

# The Financial Technologies Boom in China: Prospects and Barriers

Irina S. Amiantova, Olga V. Protopopova, Ekaterina P. Rusakova  
Peoples' Friendship University of Russia RUDN University  
Moscow, Russia

Daniyar V. Kairgaliev  
Volgograd Academy of the Russian Ministry of Internal  
Affairs  
Volgograd, Russia

Elvira N. Iamalova  
Bashkir State University  
Ufa, Russia

**Abstract**—The article covers a wide theme of fintech development in China and its effects on the Chinese economy. The article pinpoints the main benefits for the economy that fintech provides. In addition to that, the authors cover a range of specific problems of the Chinese financial sector, revealing the new fintech circle of the economic development. It demonstrates the synergetic effects of the fintech in the economy. The main findings of the article are that the effects of the fintech development are similar in all the countries, still the risks are specific to the concrete economy and the fintech circle of the economic development.

**Keywords**—*financial technologies; innovations; China; economy; economic circle*

## I. INTRODUCTION

In the last five years China has become one of the leading hubs for innovations in all spheres. The general course of the Chinese innovation process lies in the sphere of computing technologies and the innovative products development. The obvious proofs of that course are the super profits of the Chinese Hi-Tech industrial leaders, such as Huawei, Xiaomi, ZTE, etc. At the same time, the innovations introduced in the hardware of the produced goods force the Chinese companies to start a long process of generating software innovations, which, in turn, lead to the creation of the company ecosystem. For instance, the user experience with a Huawei mobile phone and a Huawei laptop is more complex than with the same two devices, but without the second (a Huawei phone and an Apple laptop and vice versa). Software development allows to extend and diversify the sphere of a company's activities, allowing it to conquer new markets. At the same time, the innovations in the sphere of creating the ecosystem of a company's products lead to the innovations in the sphere of marketing and sales, which in turn creates the high demand for the innovations in the financial services that will support the growing quantity of financial operations, evolving from the software ecosystem created by the leading Hi-Tech companies.

Moreover, the main demand for the innovative products in the financial sphere does not always mean the best financial system. For instance, the development of the massive personal banking and financial services, incorporated in the mobile banking apps are of a high quality in Russia, PRC, India, which do not have the most developed financial systems. At the same time, the USA and many European developed economies are far less developed in that aspect.

The article is devoted to analyzing the trends of the financial technologies development in China and presents a comparison of pros and cons of such fast development of financial technologies on the Chinese market

## II. METHODOLOGY

The main goals of the article are to estimate the positive effects of the financial innovations on the economy of China and to assess the possible risks they may produce. The article pinpoints the key features of the Chinese market of fintech. These features allow to reveal another economic circle (based on the concept of the economic circles of Prebisch-Singer [1]). This circle demonstrates a synergy of positive economic effects, gained through the development of the innovative financial technologies. The circle discussed illustrates the main two-way exchange in financial flows and regulations, which contributes to the self-sufficient development of the fintech by everyone involved in the process.

The analysis of the risks caused by the extensive development of the sphere leads to the key ideas, which are to be incorporated in the future development program of the Chinese fintech industry.

## III. THE KEY FINANCIAL TECHNOLOGIES, CONTRIBUTING TO THE GROWTH OF THE CHINESE ECONOMY

The key trends of the Chinese Hi-Tech industry are described in [2]. The key economic tracks are the following.

1) The competition between the new startups in the sphere of Fintech (the majority of them according to the same source

are no more than five years old). This tendency allows to generate a more competitive market of the financial technologies and force the traditional banks to create innovative services in order to secure their client base. At the same time, the startups are making the market more and more segmented, as their products find special market niches.

2) The focus of attention and investments on Big Data and AI. This leads to the breakthroughs in the sphere of machine learning and the analysis of the non-regular situations without the participation of humans. It contributes to the fast and secure microfinancial operations, especially loans to the small businesses without a credit history. In addition to that, the pace of the decision making on the non-regular situations, such as suspicious financial transactions, international transactions and no-regular behavior of the clients has grown significantly.

3) The introduction of the new insurance products. The Chinese market became one of the first in the world to introduce a system of insurance risks estimation, based on the Big Data analysis. As a result, the insurance became more affordable and the quantity of the Chinese citizens who have one or several insurance products grows.

4) The introduction of the blockchain technology in the financial sphere and its massive use in everyday life (mainly in routine financial operations).

The tendencies, described above, contribute to the development of the economy of China.

First of all, financial startups aim at the small business and the citizens of the regions, least covered by the banking services. These are rural regions and the distant regions with loose connections with the regions' centers. The infrastructure of such territories is not well developed and it is one of the reasons of the relatively low population density. The introduction of the financial innovations contributes to the active investment and migration process to these regions. In turn, the traditional industrial regions get the opportunity of faster development due to the better marketing and innovative management technologies, along with the investments inflow from such mechanisms as "Yu'e Bao" – a product of Alibaba [3]. The innovative methods of crediting the entrepreneurs by their customers via the credit aggregate mechanisms also contributed to the faster development of P2P crediting. All in all, the speed of the money turnover has significantly increased, especially taking into account the massive involvement of the Chinese citizens in the digital sphere.

Secondly, the introduction of the financial technologies in the society with high social standards (mostly enforced by the Chinese authorities, still working better than in the majority of developing countries) contributes to a more equal distribution of the financial resources and grants new possibilities to the younger generations. This is another positive aspect of the fintech in China. For instance, after finishing school the former student is motivated to enter the university, but he does not have the financial resources for it. He can apply for a loan in traditional banks, but the chances of receiving it are relatively low (the person described in the case usually has poor or no credit history). The innovative crediting technology will allow the person discussed to get the required finance with much higher chances (the refuse rate in online-services of the People's Bank of China equaled to 1%, when the same rate

for the applicants in offices exceeded 10%) [4]. In addition to that, the system of credit repayment for the person discussed will be significantly easier, as the bank will accept online payment or will automatically charge money from his account. This will make the cash flow from the personal borrowers and small enterprises more predictable and stable.

The analysis above allows to give the main effects of the digitalization of the financial system and innovative financial products on the Chinese economy.

1) The growth of demand through higher spending and easier transactions.

The availability of cash-free trade involves many new customers in the process of ordering goods via Internet. According to [5], the difference between the real trade growth scenarios for the period from 2016 to 2030 are equal to 2.5% between the intensive Hi-Tech development scenario and the basic scenario. These 2.5% in terms of the Chinese population mean 38 mln consumers, who spend their money on the innovative financial products. The number tends to grow due to the growing incomes of the Chinese citizens and the growing population [6].

2) The rise in monetary velocity.

The financial behavior of the Chinese citizens changes through time. According to the basic economic law of spending-saving ratio, the higher the disposable income is, the higher the rate of spending is, it is especially true for the countries, facing economic risks, where the monetary value is not secure and the inflation is high – in these countries the population tends to convert money (M0) into low liquidity assets, so the real spending rate is low. The constant access to the financial resources, especially to the consumer loans, issued through the banking apps, the quantity of borrowers increases, just as the quantity of the depositors, who have additional money and want to get profit on it. All in all, the monetary market of the country starts to develop extensively with higher money velocity in accordance with the money law of K. Marks.

3) The higher revenues of the state-owned banks, which are mostly transnational banks.

The more clients a traditional bank attracts, the more profits it has. Because of a more transparent system of financial interactions, offered by the banks to their clients via the mobile apps, especially the complex apps, just as in China (these incorporate banking operations, insurance services, the access to the financial market (in special Chinese territories), etc.) the clients become more involved in the financial market. The higher the involvement is, the more services the clients are offered and the higher profits the Chinese banks have.

4) The development of the economically depressive regions through the development of infrastructure and higher savings rate of their inhabitants.

5) The development of the Chinese Hi-Tech industry in the direction of user products, supported by the integrated financial products (Huawei Pay, for instance), leading to the export of fintech to other countries.

The main profit of a modern Hi-Tech company is gained through additional services, specific for the concrete company [7]. This example demonstrated the possibilities of software

development, which until recently was not among the priorities of the Chinese developers. Since the trade war with the USA began, the situation with foreign assets in the sphere of software became even worse. As a result, the national security concept of PRC dictates to start the process of developing the Chinese software products, which are to be of higher quality than the foreign ones. These new products are competitive and can stimulate the Chinese export and support the foreign demand for the Chinese products.

6) The development of the legislative base for the financial sphere and the new approach to the *laissez-faire* financial market in China.

The Chinese financial market, especially in the sphere of fintech, is not highly regulated now. At the moment, the crises have not highly influenced the sphere yet, hence the anti-crisis measures, which are mostly represented by the legislative acts (for instance, Dodd-Frank act in the USA, implemented after the financial crisis – are not yet developed [8]). The main effect of the further development of the sphere is that the *laissez-faire* approach will be changed to the more regulated one.

7) The better and easier penetration of the financial services in the everyday life with the rise of the quantity of their active users.

8) The improvement of the social situation due to the better human capital development and the growth of disposable free time.

Despite all the negative effects of the dependence on the Hi-Tech in everyday life, they do save time [9]. This free time and wider possibilities for the personal pastimes and better education inevitably lead to the human capital development.

All the named effects contribute to the formation of the new economic circle represented in Fig. 1. It demonstrated the two-way dynamics of the actions taken by all of the parties represented on the market.

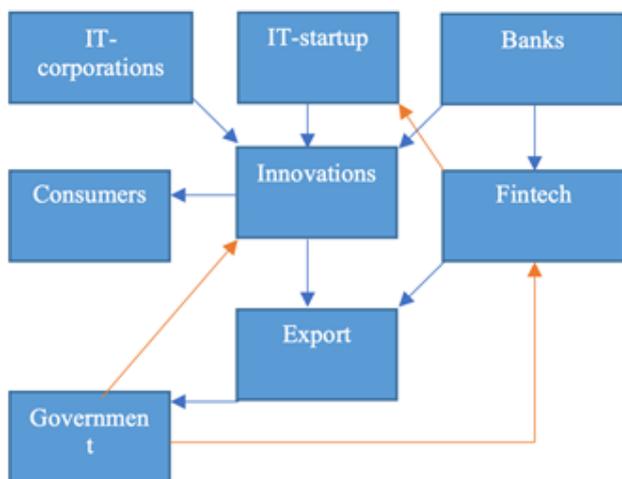


Fig. 1. The fintech circle (developed by the authors)

Fig. 1 illustrates the overwhelming influence of the fintech on the economic agents. This influence is mainly positive, especially in China, where the whole process is under full control by the government authorities and megacorporations, which are tightly connected with the government.

#### IV. THE BARRIERS FOR THE DEVELOPMENT OF THE FINANCIAL TECHNOLOGIES IN CHINA

Despite the numerous positive effects, the innovations in the financial technologies produce for the national economy of China and any other country, which were described here above, the negative effects they might cause are also significant and force the government authorities to take the innovation process under control. It was already mentioned that at the moment the Chinese approach to the problem is more of a liberal character. Moreover, the main barriers to the financial technologies development in China are produced not by the regulative measures, as in the developed countries, but by the lack of infrastructure for such innovations.

The short history of the development of the Chinese banking system leads to the high volume of the Western banking products being transferred to the Chinese market. These products are oriented to the high to middle-income citizens of the Western countries, so the Chinese citizens with a lower average income are not the target customers for such innovations. This in turn leads to the development of the innovative products of massive banking and microfinancing, where the risks of operational activities are significantly higher than in traditional banking. Hence, the financial system of China tends to overheat because of the fintech. The majority of the new financial services are offered by the state-owned banks and leading private banks [10], which can afford accepting some risks. At the same time, the large quantity of risky assets destabilizes the system of crediting of the bank, which leads to the necessity of asset sanitation.

The other important barrier is that in the Chinese financial market there is no clear difference between the state and the private financial sector. This leads to the lower efficiency of the innovative processes of decentralization of the financial market, which slows down the process of adaptation of the fintech products to the needs of their main consumers.

In addition to that, the overheating of the Chinese financial system may affect the financial systems of the less developed countries of the Belt and Road Initiative, which in turn will be the cause of the new financial crisis. The main issue about this tendency is that the Chinese legislative system does not possess the mechanisms of the fintech control. The current approach to the fintech regulation does not allow the active penetration of the foreign banks on the national market [2]. It brings forward the question of the oligopoly on the Chinese financial market, which will obviously affect the situation in the sphere of personal information access, and result in the higher prices of the innovative financial services, the slowdown in fintech development, etc.

The risks, described above, lead to the conclusion that the development of the Chinese financial sector is to be based on the following principles.

- 1) Responsibility – due to the youth of the industry, the historic method of estimation of the risks is unavailable.
- 2) Durability – the main industry crises are only to come, so the industry should be prepared to face them.
- 3) Positive social influence – the banking and insurance services of the new generation are to be of high value for the consumers, they have to make their lives easier and help them

to save or gain additional financial resources and extend their income.

4) Flexible regulations – the sphere of fintech develops quickly and the state regulations should fit the pace, not be either too soft, nor too strict.

5) Competitive and massive – the fintech should be available for wide audiences, it should not be an elite good. At the same time, the Chinese financial technologies should be easily transferrable to other countries.

These principles are to form the basis for the future development of the financial industry in China; however, they are suitable for any other country too (especially they may be interesting for Russia, where the consumer fintech is of the high level of development).

## V. CONCLUSION

The Chinese financial market is highly affected by the financial technologies. China is one of the global leaders in producing the innovative financial products. These products have an ambivalent effect on the Chinese economy, still according to the authors' opinion they bring more benefits than risks. The main benefit brought by the active introduction of fintech in everyday life both in China and the other world is the formation of the new fintech economic circle, which allows to finance financial technologies by the use of benefits these technologies bring to the national economy. In China this circle is much more obvious, as the Chinese economy is tightly regulated; at the same time, the innovations in the fintech sphere are far less controlled than the banking innovations in general, which leads to the conclusion that the financial technologies in China may bring several structural risks to the economy.

These risks are connected to the legislative problems and the lack of competition on the market, as a result the worst consequence they may have is a financial crisis of the whole Chinese financial system, which will lead to the serious financial problems in the countries of the BRI. In addition to that, the Chinese banking system has long been fully under the governmental control, which puts several limits on its functions in the changing conditions and the liberalization of the sector. Hence, the extensive changes in the regulative system of the PRC are required in order to make the process of financial innovations introduction in the economy of China more secure and stabilize the financial fluctuations they may cause.

## REFERENCES

- [1] R. Arezki, K. Hadri, P. Loungani, and Y. Rao, "Testing the Prebisch–Singer hypothesis since 1650: Evidence from panel techniques that allow for multiple breaks," *Journal of International Money and Finance*, 42, pp. 208–223, 2014.
- [2] KPMG China, "2018 China Leading Fintech 50 (3rd session)," 2018. Retrieved from: <https://assets.kpmg/content/dam/kpmg/cn/pdf/en/2018/12/china-fintech-50.pdf>
- [3] A. Lau, "Financial Services Innovation Boom in China (Part 1)," 2018. Retrieved from: [https://medium.com/@Alibaba\\_Cloud/financial-services-innovation-boom-in-china-part-1-e6df0c18c3b7](https://medium.com/@Alibaba_Cloud/financial-services-innovation-boom-in-china-part-1-e6df0c18c3b7)
- [4] Xinhua, "Economic Watch: Financial innovation helps small Chinese businesses ease financing difficulty," 2018. Retrieved from: [http://www.xinhuanet.com/english/2018-10/11/c\\_137526039.htm](http://www.xinhuanet.com/english/2018-10/11/c_137526039.htm)

- [5] WTO, "World Trade Report 2018. The future of world trade: How digital technologies are transforming global commerce," 2018. Retrieved from: [https://www.wto.org/english/res\\_e/publications\\_e/world\\_trade\\_report18\\_e.pdf](https://www.wto.org/english/res_e/publications_e/world_trade_report18_e.pdf)
- [6] EY Global, "How China's open banking experiment is unfolding," 2018. Retrieved from: [https://www.ey.com/en\\_gl/banking-capital-markets/how-chinas-open-banking-experiment-is-unfolding](https://www.ey.com/en_gl/banking-capital-markets/how-chinas-open-banking-experiment-is-unfolding)
- [7] C. Gartenberg, "How Apple Makes Billions of Dollars Selling Services," 2019. Retrieved from: <https://www.theverge.com/2019/3/20/18273179/apple-icloud-itunes-app-store-music-services-businesses>
- [8] W. Magnuson, "Regulating Fintech," *Vand. L. Rev.*, 71, 4, pp. 1167–1226, 2018. Retrieved from: <https://scholarship.law.tamu.edu/facscholar/1256>
- [9] L.R. Humphries, "How Technology Can Save You Money," 2019. Retrieved from: <https://www.investopedia.com/financial-edge/1011/how-technology-can-save-you-money.aspx>
- [10] Y.Z. Fu, "Research on Innovation in China's Banking Sector," *Journal of Applied Sciences*, 13 (21), pp. 4507–4512, 2013.