

Financial Technology Research Summary

He Jiaying

School of Economics and Management, Xidian University, Xi'an 710126, Shaanxi, China

hejiayingprivate[at]163.com

Abstract: *At present, finance and technology have become the core driving force of social progress and economic development, and the deep integration of finance and technology has become a new trend. Based on the literature review in recent years, this article first summarizes the basic concepts, development history, classification and characteristics of financial technology, and then compares financial technology with Internet finance and technology finance respectively, and then compares the domestic and foreign financial technology supervision. Finally, I put forward my own views on the development trend and improvement of financial technology.*

Keywords: financial technology; internet finance; technology finance; regulatory model

1. Introduction

In recent years, my country has successively promulgated policy documents such as the Action Plan for Promoting the Development of Big Data and the Development Plan for the New Generation of Artificial Intelligence. It has successively released financial application specifications for new technologies such as cloud computing and voiceprint recognition, creating good policies for the development of financial technology surroundings. Financial products and services are also making great strides in the direction of intelligence, refinement, diversification, and scenarioization. Financial technology has become a new driving force for the practice of inclusive finance and the development of the digital economy. However, there is still a lack of financial technology research, and the specific understanding of financial technology is still insufficient.

Through the review of existing literature, the first part summarizes the overall concept of financial technology from the connotation of financial technology, the development process, classification and characteristics of financial technology at home and abroad. The second part compares financial technology with internet finance and technology finance. The third part summarizes the development model of financial technology at home and abroad. Finally, through a summary of the literature, the deficiencies of existing research and future research directions are drawn.

2. The Concept of Financial Technology

Financial technology has always been an important field of economic theory research in my country. Through combing the literature in the past two years, this part will summarize the meaning, characteristics, classification and development process of financial technology in four aspects.

2.1 The meaning of financial technology

"Finance Technology" (Fintech) was first mentioned by Citigroup Chairman John Reed in the newly established "Smart Card Forum" in the early 1990s. Financial technology (Fintech) is a compound word of Finance and Technology, mainly defined in the following five different

perspectives.

First, in March 2016, the Global Financial Stability Board, the lead agency for global financial governance, released the "Fintech Description and Analysis Framework Report", which is the first time that financial technology was initially defined at the international organization level: finance Technology refers to the promotion of financial innovation through technological means, and the formation of business models, technology applications, processes and products that have a significant impact on financial markets, institutions and financial services. Second, the "Oxford English Dictionary" defines financial technology as computer programs and other technologies used to support or promote the development of industries and financial services. Third, Wikipedia believes that "financial technology" is an economic industry composed of a group of companies that use technology to make financial services more efficient. Fourth, the Wharton School of Business proposed that financial technology is an economic industry that uses technology to improve the efficiency of the financial system. Fifth, Feng Tingting and Cai Miao pointed out that financial technology, as the name suggests, contains three elements: first, finance, which is the essence of financial technology; second, technology, technological innovation is an important carrier of financial technology; third, integration, finance and technology Interpenetration and integration.

At present, the last definition is based on a technical point of view, integrating business models and learning techniques, and this expression is gradually being recognized by everyone.

2.2 The development history of financial technology at home and abroad

In the "Financial Technology Research Report" released by the International Organization of Securities Regulators (IOSCO) in February 2017, taking the United States as an example, the development of financial technology was divided into three stages from the two aspects of emerging technology and innovative business model evolution. (Shown in Table 1).

Volume 10 Issue 3, March 2021

www.ijsr.net

Licensed Under Creative Commons Attribution CC BY

Table 1: The development history of financial technology in China and the United States

	United States (Li Zhan, 2019)	China (Feng Tingting, 2019)
The era of financial technology 1.0	1980-1990, marked by the emergence of direct banking in the late 1980s, the United States took the lead in proposing the concept of financial technology in 1980 and began to set up a separate IT department within the organization to develop relevant technology suitable for financial business. In order to improve business efficiency and reduce business costs.	In the Internet era, the traditional financial online (2005-2010) stage, the rapid development of Internet commerce, the specific manifestation of the financial online, simple traditional financial services began to go online. A typical representative is online banking, which transfers offline counter business to the PC terminal.
The era of financial technology 2.0	From 1990 to 2010, at this stage, a large number of financial institutions strengthened the construction of online business platforms to obtain customer resources and information through the Internet.	In the mobile Internet era, during the period of the rise of Internet finance (2011-2015), the widespread use of smart phones has greatly increased the utilization rate of the Internet. The specific manifestation is that traditional financial institutions build online business platforms on the Internet to achieve information resource sharing and business integration, such as Internet financial management, etc.
The era of financial technology 3.0	Since 2011, at this stage, emerging technologies such as big data, artificial intelligence, and blockchain have been closely integrated with finance, and financial services have gradually become popular with long-tail customers, effectively improving the operational efficiency of traditional finance.	In the era of artificial intelligence, the combination of finance and technology (since 2016) has accelerated the penetration and integration of finance and technology, transforming and subverting traditional finance. The financial industry has greatly improved the efficiency of traditional financial services through emerging technologies, and solved the pain points of traditional finance, such as big data credit investigation.

It can be seen from the above three development stages that financial technology has gradually realized a strong combination of finance and technology. With the development of new technologies, financial technology will usher in a new development form.

2.3 Characteristics of Fintech

Generally speaking, financial technology has three characteristics: First, financial technology realizes financial business innovation through scientific and technological innovation, and establishes a new financial production method and financial transaction mode. Second, financial technology has a strong iterative nature. By transforming the scale orientation of the traditional financial format into a function orientation, optimizing and perfecting financial functions, so as to greatly reduce the cost of financial services and effectively improve the production efficiency of financial services. Third, financial technology can not only break the technological barriers and make financial services that were impossible in the past possible, but also break the existing financial shackles and boundaries through technological innovation, give full play to the essential functions of finance, and make funds in a real shortage. Effective circulation between the party and the surplus party. (Shen Wei, 2018)

2.4 Classification of Fintech

Some scholars, such as Liao Min (2017), believe that financial technology is still evolving, and its business form and business model are not completely fixed, but it has its main subdivisions, while another school of scholars believes that financial technology can now be divided. There are several categories. For example, the Banking Regulatory

Commission of Basel believes that the application of financial technology can be classified as payment settlement, deposit and loan and capital raising, investment management and market facilities. At present, the development of financial technology has shown different forms. We should classify from different perspectives to better understand the specific connotation of financial technology. Through combing the existing literature, we will start from the technical point of view, financial format, Conceptual perspectives are classified in three aspects (shown in Table 2).

Table 2: Classification of Fintech

Classification method	Specific content
From a technical perspective	key financial technology technologies include cloud computing, big data, blockchain, artificial intelligence, quantum communication, etc.
From the perspective of financial formats	financial technology can be divided into third-party payment, crowdfunding, P2P network lending, Internet insurance, robo-advisory, mobile finance, Internet credit investigation, and digital currency.
From a conceptual point of view	financial technology can cover supply chain finance, consumer finance, sharing economy, platform economy and inclusive finance, etc.

3. Comparative analysis of financial technology

Fintech, Internet finance, and technology finance are all concepts that emerged in the context of the Internet. They are all a combination of technology and finance, but the essence is quite different. In this part, we will compare and analyze financial technology and Internet finance, and

financial technology and technology finance.

3.1 Fintech and Internet Finance

The concepts of "financial technology" and my country's "Internet finance" are not the same. "Financial technology" and "Internet finance" are both similar and different. Li

Wenhong and Jiang Zeshen (2017) pointed out that the similarity is because both are a combination of finance and technology, and use technological means to provide financial services. The differences are mainly reflected in five aspects: definition, service object, information technology, spatial scope and essence (shown in Table 3).

Table 3: Comparative analysis of financial technology and internet finance

	Fintech	Internet Finance
Definition	The "Report on the Description and Analysis Framework of Fintech" points out that Fintech refers to the promotion of financial innovation through technical means to form business models, technology applications, processes and products that have a significant impact on financial markets, institutions and financial services.	The "China Financial Stability Report" issued by the People's Bank of China (People's Bank of China, 2014) stated: "Internet finance in a broad sense includes not only the financial business conducted by Internet companies as non-financial institutions, but also the business conducted by financial institutions through the Internet; in a narrow sense Internet finance only refers to the financial business based on Internet technology carried out by Internet companies." Zheng Liansheng (2016) proposed that Internet finance is an emerging financial service model, and its information intermediary, financial communication and other services are realized with the aid of emerging network information technology.
Service target	Financial technology is "to B", which mainly provides scientific and technological support and services for financial institutions.	Internet finance focuses more on "to C" and directly provides services to consumers and investors.
Information Technology	The foothold of financial technology lies in technology. It emphasizes technical attributes and has a higher technological content. It applies big data, cloud computing, and blockchain to financial services and products.	The foothold of Internet finance is finance, with stronger financial attributes, which is an upgraded version of traditional financial services combined with Internet technology.
Spatial scope	Fintech is an international concept. The scope of financial technology is broader, including big data analysis, mobile payment, third-party payment, technology risk control, social media, etc.	Ye Chunqing (2016) believes that the concept of Internet finance is only applicable to my country. The business model of Internet finance lacks sustainability, so it only exists as a stage of the transition to financial technology.
In essence	"financial technology" is a brand-new product based on finance. Fintech is a relatively mature stage of Internet finance. The technology it uses and the problems it solves are more advanced than Internet finance. This improvement is gradual. But it can't be ignored.	Many Qi (2018) "Internet Finance" is a change in the traditional business model by shifting part of the traditional financial industry's business from offline to online.

3.2 Fintech and Technology Finance

Science and technology finance is an institutional arrangement that uses financial innovation to scientifically, controllably and efficiently provide comprehensive financial services to scientific and technological innovation and entrepreneurial institutions, enterprises and individuals for the transformation and capitalization of scientific and technological achievements. This institutionalized financial

service arrangement mainly includes various policy tools such as government venture capital guidance funds, technology credit, investment and loan linkage, financing guarantees, loan risk compensation, multi-level capital markets, technology insurance, intellectual property securitization, and technology leasing. . The differences between financial technology and technology finance are mainly reflected in four aspects: origin, goals, participants, representative products and services (shown in Table 4).

Table 3: Comparative analysis of financial technology and internet finance

	Technology Finance	Financial Technology
The concept originated	in the Chinese context policy system, an institutional tool that provides financial services for the transformation and capitalization of scientific and technological achievements.	Foreign products (Fintech), technological innovation in the financial industry.
Goals	To guide the allocation of financial resources and support the development of the real economy through financial service technological innovation.	Use technological means to improve financial products, meet the precise needs of customers, and improve the overall efficiency of financial resource flow.

Participants Government departments	venture capital institutions, banking, securities, insurance, financial institutions and financing guarantee institutions (platforms).	other traditional financial institutions, emerging technology companies (Internet), support service companies (communication, infrastructure, professional services) etc.
Representative products and services	Government venture capital investment guidance fund, technology credit, investment-loan linkage, financing guarantee, loan risk compensation, multi-level capital market, technology insurance, intellectual property securitization, technology leasing, etc.	Mobile payment, P2P online loan, Internet sales Funds, insurance, etc.), consumer finance, corporate financial services, credit investigation and data services, etc.
	Internet Finance (Equity Crowdfunding)	

In the medium and long term, the domestic concept of "Internet finance" will gradually approach and integrate into the concept system of "financial technology", and will eventually be consistent with internationally accepted concepts. "Technological finance" will gradually be replaced by "financial technology", focusing on serving the financial industry.

4. Fintech regulatory model

Seeking the perfect balance between innovation and risk prevention is the ultimate goal of each country's regulatory authorities. This part will analyze the different regulatory models in the United Kingdom, the United States and China.

4.1 The UK's "Regulatory Sandbox" Policy

The UK's "regulatory sandbox" policy is a policy implemented by the Financial Conduct Authority (FCA) in 2016. Bian Weihong (2017) pointed out that the "regulatory sandbox" is a financial innovation product or service that needs to be investigated and risk assessed within the existing regulatory framework. According to the degree of risk and impact of various aspects of its new product, the relevant regulatory authority shall determine the legal Within the scope of authorization, under the premise of moderately simplified market access standards and procedures, financial technology companies are allowed to carry out their own business tests in real or simulated market environments under limited business licenses, and meet market needs and comply with regulatory requirements. After the authorities' requirements on the degree of risk indicate that they are suitable for comprehensive promotion, they can further obtain a full license in accordance with the law and include them in the scope of normal supervision. Hu Bin et al. (2017) also proposed that the main purpose of the regulatory sandbox is to prevent various risks arising from financial innovation.

4.2 The U.S. "No Objection Letter" Policy

Chen Shengmiao (2017) pointed out that the United States included third-party payment in the supervision of money transfer business, and included crowdfunding and P2P in the scope of securities trading supervision. At the same time, the US Consumer Protection Bureau (CPFB) announced in 2016 that it will adopt a relatively loose "no objection letter" policy for financial innovations that are not regulated by current policies and laws and may benefit consumers, which reduces the risk of supervision. It also protects the

enthusiasm of financial technology innovation.

4.3 My country's financial technology regulatory model

He Jianqing (2017) analyzed the international financial technology supervision examples and proposed my country's technology supervision policy. Chen Yiding (2015) proposed the introduction of insurance products to provide guarantees to reduce risks, and emphasized the importance of laws and internal control. Zhou Ruimin (2017) pointed out the use of artificial intelligence for financial supervision. Zhang Rui (2018) further proposed the application of Regtech (Regulation Technology, that is, regulatory technology). "Responding to regulation with technology" on the basis of improving the real-time nature of regulation also avoids the result of over-regulation that inhibits financial innovation. Zhu Taihui and Chen Lu (2016) mentioned that the influence of the financial system of the fintech society should be evolutionary rather than radically revolutionary. This should be followed by continuous regulatory analysis on the development of fintech, and on this basis Principles and policies are adjusted in a timely and dynamic manner. Li Wenhong and Jiang Zeshen (2017) pointed out that both internationally and domestically, supervision should be targeted, highlighting the key points such as: paying attention to the nature of financial business, whether there are acts that affect public interests such as raising public funds or publicly issuing securities. For activities with a limited scope, the supervision procedures should be simplified appropriately, and the neutrality of technology should be emphasized.

From the analysis of the relatively advanced financial technology regulatory policies in the United Kingdom and the United States, the "sandbox" test is the most effective regulatory method at this stage. However, this regulatory method still lags behind the development of financial technology and has a huge impact. Room for improvement. Judging from the content of this supervision method, the future development trend of financial technology supervision is bound to simplify the testing process and reduce unnecessary steps in the test.

5. Conclusion

Financial technology can not only improve the efficiency of financial services by providing more targeted products and services, but also reduce business costs by simplifying business processes, and can further promote the development of inclusive finance in China. The rapid

development of financial technology will inevitably bring new financial risks.

Starting from the concept of financial technology, this article analyzes and summarizes scholars' research on the characteristics, classification and development of financial technology. Then, through combing the related literature of technology finance, financial technology, and Internet finance, we summarized the connections and differences between the three, and concluded that financial technology is a relatively mature stage of Internet finance, and the technology it uses and the problems it solves are more Internet finance needs to go to a higher level. Finally, it analyzes the different regulatory models at home and abroad, and summarizes my country's financial technology regulatory models and future trends. Through the above summary and analysis of the research status of the three major aspects of financial technology, the author has a clearer understanding of financial technology, but the existing literature is only limited to the research on the basic concepts of financial technology. There is a lack of empirical research on the coming financial risks and the sound financial technology supervision system. The subsequent research can conduct in-depth analysis from the factors affecting financial technology risks and the establishment of the supervision system.

References

- [1] Li Yang, Cheng Binqi. The construction of financial technology cooperation system and the upgrading of financial diplomacy under the "Belt and Road" initiative [J]. Journal of Tsinghua University (Philosophy and Social Sciences Edition), 2018, 33(05): 119-131+203-204.
- [2] Li Bin. The connotation and pattern of financial technology[J]. Financial Electronics, 2018(04): 44-45.
- [3] Feng Tingting. The origin, development and supervision of financial technology [J]. Information System Engineering, 2019(06): 153-154.
- [4] Cai Miao, Yang Mo, Zhu Ling, Gao Bo, Zhou Wentao, Wan Zuqi. Research on Financial Technology Development Strategy of Postal Savings Bank [J]. Postal Research, 2018, 34(05): 18-21.
- [5] Shen Wei. Decentralization of Financial Technology and Centralized Financial Supervision-The Regulatory Logic and Analytical Dimensions of Financial Innovation[J]. Modern Law, 2018, 40(03): 70-93.
- [6] Li Zhan, Ye Shujun. Research on China's financial technology development status and regulatory countermeasures[J]. Jianghuai Forum, 2019(03): 54-59.
- [7] Liao Min. International experience in the development of financial technology and China's policy orientation [J]. New Financial Review, 2017(04): 132.
- [8] Li Wenhong, Jiang Zeshen. The development and regulation of financial technology (FinTech): a supervisor's perspective [J]. Financial Regulation Research, 2017(3):1-13.
- [9] Zheng Liansheng. Grasp the key links and fight the battle against financial risks [N]. China Urban and Rural Finance News, 2019-04-19 (A07).
- [10] Ye Chunqing. "Fintech" and Internet Finance[J]. Financial Technology Times, 2016(08): 88.
- [11] Many strange. The social characteristics of Internet financial risks and regulatory innovation[J]. Legal Studies, 2018, 40(05): 22-41.
- [12] Chen Shengmiao. Reference from international experience in financial technology supervision[J]. Economic and Trade Practice, 2017(27): 133.
- [13] He Jianqing. Financial technology: influence, development and regulation [J]. Financial Development Research, 2017(06): 54-61.
- [14] Zhang Rui. Optimal empowerment of financial technology and regulatory technology [J]. Chinese and foreign corporate culture, 2019 (04): 32-37.
- [15] Zhu Taihui. A comprehensive analysis framework for the development and evolution of Fintech in my country [J]. Financial Supervision Research, 2018(01): 55-67.
- [16] Zhang Jiayu, Zhou Jianquan, Gui Qi. 2018 Global Financial Technology Development Index (GFI) and Investment and Financing Report [EB/OL]. <http://www.01caijing.com/article/35139.htm>.
- [17] Bian Weihong, Shan Wen. Fintech development and "regulatory sandbox"-based on a comparative analysis of major countries [J]. Financial Supervision Research, 2017(07): 85-98.
- [18] Hu Bin, Yang Kai. Application and Enlightenment of Supervision Sandbox[J]. China Finance, 2017(02): 68-69.
- [19] Wei Hang. A review of financial technology research[J]. The era of financial technology, 2018, 280(12): 38-42.
- [20] Douglas W Arner, Dirk A Zetzsche, Ross P Buckley, Janos N Barberis. FinTech and RegTech: Enabling Innovation While Preserving Financial Stability[J]. Georgetown Journal of International Affairs, 2017, 18(3).
- [21] Journal A B. A Roadmap to Serving Non-Traditional and Underbanked Customers[J]. Aba Banking Journal, 2017, 109.
- [22] Xu Zhong, Sun Guofeng, Yao Qian. Financial Technology: Development Trends and Regulation [M]. Beijing: China Finance Press, 2017.
- [23] Liao Min. The status quo and future trends of global supervision [J]. New Finance, 2016(10): 12-16.
- [24] Liu Jingyi, Yang Lei. Research on the Development, Impact and Supervision of Financial Technology—A Review[J]. The World of Labor and Social Security, 2018, No.496(12):64-65.
- [25] Zhang Pu, Qiao Junwei, Yu Ling. The development and model of technological finance innovation: a review and enlightenment [J]. Economic Research Guide, 2018
- [26] Zhu Xinghua. Technology Finance and Financial Technology [J]. Technology and Finance, 2018, No. 9(07): 78-80.
- [27] Zhang Xing. A review of Fintech (financial technology) research [J]. China Business Review, 2017(2): 17-20, 4

pages in total.

- [28] Zhou Zhongfei, Li Jingwei. The transformation of financial supervision paradigm under the background of financial technology [J]. Legal Studies, 2018, 40(05): 5-21.
- [29] The impact of financial technology on financial stability and financial technology regulatory issues that countries should pay attention to[J]. Financial Supervision Research, 2017(9):1-20.
- [30] Wang Wenzhao. Summary of the connotation, development and significance of science and technology finance[J]. Journal of Changchun Finance College, 2016: 65.
- [31] Li Ying. The connotation, trend and path of financial technology [J]. Hainan Finance, 2018, 360(11): 25-30.
- [32] Guo Yanying, Zhu Zhigang. Comparative research on financial technology development policies at home and abroad[J]. Zhejiang Finance, 2018, No.473(07):70-76.
- [33] Liu Jibing, Li Shutan. Research on the Optimization of China's Financial Technology Development Path [J]. Southwest Finance, 2018
- [34] Chen Zepeng, Huang Ziyi, Xie Jiehua, Li Chengqing, Xiao Jie. Research on the status quo and strategy of commercial banks developing financial technology[J]. Finance and Economy, 2018, 495(11): 24-30.
- [35] Sun Bo, Zhang Yating. Sino-US financial technology comparison and its development trend[J]. Research on the Development Strategy of Science and Technology Innovation, 2018, v.2; No.6(04):46-49.
- [36] Luo Fuzhou, Lu Bangzhu, Fang Yongheng. Research on the practical problems and countermeasures facing the development of financial technology in my country [J]. Scientific Management Research, 2018, v.36; No. 224(03): 100-103.
- [37] Liu Mengyue, Wei Huiying, Fu Jinqun. Research on the Problems and Countermeasures in the Development of my country's Financial Technology [J]. Think Tank Times, 2019, 186(18): 298-299.
- [38] Liu Yuan, Zheng Chenyang, Jiang Ping, Liu Chao. Does financial technology help improve the investment efficiency of the real economy? [J]. Journal of Capital University of Economics and Business, 2018, 20(06): 23-34.

Author Profile



He Jiaying (1996-), female (Han nationality), a native of Hanzhong City, Shaanxi Province, China, a postgraduate student at Xidian University, research direction is company valuation.