Venture Funds as one of the Major Sources of Investment for Innovative Entrepreneurship in the Republic of Kazakhstan

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Abstract:

The article presents the development of venture capital investment in the Republic of Kazakhstan within the context of analyzing foreign experience in the implementation and application of the methods, models, vehicles and schemes of venture capital investment in knowledge-intensive high-tech innovative enterprises. Kazakhstan is primarily interested in the experience of Western Europe and the USA, since the venture capital industry of these countries is the most developed as compared with venture investing investment in other countries.

The goal of this article is to focus on studying of the theoretical and methodological foundations of venture capital investment, as well as on developing practical guidance on improving the development of venture capital operations in the Republic of Kazakhstan.

Trying to achieve the above goal the following results have also been achieved: uncovering of the goal, essence and peculiarities of venture capital investment, as well as its role in the development of innovative projects; identification of current trends, patterns and contradictions in the development of the venture capital investment process; consolidation of the best practice in organizing venture capital investment in the Republic of Kazakhstan and abroad.

The article offers practical guidance for enhancing the efficiency of venture capital investment in the Republic of Kazakhstan. First of all, it has been concluded that nowadays the country is in an urgent need for the formation of a new investment model providing for the creation of venture funds investing in business-plans and pilot teams.

Keywords: investment, venture funds, venture capital, knowledge-intensive high-tech enterprises, public-private partnership.

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1. Introduction

Today, the various financial sources involved in the implementation of innovative projects are used. However, the projects related to the implementation of high technology are characterized by a higher degree of cost and risk. In this regard a greater attention is being paid to finding of the optimum and at the same time more effective (from the point of implementation) vehicles and methods of high technology funding, one of which is venture capital funding. Today the majority of companies all over the world consider venture capital funding as an efficient means of support and obtaining of the access to high technologies. Even though the volumes of venture capital in the global economy are not that big, its role in the innovative development is quite significant (European Private Equity and Venture Capital Association, 2008).

This issue becomes to be of exceptional relevance for the Republic of Kazakhstan. In today's situation, when the resource-based nature of the economy has proven to be a handicap, it is only the high-tech production that can ensure the diversification and economic growth and, therefore increase the competitiveness of the country. Thus, it becomes more evident, that the availability of venture capital investment is a major impetus for the intensification of innovation at the national level (McGowy and Spagnola, 2008).

The venture capital industry of the Republic of Kazakhstan is at the very start of its development and its impact on the innovation and the formation of open innovative environment is minor. Nevertheless, there is rather a significant potential for its development and this will be covered in this article.

The article is theoretically based on previous works of foreign economists (Metrick and Yasuda, 2010; Bygrave and Timmons, 1992; Gladstone and Gladstone, 2006; Korver, 2008; Gilson, 1999; McKaskill, 2009; Cristea and Thalassinos, 2008; 2016; Vovchenko *et al.*, 2017; Thalassinos and Liapis, 2014), etc. Their works explain the essence and principles of venture capital financing of innovation. The following foreign economists have studied the issues of high-tech venture capital financing (Roberts, 1999; Kenney *et al.*, 1997; Thalassinos *et al.*, 2013).

A data which is valuable from the theoretical and especially from the practical standpoint, have been obtained when analyzing the monographs and scientific articles of Kazakh and Russian authors who researched the problems of venture capital financing, namely (Ammosov, 2005; An'shin, 2003; Balaban, 1999; Vorontsov, 2002; P.G. Gul'kin, 2003; Karzhauv, 2006; Kashirin, 2008; Lyudvikova, 2009; Potatuev, 2007; Radionov, 2005; Folom'ev, 1999; Yunusov, 2011; Kenzheguzin, 2005; Baimuratov and Turgulov, 2007; Zhumadil, 2007; Krupa *et al.*, 2015; Krupa *et al.*, 2015a; Schlossberger, 2016; Valenčík and Červenka, 2016; Anikina *et al.*, 2016; Boldeanu and Tache, 2016; Liapis *et al.*, 2013).

The development of venture capital investment all over the world was due to the need of providing the long-term financial investment for the development of innovation (Dudin, 2016). The legislative regulation of venture capital investment was for the first time formalized in the USA. Semko (2011) notes that a large number of legal acts of the USA contain the provisions stipulating the pivotal role of innovation in the economic development of the country. The Federal Act on State Science and Technology Policy, Organization and Priorities of 1976 laid the basis for the development of today's innovation system in the USA. This Act provided for the prevailing role of the government in determining of the innovative strategy of development as "the main organizer facilitating the development of fundamental sciences as a specific area of the USA strategic interests, determining federal budget as the source to cover those expenditures" (McConwey, 1990).

Another fundamental law regulating the venture capital operations in the USA was the Stevenson Wydler Technology Innovation Act of 1980, which has regulated the aggregation of private and public capital with the aim of producing the high-tech products. The application of this Act provided for the creation of University-based and NPO-based industrial and technological centers having the function of carrying out the research that have national and strategic importance but with no obvious economic benefit (Stevenson-Wydler Technology Innovation Act, 1980).

Access to funding is considered to be one of the most important factors affecting the development of entrepreneurship in a whole. The EBRD poll of 2009 suggests that 47 percent of companies in South-Eastern Europe believe that a restricted access to funding creates a serious obstacle to their growth and development (EBRD, 2009). Similar results were obtained by the World Bank in 2008 when the access to finance was considered as a key issue for the development of entrepreneurship in countries of Central Asia (World Bank, 2008). Some foreign authors stress that the restricted financing makes it less probable that the entrepreneur will be trying to implement the innovative projects (Savignac, 2006). Traditionally it is the entrepreneurs who respond most strongly to the absence or insufficiency of funds for the development as compared with big business (Hall, 2010).

The volume of venture financing is constantly and rapidly growing all over the world. Within the first nine months of 2015 the global venture capital investment equaled to USD 98.4 bln which is well ahead of the figure of 2014 ended with USD 88.7 bln (Organisation for Economic Co-operation and Development, 2010). However, the volume of venture capital is decreasing significantly during the periods of economic uncertainty in the country. The last global economic crisis has forced the venture capital funds worldwide to significantly reduce the initial investment in start-ups and provide financing to later stages of innovation projects. Right immediately after the beginning of the global financial crisis the venture capital investments just in the USA alone have dropped by over 50 per cent (INSEAD 2014).

2. Methods

The role of state and state programs in developing of venture financing can be analyzed considering the positive experience of foreign countries in implementing of different approaches to the creation of public-private partnerships and the innovative tools applied in financing of joint projects. One of the priority directions in implementing of strategic public-private partnership (PPP) is the economic development of the industrial complex which will be based on technological innovations with the purpose of providing the economic security.

A great importance for the practicing of PPP has the implementation of PPP financial mechanism, which absorbs different means for utilizing the economic resources available to the authorities. These are first of all the public and municipal funds (budgetary funds) and also the public and municipal property. The problem for implementing of the PPP financial mechanism is due to the fact, that any movements of these funds and property are strictly regulated by the acting legislation.

Special attention should be drawn to financial (public budget loans, subsidies and tax incentives for entrepreneurs) and financial and budgetary aspects of PPP practice development. This is about the insufficient transparency of financial information related to accumulation of partners' funds and their spending (Budina, Polackova, Brixi and Irwin, 2007). The main requirements set to the financing of PPP projects are: low cost of attracted funds; transparency and legitimacy of the funding scheme; sustainable sources of financing; high credit rating (not less than BBB) assigned by major international rating agencies. High transaction costs present a serious obstacle for PPP development. So, this is the case with the growing costs of infrastructure facilities construction: high cost of funding for private sector (in Europe the gap varies between 3% to 7% per annum) (Accounts Commission, 2002), expectation of high yield from PPP projects from the side of private partners, lengthy periods for the preparation of such projects.

PPP is based on the project financing concept which implies the use of various sources of financial resources: company's own funds (share capital, depreciation, retained earnings, land plots, fixed assets), money loans and credits, commercial credits, proceeds from shares issue, bond issue, financial leasing, user charges. Budgetary funds in the form of credits, subsidies, guarantees, tax incentives and functional guarantees for the investor are often used.

The analysis has shown that the economic model of cooperation between the public authorities and the private sector is the same for all countries and is based on the following principles: the private sector's striving for profit and the public sector trying to find the ways for attracting of non-budgetary investment enabling to implement the projects significant for the country.

Venture capital investment based on the government and venture funds partnership is the efficient tool for the state support of innovations. The USA has 45 years of experience in this area, Europe -25 years and Israel -15 years. The cooperation between the government and private investors based on the creation of public-private venture funds (PPVF) contributes to the enhancement of innovation and national economies' competitiveness. It is carried out in two major areas.

- Financing of PPVFs already existent in the country by using of public budget or non-budgetary funds.
- Participation of governmental or regional authorities in managing of PPBFs in the form of: direct participation inclusion of Government representatives into the companies' Boards of Directors, assisting in settling the issues of innovative companies', facilitating the commercialization of R&D within the framework of projects financed from PPVFs; indirect participation starting up and managing of business-incubators; facilitating the transfer; developing and carrying out the innovative industrial policy, regional clustering policy.

The proposed methodology summarizes the experience of developed countries in building the development models of venture capital investment. The key provisions for improving the government model of support rendered to the venture capital business comprise the following: explicit definition of government objectives, goals and expected results; identification of advantages of innovative development and venture capital operations in the country with the aim of developing the government programs; selecting the government programs taking into account the criteria that reflect the achievement of the goals established; ensuring the actual independence of the heads of the funds; ensuring the program flexibility by adapting to the changing situation based on constant monitoring and developing the possible ways of action; raising the awareness and quality of education in venture business for the decision-makers. The basic models of venture capital investment PPP are as follows:

1. The "Fund of Funds" model, where the government forms a national PPVF at the expense of government and non-budgetary funds.

The funds of this PPVF are allocated by region, where the regional PPVFs are created with participation of private investors, or allocated by industry (industry-specific funds). This model is the most common in Europe, where the European Investment Fund (EIF) has been operating since 1994. EIF resulted from European Union and European Investment Bank partnership. PPVF managing company can be fully state owned (Israeli group Yozma at the initial stage, Irish Enterprise Ireland), public-private (French CDC Enterprises) or fully private (British Westport Private Equity Ltd).

2. The "Pilot Region" model using two separate strategies is used in the countries with uneven regional economic development.

Strategy one: PPVF (financed from the state budget, regional budget and private investor funds) is created in the most economically developed region of the country. Experiencing the pressure of competition and while looking for promising targets for investment a venture capital expands to other regions. Thus the «market pull» strategy is carried out when less developed regions develop at the expense of capital from the developed regions. PPVF NEXT (Lombardy, Italy) can be brought as an example

Strategy two: PPVF is created in a depressed region where the venture capital investment catalyzes the formation of high-tech innovative clusters. In this way a "technology push" of economic development of depressive region is taking place due to the venture capital investment takes place. Toulouse in France, Sardinia in Italy, and Western Pannonia in Austria can be brought as successful example.

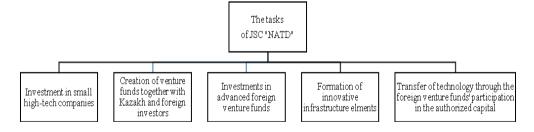
3. The "Investment Innovative Companies" model.

Such companies are established and managed by private investors and employ the funds of federal ministries and agencies on a competitive basis. This model has evolved in the USA where the companies operate on the principles of venture capital business and simultaneously serve as a catalyst for the growth of innovation in the regions and act as intermediaries that provide access to smaller innovative companies' to the federal budget funds given that they participate in the implementation of the State targeted programs.

3. Results

The essential feature of venture capital funding in the Republic of Kazakhstan is the fact that the state acts as the sole initiator in the development of the venture funding mechanisms. To this end the JSC "National Innovative Fund" was established in 2003, which was reorganized in 2012 into JSC "National Agency for Technological Development of the Republic of Kazakhstan" (JSC «NATD»). The basic goals of JSC "NATD" are:

Figure 1. Basic goals of Joint Stock Company "National Agency for Technological Development of the Republic of Kazakhstan" (prepared by the author)



The peculiarity of JSC "NATD" as a public fund of funds is that it pursues the goals other than profit making which is associated with the activation of venture activities and the formation of the network of private venture capital funds in the country. One of the strongest issues in the development of innovative entrepreneurship in Kazakhstan is in a weak financial support of such projects, which is typical for developing countries and which creates high uncertainty and risk in the business environment. The venture capital investment funds presented below are the partners of JSC "NATD" (Table 1):

Table 1: Venture capital investment funds – partners of JSC "NATD"

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The name	Year	Results achieved
of the Fund	founded	
JSC AIFRI "Sentras	2004	The main objective is the introduction of advanced
Venture Fund"		western technology to the financial services market
		of Kazakhstan. The Foundation provides funding
		for more than 15 innovative projects and is one of
		the leaders in the industry market.
JSC AIFRI "Delta	2010	Gaining access to advanced western technology for
Technology Venture		their subsequent transfer to Kazakhstan.
Fund"		
JSC "Areket" High	2004	The implementation of two investment projects:
Technology Fund"		- "Karatal AgroTech" - large-component assembly
		for agricultural machinery, beginning from
		December 2008,
		- «Basalt-Technology» - the production of thermal
		insulation materials from basalt fiber using the new
		technology, beginning from September 2005
JSC "Logycom	2008	Providing investment as a contribution to the share /
Perspective		equity capital of companies registered in the
Innovations"		Republic of Kazakhstan, for the financing of
		innovation, high-tech and highly profitable projects
		in the field of informatization and
		telecommunications.
Note: prepared by the author using the source (Venture Capital Investment)		

The share of national agency in these funds comes to 49%. Earlier, JSC «NATD» used to be in partnership with other two venture funds – "Advant" and "Almaty Venture Capital", but in 2010 left these partnerships with overall profit of 58.2 mln tenge. In parallel the agency is a partner of the top five foreign venture capital funds covering Europe, the USA, Israel, South-East Asia – Wellington Partners III Technology Fund L.P., Central Asian Fund of Small Enterprise Support CASEF, LLC, Mayban Jaic Asian Fund, Vertex III Fund L.P. A joint Russian-Kazakh Nanotechnology Fund was created in 2011 on the basis of OJSC "ROSNANO", JSC "Kazyna Capital Management", "VTB Capital" and "I2BF Global Ventures".

Within the framework of the increasing integration with EAEU countries, the fund Venture Company "Center of Innovative Technology EurAsEC" (CIT EurAsEC)

was created. The charter capital of CIT EurAsEC is equal to USD 3 mln. Equal shares totalling to this amount will be contributed by Infrafund "RVK" (Russia), JSC "NATD" (Kazakhstan) and "Belinfund" (Belarus).

4. Discussion of the results

Having analyzed the Kazakhstani practice of financing of high-tech projects the following can be noted:

In early stages the funding comes from public institutions - the Science Foundation and JSC "NATD". The Science Foundation funded mainly the sown projects that do not have clear business plans and potential profitability, the main requirement for such a project is to comply with the criterion of "the innovative technology idea intended for the creation of the product having the export potential."

In the next stages of development, characterized by a greater attractiveness, profitability and lower risk the JSC "NATD" provides funding to venture capital funds, which will further be invested into the initial stages of high-tech projects. And only when the companies demonstrate high profitability and the value of the company grows the traditional sources of capital (banks, major corporations, etc.) along with venture ones will be involved in financing.

The profit received is then invested for the further development of the company, and after this the share of JSC "NATD" is sold either to private structures or is taken out on a stock exchange. In general, when a certain level of development of the stock market will be reached the JSC "NATD" plans to actively use its capabilities for leaving the projects, namely leading the successful project companies to IPO. In this case the companies that will receive funding should from the very beginning be targeted to IPO and at the stage of project monitoring brings the project companies in line with requirements of IPO. As a result, JSC "NATD" can significantly increase the profitability of projects and create conditions for a successful exit from major projects. In Table 2 the author summarizes the features of venture capital investment in Kazakhstan.

Table 2: Features of venture financing in Kazakhstan

Parameter	Kazakhstan
Role of the state	Public programs, establishing of JSC "NATD",
	Science Foundation
Science and business relation	Gradual development of relations between the science and corporate sector, business and science integration process
Availability of the dedicated institution	Kazakhstan Association of Venture Capital
Priority Industries	Pharmaceuticals and biotechnology, information technology, oil and gas sector services, food industry

Priority stages of financing	Science Foundation: sowing, start-up JSC "NATD", venture funds: start-up, expansion stages, liquidity stage
Sources of venture capital	JSC "NATD", foreign and internal investors (corporations, pension funds, private companies,
	business angels)

In general, the venture capital operations in Kazakhstan just start taking the shape as compared to the venture funding of the USA, where the average American venture fund annually receives up to 4000 applications. So far, about 400 project applications have been submitted annually in Kazakhstan, and just about half of them were worth considering and were reliable. (Azylkanova and Sazonova, 2015).

To summarize, a number of problems can be identified that create obstacles to successful development of venture financing in Kazakhstan:

- 1. The absence of clear understanding of its principles and objectives. The analysis has revealed the cases when the funds were invested not in high-tech projects, but in the newly created companies as they just needed some additional resources. According to the RoK Statistics Agency, only 1 215 (5.7%) out of 21 452 enterprises of the Republic of Kazakhstan have the technological innovations. In the developed countries (Germany, USA, Sweden, Italy, France) the share of innovative enterprises comes to 52-80% (Davydenko, 2014).
- 2. There is a lack of industrial concentration which presents a serious problem as the money themselves will not suffice from the venture infrastructure viewpoint.
- 3. New innovative projects need being generated and one of the tools enabling to do it is the venture fund.

Today, when the developed countries already live in conditions of the Forth Industrial Revolution, Kazakhstan has not managed to achieve the goals of the Third Industrial Revolution. In crisis conditions determined by external and internal factors, primarily the resource-based nature of the Kazakh economy, the venture capital funds should become the drivers of innovation growth. Within the period of 2010-2015, all Kazakhstani funds in total have made about 12-15 deals, while they were supposed to make 50-60. In average each of the funds was supposed to make 10 deals within the investment period given that the capital is used efficiently (Concept for the Innovative Development of the Republic of Kazakhstan until 2030). Venture capital funds shall be regarded as interlink between the centers of prospective technology and enterprises in the real sector of economy. This requires a number of issues being solved.

Firstly, the choice of projects. For the time being the funds do not have an extensive portfolio of applications for funding. This is partly explained by the low level of development of technology market in the country.

Secondly, the structure of sources of venture capital investment in Kazakhstan shall be diversified. Without creation of tax incentives it will be quite difficult to attract money to such funds. The formation of the national system of venture capital funding requires determining of conditions for the participation of institutional (corporate) investors – insurance companies, pension funds and banks, whose funds can be allocated to venture funds, reserve funds and "risky" operations insurance funds. Mainly it is determined by the flaws in the institutional mechanism that puts limitations on the institutional investors' capabilities.

Thirdly, today the greatest total risk of venture capital investment is born by the state represented by JSC "NATD" and a limited range of venture capital funds. Therefore for the venture development strategy it is important to identify the level of acceptable country risk of venture investment considering the practices applied in developed countries. The share of venture capital investment in GDP in different countries varies from 0.01% to 0.68%.

Fourth, in Kazakhstan there is no systematic information reflecting the development of this important sector using the specific indicators practiced in the world. The information resources of JSC "NATD" are quite limited and offer the most general information on the development of the venture capital industry. The analytical work needs to be arranged which will absorb the experience of the European Venture Capital Association.

5. Conclusion

The further development of the PPP in the field of venture capital investment will allow to significantly increasing the innovative potential of infrastructure projects and of the tools of high-tech industry. The implementation of the development strategy of the PPP contributes to the harmonization of interests of the state in terms of the efficient use of the public property facilities and of the business given its high demand in long-term investment resources.

Improving of the model of venture industry is based on the methodology and the experience of developed countries. The main areas for improvement of the PPP financial mechanism are: definition of acceptable limits of expected costs of the projects that will be implemented; the cost of the already implemented projects against the cost of new projects that is going to be launched; forecasting of the annual volumes and the sources of public funding of the project; considering of the alternative decisions in the project implementation; transparency in disclosing of the financial indicators and project risks. The prospective further research can elaborate

the conceptual grounds of the credit and investment mechanism in developing of the public-private partnership projects.

The analysis of venture funds in Kazakhstan brings to the idea of forming the new investment model that shall provide for the creation of venture capital funds that will invest in business plans and pilot team. The team initiating the project receives a share in the project funded, which will vary from 5 to 20% depending on the success of project.

Kazakhstani venture funds should only provide the finance to projects focused on new technologies. One serious issue arises here - different approach to understanding of the innovations: for venture capital funds it is primarily the company, which is ready to produce the new product, i.e. business, while for scientists it is the real scientific development resulted from the intellectual work. It is obviously a contradiction that inhibits the interaction of business and science. Venture capital funds will not invest in science but will invest in knowledge-intensive business. The main activity of venture funds is the investment and the attraction of investments into the companies that implement innovative projects, as well as into the projects involving the transfer, borrowing and increasing the capacity of advanced and innovative technologies.

To get the big companies interested in implementing the know-how by providing the tax incentives from the government. This will require amending of the Tax Code of the Republic of Kazakhstan. Until the companies wishing to be involved in the innovative business will receive the tax holidays for the period when the new technologies' undergo the development (3-5 years) and until they will receive the exemption from customs duties on the imported technology and auxiliary equipment it will be hard speaking of the breakthrough in the area of innovations.

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