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INNOVATIONS AND DEVELOPMENT

INNOVATION POLICY OF A COUNTRY AS A DETERMINANT OF THE DEVELOPMENT OF INNOVATION PROCESSES IN POLAND

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Abstract: The experience of the developed countries shows that the innovations are motive force of every economy and they are influencing a long-term growth potential. Innovation policy of a country shall play an extremely important role in the development of innovation processes. Innovation policy should be a well-balanced combination of generating the knowledge by means of choosing a sector strategic for a particular economy and eliminating obstacles to a capital access. The aim of this article is to present innovation policy and its role in the constantly changing economy.

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The innovation of economy is significantly determined by a designated innovation policy which embraces a wider range of issues than the scientific-technical policy does. Innovation policy embraces government programmes, tools, instruments, mechanisms and measures aimed at both: affecting indirectly or directly the level of innovation of particular entities and sectors by a country; and developing the innovational structure of economy (Pangsy-Kania and Rześny-Cieplińska, 2008).

The innovation policy in Poland has got its beginnings in the 1990s when the system changes began - the first in the world's history case of switching from prescriptive-distribution economy to free-market economy.

Creating favorable environment for positive feedback between science, engineering, technology and the economy of a country should be a goal of innovation policy. Modern innovation policy has got certain distinctive features separating it from other types of policies. It is a policy which:

- promotes innovational activities and diffusion of technology;
- treats innovation as a network process (involving many entities);
- supports all technology users (supporting consulting, training and information services);
- uses the country as a peculiar regulator which creates institutional frames for supporting the innovation of different economic entities;
- wins public approval for innovation processes;
- reduces the level of difficulty in undertaking and carrying out innovation projects.

In modern free-market economy innovation processes are mainly regulated by market as generally understood. Nevertheless, this regulation is slightly moderated by state intervention. The aforementioned interventionism can be

defined as an innovation policy which is an example of a structural policy of a modern country.

Researching the topic of innovation policy, one can find a synonymous term of scientific-technical policy in specialist literature. Nevertheless, there are slight differences between these two terms. Innovation policy puts more stress on innovations/technologies while scientific-technical policy focuses rather on science/scientific research (Jasinski, 2006).

Rothwell and Zegveld, the precursors of innovation policy theory in English literature, understand it as "the fusion of scientific and industrial policies with a strategic goal of achieving and maintaining a high level of international competitiveness of goods produced in a particular country" (Rothwell and Zegveld, 1981). Whereas Stoneman defines it as "the combination of activities which takes the nature of state intervention in economy with the intentions of influencing the process of technical innovation" (Stoneman, 1987). The said author also highlights two fundamental arguments for the necessity to conduct innovation policy by a country in modern economy:

1. Suboptimal allocation of resources resulting from market failures seems to create rationality and be an indicator for a government intervention policy.
2. Higher rate of social efficiency is an important factor emphasizing the arguments for state intervention in the process of technological development; minor growth of resources aimed at innovations may produce very high rate of return.

Creating a strong country, as far as effectiveness is concerned, constitutes one of the most important objectives of national commonwealth and economic role of a modern country is not decreasing. Whereas the structure of the functions performed by this modern country together with spheres, range and interference forms are changing (Płowiec, 2008).

The innovation - realization of economic value, which has arisen from new ideas, is considered as an activity well-developed in a private sector, especially in the United States. Promising a profit by going into the market or showing the potential for the company growth is a form of

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motivation which develops new products, processes and organization forms. Market evaluates their effectiveness, rewarding the companies that have produces goods and services valued by customers (Feldman and Kogler, 2008).

The efforts of both private and public sector are crucial for innovation development and technological undertaking in economy. Public institutions like governments, universities, public benefit foundations, charity organizations and other entities which are undeniable tools as far as providing resources, suggesting initiatives and estimating the possibilities of private sector development are yet very often underestimated and not fully appreciated. The role of market forces is not very often elaborated on or even taken notice of. The Internet is an example of crucial role played by a public sector for innovations. Its origins dates back to the early 1960s when American Ministry of Defense declared as a priority the creation of decentralized protective shield of communication and transport in the case of a nuclear attack. Defensive purposes were of the topmost importance and they were combined with the potential created by scientific development in the fields of Mathematics and Information Technology.

Working on the assumption that a strong computer industry would be essential to maintain appropriate level of competition, Ministry of Defense promoted an extensive research programme with an access to the funds and subsidies which would be granted to federal laboratories, tertiary education entities and industry (Mowery and Simcoe, 2002; Greenstein, 2007). Demand for infrastructural investments had arisen till the 1980s. The National Science Foundation not only provided necessary funds but also, which was more important, was encouraging many others groups and extending their share in providing network services. A large number of private enterprises were involved in that undertaking.

Phenomena requiring economic support from public sector are subjects to research as part of neoclassical institutional economy in the theories of: property law, transaction cost and information asymmetry. The research concerns the relationship between public and private sector, paying special attention to (Kultys, 2000):

- higher potential of public authorities to gather and spread innovation risk which puts a project in a stronger position and facilitates its funding or even decreases the capital costs,
- information asymmetry or incomplete information in macroeconomics policy and state regulating policy,
- division of costs between capital holders and potential creditors and between capital holders and project managers.

Undoubtedly, the theory of property law deals with economy in relation to the ownership of its goods. This is an important fact in the case of innovation projects carried out and funded by private capital.

The theory of transaction cost analyses the processes which embrace transaction costs related to organization of a particular transaction such as an innovation project. Negotiations, creating and concluding agreements and contracts are at issue. This is an extremely important field of research in the case of big and complex innovation projects where the cooperation between public and private sector, which manages the capital, is essential.

The theory of information asymmetry evaluates phenomena where the parties involved have unequal access

to information. In real terms, there is no equal access to information which would allow taking decisions burdened with the possible smallest risk. The distribution of costs between the parties involved in a project is very crucial as well.

Public sector is and should keep engaged in projects and innovation processes because of important economic and political matters expressed in relationships such as (Walker and Smith, 1995):

- government as a customer - allotting benefits to indirect beneficiaries,
- government as a regulator - regulating activities with the hallmarks of monopoly,
- government as a guarantor - protecting against long-term risk connected with innovation risk,
- government as a defender - providing national security.

Public-private partnership (PPP) is a typical example of cooperation between public and private sectors. In 1992 the government of Great Britain announced a programme of Private Finance Initiative (PFI), the goal of which was to use private finance in creating public infrastructure. Among other projects, PFI model was used to build public facilities such as hospitals and schools.

It should be stated that the programmes of public and private sectors cooperation should be used in the accomplishment of innovation projects. It is declared that PPP itself enables private parties of a tender to take advantage of many different solutions. Consequently, public sector benefits from innovative construction plan of a facility or innovative method of providing a service (Yescombe, 2008). The aforementioned process combines with the fundamental component of PPP. That is with the fact that in a very moment of opening a tender, an ordering entity determines a result not the means, in other words declares its demands as far as the subject and services are concerned but it does not impose the way of delivery. For example, public sector can determine an appropriate number of rooms and necessity of a canteen when it comes to a construction project of a school. On the other hand, public sector does not submit a detailed construction plan of a given facility. A party involved in a tender can suggest innovational solutions if the requirements concerning the result a more flexible (Yescombe, 2008).

At least three arguments can be formulated for competent innovation policy in Poland during a period of transformation (Jasiński, 2006):

1. If innovation are one of the components or parts of an economic process that receives support from a particular country worldwide then innovations should be supported in Poland as well.
2. The majority of research institutions and quite a lot of enterprises are national companies.
3. The complete change of Polish economy together with quick and full integration with EU is not possible without a country's active support of science and technology domain.

Nevertheless, analyzing the data on funds handed over for science, one may have the impression that the country has cared about the development of science in a minimum degree. Budget expenditures for R&D as % of GDP in 1990-2006 remained as 0.96% in 1990 and 0.56% in 2006 (Rocznik statystyczny, 2007).

Looking for the reasons of such a state of affairs one should take into consideration a slight financial effort of Polish governments in the domain of science and technology in the last two decades. The reasons for such minor, sometimes even nominal expenditures may have their source in the following facts:

- sustained difficulties in drawing up the national budget, in other words an overwhelming advantage of costs over the profits - deficit; the lack of public finances reforms,
- the lack of acceptance for this kind of expenditures among the political elite of our country and, which is even worse, the lack of public acceptance,
- the lack of motivations to finance innovations by enterprises.

A modern public sector needs to be a mixed model regardless of a socio-economic model of a given country. This sector should be active at least as far as four domains are concerned: education, R&D, ecology and territorial governments.

One of the drawbacks of innovation system in Poland is not only the insufficient level of expenditures for R&D but also too broad participation of public sector in its financing and defective allocation of the funds. In well-developed economies funds for R&D are mainly allotted to high and medium technologies. For example, in Sweden their share in general expenditures for R&D of production sector equals 92.7%, in Germany 92.3%, in Hungary 87.8%. In Poland the share is estimated as 80% and it is lower than EU average of 89.2% (CEC, 2007).

Low participation level of businesses which get budget resources for R&D is yet another challenge for public sector. The participation of the aforementioned entities, as far as the overall number of businesses is concerned, equals scarcely to 3.1% whereas in Luxembourg - 39.3%, in Ireland - 27.8%, in Austria - 17.8% and in Czech Republic - 6.1% (CEC, 2007). This fact is one of the reasons of insufficient research activity of businesses.

The role of a country and economic entities in the process of the growth of Polish economy innovation should manifest in (Raport nr 26, 2005):

- a significant growth of financial involvement of public sector in R&D which should be determined by a significant change of structure of budget expenditure;
- undertaking organizational and institutional activities which are to eliminate disproportions in financing particular phases of R&D; particularly the excessive - compared to other UE countries - concentration of financing and employment in public sector and, on the other hand, not sufficient subsidizing and understaffing in the sphere of development research of businesses;
- the necessity of significant growth of direct involvement of businesses in financing the innovation activities.

One can observe the contribution of so called non-profit sector in financing the innovation projects in world's economy. This sector is a collection of organizations of neither governmental nor business nature. There are many proposals as far as terminology is concerned, for example - a third sector or philanthropy sector or voluntary sector. Usually these organizations enjoy a special tax status acknowledging their social nature. One need to highlight the fact that this economy sector is growing and is becoming more and more important for innovations and technological changes.

A policy which creates favourable conditions for innovations in macroeconomic range can be defined as a pro-innovational macro-policy, the goal of which is a socio-economic development by means of the growth of domestic economy competitiveness and creation of national innovation capability (Pangsy-Kania, 2007). It should also be mentioned that domestic competitiveness is always connected to an economic system of a given country which creates strategic environment for the functioning businesses.

Membership countries of EU, including Poland, should also jointly work out the mechanism for coordination of innovation policy on the union, national and regional level and strengthen the cooperation. Whereas future trends in development of innovation policy in EU should also concern the promotion of innovation in public sector and the strengthening the regional dimension of innovation policy. One needs to remember that innovation policy should be one of a systemic nature and, as a part of economic policy, should aim at creating the environment favourable for practical use of scientific achievements and R&D.

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