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**ASSESSMENT OF STATE AND EFFICIENCY OF USING FIXED CAPITAL IN ACTIVIZATION OF THE REGIONAL ECONOMY'S DEVELOPMENT**

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**Abstract**

The article is devoted to the questions of analysis and assessment of efficiency of using fixed capital, detection of the main features of its structure in terms of the types of economic activity. The structure of investments into fixed capital across Russia and Belgorod region is considered, the main directions of its improvement are defined. The types of economic activity of Belgorod region possessing reserves in the use of production capacities by separate types of production are established.

The need of depreciation of credit resources for the purpose of expansion of the sources of financing of investments into fixed capital is proved. The ideas on controlling the prices of services of natural monopolies as a factor of decrease in a rate of inflation are introduced.

**Keywords:** fixed capital; investments; structure of fixed assets and investments; effect of a financial leverage; capacity; types of economic activity; financing sources

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**ОЦЕНКА СОСТОЯНИЯ И ЭФФЕКТИВНОСТИ ИСПОЛЬЗОВАНИЯ ОСНОВНОГО КАПИТАЛА С ЦЕЛЬЮ АКТИВИЗАЦИИ РАЗВИТИЯ РЕГИОНАЛЬНОЙ ЭКОНОМИКИ**

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**Аннотация**

Статья посвящена вопросам анализа и оценки эффективности использования основного капитала, выявления основных особенностей его структуры в разрезе видов экономической деятельности. Рассмотрена структура инвестиций в основной капитал по России и Белгородской области, определены основные направления ее совершенствования. Установлены виды экономической деятельности Белгородской области, обладающие резервами в использовании производственных мощностей по отдельным видам продукции. Обоснована необходимость снижения стоимости кредитных ресурсов с целью расширения источников финансирования инвестиций в основной капитал. Внесены предложения по регулированию цен на услуги естественных монополий как фактора снижения уровня инфляции.

**Ключевые слова:** основной капитал, инвестиции, структура основных фондов и инвестиций, эффект финансового рычага, производственная мощность, виды экономической деятельности, источники финансирования.

**Introduction.** Fixed capital is the major and prevailing element of the Russian organizations property. Its state and change is defined both by the

economy development level and national production competitiveness level. Development of fixed capital attracts changes not only in engineering procedures,

but also in economic and social therefore evolution of the economic relations and all economic system is observed. The problem of efficiency increase of the enterprises fixed capital use takes the central place in economic conditions of today's Russia. The place of the enterprises in national production, their financial state, competitiveness in the market depends on the solution of this problem. For many enterprises the high level of fixed capital wear that does not allow to make qualitative and competitive production is common. It appears possible to solve this problem only due to more effective fixed capital use.

Having a fair idea of a fixed capital role in the production, factors influencing its use, it is possible to reveal methods, directions of efficiency increase for the fixed capital use providing decrease in production costs and a gain in work productivity.

**Main Part.** The state and efficiency of fixed capital use is characterized by a number of indicators, basic of which are the following: coefficients of wear and validity, coefficients of updating and leaving, share of completely worn-out fixed assets, ratio of growth rates of fixed capital and products, distribution of investments into fixed capital by types of fixed assets, branches, regions and others.

Let us consider the most important of these indicators characterizing fixed capital and separate types of economic activity of Russian economy in general and in regions.

In table 1 the specific structure of fixed assets in a section of economy key branches is presented, which shows their considerable distinctions [1].

Specific structure of fixed assets of key branches of the Russian economy at the end of 2013 (% to the total)

Table 1

Таблица 1

Видовая структура основных фондов базовых отраслей российской экономики на конец 2013 года (в % к итогу)

	Total fixed assets	from them:				
		buildings	facilities	machines and equipment	vehicles	other types of fixed assets
Total	100	14.6	49.7	27.9	5.9	1.9
including by types of economic activity:						
agricultural industry, hunting and forestry	100	32.4	10.5	41.0	6.7	9.4
mineral extraction	100	6.9	68.4	20.6	2.7	1.4
processing productions	100	23.4	15.8	54.7	3.6	2.5
production and distribution of the electric power, gas and water	100	13.2	49.6	35.4	1.0	0.8
construction	100	22.4	14.0	40.9	20.2	2.5
wholesale and home shopping service; repair of vehicles, motorcycles, household products and personal demand items	100	8.2	74.8	14.5	1.3	1.2
transport and communication	100	7.9	53.4	22.7	14.8	1.2

In economy general in structure of fixed assets constructions prevail, and it is common for such kinds of activity as mining, production and distribution of the electric power, gas and water, wholesale and home shopping service, and also transport and communication. In other forms of economic activity presented in the table 1, the greatest specific volume is occupied by machines and the equipment: these are agricultural industry, processing productions and construction. These specific structure features of fixed assets result in need of economically reasonable control system development taking into account specifics of their structure.

This, in particular, concerns matters of development of the depreciation policy directed on use of the accelerated charge ways of depreciation charges in those kinds of activity where machines and equipment, etc. prevail.

As a result of fixed capital systematic updating its volumes in dynamics increase. So, on statistical data, the cost of fixed capital (in the comparable prices) from 1990 for 2013 grew by 49%, that is almost by one and a half times. At the same time, wear of fixed capital is at a rather high level. In table 2 the indicators characterizing wear, updating and leaving of fixed capital are presented [1].

**Table 2**  
**Coefficients of wear, updating and leaving of fixed capital of Russian organizations (at the end of the year)**

*Таблица 2*

**Коэффициенты износа, обновления и выбытия основного капитала российских организаций (на конец года)**

Years	Coefficient of wear-out, %	Coefficient of renewal, %	Coefficient of lapse, %	Share of completely worn-out fixed assets, %
1990	35.6	6.3	2.4	...
1991	35.4	5.5	2.1	...
1992	42.5	3.6	1.6	...
1993	33.7	2.5	1.9	...
1994	41.3	2.1	2.0	...
1995	39.5	1.9	1.9	...
1996	37.8	1.6	1.7	...
1997	41.0	1.4	1.6	...
1998	41.6	1.3	1.4	...
1999	41.7	1.4	1.2	...
2000	39.3	1.8	1.3	...
2001	41.1	2.1	1.3	...
2002	44.0	2.2	1.3	...
2003	43.0	2.5	1.2	15.0
2004	43.5	2.7	1.1	14.8
2005	45.2	3.0	1.1	13.3
2006	46.3	3.3	1.0	13.3
2007	46.2	4.0	1.0	12.9
2008	45.3	4.4	1.0	13.1
2009	45.3	4.1	1.0	13.0
2010	47.1	3.7	0.8	13.5
2011	47.9	4.6	0.8	14.4
2012	47.7	4.8	0.7	14.0
2013	48.2	4.6	0.7	14.6

Apparent from this data in table 2, the level of fixed capital wear in comparison from 1990 grew from 35.6% to 48.2%, that is over one third. In a certain degree, it can be explained with decrease in rates of fixed capital updating which in 2013 decreased in comparison with 1990 by 27% (from 6.3 to 4.6%). At the same time rates of fixed capital leaving decreased almost by 3.5 times (from 2.4 to 0.7%). Lag of fixed capital leaving rates from rates of its updating was resulted by process of completely worn-out fixed assets accumulation the share of which over the last ten years practically did not change (in 2003 – 15%; in 2013 – 14.6%).

But if in general on economy the share of completely worn-out fixed assets was approximately on one level, in such types of economic activity as fishery and fish breeding, construction, transport and communication, their share considerably grew. Certainly, it is impossible to let out qualitative and competitive production on the equipment which is completely worn-out.

The developed negative situation concerning the state and the movement of fixed capital demands its

necessary updating in sufficient volumes which would allow to update technical base of production considerably and to provide import substitution, especially in those productions where borders of economic security are broken.

The question of fixed capital updating directly depends on existence of its financing sources which in modern conditions are obviously not enough, and the available sources often are not used directly. In particular, it belongs to depreciation charges which in most part are used for financing of material current assets acquisition [4]. As a result the share of own means in sources of investments into fixed capital financing constantly decreases in dynamics, and by results for 2014 it made 45.8% while the share of the funds raised on various conditions grew to 54.2%.

In the conditions of decrease in a share of own capital as an important source of investments into fixed capital financing the bank credit has to act, but conditions of its attraction in modern crisis situation remain unacceptable for the majority of the organizations. It is connected with the cost of this source of financing being rather high that does not

allow to receive sufficient profitability of production for paying back the credit organizations.

Efficiency of the borrowed funds use by the enterprise in turn is defined on the basis of a financial leverage effect calculation. It characterizes an increment of profitability from own enterprise assets as a result of borrowed funds use, despite availability in price of the last. The financial leverage effect is calculated as follows [5]:

$$FLE = (1 - S_n)(EP - SRSP) \frac{ZS}{CC}$$

where  $S_n$  – a rate of the profits tax, unit share;

$EP$  – economic profitability (profitability of assets), %;

$SRSP$  – an average settlement rate of percent, %;

$ZS$  – borrowed funds of the enterprise;

$CC$  – own enterprise assets.

From this formula it is visible that use of borrowed funds in turn of the enterprise is effective only if the level of economic profitability (profitability of assets) appears above an average settlement rate of percent. Actually, the interest rate

for the credits is approximately twice higher in comparison with the level of assets profitability. Thus, use of credit resources as a source of investments into fixed capital financing leads to decrease in own capital of the enterprise that worsens results of its activity even more.

Besides, nearly over 80% of credit resources are provided by the credit organizations for the enterprises on a short-term basis while long-term investments are necessary for investments into fixed capital financing.

At the same time, structure of investments into fixed capital by types of economic activity also demands improvement. The investment policy has to stimulate scientific researches and development of new equipment and technologies, to maintain tendency of businessman investing into this development and investment in fixed capital to provide favorable investment climate. In table 3 the structure of investments into fixed capital on main types of economic activity is presented [3].

Table 3

**Investments into fixed capital in the Russian Federation by types of economic activity (% to the total)**

Таблица 3

**Инвестиции в основной капитал в Российской Федерации по видам экономической деятельности (в % к итогу)**

	1995	2000	2005	2010	2011	2012	2013	2014
Total	100	100	100	100	100	100	100	100
Agricultural industry, hunting and forestry	3.7	3.0	3.9	3.3	4.1	3.8	3.8	3.7
mineral extraction	14.2	18.1	13.9	13.8	13.9	14.8	14.9	16.1
Processing productions	14.8	16.3	16.4	13.2	12.9	13.4	14.4	14.9
including production of machines and equipment	0.7	0.8	0.9	0.7	0.5	0.6	0.7	0.7
Production and distribution of the electric power, gas and water	7.6	6.0	6.8	9.0	9.2	9.3	8.8	8.6
Construction	4.5	6.4	3.6	3.7	3.1	2.8	3.3	3.0
Wholesale and home shopping service	2.0	2.7	3.6	3.7	3.1	3.6	3.9	4.4
Transport and communication	12.6	21.2	24.5	25.5	28.2	26.4	24.5	23.0
Scientific researches and development	0.4	0.5	0.5	0.7	0.8	0.7	1.0	1.0

The structure of investments into fixed capital by types of economic activity is not perfect. The share of the investments sent to the processing productions including into production of machines and the equipment shows it. From the total amount of investments only 14.9% goes to processing. In comparison with 1995 this amount practically did not change, and during certain periods it was even lower. From this volume only 0.7% of means are used for financing of machines and the equipment production that is extremely insufficient. The level of

mechanical engineering development defines rates of scientific and technical progress development in all other branches of economy therefore investments into this sphere have to be maximum and much higher in comparison with other kinds of activity. So far the pursued investment policy does not provide priority development of mechanical engineering. In most cases businessmen are guided by acquisition of foreign production technology that results in technological dependence on the developed states

and does not promote improvement of investment climate in the country.

Much more investments go to the extracting branches that fixes a further raw orientation in development of the Russian economy. In dynamics the share of investments into fixed capital increases from 14.2% in 1995 to 16.1% in 2014.

Also investments in trade, in production and distribution of the electric power, gas and water, transport and communication grow, and in construction their share decreased practically by 1.5 times for the considered period. The share of investments into fixed capital directed on scientific researches and development is absolutely

insignificant: from 0.4% to 1% in dynamics. Transfer of economy to innovative development way demands a basic change developed and for a long time supported structure of investments into fixed capital.

Similar tendencies are common for regional economies as well as the high level of profitability in raw branches continues to attract considerable volumes of investment resources. At the same time, there are still separate reserves for improvement of fixed capital use. In particular, in the Belgorod region as such reserve it is possible to note the available reserve in use of capacities in separate kinds of activity that is shown in table 4 [2].

Table 4

**Level of use of the average annual capacity of organizations for release of the individual types of production of the extracting and processing industries in Belgorod region (percentage)**

Таблица 4

**Уровень использования среднегодовой производственной мощности организаций по выпуску отдельных видов продукции добывающих и обрабатывающих производств в Белгородской области (в процентах)**

	2010	2011	2012	2013	2014
commercial non-enriched iron ore	76.20	100.0	100.0	100.0	82.82
Concentrate iron ore	95.87	100.0	100.0	97.65	98.38
Meat and offal food of farm animals	53.67	76.92	88.77	95.96	94.69
Meat and offal food poultry	92.26	95.92	95.92	92.94	86.5
Fruit and vegetable canned food	32.43	33.35	74.73	46.07	44.77
Whole-milk production (in terms of milk)	60.63	53.15	54.16	55.41	65.53
Beet white sugar in firm state	86.48	89.43	64.05	86.36	71.42
Portlandcement, cement aluminous, cement slag	80.53	67.57	68.53	64.47	54.43

The greatest opportunities are available in production of such production, as fruit and vegetable canned food, whole-milk production, sugar beet and another. Use of these capacities will allow to increase considerably return from fixed capital and to increase efficiency of regional economy functioning.

At the same time, investment resources, which volumes have insufficiently expressed dynamics to growth, are also necessary for maintenance of the available capacities; that is presented in the table 5 [2].

Table 5

**Investments into fixed capital in Belgorod region**

Таблица 5

**Инвестиции в основной капитал по Белгородской области**

Years	Mln.rur. (in actually operating prices; 1995 - billion rubles)	As a percentage to previous year (in comparable prices)	Years	Mln.rur. (in actually operating prices; 1995 - billion rubles)	As a percentage to previous year (in the comparable prices)
1970	389.7	99.3	2005	35,021.9	134.0
1980	817.8	103.2	2006	52,073.3	134.7
1990	2,673.2	110.0	2007	83,509.5	144.5
1995	2,675.7	91.0	2008	104,217.6	105.9
2000	9,241.8	98.7	2009	73,126.6	73.1
2001	14,030.6	139.5	2010	96,313.0	122.3
2002	10,829.8	67.7	2011	125,993.5	118.4
2003	15,336.3	126.8	2012	136,819.6	101.4
2004	22,684.5	130.9	2013	129,405.2	89.7



As data shows, growth rates of investments are not rather steady against growth that is caused by a number of reasons, of macroeconomic character as well as regional conditions of development.

As for the directions of investments into fixed capital use in the Belgorod region, they essentially differ from the similar directions in general across Russia that is presented in table 6 [2].

**Specific structure of investments into fixed capital**

Table 6

**Видовая структура инвестиций в основной капитал**

Таблица 6

	Russian Federation	Belgorod Region
Investments into fixed capital - total	100	100
including		
lodgings	16.0	5.7
into buildings (except inhabited) and construction	42.1	39.1
in machines, equipment, vehicles	35.3	52.0
etc.	6.6	3.2

The main difference of investments into fixed capital structure in the Belgorod region is considerable excess of the investments directed on acquisition machines, financing the equipment and vehicles, in comparison with average values about the country, almost by 1.5 times.

In spite of the fact that Belgorod region represents the region developed in facility construction, according to the share common of investments into this direction on average across Russia the indicator was higher.

Also in the Belgorod region the smaller share of means goes for construction of buildings and constructions (except housing).

In general the structure of investments into fixed capital across the Belgorod region is more progressive since it promotes faster rates of economy development.

**Conclusion.** On the basis of the carried-out analysis it is possible to note a number of directions allowing to improve structure of fixed capital and to increase efficiency of its use.

In particular, redistribution of investments in the direction of their bigger share on formation of fixed assets active part on the basis of new construction, expansion, reconstruction, modernization and production modernization that will promote increase of a social production efficiency is necessary. Formation of high-quality economic growth requires repeated investment increase and innovative activity, restructuring of the Russian economy on the basis of a wide circulation of modern technologies.

Expansion of investments into fixed capital financing sources requires depreciation of credit resources, as well as release from the income taxation of the enterprises aimed at production development, carrying out research and development and development of new technologies, that is widely applied in the developed foreign countries and was used in Russia till 2002.

As a stabilization factor freezing the service prices of natural monopolies that will promote decrease in inflation rate is necessary and will provide more favorable conditions for development of domestic market.

**References**

1. Entrepreneurship. Fixed Assets. URL: [http://www.gks.ru/wps/wcm/connect/rosstat\\_main/rosstat/ru/statistics/enterprise/fund/](http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/enterprise/fund/)
2. Entrepreneurship. Investments. URL: [http://belg.gks.ru/wps/wcm/connect/rosstat\\_ts/belg/ru/statistics/enterprises/investment](http://belg.gks.ru/wps/wcm/connect/rosstat_ts/belg/ru/statistics/enterprises/investment)
3. Entrepreneurship. Investments. URL: [http://www.gks.ru/wps/wcm/connect/rosstat\\_main/rosstat/ru/statistics/enterprise/investment/nonfinancial/](http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/enterprise/investment/nonfinancial/)
4. Investments: textbook / I.V. Sergeev, I.I. Veretennikova, V. V. Shekhovtsov. – 3rd ed., rev. and enl. M.: Publishing House of Yurayt, 2013. 314 p.
5. Sergeev, I.V. Economy of an organization (enterprise): textbook / I.V. Sergeev, I.I. Veretennikova; edited by I.V. Sergeev. – 5th ed., rev. and enl. – M.: Publishing house of Yurayt, 2012. 671 p.