

Fintech and the Digital Transformation of Financial Services

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Abstract. By creating a decision-making mechanism that relies on data as the basis for decisions, fintech is accelerating the change in the financial sector. The financial markets have faced numerous possibilities and problems as a result of their continuing rise. Fintech is a broad term that can refer to anything from straightforward mobile payment apps to intricate blockchain networks that process cryptocurrency transactions. This paper reviews the literature on the continuous development of fintech and investigates how it is altering financial markets by gathering pertinent data for in-depth study. It has been discovered that fintech is a two-edged sword for the financial markets. Many sectors now have access to comprehensive and up-to-date decision support information as a result of its development and utilization. But at the same time, traditional financial services are replaced by new technologies such as the Internet, and the complexity and risk brought about by fintech will also manifest itself.

Keywords: Fintech, Payment Systems, P2P Lending, Robo Advice, Blockchains.

1. Introduction

Financial Stability Board defines Fintech as technologically enabled financial innovation that can lead to new business models, applications, processes or products with a relevant material effect on financial markets and institutions and the provision of financial services [1]. The financial industry started its electronic phase in the 1970s and entered its current period at the start of the twenty-first century by using technology to manage and operate finances. Then the financial market ushered the rise of data applications and online banking, which transformed the financial industry from electronic to information. Around 2004, third-party payment companies started to emerge as a result of the use of the Internet and digital technology. Fintech has entered a new era as a result of the quick growth of investments and online banking. Since 2017, fintech and artificial intelligence have become more and more popular, becoming the areas that entrepreneurs and capital are competitively pursuing [2]. With the COVID-19 epidemic starting in 2020, technology has opened up new possibilities for digital financial services. Innovative financial services have been adopted more quickly as a result. Online platforms grew more pervasive in daily life as a result of lockdowns driving customers to seek reliable channels for contact and trade. Fintech has set off a wave of the financial industry, and financial services and products with innovative technology as the core are being used in the financial market in large numbers.

Smart money management, peer-to-peer lending, crowdfunding, and blockchain technology were seen as having the largest impact on the financial industry in the future by the 3,803 respondents who took part in the CFA Institute's Fintech Survey Report, which was published in April 2016. 37% of them believe smart money will have the greatest impact on the financial industry in the next year, followed by P2P (23%), crowdfunding (15%), and blockchain technology (11%). By far the biggest influence on the financial sector in the coming five years, according to 40% of respondents, is smart money management, followed by 30% for blockchain technology. In the short term, P2P and crowdfunding are thought to be more affected on the financial sector than they will in the long run [3]. The scope of FinTech activities has grown as a result of advances in science and technology. They began with payment systems, peer-to-peer lending and have since expanded to include blockchain and the emerging fields of robo-investing. Although technology is advancing, the risks in the financial markets have not disappeared and there are still many problems. For example, what is the function and importance of payment systems in the flow of funds; how is the market affected by

the P2P lending interest rate pricing mechanism; what are the restrictions of Robot Advice; what are the challenges of applying Blockchains in the financial industry and whether the establishment of their platforms is necessarily safe and their risks are necessarily controllable. In order to promote the use of technology in the financial industry and better avoid the difficulties that may arise in the future development of Fintech, the problems can only be assessed and solved, after having a thorough awareness of the risks and issues associated with Fintech.

2. Payment system

Along with the growing financial innovation, the competition in the payment service industry has become more and more intense. On the one hand, the application of payment systems plays an active role in the development of the economy and the convenience of daily life, and it encourages the clearing and settlement of financial transactions. But on the other hand, there are risks and issues that come with it as well. Debit cards, credit cards, online banking, and e-commerce are just a few of the modern payment technologies that have taken the role of cash payments. Compared with traditional payment systems, the cost of applying payment systems is lower and the risk of information loss can be reduced to a certain extent because the payer's credit card information or account information only needs to be communicated to the payment intermediary and not to the recipient [4].

However, there are a number of possible hazards connected to payment systems as well. For example, the payer may be at risk to a substantial extent if the platform has weak creditworthiness or information system security. In addition, if the payment platform is a non-financial institution, there is a gap in the ability to host funds compared to banks, securities, insurance and other financial institutions, then the hosting of funds will be risky. Additionally, since the payment system involves network issues, it may be attacked by viruses and hackers, which will pose a serious threat to the security of user payments [5]. Figure 1 comprehends the flow of funds during the payment process. Money moves from the user side to the payment system when a user initiates a payment activity, and the opposite happens when a refund is issued - funds move back from the payment system to the user side. Because of this, money moves back and forth between the user side and the payment system throughout the duration of the transaction. In this case, the funds collected on behalf of the merchant are settled to the merchant after the payment system has been cleared, and this flow of funds is one-way. The majority of businesses typically put this aspect into practice offline for the sake of capital circulation security [6].

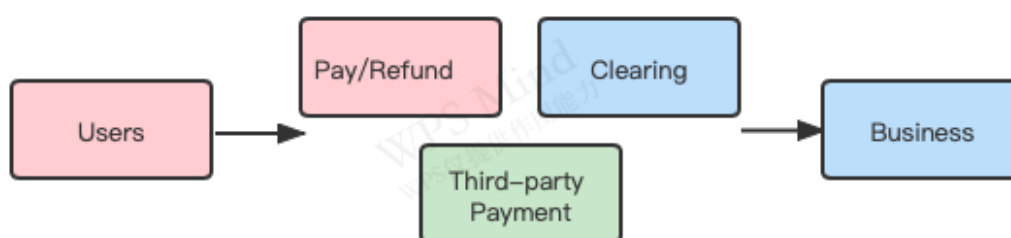


Figure 1. Flow of funds in the payment process
(Photo credit: Original)

In general, the smooth flow of payments and the effective operation of financial markets are all made possible by payment systems, which can also help to enhance financial stability by lowering the risks involved in financial transactions. By facilitating the seamless flow of payments that support economic activity, it increases economic efficiency and advances the financial sector by fostering consumer confidence in the usage of money and payment services. Amount reconciliation is one of the features of the payment system, which also serves as a link between customers, retailers, and financial institutions [7]. The payment system improves the efficiency of payment settlement, reduces transaction costs, and also boosts the pace of money circulation, which in turn promotes the

development of the economy. Since its founding, financial markets have been able to grow on a solid foundation, and its applications are now a significant part of most people's everyday lives.

3. P2P lending

With the development of FinTech and the strong demand for personal credit, P2P Lending platforms have experienced explosive growth as the main form of FinTech industry in the past few years. Early on, the P2P lending system was viewed as a way for people who would be turned away by conventional lenders to obtain access to credit or as a way to consolidate student loan debt at a more favorable interest rate. However, P2P lending platforms have widened their audience in recent years. The majority of them now concentrate on customers who wish to pay off credit card debt with a lower interest rate. Auto financing and home improvement loans are also available to users through P2P lending platforms. When compared to comparable bank rates, the rates for applicants with good credit are usually lower, while the rates for those with rough credit histories may be significantly higher [8]. Through the use of an internet platform, P2P lending allows for direct lending between two parties and acts as a link between borrowers and lenders, playing more of an information middleman function in the financial services industry. The borrowing transaction process on the P2P Lending platform is primarily realized through competitive bidding, which means that the amount of money needed by a borrower is funded by a number of lenders, and the borrowing project will be removed from the platform once the borrowed amount has been raised [9]. P2P Lending provides convenience to borrowers and lenders, but at the same time, the risk issues of the platform are also exposed. If the platform's operations are not sufficiently standardized, there are technological gaps and inadequate risk control management capabilities, these risks are concentrated and the P2P Lending platform will be prone to a range of operational issues.

In the study of interest rate pricing mechanisms of online lending platforms, Herzenstein (2011) and Barasinska (2014) present a thorough explanation of the interest rate auction mechanism of Prosper, an online lending platform in the United States. In Prosper, borrowers are usually forced to set the highest interest rate they are willing to pay for the loan, and when the total amount lent rises, the rate decreases even further. The interest rate is brought to a level that is acceptable to both lenders and borrowers through a competitive procedure between them. For the P2P platform interest rate pricing, not the higher the interest rate the better, the platform with an annual interest rate of about 12% relatively ensures the controllability of the risk. Interest rates will go up when there is a shortage of money, and they will go down when there is an abundance [10]. Platforms for peer-to-peer lending not only contribute to the real economy but also play a key role in establishing the foundation for market interest rates. Due to the fact that P2P lending services are typically offered to Micro, Small, and Medium Enterprises (MSME) that are overlooked by commercial banks, the financing assistance for the development of these actual economies is precisely what fosters economic development and social employment [11]. In Fintech, the rise of P2P Lending platforms is at the same time driving the growth of financial markets.

4. Robo advice

In the Fintech industry, robo-advisors are digital platforms that offer automated financial services powered by algorithms, as well as a combination of artificial intelligence and investment advisor. Typically, a robo-advisor will conduct an online survey with investors to learn more about their financial condition and long-term objectives. Following that, recommendations are made based on this data, and investments are made for them automatically. The role of robo-advisors in bridging the gap between consumers and financial products is the same as that of traditional investment advisors. Robo-advisors, on the other hand, are more automated and intelligent than traditional investment advisors, which significantly lowers labor expenses. It enables people to spend a few minutes on the internet to complete the entire financial management process without leaving their homes. And people

don't have to spend any time in person visiting a bank or other institutions like traditional investment advisors do. After all, human energy is limited, while a machine's learning process is continuous, and the variety of products and market information it can access is certainly far better more than that of humans. Furthermore, robo-advisors use complex algorithms and a large amount of data to make investment, which can assist each different individual in making an optimal asset portfolio and allocation. It is more objective since it does not mislead clients about their operations for individual performance, and gets rid of irrational operation behavior of investors. In such a situation, robo-advisors are more flexible and individualized and may meet the various investment objectives of different people. It reduces transaction costs and increases transaction efficiency.

Robo-advisors take on some risks and are subject to certain limitations at the same time. A significant development in the financial industry is the provision of investment and financial services by Robo-advisors. For asset management, the presence of volatility is an important indicator in terms of gaining returns. Robo-advisors, on the other hand, are unable to predict market volatility; rather, they are limited to offering financial products that are suitable for specific individuals by compiling and analyzing historical data, as well as data that already exists, through the use of technology, in order to identify users' needs and preferences. As a result, the decision-making abilities of robo-advisors are constrained. It can only gather and analyze past information in order to forecast market trends and provide investors with investment recommendations. However, there is a lot of unpredictability in the financial markets, and only individuals can create and perfect new technology for future innovation. Specific customer groups find robo-advisors' distinctive benefits—such as greater transparency, a lower investment threshold and management fee rate, a positive user experience, and personalized investment advice. It is more appealing than others, which is what's causing the market to continue to grow both in terms of users and market size [12]. However, some users are unable to correctly employ robo-advisors to obtain the investment recommendations they offer since they themselves lack the fundamental knowledge and comprehension of the limitations of such services. Because of this, robo-advisors only play an auxiliary role in the financial industry to effectively provide investment advisory services, but they cannot completely replace traditional investment advisors at present.

5. Blockchains

Security is the most sensitive topic in the financial sector. Blockchains help control data corruption and other fraudulent activities to enable fintech companies to exchange and transport secure and unaltered data through centralized networks. Even with encryption, it helps keep data private and makes it simpler to monitor, comprehend and audit artificially intelligent(AI) decisions so that people can trust machine-driven intelligence. The security of the blockchains' technology needs to be guaranteed during the blockchains application process in order for all types of transactions to run smoothly. Users on the chain will be put in danger if it is impossible to verify the validity and legality of the data that precedes the chain. The anonymous transaction mechanism will also make supervision much more difficult and increase the likelihood that criminal activity would result.

Currently, the intermediate connection required for each transfer in cross-border payment settlement takes a long time and costs a lot of money. As a result, cross-border remittances are slowed down because of this intermediate link's high cost and low efficiency [13]. Through the blockchains platform, it is possible to avoid using a transit bank, lower the cost of transit, accelerate settlement and clearing, and the utilization of funds can be greatly improved. In order to avoid fragmentation and risks between information, the note industry can also create a workable transaction environment through the use of blockchain technology. For instance, Jingdong Finance, through blockchain technology, strictly audits membership levels and ticket assets on the chain to avoid tampering, enhancing the trust foundation and risk control level of scene participants [14]. At the moment, the application of blockchain technology not only improve the efficiency of financial management but also greatly reduces credit risk. The combination of blockchain technology and various fields of

finance can help reduce the cost of reconciliation and dispute resolution among financial institutions, and significantly improve the speed and efficiency of payment processing by reducing the possibility of data leakage and the operational risk of the platform [15]. Blockchain technology is pushing the rapid development of innovative technologies and economic systems, which is actively participating in the digital era and furthering the goal of changing financial markets. However, the compliance and risk supervision of its application technology need to be strengthened.

6. Suggestion

In the financial market, the application of fintech plays a very important role. Technologies such as Payment Systems, P2P Lending, Robo Advice, and Blockchains are being used to drive the financial industry. Based on the above research and analysis of platform security and risk control, combined with the development trend of financial technology, the following recommendations are made:

(1) As far as individuals are concerned, when trading operations on online platforms, keep personal accounts and passwords safe, choose a formal platform and raise the security awareness. Investors should not place an excessive amount of reliance on sophisticated technology when making financial product decisions. Instead, they should combine big data analysis with conventional human judgment to come up with the best possible investment strategy.

(2) More platforms should be equipped with a professional risk control team, improving the audit mechanism. Because only if the risk control is in place, the platform can operate effectively in the long run. When applying fintech technology, strong technology development coupled with a sound management system ensures a good fit with each financial industry. The Fintech should be combined with various forms of finance to improve the risk assessment ability of investors and to maintain the sustainability of technology in the financial market.

(3) The innovative business of the platform also requires proper regulatory measures from the regulator, who should enhance the control of the platform so that non-compliant and illegal platforms cannot exist in the market. Financial institutions can also guide investors to establish a correct investment philosophy by providing wealth product services, professional investor advice, and objective investment decisions. This is conducive to promoting the development of the financial services industry and stabilizing order in the financial market [16].

7. Conclusion

According to this study, the financial industry has benefited from fintech's use of cutting-edge technology by receiving new service models and products, which is in turn causing the financial market to change. The financial technology industry is flourishing in the context of the trend of financial market transformation, and innovative technology information technology is deeply integrated with financial business. In order to deepen financial reform, enhance the business capacity of financial services and prevent financial risks, it is especially important to improve the strategic deployment of financial technology and enhance the security of fintech applications. It is possible to better utilize fintech to promote and develop the financial field by combining traditional business forms with technology in the appropriate ways, reinforcing technical research, and improving platform supervision. This will enable the financial markets to form a transition in the process of transformation and reduce the problems that may arise when applying fintech. The proper and reasonable use of fintech in the financial business can allow it to fully express its leadership position and promote the development of the financial market with innovative technology in the face of any future challenges that may occur in its further development.

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