Analysis of the Impact of Fintech on the Operation of Commercial Banks

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Abstract

With the rapid development of science and technology in recent decades, fintech is changing the financial order, which brings new opportunities and challenges to the management of commercial banks. Based on this, this article focuses on fintech and analyzes its impact on banking business. First of all, this paper combs the relevant research on the impact on fintech and fintech on the operation of commercial banks. Secondly, based on the perspective of geographical distance, this paper examines the differences in the development of integrated science and technology in the three major regions of the world. It is found that there is a spatial admiration effect of the development of fintech. Finally, the impact on fintech on the management of commercial banks is summarized and analyzed. Research has shown that fintech has a certain impact on commercial banks' main businesses such as settlement and clearing, lending and financing. On the one hand, Fintech can enhance the innovation capabilities of commercial banks and improve their service models. On the other hand, fintech can help commercial banks reduce operating costs and improve operating efficiency. In view of the research, this paper puts forward that commercial banks should actively deal with the impact and combine with fintech in a measured way.

Keywords

Fintech, Commercial Banks; Cooperation-Competition Interaction; Asset-Liability Structure; Risk-Taking; Total Factor Productivity.

1. Introduction

The development of fintech has become one of the important sources of threats to the commercial banking system. This article will discuss the impact on the development of fintech on commercial banks. First, introduce the main ideological framework of the paper, including research significance, research content, research methods and problems to be solved. Secondly, sort out relevant research and form a more comprehensive understanding of the nature of fintech from the definition of fintech and existing results. Then, proceeding with reality, study the development of fintech and analyze the differences in the development of fintech in the three regions of the world to further understand the impact on current fintech development on commercial banks. Finally, corresponding ideas is proposed based on the research results. This paper mainly uses literature research methods, comparative analysis methods, statistical methods and summary methods. Literature research methods, that is, the use of library data networks and paper materials to collect relevant materials, fintech-related theories and domestic theories have a comprehensive and correct understanding. Comparative analysis and statistical analysis methods, this paper mainly analyzes The Americas, Europe and Asian three regions for the current situation of fintech, through the analysis of their differences, to further understand the impact of fintech on the transformation of commercial banks. The summary method is summarized, and the transformation of commercial banks is proposed by summarizing the above comparative results and combining the theory of fintech.
2. Theory and merits

2.1. The impact of fintech on commercial banking

First, fintech has some impact on the lending and borrowing of commercial banks. Delong and Geyoung (2007) are based on 424 commercial banks and 5,175 banks in the United States that applied Internet technology between 1999 and 2001.

Research by commercial banks that do not use Internet technology has found that Internet finance can improve the profitability of commercial banks, but it can change the structure of their deposits, that is, reduce the balance of checking accounts and increase the balance of money fund deposit accounts.

Second, fintech can also affect the asset business of commercial banks. Hancock believe that technological advances could exacerbate competition between banks and thus adversely affect bank lending. Marquez (2002) argues that private information helps banks screen businesses and personal information in the lending process, but increased competition distracts businesses and personal information, discourages evaluation and judgment, and leaves banks with only higher lending rates to deal with more low-quality lenders and individuals. Berger and Udell (2002) are, in contrast to the big banks.

In contrast, small banks have a comparative advantage in the process of lending to small businesses, which stems from the exchange of private information between people, and is easier than computer technology to control the loan process agency problems. Lapavitsas Santos (2008) believes that commercial banks can optimize their lending operations by improving information transparency in the light of technological advances. Internet technology, on the one hand, facilitates interbank information sharing and reduces access to credit for SMEs and individuals (Allen et al., 2002; Berger, 2003)

Finally, fintech can influence commercial bank assets, liabilities and other aspects of business. The results show that fintech has changed the structure of the bank's debt side, which makes the bank's debt side increase its dependence on wholesale funds such as interbank lending, and further led to an increase in risk appetite at the end of the bank's assets.

2.2. The influence of fintech on the efficiency of commercial banks

Most literature studies show that Internet technology has a positive spillover effect on commercial banks and promotes the efficiency of commercial banks. Bresnahan (1986) found that banks were able to re-benefit society through Internet technology and increase overall industry productivity. Allen, etc. (2001) argue that Internet finance blurs the lines between financial institutions and further removes barriers, helping traditional banks to innovate and thus improve bank efficiency. Brewer (2001) based on empirical analysis of banking panel data found that Internet technology is conducive to promoting the technological progress of banks, and the use of Internet technology by large banks. The will is relatively strong. Acharya and Albert (2004) point out that commercial banks are under competitive pressure from Internet finance to increase productivity through the use of Internet technology. Bons (2012) and Hoehle (2012) argue that Internet technology has improved the existing channels and services of commercial banks and improved the overall efficiency of commercial banks. Promote your own transformation and upgrade. The Sribastava (2014) study found that Internet technology can reduce transaction costs, have a more significant impact on developing countries, and can have positive technology spillover effects. Stoica and others (2015) have found through empirical analysis that Internet technology can improve bank efficiency. Chen et al. (2017) argue that fintech has upended traditional banking models and forced banks to increase their efficiency.
3. Situation

3.1. The scale of global fintech development

In recent years, global fintech investment has grown rapidly and changed dramatically. As the world's leading fintech investment region, fintech investments in the Americas, Europe and Asia are undergoing different changes. In the fintech investment and financing sub-sectors, asset management, loans, and credit have become the main investment directions.

3.1.1. The scale of world fintech development.

According to Figure 1, after the slight increase in 2017, the total volume of fintech investment transactions and investment transactions in the world from 2017 to 2018 will show an explosive growth trend. Total investment transactions in the first quarter of 2018 were $71.39 million, with 150 investment transactions, both peaking at $208 million and 180 transactions, respectively, in the second quarter of 2018. But in the third quarter, the total investment transaction volume dropped by nearly 75%, and the fourth quarter rebounded, but not by much, much the same as in the third quarter. Global fintech investment grew rapidly in 2019, with total investment exceeding its 2018 peak in the first half of the year alone, and the market as a whole is in an upward cycle. And it's down again in 2020.

Figure 1. Total global fintech investment in the first half of 2017-2020
Source: Pulse of Fintech H1’20, Global Analysis of Investment in Fintech, KPMG International (data provided by PitchBook)

Figure 2 describes global fintech venture capital and mergers and acquisitions activities, and angel and seed stage financing as a whole has remained stable and increased slowly, as a result of the overall trend of venture capital activity in previous years. At all stages of the investment, the volume of transactions in the second quarter of 2018 was higher than before. The median size of mergers and acquisitions transactions in the second quarter of 2018 alone reached 2017 and is close to the size of the whole of 2019.
3.1.2. Fintech investments around the world

The performance of fintech investment in different parts of the world is different. The Americas, Europe and Asia are the three major fintech investment regions in the world as representatives. Compare the investment scale of these three regions from 2017 to 2020. The Americas have a higher proportion, with Europe in second place and Asia in last place. As can be seen from figures 3 to 5, total investment in all regions increased significantly in 2018, reaching 54.24%, 61.76% and 67.41% year-on-year, respectively. Asia experienced a significant decline in 2019, while the Americas and Europe continued to maintain strong growth momentum, reaching $6.78 billion and $6.19 billion, respectively. Investment activity in Asia, the Americas and Europe has fallen sharply in 2020, possibly due to negative investment sentiment due to factors such as Brexit and the outbreak of neo-crown pneumonia, and then the maturation of the fintech segment has increased the consideration of waiting for a better investment opportunity. During this period, fewer new companies were established and were gradually subject to strict market regulation, which affected the total amount of transactions. Judging from the number of transactions over the years, with the exception of 2018 with the exception of 2018, the overall trend of steady decline, and in 2020 reached a four-year low of 587, 391 and 243, respectively. Because the American financial industry is more mature and the financial system and market environment are more complete, it can better meet the broader investment and financial needs of consumers and is conducive to better promotion of fintech trading activities. Therefore, the trading volume in the Americas regions has always been very active. In Asia, where China and Southeast Asian countries are the trading representatives of fintech activities, the situation in the financial market is still the initial development and mining, and the efficiency of financial services is relatively backward. Fintech can promote the development of financial services and increase transaction volume. From the overall growth rate of the number of transactions, as shown in the figure, the development speed of the Asian region is faster than that of the Americas because of the vast market demand for fintech and the huge development potential.
Figures 6 to 7 shows the number of fintech venture capital activities and mergers and acquisitions activities in various regions of the world. From the point of view of venture capital activities, fintech venture capital activities in various regions are not stable, showing a relatively large fluctuation. Venture capital activity increased in all regions in 2018 compared to 2017. The Americas and Europe both exceeded the full 2017 and 2018 levels, reaching $2 million and $132.2 million, respectively, compared with most regions in 2019. The region reached an all-time low of $20 million. In Europe, venture capital rebounded significantly in the first half of 2020, with post-investment growth particularly strong. In Europe, uk fintech venture capital accounts for the vast majority, while other more active countries include Germany, France and so on. In the Americas, the growth rate of fintech venture capital and investment in Asia is not obvious, with China, India, Singapore and Australia accounting for the majority, and countries are paying more attention to fintech and increasing their investment. For a mature integrated financial services platform, horizontal collaboration between mergers
and acquisitions and platforms helps it develop segments, open up market space, and increase market share. In 2020, there will be a new crown pneumonia outbreak black swan incident, during this period of time, three regions, including banks, many large institutions through the establishment of venture capital and mergers and acquisitions funds to promote the integration of the fintech industry, further promote the concentration of financial resources in the banking industry, improve industry concentration.

Figure 6. Fintech venture capital and M&A activities in the Americas in the first half of 2017-2020

Figure 7. European Fintech Venture Capital and M&A Activities in the First half of 2017-2020 (Median: $m)

Source: Pulse of Fintech H1’20, Global Analysis of Investment in Fintech, KPMG International (data provided by PitchBook)

3.2. The impact of fintech on commercial banks

Fintech mainly affects the commercial banks’ Payment and settlement methods, lending and financing, asset management and other businesses.

In terms of payment and settlement, the traditional operating model of commercial banks is difficult to meet the individualized and diversified needs of customers. Third-party payment platforms rely on the advantages of data technology, high liquidity and convenience to cover related integrated financial operations. They are gradually eroding and squeezing the market share of traditional financial institutions such as commercial banks, and the range of services they provide is becoming more and more comprehensive, some are already similar to commercial banks.

In terms of asset management, with the improvement of residents’ income and the development of financial markets, consumers are no longer satisfied with the traditional savings business of commercial banks’ deposits and wealth management, more capital flows have been transferred to other investment channels. With the rise of Internet finance in the 21st century, Chinese landmark internet finance companies like Alibaba have launched financial products such as Alipay and Ant Financial, which achieved the integration of technological innovation and financial innovation, successfully occupied a large part of the market share of
China’s financial market. However, commercial banks need to spend more time and energy on internal operations and human resource management due to their large business scope and traditional service models. Therefore, they are inferior to emerging Internet financial companies in terms of service innovation.

In terms of credit and lending, insufficient financing channels, low financing efficiency, and high financing costs still plague most SMEs (small and medium-sized enterprises). Traditional commercial bank financing service models cannot meet the financing needs of most SMEs. However, online lending provides new financing channels, speeds up credit evaluation through information technology and fintech, improves financing efficiency, and provides convenience and assistance for the development of SMEs. And fintech can significantly improve the problem of information asymmetry, realize the sharing of information and resources through big data, and subdivide the links of online lending, making it easier for SMEs to obtain loans. (Allen et al, 2002; Berger, 2003).

### 3.3. Fintech empowers commercial banks to develop

Although the development of fintech has hit the banking business, commercial banks can also rely on fintech to achieve financial innovation and update their business and operating models. First of all, fintech can bring innovation to commercial banks, break the boundaries of traditional finance, expand the scope of services and functions of banks, and change consumers’ consumption thinking and habits.

Under the influence of the rapid development of fintech, commercial banks can change the financial and data ecosystem and improve data processing and analysis capabilities. At the same time, the application of big data analysis helps commercial banks to explore the internal connections between multidimensional data. This will further integrate various digital channels and improve the customer experience. Therefore, commercial banks can use fintech to achieve digital transformation and upgrading, thereby enhancing the innovation capabilities of the banking business.

Then the innovation brought by fintech can reduce the operating costs of commercial banks, improve the efficiency of bank processing business, and provide customers with greater convenience. Fintech has helped commercial banks carry out a series of technological innovations, alleviating information asymmetry, opacity and other problems, making banking business more efficient and convenient.

In recent years, commercial banks, financial institutions, and technology companies around the world have increased their exploration of fintech such as blockchain technology. For example, blockchain technology has the characteristics of reliability, non-tampering, and distributed accounting. As the core of actual business scenarios, it promotes economic prosperity by exploring the application potential and market space of blockchain technology in various fields. Commercial banks have also begun to attach importance to fintech such as blockchain: On the one hand, blockchain technology can simplify business processes, improve service efficiency, and reduce labor costs. On the other hand, the application of blockchain technology is highly compatible with banking business. Through the implantation of standardized smart contracts, it brings innovative service models and operating concepts to commercial banks and leads the formation of new business models.

### 4. Conclusion

This paper analyzes the impact of fintech on the operation of commercial banks and gives the following conclusions:

First, fintech has impacted the existing business of commercial banks, in fact, in disguise to promote the marketization of interest rates.
Second, fintech development will reduce the risk-taking of commercial banks at the beginning of the period, and then increase the risk-taking of commercial banks and produce a greater impact. The marketization of interest rates has pushed up the overall risk level of commercial banks, fintech has divided commercial banks' deposits, challenged the credit pricing of commercial banks, forced commercial banks to narrow interest rates and forced their interest rates to market, and further aggravated the risk-taking of commercial banks.

Third, under the condition of fintech technology, the technology spillover is brought to commercial banks by demonstration effect, competition effect, correlation effect and people flow effect, which improves the total factor productivity of commercial banks. Among them, fintech has a significant role in promoting the technological progress of commercial banks, and the impact on commercial banks' pure technical efficiency and pure scale efficiency is not significant. In addition, commercial banks of different nature have different performance on the overflow absorption capacity of fintech technology, and the absorption capacity of non-systemic important banks is better than that of systemic important banks.

5. Strategy suggestion

Fintech is a double-edged sword. Although it will have an impact on the banking business, it also brings opportunities for the transformation and upgrading of commercial banks. Therefore, commercial banks should actively view and accept the impact of the development of fintech, and organically integrate with fintech.

First, banks should innovate their business models. Commercial banks must not only consider short-term business performance, but must increase R&D efforts, strengthen the application of fintech in business innovation, and improve the internal structure of the bank through technological innovation, reduce operating costs, simplify business processes, and improve service efficiency. And continue to think about the development model of fintech, explore and improve the science and technology that can be applied to itself, and improve the market competitiveness of banks in the long run. In this process, there may be some innovations and concepts that are too complex, and even run counter to actual economic needs and profit goals. Commercial banks need to gradually adjust and improve these innovations.

Second, through fintech to strengthen the risk management of commercial banks and the supervision of internal systems, commercial banks can use big data analysis, cloud computing and other fintech methods as technology drivers to explore more precise risk management and internal supervision methods, and further Obtain changes in risks and identify opportunities for risk rewards, so as to improve the existing risk control system and improve overall risk control capabilities.

Third, vigorously develop Internet finance and improve the efficiency of banking services. The most suitable transformation model for commercial banks is a multidimensional transformation oriented by information transformation and technological transformation and building an Internet platform such as online banking is an important step in information transformation. Through the network platform, commercial banks can not only expand the scope of business and service content, but also use fintech technology to transform and upgrade the original internal operating structure and business system of the bank, and improve the ability to obtain and identify information, as well as the efficiency of processing and analysis.

References


