

WAYS TO RAISE THE ROLE OF INNOVATIVE TRADE FAIRS IN ACTIVATING THE INNOVATIVE PROCESSES IN UZBEKISTAN

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This article is devoted to revealing the role of innovative trade fairs in encouraging the innovation process in Uzbekistan and analysis of their effect for the economy. The article represents correlation – regression analysis of the impact of the volume of trade fair transactions and a number of innovations implemented in the real sector of the economy on the volume of the innovative products manufactured in the economy. Moreover, the article provides recommendations aimed at using venture capital funds as the source of financing innovation projects as well as a trade fair mechanism of initiating cooperation between innovative beneficiaries and donors of venture funds.

Keywords: *innovation, innovative elaboration, technological innovation, innovative trade fairs, venture financing, venture capital funds.*

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ПУТИ ПОВЫШЕНИЯ РОЛИ ИННОВАЦИОННЫХ ЯРМАРОК В АКТИВИЗАЦИИ ИННОВАЦИОННЫХ ПРОЦЕССОВ В УЗБЕКИСТАНЕ

Статья посвящена выявлению роли проводимых ежегодных инновационных ярмарок в стимулировании инновационных процессов в Узбекистане и анализу соответствующего эффекта для экономики. В работе проведен корреляционно-регрессионный анализ влияния объема ярмарочных сделок и количества внедренных инноваций в реальный сектор, на объем выпускаемой инновационной продукции в экономике. Даны рекомендации по использованию венчурного капитала как источника финансирования инновационных проектов, а также ярмарочного механизма инициирования сотрудничества инновационных бенефициаров и венчурных доноров.

Ключевые слова: *инновация, инновационные разработки, технологические инновации, инновационные ярмарки, венчурное финансирование, фонды венчурного капитала*

1. Introduction

Innovations which are considered to be the result of innovative activity at least facilitate raising competitiveness of manufacturing and efficient development of the economy. For example, in economically developed countries more than 75-80% of the GDP is achieved due to innovations. It is interesting to notice that at the beginning of 1980-s this indicator amounted to 55-60% in developed economies. Nowadays in the countries with the developed economies about 30% of inventions are implemented in practice, and about 45% of industrial enterprises carry out development and mastering of innovations [1]. Nowadays China is considered the largest exporter and importer of high-tech production (348,3 billion USD), which rapidly overtook and even outpaced leading exporters in high-tech sphere, such as the USA (141,52 billion USD), Germany (142,45 billion USD) and Japan (99,21 billion USD), and has become one of the leading exporters of high-tech production [2].

Over the next years, Uzbekistan is actively implementing innovative developments in the economic process. In particular, the volume of innovative products has increased by 3,5 times in 2008–2013 and their overall value amounts to 4,62 trillion UZS in 2013 [3]. These achievements have become possible due to the prudent policy of the government directed to the economy modernization and its diversification. For example, a great achievement in this field is establishing the Committee on Coordination of Science and Technology Development under the Cabinet of Ministers of the Republic of Uzbekistan in compliance with the Decree of the President of the Republic of Uzbekistan №436 “On measures of improving development of science and technologies and improving management” dated from August 7, 2006. Basing on the priorities of social and economic development of the country the committee is in charge of determining prior directions of science and technologies development as well as organizing an annual innovative trade fair for innovative ideas, technologies and projects. So this article is devoted to development of proposals aimed at raising efficiency of activities performed, determining their results and measures for their further improvement. As a result of our research we would like to give proposals aimed at solution of existing problems and directed to implementing the mechanism of financing innovative products through venture capital. Different scientists tried to solve this problem in their researches. For example, P. Gompers and J. Lerner [4] studied the role of venture financing of investments and D. Neher [5] researched optimal ways of financing investment projects at each stage.

2. Analysis of the current state of innovative trade fairs

In compliance with the Decree of the President of the Republic of Uzbekistan № 916 “On additional measures to encourage implementation of innovative projects and technologies” dated from July 15, 2008 the annual “Fair of innovative ideas, technologies and projects” has turned into one of the main mechanisms of developing scientific and practical researches, innovative elaborations, modernization of manufacturing, encouragement of implementing sophisticated technique and technologies, as well as provision of integration science with the production.

Such kind of establishing mutual cooperation between enterprises and research institutions plays a big role in further expanding innovation activity and strengthening economy of our country.

More than 3700 elaborations, technologies and ideas of our scientists were represented during 7 fairs held in 2008-2014 [6]. With the aim of

Table 1

Contracts signed, financial funds and volume of goods produced in the framework of the I-VII innovation fairs

Fairs	Number of elaborations presented	Number of contracts signed	Financial volume on contracts signed (billion UZS)	Volume of goods produced (billion UZS)
I	700	202	8,38	255,7
II	570	300	13,66	123,2
III	600	395	8,28	193,1
IV	580	335	8,3	111,2
V	420	325	11,8	102,5
VI	440	411	17,3	70,0
VII	410	361	19,06	–
Итого	3720	2329	86,78	855,7

Source: calculated on the basis of annual statistical data of results of “Fair of innovative ideas, technologies and projects” held in 2008-2014.

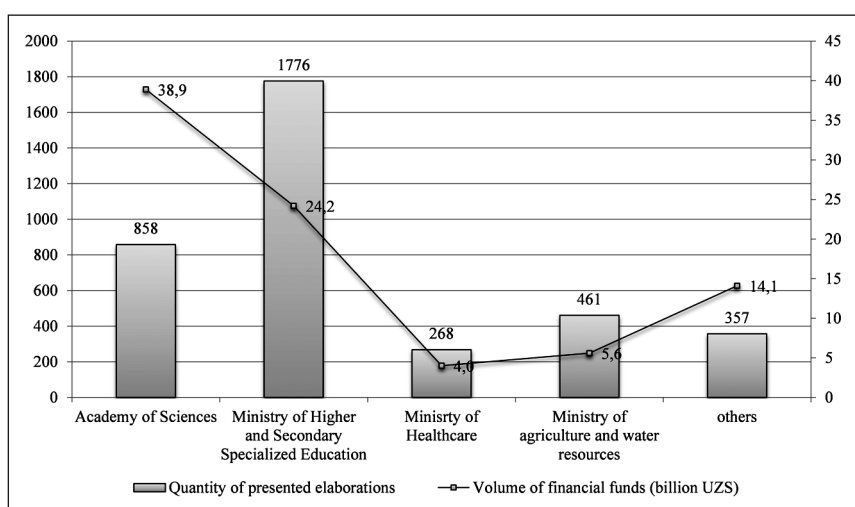


Figure 1. Contracts signed by ministries and agencies in the framework of I-VII innovation fairs and the volume of financial funds

Source: calculated on the basis of annual statistical data of results of “Fair of innovative ideas, technologies and projects” held in 2008-2014.

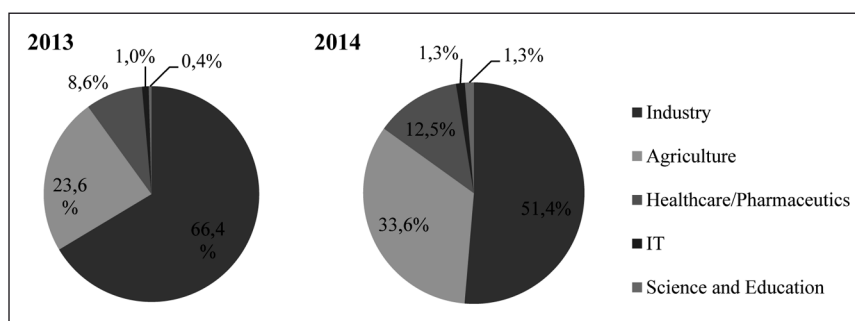


Figure 2. Share of volumes of contracts signed by sectors of economy in VI-VII innovation fairs

Source: calculated on the basis of annual statistical data of results of “Fair of innovative ideas, technologies and projects” held in 2013-2014.

their implementation 2329 contracts and agreements have been signed. From the following table we can see that the overall financial value of

contracts accounted for 86,8 billion UZS. In the framework of signed contracts the volume of really produced goods on January 1, 2015 was

10 times bigger (in the amount of 855,7 billion UZS).

Research institutions and other organizations participated in the innovation fairs with their more than 3700 innovation projects and elaborations. On the date of January 1, 2014 they delivered goods in the amount of 735,1 billion UZS on the basis of the contracts signed. In particular, 19 scientific and research institutes under the Academy of Sciences (basically, Institute of physics and technics, Nuclear physics institute, General and non-organic chemistry institute, Institute of plants and chemistry, Bioorganic chemical institute, Institute of natural polymers and others), 24 higher educational institutions under the Ministry of Higher and Secondary Specialized Education (Tashkent State Technical University, Tashkent State University of Economics, National University of Uzbekistan named after Mirzo-Ulugbek and etc.), 17 scientific and practical institutions under the Ministry of Healthcare and 22 specialized scientific and practical research institutes under the Ministry of Agriculture and Water resources and 22 scientific and research centres under 18 companies of the real sector of the economy participated in these fairs.

So as a result of 21 mutual contracts innovative products were put into production, industrial samples were developed in the framework of 69 contracts, according to 688 contracts innovative products were delivered to the ministries and agencies, enterprises, farms and other economic entities, according to 167 contracts innovative services were rendered to the ministries and agencies, enterprises, farms and other economic entities.

From this figure we can see the reduction of the share of the industry by represented innovative developments and projects during recent years. However, shares of contracts signed in oil and gas industry, pharmaceuticals and IT tend to increase.

In chemistry chemical goods in the amount of more than 302,0 billion UZS have been produced in the result of implementing innovative technologies in the process of producing efficient fertilizers.

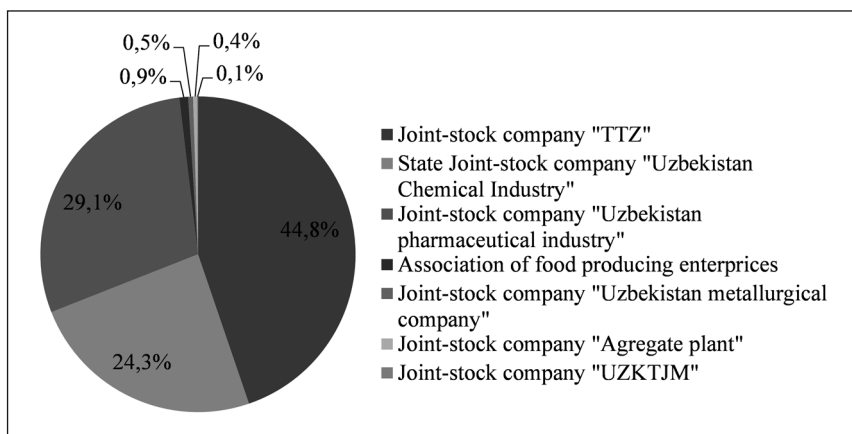


Figure 3. Condition of executing contracts signed in the framework of the I-VII Fairs of Innovation ideas, technologies and projects

Source: calculated on the basis of annual statistical data of results of "Fair of innovative ideas, technologies and projects" held in 2008-2014.

In Olmalik mining company the technology of exploring copper has been improved. Nowadays this technology is economically efficient and it makes 17 million USD.

Such companies as Olmalik mining company, Navoi mining company and Uzbekistan metallurgy company have economized about 400,0 mln. kW of energy with the help of applying economizing devices and as a result gained 24 billion UZS as a profit. самарага эришилди.

New technology of using special catalyzators has been introduced in oil and gas sphere and as a result the economic benefit has accounted for 2,0 billion UZS and economized foreign currency in the amount of 10,0 mln. USD.

Innovative technologies on producing 12 types of medicine have been introduced in state joint-stock company "Uzbekistan Pharmaceutical industry" and new types of medicine have been produced in the amount of 2,9 billion UZS.

Sophisticated innovative technologies have also been introduced in such companies as Olmalik mining company, Navoi mining company and Uzbekistan metallurgy company and as a result these companies launched production of new products.

Regional trade fairs were held in all provinces in the framework of VI-VII fairs. About 150-200 elaborations were presented to more than 3000 participants in each fair.

3. Problems of activating innovation processes in the economy

It should be noted that in spite of the fact that the scope of implementation of innovative technologies and developments in appropriate fields and sectors nowadays there are very few innovative developments in the economic sectors of our country. In addition, there is an impact of insufficient introduction of certain mechanism of providing high innovative activity for producers and consumers of innovative products.

Nowadays active steps are being undertaken in the direction of implementing 255 contracts signed in terms of V-VII fairs, and 697 projects among 1090 have been completed in the amount of 46,7 billion UZS. In total 22,4 billion UZS are allocated to scientific organizations. About 13% (in the financial amount of 10,0 billion UZS) hasn't been completed. If 46,3% is the share of farms and small companies, 74 contracts signed hasn't been implemented by the large industrial companies [7].

In particular, Joint-stock company "Uzbekistan auto industry", Joint-stock company "Uzbekistan chemical industry", State Joint-stock company "Uzbekiston cotton industry", State Joint-stock company "Uzbekiston energy" are in the slow process of implementing contracts signed during the fairs.

Sector schedules of executing financing of contracts signed in the

framework of the fairs are not always accomplished. Namely, State Joint-stock company "Uzbekiston chemical industry", "Uzbekistan oil and gas" company, State Joint-stock company "Uzbekiston energy", Olmalik mining company have relatively past indicators in this field.

If we analyze the degree of the interest of domestic companies and organizations, entrepreneurs to the implementation of investment elaborations by regions we cannot positively evaluate the attitude of the local authorities of the Republic of Karakalpakstan, Khorezm, Surhandarya, Kashkadarya, Samarkand, Syrdarya and Fergana to the process of activating innovative activities in these regions.

These lacks can be considered as incomplete execution of the objectives stated in the Decree of the President of the Republic of Uzbekistan №916 "On additional measures to encourage implementation of innovative technologies in production" dated from July 15, 2008.

For instance, funds for new technologies and modernization, which ought to be established according to this decree, are available only at five large companies. In the rest of the companies such as "Uzbekistan oil and gas" company, State Joint-stock company "Uzbekiston chemical industry", State Joint-stock company "Uzbekiston pharmaceutical industry", Joint-stock company "Uzbekistan auto industry", State Joint-stock company "Uzbekiston cotton industry", "Uzbekistan construction materials", State Joint-stock company "Uzbekistan light industry", Joint-stock company "Uzbekistan grain production" and some other large companies, manufacturing enterprises, economic entities such kind of funds haven't been established. Taking into consideration this data we can make a conclusion that if companies had not established funds for innovative development their activity for developing innovative activities could be assessed as very passive.

The monitoring over execution of the contracts signed in the framework of fairs is supposed to be held by the regional centres for innovative activity and technologies transfer. However, these centres perform monitoring over

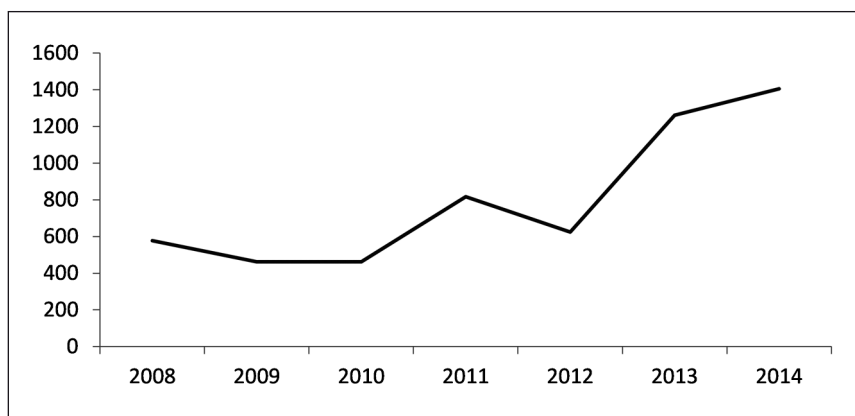


Figure 4. Number of technological innovations implemented by companies of the real sector of the economy in 2008-2014

Source: Developed on the basis of the official statistic data of the State Statistics Committee of the Republic of Uzbekistan.

execution of the contracts signed in the framework of fairs not at the appropriate level. The reasons for non-execution of the contracts signed in the framework of the fairs is untimely preparation of analytical data and overdue fulfillment of some measures in the framework of contracts signed.

Research centres under the Academy of Sciences, the Ministry of Higher and Secondary specialized Education, the Ministry of Agriculture and Water resources have some difficulties in executing contracts signed in the framework of fairs as well as monitoring the application of the practical results and implementing innovative elaborations developed by researches of the scientific centres in cooperation with the specialists from the manufacturing enterprises.

4. Analysis of the impact of fair deals and innovative implementations to produced innovation products

With the aim of determining efficiency of the activities of trade fairs we are going to analyze the volume of contracts signed on the number of technological innovations implemented in practice of the enterprises of the real sector of the economy (Figure 4).

While performing correlation and regression analysis the main impact factor for these statistic indicators was financial provision which means that the faster the innovation is provided by the financial resources the sooner positive effects and efficiency will be

achieved and this product will be considered as a competitive one.

In order to hold unit-root test for selected variables and applying Augmented Dickey-Fuller test we can determine that in such indicators as *contracts* the meaning of *p* is very low and isn't in compliance with limits.

In order to analyze interconnection of selected factors we recommend using correlation analysis. When we analyze statistic data with the help of EVIEWS 7.0 software ratio of interconnection will be equal to 0,7917.

Table 2

Correlative interconnection of selected factors

	<i>innovations</i>	<i>contracts</i>
<i>innovations</i>	1	0.7917
<i>contracts</i>	0.7917	1

Dependent Variable: LOG(INNOVATIONS)

Method: Least Squares

Date: 03/07/15 Time: 22:21

Sample: 2008Q1 2014Q4

Included observations: 28

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(CONTRACTS)	0.91	0.43	2.11	0.08
C	-1.89	4.04	-0.47	0.66
R-squared	0.47	Mean dependent var		6.60
Adjusted R-squared	0.37	S.D. dependent var		0.47
S.E. of regression	0.38	Akaike info criterion		1.11
Sum squared resid	0.71	Schwarz criterion		1.10
Log likelihood	-1.91	Hannan-Quinn criter.		0.92
F-statistic	4.44	Durbin-Watson stat		2.06
Prob (F-statistic)	0.00			

As a of $\log(\text{innovations})$ we have used the percentage of the number of technological innovations implemented in practice of enterprises and companies, and as a $\log(\text{contracts})$ we have used changes in percentages of contracts signed on the innovative elaborations developed in the framework of fairs. Having analyzed these figures with the help of EVIEWS 7.0 software we have received the following results.

As the result of analysis we can see the coefficient R^2 equals to 0,47. So, we can see that there is an average connection between these economic indicators. In regressive analysis, the probable value of impact factors does not exceed (prob. value) 10% and it proves accuracy of the coefficient of selected factors. If we study the impact of this indicator on the number of implemented technological innovations we can observe average 1% positive increase of the number of contracts signed and 0,91% growth of application of innovative technologies in practice.

It is possible to illustrate the correlation and regressive connection between impact factors and result factors:

$$\log(\text{innovations}) = 0,91\log(\text{contracts}) - 1,89$$

Basing on this model and analysis stated above we can make a conclusion that innovative process in the forms of fundamental research, practical analysis, practical elaborations is

actively going on in all branches of the economy, enterprises of the real sector, and specialized scientific and practical research centres of Uzbekistan. However, the volume of innovative products amounts to only 3,88% in GDP [3]. This indicator is considered to be rather low in the share of the GDP. On the other hand, innovations can act as intermediaries in establishing mutual relations between research institutions and real sector of the economy and in the advanced countries, the low indicator can be due to the absence of venture capital of investors.

5. Ways to raise the role of innovative trade fairs in activating the innovative processes

From the point of views of different scientists and specialists the main measures aimed at raising efficiency of implementing innovations and innovative elaborations in relevant branches and fields are the following:

- first, to provide complete execution of objectives stated in the Decree of the President of the Republic of Uzbekistan №916 “On additional measures to encourage implementation of innovative technologies in production” dated from July 15, 2008 it is necessary to determine the amount of the profit gained by the company while establishing funds for new technologies and modernization;

- second, it is advisable to organize special workshops devoted to the provision of implementing innovative elaborations in manufacturing enterprises at different ministries, agencies, companies, and economic authorities;

- third, it is recommended to strengthen the activities of the regional centres for innovative activities and technology transfer by employing highly-qualified and experienced scientists and specialists;

- fourth, taking into consideration that the duration of executing practical research projects conducted in the framework of the State scientific and technical programmes is 3 years and the duration of executing scientific and technical programmes is 2 years it is recommended to hold the republican trade for innovation ideas, tech-

nologies and projects once in 3 years efficiently.

In our opinion, with the aim of solving the problem stated above it is necessary to strengthen cooperation between the public and private sectors to encourage the inflow of the venture capital in our country. Therefore, we recommend establishing and developing venture capitals due to the funds of institutions able to attract long-term investments such as pension funds, insurance companies, state joint - stock companies and investment funds. In addition, in the framework of trade fairs it is advisable to develop the activity of venture capital funds with the help of selecting the most profitable innovative developments presented at the fairs.

Application of this mechanism of financing enables investors to get a chance to observe a steady growth of the innovative enterprise and raising its capitalization. The practice of advanced countries shows that this type of investments is considered to be very important for the economic growth because significant innovations can often be risky in long-term projects. For example, a telephone, an automobile, a plane, a computer and other technology innovations might have been unprofitable at the time when they were invented. In 1874 T. Sanders and G. Hubbard placed profitable investments in the project of A. Bell on producing telephones. G.P. Morgan and S. Trask financed electricity elaborations of T. Edison [8]. A founder of Silicon Valley of the USA Frederick Terman invested 538 USD in the development of high-level oscillator invented by W. Hewlett and D. Packard and in 1939 this oscillator turned to be the first product of Hewlett Packard Company. Moreover, Microsoft, Intel, Apple, Google, Cisco, United Healthcare, Amazon, Intuit, Netspace, eBay and other large companies have been encouraged through venture investments.

Investments of venture capital funds [9] are provided for perspective innovative companies in exchange for the share in the company with the account of the fact that in the results of the successful development of the company during 5-7 years this share can be sold with the significant profit.

Venture capital funds perform an important intermediary function because thanks to them funds of institutional investors and other traditional financial establishments are invested in high-tech companies.

Typically, venture capital has a long-term nature. Because of the limited liquidity of the resources of venture funds and their potential for a high profitability, a risky capital is an attractive form of assets of such institutional investors as the state stabilizing funds, pension funds, insurance companies, donation funds etc.

Funds of venture capital manage several separate investment firms. Each firm is typically established in the form of the open joint-stock company in which some or all managers of the firm tend to act as active full partners. Main partners of the venture firm act as managers, i.e. they are professionals of the investment business, and however, investors are called partners with the limited liability (passive partners). This group of investors consists of wealthy persons and institutions, which own big amounts of capital in cash. They can be state and private pension funds, insurance companies which themselves are the sources of the capital.

6. Conclusion

In conclusion we can say that the role of the innovation trade fairs held in Uzbekistan is very comprehensive in encouraging innovative activity. These fairs play a big role in determining competitiveness of innovative developments, their compliance with market conditions, introducing them to the market, possibilities to export these developments, studying trends of producing products, sharing experience, participating in different events etc. However, we have found out the absence of the mechanism facilitating further improvement of this product and developing commercial relations between investors who assist in strengthening technical base and enterprises of the real sector of the economy and this hypothesis has been proved by correlation regressive analysis. To solve this problem we have proposed to introduce the mechanism of financing with pub-

lic and private funds through venture capital funds, which are widely used in practice of foreign countries. The potential of introduced venture capital funds is strong at the fairs, however, we consider it necessary to introduce innovative developments lacking financing and their initiators and to establish cooperation between them. We believe that the efficiency of each UZS invested in innovative development will be much higher in future in comparison with the current situation.

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