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**CAPITAL AND FINANCING INNOVATION  
PROCESSES IN ENTERPRISES IN POLAND:  
SELECTED ASPECTS**

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**Key words:** Capital, innovation, capital gap, financial engineering.

**Abstract:** Every economic entity undertakes various complex activities that aim at achieving strategic goals. This complex plane of strategic activities certainly includes pro-innovative activity consisting in creating and implementing innovations that help to gain competitive advantage. Undoubtedly, enterprises need capital. Without capital they are not able to positively influence the economic growth of any country. The aim of this article is to present the relationship between capital and financing innovation projects in Poland.

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Experiences of highly developed countries show that innovation is the driving force of any economy, determining the long-term growth potential. There is a positive interdependence between the intensity of investment in R&D and the level of economic development and competitiveness of economy. Countries with the highest indicators of the intensity of investment in R&D are the world's leading economies<sup>1</sup>. The indicator of the intensity of investment in R&D is the relation between total investments in R&D and total value of GDP in a given country.

The development of the innovative enterprise sector is fundamental for the Polish economy in order for it to gain competitive advantage in the global dimension. Only innovative enterprises with substantial share of high technology, but also managed in a way that enables expansion to international markets, can be successful on the international scene. Unfortunately, Poland is very much behind as regards R&D expenditure, both in comparison to the developed countries of the EU and to some developing countries (R&D constitutes only 0.57% of Poland's GDP).

Poland occupies the 29th position (out of 35 countries) in the European Innovation Scoreboard. Together with Romania, Bulgaria and Slovakia, Poland is in a group of countries whose level of innovation in comparison to the EU average keeps getting worse. The only innovative region, occupying the 65th position as regards innovation, is Mazowieckie Province. Meanwhile, the turnover value of innovative enterprises in the EU is growing three times faster and the increase in employment exceeds twice the indicators recorded in non-innovative enterprises.

Undoubtedly, Polish enterprises need capital. Without it, they cannot positively influence the economic growth of our country. Domestic financial resources generated as a result of transforming domestic savings into investments are still insufficient in comparison to the needs of the Polish economy. This situation is caused by a combination of negative factors (Janasz, 2009):

- low level of investment capital accumulated so far;

- low rate of savings in Poland;
- persistently low level of GDP per capita.

Implementation of innovation projects enabling the development of an enterprise and increase of its value requires obtaining capital for financing such investments. Inflow of capital to an enterprise is possible in a situation where potential investors are sure that capital investments in a given enterprise will bring the expected rate of return, accepting the risk connected with any economic activity.

Financing innovation- and technology-oriented enterprises is one of the most serious problems faced by their owners. Lack of capital for implementing innovation projects can cause their outflow to other economies, both through direct migration of entrepreneurs and taking over of projects by foreign enterprises. Capital is the basis for development of innovative enterprises.

Joseph Schumpeter, considered a pioneer of economic analysis of innovation, made the analysis of allocating financial resources for innovation processes one of the main points of his studies on innovation. As O'Sullivan (2006) writes, contemporary economists dealing with this problem have, in large measure, neglected the relation between funds and innovation. The early works of Schumpeter (1964, 1996) concerning microeconomics of innovation often referred to the process of using credits for financing innovation. However, in the later period (1975) he diminished the role of creating credits in facilitating the innovation process and economic development. Instead, he emphasised the source of self-financing innovative investment by large and dominant enterprises.

In his works, Schumpeter presented also three characteristics of the innovation process, which are material for allocating funds. First, innovation depends on investment. It requires quite substantial expenditure. Second, innovation is a chance both for new and older enterprises. Third, innovation is implemented mainly by "new" people in the enterprise, who have not played leading roles in business before (1996, 1964).

Contemporary economists have developed a few ways of thinking about innovation economy on the level of economy, i.e. about the relationship between innovative activities and economic development. One approach derives directly from

<sup>1</sup> The countries include, among others: Finland, Japan, the USA and Germany.

the work of Schumpeter and concerns the techno-economic perspective. The other approach - the national system of innovative structure - has been developed for the last 25 years in order to explain the comparative historical models in economic development (Nelson, 1993). Both approaches engage in the process of presenting the evolution of economy in economic development analyses. However, they differ in the amount of attention devoted to allocating financial resources for innovation. Literature related to the national innovation system rarely discusses the activity through which work and capital are devoted to innovation.

Perez (2002) follows Schumpeter in her work, putting in the centre of her theory technological revolution, defined as clusters of radical innovation creating exceptional and successful activities modernising the whole production structure. However, her concept puts much more emphasis on the diffusion of innovation than the works of Schumpeter. The analysis of the interaction between the financial and production systems conducted by Perez is also more comprehensive than Schumpeter's. He focused mainly on the role of the financial system in financing initial phases of innovation, whereas Perez characterises ways in which the financial system can be engaged, providing resources for innovation throughout the technological cycle.

One of the main problems of implementing innovation in Poland is the presence of a capital gap, characterised by insufficient access to capital for innovation-oriented enterprises. Innovation capital can become the key to national economic development. It can be defined as financial resources accessible to economic entities that engage in and want to engage in development and innovation activities. The definition of innovation capital can also include benefits resulting from implementing various innovation activities. Innovation capital can be divided into public sector capital, private sector capital and venture capital.

Innovation capital can be generally defined as a collection of institutional and behavioural conditions characteristic for an entity, society, enterprise, market, etc., whose specific association (model, models) would determine innovative activity.

What should be emphasised is that despite the fact that the process of globalisation eliminated many barriers and enabled faster absorption of new technologies, without access to capital the explosion of innovation in Poland is impossible. The concept of financing innovation projects makes it justifiable to adopt the so-called financial engineering, i.e. funds coming from other sources.

Financial engineering should be divided as regards the source of funds that will be allocated for supporting and financing innovation projects. The division could be constructed in the following way:

- a. Funds from private investors, i.e. private capital;
- b. Funds from the state budget and European funds, i.e. public capital;
- c. Funds from both private and public capital, i.e. public/private capital (mixed capital).

There is a combination of two processes in an enterprise (Duliniec, 2007): investing capital in the enterprise by owners and creditors; investing capital in the activity of the enterprise by the enterprise itself.

Financial decisions taken by the board of an enterprise, regarding obtaining sources of financing, i.e. ensuring capital for the enterprise in a suitable amount, type and time, have to be closely linked with investment decisions, that is spending the acquired capital in a way that will ensure profitability of the investment at least covering the cost of the capital.

Every enterprise needs capital. Financial decisions play a leading and integral part in the management process. All undertakings of an enterprise that provide it with capital and help form the structure of financing sources in specific market conditions constitute the process of financing. The main phases of creating financial strategy are of great importance and include (Skowronek-Mielczarek, 2003):

- detailed identification of capital needs of an enterprise in various phases of its existence;
- detailed analysis of an enterprise's financial resources; it is necessary to evaluate if a given enterprise can satisfy its needs from own capital or requires external capital;
- detailed analysis of potential sources of financing enterprises, offered by the market and the nearest environment;
- determining the most rational, in given conditions, structure of sources of financing, taking into consideration the costs of obtaining all sources involved as well as connected risk;
- evaluation of chosen sources as regards the profitability of the enterprise and ensuring intensive development, i.e. the adopted development strategy.

It is not possible to determine the best and universal method of financing innovative activity in an enterprise. It is even more difficult if the capital that a given enterprise is trying to acquire is intended for financing innovation. So far, a definite model of supporting this kind of activity has not been developed.

There are many types of financing. They are classified in various ways according to different criteria. Reference books present many classifications of factors which can influence the choice of the structure of financing innovation processes in an enterprise. They include:

- availability of specific sources of capital - not all sources of financing are available to certain enterprises (formal and legal requirements);
- profitability obtained by the enterprise - accumulative capacity of a given unit depends on its level;
- cost of obtaining capital;
- choice of taxation system for conducted economic activity;
- financial risk.

Innovation activity is always connected with substantial expenditure, long return period and specific risk. That is why none of the mentioned financial strategies in its pure form is

appropriate for an enterprise introducing innovation. If we consider internal sources of financing, including funds appropriated from profit for current activity and development, amortization, funds obtained from selling fixed assets and current assets, reserves created for the payment of future liabilities, it is obvious that because of the specific life cycle of an innovative product, financing such undertakings from internal sources, particularly in small companies, is not able to cover financial needs. Undoubtedly, there is a need for external capital, particularly private capital.

TABLE 1. SOURCES FOR FINANCING INNOVATIVE UNDERTAKINGS

Criterion	Type of sources	Examples
Type of ownership	- public	- state budget, European funds
	- private	- credits, PE/VC, loans, stock exchange
Source	- domestic	- domestic investors
	- foreign	- direct foreign investments
Method of financing	- direct	- amortization, profit, credit
	- indirect	- technological parks, incubators of entrepreneurship
Sources of financing	- own capital	- owner shares, business angels
	- external capital	- financial market
	- other capital	- venture capital

Source: own study

The Table 1 below presents the characteristics of possible sources for financing innovative undertakings.

The study conducted by The Polish Central Statistical Office shows that in all regions the fundamental factor limiting innovative activity of enterprises in the SME sector was the economic factor. 37% of small and 31% of medium innovation-oriented firms expressed an opinion that they do not undertake innovation activities because of lack of funds, whereas 36% of small and 32% of medium entities point to high costs of innovation (Wojnicka and Klimczak, 2008). The second among the factors that impede the innovation process are market factors, particularly unstable demand and dominating the market by leading markets.

The problem of micro-, meso- and macroeconomic factors that determine decisions regarding innovation is very complex. Results of many empirical studies indicate a big role of capital, including private capital, in financing innovation and causing fluctuations in innovation activity. This also points to possibilities (methods) of appropriating savings accumulated by the society for innovation expenditure. The important role of innovation capital in creating a long-term, sustainable economic development of individual enterprises is indisputable, which is connected with, as pointed out above, the issue of institutional conditioning of innovation processes and the regulatory role of the state. Developed market economies use their savings thanks to the existence of a well-developed money and credit market (capital market) and non-bank financial institutions (Janasz, 2009).

Still, the basic source of financing innovative activity of Polish enterprises are own funds, which in 2006 constituted 80%, i.e. PLN 13.2 billion of expenditure of industrial enterprises and over 90%, i.e. PLN 6.6 billion of expenditure of enterprises from the services sector<sup>1</sup>. The share of own capital in financing this type of activity is growing and its level depends on the size of an enterprise - with the highest level in case of large entities. However, this indicator is not an evidence that Polish enterprises have high level of own capital, but rather confirms the thesis on insufficient accessibility of private capital. The success of innovation is conditional upon creating an appropriate model of financing innovation and the emergence of a specific arrangement between individual entities (state administration, economic regions, enterprises, international connections). It is necessary to introduce changes in legislation and institutions in order to give entrepreneurs possibility to use specialised financial support instruments and enable public/private co-operation. These linkages are to be mostly informal, network, not hierarchic, and arise from co-operation rather than competition.

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<sup>1</sup> See: Nauka i technika w 2006 roku, GUS, Warszawa, 2007, Tab. 2.20-2.21.