



**Microeconomics**

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**THEORETICAL AND METHODOLOGICAL  
APPROACHES TO THE FORMATION  
AND USAGE OF INTELLECTUAL POTENTIAL  
OF ENTERPRISES**

**Abstract**

The main methods of intellectual capital evaluation and investor risk are analyzed, their interdependence in the process of investing is considered. Also the possibility of using and practical value of the obtained results for evaluation of regional investment potential is examined.

**Key words:**

Economic complex, intellectual capital, risk, investments, integral rating, investment potential.

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**Introduction.** The strategy of economic growth of Ukraine and its regions provides the conducting of deep structural transformations in the economic system, formation of market environment on the basis of competitive relations in all spheres of economic activity, requiring the corresponding investments and new approaches to the usage of intellectual potential.

In conditions of sharp international competition at the capital market, as a consequence of excess of demand over supply, the urgent problem is examination of economic environment of the regions, their structural subdivisions, intellectual consistency, investment attractiveness of cities of resource appointment and formation of favorable investment environment, in other words, arrangement of conditions for improvement of activity of domestic and foreign entities of entrepreneurship activity on the basis of effective use of intellectual potential [1].

Formation of national economic system, drastic changes of economic relations defined a set of new tasks, connected with the reconstruction of the economic complex. In such situation it is necessary to decentralize the public management likewise the structural adjustment of industry and economy of Ukraine on the basis of skillful regulation of investment processes, industrial and technical processes, social policy, which could provide the realization of dimensional strategy and regional policy within the state [1, 2].

Lots of native and foreign scholars such as I. Borshchuk, O. Buhrov, V. Varenia, V. Holovatiuk, I. Dvorak, A. Peresada, O. Checheliuk, A. Yaskevych studied the problem, concerning different investment risks. Methods of evaluation of investment and intellectual capital were studied by such scholars as O. B. Butnik-Siverskyi, S. O. Dovhyi, V. H. Zinov, H. Mins, Richard R. Nelson, E. Bruking, T. Byuzden, D. Shnaider, V. P. Chebotarev, V. M. Antonov, P. S. Khariv, N. A. Kolesnykova.

**Problem definition.** In accordance with the traditional approaches to the elaboration of regional and investment problematic, the evaluation of investment supply is carried out according to the characteristics of the final stage of investment – by means of the volumes of investments, involved into public production, correlated with the results, received. In such a way, the processes of regional investment are inadequately described by means of methods, which obtain features of accomplished economic events, without consideration of resource base and potential of investment. Besides it, the operation of methodical instrument is reduced and ruined the imagination about the real investment opportunities of the region likewise perspectives of its development on the basis of definition and usage of intellectual potential.

Special attention as for the aspect of economic development and innovation activity of the society should be paid to the unique group of objects, which

are in the form of opportunities. They are studied insufficiently in the scientific literature. Although, we cannot underestimate the influence of potentiality on the real economic processes. It should be mentioned that economy is both in real and potential forms.

The possibilities of development are connected with the notions of external effects. Only external effects are the consequence of the mentioned possibilities realization, in other words potentialities are the reasons of their emergence and *visa versa*.

Besides the fact of existence of possibilities of development we are interested in how their realization influences on the functioning system: influence of the possibilities of development are of dual character – their usage improves the system parameters as well as nonuse leads to the significant losses of the assumed positions.

We should pay attention to one more significant peculiarity. Possibilities are only elements of economy, which exist in potential form, but not a real economy, which is able to obtain maximum possible result under certain conditions of production, distribution and redistribution. Real economy is able to reach its potential level and at the same time it is limited by the level of maximum possible results. Unlike it, economy in potential is a world of different opportunities, which are optionally realized. Economy in potential form is open-ended, inasmuch as it includes everything in the form of ideas (benefits), which can influence on the economic life. Its possibilities can be developed and undeveloped. The developed possibilities are the formulated ideas, logically presented as theories, systems, emerged as a consequence of problems studying and their solution. Undeveloped possibilities are ideas, required formalization and rethinking.

Besides it, possibilities can belong to the potential economy for a long time, even in developed condition. It is proved by the experience of the world economy historical development. For example, in the early Middle Ages, the natural economy was established, as a consequence of active realization of Aristotle ideas, whereas the possibilities of banking system development, which were established as far back as the ancient Rome, were not used and established only in the period of late Middle Ages. It concerns also the problem of physical economy, studied by Leibnitz, Karnot, Liszt, LaRouche [4–6], and other possibilities, the realization of which facilitate the development of financial and economic life of humanity. The problem of economy, which exists in potential form of developed and undeveloped possibilities, requires further studying. But the authors continue to examine the possibilities of development and possibilities of decline.

Investigating the comprehensive benefits we should particularly consider the potentially existent comprehensive benefits – possibilities of development, inasmuch as they are the consequences of economic entities functioning, creation of mechanism of active realization of the mentioned possibilities opens a pros-

pect of level increase of positive effectiveness and the speed-up of the dynamics of development of financial and economic system.

The possibilities of development are the potentially existent comprehensive benefits, which are the consequences of the factors of financial and economic system and their active realization enables to obtain more and better new comprehensive benefits.

It is the time for economic entities to consider the possibilities of development in their activity, inasmuch as indifferent attitude to the problem of realization finally will promote the processes of decline, destruction and break-down, which occur now at the micro- and macro-levels.

**Results.** On our opinion, it is necessary to use new methodological approach. It is offered to use the resource approach in its basis, which from the one hand provides the entirety of description of the region as an object of investigation, from the other hand, eliminates the mentioned above inconsistency between the subject and methods of investigation of regional and investment problematic.

In the process of economic theory investigation, we have defined the stages of formation of system of scientific knowledge, referring to intellectual and investment potential, which is described by the following features.

I stage – the availability of separate features and factors without using the notion «investment potential», «innovation potential» or «intellectual potential» in the theories of elements description;

II stage – introduction of such notions as «investment», «innovation» and «intellectual» potentials into the science, appearance of theories and conceptions where these notions are used;

III stage – extension of the content of the notion «investment potential», «innovation potential» and «intellectual potential», as the consequence of their actualization by means of the growth of role of investment-innovation processes in the economic development.

The mentioned potentials are characterized by complexity and are considered at macro-, meso- micro-levels.

At the macro-level, the investment potential includes indicators of political, economic and social environment for the investments. The means of macroeconomic character are realized according to government measures by increase of investment attractiveness in innovations.

Approaches concerning analysis of investment potential at meso-level are similar to those at the macro-level. A specific feature is that in all regions the same legislative field functions, and the direct relationships between investors and regional authorities play an important role at the regional level. At the micro-level, investment potential approves itself by means of bilateral relations between

investor and specific government agencies, economic entities-suppliers, banks, as well as trade unions and work collectives of the host party. At that level, so called concretization of the generalized evaluation of investment potential at the time of real economic, legal, cultural relations of the foreign firm (with the new surroundings for it) occurs. Micro-economic instruments are used by foreign investors in order to adapt to the conditions of the current environment.

Coupled with statistic and expert evaluations, some methodologies from the one hand provide analysis of potential – investment and intellectual, in other words, business scales, ready for the region, from the other hand – the level of investment risk.

Among others methodologies, we should mention the methodology, offered by the rating agency «Expert RA», according to which, two characteristics are considered to be the main components of investment attractiveness of the region: investment and intellectual potential (objective possibilities of the country and the region) and investment risk (conditions of investors activity) [8].

To calculate the integral rating of each region we use the combination of potential and risk components. In the formula risk-potential the following gradations are specified:

- potential: high (digital notation 1), middle (2) and low (3);
- risk: low (letter denotation A), middle (B), high (C) and very high (D).

Correspondingly, the rating of each region is denoted by numeric-alphabetic combination, which point out the region in the mentioned above coordinates.

Interrelations between investments risk and potential is specified by the place of each region in the Cartesian plane, along the axes axis of coordinates, the total investments are pointed out, which fall on 1% of regional potential, along the axis of abscissas – the index of investment risk.

Generally, there is no one adopted methodology of potential evaluation. On the basis of analysis of the current methodologies, we can define some approaches to the potential estimation [2].

The first is based on the analysis of the limited number of indicators: availability of legislative conditions for investment, as well as the level of political stability, and some macro-economic indicators.

The second – is expended, factorial. It is based on the evaluation of the complex of factors, which influence on the investment potential. Its peculiarity is that up to now, the final check-list of those factors is not formed. At that, there is a range of factors, which are available in all authors' classifications.

The composite index of the potential evaluation can not be the unique criterion of profitableness of one or the other economic system for investment. It is

supplemented by the information concerning the development of the other factors, which influence on the potential dynamics. But while adopting a decision, referring to the object of investment, the investor is oriented at his own choice of factors.

Therefore, we offer to apply the differential approach of the potential evaluation from the perspective of the different types of investors, having different targets and considering the desperate set of factors while evaluation of the potential of investment object.

The advantages of the factorial method are: consideration of interaction of many factors, hierarchical pattern and differential approach concerning analysis of the different levels of national economic system, using of statistic data, neutralizing the subjectivity of expert evaluations.

The third approach is factorial-risk. It helps to evaluate the attractiveness of the territory for investment by means of two components of evaluation: potential and risk.

The fourth approach is risk. The adherents of this approach use only the evaluation of investment risks. Investment risk characterizes the probability of full or partial full of results of investment projects, loss of investments and income in the certain environment, shows why the given project should (or should not ) be invested.

Investment risk is defined as a possibility of depreciation of capital investments, in consequence of the governmental authorities' activities or as a stipulated probability of the fact that the real incomes from investment will be lower than it was expected.

The degree of the risk depends on the political, social and economic, ecological and criminal situation, which provides the distribution of the total uncommercial risk for economic, financial, political, legislative, social, criminogenic and ecological. Each of them is specified by the certain group of indicators.

Inasmuch as risks are too complicated economic category, their evaluation should be conducted in complex. There are some methods of risks' evaluation and measurement [3]:

- analogy method includes studying of the experience of investment, evaluation of the results of realized projects and their extrapolation in prospect;
- method of modeling is based on the theory of games. Hypothetical investment project (model) is «lost» in order to define the reaction of the environment and all possible consequences;
- demonstration method allows to define the public opinion concerning investment project and find out the number of potential participants;

- methods of mathematical statistics allow to find out the event probability. Inasmuch as the risk is the companion of the any variant of investment, the calculations are conducted in order to minimize the probable losses, in other words the probability of the level of losses is defined. Methods of mathematical statistics are the mathematical support of the analogy method.

In such a way, on the basis of the conducted evaluation, we look for and organize work, concerning additional profit-earning and reduction of the level of the probable losses in the process of realization of the financial and economic relations. It means that investor, which will invest into the certain decisions should have information about the possible windfall losses, in other words evaluate the potential and risk [3]. The control object in such case is risk of departure from planned results. The risk is defined by such ratio [3]:

$$R = f(P, I), \quad (1)$$

where  $R$  – risk event;  $P$  – probability of its appearance;  $I$  – importance of consequences in case of risk event.

We can say that in the process of investment the level of risk shows the imagination of investor about the potential of the object of capital investment. It means that the bigger potential the investor sees, the bigger level of risk he is ready for, taking into consideration some other factors. Potential of the object of capital investment is the intellectual potential, which can be converted into the profit or in other words capitalized. The notion «intellectual capital» is usually defined as «ability of system (country, region, enterprise, organization etc) determination of unique decisions for the considerable results reaching in the sphere of science, technology and spiritual sphere» [4].

The essence of intellectual capital as an economic category can be defined as the system of interrelations of different economic entities towards rational, stable its reproduction on the basis of progressive development of science for the purpose of specific goods and services production, advance in living standards, solving of the problem of inequality of world and regional development on the basis of personify economic interests of the entities [6].

Intellectual potential, which developed on the basis of previous form of capital, absorbs their basic properties and at the same time has its own content, which defines the specificity of its functions:

- availability and progressive development of intellectual property;
- determination of creative mind-set of workers, employers, scientists, managerial personnel, which form and realize the basic models of reproduction of each specific economic system;

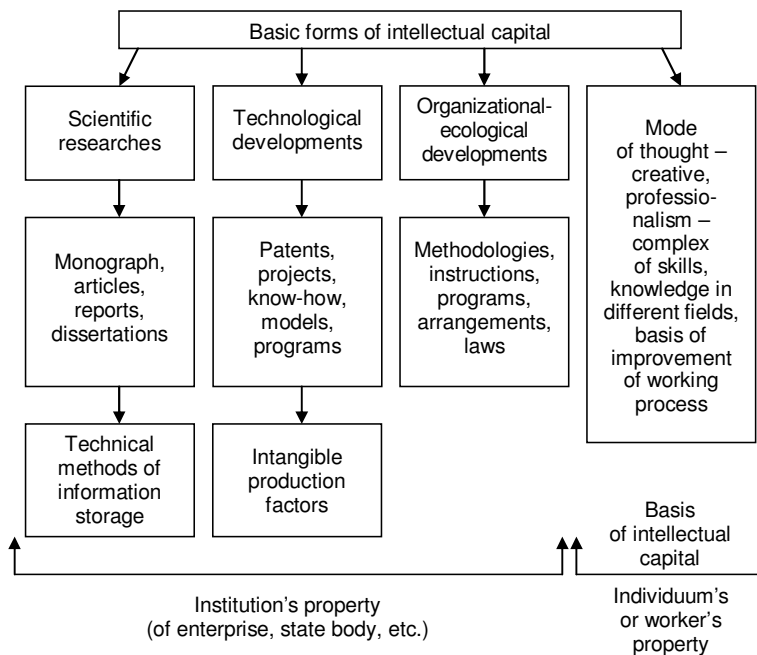
- preferential formation of the capital of intellectual center which gradually embrace the all factors of production, distribution, exchange and consumption.

The up-to-date forms of intellectual capital materialization are material factors of production, labor such as – patents, licenses, know-how, models, programs, etc (Figure 1).

Intellectual capital realizes the completed process of motion, forms, supplements itself as system. Considerable part of the intellectual capital cycle of motion is connected with the usage of capital assets but the effective output does not come at once. Only at the stages of capital materialization there are opportunities of returns of investment and profit earning.

Figure 1

### Basic forms of intellectual potential





Investments into the intellectual capital have a range of possibilities, which differ from the other investment types:

1. Return on investments into the intellectual capital depends on the duration of employable period of its carrier.
2. Intellectual capital can be accumulated and multiplied.
3. While intellectual capital accumulation, its profitableness is increased up to the certain level, determined by the maximum limit of the active labor activity and after that it is sharply reduced.
4. Not all the investments into the human being can be called the investments into the intellectual capital, only those, which are socially expedient and economically effective.
5. The character and types of investment into the human being are stipulated by the historical, national, cultural peculiarities and traditions.
6. Concerning investments into the other forms of capital, investments into the intellectual capital are the best from the point of view of individuum and society at all.

Intellectual capital begins to work for the benefit of the region only in case of its development, and the development of intellectual capital is possible, having the investments in it.

In such conditions there is a question before the investor and recipient, concerning the necessity of intellectual capital adequate evaluation for the purpose of attracting investments for the further development. At that, the cost basis of the intellectual potential is defined by the necessity of reproduction of intellectual property from the one hand, and from the other hand – the necessity of obtaining of the corresponding return while applying it in the process of reproduction.

A quite serious problem appears, while evaluation of the intellectual potential as a special form of capital. The process of depreciation of intellectual potential differs from the analogous processes in the material factors. Besides it, in most cases, the intellectual capital is not completely depreciated.

K. E. Sveiby considered the methods of intellectual capital evaluation. He defined 25 methods, which are grouped into 4 categories [7]:

- Direct Intellectual Capital methods (DIC). This category includes all methods, which are based on the identification and evaluation of the certain assets or the certain components of the intellectual capital in the money equivalent. After the evaluation of the certain components of the intellectual capital, the integral evaluation of the intellectual capi-

tal is held. At that, the evaluation of the separate components is not necessary, more complicated formulas can be applied.

- Market Capitalization Methods (MCM). The difference between the company market capitalization and own capital of its stockholders is calculated. The received value is considered as the value of its intellectual capital or non-material assets.
- Return on Assets Methods (ROA). Interrelation of the company's mean income to the tax calculation for the certain period and tangible assets of the company – ROA of the company is compared with the analogical period for the branch at all. To calculate the average additional income, concerning intellectual capital, the received difference is multiplied by tangible assets of the company. Hereafter, by means of direct capitalization or discounting of the received cash flow we can calculate the value of the company's intellectual capital.
- Scorecard Methods (SC). The different components of non-material assets or intellectual potential are identified, indicators and indexes in terms of scoring or headings. Application of SC-methods does not provide the obtaining of money value of intellectual potential. Those methods are similar to the methods of diagnostic information system.

All well-known methods of intellectual evaluation valuation are easily distributed according to the four above mentioned categories. At that, it should be mentioned that the relative proximity of DIC and SC-methods, likewise MCM and ROA methods. In first two cases the movement is performed from the identification of the separate components of intellectual potential, in other cases – from integral effect.

ROA and MCM methods, providing the monetary values, which are useful, while amalgamation of companies in conditions of purchase and sale of business. They can be used to compare companies within the framework of one branch. Also they are very practical for illustration of financial intangible value. And at last, they are based on the robust rules of accounting; they are easily interpreted by the professional accountants. The basic disadvantage is that their application is impossible for non-commercial organizations, internal units, organizations of social sector, and at macro- and meso-levels. It is especially relevant for MCM-methods, which can be applied only in case of public companies.

The advantages of diagnostic information system and SC-methods are the facts, that they can be applied at any level of economic entity. They work close to the event, therefore the received notification can be more exact than financial measuring. They have more practical value for the noncommercial organizations, internal units, organizations of social sector as well as at macro- and meso-levels. Those methods are quite new and managers consider them ambiguously.

Complex approaches cause the bigger data files and it is difficult to analyze and compare them.

**Conclusions.** Making a conclusion, we can say that in the process of attracting investments, the evaluation of intellectual potential is critical, inasmuch as the experienced investor will compare the neighboring risks with the current potential of the investment object. Intellectual capital is a special form of potential, simultaneously realizing the possibilities and risks, reflecting the investors' hopes.

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