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Status and Regulation of the Fintech Industry

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Abstract: Fintech is the cross product of the financial industry and the technology industry. With the development of society, financial digitization and technology finance have become the development trend. Electronic payment, p2p lending, Robo-Advisor and block chain technology four industries have formed a scale. The current fintech industry has become an important supplement to the economic system. However, due to the short development time, there are still challenges such as high risk points and difficult supervision. Based on the existing industrial scale and business capacity, the continuous integration of fintech industry and society has become a future trend. In the long run, fintech enterprises should give full play to their advantages in technology reserve, optimize and improve products, maintain industry self-discipline and reduce risks. The society and the government also need to keep objective and inclusive, increase talent reserve and industry support, maintain active supervision, promote the establishment of relevant laws and regulations, and maintain a good industry ecology.

Keywords: fintech, e-payment, P2P lending, Robo-advisor, block chain

1. Introduction

With the development of The Times and the progress of technology, the development needs of society and technology collide with each other, forming the fintech industry based on Internet technology and big data technology. The concept of fintech was first born in the late last century, but it has seen significant development in the era of mature Internet technology. Finance and technology have never been so tightly integrated. In the past, science and technology determined the limit of social development, and finance determined the space for human survival. At present, fintech based on model innovation, driven by technology iteration and investment influx, connects technology and finance to the lives of ordinary people. Fintech has received much attention since its birth, showing rapid development, large scale of development, and great potential. In the first half of 2022, $107.8 billion has been invested in fintech, with 2,980 deals [1]. Globally, the United States, the United Kingdom, Singapore and other countries are supporting the development of their own fintech enterprises and building international fintech centers. The development nodes of fintech are spreading out from central cities such as New York and London, and forming large-scale industries in important financial centers such as Tokyo, Shanghai and Frankfurt on a global scale. The majority of the top 100 fintech companies in 2022 are from Europe and the US, with 14 companies from China and the rise of new players in countries such as Russia [2]. The importance of fintech is increasing day by day. The governments of countries and regions all over the world

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hope to increase the investment in fintech field, create advantages in the industry, and then expand the power and ability of the country under the world financial system.

The fintech industry is mainly divided into four parts: electronic payment industry, P2P lending industry, intelligent investment industry and blockchain industry. Due to early development, technical reserve reorganization, low development difficulty, large social demand and strong promotion ability, some industries have formed very mature industrial and regulatory measures. Both electronic payment and P2P lending have a development history of more than 15 years, with high public acceptance and low risk. They have formed a complete industrial chain among major economies in the world, and have representative enterprises and corresponding regulatory systems. The intelligent client investment industry has risen rapidly with the help of the development tide of artificial intelligence in the past decade, and has won great praise within the fintech industry, but the popularization of the public still needs to wait for social recognition and enterprise promotion. Blockchain technology creates industries with the ability to disrupt the financial system. Because the technology concept has the ability to rebuild the industry, blockchain technology has become the main path of future development. However, for its universal application in the financial field, the attitude of the world is different, and the risk still needs to be tested by time.

Now fintech has gradually changed from a role of filling the void to a pillar of the financial system, and has begun to impact the traditional financial system. The fintech industry based on current technologies has had a great impact on the financial system, but it has not yet caused a disruptive impact. With the continuous thinking on mode innovation and technological breakthroughs in the future, the potential of fintech is still worth looking forward to.

2. E-Payment

The electronic payment industry has been booming. With the continuous development of the electronic payment industry and Internet technology, the concept of electronic payment was put forward in the 1990s, and has had a wide impact all over the world. Generally speaking, electronic payment refers to the monetary payment activities through electronic devices. Electronic equipment includes Internet equipment with PC as the main part and mobile electronic equipment with mobile phone as the main part. The electronic payment industry has effectively developed traditional business models and created new commercial channels such as e-commerce. Electronic payment is an important factor in the rapid development of digital economy in the new era.

The origin and development of electronic payment depend on the wide spread of electronic equipment and the innovation and improvement of information technology. In the traditional concept, financial services companies (FS) and technology, media and telecommunication (TMT) companies belong to different industries and have less business relevance. However, with the emergence of electronic payment, both financial service companies and TMT companies have participated in the development and market expansion of electronic payment. According to PWC Global Fintech 2019, a survey report released by PWC in 2019, with the development of technology, the boundaries between financial service companies and TMT companies have gradually blurred, forming a complex network of cooperation [3]. In the report, it is also mentioned that the fintech platform enables FS and TMT to have the dual attributes of technology and finance [3]. This dual attribute affects FS company and TMT company to have different development strategies and channels in electronic payment.

For TMT companies, their main business is electronic information industry or media industry, rather than financial industry. Although the three technology companies from different directions have different approaches to enter the financial field, what is common is that electronic payment significantly lowers the industry threshold for these technology companies to enter the financial industry. For TMT company, the emergence of electronic payment is essentially the improvement

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of its main business. In the early stage, due to the combination of business expansion and e-commerce, buyers and sellers based on the electronic platform lack of trust, which seriously affects the normal sales business of enterprises. Technology companies have developed electronic payment services based on both sides' need for credit. For the guarantee of credit, different enterprises have different choices. The first type of enterprises choose to build their own payment platform and use the company itself as a guarantee to provide payment services for customers. Such e-payment channels often require customers to link their bank cards to their platform accounts. The classic cases of such electronic payment services include Paypal developed on Ebay platform, Alipay developed on Taobao platform, and Wechat Pay developed on Wechat media platform. Another solution to the trust crisis is to find a third party that both parties fully trust and use its electronic payment service. For the second type of payment, tech companies only provide users with electronic wallets, and all settlement payments are still made by the card issuer or retail payment service. For example, Apple Pay, Google Pay and so on.

TMT has a significant impact on the financial industry. TMT companies that can enter the financial sector from the technology and media industries tend to have large user groups and strong user stickiness in their main business. Since TMT's development of the financial industry originates from the development needs of its main business, its huge user group and strong user engagement can provide a vast market share for its financial business, which is significantly reflected in the field of electronic payment. TMT's advantages make it a strong competitor to traditional financial institutions. FS is also actively using technology to meet customer needs. In China, China UnionPay, together with major banks, has jointly developed a "cloud flash payment" electronic payment channel. However, in the electronic payment industry, both the acquisition of customers and the settlement of funds depend on the existing banking system. From a macro perspective, TMT company and FS company have more cooperation than competition in the electronic payment industry. TMT effectively simplifies the convenience of micro-payment, improves the efficiency of financial operation, and does not cause a disruptive impact on the existing banking system. Both will lead to a long-term win-win situation.

As electronic payment brings a larger number of transactions, it directly improves the frequency and level of transactions and lowers the threshold of business. As electronic payment is a derivative developed based on online trade, it can be restricted by existing laws and regulations. However, there are still risks in electronic payments based on electronic platforms as intermediaries. Electronic payments rely on the digitization of monetary information, which enables the entire trade process to be transmitted in the form of data and reduces the loss of trust between parties. On the one hand, the existence of electronic payment relies heavily on the credit guarantee made by the payment platform, which makes the information asymmetry between the two sides of the transaction, thus increasing the risks in the trade process [4]. On the other hand, electronic payment in the process of information dissemination is easy to cause digital information leakage, resulting in property losses.

3. P2P Lending

P2P lending refers to the financial lending transactions between individuals and small and micro enterprises through the network platform mode. P2P is the abbreviation of Peer to Peer. Different from the traditional lending model, the P2P lending model based on the development of network technology focuses on small and micro enterprises and individuals. Through a large number of small loans between individuals and individuals, individuals and enterprises to meet the financial needs of individuals and enterprises. Since the concept was first proposed in 2005, the P2P lending model and its online platform have expanded rapidly around the world, and have developed in every

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country. China, the United States and the United Kingdom are the three countries with the largest P2P lending industry in the world.

The reasons for borrowing demand are usually consumption needs and financing needs. Consumption needs often appear at the individual level, while financing needs come from the level of company development. In the traditional model of lending, the sources of short-term or long-term borrowing are often banks, lending companies and private funds. These funds often need to be obtained through the review and evaluation of personal or enterprise credit, income and other relevant information. Or through good personal relationships or reputation, get loans. The former is usually transactional lending, while the latter is relational lending. Transactional lending requires strict review of lender information, so it takes a long time, has low efficiency and is difficult to borrow [5]. Although relational lending is based on the good reputation of the lender, there is an increased risk of default or failure to repay. As a result, traditional lending often cannot effectively cover the needs of small businesses. First of all, under the traditional lending mode, the review of small enterprises is complex, facing difficulties, and the loan takes a long time to obtain, resulting in low efficiency. Secondly, under the traditional lending model, the high risk and high market launch rate of small enterprises make lenders more cautious and more difficult to borrow. Moreover, under the traditional lending mode, small enterprises have a single borrowing channel and the borrowing threshold is too high. It is not only difficult for small businesses to borrow money under the traditional lending system, but also for individuals. First of all, because the traditional lending system has audit requirements for credit and repayment ability, for individuals, funds often cannot be lent in time, so it is difficult to meet their urgent consumption needs. Then, the borrowing cost based on the audit system is too high, and the material submission and audit are too complex for consumption behavior. Finally, borrowing based on personal relationships is prone to legal disputes. Therefore, the traditional lending model does not completely cover all groups.

The traditional lending model cannot cover the lack of personal loans and small business loans in the financial industry, and commercial banks and other financial institutions can hardly bear the risks brought by making up for this gap. From a technical point of view, the digitization of personal credit system is becoming more and more perfect. The development of the Internet provides a multidimensional record of individual credit to inform each individual's credit model. At the same time, the popularity of the Internet has brought more information channels. Therefore, P2P lending emerged based on technical satisfaction and social demand.

The core of P2P lending is the small loan between individuals and the small financing business between individuals and enterprises. According to the description in Fintech Credit in 2017, P2P lending has stronger digital processing capabilities through online platforms, and focuses its business on the shortcomings of the existing lending system, which effectively reduces the borrowing costs of customers and increases the convenience [6]. Therefore, its typical characteristics are real-time, convenience and effectiveness. By targeting individuals and small businesses, P2P lending has a wider range of customers and more frequent transactions than traditional lending. Therefore, P2P lending platforms are usually divided into two models. The first type is the intermediary platform. The online platform only provides the information of both lenders and borrowers, and does not provide credit guarantee for users. The second is the credit guarantee platform, which assumes the role of commercial banks in the traditional mode, conducts credit review and evaluation for borrowers, and determines the interest rate [7]. Platforms in this model earn profits by charging management fees.

However, P2P lending model still has risks and legal problems. Countries around the world have their own regulatory tools. Among the three largest countries, China, the United States and the United Kingdom, different countries have provided corresponding policy and legal basis based on different national conditions. In the United States, the business model of P2P lending is not a direct

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connection between people through the platform. Peer-to-peer companies in the United States make loans through banks to borrowers who want them, buy the banks' securities and resell them to lenders [8]. The Securities and Exchange Commission (SEC), the Consumer Financial Protection Bureau (CFPB) and the Federal Trade Commission (FTC) jointly oversee transactions because of the mechanism in which commercial banks make loans rather than the flow of private money.

The distinctive feature of P2P lending in the UK is industry autonomy. P2P in the UK is mainly regulated by the FCA and has gone through a process from industry self-regulation to the coexistence of self-regulation and rule of law regulation. In 2011, the P2P Finance Association emerged in the UK and reached relevant industry constraints. In China, the China Banking Regulatory Commission is the responsible regulator of P2P lending. Due to the imperfect credit investigation system, P2P Lending in China tends to be managed by local governments and managed by P2P lending platforms themselves. In addition, due to legal regulations, P2P lending platforms are positioned as financial information intermediaries and are not allowed to provide any credit guarantee business. Therefore, all P2P companies in China are intermediary companies. Different countries have adjusted the business operation model of P2P based on different economic situations. However, based on the technical basis and operation philosophy of P2P lending, the universal risks can still be summarized.

First of all, P2P lending relies heavily on big data technology and statistical conclusions of relevant data. The conclusions provided by technology are often based on the analysis of data, which cannot directly reflect cause and effect. In addition, due to the short emergence time, there is not enough valid information to support the model. According to the survey of the US Treasury Department, P2P lending seriously lacks the accumulation of a complete credit cycle. The reliability of the model is questionable [9]. Secondly, The model innovation of P2P lending makes it prone to legal conflicts. Due to the large number of customers and large loan business, there are some problems in the P2P model, such as unclear information about the source of funds, and the business that needs to be approved cannot be realized. For example, illicit funds could theoretically be transferred and laundered through the P2P model. In China, the laundering of illicit funds is illegal under the Criminal Law of the People's Republic of China and carries a sentence of imprisonment. Besides, It is difficult to protect investors in the P2P model. In order to attract funds from lenders, many P2P platforms attract public funds by exaggerating returns and downplaying risks, or fictitious borrowers to attract public funds for their own project development. As a result, there are no precise legal provisions to protect investors in P2P lending. In addition, the risk of personal privacy disclosure in P2P mode is serious, and the protection of personal information needs to be strengthened urgently.

4. Robo-advisor

Robo-advisor refers to the provision of consulting services based on data analysis for investors according to their risk preferences and investment needs through artificial intelligence technology. Robo-advisor originated from the introduction of statistical concepts in the investment process for mathematical analysis of investment preferences. The technology began with the introduction of mathematical models in 1952 and began to take shape in small online investment management services in 1990 [10]. With the development of Internet technology, artificial intelligence has shifted from concept to entity and gradually improved. In 2015, Robo-advisor based on big data learning was launched and widely used. According to PWC's Global Fintech Report 2019, 56% of FS company managers believe that AI will be the most important technology to transform the financial services industry in the future [3]. Technology companies have R&D projects on Robo-Advisor at the same time as FS companies, and have different directions of exploration. On the one hand, technology companies develop independent intelligent investment advisory platforms

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based on their advantages in technical reserves and experience in big data technology. On the other hand, FS companies choose to introduce big data technology for analysis in their investment decisions.

The main drivers of Robo-Advice technology are market demand and capital. Robo-Advice effectively improves decision-making efficiency and accuracy, and reduces risks in the investment process. Beyond technological developments, there are two main drivers of Robo-Advice. First, The traditional consulting model cannot meet the needs of investors. On the one hand, due to the discoordination between the insufficient supply of advice and the large demand of investors, the emergence of Robo-advisor can effectively replace the lack of human capital. On the other hand, the main business target of traditional investment institutions is clients with high net worth and high assets, and profits are obtained by charging management fees. Small investment clients have a large group, small benefits, and little cost difference compared with high net worth clients. Therefore, traditional investment institutions provide fixed investment advice to low net worth clients for a long time. Robo-advisor can effectively provide personal investment advice to a large number of customers, effectively expanding the market. Second, Robo-advisor can provide better advice. In PWG's Global Fintech Report 2019, FS and TMT managers believe that Personal digital content, Personalized Service, Trust, Faster service and process, Ease of Use are the five most important factors to increase customer viscosity [3]. Robo-advisor fully provides customized services, provides real results based on big data and effectively avoids risks arising from professional ethics problems of investment advisers. Robo-advisor also has great convenience. All this means that more clients need Robo-advisor. Robo-advisor has been widely used since its introduction, and today tens of billions of dollars in assets and funds are under the management of Robo-advisors.

Robo-advisor has become a useful tool for people working in the securities and fund industries. The investment preference obtained based on the analysis of customers' personal data not only has reference value for customers, but also can help investment consultants quickly obtain detailed and perfect personal information and improve personal investment suggestions on the basis of investment recommendations. Robo-advisor also enables systematic big data analysis of the investment preferences of a large number of clients. Through a large number of real and effective real-time data to predict the future "black swan" incidents, and partially avoid the risks that may arise in the financial market. On the other hand, Robo-advisor also has strong substitution for employees. Considering the easy availability of mobile devices, Robo-advisor based on mobile devices can more effectively provide clients with investment recommendations that are no weaker than their investment experience, and avoid the risks caused by the lack of professional ethics. Therefore, when the pay-to-report ratio of using an investment adviser is similar to that of Robo-advisor, clients tend to use Robo-advisor to avoid risks. This enables Robo-advisor to create a "catfish effect" among practitioners, prompting advisers with lower investment levels than AI to keep learning and gaining experience. Thus, information asymmetry is reduced, information transparency is increased, and consultation costs for clients are reduced.

Although after years of development, Robo-Advise technology has gradually matured. But the risk factors are still worth considering. On the one hand, Robo-advisor relies heavily on the model behind big data technology. The mathematical model of investment bias directly affects the accuracy of data analysis results and risk factors. On the other hand, the transparency of the data remains questionable. Although Robo-advisor will give neutral answers based on data analysis, the authenticity and reliability of the data itself is still worth considering.

5. Block Chain

Block-chain technology is also known as distributed ledger technology. Block-chain technology packs data information periodically and marks the time, and connects historical data packets with

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hash values to form a continuous information chain. Block-chain technology provides a secure and efficient transmission mode for data information. Block-chain technology first appeared on Bitcoin, which was released in 2008, and has been widely spread and applied as an interdisciplinary comprehensive technology. By 2022, the research and development of Block-chain technology has become an important project in various countries. Block-chain technology is also known as one of the greatest inventions of the 21st century.

A notable feature of Block-chain technology is decentralization. Decentralized finance represents that all commercial trade based on Block-chain technology is facilitated by a P2P network rather than a traditional central institution. Satoshi Nakamoto noted that a centralized monetary system that relies on traditional banks makes it difficult to transfer money without cost like other information [11]. Thus, Block-chain technology can be considered as a technical implementation of the decentralization idea. In the actual financial system, when commercial banks and other financial institutions in the central position have the dominant power, they will have too much market power and profits. Therefore, the core task of decentralization is to complete the decentralization or multi-center of the financial system [12]. Through Block-chain technology, the concept of disintermediation is extended. Decentralization is not the same as disintermediation. Disintermediation reflects the removal of the involvement of third parties so that the two parties directly complete the trade. Decentralization emphasizes that there is no center in the economic system, and every node can be a center and temporarily be a center. In the traditional financial system, commercial banks assume the task of center and intermediary. Commercial trade needs to be settled through banks, which also serve as the center of the economic system. However, in the electronic payment system, third-party payment platforms such as Paypal and Alipay play the role of intermediary, while banks still play the central role by relying on monetary settlement. Therefore, the existing Block-chain technology is easy to complete the task of disintermediation, which is determined by its own technical characteristics. However, for the concept of decentralization, since the current society and the future economic system have long relied on centralized currency issued by the government and settled by banks, Block-chain finance needs to issue its own decentralized currency to complete this task. This led to the creation of the first electronic currency, bitcoin.

Bitcoin was a decentralized currency at the beginning of its life. Due to the cryptographic encryption, bitcoin has a strong privacy and credit guarantee. Since the key of each bitcoin can only be calculated by a computer, and the password cannot be obtained by reverse tracking, its credit can be guaranteed. As more people got involved, the concept of bitcoin spread around the world. Due to its strong credit guarantee, more and more people are making money by computing bitcoin. At the same time, many people use bitcoin as a special stock outside the stock market to make profits. Therefore, to sum up, bitcoin is only decentralization on the technical level, and its feasibility in the real world is verified. But decentralization based on economics and sociology is not complete, because people still measure the value of decentralized currencies through centralized currencies. This is equivalent to alienating bitcoin into a special commodity rather than a settlement currency. So bitcoin has not done its job. There were many virtual currencies after bitcoin, but most of them continued the value of bitcoin rather than innovating.

Through the example of bitcoin, it can be seen that the driving factors of Block-chain technology in the financial field mainly come from the defects of the existing financial system, the conflicts caused by the cross-border financial industry of technology enterprises, and the demand for autonomy of financial consumers. First, The deficiencies of the existing financial system are mainly in two aspects: electronic information security and service completeness. For the problem of electronic information security, the establishment of the current system is earlier than the development stage of electronic technology, and the formulation of various security rules cannot effectively deal with the risks in the Internet era. However, due to the different establishment times

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of different businesses in the financial system, there are differences in their standards, and the existing financial system is not perfect because it cannot meet the requirements of full-time and all-round services. Besides, Conflicts caused by cross-border technology enterprises. The lack of TMT companies for the financial industry created the fintech industry.

Compared with the traditional financial industry, TMT enterprises have more scientific and technological reserves, and it is easier for them to occupy the market from the traditional financial enterprises through innovation. Moreover, Block-chain technology satisfies financial consumers' pursuit of autonomy. Due to the development of the Internet industry and the media industry, the environment of information asymmetry has improved slightly. Financial clients tend to have more truthful information to make their own judgments, thus reducing risk. This also means that for the risk problems in the traditional financial industry, customers will subjectively enlarge due to the lack of autonomy and pursue autonomy. Block-chain technology is still being evaluated by many countries and organizations due to its disruptive promise to change the existing social and technological environment. There is no universal regulatory standard in the world. But different countries have taken different approaches to virtual currencies. Based on the subversive nature of virtual currency, some countries such as Brazil choose to welcome and accept it; Some countries have chosen to ban them. China banned the trading of virtual currencies altogether in 2021 because of their volatile prices and regulatory difficulties. Putting aside the technical level, the main reason Block-chain technology has been blocked at the financial level is that it is difficult to regulate. Much of the financial impact of Block-chain technology will cross borders, and how to agree on regulation is open to debate given the different laws in different countries. Secondly, the main reason why Block-chain technology can generate financial value is the credit generated by the characteristics of the technology. Strong encryption and confidentiality enable only the person who owns the key to own and supervise a single currency. Therefore, the government cannot effectively control and measure the financial crisis and risk.

To sum up, Block-chain technology comes from the attempt and exploration of decentralization, and has made certain results under the presumption of social and public demand. However, due to the limitations brought by the characteristics of the technology, it is still difficult for the current society to accept the global and uncontrollable risks of Block-chain in the financial field. Block-chain technology is not necessarily a technical solution to solve decentralization, but it must be a solution to promote the standardization and upgrading of centralized finance industry. Through the influence of decentralization, centralized financial systems must improve their own vulnerabilities, improve customer service, and increase their own efficiency. These directness improve the financial services enjoyed by customers. From this point of view, Block-chain technology is an excellent and great work.

6. Conclusion

Fintech arises from the intersection of technology companies and the financial industry, and is an effective supplement to the traditional financial system. Fintech effectively uses new-era technologies from different perspectives to help reform and upgrade the traditional financial system, and help customers improve service quality and convenience. In the field of fintech, e-payment and Robo-Advisor have gradually matured and been recognized by the market. The changes of P2P lending and Block-chain are creative, but it still takes time to verify their risks. The innovation of the generation brought by technology still needs to be greeted with an open attitude and an inclusive attitude. Therefore, the government needs to maintain a consistent regulatory attitude, promote industry self-discipline, and form the dual constraints of industry internal supervision and legal restriction. FinTech still has promising development potential, and society's understanding and attitude towards the fintech industry will be directly related to the future development of the

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industry. Science and technology will always be the primary productive force of society, and fintech based on science and technology will certainly bring disruptive changes in the future.

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