Procedure for Regional Investment Potential Assessment by Institutional Sectors of Economy

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Abstract

Background/Objectives: The article is aimed to develop and substantiate the author’s procedure for assessing regional investment potential by institutional sectors: investment potential of financial and non-financial corporations, households, public administration. Methods: The research is based on the problems of determining the amount of unused investment resources of the Far Eastern Federal District, as well as on evaluation of all components of the investment potential of this region and distinguishing its problematic elements. The research methodology includes the economic-statistical, computational and constructive method and comparative analysis. Findings: The provided procedure has allowed assessing the total investment potential and its individual elements in the Far Eastern Federal District; the level of its use was also evaluated. It is noted that in the FEFD territory the resources financial corporations are a key element of the total investment potential. The study revealed that FEFD has high reserves of unutilized investment resources, enabling, in the case of their use, to increase significantly GRP of the region. The study showed the applicability of the procedure for investment potential assessment by institutional sectors at the regional level. The proposed procedure allowed showing the FEFD investment potential in the context of institutional sectors, identifying the shadow economy; estimating the amount of unutilized investment resources of the District; calculating the level of FEFD investment potential use and determining that the available investment opportunities are not used fully in the region; determining the change in the economic indicators of the District, taking into account the involvement of the entire total investment potential of the territory. Application/Improvements: The proposed procedure will enable to pursue a competent investment policy, providing a constant inflow of investments with the greatest possible involvement of investment potential of the territory.

Keywords: Far Eastern Federal District (FEFD), Investment Policy, Institutional Sector of Economy, Personal Savings, Region, Regional Investment Potential

1. Introduction

Implementation of the efficient investment policy in the territory of a region is a guarantee of its sustainable economic development. In this regard, the identification and evaluation of investment-relevant indicators is one of the most important tasks, the solution of which determines the dynamics of investment processes and management decision-making in the region.

The development of investment processes in a particular federal subject is largely determined by the condition of its investment potential, the effective use of which in the future will increase the volume of investment resources, incoming in the economy of the region. Consideration of the investment component of the individual federal subject shows the necessity to form (mobilize all sources of investment), and employ effectively the investment potential of this territory.

An important factor, giving relevance to research in this area, is the fact that the State programs “Economic development and innovative economy” of many subjects of the Russian Federation identify the decreased investment potential as a threat to socio-economic development (SWOT-analysis).

Measures aimed at addressing the problem of formation and effective use of regional investment potential should
be based on a solid theoretical and methodological foundation. The category “regional investment potential” should be taken primarily to mean a concentration of resources within a separately taken territory, which resources can be allocated to the investment needs with the purpose of strategic development of its economy. This notion includes not only the resources available at the region at the moment, but also funds that potentially can be involved for its economic and social development.

The peculiarity of foreign studies is that investment potential is considered there as one of the components of the investment climate (investment attractiveness) of the city, region, country as a whole, and is usually evaluated as part of one of the stages of such studies.

The greatest worldwide recognition was won by the procedure of the Harvard Business School as well as the method for calculating the BERI-index proposed by German scientists. The basis of the above studies is formed by a set of different factors taken into account, containing both quantitative and qualitative characteristics of the research object. M. Tullis and O. Borrin, H. Heuzler are the most well-known foreign authors of guidance papers. It should be noted that, as a rule, the authors prefer scoring methods to assess factors, primarily expert techniques, which contributes a significant proportion of subjectivity into the final result.

In Russian studies the issue of regional investment potential assessment is dealt in the procedure of Expert RA rating agency; works by S.G. Popova; A. A. Vodianov; T.N. Maximova; I.M. Golaido; Yu. A. Doroshenko; I. V. Frolova; I. V. Grishina, I. I. Roizman and A. G. Shakhnazarov. A. A. Vodianov and T. N. Maximova offer a procedure for assessing the regional investment potential through the sum of the saves resources and gross fixed capital formation (current savings of economic entities, the investment in the fixed capital and housing construction, etc). The set of indicators proposed in these papers is chaotic and not subjected to systematization. As a result of the lack of indicator comparability over time the performed calculations will not give an answer to the question about the real dynamics of regional investment potential.

In other enumerated studies an integral indicator of potential regional development is considered as a result of regional investment potential assessment. However, this figure makes it possible only to rank the regions by a particular set of features. Values of weighting coefficients are identified by an expert way, making the final result to be largely subjective. The calculations require expensive and time-consuming marketing and sociological research. In addition, in our opinion, the integral index does not consider the available resources from the standpoint of the possibility of (potential) using; therefore, it does not fully disclose the essence of the concept of ‘regional investment potential’.

In this connection we have offered a procedure for assessment of regional investment potential that will enable to answer the following questions:

1. What is the volume of total regional investment potential and of its individual components?
2. What is the extent of its use?
3. How will attraction of potential investment resources influence the economy of the region?

2. Method

Based on the “Guidelines for the development of long-term forecasts of socio-economic development of the subjects of the Russian Federation” developed by the Ministry of Economic Development and Trade of the Russian Federation we propose to consider the regional investment potential by the institutional sectors, identifying the shadow economy. The official statistics data are used in calculations, but according to some authors, the shadow sector is not considered to the full extent in official statistics, so it is advisable to find an opportunity for its additional assessment, as it has high investment potential.

Thus, regional investment potential can be presented by formula:

\[ IP = IP_H + IP_N + IP_S + IP_F + IP_{SH}, \]

where \( IP \) – regional investment potential; \( IP_H \) – investment potential of households; \( IP_N \) – investment potential of non-financial corporations; \( IP_S \) – investment potential of public administration; \( IP_F \) – investment potential of financial corporations; \( IP_{SH} \) – investment potential of shadow economy.

2.1 Investment Potential of Households

The amount of accumulated savings is an important indicator that reflects the level of cash incomes of individuals and their property. Availability of the developed financial infrastructure in the region enables to convert existing personal savings into investments. In our study
the investment potential of households is understood as a part of the citizens’ income, which can be allocated to meet the investment demand in the region.

Investment potential of the households is equated as follows (2):

\[ IP_H = \sum_{k=1}^{n} \left( \frac{HC_k + HD_k + HFC_k}{(1+i)^k} \right), \]  

where \( HC_k \) – excess of personal income over expenses in \( k \)-th year, in monetary units (MU);  
\( HD_k \) – personal money savings in deposits and securities in \( k \)-th year, MU;  
\( HFC_k \) – personal expenses for foreign currency acquisition in \( k \)-th year, MU;  
\( i \) – discount rate;  
\( k \) – number of years.

Based on the global practice, the rate of return on long-term government obligations is used in our study as the risk-free discount rate.

2.2 Investment Potential of Non-Financial Corporations

An important role in the formation of regional investment potential is played by funds of economic entities. Investment potential for them will be calculated as the sum of domestic investment sources (balanced financial result – profit minus loss, depreciation) by the following formula (3):

\[ IP_N = \sum_{k=1}^{n} \left( \frac{NFR_k + ND_k}{(1+i)^k} \right), \]  

where \( NFR_k \) – balanced financial result (profit minus loss) of companies’ activities in \( k \)-th year, MU;  
\( ND_k \) – companies’ depreciation deductions in \( k \)-th year, MU.

2.3 Investment Potential of Public Administration

Initial information for calculation is the investment expenditures of the federal, regional and local budgets on a certain territory, as well as the amount of insurance reserves and pension savings of Pension Fund of the Russian Federation.

Investment potential of public administration is calculated by formula (4):

\[ IP_P = \sum_{k=1}^{n} \left( \frac{FIE_k + RIE_k + MIE_k + SPF_k}{(1+i)^k} \right), \]  

where \( FIE_k \) – amount of the federal budget investment expenditures allocated to the economic support of the federal subjects in \( k \)-th year, MU;  
\( RIE_k \) – amount of the regional budget investment expenditures in \( k \)-th year, MU;  
\( MIE_k \) – amount of the municipal budget investment expenditures in \( k \)-th year, MU;  
\( SPF_k \) – amount of insurance reserves and RFPF pension savings in \( k \)-th year, MU.

2.4 Investment Potential of Financial Corporations

This indicator is calculated as the sum of credit resources of banks, balanced financial result (profit minus loss) and the amount of insurance reserves of insurance companies, as well as the amount of assets of financial investment companies located within the territory of the region by formula (5):

\[ IP_F = \sum_{k=1}^{n} \left( \frac{FI_k + FIC_k + FB_k}{(1+i)^k} \right), \]  

where \( FI_k \) – balanced financial result (profit minus loss) and the amount of insurance reserves of insurance companies in \( k \)-th year, MU;  
\( FIC_k \) – the amount of assets of financial investment companies in \( k \)-th year, MU;  
\( FB_k \) – credit resources of banks in \( k \)-th year, MU.

2.5 Investment Potential of the Shadow Economy

If the rate of economic downfall, decrease in execution of works and servicing, taken over time, is lower than the rate of decline in cash money in circulation, then grounds emerge to assume that part of the funds derived from the circulation is used for investment in the shadow economy. Proceeding from this assumption, the investment potential of the shadow economy will be taken to mean the amount of hidden investments, determined on the basis of differences of indices of industrial production, executed works, services rendered and the index, reflecting the quantity adjustment for cash in circulation (6):


\[
IP_{SH} = \sum_{k=1}^{n} \left( \frac{Q_k \times (I_{n_k} - I_{q_k})}{(1+i)^k} \right)
\]

(6)

where \( Q_k \) – volume of industrial production, works executed and services rendered in \( k \)-th year, MU;

\( I_{n_k} \) – index of cash stock in \( k \)-th year;

\( I_{q_k} \) – index of industrial production, works executed and services rendered in \( k \)-th year, MU

The proposed formula will allow forecasting accurately investment activity in the shadow economy for a long-term period.

To assess utilization of cumulative regional investment potential we suggest a coefficient characterizing the degree of utilization of this potential \( F_{IP} \) (7):

\[
F_{IP} = \frac{I}{IP} \times 100\%
\]

(7)

where \( I \) – investments being made in the current year at the expense of own funds and external resources of the region.

Let us evaluate possible GRP increase in the region under the proposed procedure provided the full utilization of reserves of cumulative investment potential.

To obtain adequate assessment of GRP increase with preset growth of investments, let us make use of Keynesian multiplier\(^{15}\):

\[
\mu_1 = \frac{\Delta y}{\Delta I},
\]

(8)

where \( \Delta y \) – GRP variation;

\( \Delta I \) – change in investments.

### 3. Results and Discussion

The cumulative investment potential of the Far Eastern Federal District was calculated using the presented formulas. Selection of this macro-region is justified by the increased attention on part of the state to the development of the Far East. This attention resulted in creation of the Ministry for Development of the Russian Far East, the emergence of the law “On Territories of advancing social and economic development in the Russian Federation”, the launch of TASED ( Territories of Advancing Social and Economic Development) Program and major investment projects in the FEFD territory, the issue of creating a free economic zone in the Far East in order to enhance the foreign economic activity of the country as a whole, with a focus on the Pacific region as one of the largest and robust world’s centers of business activity.

The District is rich in various natural resources, which are keenly interesting for Russia and neighboring countries of the Asia-Pacific Region. With the effective application of necessary investment funds, these resources will not only recover the value of initial investment, but also give impetus to the development of the economy region as a whole. In this regard, it is important for the public authorities, conducting the investment policy, to prioritize investment areas, with a view to the most effective use of the investment potential existing in their territory.

Behavior of the FEFD investment potential as broken down by institutional sectors of the economy is shown in Figure 1.

The data shown in Figure 1 demonstrate that population may become one of the most stable sources of potential investment resources for FEFD, as since 2006-2007 they made the largest contribution to the cumulative investment potential. According to a number of Russian studies in the field of household savings, it is noted that they act as an unused reserve whose potential is not involved in full. Thus, in the FEFD in prices on 2013 the household investments in fixed assets amounted to 193 billion rubles with the investment potential of this type of resources making 407.9 billion rubles. The significant amount of funds in rubles and foreign currency available at the disposal of households confirms that there is no effective mechanism for the transformation of household savings into investments in the FEFD, and in Russia in general. This is primarily due to the lack of public confidence in the state as an institution which ensures the
protection of property rights and creditors. Yet there is a positive trend of the importance of personal savings as an investment resource compared to 2000, when this share in the total volume of investment resources amounted to 8.7%, and in 2013 this figure was 23.7% already.

Since 2008 the leading positions have been occupied by investment potential of public administration and financial corporations. In 2013, investments in fixed assets amounted to 64.3% at the expense of these investment sources for the FEFD. The Amur Region is a leader among the subjects of the FEFD that made a significant contribution to the development of the investment potential of financial corporations, where this indicator increased by 11.6 times over the analyzed period. The financial corporations of the Primorsky Territory also contributed significantly; there this indicator grew by 57.7% during the period under study in 2006 prices.

The companies’ own funds serve an important source of investment in fixed assets of the FEFD; the share of these funds amounted to 35.7% in 2013. In general, the potential of this type of investment resource is at a rather high level in the FEFD and has a positive dynamics.

We have also calculated investment potential of the shadow economy in the FEFD. The behavior of this indicator is not characterized by stability, and it is constantly changing.

Having calculated each constituent element of the regional investment potential, it is possible to determine is cumulative value, to estimate the degree of utilization and the potential impact on the GRP increase. The data are given in Table 1.

Analyzing the data in Table 1, we should mention that during the period under study, the FEFD investment potential was not utilized in full. We have determined that the degree of cumulative investment potential utilization increased notably during the period of financing of large investment projects. In 2006-2007 the Sakhalin Region, the Chukotka Autonomous Region, the Kamchatka Territory and the Republic of Sakha (Yakutia) were leaders in the rate of investment growth in fixed assets. This is the result of major investments in the oil and gas extraction, mining of diamonds, gold, and in the defense industry.

It should be noted that in the 2008-2009 in Russia in general the decline in investment in fixed assets totaled to 16.3%. This was influenced by the consequences of the global financial crisis – a sharp reduction in funds from the parent companies, a strong rise in loans from foreign and domestic banks. But despite this, in the crisis years the positive investment growth rates in fixed assets were marked in the Chukotka Autonomous Region, the Kamchatka Territory and the Republic of Sakha (Yakutia). These rates were conditioned by the continuing financing

### Table 1. Assessment of the investment potential of the Far Eastern Federal District

<table>
<thead>
<tr>
<th>No.</th>
<th>Assessment indicators</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Cumulative investment potential of FEFD, in comparable prices on 2006 RUB mln.,</td>
<td>704,853</td>
<td>710,267.3</td>
<td>510,958.4</td>
<td>616,041.4</td>
<td>859,899.6</td>
<td>858,696</td>
<td>858,581.6</td>
<td>787,395.7</td>
</tr>
<tr>
<td></td>
<td>including:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Investment potential of the shadow economy, RUB mln.</td>
<td>195,450</td>
<td>100,132</td>
<td>15,043</td>
<td>10,252</td>
<td>129,005</td>
<td>85,001</td>
<td>65,101</td>
<td>37,770</td>
</tr>
<tr>
<td>3.</td>
<td>Investment in fixed capital, in comparable prices on 2006 RUB mln.</td>
<td>287,174.5</td>
<td>333,224.3</td>
<td>377,998.2</td>
<td>531,340</td>
<td>437,136.7</td>
<td>507,792.5</td>
<td>433,058.3</td>
<td>345,818</td>
</tr>
<tr>
<td>4.</td>
<td>Degree of cumulative investment potential utilization, %</td>
<td>44.6</td>
<td>52.3</td>
<td>74</td>
<td>86.3</td>
<td>50.8</td>
<td>59.1</td>
<td>50.4</td>
<td>43.9</td>
</tr>
<tr>
<td>5.</td>
<td>Keynesian multiplier</td>
<td>3.17</td>
<td>2.62</td>
<td>1.74</td>
<td>1.93</td>
<td>3.74</td>
<td>1.55</td>
<td>–1.88</td>
<td>–0.69</td>
</tr>
<tr>
<td>6.</td>
<td>Admissible GRP increase of the region at the expense of cumulative investment potential, %</td>
<td>142.7</td>
<td>90.1</td>
<td>23.3</td>
<td>14.9</td>
<td>135.3</td>
<td>44.8</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>
of large investment projects, in particular, the construction of the “Eastern Siberia – the Pacific Ocean” oil pipeline (ESPO) and the launch of two mines – “Mir” and “Aikhal” in the Republic of Sakha (Yakutia), as well as by investment in gold and silver mining in Chukotka and Kamchatka.

In the 2010-2013 negative growth rates were observed in almost all subjects of the FEFD, which is associated with the completion of the investment projects, a small amount of own funds and the limited availability of investment resources (direct investments and loans). In turn, this greatly affected the degree of utilization of cumulative investment potential in the territory and the negative value of the Keynesian multiplier. The data of Table 1 indicate that there are huge unutilized investment resources in the FEFD enabling to significantly increase the GRP of the region. But this requires conducting a competent investment policy, ensuring a steady flow of investment, with the full utilization of investment potential of the territory.

4. Conclusion

Thus, the proposed procedure for assessment of the regional investment potential has a number of advantages:

- the availability of initial information (the data of Federal Service of State Statistics and the Central Bank of the Russian Federation are the sources of initial data for the calculations);
- the exclusion of subjectivity in the calculations (there are no expert evaluation in the overall composition of the indicators);
- structural assessment by institutional sectors (enabling to evaluate all components of cumulative regional investment potential and highlight its critical elements);
- determination of the amount of unused investment resources in the relevant territory (allows estimating the degree of the investment potential utilization and predicting the changes in economic indicators of the region with regard involving the entire cumulative investment potential of the territory).

The proposed procedure may allow public authorities, conducting investment policy in the territory, to determine the total amount of available investment resources and the degree of their utilization. Therefore, it will enable to proceed more objectively to the development of investment strategies and programs for the region development, and take management decisions adequate to the modern conditions.

5. References