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Generalization of Foreign Experience in the Reproduction and Recording of Fixed Assets

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ABSTRACT

The slowdown in the depreciation of fixed assets, especially their active part is achieved in the implementation of programs of reconstruction and technical re-equipment of enterprises, as well as in the modernization of equipment. Revamping is carried out with the aim of improving the efficiency of their operation through the introduction of new technologies, progressive methods of management and production organization. The reconstruction is accompanied by the replacement of the main part of the production equipment more progressive types with higher performance and improved structural characteristics. Such works are carried out on the complex project of reconstruction of the whole enterprise in order to increase production capacity, improve the quality and changes in product mix, as a rule, without increasing the number of jobs while improving working conditions and environmental protection. The expansion of the existing enterprise is a special case of the reconstruction, which is dominated by activities associated with the completion of the existing fleet of production equipment and the creation of objects for the added equipment necessary areas and other elements of fixed assets. Technical re-equipment, which is a particular case of reconstruction of existing enterprise includes activities associated with the modernization and replacement of existing technological equipment of modern, more effective. It is possible to change the other model associated with the equipment items of fixed assets.

JEL Classification: D21, D24, D92.

Keywords: Enterprise economy, fixed assets of enterprises, reproduction, modernization, amortization.

1. INTRODUCTION

Reproduction of fixed assets is a continuous process of updates through the acquisition of new, reconstruction, technical re-equipment, modernization and major overhaul that includes the following interrelated stages (Figure 1): creation; consumption; attenuation; restoration and reparation.

In the diagram, the stage of reproduction of fixed assets is divided into two parts. One part is the creation of fixed assets, which often occurs outside of the enterprise. The creation of fixed assets in accordance with their structure occurs in two areas: construction and engineering, including instrumentation. The second part is the stages that are carried out within the enterprise.

The initial stage of reproduction of fixed assets, which is supported on the enterprise's stage of acquisition and formation. For the new company, which only generated, and the process of forming a means construction of buildings, purchase of equipment, and appropriate technological process, cost and product quality (Kobersy, Barmuta, Muradova, Dubrova, & Shkurkin, 2015).

For existing enterprises, the formation of fixed assets includes primarily the following steps:

- inventory of existing and used fixed assets to identify obsolete and worn elements of fixed assets;
- analysis of the compliance of the existing equipment technology and organization of production;
- choice (taking into account the particular circumstances of production and the planned production volume) of the volume and structure of fixed assets. Next is the reinstallation of existing equipment, purchase, delivery and installation of new equipment.

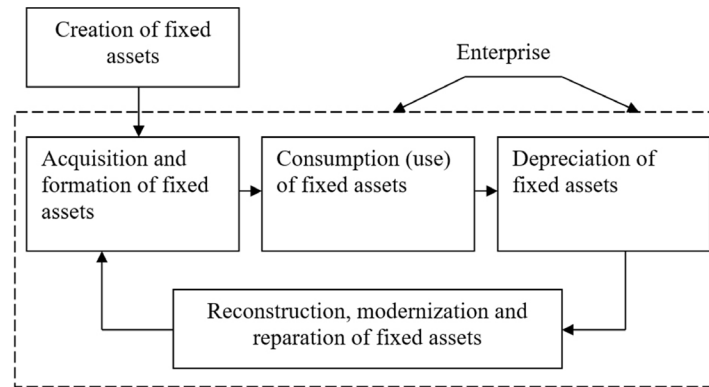


Figure 1: Stage of reproduction of fixed assets

Completes the fixed assets reproduction process of recovery or reimbursement. The recovery of fixed assets may be carried out by means of repair (current, average and capital) at the expense of depreciation as well as by upgrading and reconstruction.

2. MATERIALS AND METHODS

Theoretical and methodological basis of research served as the scientific works based on the fundamentals developed by Russian and foreign scientists in the field of formation and accounting of fixed assets.

During the research the authors relied on scientific analysis methods: scientific abstraction, system synthesis, logic, comparison.

3. PROFITABILITY OF FIXED ASSETS

Quite a long time works on financial analysis, published in the West, was limited to description of techniques of analysis, which is used in one or another particular country.

Unfortunately, despite the nascent cooperation, accounting system and reporting information differed in the countries to such an extent that the technique of financial analysis of income statement used in the UK differed from that used in France or Germany.

In this case, is it possible to give preference to certain types of learning associated with any one country? Isn't it better to enrich the knowledge of, become acquainted with various methods of analysis that find application in different countries?

Technique of Financial Analysis of Fixed Assets of United States and France

In this work, taken into account the experience of the two countries where the technique of financial analysis is particularly well developed and has a lot of differences - the USA and France.

One of the benefits used experience in that it shows the possibility of solving the same problem, manifesting itself in various forms of approach to it or different variants of its decision. Analyzing international experience, it is possible to show not only its advantages but also its shortcomings.

A traditional analysis of fixed assets is the analysis of fixed capital.

Fixed capital – machinery, machinery, i.e., anything used for a long period of time and transfers its value to the value of the goods in the form of depreciation.

The traditional approach to determining the degree of wear of fixed capital consists in correlation of the sums of deductions of depreciation to original cost of fixed capital:

$$K_w = \frac{\text{Amount of Wear}}{\text{Initial Cost of Fixed Capital}}$$

But the analyst should also consider additional elements that can affect the overall picture:

- it is possible to change the way of wear;
- the lack of revaluations of balance;
- the frequency of updating of fixed capital.

The associations of undertakings, or where there have been mergers and reorganization should take into account the emergence of new fixed capital, analyzed with various rates because of various spheres of activity, or simply due to different methods of depreciation (in the same field of activity) (Akberin & Kibanov, 2015).

Another approach is to estimate the degree of updating the instruments of production by mapping the amounts of their purchases for a certain period to the capital value, end of period:

$$K_u = \frac{\text{Value of the Purchased Assets for the Period}}{\text{Cost of Fixed Capital in the End of Period}}$$

Sometimes analytics it is necessary to know the production potential at the moment, its dynamics in time and its relative value in relation to some basic data manual.

The first problem arises from the fact that there is no regular and systematic revaluation of the balances, the cost of capital is mostly not accurately reflected in the balance sheet.

As for the second problem, namely the comparison of the volume of fixed capital in time, it involves the assessment of fixed capital in comparable prices. The use of comparable prices does not always solve the problem, as the result of technological advances, the equipment is updated.

Therefore, the analyst must take into account this point for the development of the evaluation system in basic prices (Baydell, 2015).

It also makes sense to relate the amount of fixed capital used in production, with an average number and calculate the measure of the amount of equipment per worker, i.e., the rate of the technical composition of capital:

$$\text{Technical Composition of Capital} = \frac{\text{Number of Machines, Equipment Used in the Production}}{\text{Average Number of Employees}}$$

Typically, the numerator of the indicator should be expressed quantitatively in order to bring momentum for the periods and between companies. In fact, most often the analyst expresses in current prices, as suggested by the Central office for balance sheets of the Bank of France, in the following:

$$\text{Value Composition of Capital} = \frac{\text{Cost of Main Capital}}{\text{Cost of Labor}}$$

One of the problems that arises from specialists in the analysis and control is to determine initial or residual value must be considered fixed capital, when it comes to assessing the performance of an enterprise (Isaev, 1999).

Assessment of the Technological Level of the Main Production Funds

The acceleration of technological progress makes the enterprise faster to update fixed capital in the conditions of new technologies. Consequently, the assessment of the technological level of the means of production is the primary objective of any economic analysis of enterprises.

Experts on this issue believe that this analysis should not abstract from the totality of the conditions of action of the global strategy of the enterprise (Chueva et. al., 2016). It is not about applying everywhere one technique and follow the need to achieve higher coherence of machinery and equipment, on the contrary, it is widely acknowledged the existence of a strong interdependence between the nature of goods produced, the technology used and the form of organization of production.

Evaluation of the technological level of the means of production of the enterprise must take into account linkages with other elements of the analysis of a commodity and the conditions of production (Ragulina & Zavalko, 2013). This estimate is based on the calculation of appropriate indicators, linked to the system. But the definition of the technological level is not the end of the analysis, it is also important to assess the level of difficulty of the equipment and the risk associated with its operation. Interest analysts also

raises the level of integration of the equipment in the extent in which it plays a role in product management and accidents (stops production). And finally, the ability of the equipment to the modification required in the new technique of production control is one of the highlights of the analysis equipment.

The technological level of the group of machinery and equipment can be measured by the following indicators:

- manual machines – 1;
- simple machine partially mechanized – 2A;
- simple machines fully mechanized – 2B;
- machines partially automated – For;
- machine fully automated – Fi;
- machine is automated and programmable to 4;
- flexible and automated and programmable system – 5.

Adaptability of Fixed Assets Production

The improvement in the equipment carried out without proper analysis creates problems for the enterprise: the more complicated the equipment (technology), the higher the probability of an accident.

Ideal for the enterprise is simple and rugged equipment, which, however, will meet the technical needs of the day, due to competition. Under the condition of equal satisfaction of the consumer more productive will be the simplest equipment. Of course, such an assessment is the degree of “simplicity” of the equipment may only be done by specialists.

Flexibility is one of the key concepts of new production technologies. New sales conditions are forcing enterprises to change the characteristics of products, but also produce a limited number of additional products. In a sense, should be done to square the circle: to produce in small quantities at a low price, and for this we must move from simple equipment, specializing in one type of production, flexible equipment, able to adapt rapidly to production of different products. Thus, if the needs of the market lead to flexible equipment, the analyst must determine whether all the necessary components of this flexible system.

The flexibility of the equipment can be determined using various criteria: the degree of polyvalences equipment, time, transition, segmentation, equipment, availability of equipment spare parts, the degree of multiplicity of the staff.

The degree of polyvalences equipment by type of equipment it is possible to tell whether you meant to perform one task, or programmed to solve a variety of problems.

A time of transition. polyvalences machines suggest that you can go to one machine from one operation to another, and that the transition time is reduced to a minimum.

In the production of mass batches of machines were not designed for rapid changing of tools. When running on the system “just in time” is a time of transition became one of the key points of the technology: the optimum in this case is the touch of just one button, but even when using system SMED (SMED is a quick change of tools (practically less than 10 minutes)) achieved a great result.

Segmentation of equipment is also an important means of flexibility of the equipment: instead of having one flexible equipment, producing several kinds of products, it is better to have several production lines, corresponding to each type of products; and not only because the whole process will become less expensive and more reliable, but more will be its flexibility, the equipment will be better suited to the lot sizes ordered for each item. In addition, in case of necessity of production of a commodity, then the corresponding line can be stopped and personnel will move to another process and activity. And finally, if at some point in the market there is demand, it will be possible to organize the production of different products at the same time (Merzlova, 2014).

Availability of backup equipment. This factor may also play an important role in the flexibility of the equipment. In case of an unexpected urgent order or breakage of one of the lines the presence of backup equipment is of particular interest. To the contents of this line would not be too expensive, it can be assumed that the equipment is completely worn out and amortized, and does not occupy much space. Thus, the presence of such underutilized equipment does not constitute in this case the evidence of the inability of the enterprise to fully utilize its production capacity, and is proof of its ability to provide higher flexibility of production at an average price.

Obviously, this situation can be understood and adopted to the extent that the benefits of greater flexibility affect the cost of under-utilization of equipment. Currently this situation is widespread.

The degree of diversified staff. Besides the quality of the training diversified staff is an important element of flexibility. It was on this condition you can replace one line to another, to quickly adapt equipment to replace the failed worker.

Concluding from the above, we note the aging of existing production equipment of the enterprise causes a significant increase in the volume and the complexity of repair and maintenance. Insufficient investment of resources is the reason that the company has a high number of physically and morally outdated equipment, the service life of which exceeds.

Accounting and the Correct Reflection of Fixed Assets in the Enterprise's Reporting

Accounting and the correct reflection of fixed assets in the company reporting a priority. It was on the volume of accumulated assets, you can judge the size of the company, its capabilities and development prospects. In the Russian transition economy, with its growing number of new, unusual for her forms of acquisition of fixed assets this issue is particularly acute. With the introduction of international financial reporting standards (IFRS) of Russian enterprises must switch to new, often unusual accounting system, fixed assets, and accounting should occur within the framework of the whole complex of operations related to the acquisition of fixed assets and their use.

IFRS 16 "Fixed Assets Accounting" describes the General concept of present fixed assets of the financial statements and identified the following stages (degree) of their account:

- the moment of recognition of assets;
- determination of their carrying amounts;
- the order of calculation of depreciation;
- identifying and addressing cost reduction of fixed assets.

Key in this standard is the definition of fixed assets. The main tools in international practice include the cost of tangible assets to be used in the economic turnover for a long time and will provide the company economic benefit in the future. If the benefit is not obvious, the cost of acquiring such funds are not recognized as assets and should be attributed to the decrease in profit of the reporting period.

Accounting and Proper Reflection of Assets in International Practice

For fixed asset determination in international practice there are three main features which must be met by consigning to him the assets: the purpose of the acquisition; duration of use; the existence of material form.

The adopted on the balance sheet tangible assets were recognized in fixed assets, they should be used as tools to organize the company's primary activities – production of goods, performing works or rendering of services. The standards allow for the acquisition of fixed assets for the lease or use in administrative expenses (Bogoviz, Ragulina & Kutukova, 2016). If fixed assets are acquired for sale, they should be reflected in the current assets of the company. This is because as a result of implementation they change their natural form into money.

The duration of the term of operation provides a basis for the development and application of methods of transferring the value of fixed assets on the finished product during the whole time of their useful lives.

Thus, the characteristics that distinguish fixed assets from the other assets in the international accounting practice, there is no cost criteria. Foreign companies are granted the right to independently determine the limit at which the increase in purchased funds are included in non-current assets, if not in the composition of working capital.

Classification of Fixed Assets in Foreign Practice

In foreign practice the classification of fixed assets is presented in the most General form and is used to define major groups of depreciable assets. Therefore, the fixed assets under the following classification groups: land, buildings and structures, machinery and equipment. The basis of this division of fixed assets is necessary unity of approaches to the determination of the degree of wear and the sources of its coverage.

According to the correspondence principle in the international practice focuses on the ratio of income and expenses in one reporting period. Therefore, IAS 4 “Depreciation Accounting” the significant attention paid to the problem of distribution of the asset value in time using the mechanism of depreciation. However, the decision of this question can be obtained only when reliable valuation of assets. In accordance with the requirements of international standards there are several estimates of key means, each of which has its own purpose.

In foreign accounting practices, there are no unified norms of depreciation. Therefore, when the production of fixed assets on the account along with the initial value determines the maximum useful lives and residual values at the date of disposal. These figures allow us to calculate the depreciation rate in the future to calculate the amount of depreciation deductions (Lemke, 2012).

Modernization as the Technical Re-equipment of the Enterprise

Upgrading refers to technical upgrading, which is a set of measures aimed at improving the technical and economic level of individual industries, shops and sites through the introduction of more advanced technology and new technology, mechanization and automation of production, the replacement of obsolete, worn-out equipment with new, more productive, as well as the improvement of offsite facilities and support services (Marshall, 2013).

Under the modernization of equipment means a change of its basic structural elements for the purpose of full or partial elimination of obsolescence and enhance the technical and economic parameters to the level of similar equipment of more advanced models. In contrast to the reconstruction and modernization of the equipment is characterized by relatively short period of implementation and funding.

In solving the problem of modernization of the enterprise must be borne in mind first of all generations of technology change, rather than the usual processes of improvement and partial improvement that lies behind the concept of modernization. These age-related changes mean overall quality of backward production and technological bases of petrochemical industry, which can be overcome only by a mass change of equipment and technology on the basis of scientific and technological progress ((Zawadzki, 2009; Strakhova, 2014).

Prior to the event on the modernization of equipment, it is necessary to define, and whether it is worth spending and is not to be more profitable to buy new equipment.

The feasibility of the modernization of the equipment is determined by the following aspects: technical; organizational; Economic.

Technical feasibility of improving the production or operating in the existing elements of fixed assets due to the presence of the benefits in one of the compared alternatives (to upgrade, to upgrade or not to buy) based on technical indicators. For example, in a preferred embodiment, the best results:

- quality – endurance, strength, power, reliability, speed;
- structural properties – the degree of harmonization, weight, dimensions;
- technological properties – processing modes, precision.

Technical indicators are measured in physical terms, therefore, have a constant measurement scale that is important in the preparation of technology upgrade options (Semenov, 2014).

Organization is to establish the feasibility of options for upgrading its hardware capabilities of the required volume and a target date under the existing or projected the structure of plants or production sites.

Economic feasibility is determined on the basis of economic analysis compared alternatives modernization of equipment in terms of increasing production efficiency and improve resource utilization.

However, during the modernization of the equipment necessary to take into account the fact that there are objective limits technical development. Thus, the technical limit of the modernization of existing equipment in the plant life of the machine is determined, which is due to the duration and intensity of their use. The economic limit is determined by the terms of the economic efficiency of hardware upgrades.

In particular, the modernization of the equipment is effective if the following conditions are true: increasing the annual production, increasing productivity and reducing production costs.

In addition, it is necessary that at the same time achieved increased profitability of fixed assets. This is possible if the relative increase will be larger than the increase in production cost of funds as a result of the modernization costs.

4. CONCLUSIONS

In the conditions of market relations policy in the field of reproduction of fixed assets plays a vital role as it determines the quantitative and qualitative condition of fixed assets.

This policy should be implemented at both macro-and micro-level. The key task of the reproductive policy at the macro level is to create for all economic entities favorable conditions for simple and expanded reproduction, the purchase of new equipment, reconstruction and technical re-equipment of production. This task is solved through the implementation of appropriate depreciation, investment and tax policy.

Reproduction of fixed assets is a continuous process of updates through the acquisition of new, reconstruction, technical re-equipment, modernization and major repairs.

The most important goal of reproduction of fixed assets – providing businesses with fixed assets in their quantitative and qualitative composition, as well as maintaining them in working condition.

In the process of reproduction of fixed assets, the following tasks:

- compensation retiring for various reasons, fixed assets;
- weight increase in fixed assets to expand production volume;
- improvement of the species, technological and age structure of fixed assets, i.e. improving the technical level of production.

The process of reproduction of fixed assets can be funded by various sources. The main means of reproduction of fixed assets in the enterprise can come through the following channels:

- as a contribution to the authorized capital of the company;
- result of capital investments;
- result of gratuitous transfer;
- due rent.

The main differences in the methodology of valuation of fixed assets in the Russian and international accounting practice are associated with different approaches to the determination of useful life of objects. If the organization of the account abroad, the terms of use of fixed assets and determining depreciation rates are established by the enterprises independently in the accounting practice, they are presented as part of the unified norms of depreciation deductions. The established order leads to the fact that the amount of depreciation attributable to the costs of the current accounting period will depend on the source of income (residents and non-residents) and purchase (contract) value of fixed assets. These two factors have a direct impact on the value of the initial value set when entering the facility.

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