

Financial Technology Influence on the Banking Industry

Subjects: Business, Finance | Computer Science, Artificial Intelligence | Computer Science, Interdisciplinary Applications

Contributor: Parminder Varma, Shivinder Nijjer, Kiran Sood, Simon Grima, Ramona Rupeika-Apoga

The synthesis of technology and finance is known as financial technology (Fintech), which brings together two of the biggest industries in harmony. Fintech disruption is a deviation from the norm, resulting in a significant shift in banking services and, as a result, risk.

Keywords: Fintech ; banking ; blockchain ; cryptocurrency ; emerging technologies ; thematic analysis

1. Introduction

The Internet of Things (IoT), cloud computing, virtual and augmented reality, blockchain, artificial intelligence (AI), and e-commerce are a few of the emerging technologies influencing the future. Technology-driven innovations accelerate the automation of well-established data collection and analysis processes. However, automation raises data security and privacy concerns, putting the relationship between technological advancement and regulation at risk. In the financial sector, incumbent banks have traditionally faced stricter regulatory requirements than start-ups that use innovative financial technology (Fintech) ([Roy 2021](#)). For incumbent banks, disruption from Fintech poses a challenge ([Truby et al. 2020](#)). On the one hand, banks are being forced to lower their risk levels, increase capital adequacy, and improve the stability of their revenue pools due to the continued escalation in regulation ([Buchak et al. 2018](#)). On the other hand, banks are threatened by technological advancements as Fintech firms may reduce the banks' market share, leading banks to make riskier investments ([Rupeika-Apoga and Wendt 2021](#)). As a result, banks must adapt to a changing environment. However, achieving innovation and agility may expose the company to new risks or jeopardise the quality of existing practices. Furthermore, according to [Soloviev \(2018a, 2018b\)](#), Fintech initiatives have not yet resulted in a radical transformation of the financial sector because banks, Fintech start-ups, technology companies, the state, and clients all have different perspectives on Fintech.

Researchers' contribution to academic literature, as well as public and political debate, is two-fold. First, the existing literature on the impact of Fintech on the financial sector is contradictory. For example, ([Shoaib et al. 2020](#); [Kuzmina-Merlino and Saksonova 2018](#)) consider blockchain technology to be a catalyst for financial sector development, whereas other findings ([Fauzi et al. 2020](#)) associate cryptocurrencies with extremely high energy consumption, which has a negative impact not only on the financial sector but on the entire economy. researchers used a comprehensive thematic analysis in this entry to identify the major impact streams recognised in current academic research.

Second, as emerging technologies and regulatory environments continue to develop, previous review studies might now be out of date. In order to fill this gap, the current entry offers a comprehensive literature review based on the most recent findings. Furthermore, researchers decided to concentrate specifically on how blockchain technologies affect banking, as blockchain has already transformed the financial world but is still in its early stages of adoption ([Grima et al. 2021](#)).

2. Emerging Technologies in the Banking Industry

The market's current most disruptive and empowering force is, without a doubt, the growth of the financial technology ecosystem ([Laidroo et al. 2021](#)). Fintech refers to emerging technologies that offer novel ways of delivering financial services that are unavailable through traditional channels ([Rupeika-Apoga and Thalassinou 2020](#)). Emerging technology is an innovation that fundamentally alters how consumers, companies, and entire industries function. Because of its measurable and superior qualities, emerging technologies have the potential to replace established systems or practices. Emerging technology, to put it simply, is a new technology that fundamentally alters the way a market or industry currently operates. As a result of their potential to disrupt the status quo, emerging technologies frequently encounter initial resistance from established businesses ([Barroso and Laborda 2022](#)). They can, however, fundamentally alter how an

industry runs over time. Anti-ad blocking software, online shopping, and 5G with Wi-Fi 6 are a few examples of emerging technologies. However, the potential of emerging technology is frequently underestimated ([Bilan et al. 2019](#)).

Emerging technology does not have to be novel or revolutionary; however, it must have the potential to transform a specific market or sector. Numerous sectors, ranging from agriculture to education, use this kind of technology ([Chonsawat and Sopadang 2020](#)). New technology is frequently not immediately embraced by the general public. This is due to the fact that it is frequently viewed as being too risky or unproven. However, as the technology develops, it may eventually find widespread adoption. A number of advantages could result from this, including reduced costs, higher quality, and more competition ([Anshari et al. 2020](#)). Emerging technologies have the potential to completely transform an industry and even create entirely new markets.

Emerging technologies reset consumer expectations and change how people manage and move money ([Truby et al. 2020](#)). Blockchain, cryptocurrencies, AI, IoT, cloud computing, virtual/augmented reality and e-commerce are all examples of emerging technologies used in the banking industry. Banks are using AI and machine learning in a wide range of settings. While chatbots are the forms of artificial intelligence that are most visible to the general public, AI also has an impact on back-office operations, product delivery, risk management, marketing and security ([Schulte and Liu 2017](#)). Machines use simple algorithms to carry out tasks such as data entry, risk assessment, and loan form processing, saving top banks hundreds of thousands of employee hours each year ([Schulte and Liu 2017](#)). However, AI is an emerging technology that carries risks. Systems for making poorly designed decisions have a higher chance of making mistakes, leading to legal issues and raising costs ([Truby et al. 2020](#)). These emerging banking technologies are also easily accessible to smaller banks, with tools to automate processes such as documentation, data sharing, data analysis, customer communication, and more ([WEB 2019](#)).

AI and machine learning contribute significantly to automation and robotics. Chatbots and automation are emerging technologies in the financial services industry that reduce man-hours, improve the quality of customer relationships, and increase profitability ([Bilan et al. 2019](#)). According to a study ([Mike 2021](#)), over 120 million workers worldwide will need to be retrained over the next few years. Robots and AI-RPAs (robotic process automation) are primarily used to automate repetitive tasks, generate reports, log data, and maintain logs. RPA, for instance, can handle instant payments by using a programmed rule to approve a payment automatically if all requirements are met. Once this transaction had been recorded, it would be updated across all servers and apps that were using the data by another RPA, which would then move the documentation into a larger file ([WEB 2019](#); [Mike 2021](#)).

Blockchain is an emerging financial services technology trend that is transforming the financial world as researchers know it, but it is still in its early stages of adoption. This is why researchers decided to focus specifically on how blockchain technologies affect banking in this entry. According to KPMG's study, blockchain clearly has significant impacts on the finance function, and most organisations will gradually adopt the technology as they envision a new operating model for finance ([KPMG 2019](#)). The main potential benefits of blockchain are up to 95% reduction in errors due to the elimination of out-of-sync ledgers and reconciliations; up to 40% increase in efficiency due to straight-through processing and a single source of truth; up to 25% improvement in customer experience, due to faster processing and use of digital channels; up to 75% reduction in capital consumption, due to quicker settlement of trades, straight through processing, and freed-up capital flows ([KPMG 2019](#)). The decentralised nature of blockchain translates into the absence of regulatory bodies, which may replace control instruments from institutional actors with a more dynamically distributed environment ([Velasco 2017](#)). Blockchains with auditable ledgers and tamper-resistance provide credibility and regulation to transactions on the Internet ([Wang et al. 2018](#)). Therefore, academics examined the potential applications of blockchains in the financial industry, including open banking, tightening the regulatory framework, and enhancing credit decisions ([Srivastava and Dashottar 2020](#)).

Fintech disruption refers to a significant shift in banking services from traditional banks to neobanks. Many emerging technologies in the Fintech industry directly impact the delivery of retail banking products and services ([Truby et al. 2020](#)). As consumer and business banking practices evolve, these changes should be viewed as essential planning measures. In general, Fintech is expected to improve consumer welfare while also providing supervisory and regulatory benefits to the industry ([Musabegović et al. 2019](#)). Fintech may provide decentralised tools for enhancing system-wide resilience while avoiding the moral hazards stemming from quantitative easing and negative interest rates. This becomes relevant in the context of the global financial crisis, as traditional banks are incentivised to take excessive risks ([Hayes 2016](#)).

The provision of financial services to the general public is the key function of retail banking ([Demirgüç-Kunt et al. 2020](#)). Fintech is expected to greatly enhance the banking industry through several channels, including automation of customer segmentation processes; cost reduction in payment transactions; quality-control of customer service; optimised

accounting; and expansion of the customer base (Melnychenko et al. 2020). Financial inclusion may include the provision of financial services to underserved populations with limited access to traditional financing channels (Grima et al. 2020a). The use of Fintech in retail banking is linked to system-wide stability outcomes and socioeconomic benefits. As a result, reviewing the established literature on emerging technologies in the banking industry can be beneficial.

References

1. Roy, Anup. 2021. Fintech Regulations Must Be Based on Entity, Not Activity: RBI Dy Governor. Business Standard, 2021. Available online: https://www.business-standard.com/article/finance/fintech-regulation-must-be-entity-based-rbi-deputy-governor-rabi-sankar-121092800472_1.html (accessed on 3 August 2022).
2. Truby, Jon, Rafael Brown, and Andrew Dahdal. 2020. Banking on AI: Mandating a Proactive Approach to AI Regulation in the Financial Sector. *Law and Financial Markets Review* 14: 110–20.
3. Buchak, Greg, Gregor Matvos, Tomasz Piskorski, and Amit Seru. 2018. Fintech, Regulatory Arbitrage, and the Rise of Shadow Banks. *Journal of Financial Economics* 130: 453–83.
4. Rupeika-Apoga, Ramona, and Stefan Wendt. 2021. FinTech in Latvia: Status Quo, Current Developments, and Challenges Ahead. *Risks* 9: 181.
5. Soloviev, Vladimir. 2018a. Fintech Ecosystem in Russia. Paper presented at the 2018 Eleventh International Conference “Management of Large-Scale System Development” (MLSD), Moscow, Russia, October 1–3; pp. 1–5.
6. Soloviev, Vladimir. 2018b. Fintech Ecosystem and Landscape in Russia. *Journal of Reviews on Global Economics* 7: 377–90.
7. Shoaib, Muhammad, Ming K. Lim, and Chao Wang. 2020. An Integrated Framework to Prioritize Blockchain-Based Supply Chain Success Factors. *Industrial Management & Data Systems* 120: 2103–31.
8. Kuzmina-Merlino, Irina, and Svetlana Saksonova. 2018. The Knowledge and Competencies Required for the Fintech Sector. In *New Challenges of Economic and Business Development—2018: Productivity and Economic Growth*. Riga: Univ Latvia, pp. 387–95. Available online: <https://www.webofscience.com/wos/woscc/full-record/WOS:000535358500036> (accessed on 12 July 2022).
9. Fauzi, Muhammad Ashraf, Norazha Paiman, and Zarina Othman. 2020. Bitcoin and Cryptocurrency: Challenges, Opportunities and Future Works. *The Journal of Asian Finance, Economics and Business* 7: 695–704.
10. Grima, Simon, Murat Kizilkaya, Kiran Sood, and Mehmet ErdemDelice. 2021. The Perceived Effectiveness of Blockchain for Digital Operational Risk Resilience in the European Union Insurance Market Sector. *Journal of Risk and Financial Management* 14: 363.
11. Laidroo, Laivi, Ekaterina Koroleva, Agata Kliber, Ramona Rupeika-Apoga, and Zana Grigaliuniene. 2021. Business Models of FinTechs—Difference in Similarity? *Electronic Commerce Research and Applications* 46: 101034.
12. Rupeika-Apoga, Ramona, and Eleftherios I. Thalassinou. 2020. Ideas for a Regulatory Definition of FinTech. *International Journal of Economics and Business Administration* VIII: 136–54.
13. Barroso, Marta, and Juan Laborda. 2022. Digital Transformation and the Emergence of the Fintech Sector: Systematic Literature Review. *Digital Business* 2: 100028.
14. Bilan, Andrada, Hans Degryse, Kuchulain O’Flynn, and Steven Ongena. 2019. FinTech and the Future of Banking. In *Banking and Financial Markets*. Edited by Andrada Bilan, Hans Degryse, Kuchulain O’Flynn and Steven Ongena. Palgrave Macmillan Studies in Banking and Financial Institutions. Cham: Springer International Publishing, pp. 179–99.
15. Chonsawat, Nilubon, and Apichat Sopadang. 2020. Defining SMEs’ 4.0 Readiness Indicators. *Applied Sciences* 10: 8998.
16. Anshari, Muhammad, Mohammad Nabil Almunawar, and Masairol Masri. 2020. Financial Technology and Disruptive Innovation in Business: Concept and Application. *International Journal of Asian Business and Information Management* 11: 29–43.
17. Schulte, Paul, and Gavin Liu. 2017. FinTech Is Merging with IoT and AI to Challenge Banks: How Entrenched Interests Can Prepare. *The Journal of Alternative Investments* 20: 41–57.
18. WEB, and EVERFI. 2019. 4 Emerging Technologies in the Financial Services Industry. EVERFI. June 3, 2019. Available online: <https://everfi.com/blog/financial-education/emerging-tech-in-financial-services/> (accessed on 2 August 2022).
19. Mike, Thomas. 2021. Will Robots Rule in the Future? Available online: <https://builtin.com/robotics/future-robots-robotics> (accessed on 20 July 2022).

20. KPMG. 2019. Blockchain and the Future of Finance. Available online: <https://assets.kpmg/content/dam/kpmg/ca/pdf/2019/05/blockchain-and-the-future-of-finance.pdf> (accessed on 23 July 2022).
21. Velasco, Pablo R. 2017. Computing Ledgers and the Political Ontology of the Blockchain: Computing Ledgers. *Metaphilosophy* 48: 712–26.
22. Wang, Xin, Xiaomin Xu, Lance Feagan, Sheng Huang, Limei Jiao, and Wei Zhao. 2018. Inter-Bank Payment System on Enterprise Blockchain Platform. Paper presented at the 2018 IEEE 11th International Conference on Cloud Computing (CLOUD), San Francisco, CA, USA, July 2–7; pp. 614–21.
23. Srivastava, Vikas, and Surya Dashottar. 2020. Default Probability Assessment for Project Finance Bank Loans and Basel Regulations: Searching for a New Paradigm. *The Journal of Structured Finance* 25: 41–53.
24. Musabegović, Ismail, Mustafa Özer, Slađana Đuković, and Stefan Jovanović. 2019. Influence of Financial Technology (Fintech) on Financial Industry. *Ekonomika Poljoprivrede* 66: 1003–21.
25. Hayes, Adam. 2016. Decentralized Banking: Monetary Technocracy in the Digital Age. In *Banking beyond Banks and Money*. Edited by Paolo Tasca, Tomaso Aste, Lorian Pelizzon and Nicolas Perony. New Economic Windows. Cham: Springer International Publishing, pp. 121–31.
26. Demirgüç-Kunt, Asli, Leora Klapper, Dorothe Singer, Saniya Ansar, and Jake Hess. 2020. The Global Findex Database 2017: Measuring Financial Inclusion and Opportunities to Expand Access to and Use of Financial Services*. *The World Bank Economic Review* 34: S2–S8.
27. Melnychenko, Svitlana, Svitlana Volosovych, and Yurii Baraniuk. 2020. Dominant ideas of financial technologies in digital banking. *Baltic Journal of Economic Studies* 6: 92.
28. Grima, Simon, Ercan Özen, and Hakan Boz, eds. 2020a. *Contemporary Issues in Business Economics and Finance*, 1st ed. *Contemporary Studies in Economic and Financial Analysis* 1569–3759. Bingley: Emerald Publishing, vol. 104.

Retrieved from <https://encyclopedia.pub/entry/history/show/80068>