



Methodological Aspects of Depreciation as an Economic Category

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ABSTRACT

Depreciation is a complex economic category, the essence of which is manifested in the duality: This cost element, and its own source of reproduction of fixed assets and intangible assets. The depreciation laid relationship with asset and liability balance sheet; it touches on aspects such as formation costs, taxation issues, and reproductive process. That is why a methodological study of the depreciation essence, the allocation of the classification of bases, principles and functions seems urgent. In a study of a structured approach to the treatment of depreciation, developed fourteen grounds of classification, allowing to consider a category from different perspectives. Particular attention is paid to communication of depreciation or amortization, depreciation allocated classification. Principles of depreciation and highlighted the functions performed are designed to create a more complete picture of the depreciation. Thus, the methodological aspects of the depreciation that promote, further, formation of a technique of creation and use of a sinking fund.

Keywords: Amortization, Depreciation, Wear, Reproduction Process, Classification, Principles, Functions

JEL Classification: M41

1. INTRODUCTION

The study is based on the works of Russian and foreign scientists Asaul, Bethge, Karzaeva and many others.

However, many theoretical and practical aspects of accounting amortization and depreciation fund insufficiently developed. Much of the research is dedicated to the general procedures of amortization accounting without consideration of the reproduction process.

Depreciation is one of the most difficult economic categories:

1. Contractive article regulates the value of fixed assets and intangible assets of the balance sheet (deducted when receiving core indicator). In this sense, the depreciation is cost element (in the allocation of cost elements), or included in the calculation of articles (with itemized cost division). In this part, depreciation affects the cost, the reliability of the financial statements, taxation processes.

2. Own source of reproduction of fixed assets (depreciation fund, although it is a reimbursement of the costs incurred by the investor the creation or acquisition of fixed assets, but is not reflected in the statutory financial statements). In this part of depreciation affects the investment policy, the process of reproduction of fixed assets, and the structure of funding sources.

Thus, the depreciation is a multifaceted category that affects the majority of business processes in different industries.

We shall consider the essence of this category in all its diversity.

2. RESEARCH METHODOLOGY

Depreciation is governed by a significant number of regulations. Depreciation is characterized descriptively, thus it does not contain a clear definition of this concept. In connection with the orientation of the RF fiscal accounting system, the most complete

characterization of depreciation is given in the Tax Code (article 256 of the Tax Code). At the same time, depreciation summary is not disclosed.

In the analysis of regulatory documents on accounting, it becomes apparent that depreciation is used in many documents, but never provides a clear definition of this category.

IFRS (IAS) 16 “fixed assets” reflects that depreciation - is a systematic allocation of the depreciable value of the asset over the useful life (Vernon, 2013).

In most sources, the term “amortization” is translated from Latin as “repayment” (Amortisatio).

The complex nature of the depreciation (a kind of duality: Part of the cost and re-source), a change in form (goods - money - goods), leads to a multiplicity of definitions.

Let us consider the basic definitions, as reflected in the economic literature (Figure 1).

Thus, the depreciation can be characterized as:

- A gradual transfer of fixed assets under the influence of processes of wear to the cost or expenses of the period.
- The formation of the fixed capital reproduction financing source in the transformation of depreciation in the form of money.

3. RESULTS AND DISCUSSIONS

Classification of depreciation is presented in Table 1.

I. Interconnection of depreciation and wear

Two polar points of view can be distinguished:

- Depreciation and wear are synonyms (found in many textbooks of post-Soviet period, as well as in a number of training manuals on economic analysis);
- Depreciation and wear are a completely different concepts;
- Consider the factors that affect the appearance of wear (Table 2).

Wear can have two types of effects:

- Technical - performance degradation;
- Economic - reduction in value of the object during its operation.

To characterize wear we will hold its classification (Table 3).

The essence of the selected types of wear are present in Table 4.

There are several reasons worthy of recognition, proving that depreciation and wear are not synonymous:

- Discrepancy in time of the objective processes of wear and depreciation (accelerated depreciation accrual does not mean the acceleration of the processes of physical deterioration);

Table 1: Classification of depreciation

Basis of classification	Types of depreciation
Communication categories of “amortization” and “wear”	Depreciation and wear are synonyms
By models	Depreciation and wear - different concepts
By levels	Static
	Dynamic
	Macroeconomics
By spheres	Mesoeconomics
	Microeconomics
	Fiscal
By phases	Financial
	Accounting
	Depreciation
	Proceeds of sales
	Getting cash from customers
By the economical subject	Sinking fund
	For commercial organizations - Depreciation
	For non-commercial - wear
By the nature of the reproductive process	The first subtype:
	Simple reproduction
	Extended reproduction
	The second sub-type:
	With the assistance of paid sources
By amortized accounting objects	Without the involvement of paid sources
	Fixed assets
	Intangible assets
	Natural resources
	Tactical account
	Strategic account
	Legal
	Economic
	Financial
	Fiscal and Finance
By uniformity	Investment
	linear
In relation to the volume of production	Nonlinear
	Continuous
As the possibility of forming a sinking fund	Discrete
	Accumulated
	Factual

- The principle of matching revenues and expenses (for example, object to the preservation, but inevitably Amortization out, although not depreciated).

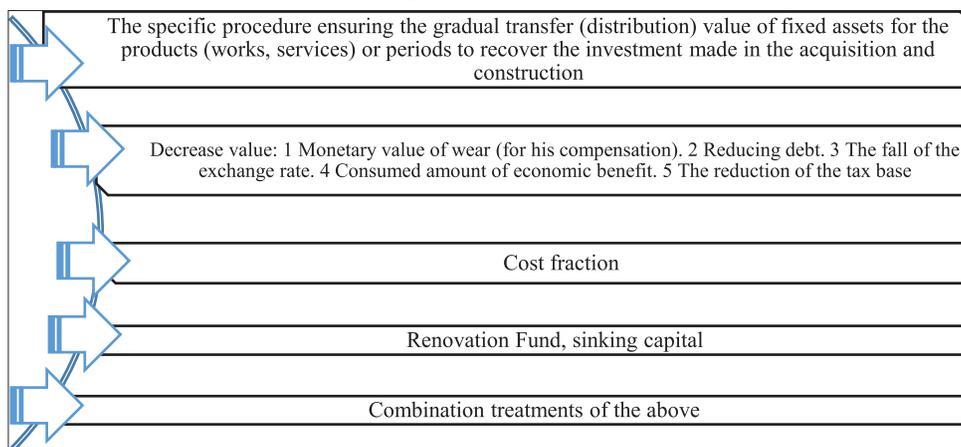
It must be remembered that depreciation and wear are different concepts. Wear (physical and moral) - belongs to the field of objective reality, depreciation - cost concept, the result of subjective accounts abstractions. The following communication options wear and depreciation (Table 5) can be identified.

It is necessary to stop at the first classification in more detail.

Obsolescence can be viewed from the following perspectives:

- Social - obsolescence due to the inability to meet social requirements, increased due to the emergence of more advanced facilities, plant and equipment of this kind;
- Environmental - obsolescence due to the inability to meet the

Figure 1: Treatments of depreciation in the current economic literature



requirements of environmental protection, natural resource management, etc. (Bolshuhina, 2015);

- c. Environmental factors (e.g., the proximity of sewage treatment plants, or, on the contrary, socially important objects, and others).

The differences in interpretations of various authors noted in respect of:

- Speed reduction (according to Babaev, obsolescence is characterized by a sharp decline, the physical - the gradual (Babaev et al., 2015; Suspitzin, 2012);
- The loss of the object (consumer properties, cost (Babaev), utility and others).

Physical wear can be conditionally expressed in three stages (Figure 2).

II. By model (static and dynamic)

Initially, two main balance theories were developed in the framework of the German accounting school:

- Static (detailed reflection of the net asset value);
- Dynamic (performance measurement, calculation of profitability, estimation of the economic outlook). Consider Shmalenbaha representation of the essence of the dynamic amortization (Figure 3).

For the static theory of depreciation - is depreciation of the value of time for the dynamic theory - is method of accounting policies for the regulation of the financial result. (Balansovedenie, 2011).

At the end of physical life, equipment or even the term established by the contract, the amount of accumulated depreciation in static and dynamic account is the same. But for each reporting period the static amortization will vary depending on changes in market prices of the objects under consideration, while the dynamic amortization will be distributed on the principle of transferring the cost depending on the benefits that bring the car or building, at the same time acknowledge to be adopted, the liquidation the cost of this equipment.

Figure 2: The three stages of physical wear

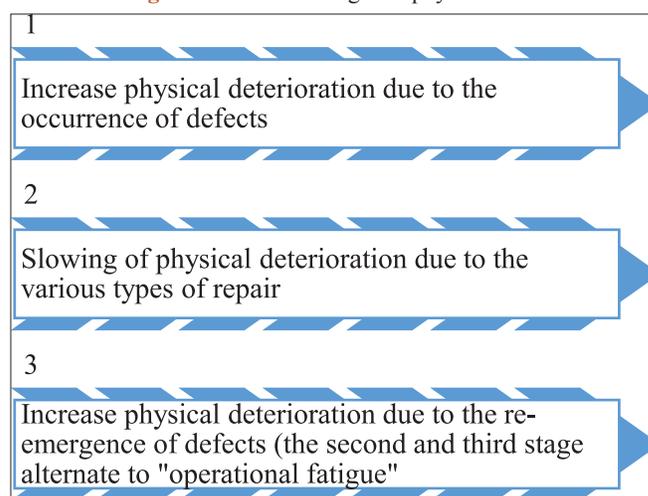


Table 2: Factors affecting the appearance of wear

Wear's type	Factors	Detailization
Internal	Technological	Technology and production, the degree of influence of time and operate on an object, the dynamics of scientific progress in the industry
	Management	The company's policy in relation to the range, the choice of fixed assets, human resources, information flows, etc.
External	Political	Protectionist policies, changes in the sectoral structure of the region, etc
	Economical and social	The skill level of the labor market, the overall economic situation in the country, focus on the mining and processing industry, the dynamics and the structure of supply and demand, etc.
	Psychological	The structure of the set of requirements and benefits to meet their mentality (including religious: Clearly presented in the Islamic model)
	Ecological	Attention to environmental issues, the availability of sanctions

Table 3: Classification of wear

Classification of amortization							
Nature of wear		Degree of wear		Type of wear		The suddenness degree	
Obsolescence (functional)	Physical wear	Full (unrecoverable) wear	Partial (recoverable) wear	External wear	Internal wear	Gradual wear (normal conditions)	Sudden wear (force majeure)

Table 4: Variations due wear and depreciation

Basis of classification	Type of wear	Characteristics
By the nature of wear	Moral (functional)	Impairment of fixed assets resulting from productivity growth in industries producing such fixed assets, and the emergence of new, modern and more productive machinery and equipment (Babaev et al., 2015); i.e. declining in consumer appeal of obsolete item of property caused by the expansion of functionality in new facilities, as well as STP (loss of utility assets due to reasons not related to the physical properties of the asset)
	Physical	Physical deterioration - is the deterioration of technical and economic parameters of the object, which is due to its wear during operation and environmental stress (Asaul, 2014)
According to the degree of wear (the classification is used for both physical and obsolescence)	Full (unrecoverable) wear	Effects of wear is not possible or cost efficient to compensate, so the existing funds are eliminated and replaced by new ones
	Partial (removable) wear	Effects of wear can be eliminated by repair
According to the nature of the loss	External	The deterioration of the appearance of the object property while maintaining its operating characteristics
	Internal	Functional compliance with the requirements under external well-being
According to the degree of surprise	Gradual	Wear, resulting from normal use
	Sudden	Wear, arising as a result of force majeure and accidents (i.e. not only natural disasters, but also man-made disasters)

III. Macroeconomics, meso-economics, microeconomics

Depreciation is charged in the framework of the economic entity (microeconomics), but the generalization performance of individual organizations leads to macro-level data. Consider two aspects of the use of depreciation at the macro level (Figure 4).

IV. By areas (Table 6)

V. In Phases:

- a. Depreciation;
- b. The revenues provided the profitability of activities;
- c. The renovation fund.

VI. On economic subject

Commercial organizations charge depreciation (depreciation - a source of reproduction of fixed assets), un-profit (funded by budgetary allocations) - wear (i.e., depreciation for these organizations - is the degree of deterioration of the non-current assets) (Lytneva et al., 2011).

VII. The nature of the reproduction process (Table 7)

Circuit of fixed capital is reflected in Figure 5.

Thus, depreciation takes the following form:

- The use of fixed assets (taking into account the degree of moral and physical wear);

Table 5: Variations due wear and depreciation

Aspect	Details
The accounting aspect	Fixed assets wear out, without any connection with the amortization process; When calculating depreciation is taken into account the physical and moral wear; The accumulated depreciation is fully consistent wear object.
By the flow rate	Depreciation is a higher rate than the physical wear (useful life, in this case, can be set lower than the life span, such as moral wear object); Depreciation reflects the processes wear; Depreciation goes at a slower pace than wear.

Table 6: Classification by fields of depreciation

Sphere	Transcript
Fiscal	Used for tax purposes, i.e., calculation of the tax base in accordance with the Tax Code of the Russian Federation. Tax records should be considered: The narrow sense - to calculate the taxable profits for the purpose of Chapter 25 of the Tax Code; The broadest sense - to calculate all kinds of taxes (Kruglyak and Kalinskaya, 2016)
Financial	It is used in financial calculations (including in the field of management accounting)
Accounting	It is used in the financial account balance

- Amortization of depreciation (cost element or component of the article calculation);

Figure 3: The essence of dynamic cushioning

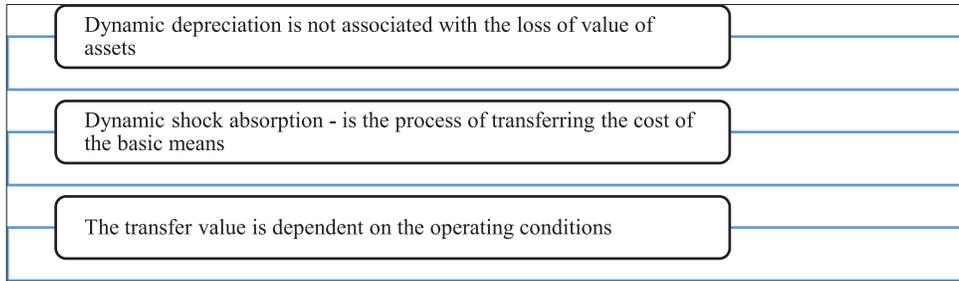


Figure 4: Two aspects of depreciation at the macro level

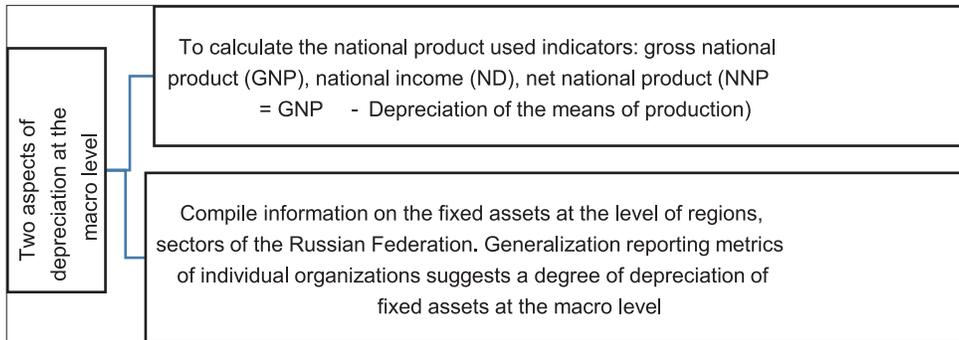


Figure 5: Circuit of fixed capital

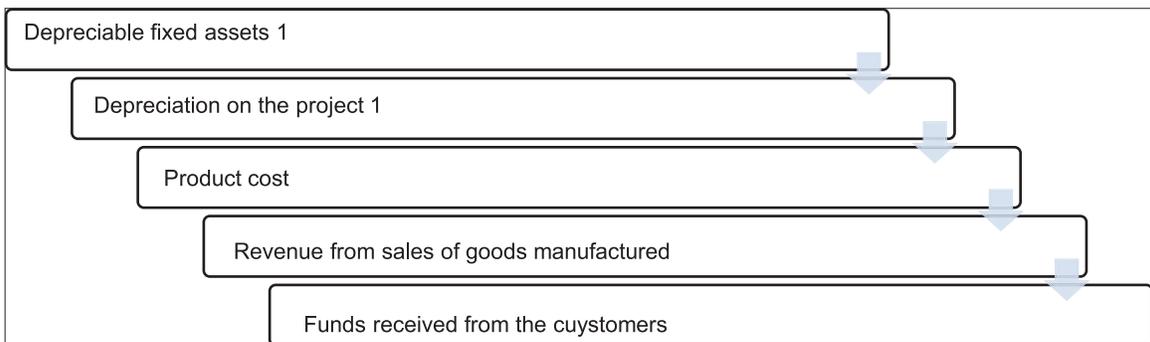


Figure 6: Tasks sinking fund

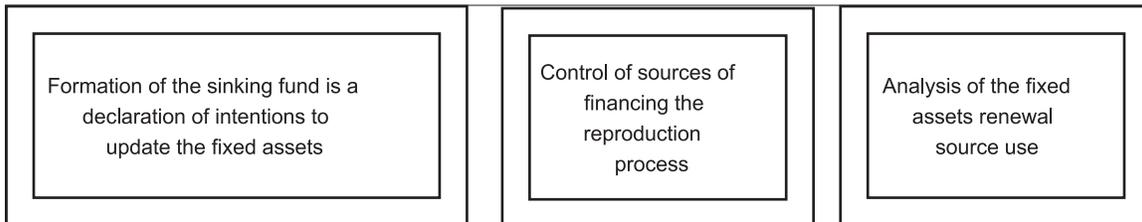


Table 7: Classification of amortization on the nature of the reproduction process

Subtype	Kinds	Transcript
First subtype	Simple reproduction (in a classical interpretation in the current economic conditions it is impossible). If you ignore the cost criterion and concentrate on the same level as the technical characteristics of the old and new capital assets, then, with a certain degree of conditionality, the term can be used	The same amount of the means of production from year to year; Fixed costs for the acquisition of the means of production; Constant characteristics and the level of labor productivity (Suspitzina, 2012)
Second subtype	Extended reproduction With the assistance of paid sources At the expense of own funds (depreciation and retained earnings) Mixed financing	Reproduction in the expanded scope

- Sinking fund (renovation fund) - the source of the reproduction of fixed assets.

In the context of inflationary depreciation spiral is not enough for the purchase of new fixed assets, will inevitably have to involve retained earnings and liquidation of accumulation (the funds received on the disposal of fixed assets) or paid sources of funding. According to some authors (Ovsiyчук and Demin, 2010), should be involved not retained, and the net profit. However, it is methodologically wrong. From the standpoint of accounting theory, only the retained earnings can be directed to the reproduction of fixed assets.

The final form of depreciation - depreciation fund - designed to perform tasks (Figure 6). The economic literature suggests the possibility of attracting additional capital formed due to reassessment, to the reproduction of fixed assets. This opinion was expressed, in particular, in the work of Fedorovich (Fedorovich, 2011). However, the revaluation of fixed assets does not lead to the formation of a sinking fund, which is formed by liquid assets. The source is formed in the calculation of depreciation of fixed assets, increasing its cost.

The structure of the sources of the reproduction process also depends on whether the object is being built on their own, whether the reconstruction is carried out, modernization and technical re-acquired.

VIII. For depreciable accounting objects (fixed assets, intangible assets, natural resources [depletion]) (Table 8)

In accordance with paragraph 17 Russian accounting standard (PBU) 6/01 “accounting of fixed assets,” the natural resources are not included in the depreciable assets.

IX. To the planning horizon:

1. Tactical account - generates accounting information in the short term.
2. Strategic accounting for depreciation of fixed assets - common analytical accounting system, based on the functions of the financial, tax and management accounting, provides management information for strategic decision-making in the process of formation and use of depreciation (Chirkov et al., 2012).

X. Depreciation concepts (Table 9) (based on the work Cooter et al., 2010)

XI. To uniformity:

- Linear - calculated according to the straight-line method;
- Express - is charged at an increased rate (Medvedev, 2008).

XII. With respect to the volume of production (Table 10).

XIII. XIII to the degree resolution:

- Continuous - depreciation, accrued from the date of receipt of the object to its disposal, for any reason, including liquidation;

Table 8: Classification of depreciation on depreciable objects

Term	Source	Transcript
Depreciation	Glossary of	It applies to fixed assets
Amortization	Management	It applies to intangible assets
Depletion	Accountants	Depreciation of natural resources (the so-called exhaustible resources - natural gas, coal, oil, wood, etc.)
Depletion allowance	Dictionary of modern economic theory	Tax credit, resolving the owner of natural resources deduct from their gross income reduction in the cost of non-renewable resources such as minerals, oil or gas

Table 9: Classification on the concepts of depreciation

Concept	Essence
Economic	Reflects the cost approach, i.e., amortization - a means of cost-sharing and, consequently, the financial result in time
Legal	Determining the value at which the property can be sold in a bankruptcy or liquidation of the company for other reasons (in this case it should not be taken into account accumulated depreciation and expert assessment or special assessment discounting (Cooter, 2012)
Financial	Used for simple reproduction: Amortization - a source of renewal of long-term assets, reflects the use of the released money-capital for investment.
Fiscal-financial	Used in the expanded reproduction of fixed assets subject to the application of accelerated depreciation methods, involves tax savings due to the use of these methods are directed to the strengthening of the capital base of the company (Cooter et al., 2010)
Investment	Opens the way of forming its own internal source of financing of investment activity by direct accumulation of depreciation and an increase in their share in investment funding sources in fixed assets (Veretennikova and Bikmetova, 2011)

Table 10: Classification of amortization in relation to the volume of production

Type of costs	Definition	Methods of depreciation
Depreciation costs are variable (Are irreversible)	Costs that change (not always directly proportional to) a change in output	The method of depreciation is proportional to the volume of goods (works)
Depreciation charges are fixed (Are irreversible)	Costs that do not depend on changes in production volume. For example, general expenses	Linear method Declining balance method The method of depreciation for the sum of numbers of years of useful life

- Discrete - depreciation, which were credited to the gaps caused by, for example, a translation into the conservation.

XIV. To the possibility of forming a sinking fund:

- Gross - value reflected contractive loan account 02 “depreciation of fixed assets;”
- Actual - depreciation, transformed into a sinking fund in connection with the receipt of revenue from customers in cash.

**Table 11: Depreciation principles**

Principle	Essence
Universality	Depreciation is charged on commercial organizations in many industries and activities, organizational and legal forms of ownership
Dualism	The dual nature of depreciation: Costs and, at the same time, the source of funding for the reproduction of fixed assets There are a number of circumstances that prevent the use of depreciation as a source of funding: Lack of regulations about depreciation expense; The lack of teaching materials on the reflection in the accounting system;
Targeted	Depreciation as a source are retrospective in nature, i.e., not included in the items of property price growth The need directions sinking fund for the reproduction of fixed assets, i.e., It must be respected targeted their expenditure. Targeted use of depreciation and is the main difference from the completely liquid assets, which in fact, are multi-purpose in nature and not directly related to the circulation of capital assets. In conditions of economic crisis the sinking fund is directed for working capital rather than investment in fixed assets. Thus, the target is broken nature of the source of funding. It makes a number of opinions that the control over the use must be in the area of tax legislation. According to Mamedov, the violation of spending targeted nature of the sanctions should cause (due to violation of rules for getting targeted tax breaks). According to him, if the organization during the next reporting period (a year, at the end of which the fund is formed) does not use it to its destination. It can not only be deprived of the benefits of application of accelerated depreciation methods, but should recover it as a pre-tax profit and to pay a fine to the budget, calculated at a rate significantly different from the Central Bank refinancing rate (Mamedov, 2009). In our view, this measure will lead to a deterioration in the financial condition of companies
Sufficiency	Depreciation, refracted in the sinking fund, creates the possibility of replacement of fixed assets. Thus, it is necessary to pay attention not only to the acquired object, but also on physical indicators. Currently, the sale of products obtained after the liquid assets is insufficient for the reproduction of fixed assets. For many organizations, the reproduction is limited to repair. Since the conditions of inflation sharp rise in price of fixed assets will lead to their reproduction narrowed, sinking fund plan should take into account the future increase in the value of fixed assets
Regulation (Baeva, 2010)	The nature of the reproduction of fixed assets should be established in the regulations of the company and fully comply with its planned development strategy. Reproduction plant and equipment variants are possible, for example: Purchase of fixed assets, a similar effect on the majority of characteristics; Purchase of fixed assets, non-current, because of the significant scientific and technological progress in the industry, or perhaps a change of activity; Instead of purchasing fixed assets for production purposes of social and cultural destination (or <i>Vice versa</i>). In addition, the report should reflect the point in the planning process of reproduction: Physical indicators (number of fixed assets with a reflection of the priority technical specifications); Value indicators (a limit of funds that can be directed to the renewal of fixed assets); The nature of the reproductive process (acquisition, construction, reconstruction, etc.). It is necessary to determine the procedure for the definition and use of the sinking fund as an accounting policy element The principle of the regulation is not implemented in practice

Amortization is always greater than the actual due to work in progress and the remnants of unsold products.

The following principles (Table 11) were isolated by depreciation study as an economic category.

Depreciation performs a number of functions (Table 12).

The most important element of the concept of amortization is depreciation policy, which should be considered in the context of industry-specific organizations in the unity of the strategic and tactical aspects.

Amortization policy must fit into the overall strategy and tactics of the company. It should be remembered that:

- Strategy is a plan to achieve long-term goals in the renewal and modernization as the acceleration of scientific and technological progress, plant and equipment production;
- The combination of the tactics and methods of the operational mechanism of their effects on the company's depreciation policy. (Bukhalkov and Safronov, 2008).

The depreciation policy is not an end in itself in the company's accounting and analytical field. It must be remembered that it should be formed taking into account the financial condition of the company in close connection with fiscal, financial and investment policies.

Depreciation tools - part of organizational and economic tools and indicators to meet the criteria of efficiency of use of fixed capital (Bukhalkov and Safronov, 2008). The amount and composition of

Table 12: Depreciation functions

Function	Elaboration
Compensating	Turnover function of fixed capital (wear and obsolescence compensation) is aimed at registration on a systematic basis the impairment of fixed assets and the formation of the fund, enough for their reproduction in the future
Financial-fiscal	It has two aspects: Sinking fund should be directed to the reproduction of fixed assets, and not the working capital; The use of accelerated depreciation methods, allowing to obtain tax savings on profits, will form one element of the depreciation of capital (in the terminology of Cooter - "saved the sinking capital" (Cooter, 1998). In the practice of investment analysis depreciation called "tax shield." Obviously, the function in this aspect only makes sense for organizations that are on the common system of taxation.
Analytic	Analytic depreciation affects a significant number of analytical parameters; in particular, it contributes to an increase in net assets The function reflects an analysis of the use of the source of reproduction of fixed assets

the depreciation of tools can vary greatly, but, according to Bethge, amortization is determined by three determinants:

- The base value of the property of the object;
- Service life;
- Depreciation methods (Bethge, 2000).

According to Bethge, 2000 it is necessary to form a plan of depreciation, which allows to distribute the initial cost of the acquired property of the object to the term of its operation.

Moreover, one should consider not only the lifetime but also:

- Limit the service life (durability of the object);
- Economic service life (Bethge, 2000), i.e., during the operation of the equipment, in which the investor receives the maximum income;
- Legal restrictions on the use of the asset.

4. CONCLUSIONS

Thus, this paper highlights the main aspects of the consideration of depreciation effect, discussed elements of the methodology, which manifest themselves in the formation of the classification of bases, principles and amortization functions. Paying attention to the relationship the most important categories: Wear and depreciation. Foundations of wear classification are obtained.

The work can be structured terminological field, organize the diversity of points of view presented in the economic literature. In the future, attention should be paid to the methodological elaboration of the reproductive process; procedures of reflecting the depreciation fund to accounting system.

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