

Features Financial Investment of Innovations in the Russian Economy

Margarita D. Mironova¹, Anna I. Romanova², Fedorova Svetlana Faridovna³ and Elena A. Dobroserdova⁴

¹*Kazan Federal University*

²*Prof., Kazan State University of Architecture and Engineering*

^{3,4}*Ass. Prof., Kazan State University of Architecture and Engineering*

ABSTRACT

The article describes the technique of an estimation of efficiency of banking activities in the field of financing innovation. Comparative analysis of the effectiveness of venture financing of innovations in Russia was carried out using matrix models. The necessity of financing at all stages of innovative projects.

Keywords: Innovation financing; venture capital financing; the effectiveness of venture capital.

1. PROBLEM STATEMENT

The Russian economy currently appears to face some recovery, according to the Bank of Russia, as per IV quarter of 2016, with correction for a season. Furthermore, according to assessment of the Central Bank of Russia, the recovery of the economy has been sustained, although the rate of growth, some indicators say, is still uncertain[1]. In order to achieve a sustained economic growth, it is necessary to activate the process of implementing innovations in competitive and high-tech industries that create their innovative potentials. This process can be realized only through a large-scale financing. Therefore, the determination of conditions and factors that increase banking activities will be of great importance while creating effective financing mechanisms of innovative projects.

2. ANALYSIS OF RECENT PUBLICATIONS

Issues of efficiency of financial investments in innovations are studied in the projects by Matrosova E., Zolotih N., Popelnih V. [7]. The issues of capital transformation in development of innovative technologies are studied in the projects by Romanova A. I., Mironova M. D., Ilyina E. V., Dobroserdova E. A. [9].

Issues of target setting in innovation activities are studied in the projects by Sirotkin, D. G. [12], The roles of innovation in the process of creating a company strategy is discussed in the research by Korobeynikov O. P., Trefilova A. A., Korshunov I. A. [6]. Conditions and factors for creating innovative mechanisms of business structures are studied by V. A. Kolokolov [5].

3. THE PURPOSE OF THE STUDY

The purpose is to scientifically substantiate and develop quality control process for the venture financing, as well as to explore factors and conditions for creating effective financing innovations mechanism in order to achieve sustainable growth of the national economy.

4. THE MAIN RESULTS OF THE STUDY

Innovation is a result of a transformation of an innovative idea into a new product, improved according to a number of qualitative and quantitative indicators. Innovation can be a production process which is, a new approach to services production, and a structural transformation of the Company management system.

The founder of the innovation theory is I. Schumpeter. He defined the content of this category as a “new combination” of production factors that contribute to economic growth. According to the author, this concept includes production of a new benefit or its quality unknown to a consumer; the introduction of a new way of production, unknown in this industry. This way should be based on a scientific discovery; the development of a new industry market; obtaining a new source of raw materials or semi-finished products; executing corresponding reorganization procedures [13, p.159-160]. It is innovations, based on conversion of scientific knowledge into innovative products that make individual businesses and industries and the national economy commercially viable.

At the present time, financing innovative activity is considered as a specific production restructuring. Financing innovative activity is a top condition for economic development of business entities. At the same time the most important aspect of innovation activity is its commercial component, which becomes a source of income in case of introduction of innovations into production.

Stability and high economic growth rates can be achieved by a significant increase in the share of innovative products, executed works, services in the amount of production output.

World experience of economic development shows that steady growth of the innovative economy can be achieved by a large-scale financing into competitive industries that actively create their innovation potential. Comparative indicators of innovative products relative share, works and services in a total amount of shipped goods, performed works, indicate the level of innovation development of the national economy (Figure 1)

Indicators of cost distribution for technological, marketing and organizational innovations by type of innovation and economic activity reflect the structure of innovative activities in various sectors of the Russian economy (Table 1).

There is a significant gap in terms of development index between the regions of the Russian Federation as per results of the analysis of the innovative activity index (IAI). The value of IAI ranges from 0,615 in the regions with high level of innovation activity, up to 0.103 in the regions of the Russian Federation with the more passive activity [10, c.42].

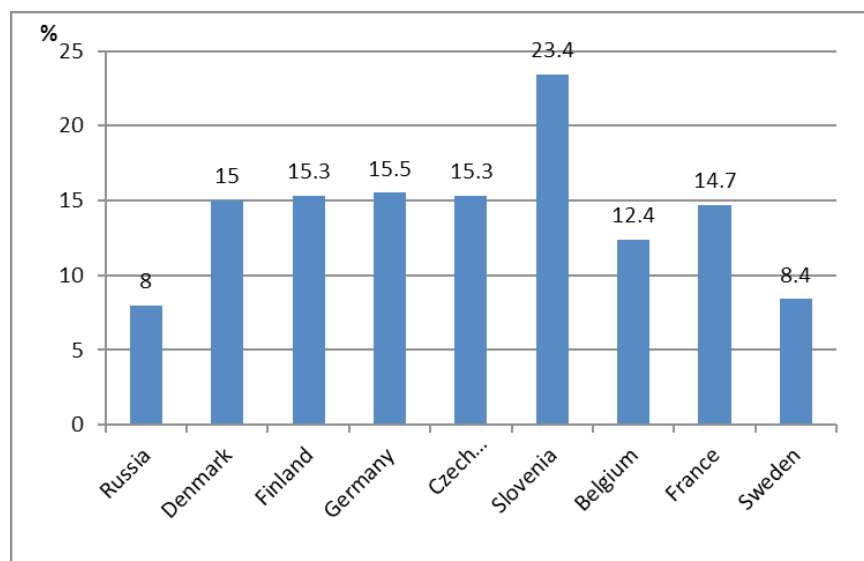


Figure 1: Relative share of innovative products, works and services in a total amount of shipped goods, performed works and services in 2012, %
* According to the results of the European innovation survey [3, 8]

Table 1
Cost distribution over technological, marketing and organizational innovations as per the type of innovation and economic activity in Russia, %, [3]

Innovation type	2013	2014
Mining, processing production, electricity and gas generation, production of water		
Technological	98,8	98,0
Products	34,5	37,5
Process	64,3	60,5
Marketing	0,3	1,6
Organizational	1,0	0,4
Communication, activities related to computers and information technology usage		
Technological	96,7	99,1
Products	66,2	70,7
Process	30,5	28,4
Marketing	2,9	0,2
Organizational	0,4	0,7

Tatarstan plays an important role in development of innovative economy in Russia. Formation of a modern institutional environment, among which the most important is an advanced training of industrial sites, elimination of administrative barriers, increasing confidence of investors to the government, are the most promising directions for development of regional innovation economy.

Tatarstan joined the leading group in the region rating in terms of IAI. The number of organizations engaged in the development and implementation of innovations, reached 20.2% in the Republic. There has also been an increase in activity in the field of non-technological innovations, based on organizational-managerial and marketing innovations. The number of enterprises engaged in non-technological innovations

in the Republic of Tatarstan reached 8,4% [10]. The Venture Investment Fund of the Republic of Tatarstan helps to improve the investment climate in the Republic. This Fund is a part of an international organization “NVCA” and “EVCA”. That participation makes it possible to actively adopt foreign experience of venture financing [2].

Despite the availability of a wide range of funding sources, the Russian market of venture financing is developing at a slow pace. Therefore, banks play a significant role in the modern knowledge economy as arrangers of innovations. Banks are the founders of venture funds. They contribute to creation of a number of other elements of the innovation system.

Past international experience proved that one of the main roles in development of the venture capital market belongs to commercial banks. At the current stage, Russia has a small number of innovative banks. The main purpose of their activities is to support a large-scale implementation of scientific and technical research in the mass production. Innovative banks can share participation in the formation of joint production and structuring for creation and use of inventions and developments. The banks can also provide financing for innovative projects by placing bonded debt among persons interested in this project.

The main factor preventing banks from investing in innovations, is considered as a discrepancy between the amount and terms requirements of the Bank’s credit products, and financing needs of innovative projects. Short term credit investments are the most balanced for the Bank in terms of resource endowment. Therefore, venture financing both as a medium and a long-term investment, negatively affects the liquidity of the Bank.

Sources of funds for venture financing in the Russian economy are very limited. Population is one of the main sources for bank resource base replenishment. As opposed to the countries with established market conjuncture, the population of Russia is not yet ready to make long-range investments. The average duration of a consumer loan of the citizens of Russia in 2015-2016 was 2 years [11].

For the purpose of performing a comparative analysis of efficiency of financing innovations in Russia and other countries, we use a matrix method of assessment, based on comparison of expenses intensity on technological innovations (TI) and a relative share of innovative products, works, services in total amount of shipped goods, performed works, services (UVIT) in 2012 (Table 2).

Table 2

The indicators of expenses intensity for technological innovations (TI) and a relative share of innovative products, works, services in total amount of shipped goods, performed works, services (UVIT)

<i>Country</i>	<i>TI,%</i>	<i>UVIT,%</i>
Russia	2,52	8
Finland	2,76	15,3
Germany	2,18	15,5
Czech Republic	1,67	15,3
Slovenia	1,44	23,4
Belgium	1,93	12,4
France	1,58	14,7
Sweden	2,98	8,4

*According to the results of the European innovation survey, [3].

On the basis of the table data we need to build the matrix of efficiency of unit costs for innovations.

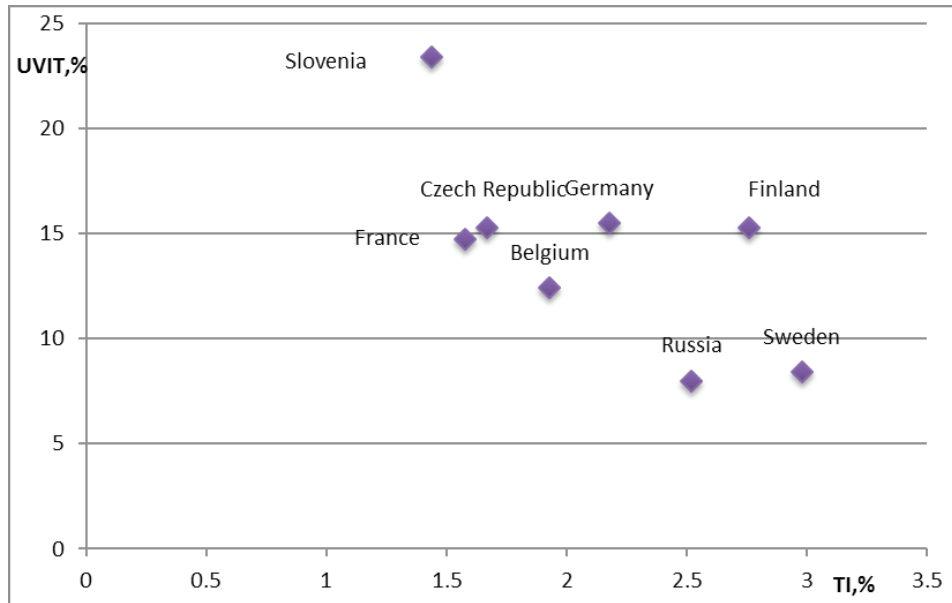


Figure 2: Matrix of efficiency of unit costs for innovations (as per results of the author’s research)

The obtained matrix of efficiency of unit costs for innovations can be divided into four zones (Table 3):

Table 3
Zones of the efficiency matrix of unit costs for innovations

Zone denomination	Efficiency zones boundaries	
	TI, %	UVIT, %
I Perfect efficiency	0-2,5	13-25 and higher
II High efficiency	2,5-4,0	13-25 and higher
III Low efficiency	0-2,5	0-13
IV Inefficient innovations	2,5-4,0	0-13

* as per the results of the author’s research

The matrix presents four efficiency zones of venture investments. The zone of perfect efficiency is an area characterized by a high economic effect with a relatively low level of unit costs for innovations. The high efficiency zone is characterized by a high efficiency of innovative activities, but also by a high level of unit costs for innovations.

The low efficiency zone indicates a low level of innovation product development and low levels of unit costs for innovation, which may account for the lack of effectiveness of unit costs for innovations. The inefficient innovations zone may indicate both low unit costs for innovation, and the low efficiency of financing innovations.

Therefore, based on the analysis of matrix of unit costs for investment we can divide countries into groups, each for efficiency of this indicator (Table 4).

Table 4
The distribution of countries over the matrix zones of efficiency of unit costs for innovation

<i>Zone denomination</i>		<i>Country</i>
I	Perfect efficiency	Slovenia, Germany, Czech Republic
II	High efficiency	Belgium, Finland
III	Low efficiency	Russia
IV	Inefficient innovations	Sweden

*As per the results of the author's research

The analysis showed that Russia is positioned at the boundary of the zone for low efficiency of unit costs for innovation. This position accounts for ineffective investment of venture capital into the innovative economy of the country, as well as the high risks for financing innovative projects. But the proximity to the high efficiency zone may indicate a high probability for transition in case of a favorable dynamics of indicators for innovative development.

Studies have shown that Russian banks are rather passive in the venture capital market. This state of things to some extent affects the overall amount of innovative products. However it should be noted and it is a well-known fact, that the share of public investment is usually 20-30% in total amount of innovation financing. The rest is financed by private entities, including banks. A characteristic feature for financing innovations is that the banks perform investments only at a late stage of innovative processes development. But a distinctive feature of creating innovations and their implementation necessarily requires financing the investment projects at all stages of their lifetime. The implementation of partnership relations of the Bank with a counterparty as well as transparency of investment in innovations are proved to be a positive factor in this process [7]. It should be noted that banks can perform a quick implementation in the innovation sector of the national economy and due to this ensure high profit, provided that banks participate in venture capital investment [9]. At the same time, venture capital investments can be considered as a tool to enhance a credit activity of banks by attracting new customers, most part of which are small and medium-sized businesses.

Despite the potential benefits of venture financing, banks participating in crediting innovative projects accompanied with high risk, face complications in the form of unavailability of necessary collateralization by borrowers and limitations for long-term credit resources on the part of the lender. The factor of unavailability of necessary collateralization from the borrower makes an impact especially in the early stages of the innovation project lifetime. However, not only a high probability of risk of profits loss is essential for the bank engaged in highly risky financial investments in innovative activities, but also a probability of direct losses in case of unfavorable outcome of the innovation project.

A modern promising tool for venture projects is project financing, which is considered as a set of activities aimed at funds and other tangible assets attraction for assets and cash flows from innovation project realization. This financial tool causes growth of attracted investments in innovation projects.

Various entities participate in project financing, including banks that are capable to act both as an organizer and a financial consultant and a co-investor of the innovative project.

Within the framework of financing an innovative project, different sources and forms of financing can be used, such as: credit, financial leasing, and acquisition of shares by the Bank in the authorized capital

stock of the project initiator. One of the sources can also be a foundation of a new special company with a shared participation by the project initiator, or foundation of the Bank and attracted co-investors as well as the issuance of target bonded debts, etc.

At the present time Russia counts state innovation support institutions that specialize in making grants and entrance into the capital. But there is a need for financial support of innovative projects in the later stages of their development. The Bank for Development and Foreign Economic Affairs (VEB) and the Ministry of Finance have developed regulations on State corporation financial policies. These regulations define the ways of financing innovations [4]. Up to the present moment, VEB has financed a wide range of projects, mainly those aimed at creating and improving technologies. Their share in the loan portfolio of VEB is 34.5%. A new financing strategy is similar to the venture capital financing. On the other hand, by implementing a new financing strategy for innovative projects, the VEB will contribute to their entrance to the market and to the attraction of funding at this stage of project development. The allocation of money by the VEB is assumed to be exclusively on a repayable basis and for those projects only that correspond to priorities of the sector (nanotechnology, infrastructure, composite materials, etc.).

According to a new financing strategy of innovative projects, the share of the VEB in financing can range from 50 to 79%, depending on the stage of development of the project. In this case the payback period of the project must exceed 5 years and the cost should be more than 1 billion rubles [4].

Consequently, the characteristic feature of venture financing is the lack of a guarantee tool which is a typical tool for banks. Nevertheless the alternative financing model as a tool of bank guarantee is aimed at the future cash flow from the innovation project realization.

5. CONCLUSIONS

Thus, it can be noted that at this stage the Russian development of venture financing did not reach the level that would be necessary for intensive growth of the innovative economy. Based on the matrix models analysis, we can conclude that the profit rate from venture capital investments in Russia is relatively low. It is that only a small part of investments is involved in creation of an innovative product.

Domestic banks are relatively passive in the venture capital market. This fact also affects to some extent the overall amount of innovative products output. At the same time the form of risk investment, that is a venture financing or investment lending, is determined by the level and extent of a credit risk that the bank may accept.

Innovations that transform scientific and technological activities results into new products, services and technologies, are one of the main aspects of qualitative economic growth. Meanwhile, the innovation activity cannot be performed without proper financing. The analysis of banking activities of venture capital investments indicates that banks should be an integral part of the combined venture capital market in the economy of the country. Security of an innovation project by financial resources at all stages of the project lifetime increases the success of innovative activity and is considered to be one of the main aspects for increase in competitive abilities of the national economy.

In connection with existing problems, the state policy plays a significant role and must take consistent steps in order to achieve the set goals for building a functional, balanced and powerful system of the venture capital industry.

References

- Banks. ru. Information portal: banks, deposits. Loans, mortgages, ratings of banks in Russia [Electronic resource]. – Contact us: <http://www.banki.ru/>.
- Investment and venture Fund of the Republic of Tatarstan. About the Fund [Electronic resource]. – Contact us: <http://ivf.tatarstan.ru/>.
- Indicators of innovative activities: 2016: statistical book/N. V.Gorodnikova, L.M. Gokhberg, K. A. Ditkovsky and others-M.: Higher school of Economics, 2016.-320 p.c.
- Innovative risk of the bank [Electronic resource]. – access mode: <http://www.banki.ru/>.
- Kolokolov V. A. Innovative mechanisms of enterprise structures functioning // Management in Russia and abroad.- No. 1.- 2002.
- Korobeynikov O. P., Trefilov A. A., Korshunov I. A. Role of innovations in creating a strategy of the enterprise // Management in Russia and abroad.- No. 3.- 2000.
- Matrosova, E., Zolotih, N., Popelnih V. Under what conditions it is profitable for investors to invest in venture hi-tech projects // Moscow business magazine for small and medium business. – 2007.-№ 4(113).-P.8.
- Science. Innovation. Information society: 2015: Short statistical book / G. I. Abdrakhmanov, N. V.Gorodnikova, L. M. Gokhberg and others-M.: Higher school of Economics, 2015.-80 C.
- Romanova AI, Ilina EV, Dobroserdova EA, Shindina TA and Mironova MD. The movement of capital in the field of information services / Journal of Internet Banking and Commerce. Volume 2015, Issue S1, 2015, Article number 010, 7p. [Electronic resource]. – access mode: [http://www.icommercecentral.com /](http://www.icommercecentral.com/).
- The rating of innovative development of subjects of the Russian Federation. Edition 2/ ed. by L. Gokhberg M.- Higher school of Economics, 2014.-88 p.
- The most reliable banks in Russia as of 2015-2016 [Electronic resource]. – Mode of access: <http://prostofinovo.ru/products/others/samye-nadezhnye-banki-2015-2016-godov-v-rossii/>.
- Sirotkin D. G. Innovations and companies: where the process is taking us? <http://www.cfin.ru/management/practice/innov.shtml>.
- Schumpeter, J. A. The theory of economic development/ Reproduced under edition «Schumpeter. A. the Theory of economic development. – M.: Progress, 1982». – Moscow: Direct Media Publishing, 2008. – 401 p.