

## Improvement of Capital Investments Structure as Direction to Increase Fixed Assets Efficiency

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**Abstract:** The fixed capital of many Russian organizations is seriously worn-out now there are in total 46,3% in fixed assets and 54,1% in the active part. Besides there are about 15% of completely worn-out fixed assets in the operation and is more than 20% in the machines and equipment. It is possible to increase the fixed capital efficiency by improvement the structure of fixed asset investments. In the course of research it is established that the most effective forms of reproduction of fixed capital are modernization, expansion, reconstruction and modernization. New construction is long and more capital-intensive. It is necessary to improve the reproduction and the technological structure of fixed asset investments capital which will allow to increase the quality of fixed assets and competitiveness of products.

**Key words:** Fixed asset investments • Technological structure of investments • Reproduction structure of investments • New construction • expansion and reconstruction of production • Modernization

### INTRODUCTION

In present-day conditions the most important factor of innovative development of economy and its successful modernization is the increase of investment activity which is defined by a number of factors both macrolevel and level of certain managing subjects.

In modern conditions the defining role of investments in ensuring economic growth and economy development which is noted in programme state documents [1-3] and also in works of a number of scientists-economists [4-8, etc.]. A number of measures for creation the comfortable conditions for the investments inflow and ensuring favourable investment climate is undertaken in this direction. At the same time all opportunities aren't exhausted yet and the barriers on the way of the development of the investment activity of domestic and foreign businessmen aren't eliminated. In this regard it's necessary to apply further measures to attract additional resources in domestic economy and to use more effectively the available ones.

One of the directions of rationalization of the investment policy is the improvement of investments structure to increase the efficiency of fixed capital.

As practice shows the fixed assets of the Russian organizations can't put on the market the competitive production, new types of production made on the basis of nanotechnologies, the innovative products capable to take a worthy place in the international consumer markets and services. At the same time there are not enough financial resources for full-scale updating of technical and technological base of production in many Russian organizations. The major factors holding back the investment activity of the Russian organizations are shown in table 1.

The major factor constraining the investment activity is the lack of own funds (this reason was pointed by 60% of heads of the organizations in 2011). This factor has been leading since 2005. The second important factor (prevailing in certain years) is uncertain economic situation in the country which doesn't allow investors to be sure in the results of business activity in the future. We believe that this factor is predominating one.

Table 1: Distribution of the organizations according to the factors which limits investment activity [7] (percentage of total number of the organizations)

	2000	2005	2008	2009	2010	2011
Insufficient demand for production	10	21	18	29	19	19
Lack of own financial funds	41	65	63	66	67	60
High percent of commercial credit	47	31	26	36	31	25
Difficult mechanism of obtaining credits to realize investment projects	39	17	15	19	15	14
Investment risks	35	25	27	23	23	27
Unsatisfactory technical base	18	9	7	7	5	6
Low profitability of fixed asset investments	8	14	8	10	11	11
Uncertain economic situation in the country	49	18	33	48	32	31
Imperfect standard and legal base regulating investment processes	36	17	10	10	10	10

Table 2: Directions of fixed asset investments <sup>1</sup> (in actual prices)

	2005	2008	2009	2010	2011
Billion roubles					
Fixed asset investments in total	2893.2	6705.5	6040.8	6625.0	8406.6
including:					
construction	1577.3	3899.4	3771.6	4047.7	4887.2
modernization and reconstruction	626.6	1418.4	1111.2	1244.8	1644.5
purchasing of new fixed assets	689.3	1387.7	1158.0	1332.5	1874.9
Results in percent					
Fixed asset investments in total	100	100	100	100	100
including:					
construction	54.5	58.2	62.4	61.1	58.1
modernization and reconstruction	21.7	21.1	18.4	18.8	19.6
purchasing of new fixed assets	23.8	20.7	19.2	20.1	22.3

1) Except the subjects of small-scale business and the volume of investment which aren't observed by direct statistical methods.

Others factors follow and depend on it. This factor influence on the level of the investment risks and high percent of the commercial credit, too.

The improvement of structure of fixed asset investment (capital investments) becomes the important direction of the quality improvement of technical and technological base of production nowadays. The fixed asset investments are the expenses directed to reproduction of fixed funds (new construction, expansion, reconstruction and modernization of objects which lead to increase their initial cost, purchasing of cars, equipment, vehicles, formation of the main herd, planting and cultivation of perennial plants etc.). The correlation between active and passive parts of fixed assets depend on investments directions, capacity of the enterprise and efficiency of its functioning.

The main directions of fixed asset investments in Russian economy [9] are shown in Table 2.

This period is characterized by the growth of fixed assets investments thus the investments in construction had the priority growth rates. So if the capital investments

increased in total 2.9 in 2011 in comparison with 2005 the investments in the new construction raced 3.1 while the capital investments increased 2.6 in modernization and reconstruction and they raced 2.7 in purchasing of new fixed assets.

Similar changes were in the capital investments structure. The share of the investments increased in the new construction, modernization, reconstruction and purchasing of new fixed assets decreased. These changes didn't lead to the efficiency growth of the social production as return of new and more productive fixed assets investments is much higher in modernization and purchasing in equal conditions. Investments in cars, equipment, vehicles are costs of purchasing of assets which directly generate the organization income.

The most effective forms of reproduction of the fixed business assets are modernization, reconstruction and production modernization. It depends on capital investments which are significantly lower in their realization then in the new construction and the period of capital construction is shorter.

New construction is the most large-scale, labor-intensive and money-losing among all forms of reproduction of fixed assets therefore the period of capital construction is very long. New construction at the operating enterprise is efficient when it is not impossible to make a definite decision concerning the expense of reconstruction and production modernization.

The fixed assets investments in modernization are the expenses concerning the technological or office change of equipment, building, construction or other fixed asset objects, raised loadings and (or) other new qualities.

The investments in reconstruction are costs of the fixed assets reorganization of existing objects connected with the production improvement and increase of its technical and economic indicators. They are carried out according to the project of fixed assets reconstruction, capacities increase, quality improvement and product range change.

Thus in the course of modernization and reconstruction of fixed assets there are high-quality changes to improve the available indicators of their functioning and add them new quality. The term "reconstruction" is used in relation to the buildings and constructions and the term "modernization" is applied in the case of the equipment.

At the same time the investment growth in the new construction in the structure under consideration can be justified by the intense investments to the dwellings which play an important role in providing the relevant conditions and the population life qualities including employees of the enterprises (Table 3) [10].

The investment in dwellings grew 11.9 from 2000 till 2011. The investments in buildings (except inhabited) and constructions went up 9.1, the investments in cars, equipment and vehicles raced 8.9. The investments rate in machinery, equipment and vehicles went down during the analyzed period from 36.6 in 2000 to 35.2 in 2011, respectively.

The fixed assets terms depends on the investments size directed to the updating. The structure of fixed asset investments is shown in table 4 according to the types of processing productions and types of fixed assets [11].

The greatest part of fixed asset investments rates is intended for the development of the industry buildings (except inhabited) and constructions (53.6%). The state of things in processing productions is a little better: the investments in machinery and equipment are 54.6%.

At the same time in the fixed asset investments there are prevailing investments in buildings and constructions while a number of productions (leather and allied product manufacturing, shoes manufacturing, coke and oil products manufacturing, nonmetallic mineral product manufacturing) doesn't favour the innovative economy development especially such branch as the industry which is intended to be the major base for progressive engineering and technology.

The development of innovative economy and the adoption of new technological structures require advancing updating of the active part of fixed assets. It is especially necessary because active fixed assets are more depreciated than other ones. So at the end of 2011 the accumulated depreciation of fixed assets of

Table 3: Specific structure of fixed asset investments (in actual prices)

	2000	2005	2008	2009	2010	2011
Billion roubles						
Fixed asset investments in total	1165.2	3611.1	8781.6	7976.0	9152.1	10776.8
including forms						
infix assets:						
dwelling	132.0	434.2	1193.8	1036.9	1111.2	1566.9
buildings (except inhabited) and construction	502.2	1460.2	3742.2	3482.2	3965.5	4751.9
machinery, equipment, vehicles	426.6	1484.0	3311.9	2970.2	3470.5	3791.2
others	104.4	232.7	533.7	486.7	604.9	666.8
Results in percent						
Fixed asset investments in total	100	100	100	100	100	100
including forms						
infix assets:						
dwelling	11.3	12.0	13.6	13.0	12.2	14.5
buildings (except inhabited) and construction	43.1	40.4	42.6	43.7	43.3	44.1
machinery, equipment, vehicles	36.6	41.1	37.7	37.2	37.9	35.2
others	9.0	6.5	6.1	6.1	6.6	6.2

Table 4: Fixed asset investments in the organizations of processing productions in 2010

	Fixed asset investments results, in percent	Fixed asset investments rate in total, percent	
		buildings (except inhabited) and construction	Cars and equipment
In industry in total	100	53.6	28.4
including:			
processing productions	15.2	38.7	54.6
including:			
	2.2	27.6	63.8
textile and clothing manufacturing	0.1	42.9	50.7
leather and allied product manufacturing, shoes manufacturing	0.02	48.4	45.5
woodworking and wood product manufacturing	0.3	33.9	57.1
paper manufacturing; publishing and printing	0.5	21.1	68.4
coke and oil products manufacturing	2.7	54.0	39.5
chemical manufacturing	1.3	43.5	51.7
plastics and rubber products manufacturing	0.3	26.3	68.9
nonmetallic mineral product manufacturing	1.5	39.7	46.4
primary metal manufacturing and fabricated metal product manufacturing	3.1	36.1	61.2
machinery manufacturing (except arms and ammunition manufacturing)	0.7	4.3	53.4
electrical equipment electronic and optical manufacturing	0.4	22.1	69.0
vehicle and transportation equipment manufacturing	1.2	41.7	52.7

the commercial organizations is 46.3%, including 23.0% in buildings, 49.3% in constructions, 54.1% in machinery and 42.2% in vehicles. It points out that the active part of fixed assets is the most worn-out. The same situation is also confirmed by the accumulated depreciation of fixed assets rates. If the fixed assets investment made 14.4% at the turn of 2011, this indicator was at the level 3.6% in buildings, 13.9% in constructions, 22.0% in machinery and equipment, 11.7% in vehicles [10]. Thus it is possible to conclude that it's about a quarter of completely worn-out equipment as a part of available machinery of the Russian organizations. The physically and morally depreciated fixed assets leads to their inefficient use.

It's impossible to replace the fixed assets in time, so the period of inefficient machinery and the equipment use is extended. In many cases they are liquidated only when their further operation which is intended for physical depreciation is not carried out. According to the sampling method of fixed assets in industry in 2010 68% of machinery was liquidated due to physical depreciation and only 10% had the economic inefficiency [11].

The ratio of indicators of fixed assets input and depreciation confirms the insufficiency of fixed assets input volumes for providing necessary level of their updating, too. So, the volume of all fixed assets input in the commercial organizations of processing productions (without subjects of small-scale business) in 2010

exceeded the depreciation volume charged this year only 1.9, including machinery which increased 1.5. Taking into account the difference in the prices, the cost of annual input of new machinery and vehicles only more or less compensates their annual depreciation. It is obviously insufficient to overcome the long period tendency of machinery ageing [11].

Thus, in the current situation there is an obvious investment resources defect to increase the fixed assets efficiency on the one part and not enough effective use on the other part. First of all this problem can be partly solved by the improvement of reproduction and technological structures of fixed assets investment. The reproduction structure of investments characterizes its distribution to: a) new construction; b) expansion, reconstruction and modernization. The technological structure of fixed assets investment is the investments direction in fixed assets in the forms of: a) installation and construction works; b) purchasing of machinery, equipment, tool and stock. The progressiveness of these structures is defined by the increase of the funds ratio used in the second direction, i.e. in expansion, reconstruction and modernization and in purchasing of machinery, equipment, tool and stock, respectively [12].

According to the authors' opinion, the main directions of the improvement of fixed assets investments structure are:

- Priority investment of innovative activity of the organizations;
- Advance fixed assets updating in progressive industries and economy;
- Wide use of tax and other instruments for the accelerated updating of active part of fixed assets;
- Introduction of progressive technologies in the branches focused on the improvement of the population life quality;
- Increase of the investments races allocated to the environmental protection and others.

The structure improvement of fixed assets investment will lead to the economic modernization followed by the gross domestic product race and the quality improvement of the population life.

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