

## Trends in Developing Financial Innovations in the Course of the Economic Development in Russia

**Tolendi Ashimbayev\***

ADAM University / Bishkek Academy Financial and Economics, 720010, Kyrgyz Republic, Bishkek city, bul. Young Guard

**Sarkyt Tashenova**

Central Asian University, 050090, Kazakhstan, Almaty, Zhandosov Street, 60

**Yevgeniy Sadvakassov**

Kainar Academy, 050013, Kazakhstan, Almaty, Satpaev str. 7A

**Alma Karshalova**

S Narxoz University, 050035, Kazakhstan, Almaty, Zhandosov ave. 55

### Abstract

This article is devoted to studying trends in developing financial innovations in the Russian Federation, which represent implementation and promotion of the financial system with improved financial products, services and new processes to create a new financial structure, which ultimately accelerates the sustainable economic growth. The results obtained during this study show that four most promising segments can be identified in the long-term run, which should be taken into consideration while planning the development of financial innovations: payments and remittances, alternative financing, insurance and capital management. In Russia, the development of the above segments will depend on the creation and effective functioning of its financial technological (FinTech) ecosystem. This may be achieved by developing technologies and increasing demand for new services and innovative financial products through a set of measures aimed at providing capital to financial innovation companies, as well as improving the regulatory environment and developing human intellectual capital. This study has identified key initiatives that should be implemented to support the development of financial innovations and FinTech segments in Russia.

**Keywords:** Financial innovations; FinTech ecosystem; Financial products and services; Innovative banking technologies; Economic development.

**JEL Classification:** O10, O30



CC BY: [Creative Commons Attribution License 4.0](https://creativecommons.org/licenses/by/4.0/)

### 1. Introduction

The role of innovations for economic growth is unquestionable. According to the general definition of *innovations*, they emerge when new ideas, solutions and instruments are implemented to change the business environment and improve its position. Implementation of innovations improves the competitiveness of any business entity and creates value for its owners (Grudzewski *et al.*, 2010).

Financial innovations extend economic activities by promoting financial integration, simplifying financial transactions in international trade, providing money transfers and improving financial efficiency, which ultimately play a fundamental role in the economic growth. In the Russian Federation, financial innovations offer great opportunities for the development of its financial sector.

This is due to the fact that financial innovations serve as an agent for studying the financial development through the diversification of financial services, efficient financial intermediation, technological progress, and a new channel for efficient allocation of resources for production. The development of the financial sector can result in economic growth because the efficient financial sector shall mobilize available economic resources, promote the capital accumulation, and improve the efficiency of the financial system, which ultimately causes the economic growth.

Over the recent years, the banking system of the Russian Federation has diversified certain financial innovations, such as mobile banking, specialized business financing options, Internet banking, agent banking, stimulating the capital adequacy for investors, and creating non-bank financial institutions to support institutional loans for investments. The Russian financial sector includes commercial banks, insurance and leasing companies, specialized financial institutions, financial markets and nonsystem financial institutions.

The current empirical studies indicate that little research has been done on the financial development and economic growth in Russia. Moreover, the search for the references has shown that there are no convincing studies on the impact of financial innovations on the economic growth of the Russian Federation.

This gap in research induces to find how and to what extent financial innovations influence the Russian economic development.

## 2. References Review

The traditional economic view on the innovation growth shows that financial innovations improve the quality of financial products and services (McGuire and Conroy, 2013), accelerate the process of financial development (Ozcan, 2008), improve the capital accumulation and distribution (Uddin *et al.*, 2014), and improve the performance of financial institutions (Shaughnessy, 2015).

Furthermore, the efficiency of financial institutions has an impact on the development of the financial system through better payment mechanisms that accelerate both domestic and international trade (Sabandi and Noviani, 2015).

In the financial system, both institutional innovations and other types of innovations accelerate the process of financial transformations related to Internet banking and mobile banking services (Raffaelli and Glynn, 2015), microfinance organizations, NGOs, and hybrid legal forms of business (Battilana and Dorado, 2010).

Empirical review of the references shows that the development of the financial sector is closely related to the national economic growth (Duasa, 2014). This relationship exists because an effective financial system ensures effective mobilization of the available economic resources with higher productivity (Kyophilavong *et al.*, 2016)

The idea of financial innovations is not new, but over the past decade their implementation has created some problems that affect financial development, including structural changes in the financial sector, certain changes in financial services themselves, and the introduction of new financial assets into financial markets. Financial innovations implement and popularize new financial instruments, institutions and technologies for the financial system (Sood and Ranjan, 2015).

Over the recent years, the number of researchers with pessimistic views has increased with respect to the long-term effect of financial innovations. Thus, some researchers argue that excessive implementation of financial innovations has caused the financial crisis in 2008 (Boz and G., 2014). Other researchers are studying what has become known as the “dark side” of financial innovations (Diaz-Rainey and Ibikunle, 2012).

Allen (2001) has found an empirical evidence that financial innovations increase the complexity of transactions that provide opportunities for studying the interests of financial services consumers.

However, market competition for financial innovations is undergoing a number of changes due to FinTech start-ups that in many cases promise to provide better and safer services than traditional financial institutions do. These factors create new problems for the management and regulation of financial innovations. Therefore, more detailed understanding of the complexity of the process of financial innovations becomes a key element in a new market context.

Nevertheless, as noted by some author, studies of financial innovation are not numerous and do not provide a consistent basis for understanding the process of financial innovations (Armstrong *et al.*, 2012).

## 3. Methods

During this study, the author has relied on reliable data sources, including current research references and industry publications.

The main method is the desk study based on the analysis of information taken from open sources, including industry portals, articles, surveys and data of state statistics agencies, analytical publications on financial technologies, and recognized studies of specialized research companies.

The method of secondary analysis of the data obtained during interviews with key international experts, officials of Russian financial institutions, leaders in promising segments of trading, etc. has also been used in this work. The study includes an overview of the financing market for social enterprises, including channels, processes and innovative financial products in advanced economies.

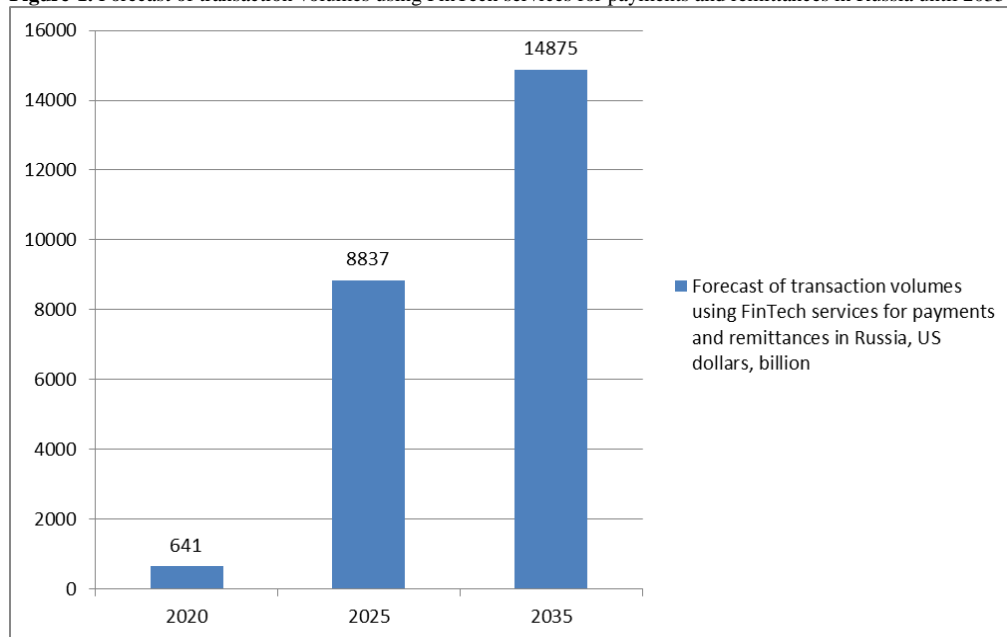
## 4. Analysis of the Development of Financial Innovative Technologies in Russia

In Russia, like in the rest of the world, the development of financial innovative technologies is concentrated in four main segments: payments and remittances, alternative online payment instruments, insurance and asset management.

For financial innovations, the key segment is payments and remittances. According to the expert survey, in 2016 the total volume of payments and remittances using innovative financial technologies amounted to 1% of the total volume of non-cash transactions (or 9 trillion US dollars).

Russia accounted for 1% of the world market, while the annual growth rate of the Russian market was 20% as compared to the global annual growth rate of 12%. In 2016, the segment of payments and remittances of the Russian market of innovative financial technologies amounted to about 87 billion US dollars. This segment will continue to grow by an average of 31% per year, and will reach \$14.9 trillion by 2035 (Figure 1) (Focus on FinTech, 2018).

**Figure-1.** Forecast of transaction volumes using FinTech services for payments and remittances in Russia until 2035



In Russia, the penetration of financial technologies into the segment of payments and remittances will reach 96.3% by 2035. At the current stage of the segment development, the majority of global innovative services are focused on B2C offers. At the same time, it is expected that the B2B segment of the e-commerce market will grow on a mid-term horizon, which will create demand from companies for instant and inexpensive payment solutions.

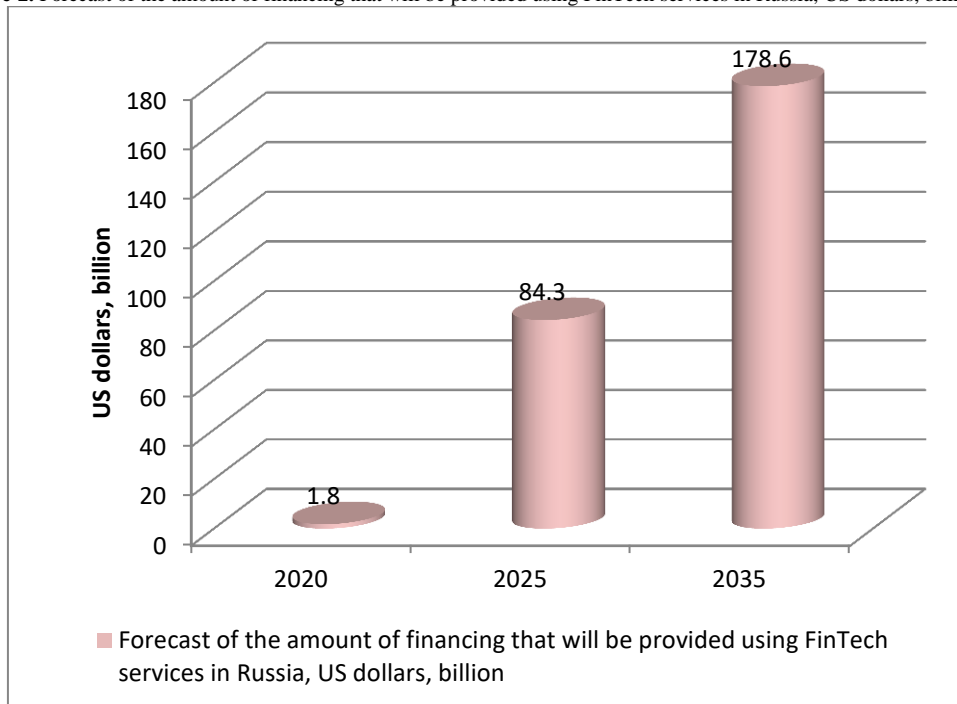
Both growing web distribution and rapid implementation of technological innovations in the financial sector result in the creation of alternative online financial instruments. In 2016, the global amount of funds raised by using alternative online financial instruments amounted to \$176.5 billion. In 2013–2015, it had increased by an average of 252% per year. This increase was mainly provided by P2P-lending (55.3% of the total market turnover).

However, the alternative online financing market in Russia is just in its infancy. In 2016, its volume amounted to approximately \$0.1 billion. Currently, about 97% of the Russian Internet users are bank customers, i.e. they have at least one bank card, account, deposit or outstanding loan.

In 2016, according to the Bank of Russia, the average number of financial services provided to an adult resident in Russia was 8.4. More than 40% of the population used remote access to bank accounts (Internet banking and/or mobile banking), and this indicator increased by 9.3% over the past two years.

It is expected that the online financing segment will continue growing in Russia by an average of 51.2% per year, and will reach \$178.6 billion by 2035 (Figure 2).

**Figure-2.** Forecast of the amount of financing that will be provided using FinTech services in Russia, US dollars, billion



In Russia, the penetration of financial technologies into the financial segment will reach 36.7% by 2035.

The most popular remote channel for banking services is Internet banking. At least one Internet bank is used by 35.3 million people, or 64.5% of all Russian Internet users. At the same time, it should be noted that the growth in the Internet banking audience, which had been observed for several years, actually stopped in 2016.

The active implementation of innovative financial technologies has an impact on the insurance market. In 2011–2016, according to the Central Bank of Russia, the InsurTech market raised global investments of \$6 billion (523 transactions in total) ([The Global Fintech Report, 2017](#)). Moreover, according to the CB Insights, 80% of all transactions have been closed by venture funds.

At the present stage of market development, the “usage-based” insurance is the most significant and dynamically developing segment of the InsurTech. In fact, the insurance model remains the same, with changes influencing the approach to determining service fees, resulting in calculations based on the aggregated data, all more often give way to a deeper analysis of personal data collected by using telematics.

The studies show that the global InsurTech market volume was about \$1.1 billion in 2016. At the same time, the Russian InsurTech market is at its initial stage of development, it does not exceed 1% of the whole Russian insurance market, which amounted to about \$17.7 billion in 2016 ([InsurTech – a Technological Breakthrough in the Financial Sector, 2017](#)). In Russia, it is expected that the FinTech insurance segment will continue growing by an average of 19.2% per year and will reach \$4.9 billion by 2035.

Financial technologies have considerable impact on the private capital management market and services provided by financial advisers. The penetration of financial technologies into this segment causes the automation of asset allocation and capital management, the creation of new investment markets, the emergence of new products and services for traditionally unprofitable customers, and the efficiency of quantitative risk assessments.

In 2012–2015, according to the CB Insights, investments in this segment grew by an average of 98% per year, but in 2016 they declined ([Fortune 500 Tech Investment and M&A Report, 2018](#)). At the same time, the number of transactions continued growing and reached a record level in 2016 (74 transactions compared to 15 transactions in 2012).

First of all, innovations in the asset management segment are aimed at meeting the needs of retail customers (including roboadvising, personal finance management and social trading). They allow financial institutions (including traditional ones) to expand their target audience.

Robotizing the process of creating an investment profile and investment decisions results in a considerable cost reduction and allows improving the accuracy of analysis and eliminating human errors.

At the moment, the roboadvising segment in Russia, like other segments of innovative financial technologies, is just in its infancy. In 2016, the volume of the Russian market amounted to only \$0.01 billion, despite the global roboadvising market totaling \$140 billion in assets under management ([Morgan Stanley](#)). In Russia, this segment will continue growing by an average of 63.2% per year and will reach \$42.6 billion by 2035 (with a 46.1% share of financial technology penetration).

The experts interviewed during the study have identified the following main obstacles and constraints to the development of FinTech innovations in Russia:

a) In the segment of payments and remittances:

- Lack of a developed infrastructure that would allow non-cash payments outside large cities,
- Fragmentation of the existing express payment systems and a large proportion of the people who do not get services and face the inconvenience of making remittances between banks, with high fees and limits.

(b) In the alternative financing segment — there are certain technological limitations for the available automated scoring models, along with applicable regulatory constraints.

c) In the insurance segment:

- Low level of insurance culture,
- Slow improvement of the regulatory and legal framework and, as a result, a backlog in the implementation of technologies, and
- Lack of unified standards to improve the efficiency of online channels used by insurance companies and to prevent fraud.

d) In the asset management segment:

- The high cost of attracting customers, combined with the low fees of new consulting companies, contributes to low penetration of robotic platforms in countries with an underdeveloped market for retail investment services,
- Some uncertainty about the behavior of the roboadvisers during strong economic fluctuations, and
- Most of the world’s wealth is allocated to the X generation or previous generations that prefer traditional methods of wealth management.

## 5. Factors of Demand for Financial Innovations

According to the expert survey, the growth of Internet connectivity, which determines the audience of potential users of financial services, and technological progress, as well as changes in consumer preferences that contribute to the technological transformation of financial products are the main drivers for the FinTech market development. At the same time, the above factors entail more complex changes that serve as the basis for financial innovations.

### 5.1. Low Satisfaction With Traditional Banking Services or their Inaccessibility

The growth in demand for innovative financial products and services, in particular among the people who are not covered by banking services or dissatisfied with the quality of services provided by traditional financial institutions, as well as small and medium-sized enterprises (SMEs) is one of the most significant factors in the development of the FinTech market.

According to the World Bank Findex global survey, only 62% of the world's adult population have an account in a financial institution, while about 2 billion adults do not have bank accounts. At the same time, in Russia this ratio is better, i.e. 67% of people had a bank account in 2014.

The population of countries with limited access to banking services creates a high potential demand for electronic financial services, primarily payments, remittances and lending, due to:

- Lack of sufficient banking infrastructure, which will require considerable time and investment,
- Low level of adherence of consumers to traditional banking services and, accordingly, their willingness to use innovative FinTech solutions. Given the projected high level of Internet connectivity and availability of low-cost smartphones, as well as the large population of developing countries, mobile technologies can provide users with access to simple and convenient financial services.

Consumers of traditional banking services, dissatisfied with their speed, quality or cost, are another category that stimulates the demand for innovative financial solutions. According to the survey conducted by Sopra Banking Software among 5,000 banks, customers from six European countries (78% of respondents) believe that it is important to introduce innovations in banking services, 58% would like to go to a bank offering the most advanced technologies, and 46% are ready to use services provided by non-traditional banks.

### 5.2. Increased Number of Social Networks' Users

The growing popularity of social networks and messengers (Facebook, Instagram, WhatsApp, WeChat, etc.) actively contributes to the emergence and development of new financial technologies and services. FinTech companies use such communication channels, covering a rapidly growing audience and offering services based on the exchange of information between users, e.g., crowdfunding, P2P payments and financing. Moreover, social networks are increasingly engaged in developing their own financial innovation products.

In 2016, the audience of social networks and messengers in the Russian Federation was about 72.4 million people (49% of the total population) (eMarketer Electronics, 2015). Vkontakte, YouTube and OK.RU (Odnoklassniki) are the most popular social networks among the Russian users. It is estimated that the number of social network users in Russia will increase up to 87.7 million by 2025 due to the growth of the penetration of social networks and messengers into the regions, as well as the growth of their popularity among the elderly.

### 5.3. Development of Internet of Things

Against the background of the growing Internet connectivity and the development of technologies for data collection, transmission, analysis and storage, the number of devices connected to the web increases and allows users to automate many operations, including financial ones. For example, about 17.7 billion devices were globally connected to the Internet in 2016; IHS predicts a twofold increase in the number of such devices by 2020, followed by an increase to 75 billion devices by 2025. In the longer term, it is expected that the number of devices connected to the Internet will grow exponentially, to 275 billion by 2025.

### 5.4. Growth in E-commerce

According to experts, the fast-growing E-commerce market is of great importance for the FinTech industry. According to AITC, the volume of E-commerce in Russia is growing by an average of 30% per year: in 2016 it amounted to 920 billion rubles. At the same time, cross-border trade is the fastest growing segment, with the largest share of online purchases made by residents of large cities. According to forecasts, the Russian E-commerce market will reach \$81 billion by 2025.

### 5.5. Increased Investments in Financial Innovations

Most experts noted that a growing volume of investment is one of the key factors in the development of financial innovations. In 2011–2016, according to the CB Insights, at least \$60 billion were invested in FinTech. Moreover, in terms of investments the most developed ones were developed centers of financial innovations, such as the United States, Britain and China. In 2011–2016, according to the CB Insights, at least \$75 billion were invested in the Russian FinTech.

According to experts, about 90% of investments into financial technologies are made by the leading Russian banks that actively implement innovations in their business processes, support their own development, and provide funding for the most promising projects in this sector.

### 5.6. Government Policy

The government policy is one of the factors that play an important role in the development of innovations throughout the world. The main objective of regulation is to create an environment conducive to innovation, risk management and the effective functioning of the country's financial system.



## 6. Discussion of the Current Trends in Developing Financial Innovations in Russia

The development of the financial technology market and the speed of creating innovative products or services depend on the development and efficient functioning of the ecosystem, which is a combination of interrelated factors such as demand, technology, access to capital and regulation.

The factors influencing the demand and determining which technologies should be applied are the key to the development of financial innovations. Changing consumer preferences stimulates technological advancement, and technological progress is the driving force behind changes in consumer preferences. However, the development of financial innovations also depends on companies' access to capital and intellectual resources, as well as on the effectiveness of regulation.

The demand for innovative financial technologies and products is determined by the following four categories of customers:

- The consumer segment (B2C) includes the end users of FinTech services and products and is the largest in terms of both demand and penetration of financial technologies. The millennials, the people not covered by banking services, and the digital immigrants are the groups that have a high potential demand in this segment,
- The corporate sector includes corporations from various sectors, as well as small and medium enterprises, which create a growing demand for FinTech business solutions,
- The financial sector includes banks, credit unions and other traditional financial institutions that are interested in improving their services or improving operational efficiency, and
- The public sector includes the government, the National Bank, national currency exchanges or other public authorities interested in developing the financial technology market.

**Technologies.** Changes in consumer preferences influence the introduction of innovative technologies that will facilitate the transformation of financial services in the future. At the moment, the experts have identified the following groups of innovative technologies:

- Cognitive technologies that allow working without human intervention and focus on automation of processes that cannot be described with the aid of precise instructions. These technologies include artificial intelligence, large data analytics, Internet of things, as well as virtual and augmented reality.
- Distributed computing includes distributed data processing and storage and is aimed at solving the problems of exponential growth in the amount of data in the digital world. This group includes cloud computing and distributed accounting technologies.
- Cyber security technologies — they have become especially relevant in the era of the digital economy. They increase safety through remote/biometric identification and tokenization.

For the implementation of financial innovation technologies, access to human capital is essential. The driving factors in the development of human capital are the following:

- Availability of talents, which is estimated by the number of specialists employed on the FinTech market, and by the number of potential employees with key competencies in such areas as technology, finance and entrepreneurship.
- The personnel conveyor, which implies the provision of key skills to specialists, enabling them to work in the FinTech industry, involves the creation of an attractive education system, as well as the adoption of a favorable immigration policy.

Experts believe that the state agencies of the Russian Federation should adhere to a balanced approach when regulating financial innovation technologies. On the one hand, the government's goal is to create an enabling environment for the development of innovations, but, on the other hand, it should be responsible for monitoring and mitigating the risks associated with the functioning of the FinTech market.

The development of the FinTech sector requires proper implementation of the following three main instruments of state regulation:

- Proper regulatory regime that supports market participants and new business models,
- The government's programs and initiatives aimed at reducing the existing barriers in the industry, encouraging competition and supporting financial innovations on the local market, and
- Proper tax policy providing tax support measures for investors and corporations.

Experts note that work in this direction has significantly intensified over the recent years.

In the second half of 2017, regulatory initiatives on the Russian FinTech market largely depended on the Bank of Russia. Over the past five months, the Russian regulator has continued to develop the FinTech priority areas. In particular, it managed to make some progress in developing a mechanism for electronic interaction between players in the Russian financial sector by launching an information exchange project between the Bank of Russia and credit organizations through personal accounts.

In addition, the President of the Russian Federation supported the Bank of Russia project to create a "regulatory sandbox" in his Instruction issued in October 2017. In the previous period a number of organizational decisions were made to coordinate the efforts of the Russian bodies aimed at developing the digital economy and international cooperation.

In 2016, the Russian Financial Innovation Association developed an offer to improve the regulation of the national payment system, one of the key provisions of which is the use of the blockchain technology to create an unchanged and transparent system of client authentication.

In 2017, the offer of the Association of Financial Innovations (AFI) on improving the regulatory framework of the national payment system was submitted to the State Duma of the Russian Federation, the Ministry of Finance and Rosfinmonitoring. One of the key conditions of the proposal is the use of blockchain technologies to create an unchanged and transparent system of client authentication.

For the Russian government, the blockchain certification system as a basis for national payment systems will have many advantages. One of them is that the blockchain can safely store data in a transparent ecosystem. The government's current database is vulnerable to manipulating key financial and personal data. In addition, the constant and decentralized nature of the blockchain system can effectively prevent potential hacker attacks and data breaches, which makes it an important alternative to state databases.

Access to financing at all stages is crucial for the successful development and growth of financial technology companies. In addition, investments increase liquidity, which attracts an increasing number of investors. The FinTech ecosystem is considered effective if access to the following three key types of capital is provided:

- Start-up capital — investments are made at the earliest stage of the project. Typically, this type of financing is provided to young start-ups from business angels or through incubators and accelerating programs.
- Capital growth-investment is carried out from the early stage of development and until the formation of a financial and innovative company. This type of financing is provided by venture funds or corporate venture units.
- Listing financing is carried out through the IPO of mature FinTech companies.

In the summer of 2017, PJSC *Moscow Exchange* launched a growth sector — the platform for public trading in securities of small and medium-sized enterprises, which established simplified listing requirements for companies and provides expert support. In addition, in August 2017, the Bank of Russia prepared a roadmap for the developing rules of P2P lending regulation. It is expected that this project will attract investments and will have positive impact on the development of financial innovations in the SME sector of Russia.

## 7. Conclusion

The results of the study on the need to develop financial innovations make it possible to draw a number of conclusions:

Over the recent years, there has been a significant leap in the development of financial innovations in the Russian Federation.

The most active innovation processes take place in the sector of bank transfers and remittances, followed by insurance and asset management. At the same time, innovations in payment technologies have influenced both card products, and mobile and Internet acquiring, etc.

The government of the Russian Federation should encourage financial innovations in the financial system, especially in financial institutions. The government should also encourage financial innovations in the capital market that will help with attracting long-term capital for investments and accelerating overall economic growth.

## References

- Allen, F. (2001). Presidential address do financial institutions matter? *J Finance*, 56(4): 1165–75.
- Armstrong, M., Cornut, G., Delacôte, S., Lenglet, M., Millo, Y., Muniesa, F., Pointier, A. and Tadjeddine, Y. (2012). Towards a practical approach to responsible innovation in finance new product committees revisited. *J Financial Regulation and Compliance*, 20(2): 147–68.
- Battilana, J. and Dorado, S. (2010). Building sustainable hybrid organizations The case of commercial microfinance organizations. *Acad Manag J.*, 3(2): 1419–40.
- Boz, E. and G., M. E. (2014). Financial innovation, the discovery of risk, and the US credit crisis. *J Monet Econ*, 62: 1–22.
- Diaz-Rainey, I. and Ibikunle, G. (2012). A taxonomy of the ‘dark side’ of financial innovation: the cases of high frequency trading and exchange traded funds. *Int J Entrep Innov Manag*, 16(1–2): 51–72.
- Duasa, J. (2014). Financial development and economic growth The experiences of selected oic countries. *Int J Econ Manage*, 8(1): 215–28.
- eMarketer Electronics (2015). Apparel Top Russian Ecommerce Market. Available: <https://mresearcher.com/2015/09/emarketer-electronics-apparel-top-russian-ecommerce-market.html>
- Focus on FinTech (2018). Russian market growth prospects. Available: <http://investinrussia.com/news/12729-focus-on-fintech-russian-market-growth>
- Fortune 500 Tech Investment and M&A Report (2018). Available: <https://www.cbinsights.com/research/report/fortune-500-tech-investment/>
- Grudzewski, W. M., I., H., A., S. and M., W. (2010). *Sustainability w biznesie czyli przedsiębiorstwo przyszłości*. MT Biznes: Warszawa.
- InsurTech – a Technological Breakthrough in the Financial Sector (2017). Available: <https://teamprospect.ru/2017/06/26/insurtech/>
- Kyophilavong, P., Uddin, G. S. and Shahbaz, M. (2016). The nexus between financial development and economic growth in lao pdr. *Glob Bus Rev*, 17(2): 303-17.
- McGuire, P. and Conroy, J. (2013). Fostering financial innovation for the poor. The policy and regulatory environment. In: A. W.a. J.D.V. Pischke (eds). *Private Finance for Human Development*, USA, The Foundation for Development Cooperation.

- Morgan Stanley: Available: <https://www.morganstanley.com/what-we-do/research>
- Ozcan, Y. A. (2008). *Health care benchmarking and performance evaluation "an assessment using data envelopment analysis (DEA)*. Springer: New York. 214.
- Raffaelli, R. and Glynn, M. A. (2015). *Institutional innovation: Novel, useful and legitimate. In the oxford handbook of creativity, innovation, and entrepreneurship*. Oxford University Press: Oxford.
- Sabandi, M. and Noviani, L. (2015). The effects of trade liberalization, financial development and economic crisis on economic growth in indonesia. *J Econ Sustain Dev*, 6(24): 120–28.
- Shaughnessy, H. (2015). *Innovation in financial services, The elastic innovation index report*. INNOTRIBE. 21.
- Sood, V. and Ranjan, P. (2015). Financial innovation in india an empirical study. *J Econ Bus Rev*, 10(1): 1–20.
- The Global Fintech Report, Q. (2017). CB Insights. Available: <https://www.cbinsights.com/research/report/fintech-trends-q1-2017/>
- Uddin, K. M. K., Rahman, M. M. and Quaosar, G. M. A. A. (2014). Causality between exchange rate and economic growth in bangladesh. *Eur Sci J.*, 10(31): 11–26.