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PROSPECTS FOR CREATING A SPECIALIZED INNOVATION BANK IN UKRAINE



The necessity of creation of a specialized innovation bank in Ukraine has been substantiated. Main directions of government support for its development have been considered.

Keywords: specialized innovation bank, government support, and nanotechnologies

Financial stability in the country is impossible without investments in new technologies and services, innovative products and R&D that have significant social and economic impact. Therefore, there is a need to find effective lines of interaction between the banking system and the real economy of Ukraine, particularly, to create a customized innovative bank. Some aspects of innovation banks have been studied by Ukrainian and foreign researchers (*O.V. Dzyublyuk, I.S. Gutsal, T.A. Sviatohor, J. Sinci, E.A. Utkin, etc.*). However, it necessary to carefully analyze the available scientific sources to better understand the complex ways of accumulation and effective use of the national capital.

The creation, in the long-term prospect, of the national innovation bank which should lend potentially important high-tech sectors in accordance with the national priorities of socio-economic development and accumulate financial resources is an important decision that:

- + *Firstly*, the banks with foreign capital are not interested in financing the innovation-oriented business in the host country;
- + *Secondly*, the formation of innovative bank will enable the transition to a new level of use

of budgetary funds (insofar as increase in the share of public funds to be assigned to the national economy through the innovative bank on a repayable basis will facilitate the enhancement of responsibility of beneficiaries for their effective use, unlike budget loans and direct non-repayable funding);

- + *Thirdly*, it is clear that the better the bank understands the client's business, the more effective is their cooperation.

Unlike other financial institutions, the innovative bank should promote the following objectives:

1) *Manufacturing*, i.e. the national innovation bank loans should be aimed at updating the facilities and resources of Ukrainian corporations (including, at implementing the energy-saving and environmentally friendly technologies);

2) *Social* (issue of loans for building new industrial corporations will facilitate the creation of new jobs and the reduction of social transfers from the state budget);

3) *R&D* (issue of loans and further commercialization of products of Ukrainian technology parks will enable the efficient use of the national intellectual potential).

According to the Law of Ukraine on the Banks and Banking Activities (Clause 7, paragraph 2),

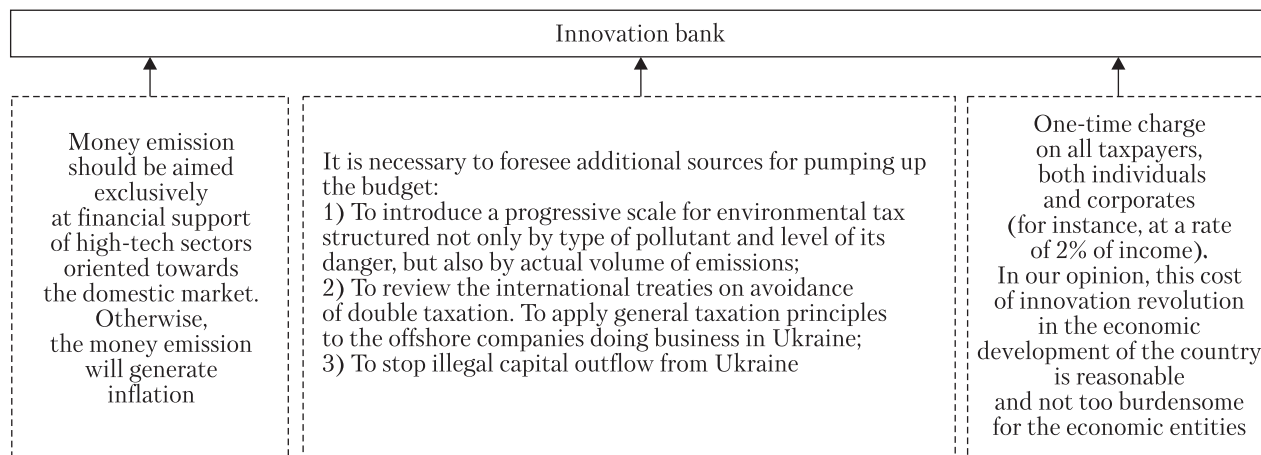


Fig. 1. Possible sources of increase in the bank capital

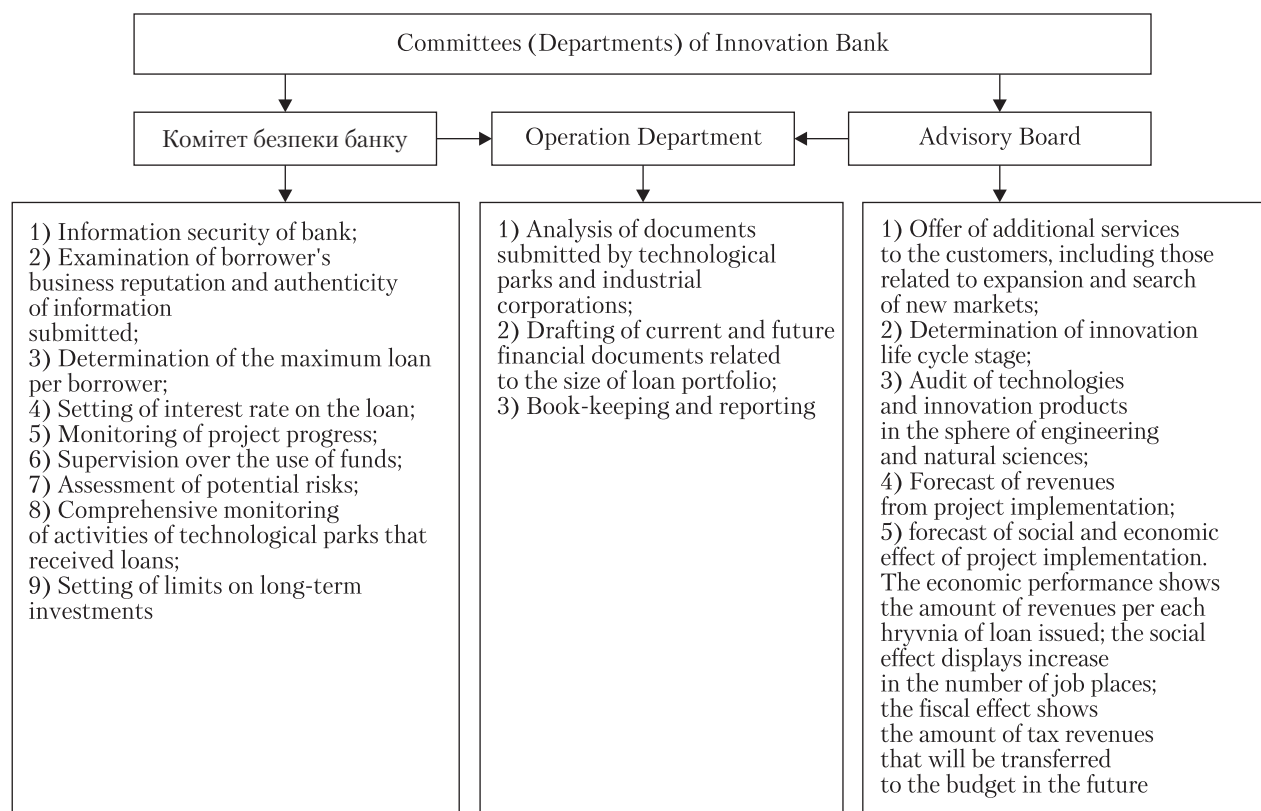


Fig. 2. Responsibilities of departments of the state-owned innovation bank

the state-owned bank should be created by resolution of the Cabinet of Ministers of Ukraine, with the expected value of authorized capital being allowed for in the Law on the State Budget of Ukraine for the corresponding year [1, 10]. Thus, a potential negative consequence of this approach is a temporary reduction of budget revenues. Hence, according to paragraph 1, Clause 31 of the Law of Ukraine on the Banks and Banking Activities, at the time of incorporation, the minimum capital of corporate entity intending to perform banking activities should be, at least, UAH 120 million [1, 21]. Therefore, it is necessary to identify the sources of long-term and low-cost

funding through which the proposed innovative bank will operate in Ukraine (Fig. 1).

In practice, the lending operations of the state-owned innovation bank should be administered by respective competent units (Fig. 2). The system of separation of powers and responsibilities that enables the clear separation of control functions shall be governed by the bank internal provisions.

As showed in Fig. 2, the basic unit that monitors the targeted use of resources should be the Security Committee. The unit that works directly with contractors, offers a range of services for the industrial and technology parks is the Operational Committee. The Advisory Council

Funding of Priority Industries from

Sector	Problems of present-day Ukraine	Creation of conditions for the effective use of national capital
Pharmaceutical sector	<p>At the beginning of 2013, the share of Ukrainian-made pharmaceuticals accounted for 21%, and that of imports made up 79%. The share of high-tech products amounted to 0.32% [2]. At the beginning of 2013, the share of counterfeit and substandard products totaled 69%. The physical depreciation of fixed assets in the sector amounted to 41.3%, the moral one was 56% [2]. The resource base is unbalanced (almost 70% of the drugs is produced from foreign substances [2]), the certification of national pharmaceuticals is limited.</p>	<ol style="list-style-type: none"> 1) public procurement and introduction of measures to protect the market from similar foreign goods entering the domestic market through the use of protectionist import duties; 2) state price control; 3) update of the range and improvement of the quality of pharmaceuticals; 4) active implementation of an effective system for the protection against counterfeiting; 5) temporary preferential tax regime for the pharmaceutical companies with domestic capital (3–5 years); 6) gradual creation, with the state involved, of new full production cycle businesses customized to the domestic market; 7) «transition» of individual research projects to «the patronage» of new state enterprises; 8) review of international agreements with international organizations in accordance with the national interests Ukraine
Machine-building sector	<p>The physical depreciation of fixed assets in the sector was equal to 56.7%; the moral depreciation totaled 59% [2]. The share of high-tech products amounted to 0.22% [2].</p>	<ol style="list-style-type: none"> 1) effective protection of the domestic market (for instance, introduction of import duty at a rate of 38% and temporary ban on the import of outdated foreign equipment); 2) public procurement (use of public transport manufactured in Ukraine to upgrade the urban infrastructure); 3) introduction of a reduction factor with respect to the corporate profit tax and a multiplying factor with respect to the wages of workers employed in the machine-building sector; 4) introduction of strict and transparent examination of the technologies and equipment imported to Ukraine; 5) enhanced protection of intellectual property, information on issued patents, certificates, and contracts.

should be engaged in the assessment of prospects and effect of implementation of science-intensive technologies.

To increase the efficiency of the national banking capital it is necessary to meet the following principles: 1) transparency (the prevention of «politically motivated» allocation of funds and the creation of the most transparent mechanism for allocation of loans that enables the monitoring of proper use of resources); 2) efficiency (when making decisions on the loan it is necessary to take into account the probable technological changes, the development of related industries and the socio-economic impact of the project).

It should be noted that the new bank should have tax benefits for nine years: during the first five years, it should not pay income tax at all; in the sixth year, it pays 25% of the general rate; and since the seventh year, it pays 50% of the rate. The state has to come out of its long-term strategic interests rather than of short-term profit. However, the success of the innovative bank is impossible without good governance and transparency. Therefore, it is necessary to introduce administrative and even criminal responsibility of officials for the targeted use of funds.

Inasmuch as the state-owned innovation bank differs by its operations from the universal banks,

Table 1

the State-Owned Innovation Bank

Participation of innovative bank in financing of the priority sectors	Possible risks	Socio-economic impact
<p>The loans are issued for the following activities:</p> <ol style="list-style-type: none"> 1) creation of new pharmaceutical companies and laboratories; 2) development of new equipment for the pharmaceutical industry; 3) creation of original high-tech products for the domestic market; 4) use of leasing schemes for the implementation of instruments and test equipment 	<p>Economic, information, and legal pressure from multinational pharmaceutical corporations and international organizations, foreign funds</p>	<ol style="list-style-type: none"> 1) the most science-intensive industry that has the best effect from the introduction of new developments; 2) medical and pharmaceutical equipment may be used to provide technical upgrade and for provision of medical institutions with domestic medicines and means of medical treatment and diagnostic facilities; 3) promotion of medication supply at appropriate level
<p>The loans are issued for the following activities:</p> <ol style="list-style-type: none"> 1) Creation of new facilities for generating electricity from alternative sources, wind and solar energy; 2) Upgrade of logistic framework of commercially effective enterprises; 3) Introduction of energy saving technologies and equipment; 4) Creation of new businesses 	<p>Economic and legal pressure from trans-national corporations (TNCs) and international organizations</p>	<ol style="list-style-type: none"> 1) creation of job places, training of highly qualified personnel; 2) Update of transportation facilities and utility infrastructure of cities; 3) introduction of non-waste technology cycles into the production, which has a positive impact on the environment; 4) reduction of raw materials export

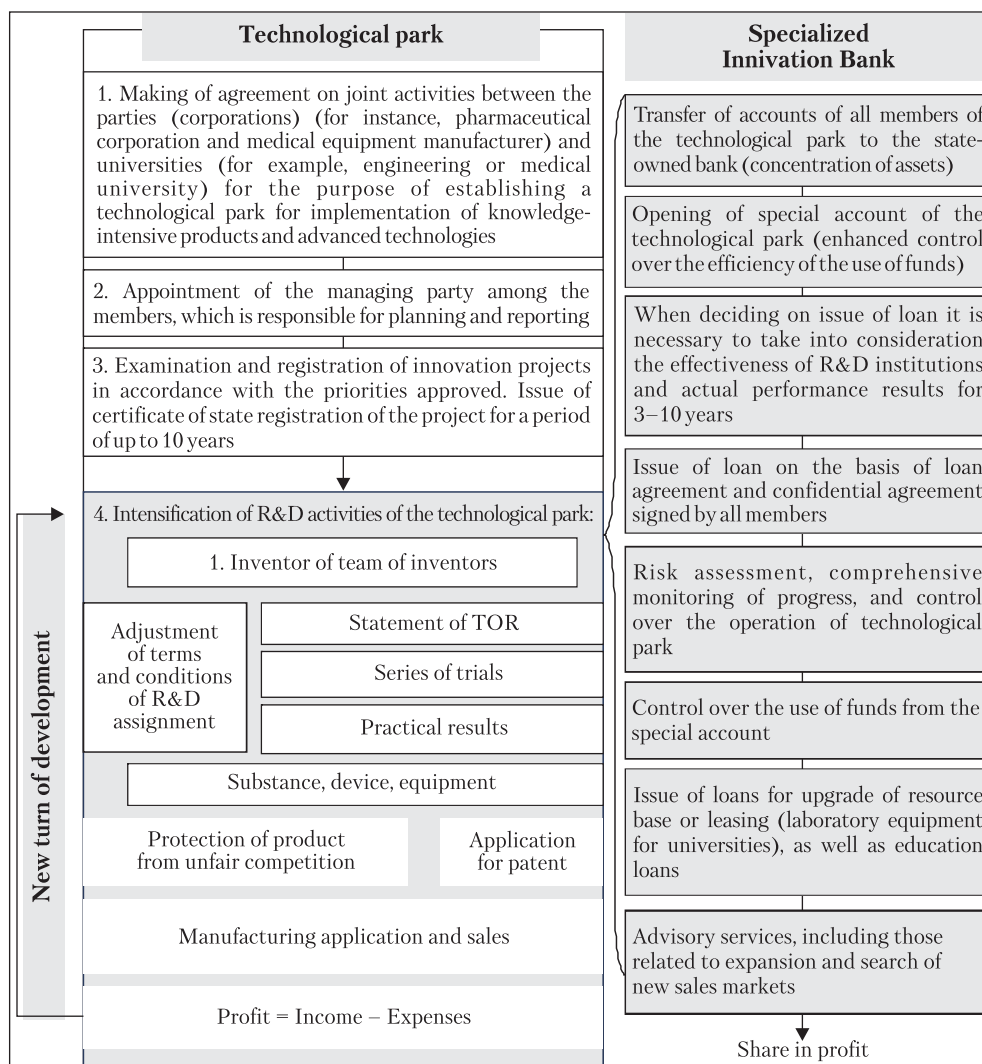


Fig. 3. The role and importance of the newly established bank specialized in the development of technology parks

we recommend to set special prudential regulations. Its activities should be limited (consumer lending, speculative foreign exchange operations, short-term lending of corporate entities). It is also prohibited to perform transactions with T-bills and other instruments of government loans. This rule will prevent the indirect emissions when the government issues bonds which are purchased by the state bank that uses them as collateral for re-financing loans from the National Bank.

In the author's opinion, the most expedient policy is to direct the capital to those prior-

ity projects that meet the national interests of Ukraine and are expected to have significant scientific, technical, and social effects, such as:

- 1) Creation of new equipment for light and food industries using nanotechnologies;
- 2) Reorientation of industrial corporations to the production of more resource-saving and environmental technologies that can improve the quality of machines on the basis of the cutting-edge computer design methods;
- 3) Development of functional materials technologies for laser and diagnostic medical equip-

ment, creation of complex equipment for welding of living cells in surgical operations;

4) Creation of a medical complex with powerful diagnostic center;

5) Introduction of new state-of-the art composite materials and structures to facilitate the improvement and update of facilities and resources.

Today, in the above-mentioned areas, Ukraine still has preserved a great scientific potential, but the commercialization and socio-economic effect of products is very low. Moreover, Ukraine has a potentially large domestic market, a branched agricultural complex, rich and diversified natural resources, and a favorable geopolitical location, therefore, it can join the world leaders of innovative development. However, it is necessary to create favorable conditions for long-term financing of high-tech sectors.

The science-intensive and high-tech sectors (Table 1) are connected to corresponding process

chains and are able to create a multiplier effect on the growth of related industries and Ukraine's economy as a whole. For example, the pharmaceutical industry is among the most attractive ones for the bank, because even in the crisis, it brings a stable income. The consistent implementation of the steps for directing the banking, industrial, and intellectual capital into the innovation-oriented industries will refocus the national economy on the production of high-tech products and will reduce the proportion of overseas sales of raw materials. In addition, the national budget will get more tax revenues due to better environmental, economic, and social conditions for activities in the selected areas.

It is important to note that the innovation bank shall issue loans for the implementation of viable projects which can give rise to new success and allow the industrial corporations or industrial parks to use the new opportunities for their busi-

Table 2

Socio-Economic Impact of Issuing Loans to Technology Parks

Effect	Characteristics
Economic	<ol style="list-style-type: none"> 1) significant neutralization of threats to the national security caused by the lack of interest of banks with foreign capital to finance high-tech sector; investment of domestic capital to the high-tech sector of Ukraine; 2) increase in the share of high-tech projects of technology parks; 3) widespread adoption of cost-effective and environment friendly technologies in production; 4) improvement of the competitiveness of certain sectors of the national economy, creation of conditions for economic growth; 5) high quality of works performed, insofar as in the case of poor sales the bank may suspend lending (in the case of budget financing it is difficult to monitor the use of resources, since the funds are allocated within the limit of budget year)
Science and Technology	<ol style="list-style-type: none"> 1) creation of new materials and devices in electronics, information technology, agriculture, aviation, aerospace, military, radio communications, and molecular biology; 2) widespread introduction of modern equipment into industrial activities, gradual upgrade of logistic framework of universities; 3) rapid development of nanotechnology, a new trend covering the fundamental research in physics, chemistry, biology, and materials science; 4) implementation of biosensors in biological research laboratories
Social	<ol style="list-style-type: none"> 1) incentives for high-performance activities that have a positive impact on the morale of most innovators; 2) new jobs, involvement of skilled Ukrainian experts, and financial incentives; 3) development of new scientific and research schools

ness. Therefore, it is important to divide the borrowers of the innovation bank into two groups.

The first group consists of the technology parks of Ukraine. This group of borrowers can get loans under the following conditions: during the first five years, they should pay a fixed percentage of 25% of discount rate (existing at the time of the transaction), and 80%, during the next period. However, the amount of loan issued by the state-owned innovation bank shall not exceed 75% of the project cost.

On the one hand, issuing loans under such conditions can be deemed an inefficient use of the national banking capital. However, it is necessary to take into consideration the fact that the activi-

ties of technology parks are not a usual business. These especially risky activities are for the sake of not only the entity itself, but also of the state as a whole, since they enhance the national scientific and technical potential. In addition, the technological parks contribute to the domestic market, reduce dependence on imports, facilitate increase in the export of high-tech competitive products, create new jobs and allow the researchers and highly qualified specialists of Ukraine to utilize their creative potential. The technology parks are not purely commercial entities. They play important socio-economic functions in the state and lay foundation of «the new economy». Undoubtedly, a specialized bank shall provide a

Table 3

The Advantages of Lending the Innovation Projects in the Social Sector by the Specialized Bank

Type / Objectives	Objectives of lending	Socio-economic impact
<p><i>Innovative technologies in medicine:</i> Production of advanced diagnostic systems and medical equipment by Ukrainian technology parks and new domestic enterprises to upgrade domestic resource and production facilities in health care field.</p>	<p>The state-owned innovative bank issues loans for the following purposes: 1) creation of new enterprises manufacturing diagnostic equipment (<i>long-term loans</i>); 2) development of new and safe information system, new computer programs for getting and processing the diagnostic images and analyzing the hidden and previously unavailable data (<i>short-term loans</i>); 3) development of innovative equipment and unique technologies that can be used for both diagnosis and medical treatment (<i>long-term loans</i>).</p>	<p>Socio-economic effects 1) provision of health care institutions with domestic advanced equipment; 2) computerization of all activities of the medical establishment and long-term saving of patient information on electronic cards; 3) computerization of laboratory tests; 4) creation of tele-medical centers and networks to approach special medical care to any area where it is required.</p>
<p><i>Innovative technologies in ecology:</i> use of safe nanotechnology-based purifiers of water and land resources; technologies for recycling; introduction of environmentally friendly equipment at enterprises</p>	<p>The state-owned innovative bank issues loans for the following purposes: 1) creation of new corporations manufacturing environmentally friendly products (<i>medium-term loans</i>); 2) development of innovation in environmental protection equipment (cheap and unique aseptic technologies for the manufacture of foodstuff in accordance with high environmental standards, without preservatives and contaminants) or creation of new effective techniques for the purification of outside (ambient) air in the industry (<i>medium-term loans</i>).</p>	<p>Socio-economic and environmental effects: 1) creation of favorable conditions for improving the environmental situation in specific areas; 2) creation of framework for environment friendly production of goods, against the background of growing consumer demand for environmentally safe products; 3) decrease in production costs of environmental friendly corporations by reducing the consumption of energy, water, raw materials, and abandonment of the use of non-renewable sources; 4) decrease in the amount of wastes of environmentally friendly enterprises as a result of switching to the manufacturing processes based on innovative technologies</p>

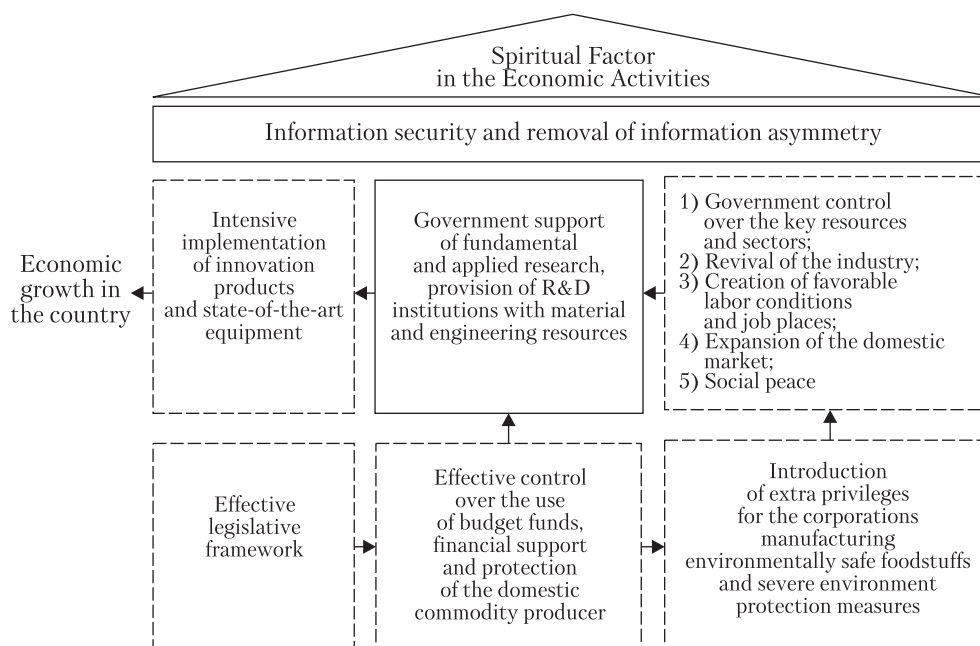


Fig. 4. Framework for sustainable financing of high technologies in the country

wide range of services to Ukrainian technological parks in order to help them successfully compete in the market environment, especially at the early stages of development (Fig. 3)

Lending the technology parks is an investment in the future economic growth of the country (Table 2).

As mentioned above, the creation of state-owned innovation bank is aimed at earning a maximum profit for the full satisfaction of socio-economic and R&D needs of the state. Lending the socially relevant areas is believed to be unprofitable and inefficient business line for the bank. However, the socially oriented projects can generate high profit provided:

1) The priority areas for lending are chosen properly;

2) The lending policy should be based on transparent methods of banking processes aimed at achieving a balance between profitability, risk, and liquidity (Table 3).

Undoubtedly, the activities of Ukrainian technological parks should be guided to the development of advanced technologies in the field of

energy, environment, health, and information. Particular attention of domestic technology parks should be given to nanotechnologies, since they allows to the researchers and engineers to do purposeful manipulations at the atomic and molecular levels. Integration of technologies is based on «the unity of the nature at the nanoscale.» The nanoscale is usually referred to the range between 0.1 and 100 nm where complex molecules are compounded, the components of living cells are combined, and the smallest components of computer memory and processors are artificially created [3]. It is an important fact that, today, the close link between nanotechnologies and other sciences becomes more and more obvious. The use of nanotechnology ensures success in production and creates wide technological preconditions for new directions of research. The nanotechnology achievements give impetus to the further development of medicine [4–6], ecology, and pharmacology [7–10]. In addition, the nanotechnology ensures progress in engineering, food industry (new types of food and methods for food preservation), and agriculture (increase in yield).

The second group of borrowers are profitable industries that are important in terms of macroeconomic impact, but are privately owned. This category of borrowers is recommended to be provided with loans against shares to an extent that allows the state to control (50% of shares) or to block (more than 25%) their activities. This approach will provide for the efficient use of allocated funds. In addition, the corporations and institutions that borrow funds shall shift all their accounts to the innovative bank. To this group of borrowers it is necessary to apply a mix of fixed and floating interest rates. During a certain part of the loan period, the borrower pays a fixed interest rate, and during the rest one, it repays loan at a floating rate (for example, at the stage of commercialization of high-tech products).

To summarize, it should be noted that the creation of innovative bank in the short or medium term (3–5 years) without appropriate macroeconomic framework is not a sign of the effectiveness of approaches to economic reforms. Thus, under the current arrangements for funding the R&D expenditures, which are regulated by the budget law (in particular, the Budget Code of Ukraine as revised in 2010), there is a mechanism called «subvention», i.e. *the public-private partnership*. In addition, there is the State Regional Development Fund to which, at least, 1% of expected revenues of general fund of the National Budget is transferred annually.

There are many other institutions, but resources are dispersed among many structures and do not generate any positive results for the national economy. Therefore, in a long-term period (7–12 years), it is proposed to concentrate all resources and to assure their transparent use in one financial institution, the state-owned innovation bank. This will prevent the duplication of functions of various institutions and organizations.

At the same time, it is necessary to create not only a specialized institution, but also the most

favorable conditions for the development of human resources and the support of basic and applied research in many sectors (see Fig. 4).

As showed in Fig. 4, the financial resources invested in the domestic manufacturing sector contribute to the development of intellectual potential. This, in its turn, gives impetus to the implementation of innovations in the form of more advanced tools, technologies, and equipment.

Summarizing the results of the research described in this article, it is necessary to conclude that the creation of specialized innovative bank for lending the technology parks and innovation-oriented domestic corporations will not only increase the competitiveness of the national economy, but also assure the financial stability in Ukraine.

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ПЕРСПЕКТИВИ СТВОРЕННЯ
СПЕЦІАЛІЗОВАНОГО
ІННОВАЦІЙНОГО БАНКУ В УКРАЇНІ

Обґрунтована необхідність створення в Україні спеціалізованого інноваційного банку. Розглядаються основні напрямки державної підтримки розвитку цієї банківської установи.

Ключові слова: спеціалізований інноваційний банк, державна підтримка, нанотехнології.

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ПЕРСПЕКТИВЫ СОЗДАНИЯ
СПЕЦИАЛИЗИРОВАННОГО
ИННОВАЦИОННОГО БАНКА В УКРАИНЕ

Обосновывается необходимость создания в Украине специализированного инновационного банка. Рассматриваются основные направления государственной поддержки развития этого банковского учреждения.

Ключевые слова: специализированный инновационный банк, государственная поддержка, нанотехнологии.

Received 15.10.14