

---

## THE INVESTMENTS OF FINANCIAL INSTITUTIONS IN REAL INNOVATIONS: KAZAKHSTANI PRACTICE

**Gaukhar KALKABAYEVA\***

*Karaganda Economic University of Kazpotrebsoyuz,  
Karaganda, Republic of Kazakhstan*

**Aibota RAKHMETOVA**

*Karaganda Economic University of Kazpotrebsoyuz,  
Karaganda, Republic of Kazakhstan*

**Bayan DOSKALIYEVA**

*South Ural State University (National Research University),  
Chelyabinsk, Russian Federation*

**Elena BORISOVA**

*Karaganda Economic University of Kazpotrebsoyuz,  
Karaganda, Republic of Kazakhstan*

**Lyazat MYLTYKBAYEVA**

*JSC Financial Academy, Nur-Sultan,  
Republic of Kazakhstan*

DOI: 10.13165/IE-21-15-1-07

**Abstract.** *In this paper, the authors investigate the issue of the weak role played by financial institutions in Kazakhstan in generating and introducing innovations in the real sector of the economy. In the process of preparing this paper, three methods were used: statistical comparative analysis; economic and mathematical modelling; and the graphical method. Based on analysis and modelling, the authors identified the predominantly negative tendencies of the decreasing participation of financial institutions in the financing of entities in the innovation sector. International best practice also confirms that for the full development of real innovations, bank investments alone are insufficient. Along with*

---

\* Corresponding author: PhD in Economics, associate professor at the Department of Banking Management and Financial Markets, Karaganda Economic University of Kazpotrebsoyuz, 100009, 9 Akademicheskaya Str., Karaganda, Republic of Kazakhstan. E-mail: kalkabayeva5664@murdoch.nu

*banking resources, there is huge investment potential for the development of the real sector, including innovation, the long-term resources of insurance companies, and a pension fund. This paper offers promising directions and recommendations for enhancing the participation of all of the major parties of the financial market of Kazakhstan in the financial support of innovations, so as to increase the competitiveness of the national economy and ensure its continued qualitative growth.*

**Keywords:** *intersectoral cooperation, regulatory institutions, economic growth, investment.*

**JEL Codes:** *G24, G38, O16, O38, O43*

## **1. Introduction**

The modern conditions of ongoing global geopolitical change and market volatility require the sustainable development of Kazakhstan's economy. Its progressive growth can be achieved by qualitatively diversifying the structure of the economy and increasing its competitiveness, including through the active generation and implementation of higher levels of technology. Naturally, the issue of innovative development is especially important for the economy of Kazakhstan, which is developing within the framework of the model of "catch up" development (Davletbayeva et al. 2018; Taubayev et al. 2019). This is particularly emphasised in documents of strategic importance, such as the President's "Kazakhstan – 2050" Strategy (2012) and the "Third Modernisation of Kazakhstan: Global Competitiveness" (2017). At the same time, the country is implementing the "State program of industrial and innovative development for a 5-year period" (2014) and the "Concept of innovative development of the Republic of Kazakhstan until 2020" (2013), which enshrine the basic principles, goals, and objectives of the innovative development of Kazakhstan. With that, difficulties in the implementation of this strategic direction of Kazakhstan are evidenced by the country's position in the Global Innovation Index (2019), where Kazakhstan ranked only 92 out of a possible 100 in the composite index of results.

The authors believe that for the qualitative growth of innovations and the innovation sector at large, efforts merely on the part of the state are not enough. Best international practice indicates that those countries that have managed to harmoniously combine the efforts of state bodies and private entrepreneurs achieve the greatest successes in innovative performance. Considering the capital intensity of any fully-fledged innovation process, the issue of financing plays an important role in the implementation of innovative projects (Andrijauskiene and Dumčiuvienė 2019). This refers to active financial and credit support for innovations by the entities of the financial and credit system, which bear the main burden in the practices of OECD countries. State bodies retain only the right of indirect participation in the part of the regulation that is aimed at aid and stimulation.

Meanwhile, the Kazakhstani practice of interaction between financial/credit structures and active innovative enterprises leaves much to be desired. Often, even projects with promising ideas do not pass the examinations of financial organisations against the background of their low-risk appetite and the requirements of the financial regulator. The results of this behaviour are evidenced by data such as the share of investments in fixed assets and in innovations (18.9% of GDP and less than 1% of GDP, respectively), and the fact that the share of innovative enterprises does not exceed 10% (compared to 50% in foreign countries) (Website of the Committee... 2020). In this regard, the prevailing tendencies and the presence of unresolved problems, including regulatory ones, which limit the investment potential of financial institutions in Kazakhstan emphasise the ambiguity and the relevance of this subject. There is a necessity for a critical reinterpretation of the content, forms, and mechanism for regulating the activities of financial organisations from the standpoint of their more productive interaction with the subjects of the innovation sector in the context of new economic realities.

Financial support for the effective functioning of the innovation sector constitutes an object of active research in connection with the need to improve it. Various aspects of this problem have been considered in the works of both Kazakh and international scientists, forming a scientific and methodological framework for the development of this subject and helping to achieve the purpose of this study. A study of the interrelation between the banking sector, the stock market, and the growth of innovation – with consideration of the democratic levels of political institutions – was carried out by C.-Y. Ho, S. Huang, H. Shi, and J. Wu (2018). Problems with the influence of intersectoral interaction on economic development, including in terms of innovative development, have been directly studied in the works of many Kazakh and international scientists. Among such studies is the work of A. Toxanova et al. (2017), which discusses various ways of financing innovative entrepreneurship. Toxanova et al. also considered the role of state development institutions in financing innovation, including the degree to which financial and credit instruments are used in the innovative development of the country.

Issues of enhancing the interaction between financial organisations and enterprises in the real sector were considered in a study by L. Matveeva et al. (2015), where the authors presented a model that allowed them to study the impact of the intra-group financing of financial and industrial groups and to determine the amount of investment possible. A study by N. Hutchison et al. (2016) examined the financial instruments of infrastructure investment projects, with the authors strongly supporting the idea that the introduction of project bonds will contribute to the growth of investment in infrastructure amidst a decrease in bank lending. The interrelation between internal and external financing and the degree of innovation in European companies is explored by P.A. Nylund et al. (2020) and R.P. Pradhan et al. (2020). Both groups of authors concluded that external financing in the form of debt reduces a company's profitability and constitutes a deterrent. However, despite the depth of the investigations carried out by these researchers, some aspects of intersectoral cooperation remain understudied.

## 2. Materials and methods

For the empirical analysis of the data used as evidence in this paper, econometric modelling methods were used – namely, correlation-regression analysis with the construction of paired and multiple linear regression models. The Stata 13 software suite was used as a modelling tool, and a graphical illustration of the dependencies was carried out in Excel. Statistics were taken from the international database of the World Bank (2020) and the database of the National Bank of the Republic of Kazakhstan for the period of 1993–2018. Within the framework of the modelling of dependency indicators, an attempt was made to determine the greatest degree of influence exerted by various sources of financing innovation on the growth of the innovation sector. The indicator “Export of high-tech goods in the total industrial export” was taken as an effective factor.

To assess the impact of the investment potential of various financial institutions on the growth of the innovation sector, an economic and mathematical model was constructed. For this, the selected indicators were grouped in the following areas: “bank loans”; “assets of financial institutions”; and “stock market” (Table 1). For each group of factors, a correlation analysis of interrelation with the indicator of “the export of high-tech goods in the Republic of Kazakhstan (Inn, % of industrial exports)” was conducted, and a corresponding regression model was constructed.

**Table 1.** *Grouping of indicators of sources of innovation financing*

| Bank loans   | Assets of financial institutions                  | Stock market   |
|--|---|--|
| 1 group  | 2 group   | 3 group  |
| Domestic loan to the private sector by banks ( $C_p$ , % of GDP) | Banking assets ( $A_1$ , % of GDP)                | Market capitalisation of companies ( $F_1$ , % of GDP) |
| Long-term bank loans to legal entities ( $C_2$ , % of GDP)       | Pension assets ( $A_2$ , % of GDP)                | Outstanding shares, total value ( $F_2$ , % of GDP)    |
| Short-term loans of second-tier banks ( $C_3$ , % of GDP)        | Assets of insurance companies ( $A_3$ , % of GDP) |  |

## 3. Results and discussion

The banking sector has been and remains the main source of credit support for the economy of Kazakhstan. However, the ratio of bank loans to GDP in 2019 was less than 22% (The current state of the banking... 2020). Evaluation and comparative analysis of the investment potential of the Kazakhstani insurance market and the insurance markets of developed countries suggest a significant absence in the investment opportunities of Kazakhstani insurance companies due to low levels of capitalisation and of the development of the insurance market itself. According to the data reported in “World Insurance: The Great Pilot East Countries”, published in 2018 by the Sigma journal, the volume of

insurance premiums in Kazakhstan in US dollars amounted to 1.01 billion, compared to 1,469.37 billion in the United States, 336.51 billion in the UK, 440.65 billion in Japan, and 23.59 billion in the Russian Federation (Swiss Re Institute 2019). With that, the Kazakhstani share in the global insurance market in terms of total insurance premiums amounted to 0.02% in 2018, which is comparable to the levels of insurance premiums in Cyprus, Sri Lanka, Serbia, and Oman. Upon investigating the indicators of the national insurance sector of Kazakhstan for 2011–2019, according to the National Bank of the Republic of Kazakhstan, one can note the growth of total assets up to 1,206.1 billion tenge, the income of insurance premiums up to 508.6 billion tenge, and the income from insurance activities up to 399 billion tenge. However, the insufficient capitalisation of Kazakhstani insurance companies discourages the development of their investment activities. The value of equity of Kazakhstani insurers, despite the constant dynamics of growth, is less than 1% of GDP, or 553 billion tenge (The current state of the insurance... 2020).

The issues of using pension savings to invest in the Kazakhstani economy, in particular in the innovation sector, are very relevant in the search for optimal sources of financing for innovative development. Pension fund assets can serve as the main factor in the growth of financial markets, provided that these markets reach a certain level of development, have adequately formed infrastructure, and possess suitable available investment tools. Considering the pension sector as a source of financing innovation, the long-term nature of the obligations of pension funds and, therefore, their fairly significant potential for investment in the innovation sector should be noted. In recent years, Kazakhstan has seen an increase in the amount of pension savings accumulated by the Unified Accumulative Pension Fund, which amounted to 10,800.5 billion tenge in 2019. The ratio of pension savings to GDP was 15.7% in 2019 (The current state of the funded... 2020).

Considering the directions of investing the pension assets of the Unified Accumulative Pension Fund of Kazakhstan, it should be noted that pension assets are mainly placed in the government securities of Kazakhstan and other foreign countries. In August 2018, the decision of the National Bank of the Republic of Kazakhstan on the provision of long-term liquidity to the “domestic economy” changed the investment orientation of pension assets. The UAPF, within the framework of the allotted quota of 200 billion tenge, acted as a buyer of JSC Bank TsentrKredit, JSC AB Sberbank, JSC KaspiBank, JSC Eurasian Bank, JSC Nurbank, and JSC Bank Home Credit securities, with various terms of circulation (The National Bank... 2020). Perhaps this measure will help to some extent in solving the issue of banks associated with the lack of long-term resources for lending to the economy, including the innovation sector.

Considering the role of the stock market in the economy of Kazakhstan, it should be noted that the indicator of capitalisation of the stock market in relation to GDP decreased from 50% to 29% for the period of 2010–2019, and the capitalisation index of the exchange-traded bond market in relation to GDP for the analysed period slightly increased, from 19% to 20%. Despite positive changes, the Kazakhstani securities market has not yet become an effective mechanism for the redistribution of cash resources in the real sector, and does not significantly affect the development of the economy. A stock market has formed in the country, covering the circulation of a limited scope of securi-

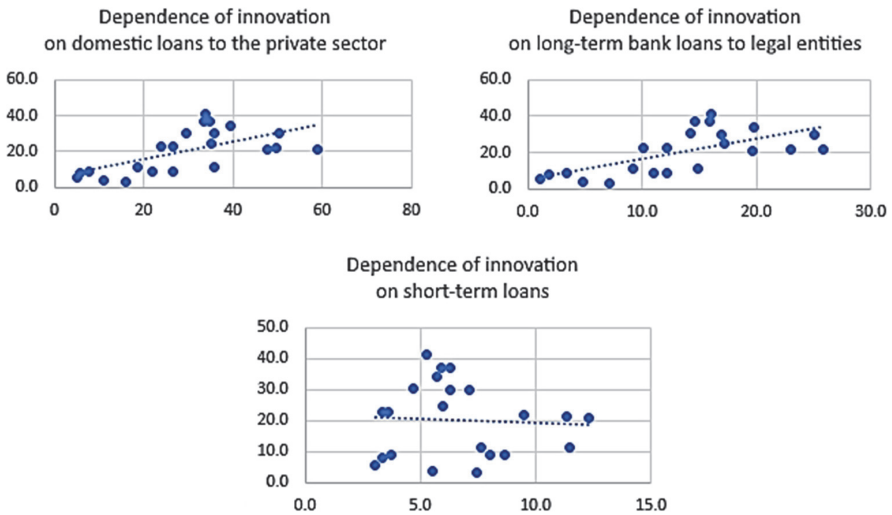
ties. The solution to this issue lies in changing the mechanism for regulating the stock market, aimed at reorienting stock market participants towards long-term investments.

Assessment of the influence of the factors of the “bank loans” group showed a strong correlation with the export of high-tech goods (.65). With that, short-term loans from second-tier banks do not have a positive effect on the development of innovations, since . This is because the terms of short-term lending do not coincide with the duration of the full innovation cycle. Considering the fact that the indicators of domestic lending to the private sector and long-term lending to legal entities are very closely interconnected, it is advisable to assess individual models (Eq. 1, 2):

$$I_{nn} = 5,43 + 0.49 \cdot C_1, (4.61) (0.14) \tag{1}$$

$$I_{nn} = 16.0 + 1,8 \cdot C_2 - 3.03 \cdot C_3, (3.86) (0.25) (0.65) \tag{2}$$

All regression coefficients are statistically significant. With that, an increase in the share of domestic loans to the private sector in GDP by 1% will involve an increase in the share of high-tech goods in industrial exports by 0.49%. Similarly, a 1% increase in the share of long-term bank loans to legal entities in GDP will contribute to a 1.8% increase in the share of exports, while an increase in the share of short-term bank loans in GDP by 1% leads to a decrease in the share of exports by 3.03% (Figure 1).



**Figure 1.** The dependence of the results of innovation on the indicators of bank lending, including by loan terms, in the Republic of Kazakhstan

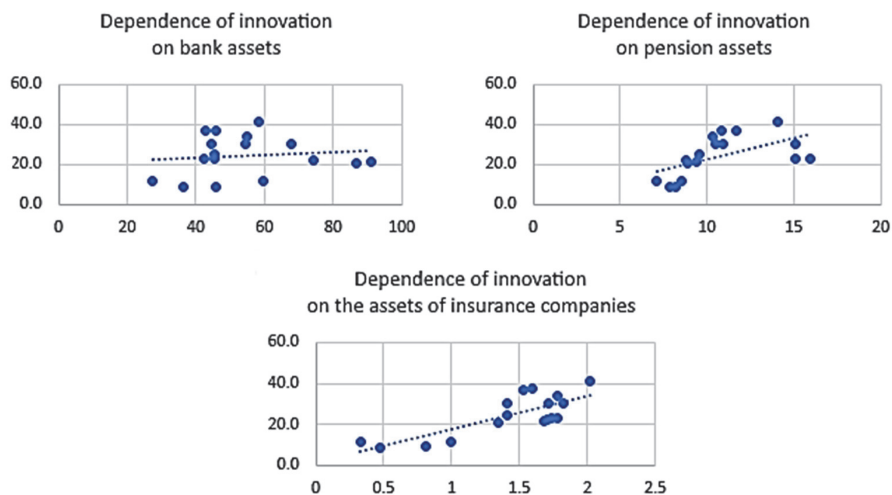
Source: compiled by the authors.

Within the framework of assessing the influence of the factors of the “assets of financial institutions” group on the indicator of the effectiveness of innovative activities (the export of high-tech goods in the total volume of industrial exports) in the Republic of

Kazakhstan, the resulting attribute is most affected by the assets of insurance companies, and least affected by pension assets (Aggregate banking assets have a weak effect on the result). The regression model in this case has the following form (Eq. 3):

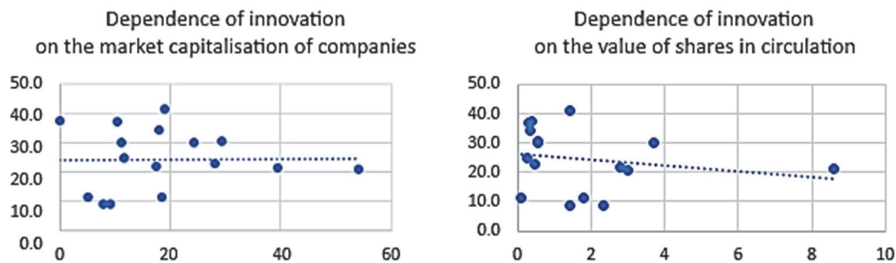
$$I_{nn} = 20.85 + 0.33 \cdot A_1 + 1.89 \cdot A_2 + 29.4 \cdot A_3, (8.89) (0.12) (0.97)(6.02) \quad (3)$$

Thus, with an increase in the share of banking assets in GDP by 1%, an increase in the share of high-tech goods in industrial exports by 0.33% can be expected. In turn, with an increase in the share of pension assets by 1%, the share of exports of high-tech goods will increase by 1.89%. An increase in the share of assets of insurance companies will contribute to an increase in the export of high-tech goods by 29.4% of industrial exports (Figure 2).



**Figure 2.** *The dependence of the results of innovation on various types of financial assets in the Republic of Kazakhstan*  
Source: compiled by the authors.

According to the authors, the inconsistency of the results obtained regarding pension assets indicates the imperfection of the institutions that regulate financial organisations in terms of their interaction with the subjects of the innovation sector. Additionally, the current practice of strict regulation, whilst also concerning subjects of the banking sector, reduces the role of these regulatory institutions in the development of Kazakhstan's innovation sector. To study the degree of influence of the factors of the "stock market" group, which describe the developmental tendencies of the stock market of Kazakhstan, it is necessary to separately distinguish the indicators of "market capitalisation of listed Kazakh companies" and "value of shares in circulation". However, the results show that these indicators do not significantly impact the indicator "export of high-tech goods". The coefficients of paired correlation between these indicators amount to and , respectively (Figure 3).



**Figure 3.** *The dependence of the results of innovation on the performance of the stock market in Kazakhstan*

*Source: compiled by the authors.*

The same result is obtained from a regression analysis of the dependence of innovation on stock market indicators (Eq. 4):

$$I_{nn} = 24.5 + 0.13 \cdot F_1 - 1.44 \cdot F_2 \quad (4.78) \quad (0.25) \quad (1.59) \quad (4)$$

The results obtained by applying the economic-mathematical model allow for the formulation of the main conclusions in the context of this research:

1. The significant potential of the influence of bank loans on the results of innovation – primarily long-term bank loans, the terms of which correspond to the duration of a fully-fledged innovation cycle – is confirmed, which determines the prospects of their use in contrast to short-term loans, for which such a dependence was not observed.
2. A strong correlation was observed between the assets of insurance companies and the results of innovation, which indicates the potential of the insurance sector, including pension assets. The effective use of the long-term assets of the insurance sector in favour of innovation entities is successfully confirmed by global practice.
3. As expected, instruments of the securities market did not demonstrate an impact on the results of innovation due to the lack of development in the structure of the financial market and the lack of experience of entities in the innovation sector in the use of securities.

In the context of country models, there are differences in terms of activity and specialisation of financial organisations in the development of innovation. With that, the higher the degree of development of a country's economy, the higher the share of participation in the innovation process occupied by the resources of both the banking/pension and insurance sectors. A relatively low degree of participation of entities in the banking sector in the country's innovative development is noted in countries with the Anglo-Saxon model, where the stock market plays this role, through which real sector enterprises form up to 40% of their resources.

In emerging markets, including in Kazakhstan, the centre of gravity is shifting toward the public sector. Banking participation is mainly observed in cases where innovative projects are guaranteed or subsidised by the state (Rakhmetova et al. 2019). It is no secret that such tendencies are formed due to the fact that in the structure of the client base



according to the scale of activity, commercial banks give preference to large enterprises, the stability and solvency of which is undoubted. However, such enterprises do not express great demand for banking services due to the sufficiency of their own funds. On the contrary, active interaction with banks, including in innovation, manifests itself primarily among small- and medium-sized businesses. The activities of such enterprises are characterized by a high degree of uncertainty regarding outcomes and a lack of confidence that their ideas can be successfully commercialised, which in most cases leads to a lack of interest among banks in this area of activity.

One can single out the following directions as priority areas for enhancing the participation of banking organisations in the development of real innovation:

- the creation of industry-specific innovative banks is associated with the recognition of the priority of innovation in the modernisation and structural adjustment of the economy. According to the authors, all of the elements necessary for ensuring all stages of the innovation process (business incubation services, technology transfer, etc.) should be concentrated within the structure of such a bank, in combination with a clear industry orientation. This will reduce the cost of maintaining an array of development institutions;
- the development of cluster initiatives in the regions. In 2006 in Kazakhstan, the concept of creating regional socio-entrepreneurial corporations (SEC) was approved. These were territories created for the full production cycle of high-tech products, divided into several cluster formations. However, while support for regional economic entities, including innovatively active enterprises within the framework of the cluster approach, was fairly well conceived, problems remain in providing financial assistance to them. In this regard, financial institutions that would possess autonomy in deciding whether to grant a loan or finance a project should be built into the regional innovation system (Alquist et al. 2019). In particular, this refers to a combination of clustering practices that are already used in the real sector with the formation of regional banking clusters, which should include both regional development banks and industry-specialised banks in accordance with the industry specialisation of the region, which are to perform the functions of financing innovation;
- the introduction of tax incentive practices: there are various measures of tax incentives for innovation. The mechanism of tax incentives is as follows: for the first two years, a company is completely exempt from taxes, and in the following years their rate is set at 15% (Galyukshova 2010). Companies that work in technology parks have the right to pay only 10% of the income tax rate, while in a number of technology parks this rate is set at 0%.

#### **4. Conclusions**

The pronounced processes of globalisation and the current tendencies of financial and economic turbulence have exacerbated issues that concern the sustainable development of national economic systems, including those based on the harmonious intersec-

toral cooperation of various economic entities. In this study, an attempt was made to simulate data so as to prove the degree of influence of the resources of financial institutions on the development of the innovation sector in Kazakhstan. With that, the process of interaction between the financial/credit and innovation sectors of the economy is capable of simultaneously generating a multitude of effects – including results at the micro-, meso-, and macro- levels.

To effectively utilize the investment opportunities of Kazakhstani insurance companies, it is necessary to formulate an appropriate state investment policy concerning the insurance market, which should contribute to an increase in its investment potential and should factor in the country's investment priorities. To increase the role of pension assets in the development of the Kazakh economy and the innovation sector, it is necessary to develop mechanisms for transforming pension savings into investment resources aimed at developing priority sectors.

### Acknowledgments

This research was funded by the Science Committee of the Ministry of Education and Science of the Republic of Kazakhstan (Grant No. AP05135183-OT-19).

### References

1. Address by the President of the Republic of Kazakhstan, leader of the nation, N.A. Nazarbayev: "Strategy Kazakhstan – 2050". Official website of the President of the Republic of Kazakhstan, 2012 [online]. Retrieved from: [https://www.akorda.kz/en/addresses/addresses\\_of\\_president/address-by-the-president-of-the-republic-of-kazakhstan-leader-of-the-nation-nnazarbayev-strategy-kazakhstan-2050-new-political-course-of-the-established-state](https://www.akorda.kz/en/addresses/addresses_of_president/address-by-the-president-of-the-republic-of-kazakhstan-leader-of-the-nation-nnazarbayev-strategy-kazakhstan-2050-new-political-course-of-the-established-state)
2. Address by the President of the Republic of Kazakhstan, leader of the nation, N.A. Nazarbayev: "Third Modernization of Kazakhstan: Global Competitiveness". *Official website of the President of the Republic of Kazakhstan*, 2017 [online]. Retrieved from: [https://www.akorda.kz/en/addresses/addresses\\_of\\_president/the-president-of-kazakhstan-nursultan-nazarbayevs-address-to-the-nation-of-kazakhstan-january-31-2017](https://www.akorda.kz/en/addresses/addresses_of_president/the-president-of-kazakhstan-nursultan-nazarbayevs-address-to-the-nation-of-kazakhstan-january-31-2017)
3. ALQUIST, R., BERMAN, N., MUKHERJEE, R., and TESAR, L.L. Financial constraints, institutions, and foreign ownership. *Journal of International Economics*, 2019, **118**, 63–83. <https://doi.org/10.1016/j.jinteco.2019.01.008>
4. ANDRIJAUSKIENE, M., and DUMČIUVIENĖ, D. Inward foreign direct investment and national innovative capacity. *Engineering Economics*, 2019, **30**(3), 339–348. <https://doi.org/10.5755/j01.ee.30.3.22832>
5. DAVLETBAYEVA, N., TAUBAYEV, A., and KUTTYBAI, M. System problems of entrepreneurship development in Kazakhstan regions in conditions of globalization. *Proceedings of the IDIMT 2018: Strategic Modeling in Management, Economy and Society. 26th Interdisciplinary Information Management Talks*,

- 2018, 113–119. Retrieved from: [https://idimt.org/wp-content/uploads/proceedings/IDIMT\\_proceedings\\_2018.pdf](https://idimt.org/wp-content/uploads/proceedings/IDIMT_proceedings_2018.pdf)
6. GALYUKSHOVA, T.V. Tax support of innovative activities. *Bulletin of the Omsk University. Series Economics*, 2010, **4**, 170–176.
  7. HO, C.Y., HUANG, S., SHI, H., and WU, J. Financial deepening and innovation: The role of political institutions. *World Development*, 2018, **109**, 1–13. <https://doi.org/10.1016/j.worlddev.2018.02.022>
  8. HUTCHISON, N., SQUIRES, G., ADAIR, A., BERRY, J., LO, D., MCGREAL, S., and ORGAN, S. Financing infrastructure development: time to unshackle the bonds? *Journal of Property Investment and Finance*, 2016, **34**(3), 208–224. <https://doi.org/10.1108/JPIF-07-2015-0047>
  9. MATVEEVA, L., MIKHALKINA, E., CHERNOVA, O., and NIKITAEVA, A. Strategic context of Russian financial and real economy sectors interaction. *Journal of Applied Economic Sciences*, 2015, **10**(37), 1085–1087.
  10. NYLUND, P.A., ARIMANY-SERRAT, N., FERRAS-HERNANDEZ, X., VIARDOT, E., BOATENG, H., and BREM, A. Internal and external financing of innovation: Sectoral differences in a longitudinal study of European firms. *European Journal of Innovation Management*, 2020, **23**(2), 200–213. <https://doi.org/10.1108/EJIM-09-2018-0207>
  11. PRADHAN, R.P., ARVIN, M.B., NAIR, M., and BENNETT, S.E. Sustainable economic growth in the European Union: The role of ICT, venture capital, and innovation. *Review of Financial Economics*, 2020, **38**(1), 34–62. <https://doi.org/10.1002/rfe.1064>
  12. RAKHMETOVA, A., KALKABAYEVA, G., ISKAKOVA, Z., KURMANALINA, A., and TURMAKHANBETOVA, G. Institutional conditions of interaction of financial-credit and innovative economic sectors. *Entrepreneurship and Sustainability Issues*, 2019, **7**(1), 704–713. [https://doi.org/10.9770/jesi.2019.7.1\(51\)](https://doi.org/10.9770/jesi.2019.7.1(51))
  13. *Swiss Re Institute* [online]. 2019. Retrieved from: <https://www.swissre.com>
  14. TAUBAYEV, A., KAMENOVA, A., LEGOSTAYEVA, A., SRAILOVA, G., and AYAZHANOV, K. Innovative entrepreneurship development: Main problems and educational limitations in Kazakhstan. *Economic Annals-XXI*, 2019, **177**(5-6), 92–100. <https://doi.org/10.21003/ea.v177-08>
  15. The concept of innovative development of the Republic of Kazakhstan until 2020. *Adilet* [online]. 2013. Retrieved from: <https://adilet.zan.kz/eng/docs/P1800000846>
  16. The current state of the banking sector of Kazakhstan. *Agency for Regulation and Development of the Financial Market of the Republic of Kazakhstan*, 2020. Retrieved from: <https://www.finreg.kz>
  17. The current state of the funded pension system of the Republic of Kazakhstan. *Agency for Regulation and Development of the Financial Market of the Republic of Kazakhstan*, 2020 [online]. Retrieved from: <https://finreg.kz/?docid=1126&switch=russian>

18. The current state of the insurance sector in Kazakhstan. *Agency for Regulation and Development of the Financial Market of the Republic of Kazakhstan*, 2020 [online]. Retrieved from: <https://finreg.kz/?docid=1180&switch=russian>
19. *The Global Innovation Index*. 2019. Cornell INSEAD WIPO. Retrieved from: <https://www.globalinnovationindex.org/Home>
20. The National Bank of Kazakhstan on market conditions lends to banks to support the economy. *The National Bank of Kazakhstan*, 2020 [online]. Retrieved from: <http://www.nationalbank.kz/?furl=news&switch=russian&kat=1&showall>
21. *The state program of industrial and innovative development of the Republic of Kazakhstan for 2015–2019*. 2014. Retrieved from: <https://adilet.zan.kz/rus/docs/U1400000874>
22. TOXANOVA, A., GALIYEVA, A., MUHAMEDZHANOVA, A., BAIBUSINOVA, G., KULUBEKOVA, A., and ASHIKBAYEVA, Z. Innovative entrepreneurship financing in the Republic of Kazakhstan. *Journal of Applied Economic Sciences*, 2017, **12**(3), 875–892.
23. *Website of the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan* [online], 2020. Retrieved from: <http://www.stat.gov.kz>
24. *World Bank Data* [online], 2020. Retrieved from: <https://databank.worldbank.org/source/world-development-indicators>