Characteristic of Economic Indicators of Reproduction of Fixed Capital

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ABSTRACT

The relevance of the topic is needed review and resolve problems of reproduction of fixed capital of industrial enterprises, identification of regularities and peculiarities of its reproduction in conditions of transition to new technological way of life, search of ways of increase of efficiency of formation and development of capital in modern conditions. Long enough for the reproductive processes were considered from the standpoint of attracting investment funds and analyze the dynamics of financial capital, without affecting the issues of reproduction of real capital, the more problems the latest requirements of the modern paradigm of development characterized by the increasing importance of the innovative capacity of enterprises and the economy as a whole. Modern aspects of economic analysis require serious consideration of the problems of the reproduction of capital. In the period of economic reforms in the 80s and 90s the twentieth century, clearly delineated the problems of reproduction of fixed capital of industrial enterprises. Reproductive cycles in this period was carried out in conditions of chronic shortage of investment resources required for sustainable reproduction processes. This defined the urgent problem of physical and moral aging of fixed assets and has created an urgent need for modernization, through the introduction of innovative technologies that meet modern technological paradigms.

JEL Classifications: D21, D23, D24.

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1. INTRODUCTION

Any organization has a certain property. The assets of the organization represent the assets listed on its balance sheet. Property of any organization is divided into two main parts, each of which acts differently in the production process: fixed assets (capital), working capital (capital). These two parts are in different ways involved in the production process due to different economic role and place in the production process. They are also different in shifting their cost to the cost of the final product during the useful (Tsygankov, 2009).

Information and the empirical base of the study was collected and summarized data of Rosstat of the Russian Federation, administrative bodies, data on the Internet.

The paper used General scientific methods of system-functional approach, methods of generalization, grouping, ascent from the abstract to the concrete, analysis and synthesis, the unity of historical and logical analysis.

2. THEORETICAL ANALYSIS

The fixed capital of the enterprise is the part of productive capital which completely and repeatedly takes part in the production of goods, transfers its value to a new product in parts, over a number of periods. Fixed capital is that portion of the advanced capital, which is spent on construction of buildings, purchase of machinery, equipment, tool (Hetman, Shneidman & Terehova, 2011).

Fixed capital is money invested in fixed assets. He changes his physical form and through the following stages:

- investment (cash – fixed assets) in tangible assets - buildings, constructions, machinery and equipment, etc., and not in financial assets – stocks, bonds.
- manufacturing (material form), consumption in the form of depreciation. The process of gradual transfer of the value of the means of labor as their physical and moral wear on etc product; the use of special funds – depreciation included in costs of production and circulation, for simple and expanded reproduction of fixed assets;
- compensation: accrued depreciation becomes in the form of money (cost, revenue). These money is re-purchase of equipment ("*International Financial Reporting Standard*", 2016).

Main capital is the monetary valuation of fixed assets (Figure 1).

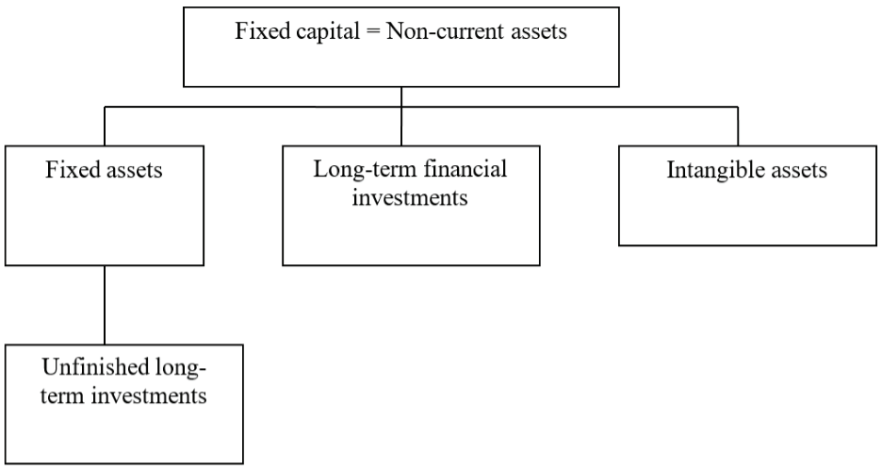

Figure 1: Composition of fixed capital of the enterprise

Fixed assets of the enterprise: The basic tools play very important role in any organization:

- fixed assets - part of the property reflected in the first section of the balance sheet of the organization;
- fixed assets in the organization to form a taxable base under the tax to property;
- at the conclusion of major contracts (tenders, bidding) always requests information on the quantity and quality of fixed assets of the organization;
- plant and equipment - the most expensive part of the property of an organization in order to invest in this organization, you need to know, first of all, the composition, structure, and use of fixed assets.

The main assets of an organization:

- fixed assets of the organization give full information to the owners about their condition, and allow you to predict key financial results;
- state of the main funds is crucial information for managers in planning the organization, contracts, determining the amount of investment (Vahrushina, Melnikova & Plaskova, 2008, p. 124-180).

Fixed assets of industrial enterprises represent a set of material values, work to create a public, long involved in the process of production in unaltered natural form and carrying their value for the products manufactured in parts with wear and tear.

Classification of fixed assets: There are several classifications of fixed assets.

Fixed assets - the most important and predominant part of all funds in the industry (this refers to the basic and revolving funds and funds circulation). They define production power of enterprises that characterize them technical equipment, are directly connected with productivity, mechanization, automation of production, cost of production, profit and level of profitability.

Each group consists of a variety of different tools. In the group of buildings divided into three subgroups: production buildings non-production buildings and housing. Structures are divided into underground oil and gas wells, mining. To transfer devices include pipes and water pipes. Power machines are turbines, motors.

Working machines and equipment are divided according to sectors of use. Tools and equipment included in fixed assets only if they serve more than one year and cost more than 300 rubles (if it is less, then it is low value items and are included in current assets).

Buildings and constructions for production purposes, transmission devices, machinery and equipment, vehicles form the fixed assets for production purposes.

The ratio of the individual groups of fixed assets in their total volume is a panoramic view (production) structure of fixed assets (Frolova & Kabanova, 2014). Depending on the direct participation in the production process of industrial fixed assets are divided into: active (serve critical production sites and describe production possibilities of the enterprise) and passive (buildings, constructions, equipment, ensure the normal functioning of the active elements of fixed assets).

Basically, the mass production of fixed assets in industry is concentrated in the active part.

Along with given a typical classification of fixed capital for a more in-depth analysis and study of trends in changes in the structure and revealing of reserves of increase of efficiency of their use in practice applied by other groups. For example, it is the study of the structure, in terms of active and passive part of fixed capital. To the active production of the main funds include the working power machines and equipment and vehicles. With their support workers directly affect the objects of labor. Passive funds include those assets which are not expressly included in the labor process, but create the necessary conditions for working and produce quality products (Klimanova & Goschansky, 2006).

Specific weight of active part of basic production assets describes the progressive structure of the main capital of the organization. It reflects the proportion of their active part in per cent to the total value of assets of the enterprise. Different organizations have completely different structure of fixed capital. It depends on the type of work performed and manufactured products, conditions of the organization. The structure of fixed assets can be judged on the progressivity and effectiveness of their use in the organization.

Technological structure of fixed capital is characterized by a specific weight of various types of fixed assets within a certain group. The overall rate coefficient of the technological structure that represents active funds in their total carrying value. The higher the value, the greater the proportion of fixed capital is directly involved in the production process.

Thus, the composition and structure of the main capital of the organization depends on the specific organization, the range of its products and services. In the composition of capital include production (active and passive) and non-productive assets (Silnov, 2016). The main indicator of capital structure, which characterizes the efficiency of its use is the coefficient of the technological structure.

For the best use of fixed assets in the course of their operation, you must maintain a clear accounting of availability and movement of fixed assets in the enterprise. This account should provide the knowledge of the General value of fixed assets, their dynamics, their impact on the level of production costs and others. Thus, the economic essence of fixed assets and their purpose more clearly you can Express the following conclusions:

- fixed assets involved in the production process of more than twelve months;
- basic tools parts keep their value on the cost of the final product in the form of depreciation over their useful use;
- fixed assets do not change their natural - material form in the production process (Sidneva, 2009).

3. DISCUSSION

In accordance with Chapter 25 of part II of the Tax code of the Russian Federation accrual of depreciation of fixed assets is subject to the following factors: the cost of depreciable property; the classification of depreciable assets; the method and procedure for calculating depreciation amounts.

Depreciable property is the property, results of intellectual activity and other objects of intellectual property that are administered by enterprises and used by them to generate income and the cost of which is repaid by accrual of depreciation.

For depreciable property does not include land and other natural objects, as well as inventory, goods, securities, financial instruments and futures contracts.

Depreciable property in accordance with the terms of its useful use is split into 10 depreciation groups: the first – all short-lived assets with a useful life of 1 to 2 inclusive, the tenth group – assets with a useful life of 30 years (Horuzhiy, 2011).

Fixed assets are subjected to physical and moral wear and tear in the course of their use and when idle. In the latter case, the physical depreciation of fixed assets is the loss of their properties under the influence of atmospheric conditions and as a result of internal processes in the structure of the material from which they are made.

When physical deterioration is the loss of fixed assets is their use-value, i.e. the deterioration of the technical, economic and social characteristics under the influence of the labor process, forces of nature, and also due to non-use of fixed assets.

A significant proportion of obsolete fixed assets in production causes a substantial loss, because, first, the aging equipment requires increased investment in capital repairs to maintain it in working order; secondly, the legacy production has not been able to use the new technology – at least not completely. As a result, the volume of goods and services decreases.

Factors of wear and tear of fixed assets: The physical wear and tear of fixed assets in the process of their use is influenced by many factors, including:

- usage of fixed assets in the production process. However, we must remember that the increased load of fixed assets is economically feasible, because it contributes to better use of assets and reduce the cost of production as per unit of production accounts for a smaller portion of depreciation of fixed assets.
- the quality of assets; whether the equipment is fixed or portable, - portable wear out faster.
- the features of the technological process and degree of protection of fixed assets from the influence of external conditions;
- the quality of care of fixed assets;
- strict observance of technological regimes, technically competent operation of machinery and equipment (Sokolov, 2004).

Machines, machine tools and other types of fixed assets not physically wear out, but are backward in their technical characteristics and economic efficiency. They are subject to obsolescence.

There are two forms of obsolescence:

- the first expresses the reduction of the cost of a machine or equipment without proper physical deterioration as a result reduce the cost of their reproduction;
- the second is the decrease in value resulting from the introduction of new more productive machinery, or equipment, is not due to a decrease in performance or power, and so that further operation of old cars compared to new leads to higher production costs.

The obsolescence of the first type is not associated with the duration of the life of the equipment, not with the extent of his physical deterioration, and with the pace of technological progress leading to lower cost of production due to the growth of labor productivity in the sector producing new capital assets (Gorbachenko, Kuznetsova & Silnov, 2016).

In the case of moral depreciation of the first form of the use value of fixed assets does not change. New machines, same old, no structural changes; performance hardware also remains the same. Changing only the replacement cost of fixed assets.

Warning of obsolescence of fixed assets: Prevention of obsolescence of the assets. Warning of obsolescence of fixed assets primarily relates to their passive parts: buildings, structures, and communications. They are much more durable than hardware. Therefore, their solutions must be taken into account subsequent replacement of technology and equipment (Horuzhiy, 2011).

The correct establishment of the degree of wear of fixed assets is important for determining the replacement value of fixed assets and depreciation charge, which is economically compensate the wear.

Depreciation of fixed assets is determined and applies to all enterprises regardless of forms of ownership all types of fixed assets, is calculated independently according to him, the depreciation or not.

In some objects of fixed assets amount of depreciation is set as required on the basis of existing inventory data cards of the initial or replacement cost of the facility, regulatory time finding it in operation and the existing depreciation deductions.

The amount of wear on fully amortized fixed assets is not charged.

Wear is reflected by the enterprises and organizations, based on established uniform norms of depreciation charges.

Physical depreciation is determined on the basis of service lives of fixed assets (1):

$$Depr_f = \frac{T_f}{T_n} \cdot 100\% \quad (1)$$

where, T_f – actual service life (years);

T_n – standard life (years).

The obsolescence of the first type is determined on the basis of the ratio of the historic and replacement costs (2):

$$Depr_{o1} = \frac{F_b - F_r}{F_b} \cdot 100\% \quad (2)$$

where, F_b – balance value (thousand rubles);

F_r – replacement value (thousand rubles).

Moral deterioration of the second kind is usually determined based on the comparison of performance of equipment (3):

$$Depr_{o2} = \frac{P_{z_1} - P_{z_2}}{P_{z_1}} \cdot 100\% \quad (3)$$

where, Pr_1 – productivity of existing fixed assets;

Pr_2 – performance of new assets.

However, this does not include the savings of raw materials or manpower saving that can be secured new asset. Therefore, for a more accurate accounting of the moral deterioration of the second kind should be compared to fixed assets and production costs, using the following formula (4):

$$Depr_{m2} = \frac{Pc_2 - Pc_1}{Pc_2} \cdot 100\% \quad (4)$$

where, Pc_1 – production costs of existing fixed assets;

Pc_2 – production costs of new fixed assets.

The basic production assets, participating in the production process, piece by piece transfer their value to the finished products produced or services rendered.

Value is migrated to the production cost is determined by:

- initial cost of fixed assets;
- kind of fixed assets;
- industry specific production.

Method of estimating the depreciation of fixed assets: The main function of depreciation is to provide renewal, the restoration of fixed assets and accounting. In cards of fixed assets accounting reflects the data for the depreciation and is determined by the value of depreciation of fixed assets over the years of their operation.

Also, the depreciation to a certain extent, and performs catalytic function, providing the most complete use of assets: the longer the period of operation of the equipment, the more volume of products and the sooner the value is transferred to fixed assets (Silnov, 2016). This will reduce their under-depreciation due to obsolescence and to reduce losses of the enterprise, which is very important in the market.

Monetary value of the transferred part of the cost of fixed assets is called depreciation. Depreciation charges are included in the cost of production (cost of production).

The amount of depreciation is determined according to the depreciation rates from the original (book) value of fixed assets based on the period of their service.

In accordance with this depreciation rate is calculated by the formula (5):

$$N_a = \frac{F_{o(b)} \cdot F_l}{F_{o(b)} \cdot t_{sl}} \cdot 100\% \quad (5)$$

where, N_a – depreciation of fixed assets in the year (%),

$F_{o(b)}$ – original (balance) value of fixed assets,

Φ_Λ – liquidation value,

t_{sl} – standard service life of fixed assets.

The depreciation rate represents the annual percentage of the repayment value of fixed assets.

In a number of industries depending on the technological features of production, mode, and shift operation of the equipment and other factors, the depreciation rate can be raised or lowered.

Businesses are given the right to choose method of depreciation.

From 1 January 2002 by the Government of the Russian Federation recommended depreciation linear and nonlinear method.

Enterprises should apply the straight-line method of depreciation to buildings, constructions, transfer devices participating in the eighth – tenth depreciation groups, regardless of the timing of commissioning of objects.

The other major assets of the company shall be entitled to apply either the nonlinear or the linear method. When applying the linear method, amount accrued during the one month depreciation is defined as the product of the initial (replacement) cost and norms of depreciation, is defined for the object.

When using a linear method, the depreciation rate for each object of depreciable property is defined by the formula (6):

$$K = \frac{1}{n} \cdot 100\% \quad (6)$$

where, K – depreciation rate in % to initial cost (recovery) of the object;

n – useful life of the object, expressed in months.

When applying the linear method, the accrued depreciation is defined as the product of the residual value of depreciable property and depreciation rates defined for this object.

When applying the linear method, the depreciation rate is determined by the formula (7):

$$K = \frac{2}{n} \cdot 100\% \quad (7)$$

where, K – depreciation % residual value;

n – useful life of this object, expressed in months.

The residual value of the object is determined as the difference between the original (replacement) cost and the amount accrued during the period of operation (Tsygankov, 2009).

So, the depreciation deductions are one of the main sources of reproduction of fixed assets.

The development of fixed assets of trade enterprises is due to the increase and upgrade of fixed assets. Growth represents the accumulation or increase them in real terms. Capital renewal is the replacement or upgrade of existing tools with new, more advanced on the technical level.

Long-term use of assets assumes a constant maintaining them in a normal condition, which is a current or capital repairs.

Classification of methods of depreciation: There is a classification of methods of depreciation. First, it is possible to allocate uniformly straight-line method.

At even-straight-line method, there is a uniform write-off the cost of fixed assets within the stipulated time.

In addition to uniform (linear) in the world practice methods of accelerated (regressive) depreciation. Accelerated depreciation methods during the first half of the standard service life of fixed assets to make up to 60 - 75% of their value, and using a uniform method would be refunded only 50% of the cost of fixed assets. In the second half of the service life of fixed assets the depreciation is reduced.

Among the methods of accelerated depreciation allocate: method at twice the normal; cumulative.

In our country, the method is applied at twice the norm, when approved in the prescribed manner the depreciation rate of the corresponding inventory object increases, but not more than 2 times.

Businesses can apply the method of accelerated amortization in respect of fixed assets used to increase the production of computer AIDS, new progressive kinds of materials, instruments and equipment, expansion of exports, in cases where they replace worn out and obsolete equipment (the standards are coordinated with the state financial bodies). This method does not apply to machines and equipment with standard service life till 3 years, on a unique technique designed only for the production of a limited range of products.

In recent years in developed countries used a new method of accelerated write-off of the cost of machinery is a combination of the methods of regressive and progressive shock absorption (Shirobokov, 2010).

4. RESULTS

In the existing technical level and structure of fixed assets increase in production, cost savings and growth of savings of the enterprises depend on use.

Estimation of fixed capital in the organization is natural in terms of value. Natural indicators can provide insights on the composition of fixed capital, its technical characteristics, the terms of service. In terms of value, the basic tools are valued at initial (balance) cost.

All the indicators of fixed assets can be combined into three groups:

- indicators of extensive use of fixed assets, reflecting the level of use of their time;
- indicators of intensive use of fixed assets, reflecting the level of use of capacity (productivity);
- indicators integrated use of the basic production assets, taking into account the combined influence of all factors - both extensive and intensive.

The first group of indicators concern: factor of extensive use of equipment, work shift coefficient of equipment load factor, equipment factor replacement time mode of operation of the equipment. The efficiency of use of fixed assets determines the needs of the enterprise in fixed assets. The higher the efficiency, the relatively less amount of fixed assets required for the smooth implementation of goods and services.

In the analysis of fixed assets should study their composition, structure and dynamics; assessment of the technical condition, degree of updating and technical improvement; to identify the security asset, the level of intensive and extensive load; determine the reserves of the best use of the funds.

The load factor of the equipment also describes the use of the equipment in time. Set it for the entire fleet of machines located in the main production. Is calculated as the ratio of the complexity of manufacturing all products for this type of equipment to the Foundation. The load factor of the equipment in contrast to the shift factor takes into account data on the complexity of the products. In practice, the load factor is usually taken equal to the value of the shift factor is reduced in two times (at two-shift operation) or three times (in three shifts).

In addition to the day and intra-shift downtime it is important to know how effectively the equipment is used in hours actual download. This task is solved through the computation of indicators of intensive use of fixed assets, reflecting their use of power (performance). The most important of these is the factor intensive use of equipment.

The third group of indicators of use of fixed assets are the ratio of the integrated use of equipment, utilization of production capacity, the indicators of return on assets and capital productivity products.

The ratio of the integral equipment utilization is defined as the product of the coefficient of intensive and extensive use of equipment and comprehensively characterizes the operation of his time and performance (power). The value of this parameter is always lower than the values of the previous two, as it takes into account simultaneously the faults and the extensive and intensive use of equipment (Tsygankov, 2009).

The average annual value of fixed assets can also be defined as the quotient resulting from dividing by 12 the sum obtained from the addition of half of the full book value of all fixed assets at the beginning and end of the reporting year and the cost of funds 1-e the number of all the other months of the year.

In a market economy increases the interest cost characteristics of fixed assets, analyzing their condition, needs timely replacement of obsolete funds and real financial capacity to implement such replacement.

5. CONCLUSION

Efficient use of fixed assets is a very important economic task. Her decision means an increase in the production of the necessary products to society, increasing the benefits created by the production capacity and better meet the needs of the population, improving balance equipment in the country, reduce production costs, increase profitability, savings in the enterprise.

Fixed assets are part of the assets of the company, the availability and use of which depends the production and financial activity of the enterprise, so it is important to monitor their availability and safety, proper accounting, valuation and revaluation, recovery of fixed assets, efficiency of use of fixed assets. So it is very important established accounting, analysis of efficiency of use of fixed assets.

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