Office of the Principal Scientific Advisor
to the Government of India

Note on FinTech Sector

The Objective of this note is to:

- **Discuss the Profile of FinTech Sector**
- **Discuss its Composition**
- **Growth Profile of FinTech Sector**
- **Key Enablers of FinTech Sector- Role of R&D**
- **COVID19 & Impact**
- **Issues & Way Forward**

Key Facts

1. In 2018, India was ranked second globally in the FinTech adoption rate.

2. From Jan'2013 to Oct'2018, appx., 2,000 FinTech companies have been founded.

3. Transaction value in Indian FinTech market is USD 66.1 billion (2019).

Source: PwC & Assocham Report, 2019

FinTech Sector – Profile

- FinTech stands for financial technology and describes technologically enabled financial innovations. From 'start-ups' to 'bigtechs' to established financial institutions, all the key players are harnessing this technological edge along the financial services' value chain to provide agile, efficient and differentiated experiences to the end user. This has the potential to fundamentally transform the financial-landscape where consumers will get to choose from a larger set of options at competitive prices and financial institutions could improve efficiency through lower operational costs.

FinTech Composition

FinTech sector comprises of Digital Payments, Alternative Lending, InsureTech. Wealth Tech and Enabling Tech. they are discussed below.

Digital Payments

- Digital Payments is the most important segment of this sector. It has been defined under the Payment and Settlement Act, 2007. As per this any "electronic funds transfer" means any transfer of funds which is initiated by a person by way of instruction, authorization or order to a bank to debit or credit an account maintained with that bank through electronic means and includes point of sale transfers; automated teller machine transactions, direct deposits or withdrawal of funds, transfers initiated by telephone, internet and, card payment.

Alternative Lending

- The second segment of Fintech sector relates to alternative models of lending and capital raising. They have the potential to change the market dynamics of traditional lenders and the role of traditional intermediaries. Crowd funding which entails raising external finance from a large group of investors is at a very nascent stage in India. The peer-to-peer (P2P) lending for which RBI has issued Master Direction in October 2017 has the potential to improve access to finance for small and medium enterprises. Eleven entities have been licensed to operate P2P platform. The Reserve Bank has also granted licenses and permitted seven purely digital loan companies (NBFCs) to commence operations. Although they are purely digital players operating through mobile applications, we have ensured that they have at least one physical presence for customers to reach out to in case of need. Furthermore, seven payment banks have commenced operations. These technology-led banks use FinTech, both while onboarding customers as well as while carrying out operations. Invoice trading is another nascent area of FinTech application in India. It assists MSMEs, which often have working capital, and cash flow problems due to delayed payments. The Reserve Bank has set up the Trade Receivables Discounting System (TReDs), which is an innovative financing arrangement where technology is leveraged for discounting bills and invoices. Three entities have been authorized for this purpose and the volumes are slowly gaining traction.

InsurTech

- Insurance penetration in India in 2017 was at 3.69%, one of the lowest penetration percentages across the world. With multiple FinTech start-ups coming up with different business models to serve the uninsured segment of the population, the sector has seen good traction over the last few years.

Wealth Tech

- WealthTech is categorized as products and services offerings ranging from financial services software, investment platforms, online investing tools and robo-advisors to digital brokerages. WealthTech players leverage advanced technologies such as AI and analytics to transform traditional investment and wealth management services. Account aggregation is expected to play a pivotal, enabling role in personal financial management by aiding data extraction and aggregation (post obtaining consent from a user) for a comprehensive analysis on transactions from multiple sources. Conventionally, the methodical expertise of financial advisors has been a key distinguishing factor for wealth advisors/managers. A total of five entities have been given in principle approval as NBFC-AA and are expected to commence their operations during 2019-20. The increasing traction of WealthTech in India is visible from FinTechs offering micro investments, personal financial management and access to alternative investments, which were earlier available to a few high net-worth investors. In 2018, WealthTechs raised USD 122 million. Though the amount raised by WealthTechs was lesser than other FinTech sub-sectors such as payments, lending and insurance, the sub-sector is expected to grow further in coming years.

Enabling Tech

- Enabling Tech firms are businesses that provide technology-based solutions to both FinTechs and traditional FIs to aid the creation, enablement and delivery of innovative financial products and services. Enabling technologies such as AI, ML, big data and cloud computing are some of the underpinning technologies transforming operations, products and services of banks, FIs and FinTechs.

Growth Profile of FinTech

- A few indicators related to FinTech activity in India are highlighted below:
- Despite a slowdown in consumption and decline in FinTech investment trends globally, the Indian FinTech ecosystem has seen an upward trend in funding. In 2019, Indian FinTech start-ups raised USD 2.6 billion in 180 rounds of capital raising. The indicators still show a bullish perception of investors towards the Indian FinTech market.
- Digital Payments have witnessed tremendous growth in the recent past. As per data received from NPCI, the total Volume of Digital transactions touched 43 billion registering a growth of around 77% over 2018-19. This translates to 3.6 billion monthly transactions as compared to 2 billion transactions in 2018-19. The Value of Digital Transactions touched Rs 30,75,90800 crores registering a growth of 6.6% over 2018-19. This translates to about 256 lakh crore monthly values of transactions.
- The growing number of mobile subscribers (1.18 billion), internet users (540 million) and mobile internet users (520 million) in India is enabling FinTech to tap into unserved customers over digital channels.
- Credit availed by micro, small and medium enterprises (MSMEs) has increased at a CAGR of 19.3% in recent years.

- Currently, assets under management (AUMs) within the robo-advisors segment in India amount to USD 42 million and are expected to increase to USD 145 million at a CAGR of 36.2%.

The increase of FinTech penetration and adoption across multiple sectors has had a positive impact on the Indian economy. The growth in digital transactions has enabled transparent, secure, swift and cost-effective mechanisms, benefiting businesses, consumers and Governments alike. Given the increased traction of FinTech activities in the Indian ecosystem, it is interesting to look at the drivers that have led to the sector's sustained growth this in the Indian context.

FinTech: Key Enablers

- One of the key enablers of Fintech sector is Technological advancement. Technological advancement includes different initiatives such as the development of IndiaStack, the world's largest proposed collection of open application programming interfaces (APIs), and availability of low-cost internet. Emerging technologies are the backbone of the entire FinTech ecosystem and are playing a vital role in revolutionizing the sector. Advanced analytics and artificial intelligence (AI) are leveraged by cutting edge FinTech for process automation, customer engagement, fraud analytics and compliance.
- **Some of the developments in technology underpinning in fintech are:**
- ***Data focused technologies*** such as analytics, sensor-based technologies, Biometrics, Artificial Intelligence or Machine Learning, etc., provide insights on customers making it relevant through personalized offerings.
- ***Infrastructure-based technology***, through platformification and open APIs, is reshaping the future of the financial services industry
- ***Operational excellence*** aspects of RPA, chatbots, and DLT are enabling greater agility, efficiency and accuracy
- ***Front-end Interfaces***: Design-based thinking and simple-to-follow user-interfaces are making the customer journey quick, convenient, and seamless.

Augmented and virtual reality and gamification are helping customers interact with their firms in innovative ways.

Impact of COVID-19

- FinTechs have become essential in the banking and financial services ecosystem and have made considerable progress in the last decade in terms of product and service offerings, business traction and attracting capital. But with the unfolding of the COVID-19 crisis and the subsequent economic impact, the foreseeable damage to the FinTech ecosystem is expected to be conspicuous and significant.
- A situation like the COVID-19 crisis has its share of adverse effects. At the same time, it provides us with an opportunity to engage in reforms and implement comprehensive, large-scale measures not only to prioritize expenditure on health and the economy, but also prepare for future setbacks. Now is the time to take quick and impactful steps to prevent further adverse effects on the economy and make efforts to strengthen financial innovation and digital adoption. While FinTech models work on the underlying premise of promoting financial access to the underserved, fast-tracking the accomplishment of this objective will require the collaboration of Governments, regulators, citizens, banks, FIs, FinTechs, BigTechs, investors and other stakeholders – the very philosophy of a collaborative ecosystem that is at the heart of the FinTech paradigm.

Opportunities, Risks and the Way Forward

Digital Onboarding and Financial Inclusion

- There are two broad areas that merit attention in the Indian context: the first is regarding improving the accessibility of financial platforms using FinTech; and the second is about analyzing potential risks that may arise out of FinTech adoption. Designing suitable financial products that cater to specific needs of the financially excluded population, digital onboarding and boosting the quantum of investments are vital in achieving the first objective. Effective utilization of Aadhaar eco-system may provide incentives for the people to adopt digital platforms as it is happening in the case of direct benefits transfer (DBT). The central KYC registry is a significant step in this regard – about 100 million KYC records have already been uploaded onto this platform. We also need to ensure multi-lingual financial literacy and a robust grievance redressal machinery to effectively handle inter-regional disparities and to offer online dispute resolutions.

RegTech and SupTech

- As regards potential risks and their mitigation, RegTech and SupTech have an important role. Regulators and supervisors have to undertake accelerated off-site surveillance. This also brings in the need for a transparent, technology and data-driven approach. To serve this need, new fields called RegTech and SupTech are coming up. Both the technologies aim at improving efficiency through the use of automation, introducing new capabilities and streamlining workflows. The examples are Import Data Processing and Monitoring System (IDPMS), Export Data Processing and Monitoring System (EDPMS) and Central Repository of Information on Large Credits (CRILC), to name a few

Also, the risk-based supervision of banks is extensively data-driven and is an example of SupTech. The future of RegTech and SupTech technologies, however, lie in big data analytics, artificial intelligence, machine learning, cloud computing, geographic information system (GIS) mapping, data transfer protocols, biometrics, etc.

Risks

- Risks for FinTech products may also arise from cross border legal and regulatory issues. Data confidentiality and customer protection are major areas that also need to be addressed. The Reserve Bank has encouraged banks to explore the possibility of establishing new alliances with FinTech firms, as it could be pivotal in accelerating the agenda of financial inclusion through innovation. It is essential that flow of investments to this sector is unimpeded to realize its full potential. It is imperative to create an ecosystem, which promotes collaboration while carefully paying attention to the implications that it has for the macro economy.

Way forward

- FinTech has the potential to reshape the financial services and financial inclusion landscape in India in fundamental ways. It can reduce costs and improve access and quality of financial services. We have to strike a subtle balance between effectively utilizing FinTech while minimizing its systemic impacts. By enabling technologies and managing risks, we can help create a new financial system which is more inclusive, cost-effective and resilient.
- Digital Currency: India may consider joining the Global Initiative on Digital Currency. This is the future technology and here research needs to be conducted on technical architecture, security and challenges in deployment of Digital Currency.
- To sum-up, a comprehensive strategy for using emerging technology for financial inclusion may be prepared.