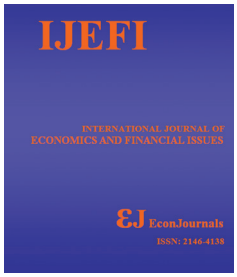

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Economics and Society in the Era of Technological Changes and Globalization

The Formation of Indicator Framework for Effective Assessment of Investment Attractiveness of the Region

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ABSTRACT

Despite the in-depth study of many theoretical aspects of investment activities and assessment of investment attractiveness, today the impact of the investment policy on the development of an effective strategy and the formation of favorable investment climate is not properly reflected in the contemporary research. At the same time unstable situation in socio-economic development of Russia requires new approaches to the problem of investment activity. In this regard, the article provides indicator framework to assess properly the investment attractiveness of the region's economy relating to foreign direct investment in the current context. At that, the proposed indicator framework is based on a number of principles, which allow achieving the objective assessment of investment attractiveness of regions and feasibility of the concerned indicators.

Keywords: Foreign Direct Investment, Investment Activity, Investment Climate, Assessment of Investment Attractiveness, Region's Economy
JEL Classifications: F21, F51, H77, O24

1. INTRODUCTION

To date it is generally accepted that innovation activity is a key driver of the quality economic development (Zhdanova, 2012). The purposeful formation in Russia of an effective innovation system is the main condition of transferring Russian economy to innovative development based on the maximum utilization and use of existing scientific and technical potential (Sukhovey and Golova, 2007). Pooling intellectual, human, production, financial, and administrative resources as well as their focus on addressing the key problems of innovation development is a background to ensure the modernization breakthrough (Ustyuzhanina et al., 2013).

At that, the achievement of these goals would not be possible without the involvement of foreign direct investment into the economy of Russian regions. Therefore, attracting investment resources nation-wide and regionally is one of the priority objectives of the state economic policy (Vershinina et al., 2014). In contemporary conditions, taking into account major changes in the geopolitical situation on the European continent and new economic contradictions between Western economies and the Russian National Economy (Maksimova, 2014), the issue of attracting foreign direct investment into the regional economy arises most acutely and is the most urgent. Given the general globalization of the world economy and despite the special cases of the interference of a political events to these processes in recent times, it would be unwise to ignore the issue of indicator framework formation for the effective assessment of investment attractiveness of the region, when studying the Russian specifics of attracting investment resources and ensuring favorable investment climate.

2. METHODS

Statistical methods allow identifying not only the most important factors influencing the nature of investment process development

in Russia and its regions, but also to quantify their relationship. This will allow engaging into real economic process those reserves of the investment business, which can largely contribute to more effective innovative development of Russia.

Currently, there is fairly large number of methods to assess investment attractiveness of regional economy and the indicators used for this purpose however these methods must be comprehensively supplemented. At that, one of the key points in assessment of investment attractiveness of the region is also the formation of indicator framework based on essential principles.

Agreeing with the Olshanskaya's opinion, it must be noted that the basis to form an indicator framework for assessing the investment attractiveness of the region should be created considering several principles.

- Consistency principle, whose implementation involves consideration of investment attractiveness as the combination of attributes inherent in the regional economy as a socio-economic system
- Integrity principle, whose implementation is inherent in selection of different factors in terms of their nature (economic, social, and legal) and accounting for the diversity of investment objects (fixed capital, human capital, and technology)
- Relevancy principle, intending ensuring completeness of assessment of investment attractiveness, the selection of investment environment indicators, significant for any investor
- Sufficiency principle, because, according to Roizman, a number of factors that determine the investment attractiveness of the region are theoretically infinite (Roizman, 2006). Practical implementation of this principle should ensure the selection of only necessary indicators to avoid their duplication and, on the other hand, to reduce the amount of analytical work
- The ability of the state statistical bodies to quantify the attractiveness. This is to ensure uniformity in the comparative assessment of the objective component of investment attractiveness of country's different regions. This is associated with the assumption that contemporary statistical software packages are not yet sufficient and need to be complemented by new indicators (Olshanskaya, 2009).

However, this list must be supplemented by additional two key principles:

- Justification principle, involving the necessity of inclusion of a certain indicator into the total list of the analyzed indicators. Such a justification is not always observed in contemporary scientific studies
- Flexibility principle, which on the practical level allows providing an introduction into the assessment of new factors and/or exclusion of certain factors or their groups, since their excessive "rigidity" restricts the implementation of the concerned approaches for assessment of investment attractiveness. A researcher, adopting a particular method, often is missing such an opportunity. Besides, the developers limit user to a standard calculation procedures. To solve the problem on assessment of investment attractiveness, the researcher should possess analytical tools, more flexible and adaptable to the requirements of a specific customer or investor. It is often important not only to determine the rating of the region in terms of development of the investment sector, but also to compare the specifications of intra-entity processes of the economic system.

3. RESULTS

3.1. Structure of the Indicators

The application of above principles allows developing indicator framework for assessing the investment attractiveness of the region, which would enhance the assessment precision and effectiveness.

As an integrated indicator, the investment attractiveness of the region's economy to foreign direct investment is the dialectical combination of investment potential and investment risk; each of them is a special indicator in relation to the investment attractiveness. In turn, each of these indicators (integrated indicators) includes a number of indices; at that indicators of investment potential are combined into functional groups, called consequently the market capacity, financial, labor and infrastructural potential. Investment risk can be represented by two functional groups of indicators: The first group includes socio-economic, ecological and criminal risks, which hereafter will be called the level of social security; and the second group concerns the degree of investment activity of foreign investors making direct investment in regional economic facilities, which we call systematic risk level.

Each of the above listed potentials and levels are characterized by several individual indicators, whose total number can be theoretically quite large. Based on the research of some foreign scholars, as well as publications of Russian authors, the following key indicators can be identified when selecting the region for foreign direct investment.

3.2. Market Capacity Potential

The market capacity potential as an integral indicator includes the following individual factors.

Gross regional product is a resumptive indicator of economic activity in the region, characterizing the production of goods and services for end use. Gross regional product is calculated in current basic prices (nominal volume of gross regional product) as well as in comparable prices (real volume of gross regional product). Gross regional product is the gross value added goods and services created by residents of the region. It is defined as the difference between output and intermediate consumption. The gross regional product in its economic content is very similar to the gross domestic product, however, it should be noted that between gross domestic product (at federal level) and gross regional product (at regional level) there is a significant difference. The sum of gross regional products in Russia is not equivalent to gross domestic product, since it does not include the value added on non-market collective services (e.g., defense, public administration), provided by public institutions to society. The

necessity to add this indicator to the overall indicator framework of investment attractiveness of the region's economy is due to the fact that it comprehensively characterizes the capacity of the regional market, i.e., the opportunity to sell goods and services, produced at the enterprise with involvement of foreign capital that is a very significant factor when making decision on foreign direct investment. It is natural that the higher volume of gross regional product will be considered as an advantage of the recipient region when making foreign direct investment (Lee and Mansfield, 1996).

The total population of the region includes persons, permanently residing in the region, as well as the persons, who are temporarily absent. The primary information source about the population is the census and the data from regional bodies of state statistics. This indicator alongside with gross regional product is also a significant characteristic of the regional market capacity, because the higher population increases objectively the number of potential consumers of goods and services produced by the enterprise with foreign capital involvement. Greater population has a positive effect on the product volume sold by the investment object. The inflow of foreign direct investment increases with the growth of incomes of the population (Grubert and Mutts, 1991).

The number of enterprises and organizations at the end of the year. This indicator illustrates the capacity of the regional market in terms of number of organizations involved in production activity that is very significant factor when making decision on foreign direct investment.

The amount of work performed within the economic activity of "construction." This indicator characterizes works performed by the organizations using their own resources within specified type of activity. This factor affects foreign investors when making decision concerning the investment of resources.

The investment volume into fixed capital is the aggregate of the expenses directed on reproduction of fixed assets. This indicator is close, though not completely corresponds to the indicator of "gross capital formation," common in international practice. In accordance with the features of existing accounting rules, the structure of investment in fixed capital does not include investment in intangible produced assets. Calculation of investment in fixed capital was carried out without the costs of acquisition of fixed assets that were in use in other organizations, as well as construction-in-progress assets. The inclusion of this indicator to the potential market capacity indicators is determined by the fact that it gives the foreign investor an idea about the general volume of funds available for investment, allocated for new construction and expansion, as well as reconstruction and modernization of objects that leads to increase in their original value; the acquisition of machinery, equipment and vehicles.

Industrial production index is relative aggregate production index on economic activities such as "mining operations," "manufacturing activity," "production and distribution of electricity, gas and water." This indicator reflects the change in production output for the above mentioned types of economic activity that is also very important for foreign investor wishing to invest resources in the regional economy.

3.3. Financial Capacity

Financial capacity is the next integral indicator, which includes four factors.

Gross regional product per capita is the gross regional product volume reduced to the total population of the region. Its inclusion is justified by the fact that it has a significant impact on per capita income and consequently purchasing power.

Average monthly nominal accrued wages of employees, which is calculated on the basis of information received from organizations by dividing the accrued wage fund of employees on their average payroll count and 12 months. The payroll paid to employees includes the amount of the remuneration in monetary and non-monetary forms for worked and non-worked time; compensation payments associated with the working pattern and conditions; premiums and increments, bonuses; lump sum payments, as well as payment of meals and lodging on a constant basis. At that, the allowances received by employees from the state social extra-budgetary funds are not included in the wage fund and average wages. The wage level significantly affects the potential costs of foreign investor when doing business. Regions with low wages attract foreign investors, because they enable reducing production costs. However, it should be borne in mind that the wage level is closely linked with per capita incomes, which characterize its effective demand and, therefore, is an important indicator for attracting foreign direct investment. Wage increase or decrease affects foreign direct investment as long as there is the effect of the relationship between capital and labor (Cushman, 1987).

Retail trade turnover is an indicator representing the proceeding of sales of goods to the population and informing the foreign investor about the purchasing power of region residents. Trade is an important sector of the economy, whose state and functioning efficiency directly influence both the standard of living of the population and the development of consumer goods production (Perepelitsa, 2013).

The expenditure on technological innovation reflects the level of innovative activity and is important for decision making about foreign investment, because innovations provide more advanced production base and affect the quality of manufactured products.

3.4. Labor Potential

The labor potential is a third indicator that is part of investment potential. It includes four factors.

The population of working age, which is a combination of all of the region's residents of a certain age, including those temporarily absent.

The share of persons with higher education, which is part of the population employed in the economy.

The number of employees involved in research and development, which refers to individuals, whose activities, undertaken on a systematic basis aim at increasing the amount of scientific knowledge and the search for new application fields of this knowledge.

The level of population's economic activity is the indicator showing the proportion of economically active population in the total population and reflecting the aggregate supply of labor in the economy at a given point in time.

The importance of this potential's indicators is that they comprehensively characterize the availability of the workforce and level of its qualification. A large proportion of skilled workers is an important factor in favor of the recipient region in the event if the object of foreign direct investment requires availability of skilled personnel and this is often the case, because foreign direct investment leads as a rule to the implementation of advanced import equipment and technology.

3.5. Infrastructural Capacity

Infrastructural capacity is another potential, which is part of the investment potential. The importance of concerned potential indicators is determined by the ability to estimate expenditures on transport and logistics costs, as well as to obtain more competitive advantages through faster delivery of goods and services to potential customers. This potential is represented by two factors.

The proportion of public-access hard-surface roads in total length of public roads. In this case, hard-surface road refers to the object of the transport infrastructure intended for movement of vehicles that includes land within the boundaries of the road easement area and design elements (roadway, pavement surfacing) located on or under the road, as well as road structures that constitute its technological part, i.e., protective road constructions, artificial road structures, production facilities, and elements of highways arrangement. The length of the road is calculated from the initial to the final populated locality by summing the lengths of individual segments forming a road network.

Auto-roads located on the territory of the Russian Federation are classified into public-access roads and non-public roads. Public-access roads include the federal-aid roads relating to the property of the Russian Federation; regional or inter-municipal roads relating to the property of the Russian Federation constituent subjects; local roads relating to the property of municipalities, including those relating to settlements, municipal districts, and urban districts. The following are federal-aid roads:

- Main-line highways connecting Moscow, the Russian Federation capital, with the capitals of neighboring countries, administrative centers of territorial entities of the Russian Federation; these highways are included to the list of international highways in accordance with international agreements of the Russian Federation;
- Roads connecting administrative centers of the Russian Federation territorial entities
- Roads which are turnouts from the federal-aid roads to major transport nodes of international significance (marine and river ports, airports and railway stations), as well as the special federal-aid facilities
- Roads which are turnouts from the administrative centers of the Russian Federation territorial entities, not connected through the public roads with Moscow, nearest sea and river ports, airports and railway stations.

Non-public roads are owned or used by legal territorial entities.

Hard-surface roads refer to those having improved surface (concrete, asphalt-concrete, crushed stone or gravel, treated by binding materials) and the transitional type of road surfaces (from crushed stone and gravel (slag), not treated with binding materials; as well as stone paved roads, roads with surfaces made of soils and local low-strength materials treated by binding materials).

The expediency of this indicator is determined by the fact that it has consistently taken the lead in the general structure of cargo transportation depending on the means of transport.

The number of registered user terminals of cellular communication. This indicator characterizes the ability of the region in terms of providing information services that is extremely important under the conditions of highly dynamic contemporary economic environment. Its inclusion to the general indicator framework is determined by the fact that it is the mobile communication that comprises the most significant part of the total scope of communication services rendered in our country.

3.6. The Level of Regional Investment Risk

The level of regional investment risk is the second component of the investment attractiveness. This factor is one of the key indicators, when making decision about foreign direct investment, since it has a significant impact not only on the possibility of obtaining profits, but also on the preservation of invested capital. Political and economic stability are the key prerequisites for reducing investment risk.

This integrated indicator consists of two levels:

- The level of social security, composed of the indicators of socio-economic, ecological and criminal risks
- The level of systematic risk, which is reflected in the degree of investment activity of foreign investors making direct investments in economic facilities of the region.

The level of social security can be described by five indicators.

The population with incomes below the subsistence minimum is determined based on data on the distribution of the population by average per capita money income and results from comparing them with subsistence minimum. This indicator characterizes the total population of the region, potentially the most inclined to various kind protests. A significant proportion of the population with incomes below the subsistence minimum and the steady tendency to its increase indicate a high probability of events negatively affecting the economic activities of entities with the possible direct involvement of foreign capital.

The number of registered crimes per 100,000 people. Registration of crimes and persons who committed them is carried out by all law enforcement bodies prosecuting within their competence. The inclusion of this indicator is explained by the fact that it characterizes the overall level of crime in this region that is an important consideration for foreign investors, who are very sensitive to their personal security and the security of their business.

The number of registered murders and attempted murders. In this case, murder refers to the intentional infliction of death to another person, while attempted murder is the intentional infliction of death to another person, not finished due to circumstances beyond the control of individual who attempted murder. This indicator shows the total number of the most resonant crimes, which have a wide public response and substantially form an image of a region in terms of ability to conduct long-term business with involvement of foreign capital.

Emissions of pollutants into atmosphere from stationary sources, i.e., pollution of atmospheric air with contaminating substances (having adverse effects on human health and the environment) from stationary emission sources. This takes into account all pollutants in the atmospheric air after passing dust- and gas-cleaning units (as a result of incomplete removal and purification) at the controlled emission sources, as well as without purification from controlled and uncontrolled emission sources. Accounting for air pollutants emissions is carried out in terms of both their aggregative state (solid, gaseous, and liquid) and individual substances (ingredients). In this case, a stationary pollution source refers to stationary units (installations, devices, and apparatuses) which in the course of its operation pollute the atmosphere, as well as other objects (for e.g., terricones, reservoirs, etc.).

The discharge of polluted wastewater into surface water bodies. In this case contaminated wastewaters are industrial and domestic (municipal) wastewaters discharged into surface water bodies without treatment (or after insufficient treatment) and containing pollutants in quantities exceeding the approved maximum permissible discharge. The polluted wastewaters do not include collector and drainage waters discharged from irrigated land after irrigation.

Both of the above indicators are also very important from the standpoint of a foreign investor intending to carry out direct investment in the region's economy, because in developed countries the environmental legislation is quite strict and its non-compliance entails significant financial and administrative sanctions. Therefore, the overall assessment of the expenses for maintenance of natural environment is an important measure in the overall indicator framework of investment attractiveness of the region's economy.

Investment activity shows the actual presence of foreign direct investors in a certain region. Thus, research works of Dunning show that if there are foreign direct investors in the specified region, this is a very important indication to foreign investors about opportunities, safety and profitability of direct investment in business entities located in the territory (Dunning, 1993).

Systematic risk level, which is manifested in investment activity, can be represented by two factors: The total amount of foreign direct investment into the region's economy, and the per capita volume of foreign direct investment into the region's economy.

4. DISCUSSION

On the one hand, mentioned factors must be addressed in an integrated manner, on the other hand, the role and importance of each factor significantly depends on the individual investor. Thus, for example, if the main purpose of investors is to reduce the costs of production, the importance of the factor such as the cost of doing business increases. In this case potential investors more closely examine factors such as the average level of wages, social costs, direct and indirect taxes, prices for services and resources (electricity, water, gas, sewage and water treatment plants), and cost of transportation. In case, where foreign direct investment aim at freezing out competitors from already formed market or penetrating new markets, importance of market capacity increases. At that, factors, such as market size and per capita income, market growth prospects, access to domestic and global markets, as well as country-specific consumer preferences acquire greater importance (Ledyaeva, 2002). Consideration of the individual peculiarities of each specific foreign investor is carried out through the weighted coefficients set for each of the above indicators.

5. CONCLUSIONS

Within the efforts focused on improvement of statistical indicators characterizing investment attractiveness, the article substantiates the indicator framework which is used in the statistical analysis of investment attractiveness of the region's economy for foreign direct investment. The article shows that each of the potentials included in the investment attractiveness of the region's economy to foreign direct investment is characterized by a number of individual indicators that should be used when conducting statistical analysis of investment attractiveness of the region's economy to foreign direct investment.

The application of proposed indicator framework will allow carrying out a comprehensive statistical evaluation of investment attractiveness of the region's economy for foreign direct investment and identifying the trends of further change in investment attractiveness to foreign direct investors.

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