ANALYSIS OF DISPARITIES IN INVESTMENT PROCESSES IN RUSSIAN ECONOMY

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ABSTRACT

An essential component of national wealth and the most important part of the country's economic capacity are the fixed funds. Fixed assets form the basis of any industry, which produces output, delivers services and executes work. Production facility renovation is one of the crucial tasks to be fulfilled in order to develop exchange relations and maintain the current economic growth rate.

The present study:

1. Provides an original definition for the term "investment potential of renovating basic production assets".

2. Uses the methods of structural and dynamic analysis to reveal structural disparities in the pattern of capital investment varying according to the type of business operation, fixed assets and the funding sources.

Offers the way to calculate capital renovation intensity index as a value which allows to identify various degrees of intensity in using funding sources in different branches of economy and justify the need for searching additional sources for financing capital investment.

Keywords: investment processes, fixed funds, investment potential

INTRODUCTION

1. In order to analyze the disparities in investment processes in Russian economy we have appealed to the term "investment potential", which takes into consideration the principal characteristics, economic resources, consumer demand and other factors.

Formation of investment potential in the current situation reflects the system of the company's investment opportunities, especially in industry.

Let us admit that renovation of fixed production assets implies a continual process of matching the body of fixed assets with the changing demand for developing productive forces by modernizing or substituting the existing facilities with the qualitatively new and more progressive ones. Therefore, we can infer that investment potential of

renovating basic production assets is an indicator of the fund's investment attractivity, which consists in a set of strategic prerequisites and renovation factors so that to obtain positive economic, social and environmental effect.

We consider this definition to completely reflect the role and importance of renovating fixed assets as a development factor in contemporary Russian economy.

Given the critical state of domestic industries and the lack of personal funds available for investments, an increasingly extensive capital investment becomes reasonably required. The latter provides technical retooling and turnout management, economic restructuring, introducing new technologies, increasing output and export capacity building. Availability of information about investment capacity in industrial sectors is a prerequisite, which enables the state, both federally and regionally, adopt a well-considered tax policy and attract both direct and portfolio investments.

As is well known, renovation of basic production assets can assume different forms, shapes and directions which can be implemented via various methods. Against the background of economic modernization, it is necessary to calculate a number of indexes in order to penetrate into the specific nature of renovation process. As economic literature points out, none of the existing renovation factors is universal, which requires to calculate factors oriented at intensive renovation.

2.   The theory of structural and dynamic analysis indicates that innovation-oriented pattern of economic development involves intensive structural changes as the innovations fuel growth of national economic output and multiple activities by introducing structural alterations. Improvements create an opportunity to build up shares, branches and kinds of activities in the overall output composition.

Innovation initiatives continually emerge in various fields. As a result, their equity proportion fluctuates. Due to these fluctuations economy maintains incentives to build up output both in separate sectors of national economy and the economic system as a whole.

The idea to design a reasonable structure appears unfeasible owing to the continual nature of innovation and investment process. But it is possible to estimate its intensity, which will demonstrate relevance of innovations.

Growth index rate and trends in structural changes are correlated in a certain way.

To obtain structural distortions in fixed capital renovation process we employed the method of structural and dynamic analysis.

To assess structural distortions in composition of investments in production assets we implemented structural and dynamic method, developed in the studies by S.Yu. Glazyev, A.G. Granberg, O.Yu. Krasilnikov, E.G. Yasin, E.F. Plekhanova, L.A. Dedov, O.I. Botkin and other scholars [1]. Let us employ the data of fixed capital investments for various the types of business activities in Russia in order to calculate a composite index which can characterize structural alterations in the process of gross fixed capital formation in Russia.

Table 1 presents the trends in structural changes in gross fixed capital investments for various business activities between 2012 and 2016.

Table 1 - Trends in structural changes in gross fixed capital investments for various

business activities in Russia, percentage

Economic sector	2012	2013	2014	2015	2016
Agriculture, hunting and forest husbandry	3,8	3,8	3,7	3,6	4,2
Fishing and fish-farming	0,1	0,1	0,1	0,1	0,1
Mining operations	14,8	14,9	15,5	17,1	19,4
Manufacturing	13,4	14,4	15,1	15,6	14,6
Production and distribution of electricity, gas and water	9,3	8,8	8,5	7,1	6,4
Construction operations	2,8	3,3	3,4	2,9	3,0
Distributive industries	3,6	3,9	4,0	3,9	4,3
Hotels and restaurants	0,4	0,7	0,8	0,7	0,7
Transport and communications	26,4	24,5	21,4	18,0	18,6
Financial activities	1,6	1,4	1,2	1,4	1,6
Real estate operations	15,6	16,3	19,4	22,8	20,6
Public administration and defense	1,7	1,7	1,7	1,7	1,9
Education	1,7	1,7	1,7	1,7	1,4
Health care	2,0	1,7	1,4	1,3	1,2
Delivery of other communal, social and personal services	2,8	2,8	2,1	1,3	2,0
Total	100,0	100,0	100,0	100,0	100,0

In accordance with the principles of conducting structural and dynamic analysis this study provides computations for interim targets to estimate structural changes. The information was obtained from the official data of investment in fixed capital in Russia, issued by the Federal Statistics Agency:

- for various types of business activities (Table 2);
- for various sources of funding (Table 3);
- for various types of basic production assets (Table 4) [2].

Table 2 - Calculation of index of overall structural change in the structure of investment in fixed capital for various types of business activities in Russia, percentage

Business activity	2013	2014	2015	2016
Agriculture, hunting and forest husbandry	0,0	0,1	0,1	0,6
Fishing and fish-farming	0,0	0,0	0,0	0,0
Mining operations	0,1	0,6	1,6	2,3
Manufacturing	1,0	0,7	0,5	1,0
Production and distribution of electricity, gas and water	0,5	0,3	1,4	0,7
Construction operations	0,5	0,1	0,5	0,1
Distributive industries	0,3	0,1	0,1	0,4
Hotels and restaurants	0,3	0,1	0,1	0,0
Transport and communications	1,9	3,1	3,4	0,6
Financial activities	0,2	0,2	0,2	0,2
Real estate operations	0,7	3,1	3,4	2,2
Public administration and defense, social insurance	0,0	0,0	0,0	0,2
Education	0,0	0,0	0,0	0,3

Health care, social services	0,3	0,3	0,1	0,1
Delivery of other communal, social and personal services	0,0	0,7	0,8	0,7
TOTAL (by employing methods of structural and dynamic approach) % (P-d), %	5,8	9,4	12,2	9,4
Overall structural change index, % m=0,5(P-d)%	2,9	4,7	6,1	4,7

Over the course of time the shares, characterizing the composition of the given economic unit, change. Some increase and others decrease, while a number of them may remain the same. Expansion level is termed as overall structural change index and is lettered "m".

Similar indexes were calculated for various funding sources and types of fixed assets.

Table 3 - Computation of overall structural change in composition of investment to fixed assets for various funding sources in Russia, percentage

Sources of financing	2013	2014	2015	2016
Personal finances	0,7	0,5	4,5	0,7
External funds	0,7	0,50	4,5	0,7
TOTAL (by employing methods of structural and dynamic approach) % (P-d), %	1,4	1,0	9,0	1,4
Overall structural change index, % m=0,5(P-d)%	0,7	0,5	4,5	0,7

Table 4 - Computation of overall structural change in composition of investment to fixed capital for various funding sources in Russia, percentage

Investments in main funds based on types of	2013	2014	2015	2016
- accommodation	0,3	2,0	1,1	0,2
- buildings	2,7	0,7	2,9	1,5
- machinery, equipment, transport means	1,2	2,5	4,8	0,9
- others	1,2	1,2	0,8	0,4
TOTAL (by employing methods of structural and dynamic approach) % (P-d), %	5,4	6,4	9,6	3,0
Overall structural change index, % m=0,5(P-d)%	2,7	3,2	4,8	1,5

A comparative analysis of overall structural change indexes shows that there are certain structural changes in the investments to fixed assets. This factor enables us to estimate trends in various spheres of investment process, for which reason this index is suggested for elaborating investment development programmes for diverse industrial sectors at various management levels.

From our point of view, by implementing structural and dynamic analysis we can solve an important problem, that is, assess structural changes in the process of investment in fixed assets over runtime.

CONCLUSION

A number of authors in their studies suggest implementing new indexes to calculate the optimal lifetime of fixed assets with respect to contemporary requirements of

economical practice, including modal and median age of equipment, share of "young" funds, intensive renewal coefficient. The index demonstrates the ways of renewing equipment (forms and ways of renewing fixed assets are put into practice through the following renewal methods: technical retooling, reconstruction, expansion and construction of new enterprises).

These factors are not widely employed but according to the recent studies it is these factors that have good prospects and may be recommended for the corresponding economic computations.

Apart from structural and dynamic analysis of fixed assets investment process, in this paper we offer to use intensive renovation index, which is equal to the ratio of retirement rate to coefficient of renewal, for various types of business activities [3].

If its value falls short of unity than we can conclude that introduction of equipment outnumbers its retirement and an extensive machinery renovation is on the way. If intensive renovation index is equal to unity or exceeds, it implies that in the first case the amount of functioning production equipment is not rising, and in the second case it is reducing. Therefore, if the value is equal to unity it is possible to qualify fixed assets renovation as intensive. With the value exceeding unity, the renovation process involves balancing the employment opportunities and labor resources. It might be indicative of introduction of more efficient machines able to maintain productive capacity at the same level with lower amount of machinery [3].

Table 5 - Fixed assets renovation values of for various types of business activities, in units [2]

Renovation coefficient	2009	2012	2014	2015	2016
Key assets	3,0	4,4	3,7	4,6	3,9
including: - agriculture, hunting and forest husbandry	2,4	4,8	3,7	4,3	4,1
- fishing and fish farming	1,5	1,8	2,0	2,2	2,8
- mining	5,1	7,1	4,9	6,0	5,3
- manufacturing	5,4	7,0	5,9	6,4	5,9
- production and distribution of electricity, gas and water	2,1	3,5	4,1	5,4	4,2
- construction operations	2,9	5,2	3,2	5,1	4,8
- distributive industries	6,4	8,6	6,4	7,6	6,3
- hotels and restaurants	2,9	3,6	3,7	3,6	3,5
- transport and communications	2,6	3,9	3,0	4,7	3,3
- financial activities	6,6	9,6	7,8	9,6	8,8
- real estate operations and renting	1,6	2,1	2,3	2,5	2,2
- public administration and defense	5,9	7,8	7,5	5,3	6,9
- education	2,2	4,2	3,4	3,8	3,5
- health care, social services	3,7	5,8	4,6	5,3	4,7
- delivery of other communal, social and personal services	3,7	5,5	4,1	5,9	4,7

Table 6 - Fixed assets retirement rate for various types of business activities, in units [2]

Retirement rate	2009	2012	2014	2015	2016
All capital funds	1,1	1,0	0,8	0,8	0,7
including: - agriculture, hunting and forest husbandry	4,2	3,7	2,2	2,4	2,4
- fishing and fish farming	1,8	2,6	0,8	1,4	1,6
- mining	1,2	1,1	1,2	1,1	0,9
- manufacturing	1,8	1,4	1,0	1,0	0,9
- production and distribution of electricity, gas and water	0,7	0,3	0,3	0,4	0,4
- construction operations	2,2	1,6	0,8	1,6	2,0
- distributive industries	2,3	0,8	0,7	0,9	1,0
- hotels and restaurants	1,1	0,7	0,6	1,1	1,3
- transport and communications	0,4	0,4	0,4	0,4	0,4
- financial activities	3,0	1,2	1,0	0,9	0,7
- real estate operations and renting	0,6	0,8	0,9	0,5	0,4
- public administration and defense	1,2	1,8	1,2	1,6	1,3
- education	0,9	1,0	0,8	0,7	0,6
- health care, social services	1,1	1,7	1,3	1,4	1,3
- delivery of other communal, social and personal services	0,5	0,8	0,3	0,8	0,9

Basing on the statistical data presented in tables 5 and 6 and implementing fixed assets renovation index, the study conducts calculations for various types of business activities. The results are described below.

Table 7 - Capital funds renovation intensity coefficient for various types of business activities in Russia, in units

Retirement rate	2009	2012	2014	2015	2016
All capital funds	0,4	0,2	0,2	0,2	0,2
including: - agriculture, hunting and forest husbandry	1,8	0,8	0,6	0,6	0,6
- fishing and fish farming	1,2	1,4	0,4	0,6	0,6
- mining	0,2	0,2	0,2	0,2	0,2
- manufacturing	0,3	0,2	0,2	0,2	0,2
- production and distribution of electricity, gas and water	0,3	0,1	0,1	0,1	0,1
- construction operations	0,8	0,3	0,3	0,3	0,4
- distributive industries	0,4	0,1	0,1	0,1	0,2
- hotels and restaurants	0,4	0,2	0,2	0,3	0,4
- transport and communications	0,2	0,1	0,1	0,1	0,1
- financial activities	0,5	0,1	0,1	0,1	0,1
- real estate operations and renting	0,4	0,4	0,4	0,2	0,2
- public administration and defense	0,2	0,2	0,2	0,3	0,2
- education	0,4	0,2	0,2	0,2	0,2
- health care, social services	0,3	0,3	0,3	0,3	0,3
- delivery of other communal, social and personal services	0,1	0,1	0,1	0,1	0,2

*Calculated from the data presented by the Federal State Statistics Service

According to the figures presented in the table 7 it follows that over the recent years the renovation intensity coefficient remains rather low, less than unity. Therefore, we can suggest that a balanced renovation processes, able to maintain productive capacity at a high level, is not in place.

Hence, implementation of renovation intensity index provides a scientifically grounded benchmark, which testifies to relevance and need for renovating the existing fixed capital stock.

Russia is currently making numerous efforts and takes steps aimed not only to overcome the consequences of the financial crisis but also to enhance the domestic economy's attractiveness as an investment destination [4]. The strategy of Russia is oriented towards holding an overall innovation-based reindustrialization of economy under modern conditions. This implies transition from the raw material model of Russian economy to an innovative model based on wide implementation of high technologies, and thus improving its competitiveness. A significant factor which might affect the process is an overall assessment of investment potential to renew fixed capital stock and an analysis of disparities in the investment processes in Russian economy.

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