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Evolution, acceptance, and adaptation of Fintech: A road map towards sustainable development

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Abstract

The Sustainable Development Goals (SDGs) could be considered the paramount objective for all nations in the world. In keeping with this, a sound global financial system is now required to fulfill its mandate to encourage the mobilization of private capital for the achievement of sustainable development and consistent economic growth. Blockchain, the Internet of Things, big data, and artificial intelligence are just a few of the recent technological advancements that have been made possible by digital transformation and advancement, specifically in the finance sector. Traditional banks, regulators, and policymakers are all paying close attention to the buzz surrounding Fintech. Since the 2008 global financial crisis, the integration and innovation of emerging technologies and finance have accelerated financial technology development (FinTech). In this paper, we reviewed the literature on the evolution of Fintech in terms of regulations and policies, as well as the role of Fintech in achieving financial inclusion and sustainable development goals. We reviewed the fintech ecosystem and segregated it into three segments, from 2010-2015, 2016-2020, and 2021 to present. We have discussed the existing literature from the mentioned timeline and concluded that despite being surrounded by numerous challenges, the acceptance of Fintech has boomed over the period of time and created some new avenues for the future that support future sustainable international trade while also facilitating the SDGs.

Keywords: Fintech, Financial Inclusion, Digital Technology, Banking, Digitization, Sustainable Development, Infrastructure.

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Introduction

A portmanteau of “financial technology” is “fintech.” It refers to software, algorithms, and programs for both desktop and mobile devices. It is a general word for technology used to supplement, streamline, digitize, or disrupt existing financial services. (Stephanie & Dough, Forbes Magazine, accessed on October 10 2022. The financial sector is undergoing fast change as a result of new players in the financial technology market. Disruptive technologies are revolutionizing banking, payments, and insurance. The field of Fintech focuses on the possibilities of emerging technology in the banking and other sectors driven by digitalization and digitization, as defined by Gobble (2018), Fintech is becoming more and more integrated into routine financial activities. Ernst &Young (2017) According to the fintech adoption index, nearly one-third of consumers in the 20 markets surveyed use at least two fintech services, and 84% are aware of fintech services.

The Sustainable Development Goals (SDGs) have emerged as the top priority for all players in the new global economy, including Fintech. The 2030 Agenda for Sustainable Development, adopted by 193 United Nations Member States in 2015, is a plan of action to achieve global sustainable development for people, the planet, and prosperity. The 17 Sustainable Development Goals (SDGs) are at the heart of it, and they are integrated and indivisible, balancing the three dimensions of sustainable development: environmental, social, and economic. As a matter of fact, sustained, inclusive, and sustainable economic growth is crucial to prosperity (Nations, 2030). We contend that financial technology

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(FinTech) is the primary force behind financial inclusion, which supports balanced and sustainable development, as reflected in the UN Sustainable Development Goals (SDGs) (Hudaefi, 2020). With a gradual approach to the development of the underpinning infrastructure to support the digital financial transformation, the full potential of FinTech to assist the SDGs may be achieved (Arner *et al.,*2020). The sustainable development of the FinTech industry is therefore essential for achieving sustainable economic development, "full" financial inclusion, and the SDGs (Pauliukevičienė & Stankevičienė, 2022)."FinTech's genuine promise derives from its capacity to unbundle banking into its fundamental activities of settling payments, completing maturity transformation, sharing risk, and allocating capital," said Carney (2017) in reference to this. Peer-to-peer lenders, aggregators, robo advisers, payment service providers, and cutting-edge trading platforms are some of the new entrants that are fuelling this prospect. Additionally, it is being influenced by market leaders who are implementing new technology to increase the scale and application of their business models. There is growing evidence that the excluded population, particularly women and poor adults in many countries, benefits significantly from financial inclusion, and policymakers in many countries have embraced financial inclusion as the key to economic empowerment and a solution to rising poverty rates. The process of ensuring that everyone, especially the poor, has access to fundamental financial services within the established financial system is known as financial inclusion (Allen, Demirguc-Kunt, Klapper, & Martinez Peria, 2016; Ozili, 2018). The innovation community has already acknowledged the potential of financial innovation, and over the past 10 years, the number, diversity, and reach of fintech start-ups have increased (KPMG 2018). Expanding technology affordances have altered the game. Prior to now, Fintech has delivered on its promise to increase access to the financial system by offering services to groups that have historically received little or no support. However, fintech start-ups' faster/cheaper/better service models are increasingly disrupting the incumbent banking system. Fintech firms now offer financial products previously only available through traditional licensed credit institutions, such as payment services and loans (EBA 2017). These smaller, more agile firms support a broader range of products and providers; they promise greater portability of digitized financial products; and they are built on hybrid and cross-industry business models that allow them to enter markets that are often closed to traditional banks and credit providers. They also provide greater transparency and improved risk management, which is enabled, at least in part, by their ability to collect instant customer feedback and use it to power real-time adjustments to the services they provide.

Framework Adopted

Our study includes a thorough analysis of the literature on Fintech, how it has changed over the past 20 years, and explores how Fintech has been promoting the SDGs execution. For easier comprehension, we divided the literature study into three timelines 2010–2015, 2015–2020, and 2020–present. Our analysis starts with the introduction of Fintech and its incubation stage between 2010 and 2015, then we look at SDG 9 inception and ongoing implementation, as well as the fintech industry's regulatory environment. The final component of our study is about the acceptability of Fintech around the world.

The study aims to fulfil the following research objectives

1. To investigate the technological changes that led to the introduction of Fintech in three eras: Fintech 1.0, Fintech 2.0, and Fintech 3.0.
2. To comprehend the significance of Fintech in terms of financial inclusion.
3. To investigate the role of Fintech in promoting Sustainable Development Goal 9: Building resilient Infrastructure and Digital Payment Systems.
4. To comprehend the key growth drivers that contributed to the transition from a cash-driven economy to a tech-savvy economy.
5. To research the rights and responsibilities of various stakeholders (government, institutions, corporate bodies, regulatory bodies) in order to establish a fintech-enabled ecosystem.
6. To research the challenges and potential opportunities in the Fintech Ecosystem.

The Inception Era of Fintech -2010-2015

It is possible to argue that the 2008 Financial Crisis was a watershed moment in the evolution of Fintech. Retail customers' perceptions have shifted from what resources exist to who owns those resources, according to Arner et al (2015). In this section, we reviewed research from 2010 to 2015 and can confidently state that those years saw a flood of FinTech products that put not only investors or consumers in the spotlight but also policymakers and regulators.

According to Dapp's (2014) assessment, banks must work hard to compete fiercely with nonbanking firms in implementing technology-driven services. In addition, they must learn how to use the internet to meet the demands of today's internet-savvy customers. According to the survey, banks should strive for authenticity and transparency as they transition to digital platforms. The author contends that in order to increase market competition, favorable conditions should be established by politicians. The author focuses on how banks must make structural changes in order to adapt to technological transformation. The two typically used regulatory frameworks, rules-based and principles-based, were highlighted (PBR). Authors have highlighted a more positive lens to examine these contrasts rather than adopting both methods. It is done by weighing the goals of any regulatory portfolio against the trade-offs of either regulatory strategy. The regulatory environment for Fintech companies is the major issue for the years 2010–2015, according to Dapp (2015), and the report asks for a regulatory framework that offers fair regulations and a level playing field. The paper continues to shed light on the structural changes that traditional banks must implement. The author also proposes a solution to this problem, stating that implementing a platform policy with appropriate programme interfaces will ultimately assist financial service providers in responding to technological advances in the future that they have not yet anticipated. Arner et al. (2015) divide the evolution of Fintech into three eras in their paper. FinTech 1.0 spans the years 1866 to 1987, FinTech 2.0 spans the years 1987 to 2008, and FinTech 3.0 spans the years 2008 to the present. According to the paper, FinTech 3.0 emerged from the Global Financial Crisis, where in developed countries, consumer demand and expectations gave rise to FinTech, while in developing countries, inefficiencies did. This research also looks at flexible and forward-thinking regulatory approaches to FinTech. Fintech adoption is on the rise despite structural and regulatory challenges, according to a study by Gulamhuseinwala et al (2015). The authors surveyed 10,131 digitally active users to examine FinTech adoption in Australia, Canada, Hong Kong, Singapore, the United Kingdom, and the United States. They identified 10 fintech services that fall under the general headings of savings and investments, money transfers and payments, borrowing, and insurance. 15.5% of digitally active consumers use FinTech products, which indicates that adoption is relatively strong for such a new product. From the conclusion of the study, money transfers and payments have become a highly adopted FinTech product.

The Accepting Era of Fintech -2016-20

Financial inclusion is known as a process of encouraging the accessibility and utility of formal financial services among public users and companies. Besides, financial inclusion also ensures that formal financial services are accessible and used by people and companies (Kunt *et al.,*2017). The delivery of financial services via digital platforms promotes financial inclusion. In addition, digital financial inclusion is also one of the stepping stones to attaining the Sustainable Development Goals (SDGs)by 2030. Effective execution of digital financial inclusion helps to reach 13 out of 17 SDGs (Tay *et al.,*2022). FinTech provides equal and affordable financial services to the poor, promoting inclusive finance (Cen & He, 2018). The Fintech ecosystem brings innovation to traditional financial services by using modern technologies, thus helping to achieve SDG Goal No 9 (industry, innovation, and infrastructure) in the financial industry. Innovation in financial services has resulted in using digital applications to open financial accounts as against visiting a bank branch. Using mobile applications, people can open an account, access loans and insurance products, and store and transfer value enabling financial inclusion. The present study explores the literature of the last 5 years that primarily focuses on the ecosystem of Fintech across the globe. Then we explore the role of sustainable development goals in achieving financial inclusion and how it supports the fintech ecosystem. Banks, policymakers, and regulators had been hard-pressed by the robust progression of Fintech and thus had to start working on their toes for making a conducive and collaborative environment among the participants of the Fintech ecosystem. The period after 2015 witnessed a surge in the acceptance and adoption of Fintech products. In addition to this, the policymakers and regulators also started to adapt to the changes in a more systematic pattern.

Before 2015, there have been few studies in the Indian context in the area of Fintech. In spite of that, post-2015 extensive literature can be found which shows the progression of Fintech, across the globe and especially in the Indian context. Research findings authenticate that financial technology (FinTech) is the key driver for financial inclusion, which underlies sustainable, balanced development embodied in the UN Sustainable Development Goals (SDGs). The full potential of FinTech to support the SDGs may be realized with a progressive approach to the development of underlying infrastructure to support digital financial transformation (Arner *et al.,*2020).

Up until now, policymakers and regulators were pondering the question, 'how to make the ecosystem of Fintech more favorable?'. How to converge all the stakeholders of Fintech on one platform? From the very start of 2015, the answers were known to almost all the think tanks and they started heading toward the more tech-driven system.

The report of KPMG and NASSCOM discusses how India is transforming into a dynamic ecosystem for Fintech Companies. Being a cash-driven economy, it is very constructive to see that the transaction value for the Indian Fintech sector is estimated to be approximately USD 33 billion in 2016 and is forecasted to reach USD 73 billion in 2020 growing at a five-year CAGR of 22%. According to the report, the Indian Government has taken many varied steps to penetrate the tech-driven economy, like, the Start-up India initiative launched by the government in 2016 which included USD 1.5 billion in funds for start-ups. In addition, many tax rebates and surcharge reliefs are provided to merchants accepting digital transactions and start-ups by the government. The government and the regulators also focused on financial inclusion and enablement to add unbanked individuals into the banking sector, and for this, the government launched Jan Dhan Yojana, which included about 200 million users. Adding more to this area, Guild (2017) in his paper discusses the significance of adopting a responsive regulatory approach for boosting financial inclusion through technological innovation. Through the qualitative analysis of three cases, cashless payment systems in India and Kenya and, peer-to-peer lending in China, Guild has presented how the countries are utilizing technology in the pursuit of inclusive finance. Based on the Indian experiences, we argue that economies must focus on four pillars of digital financial infrastructure to support digital financial transformation, maximizing financial inclusion and sustainable, balanced growth from FinTech while likewise supporting the core financial policy objectives of financial stability, consumer protection, and financial integrity (Zetsche *et al.*,2019) (Figure 1).

While most of the studies showed an accepting picture of Fintech around the globe where the economies started working around the tech-driven storm, the issues related to the same also started popping up.

Mehrotra (2019), the paper not only discusses Fintech as the vehicle of financial inclusion but also throws light on the challenges the fintech companies are facing. For penetrating financial inclusion into

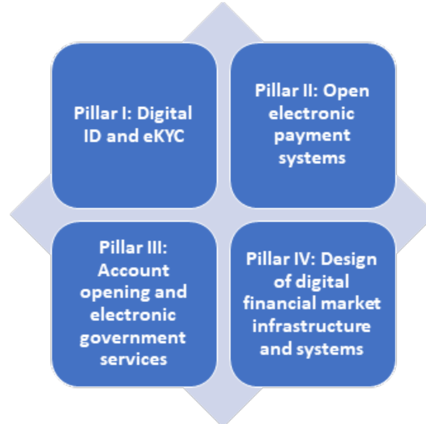

Figure 1: Four pillars of digital financial transformation

villages, better infrastructure for Fintech is needed like electricity, telecom connectivity, and availability of minimum 3G spectrum, etc. per se is a prominent issue in countries like India. Another challenge that the author spoke about is, the interfaces of fintech companies are tailored for the affluent and middle class and not for the individuals of remote areas, and therefore it is not user-friendly for them. In addition, one of Fintech's major issues is trust and cyber security, which goes hand in hand. Despite these shortcomings, according to the author, the need for an hour is not to succumb to the operational pitfalls but to build a robust framework to balance innovation and compliance. Adding more to the issues related to customer trust, Kandpal and Mehrotra (2019), discuss that it is imperative for regulators and bankers to come together for strong and responsive regulatory infrastructure to reduce the increasing cyber fraud. The author suggests that the Fintech firms need to inculcate greater confidence in the customers and tap these existing customers. Traditional banks can leverage them in adopting digital payment methods. This can prove as a double sword, on one hand, the trust issues will be minimized as they would be using the apps of their own banks and on the other hand, traditional banks would also be able to compete with the fintech companies. Moving forward with the acceptance of Fintech, traditional banks should embrace the emergence of Fintech and work on technological advancements to make it user-friendly and boost competition (Mnohoghitnei et al. 2019).

Rising above all the odds

Despite all the odds, the acceptance rate of Fintech has boomed in five to seven years, and covid-19 proved to be icing on the cake. Berg *et al.* (2021) discussed the increasing rate of Fintech lending and the ease and convenience it provides the customers, both the lenders and the buyers. The paper also reviewed the growing literature on emerging fintech business models like buy-now-pay-later. Adding more to the benefits of Fintech, Vergara and Agudo (2021) conclude that Fintech shows consistency through the usage of techniques like Crowdfunding, AI, Blockchain technology, P2P lending and so on and therefore, it can add more to Sustainability as it encourages green financing. Bollaert *et al*. (2021) discussed that Fintech has not at all dominated the traditional banks instead, it has made access to finance more prominent. Although, the author concludes his study by establishing that Fintech has not yet reached its maturity and it is an evolving industry that can pose an issue for the regulatory bodies. The study also discusses the collaborative approaches used by traditional banks and fintech companies, wherein the banks are using technologies like blockchain. This is a way forward for the fintech ecosystem. The infrastructure which Fintech has created with traditional banks is convenient and inclusive for the users. According to a report by KPMG, Top Fintech Trends for 2022 (2021), Fintech has seen immense growth and investment in the year 2021 and the report predicted the same will follow the subsequent years too. Following this, the report gives the top fintech trends for 2022, first and foremost, embedded finance being the talk of the town, banks would be offering embedded solutions. With banks providing embedded finance services, their regulatory scrutiny would also increase, making it the second trend in the list. The next few trends deal with Fintech focusing on branding themselves as data organizations, unicorn losing their charm in the developed markets and ESG (Environmental, Social, and Governance) focused Fintech having a growth trajectory in the upcoming year. With the booming of Fintech, a new branch of Fintech has been talked about: Green financing/Fintech, ultimately contributing to the SDG-9. (Macchiavello, 2022)

Discussion and Conclusion

Fintech has emerged as the platform for bringing together banks and major service providers like utilities, healthcare, education, retailers, etc., and has transformed the payment and settlement process from complex to highly simplified. The studies from 2010 to 2015 discuss structural changes to which banks had to adhere. Banks needed to move forward by taking the challenge to change their way of operations from traditional to technology-driven. In addition to this, there was a need to moderate the hype of Fintech by introducing a robust regulatory framework to strike a balance between innovation and compliance and to ensure a service orientation over and above the commercial instinct.

With more and more penetration of Fintech into the markets, regulators received more conceptual clarity and insight into the solutions offered. Post-2015, businesses and banks also got better receptive to Fintech. At the same time, regulators were also able to assess the risk associated with the offered products. And with the readiness to accept Fintech as the innovation of the century post-Covid period has seen a dramatic increase in this industry. With an increase in the adaption of Fintech, organizations started to use Fintech in executing Sustainable Development Goals. The Fintech technology made it convenient for the regulators and policymakers of the countries to fulfill their commitment towards SDGs.

With the increasing usage of finance technology, countries have also started to see this as an opportunity for financial inclusion. Although there is no denying that cyber security is still an issue but in spite of that, the growth which the fintech sector has shown is impeccable.

Research on Fintech will help the Bank better understand how it can support this evolving financial system, design future policies, and use technology to enhance its capabilities. Part of upgrading its infrastructure involves exploring new technologies. The Bank will continue to undertake Point of Contact (PoC) with fintech companies and increase its work on Supertech. Rules and regulations should also keep pace with innovation and mitigate potential risks while preparing for future innovations.

Future Scope of Research

In the first quarter of 2020, India overtook China in terms of Fintech funding. While Chinese fintech companies attracted $270 million dollars in funding, Indian companies attracted a whopping $330 million (BW Business World, accessed on March 8 2021). Fintech companies in India are spread across different categories such as payments, lending, insurance, personal finance management, investment platforms, and more. There are 2000+ Fintech start-ups in India, and the biggest category is Payments. This is because no matter one’s job, gender, or age, everyone has bills to pay, invoices to process, and online orders to pay for. India should develop its fintech infrastructure, specifically its payments architecture, decreasing the rate of cyber frauds, as well as its soft infrastructure, relating to rules and regulations of the fintech industry to mitigate the potential risk. There is also the emergence of new concepts related to Sustainable finance like Green Fintech, Greenwashing, and so on in which work can be contributed.

References

Arner, D. W., Barberis, J., & Buckley, R. P. (2015). The evolution of Fintech: A new post-crisis paradigm. Geo. J. Int'l L., 47, 1271.

Arner, D. W., Buckley, R. P., Zetzsche, D. A., & Veidt, R. (2020). Sustainability, FinTech and financial inclusion. European Business Organization Law Review, 21, 7-35.

Fuster, A., Berg, T., & Puri, M. (2021). FinTech Lending. Annual Review of Financial Economics, 14.

Bollaert, H., Lopez-de-Silanes, F., & Schwienbacher, A. (2021). Fintech and access to finance. Journal of corporate finance, 68, 101941.

Brummer, C., & Gorfine, D. (2014). FinTech: Building a 21st-century regulator's toolkit. Milken Institute, 5.

Dapp, T., Slomka, L., AG, D. B., & Hoffmann, R. (2015). Fintech reloaded–Traditional banks as digital ecosystems. Publication of the German original, 261-274.

Anne-Laure Mention (2019) The Future of Fintech, Research-Technology Management, 62:4, 59-63

Guild, J. (2017). Fintech and the Future of Finance. Asian Journal of Public Affairs, 17-20.

Gulamhuseinwala, I., Bull, T., & Lewis, S. (2015). FinTech is gaining traction and young, high-income users are the early adopters. Journal of Financial Perspectives, 3(3).

Jagtiani, J., & Lemieux, C. (2017). Fintech lending: Financial inclusion, risk pricing, and alternative information. Risk Pricing, and Alternative Information (December 26, 2017).

Kandpal, V., & Mehrotra, R. (2019). Financial inclusion: The role of fintech and digital financial services in India. Indian Journal of Economics & Business, 19(1), 85-93.

Mehrotra, A. (2019, April). Financial inclusion through fintech–a case of lost focus. In 2019 International conference on automation, computational and technology management (ICACTM) (pp. 103-107). IEEE.

Mnohoghitnei, I., Scorer, S., Shingala, K., & Thew, O. (2019). Embracing the promise of fintech. Bank of England Quarterly Bulletin, Q1.

Demirguc-Kunt, A., Klapper, L., Singer, D., & Ansar, S. (2018). The Global Findex Database 2017: Measuring financial inclusion and the fintech revolution. World Bank Publications.

Tay, L. Y., Tai, H. T., & Tan, G. S. (2022). Digital financial inclusion: A gateway to sustainable development. Heliyon, e09766.

Cen, T., & He, R. (2018, December). Fintech, green finance and sustainable development. In 2018 International Conference on Management, Economics, Education, Arts and Humanities (MEEAH 2018) (pp. 222-225). Atlantis Press.

Arner, D. W., Buckley, R. P., Zetzsche, D. A., & Veidt, R. (2019). Sustainability, FinTech and Financial Inclusion.

Hudaefi, F. A. (2020). How does Islamic fintech promote the SDGs? Qualitative evidence from Indonesia. Qualitative Research in Financial Markets.

Pauliukevičienė, G., & Stankevičienė, J. (2022). Assessment of the impact of sustainable development goals indicators on the sustainable development of FinTech Industry. Business and management, 290-298.

Macchiavello, E., & Siri, M. (2022). Sustainable Finance and Fintech: Can Technology Contribute to Achieving Environmental Goals? A Preliminary Assessment of 'Green Fintech'and 'Sustainable Digital Finance'. European Company and Financial Law Review, 19(1), 128-174.

Dapp, T., Slomka, L., AG, D. B., & Hoffmann, R. (2014). Fintech–The digital (r) evolution in the financial sector. Deutsche Bank Research, 11, 1-39.

Nicholls, C. C. (2019). Open banking and the rise of FinTech: innovative finance and functional regulation. Banking & finance law review, 35(1), 121-151.

Lee, B. X., Kjaerulf, F., Turner, S., Cohen, L., Donnelly, P. D., Muggah, R., ... & Gilligan, J. (2016). Transforming our world: implementing the 2030 agenda through sustainable development goal indicators. Journal of public health policy, 37, 13-31.

Punater, N., & Shankar, V. (2016). Fintech in India- A Global Growth Story. KPMG. https://assets.kpmg.com/content/dam/kpmg/pdf/2016/06/FinTech-new.pdf

Pulse of Fintech H2'21. (2022). KPMG. https://kpmg.com/xx/en/home/insights/2022/01/top-fintech-trends-in-h2-2021.html

Fintech in India: The Past, The Present, The Future. (2021). BW Business World. https://www.businessworld.in/article/Fintech-In-India-The-past-The-present-The-future/08-03-2021-383169/

Walden, S., & Whiteman, D. (2022). What is Fintech? Forbes. https://www.forbes.com/advisor/banking/what-is-fintech/