

G. Baibussinova*, *PhD student*

A. Toxanova, *doctor of economic sciences, professor*

Kazakh University of Economics, Finance

and International Trade,

Nur-Sultan, Kazakhstan

* - main author (author for correspondence)

e-mail: gulden.baybusinova.92@mail.ru

THE EVALUATION OF INNOVATIVE INFRASTRUCTURE IN THE REPUBLIC OF KAZAKHSTAN

The topicality of the study is determined by the need to find optimal ways of innovative entrepreneurship financing as an important factor of economic growth of the country's economy. The article is aimed at developing conceptual, organizational and methodical bases of innovative development financing in the context of macroeconomic reforms in Kazakhstan, identifying the role of state development institutions and financial instruments applied in the implementation of the state program of industrial-innovative development. The research substantiates the specific proposals to improve the state policy in innovation financing, shows the role of financial and credit instruments in the economic and innovative development of the country as the fundamental factors affecting the dynamic development of innovation, studies the basic forms and methods of the country's innovative development stimulation, examines international experience and analyzes the level of innovative activity financing. The research findings are of practical value for improving the process of state regulation of the innovative entrepreneurship financing, the rational allocation of available public and private (commercial) resources; streamlining methods of providing state support for innovative entrepreneurship; raising the level of investment attractiveness of innovative entrepreneurship through the organization of effective interaction of this institute with innovative infrastructure facilities.

Keywords: *innovative entrepreneurship, innovative infrastructure, financial support institutions, development institutions, small and medium enterprises, financing, grants, business, credit, national innovation.*

Кілт сөздер: *инновациялық кәсіпкерлік, инновациялық инфрақұрылым, қаржылық қолдау институттары, даму институттары, шағын және орта бизнес, қаржыландыру, гранттар, бизнес, несие, ұлттық инновация.*

Ключевые слова: *инновационное предпринимательство, инновационная инфраструктура, институты финансовой поддержки, институты развития, малый и средний бизнес, финансирование, гранты, бизнес, кредиты, национальные инновации.*

JEL classification: O32 – Technology and Innovation Management

Introduction. Measures of government support in the field of innovative entrepreneurship provide financial, informatics, analytical and logistical support to entrepreneurship. The problems of optimizing the government impact on the sector of innovative entrepreneurship are beco-

ming especially relevant. In Kazakhstan, the share of innovative business is still low. The main problem is generally low demand for innovation in Kazakhstan's economy, as well as insufficient financing and high risks of innovative enterprises.

The theoretical and methodological basis

of the study was the research of foreign and domestic scientists on the problems of government support in the field of innovative entrepreneurship as well as legislative and regulatory materials of Kazakhstan on the industrial and innovative development of the national economy of Kazakhstan. Methodologies used in the studies included system and comparative analysis, as well as methods of expert assessments and observations.

The study analyzed the current situation in financing the innovation process in Kazakhstan and also consists in developing conceptual and organizational and methodological foundations of state management of scientific and innovative development in the context of macroeconomic transformations of Kazakhstan and the problems of financing innovative entrepreneurship, the role of state development institutions and their financial instruments in the implementation of the state program of industrial and innovative development Kazakhstan.

Literature review. A lot of research is devoted to issues of state regulation of the innovation sphere. V. Gagiev offers an enlarged elemental composition of the innovation sphere, including: the intellectual product market, the investment market, the intellectual labor market, scientific and technical personnel; fixed and circulating assets market, innovation producers market; consumers of innovation; innovation service market, labor market [1].

In a number of works, the system of state regulation of the innovation sphere is presented on the basis of a factor approach to innovation. So, in P. Sheko's work, five factors of the innovation process were identified: the global threshold of knowledge, innovative financial resources, innovative entrepreneurs, the field of innovative activity, and the innovative climate [2].

Ivanova I.I. notes that state policy in the field of development of the innovation system is implemented in the following areas: creating a favorable economic and legal environment in relation to innovation; formation of the innovation system infrastructure; creating a system of state support for the commercialization of the results of intellectual activity [3].

Molchanova O.P. identifies the following instruments of state regulation: socio-economic and scientific-technical forecasts of public policy; state administrative, general economic and market regulators; state and regional programs; government orders and modern contract systems; indicative mechanisms and regulators of state enterprises [4].

Chernyshova B.N. rightly notes that the state implements all types of regulation of innovative activity – organizational, economic, financial, regulatory. The highest form of regulatory activity is the development and implementation of innovation policy, innovation management. Such a policy is developed on the basis of the approval of the priority value of innovation for modern social development. The state creates organizational, economic and legal conditions for innovation [5].

Kazbekov T.B., Baymaganbetov D.Z. distinguish the following economic factors of state regulation: the development of market relations, the implementation of tax and pricing policies that contribute to the growth of supply in the innovation market, the creation of favorable tax conditions for innovative activities by all entities, and the provision of effective employment in the innovation sphere, the expansion of demand for innovations, the provision of financial support and tax incentives to enterprises developing and disseminating innovations, promoting the modernization of technology and others [6, 7].

Main Body of Paper. Government policy for the support of innovative entrepreneurship implies the implementation of a number of functions to provide financial, informatics, analytical and logistical support to entrepreneurship. All these forms of support are implemented both by executive bodies through various programs adopted at the local and regional levels, and by organizations specifically created for this purpose using government capital [1].

1. JSC «National Agency for Technological Development» (NATD) (now JSC «QazTech Ventures») provides financial support for innovative entrepreneurial initiatives by attracting investments and financing projects. The Agency regularly

conducts competitions with the participation of both legal entities and individuals aimed at identifying and implementing promising initiatives, and coordinates the creation and development of technology parks, business incubators and industrial zones. According to official statistics, there are currently more than 50 registered business incubators and innovation centers. The Kazakhstan Association of Business Incubators and Innovation Centers (CABIC), which has united 14 business incubators and technology parks as well as the Central Asian Network of Business Incubators and Technological Parks is coordinated by the Shymkent Business Incubator SodBi.

At the same time, some business incubators are at a low efficiency level as often leased premises are not released by enterprises that have passed from the beginning stage to the stage of development and expansion. In addition, the main share of incubator clients consists of companies engaged in production (food, clothing, furniture, crafts and souvenir production) and services (in the field of training, consulting and construction and repair) and only 2% of clients are engaged in manufacturing.

2. JSC «Entrepreneurship Development Fund «Damu» provides financial and consulting services for the development of small and me-

dium-sized businesses, as well as microfinance organizations in Kazakhstan. The main goal of the Foundation is to stimulate the economic growth of small business entities, including innovative business in Kazakhstan, and increase efficiency of using government funds directed to support small businesses. Effective measures to support and develop innovative entrepreneurship are successfully implemented in all areas of the programs. However, it is necessary to note the weaknesses in one area of the Program, namely the development of the industrial infrastructure, since the work performed does not fully meet the needs of innovative entrepreneurship.

3. JSC «Corporation for Export Development and Promotion «Kaznex» provides information and analytical support in the field of public policy development, including the development of innovative entrepreneurship. The Center conducts research in the field of marketing and management and provides informatics and consulting services. It also publishes methodological literature in the field of marketing and management, develops software products and helps to promote national products for export.

Table 1 presents the financial and credit instruments of the development institutions [2].

Table 1

Financial and credit instruments of the development institutions*

| Financial instruments for investment | Development institutions | | | | | | |
|---|--------------------------|-------------|-----|-----|------|------|------|
| | DBK | DBK-leasing | KIF | KCM | NATD | DAMU | ECIC |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Crediting: | | | | | | | |
| - long-term investment projects (10-20 years) | + | | | | | | |
| - medium-term investment projects (5-10 years) | + | | | | | | |
| - short-term for SME entities | | | | | | + | |
| - conditional (placement) in the second-tier bank | | | | | | + | |
| - for export transactions | + | | | | | | |
| - for current operations | + | | | | | | |
| - inter-bank | + | | | | | | |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|
| Guaranteeing: | + | | | | + | + | |
| Shared (minority) participation | | | | | | | |
| - in the companies' capital | + | | + | + | + | + | |
| - in the fund | | | | + | + | | |
| Refinancing: | + | | | | | | |
| Mezannine financing | + | | | | | | |
| Interest rate subsidizing | + | | | | | + | |
| Financial leasing (3-20 years) | | + | | | | + | |
| Project financing | + | | | | | + | |
| Agent servicing | + | | | | | | |
| Export credit insurance | | | | | | | + |
| Investment insurance abroad | | | | | | | + |
| Trade financing | | | | | | | + |
| Agent servicing of projects | + | | | | | | |
| Grants | | | | | + | | |
| <p><i>*Note: compiled on the basis of the development institutions, where</i> DBK – Development Bank of Kazakhstan KIF – Kazakhstan Investment Fund ECIC – Export Credit Insurance Corporation KCM – Kazyna Capital Management NATD JSC – «National Agency for Technological Development» (now JSC «QazTech Ventures») DAMU – Entrepreneurship Development Fund JSC</p> | | | | | | | |

ҚАЗАҚ ЭКОНОМИКА, ҚАРЖЫ ЖӘНЕ ХАЛЫҚАРАЛЫҚ САУДА УНИВЕРСИТЕТІНІҢ ЖАРШЫСЫ, 2021. – №1(42)

Commercial structures do not directly support small business entities, but indirectly they have a significant impact on the development of small businesses. Among such structures, the following organizations can be distinguished: second-tier banks, credit partnerships, microcredit organizations and leasing companies.

Despite the developed network of banking services and a large number of lending programs for most small businesses in Kazakhstan, the main source of finance of entrepreneurs is their own funds. At the same time, small business entities are not able to cover all financing needs only at the expense of their own resources, but the services provided by banks for some of them remain unavailable for various reasons. In this case microcredit organizations can take part in financing enterprises [3].

From the analysis of institutions that provide financial support for entrepreneurship in Kazakhstan, the following problems should be highlighted: lack of clear definition of functions and their duplication; unprofitability of some

institutions; lack of an effective mechanism for the exchange of information between government structures and development institutions; low levels of monitoring of investment projects; fragmented nature of services provided to innovative enterprises; lack of a single information resource for all programs to support the subjects of innovative business; and low coverage of institutional support for entrepreneurs in rural areas [4].

Currently, a number of government support programs for the development of science, innovation and entrepreneurship are being implemented. The analysis of government support for innovative small and medium entrepreneurship allows us to identify the following problems:

- 1) government innovation policy is fragmented and unstable: there are systematic problems in scientific activities, lack of clear guidelines for scientific research and applied work, absence of specific support mechanisms in numerous programs for innovation development;
- 2) a number of issues have not been properly worked out at the regulatory and legislative level:

there are inconsistencies in regulations and ambiguity in the interpretation of certain provisions of the law in law enforcement practice due to the lack of clear definitions and criteria for monitoring and evaluation of innovation potential;

3) lack of a sufficient system of financing of innovative projects at all stages of the project, particularly at the initial stage, including the lack of basic mechanisms for investing in venture projects;

4) insufficient provision of service support for innovative entrepreneurship, including lack of equipped laboratories and experienced production facilities; uncoordinated work of consulting organizations, duplication of their functions and responsibilities, difference in the cost of services provided; lack of objective criteria for assessing the activities of infrastructure subjects;

5) insufficiently effective mechanisms to enter the international market for high-technology

goods and services: there are no incentives to export high-technology products manufactured in Kazakhstan; high administrative barriers in the foreign economic activity of innovative companies; considerable document circulation and long terms for the declaration and release of goods [5].

The results of our research of the innovation process can be reflected with the help of the so-called SWOT analysis technology (table 2).

Analyzing the advantages and disadvantages of innovative development, we can say that the merits serve as a basis for future projects, and the shortcomings can be viewed to some extent as a consequence of the fact that the innovative process in Kazakhstan started to develop relatively recently and it is impossible to form an effective national innovation system in such a short period of time. As experience of other countries shows, national innovation systems are formed in decades.

Table 2

SWOT-analysis of innovative development of the Republic of Kazakhstan*

| | |
|--|--|
| <p>Strengths:</p> <ul style="list-style-type: none"> - macroeconomic and political stability; - comprehensive support of the government (financial, political, legislative, etc.); - high scientific and technical potential; - highly qualified national staff; - availability of necessary natural resources; - positive dynamics of innovation - performance indicators | <p>Opportunities:</p> <ul style="list-style-type: none"> - international cooperation in the field of innovation; - participation of foreign investors and partners in Kazakhstan's innovative projects; - participation of Kazakhstan investors in foreign innovative projects; - - transfer of advanced technologies |
| <p>Weaknesses:</p> <ul style="list-style-type: none"> - insufficient degree of economic development; - relatively low levels of innovative activity of domestic enterprises; - disproportion of innovation development in the regional and sectoral context; - - low share of private investment in innovation. | <p>Threats:</p> <ul style="list-style-type: none"> - economic and financial crisis; - decrease in the pace of the scientific and technological progress in the world |

*Source: *www.nif.kz, materials of the National Innovation Fund of the Republic of Kazakhstan [6]*

We believe that the potential of innovative development of Kazakhstan should be approached from the analysis of its shortcomings. Analyzing the critical factors constraining the development of innovative processes in Kazakhstan, we can determine the following:

- high risks of innovation processes;
- disproportion in the types of innovation in favor of acquisition of machinery and equipment (small share of costs are allocated for training of personnel, conducting marketing research and other activities);

- high costs of research and development and market research;
- imperfection of regional and local legislation, lack of laws stimulating the development of innovative business, including tax and non-tax incentives and preferences;
- obsolete material and technical base of science, education and industry;
- inconsistency of professional skills of innovation activities at the required level;
- absence or inadequacy of institutes of standardization, certification and patenting, high cost of services, incompetence, overregulation and difficulty of certain procedures;
- high degree of bureaucracy in interaction with key partners and conclusion of agreements, low level of interpersonal trust;
- social problems associated with the high cost of housing, low wages and brain drain, etc.

In the field of providing service support to businesses, there are certain problems associated with the quality of service delivery. There is no single, unified and centralized infrastructure for supporting entrepreneurship, which provides a comprehensive solution to the problems of small businesses and low coverage of small business in the regions. In this regard, it is necessary to provide service support to improve the enterprise management system in order to improve its efficiency [7].

The problems of providing service support are:

- lack of close links between science and production;
- uncoordinated work of consulting organizations, duplication of their functions and responsibilities, difference in the cost of services provided;
- lack of objective criteria for assessing the activities of innovative infrastructure;
- lack of proper control by the government;
- lack of unified and centralized infrastructure for support of entrepreneurship;
- low coverage of small business in the regions;
- lack of systematic provision of services;
- lack of consulting organizations in remote regions;

- absence of a delimitation of powers between Kazagro and DAMU;
- conflicting activities of business incubators and technological parks;
- lack of innovative nature of the activities of SMEs located in business incubators;
- low commercialization of scientific research;
- lack of personnel in the field of innovative developments.

Conclusion. Summarizing, it can be stated that in the course the research, the following tasks have been solved:

1) The role of financial and credit instruments in the economic and innovative development of the country is shown as the fundamental factors influencing the dynamic development of innovations.

2) The main forms and methods of stimulating the country's innovative development have been studied. Stimulation of innovation concerns all business entities. The low level of interest rates in the country positively influences the development of innovative processes, and a high level of inflation reduces this indicator. The level of competition in the market exerts an ambiguous impact on the innovation activities. The product patent system stimulates innovation, acting as a mechanism for reducing risks. Preferential taxation is an incentive for the search for innovations and their commercialization. The creation of technological parks where incentives are provided for participants in the innovation process also contributes to the development of innovative activities.

3) The foreign experience has been studied, which shows that the formation of the competitiveness of the national economy is based on the development of the innovation sphere, while financial and credit instruments play a key role as levers of influence. In recent years, to correct market and systemic 'failures' in the areas where acute social needs exist, OECD countries and emerging economies have used targeted tools to stimulate the demand for innovations. These tools include public procurement, regulation, standards, consumer policy, consumer innovation initiatives, and the leading market initiatives.

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Г.К. Байбусинова, А.Н. Токсанова

**ҚАЗАҚСТАН РЕСПУБЛИКАСЫНДАҒЫ ИННОВАЦИЯЛЫҚ
ИНФРАҚҰРЫЛЫМДЫ БАҒАЛАУ**

Аңдатпа

Зерттеудің өзектілігі ел экономикасының экономикалық өсуінің маңызды факторы ретінде инновациялық кәсіпкерлікті қаржыландырудың оңтайлы жолдарын іздеу қажеттілігімен анықталады. Мақала Қазақстандағы макроэкономикалық реформалар жағдайында инновациялық дамуды қаржыландырудың тұжырымдамалық, ұйымдастырушылық және әдістемелік негіздерін жасауға, мемлекеттік даму институттары мен индустриялық-инновациялық дамудың мемлекеттік бағдарламасын іске асыруда қолданылатын қаржы құралдарының рөлін анықтауға бағытталған. Зерттеуде инновациялық қаржыландыру саласындағы мемлекеттік саясатты жетілдіру бойынша нақты ұсыныстар негізделген, инновацияның қарқынды дамуына әсер ететін іргелі факторлар

ретінде елдің экономикалық және инновациялық дамуындағы қаржылық-несиелік құралдардың ролі көрсетілген, негізгі формалары мен әдістері зерттелген, елдің инновациялық дамуын ынталандыру, халықаралық тәжірибені зерделеу және инновациялық қызметті қаржыландыру деңгейіне талдау жасалған. Зерттеу нәтижелерінің инновациялық кәсіпкерлікті қаржыландыруды мемлекеттік реттеу, қолда бар мемлекеттік және жеке (коммерциялық) ресурстарды ұтымды бөлу процесін жетілдіру, инновациялық кәсіпкерлікті мемлекеттік қолдау әдістерін оңтайландыру, осы институттың инновациялық инфрақұрылым объектілерімен тиімді өзара іс-қимылын ұйымдастыру арқылы инновациялық кәсіпкерліктің инвестициялық тартымдылығын арттыру үшін практикалық маңызы бар.

Г.К. Байбусинова, А.Н. Токсанова

**ОЦЕНКА ИННОВАЦИОННОЙ ИНФРАСТРУКТУРЫ
В РЕСПУБЛИКЕ КАЗАХСТАН**

Аннотация

Актуальность исследования определяется необходимостью поиска оптимальных путей финансирования инновационного предпринимательства как важного фактора экономического роста экономики страны. Целью статьи является разработка концептуальных, организационных и методических основ финансирования инновационного развития в контексте макроэкономических реформ в Казахстане, выявление роли государственных институтов развития и финансовых инструментов, применяемых при реализации государственной программы индустриально-инновационного развития. В исследовании обоснованы конкретные предложения по совершенствованию государственной политики в области финансирования инноваций, показана роль финансово-кредитных инструментов в экономическом и инновационном развитии страны как фундаментальных факторов, влияющих на динамичное развитие инноваций, изучены основные формы и методы стимулирования инновационного развития страны, международный опыт и уровень финансирования инновационной деятельности. Результаты исследования имеют практическое значение для совершенствования процесса государственного регулирования финансирования инновационного предпринимательства, рационального распределения имеющихся государственных и частных (коммерческих) ресурсов, оптимизации методов государственной поддержки инновационного предпринимательства, повышение уровня инвестиционной привлекательности инновационного предпринимательства путем организации эффективного взаимодействия этого института с инновационными инфраструктурными объектами.

