# СУЧАСНІ ПРОБЛЕМИ РЕГІОНАЛЬНОГО РОЗВИТКУ

# MODERN PROBLEMS OF REGIONAL DEVELOPMENT

## METHODOLOGY OF THE REGION'S INVESTMENT-AND-INNOVATION RANKING AND IMAGE ASSESSMENT

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*Філиппова С.В., Смоквіна Г.А. Методика оцінювання інвестиційно-інноваційного рейтингу та іміджу регіону.*

Досліджується інвестиційно-інноваційний імідж регіону. Особлива увага приділена оцінці рейтингу формування інвестиційно-інноваційного іміджу як важливого фактора економічного росту. Проведено аналіз сучасних методів оцінки інвестиційної привабливості регіону, що дозволив розробити аналітичні інструменти придатні для визначення реальної можливості забезпечення пріоритетів подальшого інвестиційно-інноваційного розвитку.

*Ключові слова:* імідж, рейтинг, інвестиції, інновації, привабливість, аналіз, ефективність, підприємство, оцінка, податки

*Филиппова С.В., Смоквина А.А. Методика оценки инвестиционно-инновационного рейтинга и имиджа региона.*

Исследуется инвестиционно-инновационный имидж региона. Проведен анализ современных методов оценки инвестиционной привлекательности региона, позволивший разработать аналитические инструменты пригодные для определения реальной возможности обеспечения приоритетов дальнейшего инвестиционно-инновационного развития.

*Ключевые слова:* имидж, рейтинг, инвестиции, инновации, привлекательность, анализ, эффективность, предприятие, оценка, налоги

*Filyppova S.V., Smokvina H.A. Methodology of the region's investment-and-innovation ranking and image assessment.*

Considered and investigated innovative investment image of the region. Special attention is given to the evaluation rating for investment and innovation image as an important factor of economic growth. The analysis of modern methods of evaluation of investment attractiveness of the region, allowed to develop analytical tools suitable for the determination of the real possibility of providing priority to further investment and innovation development.

*Keywords:* image, rating, investment, innovation, attractiveness, analysis, efficiency, region, enterprise, evaluation, taxes

Assessment of a region's investment and innovation ranking and image under market transformation conditions, is specific with certain features and essential significance, while combining such development components as innovations and investments. This rating is a logical continuation of the investment climate rating, investment and innovation capacity, investment attractiveness, to which topics numerous scientists are paying essential attention in modern research.

One of the biggest factors in the economic development of every country in modern conditions is referred to as investment resources. At the international investment market, the positive image of the country embodies one of the most important competitive advantage. Therefore the investment climate and the degree of the national economy development intensity immediately depends on the level of governmental decision-making and the ability to clearly anticipate such decisions' possible results.

The investments in conjunction with innovation should produce a positive effect of increasing the number and the amount of workplaces, reducing cost per unit and improving product quality, increasing the profitability, working conditions being improved concurrently to the productivity increase. For Ukraine it is of high relevance, as the full integration of national economies into the global economic system is possible only under conditions of accelerated development, based on the extensive use of innovation.

**Analysis of the achievements and publications on the researched topic**

The important issues on assessing investment and innovative image being dedicated to the problem by the well-known foreign and domestic scientists and economists as I. Balabanov, Y. Bazhal, O. Baranowski, M. Bendikov, B. Burkinskyy, A. Hal'chyns'kyi, V. Geets, V. Zaharchenko, I.

Ivashchuk, I. Prodius, V. Savchuk, N. Salomatin, O. Soskin, D. Stechenko, S. Filippova, O. Chemeris, A. Chemeris, Y. Sharov, A. Sheremet, K. Shpylyovoy, V. Yasinskiy etc.

**Selected actual aspects of the problem**

However, it should be noted that a number of questions related to the formation and development of investment and innovative image still lasts not completely resolved. First of all, that concerns such aspect as more clear definition and practical evaluation of investment attractiveness and investment climate, reserves of these mechanisms' efficiency increase and effectiveness as an integrated system, further reforming the economic mechanism at national and regional levels, and so on.

The *main objective* of the study consists in forming more advanced approaches and methods to evaluate the investment attractiveness and investment and innovative image with the development of more effective tools for enhancing the investment and innovation processes to improve them in the context of further market transformation.

**The main research**

The investment attractiveness concept is the closest to this one of investment and innovation image of regions. Its assessment opens opportunities for regional diversification of domestic and foreign investors, increases the guaranteed investment performance.

The investment attractiveness indicator represents a measure of the market relations maturity. In the investment climate rankings, regularly held by various international organizations, the Ukraine tends to go beyond the first hundred countries. Unfortunately, at many domestic enterprises the capital wear and tear came close to the limit, concurrently to the process of aging of fixed assets, and the level of investment activity practically never covers the fixed assets' disposals and depreciation [2].

To emphasize is that the economic image embodies a complex of measures aimed primarily at improving the economy, improving the state apparatus functioning, enabling the foreign trade. These problems' solving is necessary to achieve high and stable economic growth. At the same time, the governmental authority plays a crucial role in domestic and foreign trade policy of the country and correspondingly impacts on the economy's investment attractiveness being unable to control all the processes in the field and to solve regional problems.

The foreign investments pre-assume that for their limits' enlarging much attention should be paid to corporate governance, honesty and incorruptibility questions, at the same time that essential is to stabilize the economic and political situation in the country. A country, which has imperfect laws, will never represent interest for foreign investors. The positive image of the country is one of the significant competitive advantages in the international investment market. The economy, where domestic investors are not practically investing in the production development will never succeed in being attractive to foreign investors [3].

Unfortunately, the domestic investors do prefer the finance investments that have a short period, and the foreign investors are still very careful with investing in our economy due to the political, legal and economic instability in the country. Our economy suffers significant losses not from a lack of credits, but from the nature of their location.

To evaluate the investment attractiveness of the region, it is necessary to determine the investment potential of the territory, which can be estimated using aggregate macroeconomic indicators: rates of return, inflation, economic growth etc. It should be noted that the term "investment attractiveness" and "region" are interrelated mainly in the economic basis. If the internal conditions of economic development in the region are weak, it is likely that the region's investment attractiveness (especially for foreign investors) will be low, but that does not mean that we should ignore the influence of other factors.

The investment policy should be focused on solving specific problems such as increasing the technological and informational level in all areas of business to achieve products and services competitiveness of the regional businesses, providing economic and social development; implementation of regional development strategies, promoting a high-efficient structure of economy.

There arises a question about what field is much convenient to invest into. Some guide can evolve from the areas ratings, where investment directions questions are closely considered. Essential is to determine the status of each from those branches in order to identify all risk factors associated with crediting a particular sector. One of the objectives of risk quantification for specific sectors is to identify the possibility of large amounts of financing into branches of high development level.

On the other hand, the innovation policy should become the most important part of activities aimed at innovation and restructuring. There exist main directions of innovative development, which can be considered as priorities: strengthening the role of science in society, integration into the global information space, improving tax policies to encourage innovation and the development of innovation infrastructure [6].

Differentiated range of local, national and regulatory taxes to the extent directed to the regional budgets can be provided by investment and innovation activities' activation at the regional level. Creating a favorable tax regime for investors of all types of ownership, investing into regional priorities projects, will improve the investment climate in the region, encourage domestic and foreign investors.

The priorities of investment and innovation activity deserving government support include mass housing construction, production of clean food products, green technology, development and modernization of the transport sector. These priorities

should form the basis of national, regional and sectoral innovation and investment programs obtaining the priority support in the form of direct investment, tax benefits.

The analysis showed that the main areas of region's investment and innovation image forming is the liberalization of business and investment, the development of goods' and services' markets, business' deregulation, creating of a stable legal framework for regulating investment activities, improved corporate governance, reform of the administrative system and improvement of the financial system, conducting anti-corruption measures, to minimize political risk etc.

Therefore, assessment of investment and innovative image of the region should be performed comprehensively. The proposed methodology includes 4 stages:

At 1st stage suggested is to determine the certain regions' level of investment attractiveness. It was determined, that by level of investments the regions can be grouped in 4 classes where the key factors including profitability of investments: priority, sufficiently high, medium, low.

An 2nd stage the regions rating should be performed using the metrics, crucial in making decisions about the location and amounts of investments. The input data necessary for the region integral rating calculation includes information about:

— Economic development of region: the real sector (incomes from local budgets per one inhabitant, UAH; amount of investments in housing construction per one person, UAH., the proportion of unprofitable enterprises,%); foreign economic activity (imports per inhabitant, USD, direct foreign investments per capita, USD.).
— Market infrastructures business services (availability and number of insurance agencies, banks and leasing companies); transport (roadways network density, the passenger traffic volume); telecommunications.
— Financial infrastructure (financial institutions).
— Condition of human resources (number of registered unemployment; mortality rate per 1,000 people).
— Activities of local authorities in the field of private enterprise, small and medium enterprises [5].

At the 3rd stage convenient is to use methodology for assessing favorable external environment of enterprises which takes into account their territorial and sectoral affiliation. Also, depending on their size the enterprises are distributed in three groups: first category – large companies, the second – medium-sized enterprises, and the third one – small enterprises. Problem of this assessment is, firstly, to offer regional and municipal authorities a mechanism that helps to specifically control the state of the business climate in the region and, secondly, to give businesses a tool for analyzing their relationship with regional area control. That will help in taking management decisions on the future development of investment activity of enterprises and the regional economy.

One of the main tasks of regional investment and innovation development is to maintain the investment attractiveness of its production complexes and their units. Under circumstances where financial statements of the companies' sub-entities do not adequately characterize their activity, the role of public reliable information about the innovation-active businesses is increasing. Therefore appropriate is the regular open publication of ratings about investment attractiveness, which represents a reliable source of information for potential investors.

The practice of companies' rating is quite common. Thus, the "Financial Times" newspaper annually publishes a five hundred top list ("FT-500"), as well as the Ukrainian magazine "Expert" – a two hundred top list ("Expert-200"), including the world's largest companies in terms of market capitalization, or the value received by multiplying the number of shares issued at their market price. The latter is determined in the case of circulation within securities market. But for most Ukrainian companies, acting in issuers, to assess the capitalization rate in such a way is quite impossible, as their shares do not have a quoted market rate. Therefore, within the regional rankings expedient is to calculate the range never including that parameter.

Therefore, on the 4th stage there should be effected the business rating.

To determine the final real ratings, it is appropriate to apply the method proposed by Professor A.D. Sheremet [4].

The algorithm for determining companies' comparative ratings includes the following steps:

1) Original data are given in a matrix where the lines contain the parameters' numbers ($i = 1,2,\ldots,n$), and the columns represent the enterprises' order numbers ($j = 1,2,\ldots,t$).

2) For each parameter calculated is the maximum value that is stored into a column of standard reference company $(m+1)$.

3) The output parameters of $a_{ij}$ matrix are standardized as the ratio to the corresponding cipher of standard reference company using formula 1:

$$x_{ij} = \frac{a_{ij}}{\max a_{ij}}, \qquad (1)$$

where $x_{ij}$ – standardized parameters of the *j*-th company.

4) Significance ratings of each company are determined using formula 2:

$$R_j = \sqrt{\left(1 - x_{1j}\right)^2 + \left(1 - x_{2j}\right)^2 + \cdots + \left(1 - x_{nj}\right)^2}, \qquad (2)$$

where $R_j$ – rating estimation for *j*-th company; $x_{1j},\ldots,x_{nj}$ – standardized parameters of the *j*-th company.

The highest rating will be found for a company with minimum $R_j$ value. This method has no limitations in respect of the compared parameters and businesses number.

In the practical application of rating assessment techniques there was found that the overall comprehensive characteristics of enterprise's investment and innovation activity need to apply the rate of the tax burden. This is explained by the fact that under equal importance ranking circumstances the companies in the same area may bear different tax burden, cleverly using all kinds of taxing imperfections or tax benefits while even never paying the respective taxes.

Both at the state and regional level an united definition of the tax burden is still lacking and the official statistical records for this indicator no exists. There is no generally accepted methodology as to its definition. In developed countries (and these recent years in Ukraine also) there is applied the methodology of determining the taxes' share in the GDP amount. This methodology is quite simple, understandable and can be widely used in economic calculations and comparisons. However, it does not allow investigating the tax burden on the micro level when comparing companies belonging to different industries and sectors.

Here, some interest represents the method proposing to use the "relative tax burden" term which means a share of taxes and insurance premiums in the newly created value. In this case, the tax burden is not distorted by factors such as the production of materials, number of employees, the amount of taxes included to the price of products.

At the level of enterprises the newly created value "НВ" can be calculated using formula 3:

$$НВ = (V - MB) + (ВД - BP) \qquad (3)$$

where V – profit from the products and services sale, UAH; MB – material costs UAH; ВД – non-operating income, UAH; BP – non-operating costs, UAH. (without taking into account tax payments).

The relative tax burden is determined using formula 4:

$$Пн = \frac{ПП + ВСФ}{НВ} \times 100\% , \qquad (4)$$

where $ПП$ - tax payments, UAH; $ВСФ$ - contributions to social funds, UAH.

An analysis of the global economic practices shows that the main source of tax value is the created value. Therefore, this relative tax burden calculating method is evidently more appropriate for the purposes of companies' ratings.

Further to these aims there were several systems of companies' ratings indicators for. The last resulting parameters set is perceived the most complete and reasonable one being represented as: sales revenue, average annual growth in sales over the past 3 years; profitability of assets, profitability of economic activity (ratio of profit before tax to total revenue from sales), business performance, the actual average wage.

The introduction of businesses' rating assessments in specific regions serves to revitalize businesses, encouraging them to participate in investment and innovation competitions and tenders opening additional sources of investment to successfully operating businesses [1].

Accordingly, the use of evaluation investment image of the region in terms of market transformation must target solving specific problems. The basic principal characteristics of the proposed methodology for assessing the investment and innovative image of the region are given in Table 1.

Table 1. Basic principal characteristics of evaluating the investment and innovative image of the region in terms of market transformation

| Characteristic | Content |
|---|---|
| 1. The purpose of evaluation results of innovation and investment image of the region | — Improving technological and information level in all spheres of economic activity in order to achieve products' and services' competitiveness of the regional innovation-active businesses; <br> — Social and economic development of the region; <br> — Implementation of regional development strategy, promoting positive transformations and the formation of a highly efficient structure of it's economy. |
| 2. Priority analysis objects | — Increased role of science in society; <br> — Integration into the global information space; <br> — Revision of tax policy in the innovative plane; <br> — Development of innovation infrastructure. |
| 2.1 Evaluation of enterprises environment investoral attractiveness | – The purpose of implementation : improving the mechanism of region business climate control, creation analytical tools as to business relationships with regional sphere of controlling joint investment and innovation development; <br> – The approach to environmental assessment criteria formation relies upon sectoral principle. Sectors and criteria: 1) tax (the tax burden regarding a critical assessment of benefits availability to the company) 2) socio-cultural (social protection of workers, degree of social tensions, cultural and educational levels and opportunities for their improvement), 3) finances and credit (possibility of credit obtaining, interests rate), 4) governmental and legislative (the presence of laws and regulations influencing the development of enterprises' production) 5) Investment (presence of regulations that encourage investment and protect investors' rights), 6) Information (degree of communication techniques and tools development), 7) resources (availability of necessary resources for production (as cost percentage): labor, energy, raw material)); <br> – gradation of assessment - three digit, direction - favorable external environment and the impact |

| | of the enterprise onto it. |
|---|---|
| 2.2 Determination of business activity rating and innovation-active and investment attractive of enterprises | The companies distribution in the region into three groups according to size (large, medium, small); <br> - Selection criteria - volume of sales, the profitability and asset, efficiency of labor; <br> - Method of assessing rating - distance from the standard method, supplemented by estimates of the tax burden as a share of taxes and insurance premiums in the newly created value. |
| 2.3 Establishing reserves for the development of innovation and investment processes | - Objective is to substantiate the innovation and investment policy for the next period; <br> - Calculation method applied the index factor analysis of innovation and investment development. |

Therefore, the evaluation of region's investment and innovative image in terms of market transformation is a logical component of sustainable investment and innovation policy development in the region, and the technique suggested for its implementation is quite convenient and understandable.

The industrial production development and infrastructure in the region embodies the main goal in the strategic guidelines formation policy for innovations creation and implementation, and maintaining the socio-economic and legal guarantees for continuous reproduction and effective use of scientific and economic potential of the region. The proposed assessment methodology relies namely upon these issues.

**Conclusions**

Researching the region's investment policy condition and trends allowed estimating the situation in the regional economy in this aspect.

To increase the investment attractiveness of the economy essential is to simplify the tax system, the registration and licensing procedures, eliminating most benefits and "distortions", creating a normal stock market infrastructure to facilitate the foreigners investing in Ukrainian businesses following conventional schemes for their purchase of shares. The most important key governmental objective at this stage is to provide a favorable environment for attracting and implementing into the national economics the investment resources through improving the legal framework; to establish real efficient mechanisms for encouraging investors, removing administrative barriers in their business by improving investment image.

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