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The Assessment of Regional Investment Potential with Subject to Non-Observed Economy

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The Assessment of Regional Investment Potential with Subject to Non-Observed Economy

S G Serikov¹

¹Amur State University, Blagoveshchensk, Russia

E-mail: stas.serikov@inbox.ru

Abstract. The article outlines the author's method of assessing the investment potential of a region's economy by institutional sector: financial corporations, non-financial corporations, households, and the government, as illustrated by the case of the regions constituting the Far Eastern Federal District of Russia (hereinafter FEFD). The author attempts to extract the non-observed (shadow) economy component from the institutional sectors. An algorithm has been designed for determining the forms of funding investment needs at a regional level.

The research methodology employed by the author is based on the economic and statistical method, computational and constructive method, and comparative analysis.

The proposed method has made it possible to present the investment potential of the FEDF in the context of institutional sectors with an emphasis on the shadow economy; to assess the amount of unutilized investment resources in the district; to calculate the level of realization of the district's investment potential; and to determine that the investment opportunities available in the region are not taken full advantage of. Using the proposed algorithm, the author has identified the constituent regions of the FEFD that are capable of funding their development with their own investment resources, and the regions that require government support that may extend as far as co-financing investment.

The methods and tools presented in the research can be applied by government bodies for the sake of a more consistent and rational approach to developing regional economic policy as regards investment strategies and development programs for regions, administrative decision making that matches the present-day conditions, and more effective spending of public investment resources.

1. Introduction

One of the key national priorities for Russia in the 21st century is the development of the Far East [1]. In this context, the creation of institutional conditions [2] that are required for the realization of the investment potential of the constituent regions of the Far Eastern Federal District (henceforth FEFD) becomes an important area of activity for authorities implementing the regional economic policy.

Attempts to assess the investment potential at a regional level have been made by Russian rating agency Expert RA [3], S.G. Popov [4], A.A. Vodyanov [5], T.N. Maximova [6], I. M. Golaydo [7], Yu.A. Doroshenko [8], I.V. Frolova [9], I.V. Grishina, I.I. Royzman, and A.G. Shakhnazarov [10]. Most of these studies yield an integrated indicator that only allows for compiling a rating of regions on the basis of a combination of characteristics. The values of weighting factors are derived from expert opinion, which makes the result highly subjective. The above approaches did not consider the econo-



my of a region from the point of view of institutional sectors that, in our view, have the most liquid financial resources from an investor perspective.

2. Method

The author has designed a method for assessing the investment potential of a region's economy by institutional sector. The proposed method makes it possible to take into account a region's pattern of the distribution of investment resources among institutional sectors.

The investment potential of a region can be calculated using formula (1):

$$IP = IP_H + IP_N + IP_S + IP_F + IP_{SH} \quad (1)$$

where IP - is regional investment potential; IP_H - is the investment potential of households; IP_N - is the investment potential of non-financial corporations; IP_S - is the investment potential of government; IP_F - is the investment potential of financial corporations; IP_{SH} - is the investment potential of the shadow economy.

We shall describe the investment potential of households [11] using the following formula (2):

$$IP_H = \sum_{k=1}^n \left(\frac{HC_k + HD_k + HFC_k}{(1+i)^k} \right) \quad (2)$$

where HC_k - is the excess of personal income over personal expenditures in the k-th year, in monetary units (MU) (cash on hand); HD_k - is personal money savings in deposits and securities in the k-th year, MU; HFC_k - is individual foreign currency purchases in the k-th year, MU; i - discount rate; k - number of years.

The investment potential of non-financial corporations [12] is calculated using formula (3)

$$IP_N = \sum_{k=1}^n \left(\frac{NFR_k + ND_k}{(1+i)^k} \right) \quad (3)$$

where NFR_k - is net income (profit minus loss) in the k-th year, MU; ND_k - companies' depreciation and amortization charges in the k-th year, MU.

The investment potential of the government [13] is calculated using formula (4):

$$IP_S = \sum_{k=1}^n \left(\frac{FIE_k + RIE_k + MIE_k + SPF_k}{(1+i)^k} \right) \quad (4)$$

where FIE_k - is the amount of federal government investment expenditures earmarked for support of the regions in the k-th year, MU; RIE_k - is the cumulative regional government investment expenditures in the k-th year, MU; MIE_k - is the cumulative municipal government investment expenditures in the k-th year, MU; SPF_k - are Insurance and pension reserves in the Russian Pension Fund in the k-th year, MU.

We shall describe the investment potential of financial corporations [14] using the following formula (5):

$$IP_F = \sum_{k=1}^n \left(\frac{FI_k + FIC_k + FB_k}{(1+i)^k} \right) \quad (5)$$

where FI_k - is the net income (profit minus loss) and insurance reserves of insurance companies in the k-th year, MU; FIC_k - are cumulative asses of financial and investment corporations in the k-th year, MU; FB_k - is the net income of active credit institutions in the k-th year, MU.

We shall describe the investment potential of the shadow economy [15] using the following formula (6):

$$IP_{SH} = \sum_{k=1}^n \left(\frac{Q_k \times (I_{n_k} - I_{q_k})}{(1+i)^k} \right) \quad (6)$$

where Q_k - is the volume of industrial production, works executed and services provided in the k-th year, MU; I_{n_k} - is the M1 money supply index in the k-th year; I_{q_k} - is the industrial production and services provision index in the k-th year, MU.

To assess the cumulative investment potential of a region, we propose using a coefficient that describes the degree of the potential fulfilment (7):

$$F_{IP} = \frac{I}{IP} \times 100 \% \quad (7)$$

where I – is investments being made in the current year with the regions own funds and externally procured resources [16].

For more precise identification of the form of financing of the investment needs of the region we propose an algorithm which, if executed in a step-by-step way, will make it possible to take into account the specific features of the region's investment potential and debt burden.

Under the proposed algorithm, the process of selecting the form of the financing of investment projects includes several stages:

1. A cost estimate of the investment needs of the region is carried out as the sum total of the cost of all investment projects that are planned to be implemented in the region.
2. The investment potential of the region is determined using the proposed method.
3. The values of debt burden indicators are calculated [17]. The indicators reflect the possibility of financing the investment expenditures by the regional government, citizens and businesses.
4. The possibility is evaluated of financing the investment needs of the region with its own investment resources. If the investment resources of the region are lower than the current investment needs, we move on to stage five where the possibility of allocating additional resources from the regional budget is considered.
5. The possibility of financing the investment needs of the region by the regional budget is considered. If the region's own investment resources and available funds in the regional purse are not sufficient for covering the investment needs of the region and if the debt burden is medium to large, we move on to stage six where the possibility of procuring funds from the federal government is considered.
6. On the basis of non-financial corporations' debt burden estimates, the possibility is considered of using federal resources for supporting the development of regions.

3. Results

The application of the described method made it possible to calculate the cumulative investment potential of the FEFD and to determine the degree of its fulfilment (see Fig.1).

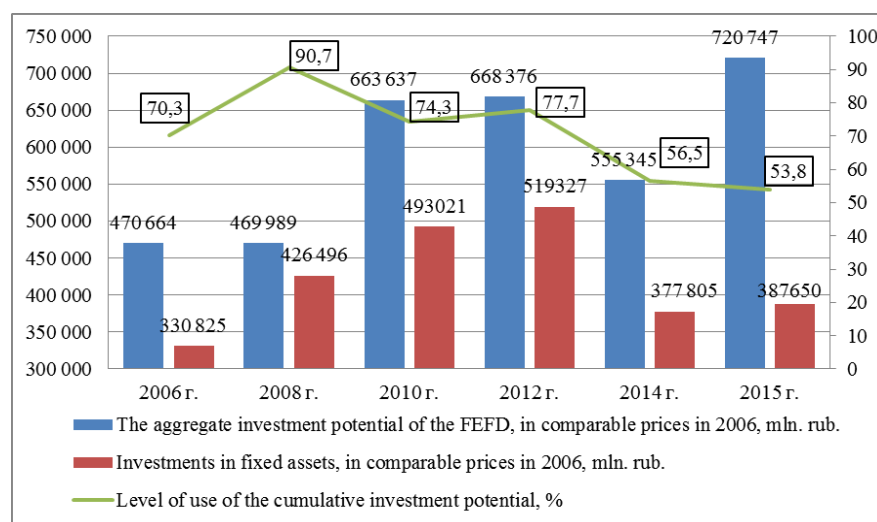


Figure 1. Assessment of the investment potential of the Far Eastern Federal District.

It has to be noted that throughout the observed period the investment potential of the Far Eastern Federal District was unfulfilled. For example, in 2015 around 55% of the district's investment resources remained unutilized. It was established that the level of fulfilment of the cumulative investment potential considerably increased during the financial crisis of 2008-09. The period coincided with the arrival of funds for major investment projects [18], which drove up capital investments.

Thus, there are considerable untapped investment resources across the federal district as well as in its constituent regions. As the resources are distributed unevenly [19], government agencies need to take a customized approach to making decisions on the forms of financing the investment needs of each individual region [20].

The algorithm for selecting the forms of financing the investment needs of a region was then tested. The described method is applied as one of the stages of the algorithm. It was observed that most of the constituent regions of the Far Eastern Federal District are capable of financing their investment projects with their own investment resources. Given a large volume of their own investment resources, Sakhalin Region, Kamchatka Territory and Khabarovsk Territory are capable of increasing the number of investment projects that they implement locally.

The Republic of Sakha (Yakutia), Amur Region, the Jewish Autonomous Area and the Chukotka Autonomous Area experience a shortage of their own investment resources for implementing planned investment projects. The regions need direct support of the federal government.

4. Conclusion

The presented method of assessing the investment potential of a region's economy by institutional sector has the following distinctive advantages: the input information is available in the public domain (the data for calculations are retrieved from reports by the Russian Federal State Statistics Service (Rosstat) and the Central Bank of the Russian Federation); it eliminates bias in calculations by excluding expert assessments from the list of indicators; it delivers structural assessment by institutional sector that makes it possible to assess all components of the cumulative potential of the region and to identify its troublesome elements; it makes it possible to determine the volume of untapped investment resources in the area; to assess the level of investment potential fulfilment and forecast how the economic indicators of the region could change if the cumulative investment potential of the area is utilized.

The proposed algorithm of selecting the form of financing a region's investment needs takes into account the investment potential of the institutional sectors of its economy and the debt burden of the local government, citizens and businesses, thus enabling one to identify the regions that are capable of relying on their own investment capacity and the regions that need government support which could go as far as sharing investment expenditures. This makes it possible to effectively distribute limited public funds among the constituent regions of Russia and to mitigate inequalities in the economic development of the regions.

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