI issued the SEBI (Depositories and Participants) Regulations, 1996 on 16th May of that year, applying to depositories and its DPs. The regulations were amended several times in the past, and recently were amended on March 02, 2023.

These regulations contain provisions for operations and functioning of depositories, prescribes forms for application and certificates used, schedule of fees for DPs, etc. It also contains provisions for registration of depository and DPs, rights and obligations of various users and constituents, inspection, and procedure for action in case of default. Entities desirous of becoming DPs, need to apply to the SEBI through the depository in which the entities propose to act as participants. The depositories forward the application to the SEBI along with is recommendations and certifications that the participants comply with the eligibility criteria as per these regulations and bye-laws of depositories. If approved and registered by SEBI, the DP can be admitted to the depository. The depository also has to formulate its own set of criteria for selection of DPs.

The depository is also required to ensure that sufficient safeguards are in place to protect the data available with it and with the DPs. To reduce risk in operations, the regulations stipulate that adequate insurance cover be provided by the depository and its DPs as well.

The regulations also require for reconciliation to be carried out on a daily basis. Further, the depository and the RTA are required to reconcile balances on a daily and a periodic basis.

Bye-laws of depositories

Section 26 of the Depositories Act, 1996 deals with the power of depositories to make bye-laws. A depository is required to frame its bye-laws with the prior approval of the SEBI, consistent with the provisions of the Act and the regulations made by the SEBI thereunder.

The SEBI has, however, the powers to direct the depository to amend or revoke any bye-laws already made, wherever it considers expedient to do so. If the depository fails or neglects to comply with the directions of the SEBI, it may make the bye-laws or amend or revoke the bye-laws on its own.

Contents of the bye-laws

As per sub-section 2 of Section 26 of the Act, the bye-laws of a depository would include:

- The eligibility criteria for admission and removal of securities in the depository.
- The conditions subject to which the securities shall be dealt with.
- The eligibility criteria for admission of any person as a DP.
- The manner and procedure for dematerialisation of securities.
- The procedure for transactions within the depository.
- The manner in which securities are to be dealt with or withdrawn from a depository.
- The procedure for ensuring safeguards to protect the interests of DPs and BOs.
- The conditions of admission into, and withdrawal from a DP by a BO.
- The procedure for conveying information to the DPs and BO on dividend declaration, shareholder meetings and other matters of interest to the BOs.
- The manner of distribution of dividends, interest and monetary benefits received from the company among BOs.
- The manner of creating pledge or hypothecation in respect of securities held with a depository.
- Inter-se rights and obligations among the depository, issuer, DP and BO.
- The manner and the periodicity of furnishing information to the SEBI, issuer and other persons.
- The procedure for resolving disputes involving depository, issuer company, or a BO.
- The procedure for proceeding against the DP committing breach of the regulations and provisions for suspension and expulsion of DPs from the depository and cancellation of agreements entered with the depository.
- The internal control standards including procedure for auditing, reviewing and monitoring.

Operating instructions and business rules of depository

Business rules/ Operating Instructions are also framed by the depositories and are an addition to the provisions of the Depositories Act, 1996, the SEBI Act, 1992, the SEBI (Depositories and Participants) Regulations, 2018 and the bye Laws of the depository. Business rules (read in conjunction with the bye Laws) shall be applicable to all the users of the depository, as well as the clients, to the extent specified therein.

Depositories have their own **'Operating Manual/Instructions'** document for DPs, issuers, and RTAs. The document specifies the working of the company, charges, and fees applicable for the various offerings and penalty structure for RTAs too.

Impact on pricing of services

The Depositories Act confers rights on depositories to frame their own bye-laws and business rules. The bye-laws are approved by the SEBI. While the bye-laws define the scope of the functioning of depositories and its business partners; the business rules outline the operational procedures to be followed by the depositories and its business partners. The business rules govern pricing of the depository services.

Owing to the multi-depository system in India, prices are not only competitive, but services rendered too are better in quality.

Key fees payable by DPs to depositories

Services		NSDL charges (₹)	CDSL charges (₹)
Entry fee at the time of submitting application		25,000/-	20,000/-
Settlement fee	Credit received in CM account from CC	1.0/- per instruction subject to minimum 1500/- and maximum 5000/- per quarter per CM account	500/- per month
	Inter-settlement transfers in the CM account(s)	5.0/- per debit instruction	
	Transfer from CM account to CM account of another clearing member	5.0/- per debit instruction	
Tariff for debit transaction – Monthly transactions	Less than 1 lakh	5/- per debit transaction	5.5/- per debit transaction
	1 lakh to 10 lakhs (NSDL) 1 lakh to 4 lakh (CDSL)	4.75/- per debit transaction	5.0/- per debit transaction

bill amount between	10 lakhs to 25 lakhs (NSDL) 4 lakhs to 15 lakhs (CDSL)	4.5/- per debit transaction	4.5/- per debit transaction
	25 lakhs to 1 Crores (NSDL) More than 15 lakhs (CDSL)	4.25/- per debit transaction	4.25/- per debit instruction
	More than 1 Crores (NSDL)	4.0/- per debit transaction	-
Creation of Pledge		25.0/- per instruction	12.0/- per instruction
Closing of pledge		0	12.0/- per instruction
Annual maintenance – Corporate accounts		500/- per corporate account per annum	500/- per corporate account per annum
Minimum fee to participants		1,00,000/- per year	8,000/- per month
CAS		0.75/- per transacted BO demat account for email CAS, 8.0/- per transacted BO demat account for physical CAS	0.5/- per transacted BO for E-CAS, 6.0/- per transacted BO for physical CAS

Source: Company tariff documents; Note: The list of charges above is not an exhaustive list

Key fees payable by issuers to depositories

Services		NSDL charges (₹)	CDSL charges (₹)
Joining fee	For listed companies	20,000/-	20,000/-
	For unlisted companies	15,000/-	15,000/-
Distribution of non-cash corporate benefits	Corporate action – for debit or credit to accounts	10.00/- per record, subject to minimum 1000/- per corporate action	10.00/- per record, subject to minimum 1000/- per corporate action
	Issue of commercial paper and short-term debt instruments	10,000/- for five instruments. Additional fee of 10,000/- for every additional five issues	10,000/- per annum for CPs issued in electronic form

			For CDs in electronic form 1000/- per allotment or 25,000/- for all issues in financial year
Appointment as a designated depository to facilitate listed company to monitor foreign investment limits	Companies in Nifty 500 or BSE 500 as on March 31st of previous financial year	25,000/- per annum	25,000/- per annum
	Other listed issuers	10,000/- per annum	10,000/- per annum

Source: Company tariff documents; Note: The list of charges above is not an exhaustive list.

Annual Custodial Fees

Annual custody/issuer charges are based on SEBI's circular dated December 9, 2015 and is applicable to both CDSL as well as NSDL. As per the SEBI, issuers must pay an annual custodial fee to the depositories at the rate of ₹ 11.00 per folio based on average number of folios, International Securities Identification Number (ISIN), during the previous financial year or the minimum amount.

This amount is subject to a minimum amount as mentioned in the table below (refer **'Nominal Value of Securities admitted (₹)'**). The average number of folios (ISIN positions) for an issuer is arrived at by dividing the total number of folios for the entire financial year by the total number of working days in the said financial year. However, temporary ISIN is not considered for the purpose of computing the annual charges.

Nominal value of securities admitted (₹)	Annual custodial fee payable by an issuer to each depository (₹) (*)
Upto 2.5 Cr (applicable only for issuer of unlisted shares)	5,000/-
Upto 5 Cr	9,000/-
Above 5 Cr and upto 10 Cr	22,500/-
Above 10 Cr and upto 20 Cr	45,000/-
Above 20 Cr	75,000/-

Source: SEBI and Company tariff documents
*Note: *plus taxes as applicable*

The presence of a multi depository system in India has resulted in a competitive scenario and helped in reducing the transaction charges for the investors. Although prices are planned by the depositories, the SEBI still has a right to govern and regulate them, as and when required. But at the same time this industry has a strong entry barrier as each of the current depositories are backed by large institutions i.e., CDSL by the BSE, SBI, Bank of India and some other banks and NSDL by IDBI, UTI and NSE.

6. Database Management Services

Insurance repository

The insurance regulator and development authority of India (IRDAI) is considering steps towards mandating electronic issuance and dematerialization of all insurance policies in electronic insurance account (e-IA) maintained by insurance repository (IR). Dematerialization will reduce the physical paperwork requirements and the policies will be issued digitally and stored in an e-insurance account (e-IA). Dematerialization of insurance policies would allow a policyholder to create a portfolio of insurance policies and store them in an electronic form with an insurance repository. The e-IA would help policyholders get access to their policies (life and non-life) digitally and keep track of insurance policies under one platform.

Currently, four companies are performing the function of insurance repositories. These companies are:

- NSDL Database Management Limited
- CAMS Repository Services Limited
- CDSL Insurance Repository Limited
- KARVY Insurance Repository Limited

Insurance repositories perform an array of functions for policy holders who have been issued a policy in electronic form. These services to the policy holders are free of cost, convenient and secure and hence are more desirable for them. Even subscribers not holding an electronic policy can have an account with the insurance repository and opt for conversion of physical policy into electronic policy through the repository. The insurance repository provides basic policy related services free of costs to the subscribers. However, for premium services, it can offer extended services against fees. Examples of basic services include online policy maintenance and access, policy status updates, printing facility, annual statements in electronic form, mini statement, etc.

For the insurers, the basket of services are provided by the repositories such as issuance / servicing of policies to the insured against agreed fees help them focus better on the core business capabilities.

Benefits for policyholders

Convenience in policy servicing - Insurance repositories offer mechanism where all the details can be accessed online, and service requests can be raised. In addition, provision of timely alerts and updates across all the insurers are also provided. The number of service touch points are increased.

Ease of Usage – Policyholders do not face any hassle of storing the policy in physical form as the storage is done online. This helps save paper and eliminates storage risks.

Simplification of claims process – Policyholders can have a single view and details of all the policies with the repository. This makes the process of claims easier and more systematic.

Nominee Access – Policyholders can use Insurance Repository as a tool for enabling access of their insurance policies to policy nominees.

Benefits for insurers

Insurance service centres and online platform – Enables insurers to digitally interact with their customers and issue them electronic policies and address service requests. Reduces cost and overheads of physical channels as well as improve customer experience.

Business related activities – Repositories can assist insurers for managing business-related activities by using various technology solutions.

Renewal revenue management services – Insurers can use repositories services to facilitate the customers to pay the renewal premiums with ease.

Issuance of policies in electronic form on meeting laid-down criteria

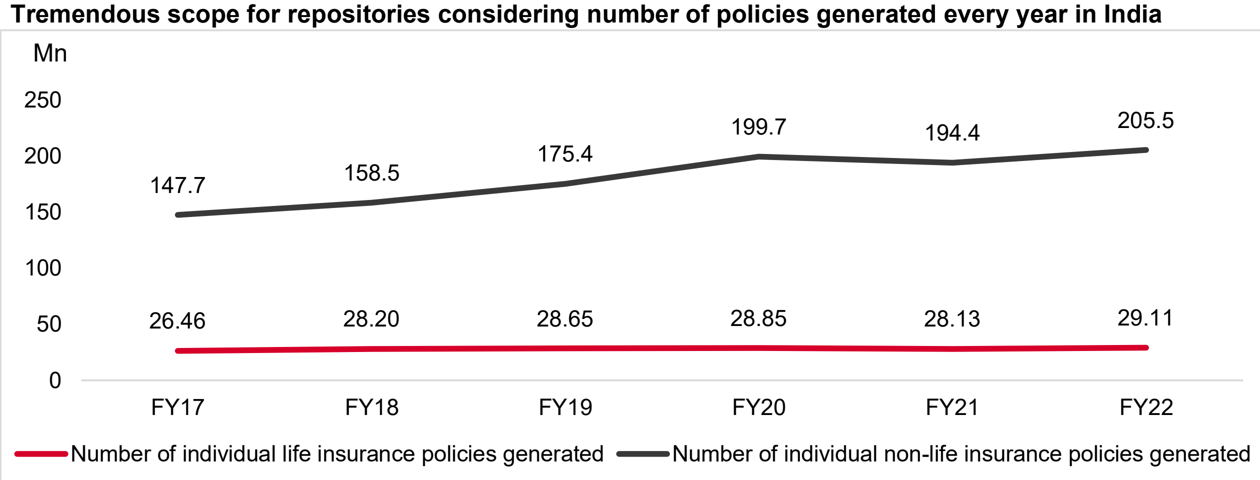
IRDAI issued a regulation in June 2016 on issuance of electronic insurance policies. The regulation made it mandatory for life insurance companies to issue policies in electronic form if the sum assured is ₹ 10 lakh or more, or annual premium is ₹ 10 thousand or more. In case of health insurance policy, the sum assured needs to be ₹ 5 lakh or more, apart from annual premium of ₹ 10 thousand and above. For general insurance policies, e-insurance is needed if anyone is paying an annual premium of ₹ 5,000 and above or has a sum insured of ₹ 10 lakh or more. For Motor retail insurance policies, e-insurance is mandatory for all policies. The rule is applicable irrespective of a policy being bought online or offline.

IRDAI also permitted the players to offer discounts in the premium rates to policyholders for electronic insurance policies, in accordance with the rates filed under the product-approval guidelines. The reason for this was the lowered cost of e-insurance policy issuance, maintenance and handling as against a physical copy. However, a large part of policy holders demands a physical copy in addition to the electronic policy.

Revenue model

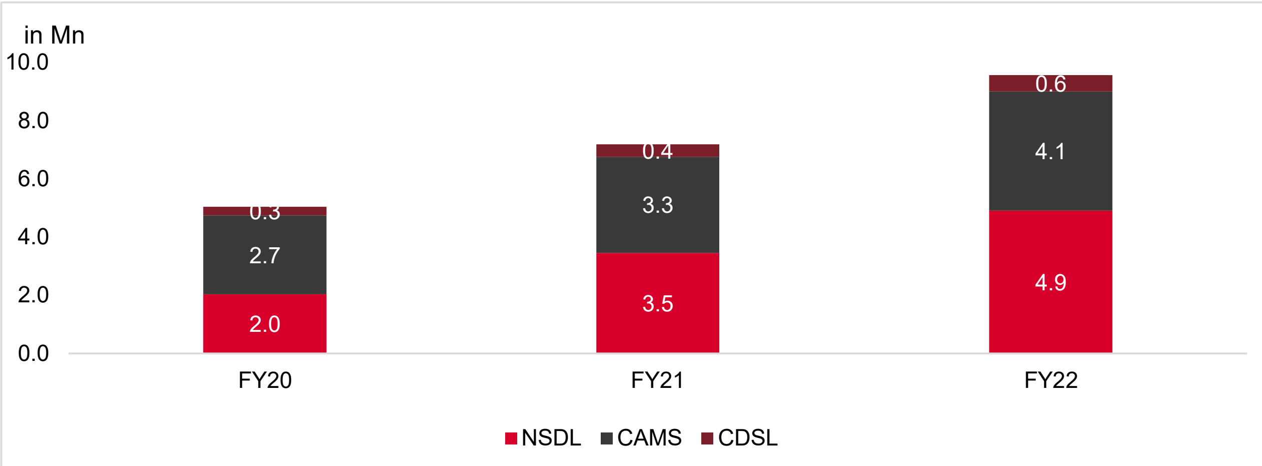
The system enables policy holders buy and keep insurance policies in electronic form and eliminate paper and associated risks. The repositories are paid directly by the insurers and policy holders are not charged. The revenue model of insurance repositories is based on both new policy issuance, existing policy conversion and annual maintenance charges to insurers.

Tremendous scope for repositories considering number of policies generated every year in India



Source: IRDAI, CRISIL MI&A Research

NDML leading in cumulative count of policies dematerialized amongst NDML, CAMS and CDSL



Note: Data for Karvy Repository not available
Source: Company annual reports, CRISIL MI&A Research

At end of Fiscal 22, nearly 10 million policies have been dematerialized, however, every year around 25 million to 30 million polices are generated by all life insurance companies. Therefore, there is a huge opportunity which is yet to be filled by insurance repositories.

KYC Registration Agency (KRA)

With a view to bring uniformity in the KYC requirements in the securities markets, SEBI has stipulated uniform KYC requirements to be adopted by all SEBI registered market intermediaries for their clients and has also issued the SEBI {KYC (Know Your Client) Registration Agency (KRA)}, Regulations, 2011. These Regulations create the framework for maintenance and inter-operability of KYC records amongst SEBI registered intermediaries.

KRAs are facilitating registration and maintenance of KYC records, inquiry of KYC status and download of KYC information to intermediaries through various interfaces including Application Programming Interface (API). KRAs work like a depository of KYC records and facilitates single point of updation and access for investors and intermediaries. Currently, there are six different KYC registration agencies in place to help the investors

- NSDL Database Management Limited ("NDML")
- CAMS Investor Services Private Limited ("CISPL")
- NSE Data & Analytics Limited (formerly Dotex International) ("NDAL")
- Karvy Data Management Services Limited ("KDMSL")
- CDSL Ventures Limited ("CVL")
- BSE Technologies Private Limited ("BSETPL")

Maintenance of KYC of investors in KRA system is mandatory for SEBI registered intermediaries. The KRA system significantly reduces the efforts in repeated KYC process and also ensures consistency and market wide updation of KYC records. KRA system also provides an additional layer of check on the KYC data and documentation followed by intermediaries.

NDML KRA holds KYC records of more than 14.5 million investors. Growth of KYC records is closely linked to growth of investor participation in securities' markets.

KYC User Agency

Authentication User Agency (AUA) is an entity engaged in providing Aadhaar Enabled Authentication Services to market intermediaries using Aadhaar based authentication. KYC User Agency (KUA) means a requesting entity which, in addition to being an AUA, uses e-KYC facility provided by the UIDAI (Unique Identification Authority of India) to facilitate Aadhaar based secure and online e-KYC of the Aadhaar holders. Aadhaar based e-KYC is one of the most convenient, secure and prevalent method for customers to establish their identity in an online manner and complete KYC requirements. There are several AUA, KUA companies which have received approval from UIDAI to facilitate the intermediaries to perform Aadhaar based e-KYC. NDML has also received approval from UIDAI to operate as a AUA and KUA.

Payment aggregator

India's digital payments industry has been growing rapidly. As discussed in the earlier section, between Fiscal 2018 and 2023, the volume of digital payments transactions has increased from 14.6 billion to 113.9 billion, causing its share in overall payment transactions to increase from 59% in Fiscal 2018 to 99% in Fiscal 2023. During the same period, value of digital transactions has increased from ₹ 1,370 trillion in Fiscal 2018 to ₹ 2,087 trillion in Fiscal 2023.

Payment aggregators (PAs) play an important role in facilitating digital payments transactions. PAs are entities that facilitate e-commerce sites and merchants to accept various payment instruments from the customers for completion of their payment obligations. As on 16th June 2023, the RBI has granted in-principle authorization to 59 entities (36 existing PAs and 23 new PAs), however, only 36 existing PAs are allowed to operate as Payment aggregators. New PAs cannot commence operations until they are granted 'authorisation' under Section 7 of the Payment and Settlement Systems Act, 2007. RBI has advised submission of System Audit Report (SAR) within specified time. All payment aggregators also have to comply with other requirements under the Guidelines and fulfil additional conditions, if any, stipulated by RBI.

NDML was appointed by Ministry of electronics and information Technology to serve and support government departments and bodies in providing online payment collection services from citizens for Govt. to citizen services. In March 2020, RBI had decided to bring regulatory oversight under Payment and Settlement System Act on Payment Aggregators. Accordingly, NDML complied with RBI guidelines for payment aggregators and applied to RBI for approval and has received "In-Principal approval" from RBI. NDML is further expanding its reach of operations from traditional e-Governance for government departments & ministries to Government run educational institutes, universities & colleges, urban local bodies, credit co-op societies, Insurance sectors & capital markets to support digital payments with its stack of technology enabled solutions.

Registrar and Transfer Agents (RTAs)

SEBI guidelines makes it mandatory to appoint Registrars to an issue (RTI) and Share transfer agent (STA), in relation to the management of public offer introduced by the body corporate in general public, and to service the shareholders. Registrar and transfer agents are agencies that record and maintain a complete record of investors & their transactions on behalf of the companies. RTAs also help the companies in ensuring compliance to various regulatory, legal provisions related to disclosures and investor services. RTAs also facilitate the companies to connect with depository system for servicing the investors through depository system.

Registrar to an issue – The registrar to an issue is responsible for collection of applications from investors with respect to an issue, proper maintenance of applications and assisting the corporate body in terms of determining the basis of allotment of securities, finalizing the list of persons entitled to allotment of securities, processing and dispatching allotment letters and executing other related documents in respect of the issue.

NDML is registered with SEBI as a Registrar & Transfer Agent and is supporting various issuers with depository connectivity and security holder record maintenance and servicing aspects.

Given the concentrated nature of this market, CRISIL MI&A believes that there is a significant growth opportunity to further develop this business.

Accreditation Agency

The class of investors who understand various financial products and the risks returns associated with them and therefore, can take informed decisions regarding their investments, is recognized by many securities and financial market regulators around the globe. These investors are typically termed as Accredited Investors or Qualified Investors or Professional Investors. Accredited Investors are capable of dealing in relatively riskier investment products due to their financial capacity, ability to absorb financial losses and understanding of financial products. They may either possibly be well advised due to their ability to hire expert managers/ advisors or be well informed with sufficient financial acumen. SEBI introduced the concept of Accredited Investors with a light-touch regulatory framework for the various securities market products and services envisaging that it may be beneficial to the Indian securities market.

Persons desirous of being reckoned as AIs need to approach an Accreditation Agency for accreditation. Accreditation Agencies are responsible for:

- verification of documents submitted by applicants for accreditation
- timely processing of applications for accreditation and issuance of accreditation certificate
- maintaining data of accredited investors
- verification of accreditation status
- maintaining confidentiality of investor information at all times
- any other responsibilities as may be specified by SEBI from time to time

To fulfil these responsibilities SEBI mandated that Accreditation agencies should have the requisite infrastructure including systems and manpower. Subsidiaries of recognized stock exchanges (with some conditions) and subsidiaries of depositories are eligible to carry out the accreditation process after making an application to the SEBI. Following are names of the companies which are Accreditation agencies in India which can provide Accredited status to investors:

- NSDL Database Management Limited
- CDSL Ventures Limited
- BSE Administration & Supervision Limited

The renewal of recognition of Accreditation agencies are subjected to their satisfactory performance.

National Skills Registry

National Skills Registry (NSR) is a data depository project of NDML & nasscom, playing key role in the IT/ITeS industry in recruitment, background checks and employee engagement lifecycle. Many large companies in IT/ITeS industry have adopted NSR registration as a requirement for new employee onboarding. NSR as an industry model enables a good use case and framework for "Employer – Employee – Job Applicant – Background Checker" engagement, facilitate and strengthen recruitment and background check practices throughout the employee onboarding lifecycle.

Around 294 companies had been onboarded on NSR as "Subscriber" companies at end of Fiscal 2022. These companies participate in NSR system by registering new employees as well as by accessing information of existing registered professionals. These companies add up to significant employee strength in the Indian IT / ITeS industry. At end of Fiscal 2022, 2.21 million knowledge professionals have registered on NSR and have IT Professional Identification Number (ITPIN). In fiscal 2022, 0.25 million Knowledge Professionals joined NSR.

Registration Count (million)	FY18	FY19	FY20	FY21	FY22
Cumulative Registration count	1.6	1.74	1.88	1.95	2.21
NSR Registration Count	0.11	0.15	0.14	0.07	0.26

Source: Company websites, Annual Reports, CRISIL MI&A Research

Digital customer onboarding platforms

Digital customer onboarding platforms facilitates online customer onboarding process primarily for financial services of intermediary companies. Such platforms facilitate these companies in opening of client accounts and perform client identification and verification by performing e-KYC. The platform supports various channels of horizontal and vertical integrations to support services such as verification of Email / Mobile / PAN / DigiLocker / Aadhaar XML / Bank verification / Video IPV / documents upload / KRA integration / e-Sign integration etc. Further, the platform can get integrated with various KRAs to provide KYC data of the client to the companies. The platforms could be evolved further with technological upgrades and systemic integrations to cater to custodians, mutual fund distributors, asset management companies, portfolio management solution providers and the banking industry. Increasing demand for financial services in India could represent increase in opportunity for companies providing digital customer onboarding services as KYC process is mandatory to avail almost all financial services. NDML has also developed a digital customer onboarding platform "Instigo" to assist brokers and depository participants with onboarding new customers.

Fixed deposit products aggregator platform

NDML has set-up a tech-driven interface for distribution of fixed deposit (FD) products which connects FD issuers and FD distributors. Through this platform, FD distributors can offer multiple FDs to their clients; similarly, FD issuers can place their FDs through multiple FD distributors on the platform.

SEZ Online

SEZ policy intends to make SEZs an engine for economic growth supported by quality infrastructure and administrative support with single window clearance. To install confidence in investors and signal the Government's commitment to a stable SEZ policy regime, the SEZ Act, 2005, supported by SEZ Rules, came into effect in February 2006, providing for drastic simplification of procedures and for single window clearance on matters relating to central as well as state governments.

On behalf of Ministry of Commerce and Industry, NDML has developed an integrated e-governance solution that facilitates the nationwide processing of transactions by SEZ developers, co-developers, and units with SEZ administration. It was introduced in 2010 and portal facilitates the establishment of SEZs, SEZ units and the submission and approval of multiple clearances. The system also supports online submission and approval of various customs related import, export declarations such as Bill of Entry / Shipping Bill which are subjected to online review and approval by Customs officers in SEZs. SEZ Online system is implemented across 250+ SEZs in the country.

7. Peer Comparison

In this section, CRISIL MI&A has analysed the operational performance and key financial indicators of players providing Depository, Insurance Repository, KYC-Registration Authorities, RTAs, Skill registry and database management services, on a standalone basis, like National Securities Depository Limited (NSDL), Central Depository Services Limited (CDSL), NSDL National Insurance Repository (NIR), CDSL Insurance Repository Limited (CIRL) CAMS Insurance Repository Services Limited , KFin Technologies Limited (KFintech), Link Intime, CDSL Ventures Limited (CVL) and NSDL Database Management Limited (NDML).

Depository & Insurance Repository Segment

NSDL and CDSL are share depositories that handles most of the securities held and settled in dematerialized form in the Indian capital market. NSDL through its subsidiary National Insurance Repository (NIR), CDSL through its subsidiary CDSL Insurance Repository limited and CAMS through its subsidiary CAMS Insurance repository services limited provides database services for insurance policies. Insurance Repository system, introduced by Insurance Regulatory and Development Authority of India (IRDAI), provides policyholders a facility to keep insurance policies in electronic form and to undertake changes, modifications and revisions in the insurance policy with speed and accuracy in order to bring about efficiency, transparency and cost reduction in the issuance and maintenance of insurance policies. In this segment we are comparing three players.

Registrar and Transfer Agents (RTA)

Registrar and Transfer Agents (RTA) are SEBI registered institutions associated with a company to maintain investors' records. The functions of the RTAs are to track and keep record of investors' transactions related to buying, redeeming, and switching in/out in mutual fund, bank mandate and updating personal information. RTAs are equipped with professional and skilled maintenance of investor and AMC data. In this segment we are comparing two players KFin Technologies Limited (KFintech) and Link Intime.

KYC Registration Authority (KRA):

KYC (Know Your Customer) Registration Authorities (KRA) act as repository of KYC data in the securities market and are responsible for storage, safeguard, and retrieval of KYC documentation as per requirement. With a vision to bring uniformity in the KYC requirements in the capital & security market, SEBI, in its circular dated Dec'2011, has mandated uniform KYC guidelines and requirements to be adopted by all SEBI registered market intermediaries for their clients. These regulations create and formalize structure for sharing of KYC records among SEBI registered intermediaries. NSDL Database Management Limited which is a subsidiary of NSDL is focused on Digitalization, Automation, Transformation & End-to-end Integration of businesses in the Financial Sector, e-Governance, Citizen Services & Industry Projects and provides KYC Registered Agency and is SEBI registered Registrar and Transfer Agents. CDSL Venture Limited is a subsidiary of CDSL which also act as KRA.

Financial performance of players (FY23)

Revenue from operations for players (in ₹ million) (FY2023)

Segment	Players	FY20	FY21	FY22	FY23
Depository	National Securities Depository Limited	2495.86	3355.78	3692.82	4091.69
	Central Depository Services Limited	1681.52	2705.84	4148.03	4506.00
Insurance Repository	NSDL National Insurance Repository	22.01	21.96	23.28	48.33
	CDSL Insurance Repository Limited	4.47	3.57	3.53	NA
	CAMS Insurance Repository Services Limited	209.35	148.72	187.77	NA
Registrar & Transfer agents	KFintech	4405.76	4717.90	6247.09	6964.50
	Link Intime$	437.95	485.31	NA	NA
KYC Registration Agency	CVL	557.60	719.00	1349.31	NA
	NDML	705.60	685.90	927.40	NA

Note: $Financial year is ending June 2019 and 2020, Above numbers are on a Standalone basis, NA= Not Available, Source: Company Reports, CRISIL MI&A Research

Financial performance for peers (FY2023)

CDSL had highest PAT margin of 50.01% in FY2023 followed by NSDL which had 43.42% of PAT margin on a standalone basis in the depository segment among the peer group for which data is available. PAT margin for CDSL saw a reduction whereas for NSDL it has been stable for the FY23 period. In the insurance repository segment, CDSL Insurance Repository had PAT of 58.57% whereas NSDL National Insurance Repository had 32.39% PAT in FY2022. In the KYC Registration Authority (KRA) business, CVL had higher PAT margin of 49.65% as compared to NDML which had PAT margin of 44.60% in FY2022.

PAT margin - Profitability of Peers (FY23)

Segment	Players	FY20	FY21	FY22	FY23	Average FY20-FY22
Depository	National Securities Depository Limited	37.32%	45.32%	42.96%	43.42%	41.87%
	Central Depository Services Limited	36.58%	51.24%	54.95%	50.01%	47.58%
Insurance Repository	NSDL National Insurance Repository	(6.28%)	(37.30%)	32.39%	34.65%	(3.73%)
	CDSL Insurance Repository Limited	30.78%	57.30%	58.57%	NA	48.88%
	CAMS Insurance Repository Services Limited	(2.03%)	11.15%	20.65%	NA	9.92%
Registrar & Transfer agents	KFintech	2.82%	(12.71%)	24.15%	27.51%	4.75%
	Link Intime$	15.09%	17.02%	NA	NA	16.06%
KYC Registration Agency	CVL	42.17%	46.95%	49.65%	NA	46.26%
	NDML	36.50%	38.33%	44.60%	NA	39.81%

Note: $Financial year is ending June 2019 and 2020. Above numbers are on a Standalone basis, NA= Not Available, Source: Company Reports, CRISIL MI&A Research

CDSL had highest EBITDA margin of 66.23% in FY2023 followed by NSDL which had 58.11% of EBITDA margin on standalone basis in the depository segment among the peer group for which data is available. EBITDA margin for CDSL saw high variation whereas for NSDL it has been stable. In the insurance repository segment, CDSL Insurance Repository had highest EBITDA of 53.34% whereas NSDL Insurance Repository had EBITDA margin of 39.06% in FY2022.

EBITDA margin of Players (FY23)

Segment	Players	FY20	FY21	FY22	FY23	Average FY20-FY22
Depository	National Securities Depository Limited	49.14%	60.13%	57.89%	58.11%	55.72%
	Central Depository Services Limited	55.09%	68.41%	72.37%	66.23%	65.29%
Insurance Repository	NSDL National Insurance Repository	6.89%	(22.05%)	39.06%	40.63%	7.96%
	CDSL Insurance Repository Limited	75.80%	59.66%	53.34%	NA	62.93%
	CAMS Insurance Repository Services Limited	24.95%	16.67%	30.35%	NA	23.99%
Registrar & Transfer agents	KFintech	36.81%	44.96%	46.81%	43.93%	42.86%
	Link Intime$	27.49%	30.83%	NA	NA	29.16%
KYC Registration Agency	CVL	58.44%	63.14%	66.25%	NA	62.61%
	NDML	50.58%	53.05%	61.67%	NA	55.10%

Note: $Financial year is ending June 2019 and 2020. Above numbers are on a Standalone basis, NA= Not Available; Source: Company Reports, CRISIL MI&A Research

At end of fiscal 2023, NSDL had stable 18.06% of employee cost as a % of revenue from operation. Within the depository segment, CDSL had relatively low employee cost of 15.21% in FY23 with higher variance as compared to last fiscal. In the Insurance Repository segment, CAMS Insurance Repository and CDSL Insurance Repository had relatively higher employee cost of 46.48% and 81.01% respectively in FY22 whereas NSDL Insurance Repository had lowest employee cost of 32.31% in FY2022. CVL had the lowest employee cost of 4.16% followed by NDML with 17.31% of employee cost as a % of revenue from operations.

Employee cost as a % of revenue from operations (FY23)

Segment	Players	Emp Cost as a % of Revenue			
		FY20	FY21	FY22	FY23
Depository	National Securities Depository Limited	23.00%	19.33%	18.71%	18.06%
	Central Depository Services Limited	23.77%	12.63%	9.90%	15.21%
Insurance Repository	NSDL National Insurance Repository	33.83%	68.95%	32.31%	31.98%
	CDSL Insurance Repository Limited	50.69%	130.39%	81.01%	NA
	CAMS Insurance Repository Services Limited	51.81%	62.02%	46.48%	NA
Registrar & Transfer agents	KFintech	42.54%	38.91%	36.01%	39.10%
	Link Intime$	44.02%	42.83%	NA	NA
KYC Registration Agency	CVL	8.12%	6.12%	4.16%	NA
	NDML	14.06%	19.30%	17.31%	NA

Note: $Financial year is ending June 2019 and 2020. Above numbers are on a Standalone basis, NA= Not Available; Source: Company Reports, CRISIL MI&A Research

CDSL Ventures Limited (CVL) had highest cumulative KYC records of 43 million in FY22 whereas NDML had 14.6 million KYC records in FY22. CVL had total of 2,097 registered intermediaries in FY22 from 2,140 in FY18 whereas NDML had grown to more than 1,500 registered intermediaries in FY22 from 1,195 in FY18.

Operational parameters for KRAs (FY22)

Particular		FY18	FY19	FY20	FY21	FY22
Cumulative KYC Record (millions)	NDML	8.3	9.2	10	11.6	14.6
	CVL	17.1	18.8	21.6	28.1	43
Registered Intermediaries	NDML	1,195	1,299	1,339	1,395	More than 1,500
	CVL	2,140	2,598	2,266	2,767	2,097

Source: Company websites, Annual Reports, CRISIL MI&A Research

8. Payment Banks

Overview of Payment Bank Licence

In 2013, the RBI constituted a committee to study "Comprehensive Financial Services for Small Businesses & Low-Income households" headed by Dr. Nachiket Mor. The focus of the committee was to recommend innovative solutions to accelerate financial inclusion in unbanked and underbanked section of the society in a cost-effective way. The committee recommended setting up of a specialized bank ("Payments Bank") to cater to the low-income groups. The draft guidelines for setting up Payments Bank were issued by the RBI in July 2014, and comments were sought from various participants by August 2014. Finally, the RBI has released the final guidelines for licensing of Payments Bank in November 2014. The guidelines were announced with aim to create a banking entity which is adequately capitalised, financially inclusive and has a competitive business model.

Guidelines for Payments Bank Licence

Parameters	Guidelines
Objective	• Widening the spread of payment services and deposit products to small businesses, low-income households, migrant labour workers and other unorganized entities by enabling high volume low value transactions in deposits and payments/remittance services in a secured technology-driven environment.
Eligible Promoters	• The eligible entities which can set up a payment bank include an existing non-bank, prepaid instrument issuers (PPI) & other entities such as individuals / professionals; Non-Banking Finance Companies (NBFCs), corporate BCs, mobile telephone companies, super-market chains, companies, real sector cooperatives; that are owned and controlled by residents; and public sector entities. • The promoter/promoter group can also enter into a joint venture with an existing scheduled commercial bank to set up a payment bank. If the promoter succeeds in obtaining a payment's bank licence, it would be required to set up the payment bank under a separate structure unless it is an existing PPI licence holder opting for conversion into a payments bank.
Scope of activities	• The payments bank shall confine its activities to further the objectives for which it is set up. Therefore, the payments bank is permitted to set up its own outlets such as branches, Automated Teller Machines (ATMs), Business Correspondents (BCs), etc. to undertake only certain restricted activities permitted to banks under the Banking Regulation Act, 1949. • The payment banks can accept demand deposits (Non-NRI deposit), issue ATM/ debit cards/PPIs, offer remittance services (incl. cross-border remittances) and internet banking services, act as a BC for another bank and undertake non-risk sharing simple financial services activities not requiring any fund commitment, such as distribution of MFs, insurance products,

	pension products, etc. and undertake utility bill payments. • Given that the primary role of payments bank is to provide payments and remittance services and demand deposit products to small businesses and low-income households, payments banks are restricted to holding a maximum balance of ₹ 100,000 per individual customer. On 7th April 2021, the limit was further increased to ₹ 200,000 per individual customer.
Deployment of Funds	• The payments bank cannot undertake lending activities. Apart from amounts maintained as Cash Reserve Ratio (CRR) with RBI on its outside demand and time liabilities, it will be required to invest minimum 75 per cent of its "demand deposit balances" in Government securities/Treasury Bills with maturity up to one year that are recognized by RBI as eligible securities for maintenance of Statutory Liquidity Ratio (SLR) and hold maximum 25 per cent in current and time / fixed deposits with other scheduled commercial banks for operational purposes and liquidity management.
Capital Requirement	• The minimum paid-up equity capital of the payments bank shall be ₹ 1 Bn. The payments bank shall be required to maintain a minimum capital adequacy ratio of 15 per cent of its risk weighted assets (RWA) on a continuous basis, subject to any higher percentage as may be prescribed by RBI from time to time. Tier I capital should be at least 7.5 per cent of RWAs. Tier II capital should be limited to a maximum of 100 per cent of total Tier I capital.
Promoter Contribution	• When the payments bank reaches the net worth of ₹5 Bn, and therefore becomes systemically important, diversified ownership and listing will be mandatory within three years of reaching that net worth. • The promoter's minimum initial contribution to the paid-up equity capital shall be at least 40% for the first 5 years.
Foreign Shareholding	• Foreign shareholding has been allowed up to 74% (automatic route up to 49% of the paid-up capital and approval route beyond that till 74%) • At all times, at least 26 per cent of the paid-up capital will have to be held by residents. In the case of Foreign Institutional Investors (FIIs) / Foreign Portfolio Investors (FPIs), individual FII / FPI holding is restricted to below 10 per cent of the total paid-up capital, aggregate limit for all FIIs /FPIs / Qualified Foreign Investors (QFIs) cannot exceed 24 per cent of the total paid-up capital, which can be raised to 49 per cent of the total paid-up capital by the bank concerned through a resolution by its Board of Directors followed by a special resolution to that effect by its General Body. • In the case of NRIs, the individual holding is restricted to 5 per cent of the total paid-up capital both on repatriation and non-repatriation basis and aggregate limit cannot exceed 10 per cent of the total paid-up capital both on repatriation and non-

	repatriation basis. However, Non-Resident Indian (NRI) holding can be allowed up to 24 per cent of the total paid-up capital both on repatriation and non-repatriation basis provided the banking company passes a special resolution to that effect in the General Body.
Other Conditions	• At least 25% of a Payments Bank's physical access points (own or others' network; not branches) have to be in rural centres

Source: RBI, CRISIL MI&A Research

In August 2015, the RBI gave "in-principle" licences to eleven payment banks. These new banks were expected to accelerate financial inclusion in India. However, of the 11 in-principle payment licensees, three withdrew their application subsequently. Aditya Birla Idea Payments Bank also closed their operations in September 2019.

The payments bank which are currently operational include Airtel Payments Bank, India Post Payment Bank (IPPB), Fino Payments Bank, PayTM Payments Bank, NSDL Payments Bank and Jio Payments Bank.

Payments Bank in India

Name of the Payments Bank	Year of Incorporation	Year of Commencement of Operation
Airtel Payments Bank	November 2016	November 2016
Fino Payments Bank	April 2017	June 2017
PayTM Payments Bank	November 2017	November 2017
Jio Payments Bank	November 2016	April 2018
India Post Payments Bank	September 2018	September 2018
NSDL Payments Bank	August 2016	October 2018

Source: Company Website, CRISIL MI&A Research

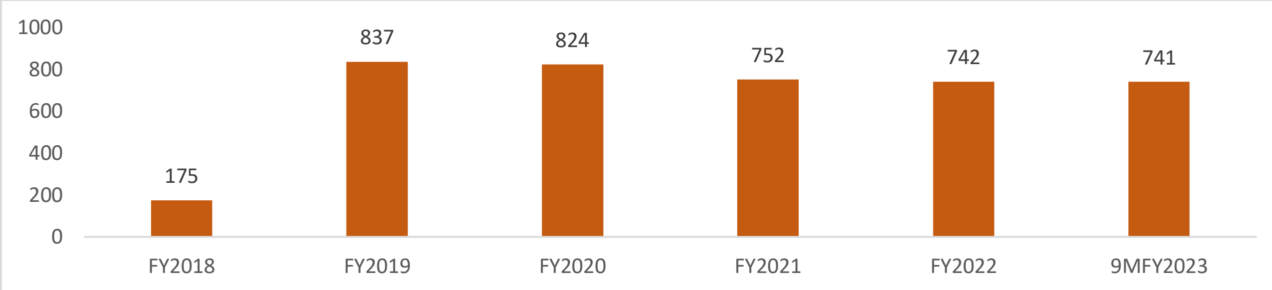
As per the guidelines for on-tap licensing of small finance banks (SFB) in the private sector, released in December 2019, payments banks can also apply for conversion into SFB after five years of operations, if they are eligible otherwise based on the guidelines.

Payment Banks have led to proliferation of non-branch type touchpoints

After granting of Payment Bank licence, it is seen that, true to the form, the payment banks have set up a vast network of touchpoints by leveraging established nature of some of their parent network and through collaboration. This extensive alternative banking channel has brought about a paradigm shift in the way people used to avail banking services. Now, the customers need not travel long to go to a traditional bank branch, instead, they can visit the local banking touchpoint at their convenience and avail assisted digital banking services such as new account opening, deposit, withdrawal, money transfer and utility bill payments.

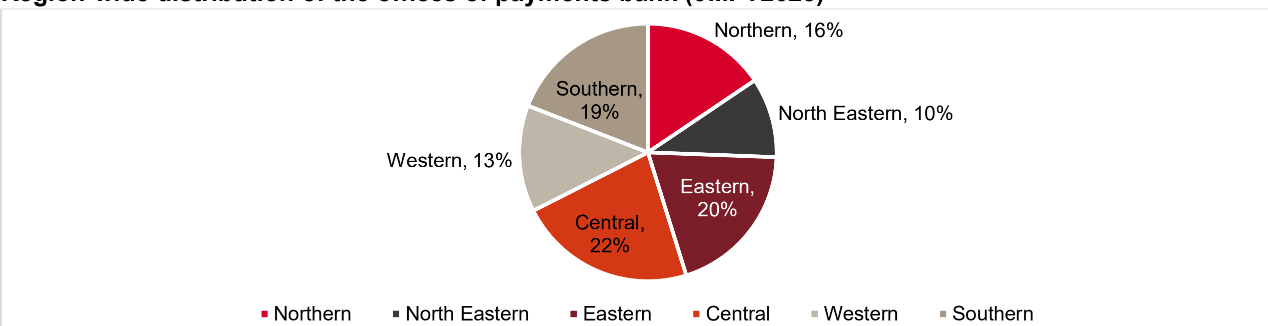
For instance, NSDL Payments Bank has partnered with 45 plus corporate BCs to offer digital banking services, thus ensuring quick rollout across the country. Fino Payments Bank has widened its network through collaboration and partnerships with Bharat Petroleum to use their outlets as digital banking points. Airtel Payments Bank, on the other hand, has leveraged its parent's network of retailers and Kirana shops and India Post Payment Bank has enabled the post offices in India to provide payment banks services.

Functioning offices of payments banks in India as at end of 9MFY2023



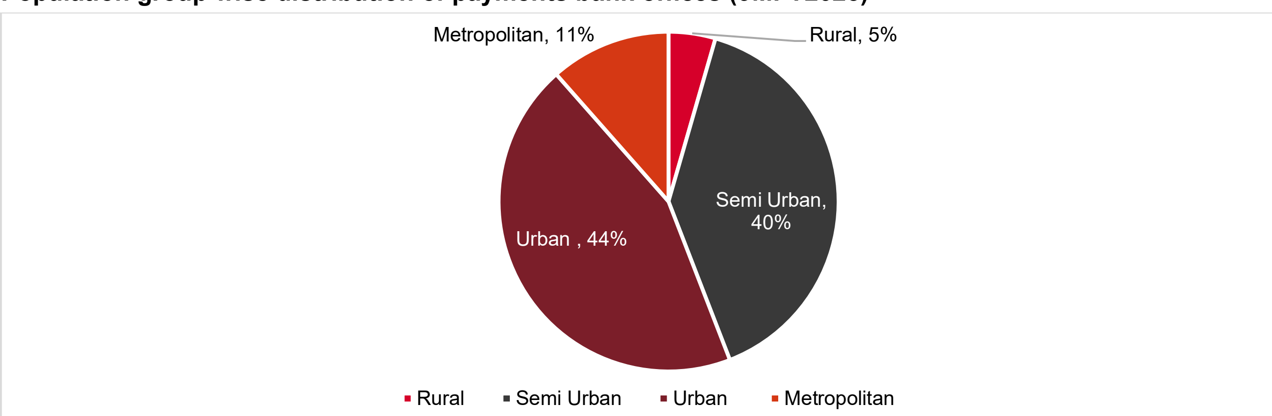
Note: Data includes only functioning offices and no banking touchpoints; Source: RBI, CRISIL MI&A Research

Region-wide distribution of the offices of payments bank (9MFY2023)



Note: Data includes only functioning offices and no banking touchpoints; Source: RBI, CRISIL MI&A Research

Population group wise distribution of payments bank offices (9MFY2023)



Note: Data includes only functioning offices and no banking touchpoints; Source: RBI, CRISIL MI&A Research

Rural areas have the least presence of payments bank functioning offices, whereas urban areas have the highest number of functioning offices as of 9MFY23. However, CRISIL believes that with the relatively under penetration in rural centers and increased focus of government towards financial inclusion, the functioning offices of payments bank is likely to witness growth in rural areas.

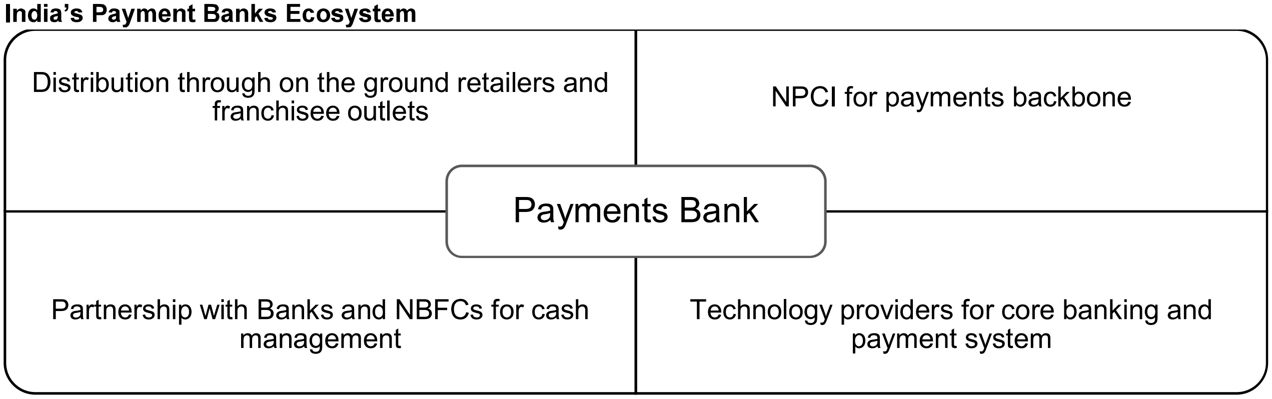
In the current scenario, these functioning offices form a very small proportion of total number of touchpoints of payments banks, as they leverage on their vast network of merchants and doorstep service providers to provide banking and related services in the last mile. For instance, NSDL Payments Bank had 2.3 million touchpoints of Dec 2022 while the Paytm Payments bank had 21 million touchpoints across India as of FY21. India Post Payments Bank had a network of 0.14 million access points and its doorstep bankers who provide financial service to the customer at the end of fiscal 2022. Airtel Payments Bank, which is the only payments bank with a mobile network operator (MNO) parent had approximately 0.5 million banking touchpoints, leveraging on its parent's existing network of retailers who provide mobile connections and recharges at their shop. These touchpoints have enabled payments bank to garner an increasing share of the deposits pie.

NSDL Payments Bank is looking to increase additional CASA accounts through its BC channels and via Owned banking channel, to get scale up account opening and in turn cross sell other banking products. It is also working towards expanding its network of customer service points, enrolling new business partners across the nation, and increasing the breadth of its banking products and services to reach and cater to a larger set of customers.

The Payment Banks Ecosystem

To build a comprehensive suite of low-cost banking and payment services for the huge customer base, payment banks collaborate with multiple partners across distribution networks, the national payment infrastructure, technology providers and banking and payment providers. Payment banks rely heavily on the use of various interoperable platforms through services enabled by NPCI for facilitation of digital transactions.

India's Payment Banks Ecosystem



Source: CRISIL MI&A Research

To summarise, payment banks leverage distribution, technology and partnerships to maximise their outreach and effectiveness as it allows them to go Phygital i.e., have a mix of physical outlets via merchant networks and partnerships combined with digital platform enabled solutions/offerings at these merchants. This operating model allows potential customers with a choice of availing financial services with assistance from agents at the banking outlet/touchpoints or availing self-service through the mobile banking application.

Payment banks' make use of the phygital model in rural areas

Banking transactions are largely a trust affair, and therefore, banks have traditionally relied upon a physical branch along with digital presence to be able to build trust with customers. However, physical models have not worked in rural banking due to high costs, while India's rural customers are not ready to go completely digital financially. Hence, the banks are relying upon the phygital model (also known as an assisted-digital model) – a combination of digital channel and human touch at the front end to assist customers – to address the pain points of a rural customer – limited accessibility, financial and digital literacy.

Some of the key advantages of using phygital model include:

1. **Digitization of customer cash:** Cash transaction is the primary reason for account dormancy in rural India. The local banks and other financial institutions, through their Phygital model could digitize customer income and expenses, which could drive account primacy and encourage banking behaviour.
2. **Phygitisation of local merchants:** The financial institutions could leverage the local merchant or kirana stores as a trust point, where the customer will get assistance in adopting digital mode of using financial services i.e. helping the customer in downloading the application, checking their balances and making a fund transfer. The familiarity of the merchant and the handholding will boost customer confidence of being able to manage such transaction on their own. The financial institutions can later elevate these local merchants to the status of a banker, thereby establishing their touchpoint and trust-point in a scalable and cost-effective manner.

The phygital model, thus has created new value propositions and helped companies respond with far greater efficiency. Going forward, this model of operation is expected to build organizational resilience through more anytime, anywhere touchpoints and increase opportunities for mutually beneficial partnerships with various stakeholders.

However, not all payments banks operate in the rural and semi-urban regions, indicating variations in their business model and target customer segments. For instance, NSDL Payments Bank has a stronger focus on large cities and urban areas and primarily operates through digital channels. On the other hand, Fino Payments Bank uses the phygital model (assisted digital model) to drive business through scale in the rural and semi-urban regions.

Customer segment and products of Payments Banks

Payment banks generally focus on four key customer segments – unbanked, underbanked, small size businesses and youth in semi-urban areas through differentiated value propositions. During the start of their operations, the primary channel for payment banks is usually agents, who help their customer in understanding the digital models and gradually shift them to a self-service digital channel to avail banking services using a mobile application.

Customer segment & value proposition of payment banks

Customer segment	Unbanked	Underbanked	Small Size Business	Youth in Semi-urban regions
Target customers	Low income individual, domestic workers and migrant workers	Low income individual, domestic workers and migrant workers	Mobile network operator agents, small merchants and Kirana stores, Agri-traders & small service providers	Youth, students who are well acquainted with mobile wallets
Products	Savings A/c & Mobile wallets, Loan disbursements through tie-ups with Banks and NBFCs and distribution of Insurance & investment products	Savings A/c & Mobile wallets, Loan disbursements through tie-ups with Banks and NBFCs and distribution of Insurance & investment products	Savings A/c, Current A/c, Loan disbursements through tie-ups with Banks and NBFC and distribution of insurance & investment products	Mobile wallets, CASA

Transaction type	Domestic money remittance, Cash-in and Cash-out, Bill payments	Domestic money remittance, Cash-in and Cash-out, Bill payments	Cash-in and Cash-out, Bill payments, Money Transfers	Digital transactions through wallet
Primary Channel	Agents are primary touch points	Agents are primary touch points	Agents, Self-service	Self-service

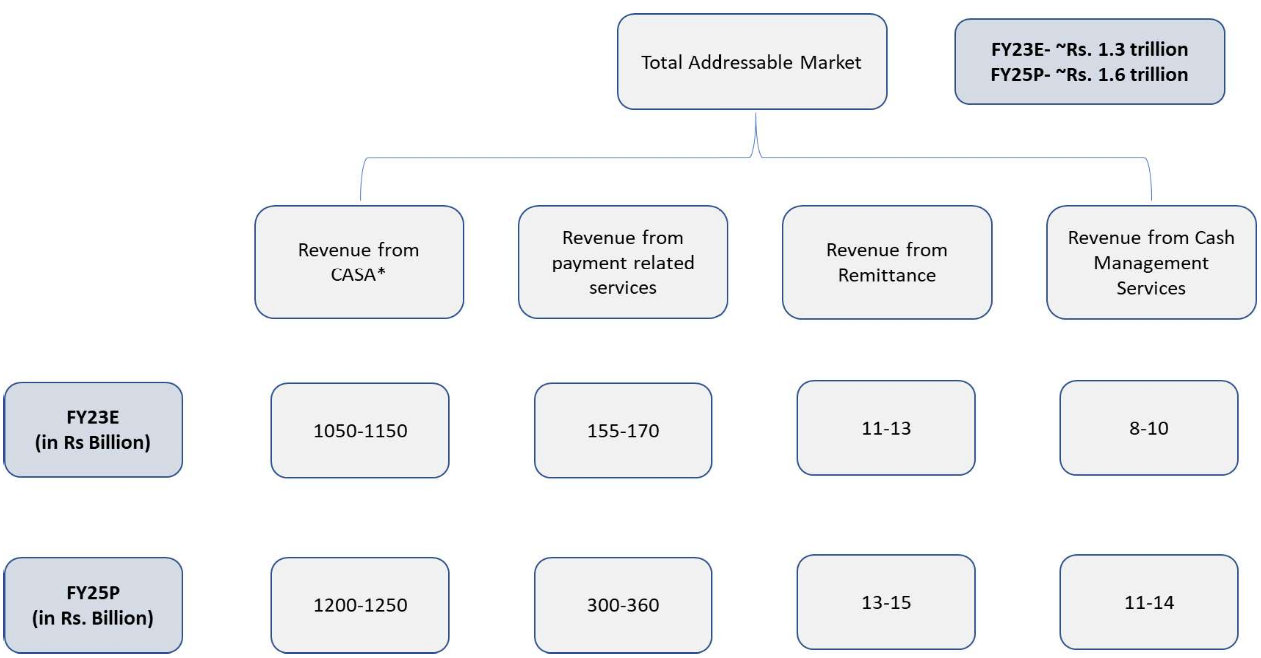
Source: CRISIL MI&A Research

Apart from payments bank, there are other players who provide similar services such as cash-in cash out, remittance services, ticket bookings, recharges and bill payment.

Addressable market (revenue from CASA for rural & semi urban region, payment services, remittance and cash collection and management) expected to grow at 11% CAGR between FY22 and FY25

Addressable market refers to the potential revenue pool available for an entity focused on providing CASA deposit accounts in rural and semi-urban areas and the entire range of payment and remittances related services across urban, semi-urban and rural areas. CRISIL MI&A Research estimates the addressable market to be approximately ₹ 1.3 trillion in fiscal 2022. We project this market to grow at a CAGR of 11% over the next few years to reach ₹ 1.6 trillion by fiscal 2025, largely driven by strong growth in the payments space due to technology and changing consumer behavior.

Total addressable market is estimated to be at ₹ 1.3 trillion in fiscal 2022



Note: E: Estimated. P: Projected; Revenue from CASA is for rural and semi-urban regions Source: RBI, Company Reports, Company Website, CRISIL MI&A Research estimates*

Deposits for payment banks grew by ~57% between fiscals 2019 and 2022

Deposits collected by payments banks grew by 54% in fiscal 2022. Cumulatively, the quantum of deposits rose from ₹ 25.7 billion as at the end of FY19 to reach ₹ 99.8 billion as of FY22. As of Q3 FY2023, deposit for payments bank reached ₹ 127.5 billion.

In the last three financial years (FY20 to FY23), the payments business (considering only UPI and IMPS) has grown over a 400% in terms of the number of transactions processed and more than 900% in terms of transactions value.

During FY2019-22, payment banks witnessed a 31% CAGR growth in revenues. Their operational expenses also increased by 22% over the last three fiscals owing to expansion in banking touchpoints, which has increased the aggregate consolidated losses of payment banks. In aggregate, the six payment banks made net losses to the tune of ₹1.30 billion at end of FY22.

Payment's bank focusing on increasing volumes, touch points with customers and cross sell to turn profitable

While payment banks in India cumulatively are not profitable, PayTM Payments Bank, Airtel Payments Bank and Fino Payments Bank are having profitable operations. Payment banks are leveraging their strength to reach out to their core customer base, enhance volumes and turn profitable. They have been launching new products to provide a bouquet of products and services to their customers under the payment banks umbrella and ensure stickiness.

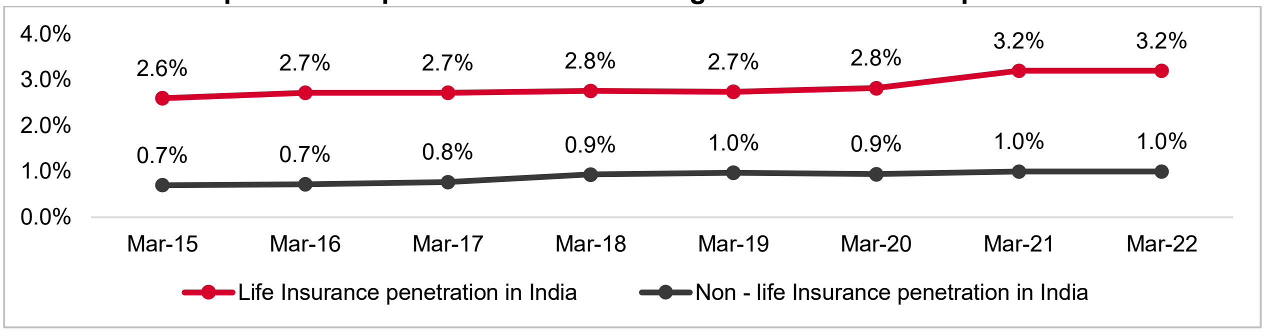
For instance, IPPB, due to its massive distribution network has set up a full suite of banking services and launched its new digital payments app "DakPay" to cater to the financial needs of various sections of the society – be it sending money or making payments enabling cashless ecosystem using a virtual debit card. The DakPay service is aimed at providing not only banking services, but also postal financial services at doorstep, thorough the postman of Indian Post. Apart from this, IPPB is also focusing on pan India government to customer (G2C) payments, especially rural direct benefit transfers.

Fino Payments Bank is also looking to utilise its massive network to reach out to customers and has enabled microcredit and gold loans on behalf of various banking partners. It has also leveraged its strong capability to manage bulk and retail cash on behalf of various MFIs and NBFCs, which has increased its cash management business.

Airtel Payments Bank has been leveraging its network of retailers to cross sell financial products. It has also entered a partnership with Mastercard to develop customised financing products for farmers and MSMEs in India. One such product is a digital platform to educate farmers on advance farming methods and provide them with means to connect to the marketplace, while enabling them to receive payments directly in their Airtel Payments Bank account.

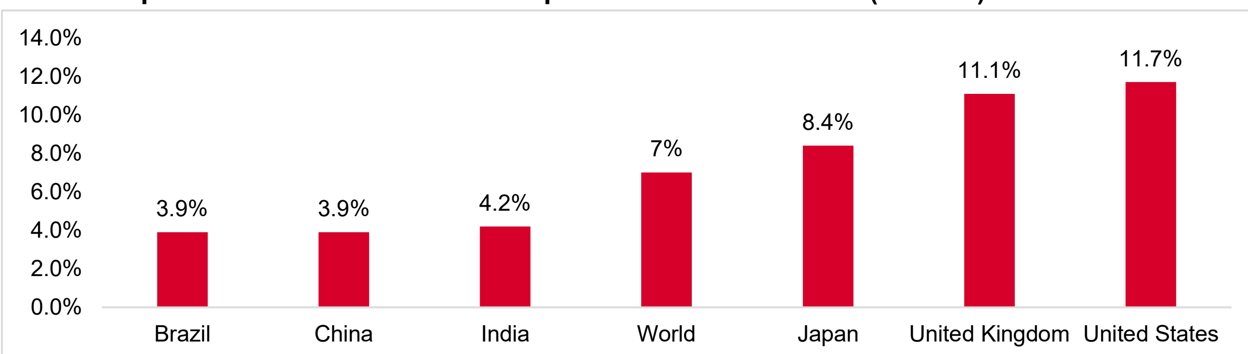
With credit penetration (share of total credit outstanding is about 8% in rural areas, 13% in semi-urban and 79% in urban areas as of March 31, 2023) as well as the penetration of insurance and mutual funds still at a very low level, cross sell to retail unserved and/or underserved customers remains an attractive opportunity for payment banks. For example, although mutual fund penetration (mutual fund AUM as a percentage of GDP) has grown from 4.3% in fiscal 2002 to ~14.5% in fiscal 2023, penetration levels remain well below those in other developed markets, which presents an opportunity for payments banks to cross sell investment products to customers in rural and semi-urban areas.

Lower insurance penetration presents headroom for growth of insurance products



Note: Insurance penetration is measured as ratio of premium to GDP
Source: IRDA, Swiss Re Sigma, CRISIL MI&A Research

Insurance penetration in India is low compared to other countries (CY2021)



Note: Insurance penetration is measured as ratio of premium to GDP
Source: Swiss Re, IRDA, CRISIL MI&A Research

Mutual fund penetration in India is lower as compared to other countries

As of September 2022, India's mutual fund penetration (AUM-to-GDP) is significantly lower (16.9%) than the world average lower than many developed economies such as the US (108.1%) and the UK (50.2%) and key emerging economies such as Brazil (71.9%).

9. Peer Comparison of Payments Banks

NSDL Payments Bank (NPBL) faces close competition from other payments banks such as Fino Payments Bank, PayTM, Airtel Payments Bank, India Post Payments Bank and Jio Payments Bank on parameters such as customer penetration capabilities, efficiency of service provision, technology-integration and satisfactory customer support services. In this section, we have compared these payments banks operating in India based on publicly available information.

Jio Payments Bank and NSDL Payments Bank are well capitalised compared to its peers

All payment banks are well capitalised. As of FY2023, NSDL Payment Bank had a capital adequacy ratio of 305.89%. As of FY2022, Jio Payments Bank and NSDL Payments Bank had a capital adequacy ratio of 3325% and 501.58% respectively. This is followed by Fino Payments Bank and PayTM Payments Bank with a total capital adequacy ratio of 125.57% and 62.41%% respectively as of FY22. Airtel Payments Bank has a capital adequacy ratio of 58.26% as of FY2022.

NSDL Payments Bank has 2.30 million of Customer Service touchpoints (Business Correspondents)

As on 9MFY2023, India Post Payments Bank had the highest number of branches (651). As of FY2023, Fino Payments Bank had 77 branches. PayTM Payments Bank had the highest quantum of deposits amongst payment banks, with deposits of ₹ 47.69 billion as of March 2022, followed by India Post Payments Bank. The higher quantum deposit for India Post Payment Bank is on account of its large network of branches. NSDL Payments Bank has around 2.30 million customer service touchpoints (Business Correspondents).

Peer comparison (FY2022)

Players	CASA Deposits (in ₹ Billion)	Net worth (in ₹ Billion)	CRAR (%)	Branches**
Airtel Payments Bank	9.92	3.47	58.26%	27
Fino Payments Bank	5.01	4.79	125.57%	77
India Post Payments Bank	36.92	4.73	40.83%	651#
Jio Payments Bank	0.19	1.23	3325.00%	11
NSDL Payments Bank	0.13	1.35	501.58%	1
PayTM Payments Bank	47.69	4.8*	62.41%	6

*Note: * Data is for FY21, ** data is for FY23, # Data is for 9MFY23. Table is arranged based in alphabetical order.*

Source: Company Website, Company Reports, CRISIL MI&A Research

NSDL Payments Bank FY2023 highlights

Player	Deposits (in ₹ Bn)	Net Worth (in ₹ Bn)	CRAR (%)
NSDL Payments Bank	0.22	1.44	305.89%

Source: Company financial statements, CRISIL MI&A Research

Operational performance of payments banks

The below table shows the transaction done using cards issued by payments bank at ATMs, POS and Online (e-com).

Volume and Value of transactions and card issued (FY23)

Players	Debit cards outstanding	Value of transaction at ATM & POS	Volume of transaction at ATM &POS
	(In million)	(In ₹ million)	(In million)
Airtel Payments Bank	4.16	2,340.00	2.92
Fino Payments Bank	6.63	70,230.00	23.54
India Post Payments Bank	9.72	3,710.00	4.74
Jio Payments Bank	-	-	-
NSDL Payments Bank	0.53	380.00	0.41
PayTM Payments Bank	37.95	1,15,870.00	46.88

Note: Data for value and volume of transactions includes transaction done through both ATM & POS; Table is arranged based in alphabetical order.

Source: RBI, CRISIL MI&A Research

Volume and Value of transactions and card issued (FY22)

Players	Debit cards outstanding	Value of transaction at ATM & POS	Volume of transaction at ATM &POS
	(In million)	(In ₹ million)	(In million)
Airtel Payments Bank	1.96	3,113.40	3.70
Fino Payments Bank	4.42	36,273.87	13.35
India Post Payments Bank	4.79	2,501.06	4.32
Jio Payments Bank	-	-	-
NSDL Payments Bank	0.33	208.67	0.27
PayTM Payments Bank	36.62	1,16,054.54	53.59

Note: Data for value and volume of transactions includes transaction done through both ATM & POS in fiscal 2022; Table is arranged based in alphabetical order.

Source: RBI, CRISIL MI&A Research

Volume and Value of transactions and card issued (FY21)

Players	Debit cards outstanding	Value of transaction at ATM & POS	Volume of transaction at ATM &POS
	(In million)	(In ₹ million)	(In million)
Airtel Payments Bank	1.73	2,698.37	4.47
Fino Payments Bank	2.27	17,122.16	6.92
India Post Payments Bank	1.11	374.38	0.70
Jio Payments Bank	-	-	-
NSDL Payments Bank	0.14	127.12	0.21
PayTM Payments Bank	63.78	84,533.42	46.06

Note: Data for value and volume of transactions includes transaction done through both ATM & POS; Table is arranged based in alphabetical order

Source: RBI, CRISIL MI&A Research

Payment Infrastructure for Payment Banks

As of March 31, 2023, NPBL was third in India in terms of deployment of micro-ATM devices in banking industry having deployed 317,170 devices across India and moved to second position in April 2023 with 3,34,559 micro-ATMs deployed. Moreover, NPBL's AePS was ranked first in India in terms of AePS transaction value during the month of March 2023 and April 2023 as an acquiring bank.

Bank Name	Number – Outstanding (as of March 2023) (in million)
	Micro ATMs
Airtel Payments Bank	0.06
Fino Payments Bank	0.37
India Post Payments Bank	0.16
Jio Payments Bank	-
NSDL Payments Bank	0.32
PayTM Payments Bank	-

Note: Data for value and volume of transactions includes transaction done through both ATM & POS; Table is arranged based in alphabetical order

Source: RBI, CRISIL MI&A Research

Product mix of various payments banks

The table below details the products and services being offered by various payment banks in India. Apart from the offering a suite of products and services to customers in the hinterland, payment banks also act as a correspondent for partner banks and enables digital financial transactions for customers at the bottom of the pyramid on behalf of various banking partners.

Product wise comparison

Products	Fino Payments Bank	Airtel Payments Bank	India Post Payments Bank	PayTM Payments Bank	NSDL Payments Bank
Savings & Current A/C	✓	✓	✓	✓	✓
Sweep Account Facility	✓	✓	✓	✓	✓
Mobile Wallet	✓	✓	✗	✓	✗
Debit Card	✓	✓	✓	✓	✓
Payments	✓	✓	✓	✓	✓
Cash Management Services	✓	✓	✓	✗	✓
Insurance	✓	✓	✓	✗	✓
Doorstep Banking	✓	✓	✓	✓	✗
Business Correspondent Business	✓	✓	✓	✓	✓

Source: Company Website, CRISIL MI&A Research

Business segment wise comparison

Products	Fino Payments Bank	Airtel Payments Bank	India Post Payments Bank	PayTM Payments Bank	NSDL Payments Bank
CASA Business	**Savings and Current A/C, Sweep Account**	**Savings and Current A/C**	**Savings and Current A/C, Sweep Account**	**Savings and Current A/C, Sweep Account**	**Savings and Current A/C**
Remittance	**Mobile Wallet, Money Transfer**	**Mobile Wallet, Money Transfer**	**Money Transfer**	**Money Transfer**	**Money Transfer**
POS/Payments	**Debit card**	**Debit card**	**Debit card**	**Debit card**	**Debit card**
Cash Management Services	**Cash collection**	**Cash collection**	**Cash collection**	**NA**	**NA**
Financial Product Distributor	**Insurance**	**Insurance**	**Insurance, Mutual Fund**	**NA**	**Insurance, Mutual Fund**
Banking Service	**Doorstep Banking and Business Correspondent**	**Doorstep Banking**	**Doorstep Banking**	**Doorstep Banking**	**Business Correspondent**

Source: Company Website, CRISIL MI&A Research

NSDL Payments Bank posted net profit of ₹ 0.08 billion in fiscal 2023

As of end fiscal 2023, NSDL Payments Bank has a total revenue of ₹ 5.41 billion and had turned profitable with net profit of ₹ 0.08 billion and RoE of 5.78%.

As of end-fiscal 2022, Airtel, Fino and NSDL Payments Bank had a total revenue of ₹ 9.24 billion, ₹ 9.94 billion and 3.0 billion respectively. NSDL Payments Bank posted a net loss of ₹ 0.07 billion during the year, whereas Fino Payments Bank reported profits of ₹ 0.43 billion in fiscal 2022. Return on equity for NSDL was negative whereas for Fino and Airtel payments bank, RoE was 13.56% and 2.65% respectively.

Profitability of players in fiscal 2022

Players	Net Worth	Total Equity	Revenue	Revenue per touchpoint	Net Profit	RoE (%)
	(In ₹ Billion)	(In ₹ Billion)	(In ₹ Billion)	(In ₹)	(In ₹ Billion)	
Airtel Payments Bank	3.47	23.48	9.24	NA	0.09	2.65%
Fino Payments Bank	4.77	0.83	9.94	9,740.66	0.43	13.56%
India Post Payments Bank	4.73	14.55	3.90	28,682.34	-1.60	-34.79%
Jio Payments Bank	1.23	2.64	0.07	NA	-0.34	-27.21%
NSDL Payments Bank	2.24	1.80	3.00	1,302.91	-0.07	-5.37%
PayTM Payments Bank	4.53	4.00	24.88	NA	0.18	4.12%

Note: Players are arranged in alphabetical order

Source: Company Reports, CRISIL MI&A Research

Profitability of NSDL Payment Bank in fiscal 2023

Payer	Deposits	Total Equity	Revenue	CRAR	Net Profit	RoE
	(in ₹ Bn)	(in ₹ Bn)	(in ₹ Bn)	(%)	(in ₹ Bn)	(%)
NSDL Payments Bank	0.22	1.80	5.41	305.89%	0.08	5.78%

Source: Company financial statements, CRISIL MI&A Research

Annexure – Comparison of NSDL and CDSL based on some of the KPIs

S. No.	KPIs	FY21	FY22	FY23	FY21	FY22	FY23
		NSDL			CDSL		
1	Demat custody value (₹ Billion)	2,43,745.24	3,01,875.56	3,02,188.90	27,439.36	37,172.78	39,711.27
	Individuals & HUF	33,524.87	47,009.40	43,060.50	10,485.26	16,004.00	16,923.63
	Non-individuals	2,10,220.37	2,54,866.16	2,59,128.40	16,954.10	21,168.78	22,787.64
2	Issuers (numbers)	34,225	37,478	40,987	16,464	18,268	20,323
	Listed	5,815	5,803	5,804	NA	NA	NA
	Unlisted	28,410	31,675	35,183	NA	NA	NA
3	Total quantity of securities held in demat (in billion)	2,433.52	2,773.53	3,224.33	474.43	567.57	612.85
4	E-voting						
	E-voting revenue (₹ million)	143.13	206.68	328.86	66.18	89.97	233.00
	E-voting events (numbers)	2,834	3,543	3,951	3,285	3,377	NA
5	Depository participants (Numbers)	276	277	283	592	584	588
6	DP service centers (Numbers)	36,044	57,026	59,401	20,689	21,728	18,676
7	Demat accounts (Excluding closed accounts) (in million)	21.69	26.68	31.46	33.44	63.00	83.00
	Individuals & HUF	21.55	26.54	31.31	33.37	62.92	82.92
	Non-individuals	0.14	0.14	0.15	0.07	0.08	0.08
8	Demat custody value per demat account (₹ million)	11.24	11.31	9.61	0.82	0.59	0.48
	Individuals & HUF	1.56	1.77	1.38	0.31	0.25	0.20
	Non-individuals	1,501.57	1,820.47	1,727.52	242.20	264.61	284.85
9	Consolidated revenue from operations (₹ million)	4,675.69	7,611.09	10,219.88	3,437.17	5,513.31	5,550.87
	Services transferred at a point in time (₹ million)	2759.65	5,597.31	7,969.62	2,479.40	4,259.36	NA
	Services transferred over time (₹ million)	1916.04	2,013.78	2,250.26	957.77	1,253.95	NA
10	Segmental operating profit margin (EBIDTA%)						
	Depository services	51.72%	48.77%	48.04%	60.80%	65.34%	55.36%
	Database management services (NSDL) *Data entry and storage and repository services (CDSL)*	41.30%	53.37%	40.20%	52.00%	61.55%	51.72%
	Banking services	-20.36%	-2.64%	1.49%	-	-	-
11	PAT Margin (%)	35.84%	25.89%	21.35%	50.24%	51.46%	44.44%
12	ROE (%)	18.50%	17.55%	16.43%	21.88%	27.44%	21.95%

Note: NA: Not available; Numbers are rounded off; ROE has been calculated as PAT/Total equity at the end of financial year.
Source: Company financial statements, SEBI Bulletin, NSDL, CDSL, CRISIL MI&A Research

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