

ЕКОНОМІКА ТА УПРАВЛІННЯ НАЦІОНАЛЬНИМ ГОСПОДАРСТВОМ

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THE STATE REGULATION MECHANISM OF COOPERATION BETWEEN HIGHER EDUCATIONAL INSTITUTIONS AND BUSINESS**МЕХАНІЗМ ДЕРЖАВНОГО РЕГУЛЮВАННЯ СПІВПРАЦІ ВИЩИХ НАВЧАЛЬНИХ ЗАКЛАДІВ ТА ПІДПРИЄМНИЦЬКОГО СЕКТОРУ**

Urgency of the research. The government regulation of cooperation between higher educational institutions and business is important due to the urgent need for the development of the industries that produce new knowledge, technologies, innovations, and where the results of researches are implemented into life, and have a real effect on the economy.

Target setting. Thereby, the new ways of realising higher education institutions' scientific and innovative potential are needed to be researched. Higher education institutions have to be competitive, so they need to be financially independent. Producing and commercialisation of new knowledge is also essential for them.

Actual scientific researches and issues analysis. The analysis of scientific researches indicates the lack of the coherent government regulation mechanism of cooperation between higher education institutions and business. In particular, the mechanism aimed at managing educational results of higher education institutions, and at the development of human and scientific potential was considered in scientific works of S. Dombrovska (2012), L. Karbowska (2012), I. Musienko (2011), N. Steblyuk (2011).

Uninvestigated parts of general matters defining. The influence of scientific and innovative activities of higher educational institutions on innovative development is not investigated. The prospects of cooperation between higher educational institutions and business are not mentioned. The transfer of technology, as well as the possibility of commercialization of researches, is not analyzed.

The research objective is to systematize the main components of the government regulation of cooperation between higher educational institutes and business.

The statement of basic materials. The article explains the expediency of implementation of the government regulation mechanism of cooperation between higher education institutions and business. The basic principles, objectives and functions in partnership "government – higher educational institution – enterprise" are defined. Methods and tools that have practical value in implementation of the system of the government regulation of higher education and business are mentioned.

Conclusions. The implementation of the proposed mechanism will reduce higher education institution's dependence on state funding, will strengthen their financial stability and competitiveness, will ensure performing of educational, research, innovative functions, and as a result will increase the impact of higher education on innovative development of national economy of Ukraine.

Keywords: mechanism; methods and tools of the government regulation of cooperation; university; business.

Актуальність теми дослідження. Важливість забезпечення державного регулювання співпраці вищих навчальних закладів та підприємницького сектору зумовлена необхідністю розвитку сфери, в якій продукуються нові знання, технології, новації, та сфери, де результати науково-дослідних робіт стають інноваціями, мають реальний ефект для економіки.

Постановка проблеми. У зв'язку з цим загострюється потреба пошуку ефективних шляхів реалізації науково-інноваційного потенціалу ВНЗ, продукування та комерціалізації нових знань і розробок закладів вищої освіти з метою забезпечення їх конкурентоспроможності, зростання фінансової незалежності та інноваційного поступу національного господарства загалом.

Аналіз останніх досліджень і публікацій. Аналіз наукових джерел свідчить про відсутність цілісного механізму державного регулювання співпраці вищої освіти та підприємницького сектору. Зокрема, в наукових працях С. Домбровської, Л. Карбовської, І. Мусянко, Н. Стебляк розглядається механізм спрямований на управління освітніми результатами вищих навчальних закладів, розвиток людського та наукового потенціалу.

Виділення недосліджених частин загальної проблеми. В той час, як поза увагою залишаються питання щодо впливу науково-технічної та інноваційної діяльності вищих навчальних закладів на інноваційний розвиток, а також перспективи співпраці ВНЗ з підприємницьким сектором, трансфер технологій та комерціалізація результатів наукових досліджень закладів вищої освіти.

Постановка завдання. Стаття покликана систематизувати основні складові механізму державного регулювання (як ініціативного фактору) співпраці вищих навчальних закладів і підприємницького сектору.

Виклад основного матеріалу. У статті обґрунтовується доцільність впровадження цілісного механізму державного регулювання співпраці вищих навчальних закладів та підприємницького сектору. Визначено основні принципи, завдання та функції у партнерстві «держава – ВНЗ – підприємство». Окреслено методи та інструменти, які представляють собою нові способи практичної реалізації державного регулювання співпраці сектору вищої освіти та підприємницького сектору.

Висновки. Практична імплементація запропонованого механізму дозволить зменшити залежність сектору вищої освіти від державного фінансування, компенсувати його обмеженість, посилити фінансову стійкість і конкурентоспроможність, забезпечити виконання місії (освітньої, наукової, інноваційної), а в результаті посилити вплив вищої освіти на інноваційний розвиток національного господарства України.

Ключові слова: механізм; методи та інструменти державного регулювання співпраці; ВНЗ; підприємницький сектор.

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Urgency of the research. In today's information and knowledge society where competitive advantages are provided on the basis of the practical use of new knowledge, information and technology, the role of universities in economic development is increasing. The experience of the innovative developed countries argues that it is through the effective cooperation between universities (the area where the new knowledge are produced) and the business sector (the area where this knowledge has practical application) that there is achieved the highest level of financial return and social effect of investment. However, the State serves as one of the main subjects of such cooperation, which through the responsible authorities has stimulating and coordinating impact in such a partnership.

Target setting. In this regard, however, the need for finding effective ways of implementing the research and innovation capacity of the universities is exacerbating, production and the commercialization of new knowledge and development to ensure their competitiveness, the growth of financial independence and innovative progress of the national economy as a whole.

Actual scientific researches and issues analysis. Analysis of scientific sources shows the lack of holistic mechanism of State regulation of cooperation between universities and the business sector. In the analyzed scientific papers there is considered the mechanism of State regulation of certain spheres of university activity. For example, L. Karbovska (2012) examines the organizational mechanism of the formation and location of State order to train specialist in Ukraine and mechanism of State funding of higher education in Ukraine. N. Steblyuk (2012) considers ways of improving the mechanism of State order and the mechanism of quality control in higher education. The mechanism of Government regulation of higher education, given in the work of S. Dombrovska (2011), is also aimed at managing the educational results of universities and the development of human potential. I. Musiyenko (2011) examines the mechanism of State regulation of the market of educational services, which may include several independent mechanisms for the implementation of specific functions.

Uninvestigated parts of general matters defining. While the use of the capacity of universities to provide the innovation development is out of focus, in particular, there hasn't been given attention to the questions as for the impact of the scientific-technical and innovation activity of universities on innovative development and innovative collaboration of universities with the entrepreneurial sector, technology transfer and commercialization of the results of scientific research in universities.

The research objective). The article is intended to systematize the basic components of the mechanism of State regulation (as an initiating factor) of cooperation between universities and the business sector.

The statement of basic materials. Purposeful State support of cooperation in the sector of higher education and the business sector includes on the one hand, the State regulation of these sectors and their economic relations, which implies a conscious shaping by State structures the legal, economic and organizational conditions of cooperation, and on the other hand, creating incentives for cooperation. Information awareness and advocacy for benefits will have stimulating effect for activating cooperation. Motivators for universities are: revenue growth, the growth of the professional implementation, the growth of welfare of scientists and employees in innovative activity; the growth of financial stability; reduction of financial dependence on the State budget funds; the growth of competitiveness of the university; the brand formation.

Incentives for entrepreneurship are as follows: profit growth through the use of tax incentives for innovation; the capitalization growth due to the growth of intellectual and innovative resource; risks reduce of innovation activity at the expense of State guarantees and State insurance; the growth of competitiveness of products and businesses through innovation, etc. Thus, using an arsenal of administrative, legislative, financial, economic, organizational, informational and educational tools, the State is able to create an environment for innovative cooperation sectors of higher education and business, as well as strengthen or weaken the effect of those or other incentives to cooperate.

State regulation should include a coherent system of appropriate methods, tools and guidelines, and their implementation may turn the potential of universities into innovations. The draft of mechanism for State regulation of cooperation between universities and the business sector are given in Fig. 1. The object of the regulation advocate universities and other participants in the innovation process,

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including the subjects of business activity, since it is the cooperation of these two sectors are capable of balancing the innovation offers and the demand for them.

Analysis of global experience shows that universities are one of the main participants in the innovation process in the country, so to improve State regulation of the domestic sphere of higher education has been identified the strengthening of cooperation between universities and the business sector to enhance the innovative development of the economy. To achieve this goal, it is necessary to complete the following tasks:

- to engage the business sector to determine the subjects for research and development of universities;
- to attract entrepreneurial sector to finance research and development of universities in the early stages of the innovation process (before the commercial stage);
- to encourage the use of entrepreneurial approaches in university’s activity;
- to improve the commercialization level of research results and development of universities;
- to stimulate the development of innovation infrastructure on the basis of universities;
- to establish cooperation in the format «State – universities – business structures», etc.

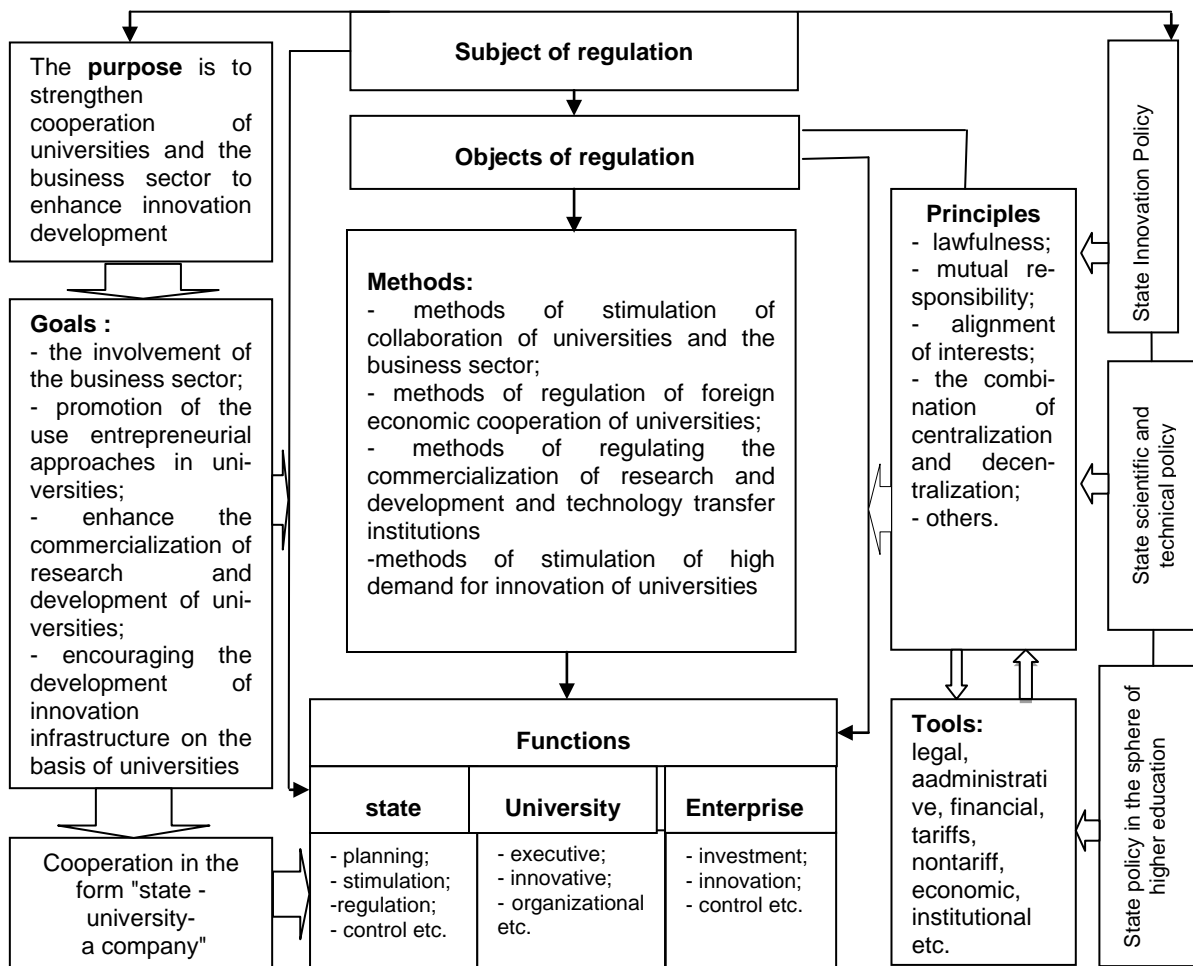


Fig. 1 Diagram of the mechanism of State regulation of cooperation between universities and the business sector

Source: the author

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During the subject's interaction with the objects one must comply with the following principles:

- the lawfulness, i.e. the recognition of and adherence to the participants of the rules and regulations set by the State;
- mutual responsibility – participants are responsible for their activities to each other, responsibility for achieving results and social responsibility;
- alignment of interests – combining efforts to achieve a common goal based on interests (benefits, interest);
- the combination of centralization and decentralization, that is part of the powers needed for making crucial decisions (strategic) remains at the highest level of management, as part of the transferred to the lower levels of management;
- and other legislatively defined principles of regulation in the field of higher education (On Higher Education, 2014), scientific, scientific-technical, (On Scientific and Technical activity, 1991) and innovation activity (On innovative activity, 2002).

Adherence to these principles will facilitate the establishment of mutually beneficial cooperation in the format "State – universities – enterprise". The State should play the role of the initiator of such cooperation within its main functions in this partnership (planning, promotion, regulation, control, etc). Universities carry out executive and an innovative function as representatives of the scope for generating new knowledge and innovations (scientific research, the provision of scientific and other State bodies and subjects of entrepreneurial activity, etc.).

The main function of the enterprises will be the investment function, the secondary one (in the development and definition of the subject of scientific research), innovation (implementation of the research results and development of universities), etc.

To ensure the effectiveness of state regulation in the course of the implementation of the tasks there is appropriate use of such major groups of methods:

- 1) methods of stimulating cooperation between the higher education sector and the business sector;
- 2) methods of regulation of foreign economic cooperation of universities;
- 3) methods of regulation of the commercialization of the scientific research results and technology transfer of universities;
- 4) methods of State stimulation of demand for innovation in the sector of higher education.

Within the first group there should be used legal, administrative and financial methods to stimulate cooperation between universities and the business sector, that is, a set of methods that enables to set clear boundaries for cooperation i.e. they will implement a direct impact from the State – and methods that provide greater freedom of choice for objects of the mechanism.

As the higher education sector has to become a partner to the business sector in the economic cooperation and the full subject of the innovation process, so a legal regulation will let create a legislative field and a favorable investment climate for cooperation, define its terms and obligations of the parties.

That's why it is urgent to conform the regulatory-right acts to the modern development of innovation and knowledge society governing the scientific-technical and innovative activity in the sector of higher education, the collaboration of universities with the business, providing paid services by universities, taxation and the use of profits got by universities, the use of profits by the subjects of entrepreneurship carrying out innovative cooperation with the sector of higher education, the protection of intellectual property of universities, the sale of licenses, regulations on public-private partnerships, etc.

The use of the administrative methods will allow to direct the vector of cooperation sectors on the innovative development of the national economy, since they exercise direct influence on the part of the State. Implementing regulation by using such administrative tools such as norms of financial, material and technical provision of activities of the universities, the funding of scientific researches, higher education standards, professional standards to the graduates, licenses and permissions to conduct activities, technology transfer, etc., the State is able to provide an innovative orientation of higher education in Ukraine. First, there should be reviewed and clearly systematized the standards of state order training, the higher education standards and professional standard in order to ensure the training of job seekers for innovation directed specialties that will be in demand on the labor market in the near future

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and will meet the needs of the information and knowledge society, the majors that determine the production and introduction of innovation, innovation enterprise and the entrepreneurial spirit of the graduates. There should be also reviewed the norms of maximum load of scientific and pedagogical workers in order to highlight a decent portion of time on systematic research activities of professors of the university. The action of administrative tools should focus on the development of entrepreneurial approaches in the activity of universities, strengthening the commercialization and technology transfer.

Funding for the higher education, including scientific research in universities is based on the standards, which are mainly focused on quantitative criteria. Therefore, it is advisable to include and qualitative characteristics of the educational activity of university (for example, the quality of educational services, employment and career satisfaction of graduates, employers, etc.), as well as to take into account the results of the research and innovation activities (sale of licenses and concluded licensing agreements, the number of created new enterprises, the amount of commercialization and innovative products). Such approach will improve the regulatory mechanism of funding for higher education by strengthening the funding for the effective activities of the university. It is also necessary to speed up the implementation of program-target funding i.e. funding for specific research or innovative programs and projects on a competitive basis, which together will strengthen the innovative function of the sector of higher education.

The financial methods of stimulation of cooperation include the use of budget instruments for financing R&D in the higher education sector and the commercialization of results, as well as tax tools for stimulating innovation entrepreneurship, including innovative collaboration with universities. Today in Ukraine, the emphasis is placed on the budgetary instruments and tax ones have been reduced. Taken into account the constraints of budget, it is considered to be promising a sound system use of budget and tax tools. The use of budgetary tools is required at the first stage of the innovation process (direct state funding for basic research) and at the second stage for the involvement of the business sector for cooperation with universities at the early stages of applied research (using the mechanism of joint innovative procurement). At the third stage it's necessary to enhance the stimulation of entrepreneurship to conduct R&D with universities by means of budgetary instruments (preferential loans, state guarantees for loans, compensation of per cent) and strengthen the use of fiscal instruments (deferment of income tax payment, tax rebate, tax credit for R&D, etc.), and also use the tools to support innovation science and technology parks based on universities (exemption from import duty, accelerated depreciation, public order). At the stage of the implementation of the growth of the State it's necessary to stimulate the entrepreneurial sector to innovative cooperation with the sector of higher education. Tools to stimulate entrepreneurship are as follows: to commercialize already completed results of R&D in universities – taxation of income from the commercialization at a lower rate of tax on profits, reimbursement of part of the costs from the patent fees payment etc. From the experience of the developed countries it is known that volume-based tax credit has high potential, which provides for the reimbursement of part of the costs of R&D and the full tax rebate that allows to write off the costs of innovation, which excludes them from the tax base. As well as to strengthen tax tools to stimulate investments in research and innovation from external to the universities sources (preferential income tax venture businesses, the tax discount on private investment in R&D; and innovation, preferential loans, venture funds, etc.). Thus, strengthening the role of tax instruments to foster innovative collaboration of universities and the business sector will lead to get a more objective distribution and prompt receipt of state assistance.

To activate economic activity of universities it's expedient to see tariff (financial) and non-tariff (organizational and administrative) methods. Financial techniques include granting privileges in taxes payment and charges in the purchase and importation to the customs territory of Ukraine educational, scientific and production equipment for the implementation of educational, research and scientific-technical activity (On Higher Education, 2014). As the organizational-administrative methods it's expedient to apply the methods of regulating the main directions of international cooperation (participation in programs of academic mobility, international, educational and scientific programs, joint research, etc.) and the main types of economic activity in the field of higher education (training foreign postgraduates, researches, setting up joint ventures with foreign partners, etc.) (On Higher Education, 2014).

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It should be noted that in order to achieve the result from the application of the tariff methods, it is necessary, first of all, to increase the efficiency of non-tariff methods, to direct their actions at supporting the results of the achievement. Thus, it is necessary to increase the stimulation of economic activity in the sector of higher education, to strengthen the position not only in scientific collaboration (participation in programs of academic mobility, international, educational and scientific programs, joint research, etc.), but also in innovation (International patenting, research, setting up joint innovation enterprises with foreign partners etc.).

Into the third group of methods (regulation methods of commercialization and technology transfer of universities), it is advisable to include legal, administrative, economic, financial, and also specific methods. The expediency of application of economic methods, which include planning, programming and forecasting, is conditioned by the need to ensure the unity and coherence of the objectives of the strategic development of the national economy. Specific techniques according to the stages of the commercialization of the research results and development may include (Guidelines for commercialization of developments created as a result of scientific and technical activities, 2010):

- methods of technological audit, which will allow to determine the commercial potential of development;
- marketing methods that allow to evaluate the prospects of sales and product competitiveness;
- methods of economic audit that will determine the effectiveness of investment and their payback time;
- methods of patent researches for obtaining security documents;
- methods of contracting and managing contractual relations which will allow to identify the essential components of the agreements, the duties and responsibilities of the parties.

The fourth group of methods (methods of State stimulation of demand for innovation) in our opinion should include methods that are meant to provide the demand for innovation of universities using the appropriate tools. EU researchers include cluster policy to such instruments, as well as regulations and standards, technology (innovative) platforms, public procurement and support of private demand (catalytic procurement, training, subsidies and taxes) (Edler, J., 2007).

The relevance of the use of such tools is conditioned by the fact that Ukrainian experience shows that the State is funding for the research process, not result as innovation. Incentive measures of offer (fiscal instruments, government funding of research, support for training and mobility, etc.) do not always lead to the practical use of derived innovations in real production.

The whole set of instruments of the mechanism of State cooperation regulation between universities and the business sector can be divided into:

- legal – normative-legal acts regulating educational, scientific, technological, innovation, entrepreneurial activity in the sector of higher education legislation in the field of protection of intellectual property, commercialization and technology transfer of university acts on stimulating the innovation entrepreneurship, support for small and medium enterprise, the development of public-private partnerships, etc.;
- administrative regulations – the norms of higher education financing, scientific research, a load of scientific-pedagogical personnel, State order, the standards of higher education, professional standards, licenses and permits to conduct activities, technology transfer, accreditation certificates, sanctions, fines, etc.;
- financial – grants, innovative public procurement, public procurement, preferential credits for the subjects of entrepreneurship and venture capital funds, State guarantees for loans, per cent compensation; tax holidays, tax rebate, tax credits for R &D, etc.;
- tariff – the tax benefits for the purchase and import of equipment for educational, scientific and technical activities, funding for academic mobility, joint researches;
- non-tariff – licensing the export and import of educational and scientific services, standards and other requirements for the innovation of products (goods, works, services), technical norms of international patenting;
- economic – economic, scientific-technical, social, State target programs, and other programs that require scientific support, plans and forecasts, etc.;

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- institutional – elements of innovation infrastructure based or with the participation of universities;
- education – grants for training the research staff, educational programs on issues of commercialization, intellectual property, technology transfer, innovation management, academic support program
- organizational – a network of technology transfer, innovation platform, patent databases, etc.;
- informational – regular e-newsletter, the official page in the Internet, blogs, chats, forums, special periodical.

Essential value for establishing perfect operation of this mechanism has a relationship with the State system of higher education policy, that is the educational, scientific, scientific-technical and innovative one. To achieve good results, cooperation is needed, firstly, to choose the priorities of education policy, define the goals, tasks and directions of the development of higher education, as well as ensure their embodiment.

Secondly, within the limits of realization of scientific-technical policy it is necessary to ensure the use of the achievements of the National University Science for realization of priority directions in scientific and technological development of the country and meet the other needs of the economy.

And, thirdly, directions, forms and methods of involving higher education to innovation development of economy must elect in accordance with the strategy of innovation policy, including the policy of technological impetus; market orientation; social orientation; policy, aimed at reforming the economic structure of economy mechanism.

Conclusions. The introduction of State regulation mechanism of cooperation between universities and the business sector, in line with the implementation of the above proposals and consideration of that factor, the proposed measures should be implemented in close cooperation with the State, entrepreneurial and educational institutions that creates real prerequisites for the activation of innovative development of the Ukrainian economy. The practical implementation of the suggested mechanism will reduce the dependence of the sector of higher education funding from the State to compensate for his limitations, strengthen the financial stability and competitiveness, provide the complete of mission (education, research, innovation).

The latter, in its turn, provides the activation of the innovation component of the university activities, finding the relevant instruments, which makes the prospect for further researches.

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