

Depreciation in the aspect of matching revenues and expenses of the company

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Abstract. The article studies the economic essence of depreciation accounting. Various points of view are examined by the authors on the issue of the economic nature of depreciation deductions and the order of their reflection in accounting and reporting. Special attention is paid to the method of cost allocation for the acquisition of assets on the basis of their contribution to net income. It is established that in accounting, the compliance of two financial flows – income and expenditure of the company, and the comparison within specific reporting periods should be ensured. It is proposed to apply a method for reserving amounts of depreciation depending on the result of the financial activities of the company. The mechanism of redundancy is described in detail, the essence of which lies in the emergence of two streams of depreciation. It is proved that the proposed method of redundancy of depreciation deductions will take into account the trends in the income of the company's activities and fully implement the principle of matching revenues expenses incurred.

1 Introduction

In the process of financial and economic activities the company obtains economic benefits from the use of fixed assets in the process of production, performance of works, rendering of services. According to the principle of time definiteness of the facts of economic activities, accounting should ensure compliance of two financial flows – income and expenditure of the company and their comparison within specific reporting periods. While determining the financial result of the current activities the company must compare the economic benefits with the costs associated with obtaining these benefits. Substantial costs while receiving the current economic benefit of the company are depreciation deductions.

The question of the role and purpose of depreciation deductions has always been in the spotlight of both Russian and foreign economists. Thus, the French economist J. Richard [1] notes that "the understanding of such concepts as depreciation was loss of lots of ink".

In existing theories of depreciation a few concepts are applied: accounting, financial, tax, economic. From the perspective of accounting concepts, depreciation is primarily the process of cost allocation related to the acquisition of depreciable facilities, for the reporting periods.

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Accounting concept of depreciation covers a range of issues such as the definition of the term decommissioning costs for acquisition of property, the calculation of the prescription of norms, the choice of method of distribution, calculation of the amount of periodic write-off to compare them with current revenues, the order of reflection the depreciation in the system of accounting and the balance sheet.

The problem of depreciation is that the amount of periodic allocation of costs for acquisition of fixed assets for the cost reporting period is a stochastic value based on multiple possibilities.

2 Theory

The necessity to define the composition of nonprice consumer behavior determinants and peculiar feature of their revelation in modern conditions of Russian economy predetermined the choice of the theme for investigation, its relevance in theoretical and practical aspects [5].

Researchers of accounting in determining the economic nature of depreciation during many years proceeded from its semantic interpretation. The term depreciation in accounting is used in the meaning of of systematic, rational reduction in the value of the property. The Latin "pretium" means the price, or value, hence, "de - pretium" - reduced price or cost. International financial reporting standard (IAS) 16 "Property, Plant and Equipment" gives the following definition: "depreciation is the systematic allocation of the depreciable amount of an asset over its useful life" [2].

In Russia in the early twentieth century, most experts interpret depreciation as a direct reduction in the value of property and cancellation of the account of Losses and profits. In Russian practical accounting of that time this way of expressing depreciation was the most common. However, in the economic literature of that time there were other points of view, as well:

Some authors considered that depreciation is an integral part of the cost of manufactured products, in accordance with which depreciation deductions should be included in the cost of production and reflect on the debit of accounts of production. I. P. Reinboth insisted on this version in the "Handbook commercial and financial computing" [3]. However, S. M. Baratz [4] noted that this method of reflection the depreciation in account has a negative side, because it makes produced products uncompetitive.

The fallacy of this method of recording of depreciation deductions by lowering the demand for the products A. P. Rudanovsky noted too [5]. He believed that "the allocation of fees on the renewal of equipment on account of the cost calculation is wrong and leads to the fact that these charges can be nominal, since by lowering the demand for the products they will be accumulated on the reserve account of the last – in cost plus a deduction for depreciation".

Other authors believed that the attenuation is not related with specific kinds of products, and is subject to the availability of fixed assets, regardless of whether they are used or not. Therefore, these economists proposed to reflect depreciation deductions on the debit of the account "Profits and losses".

Third economists believed that the depreciation deductions could be attributed to the debit side of net profit. So, E. E. Sievers [6] explained that if the statutes of joint stock companies and societies of mutual credit is established that repayment of the value of the property is due to the net profit, then this method of deducting the cost of repayment would be most useful. E. E. Sievers, offering the mentioned above method of depreciation charge, believed that the maturity value of the property as a percentage of the obtained profit eliminates the need for a small net profit incongruous to do her major contributions to repay the value of the property.

Fourth economists stuck to the view that in addition to the deductions conventional type, in which accounts are debited Production or Total expenditures, are made additional

deductions from net income. These additional deductions can be made due to the fact that accumulated ordinary depreciation deductions insufficient to replace equipment not yet quite extinguished. Excessive deductions are not due to production conditions, therefore, are not reflected in the accounts of cost accounting.

The fifth group of economists has proposed a method of cost allocation for acquisition of fixed assets on the basis of their contribution to net income. In particular, S. M. Baratz [4] believed it is possible to determine the depreciation deductions rate depending on the magnitude of the probable income from the real property excluding all costs of operation.

Modern scientists also study the problems of accounting for depreciation. So Zhang, X. B. [11] emphasizing that different types of fixed assets bring to the company the economic benefits in different ways and thus require different depreciation charge methods, proposed to increase the accuracy of the calculated values of depreciation deductions for the purpose of improving the quality of a formed for managers information. The accuracy shall be provided by the accrual of depreciation for each day of operation of fixed assets. Such measures are expected to strengthen the cost control of the company and to ensure its sustainable development in the future. Jackson, S. B. [10] investigated how the company used in the depreciation methods affects the quality of decisions in the field of investment. Weiner, Mark M. [12] studied how the optimization of the depreciation costs can lead to lower corporate taxes. Problems of accounting for depreciation were considered in the works devoted to the study of models of balance [14,15,16] and categories of overhead costs [17].

3 Results

As we may see, consumer demand determinants undergo serious transformations in green society, which should necessarily be taken into account while developing the measures of state regulation of consumer goods and services market, the potential of which may be used while forming the effective demand as a source for steady macroeconomic dynamics.

The study of literary sources and normative documents regulating the questions of depreciation, allows to make a conclusion that in accounting depreciation functions are reduced only to the allocation of non-recurring costs related to the acquisition of fixed assets, by period of their useful operation. When reviewing economic entity accounting depreciation a very important aspect of ensuring the principle of matching revenues and expenses of the company is not taken into account.

In the process of calculating depreciation expenses should be distributed over the years of functioning of the basic means to provide a comparison with the obtained income. Currently, however, the principle of matching costs and revenues in the accounting practice is not significant, because under current accounting rules, depreciation on fixed assets is made irrespective of results of financial and economic activities of company.

In our opinion, this approach to the question of depreciation does not meet the principles of market economy. Costs produced by the company for the implementation of capital investments should be evaluated from the point of view of obtaining economic benefits from the use of fixed assets in the process of production (performance of works, rendering of services). The principle of matching of costs incurred with revenues should be implemented through the expense recognition of the value of the acquired (constructed, manufactured) of an asset the consumption of economic benefits associated with its use the performance of company.

Based on the proposed scheme economic benefits from the related asset, the amortization policy of the company must be built.

The system of depreciation used in Russia at the present time is mainly based on a uniform (proportional) method of depreciation over the regulatory life cycle of fixed assets. Such a system of depreciation is simple and intuitive, eliminates sharp fluctuations in the cost of

production. However, this method generally performs the function of uniform distribution of costs for acquisition of fixed assets during the term of their useful effect and does not provide an implementation of the principle of matching revenues with costs.

From all recommended by Russian Regulation on accounting "Fixed assets accounting" (PBU 6/01) depreciation methods for property, plant and equipment, the method of writing off value in proportion to the volume of products (work, services) more fully meet the principle of matching revenues with expenditures. This method is based on the assumption that the functional utility of an object does not depend on time, and the results of its use. Repayment of cost of fixed assets is made depending on economic conditions, growing in parallel with the increase in the volume of output. The amount of depreciation deductions can fluctuate considerably from year to year.

Some Russian economists of the early twentieth century for the goal of ensuring the right mix of costs with revenues depreciable object was proposed to produce depreciation depending on the profit of the company.

Depending on the value of the profits the amortization method determines depreciation variable. This will allow in profitable years to increase the size of depreciation deductions, and in unprofitable years to reduce that, in turn, will affect the amount of profit to be distributed as dividends. The motivation for this method of depreciation can serve as the company's commitment to the distribution of dividends in each year approximately the same size.

However, in the context of the economic situation prevailing at present in Russia, due to the general economic instability, the mentioned above method of depreciation is unlikely to be acceptable. By the way, American economists E. C. Hendriksen and M. V. van Breda [7] believe that "none of the goals of depreciation will not result from using profits as a basis for the allocation".

One of the depreciation methods in order to implement the principle of matching revenues to expenditures can be considered as a method of cost allocation for acquisition of fixed assets on the basis of their contribution to net income. The application of this is being offered by some American economists, in particular O. Johnson in "Two concepts of depreciation" [8].

The contribution to net income – is the income generated by the assets, without costs on their maintenance and repair. In applying the method of depreciation, depending on the contribution to net income, the calculation of the amount of depreciation deductions is based on the ratio of the value of the asset to the expected amount of contribution to net income. The amount of depreciation deductions depending on the contribution to net income can be defined as follows:

$$A = m \times Rt \quad (1)$$

$$m = \frac{C}{\sum_{t=1}^n Rt} \quad (2)$$

A – the amount of annual depreciation;

m – the ratio of asset value to the total expected amount of their contribution to the net profit of the company;

C - the initial value of the assets;

Rt – expected amount of contribution to net income for reporting period t in throughout the life of the asset.

The annual amount of depreciation will be determined as follows (table 1).

Table 1. Calculation of depreciation on the basis of a contribution of fixed assets in net income.

The period of service of the object	Expected contribution to net income, rub.	Coefficient	The amount of depreciation, rub.
1st year	500 000		375 000
2nd year	600 000		450 000
3rd year	200 000		150 000
4th year	400 000		300 000
5th year	300 000		225 000
Total	2 000 000	0.75	1 500 000

Dynamics of depreciation deductions depending on the contribution of assets to the net income of the organization is presented in figure 1.

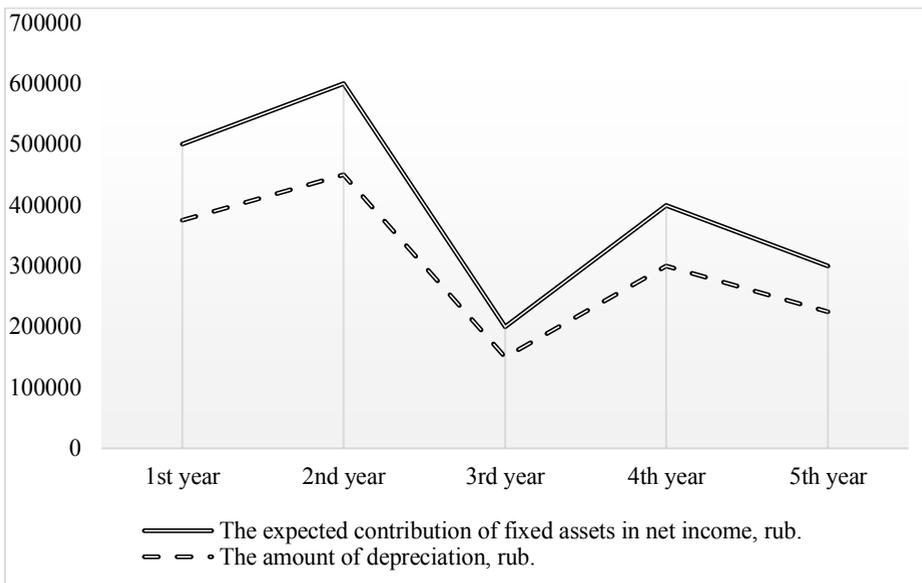


Fig. 1. Dynamics of depreciation deductions on the basis of a contribution of fixed assets in net income.

The advantage of the method of depreciation, depending on the contribution to net income, consists that it allows for various forms of depreciation. When the stability of the income of the company will be made uniform depreciation, while reducing the amount of contribution to net income – accelerated depreciation.

The use of this method provides for determining the duration of the period during which the assets are expected to bring your company income and establish trends in the development of the revenue stream. However, this method has significant drawbacks. Hendriksen E. S. and M. F. van Breda [7] believe that even the best-made forecasts contain elements of uncertainty. In addition, the application of this method will not allow an adequate temporal reference previously made investments in fixed assets to receive current income from their use.

For implementing the principle of matching expenses to the income received a method for reserving amounts of depreciation deductions may be proposed. About the possibility of redundancy was mentioned in 1928 by the German economist B. Penndorf [8]. He said: "If, however, along with systematic or uniform write-downs in favorable years results are still

extraordinary redemption, against it should not be argued, so are reserves, which can only be welcomed in the interests of supporting the enterprise" [8] .

It should be noted that the technique of redundancy depreciation deductions was used in the practice of Russian companies in 1992 in order to increase the share of depreciation deductions in total own resources of the enterprises, ensuring the reproduction of fixed assets. To determine the indexed value of depreciation deductions for fixed assets placed in operation before January 1, 1992, the sum of these depreciation charges, calculated at the applicable depreciation rates from the balance sheet assets, are multiplied by a factor of 2. The amount of growth formed a reserve indexed depreciation deductions were subject to and reflected in the accounts of accounting production costs in correspondence with the account "Reserves of forthcoming expenses and payments. In determining the actual depreciation of fixed assets calculation of depreciation was made according to current regulations without indexing.

The essence of the proposed method of reservation of depreciation deductions will be the emergence of two depreciation streams: primary (assessed according to the established norms of depreciation deductions) and additional (charged depending on the results of financial-economic activity of companies). In fact, the method of reservation will supersede the mechanism of accelerated depreciation and the use of reduction factors.

In the years of unprofitable activities the company's primary cushioning specified by the established norms of depreciation, it is appropriate to reflect the deferred costs. Subsequently, when getting a profit in the course of business, deferred expenses must be recognized as current expenditures. In that case, if the company improves its performance, the reservation of additional depreciation can be made.

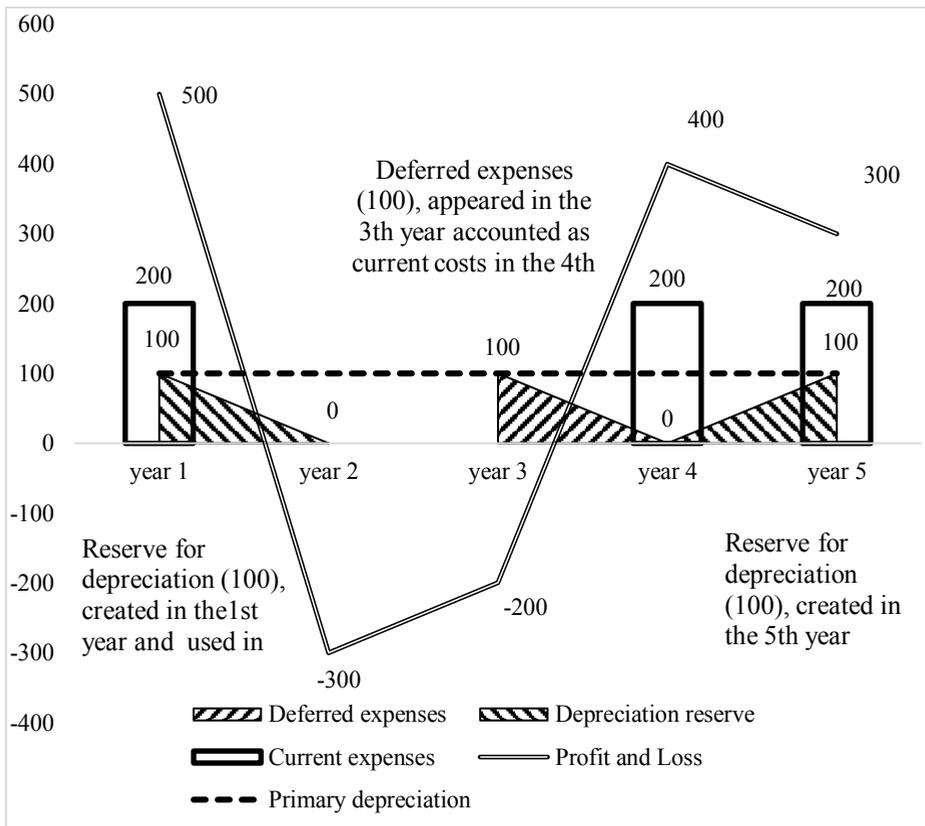
The backup process of depreciation in accounting should be reflected on the debit of accounts of production costs, the sub-account "Expenses for additional depreciation" and credited to "Reserve for depreciation". Additional amortization will be reflected in the account not as a contract to the account "fixed assets" that reduce their initial assessment, and as regulated by the reserve, the formation of which is determined by accounting policy of the company. Additional depreciation is included in cost of production, but does not reimburse capital expended in the purchase of fixed assets. Thus, it increases the working capital of the company, but does not reduce their immobility. Methods of booking depreciation deductions depending on the company structure can be represented as follows (table. 2).

Table 2. The proposed method of booking depreciation deductions, depending on the result of the financial activities of the company.

The periods of the company functioning	The financial result of the company's activities	The recognition of primary depreciation	The recognition of additional depreciation	Additional conditions
The first profitable period				
Year 1	Profit	Current expenses	Current expenses and Reserve for depreciation	
Year 2	Loss	The use of the reserve for depreciation		Reserve for depreciation is fully used
Year 3	Loss	Deferred expenses		
Year 4	Profit	Current expenses		The classification of deferred expenses in

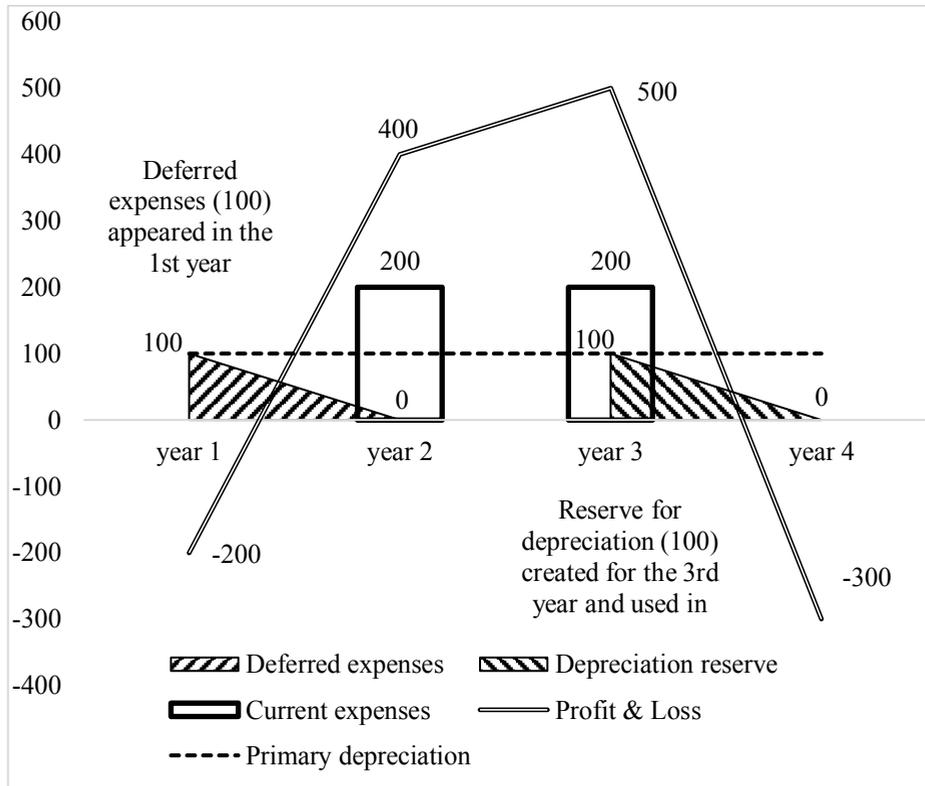
				the current expenditure
Year 5	Profit	Current expenses	Current expenses and Reserve for depreciation	
The first unprofitable period				
Year 1	Loss	Deferred expenses		
Year 2	Profit	Current expenses		The classification of deferred expenses in the current expenditure
Year 3	Profit	Current expenses	Current expenses and Reserve for depreciation	
Year 4	Loss			The use of the reserve for depreciation

Dynamics of depreciation deductions depending on the result of the financial activities of the company are presented in figures 2 and 3.



The period of service of the facility	Profit & Loss	Primary depreciation	Current expenses	Deferred expenses	Depreciation reserve
year 1	500	100	200		100
year 2	(300)	100			(100)
year 3	(200)	100		100	
year 4	400	100	200	(100)	
year 5	300	100	200		100

Fig. 2. Reservation depreciation deductions (profitable period one).



The period of service of the facility	Profit & Loss	Primary depreciation	Current expenses	Deferred expenses	Depreciation reserve
year 1	(200)	100		100	
year 2	400	100	200	(100)	
year 3	500	100	200		100
year 4	(300)	100			(100)

Fig. 3. Redundancy of depreciation deductions (the unprofitable first period).

4 Conclusions

The proposed redundancy method of depreciation deductions will take into account the trends of getting the income of the company in the process of its activity and fully implement the principle of matching revenues expenses incurred.

The logic of accounting records reflecting the process of depreciation must be based on an assessment of trends in the income of a company in sales, the price of which incorporated depreciation deductions. If the dynamics of income from the sale of such products is fairly steady, and manufacturers in revenue from sales of products return of depreciation deductions, the most expedient is the inclusion of depreciation deductions in the cost price of production (works, services). Applying this methodology in the accounting depreciation deductions will not only reimburse companies for reasonable costs incurred for the acquisition (construction, manufacturing) assets but also accumulate additional funds for new investments.

In that case, if during the period of depreciation the company's financial situation is unstable, but it is likely to improve in future periods, the most expedient is the option of recording depreciation deductions as deferred expenses. The onset of the period to obtain a stable income will allow you to include deferred costs in the cost price of production (works, services).

However, in conditions of low demand for products, the lack of its competitiveness, in the absence of a likelihood of receiving revenue from the sale of such products is the best way of accounting for processes of depreciation is to allocate the depreciation deductions to the other expenses of the company. This way of accounting records will allow refusing from the allocation of depreciation deductions in the selling price of the products and form more than actual financial impact. However, in this case depreciation deductions will be only a uniform write-off of previously incurred costs related to the acquisition of fixed assets, losses on the company.

Thus, in the framework of the accounting policies for each company based on its position in the market, and depending on the magnitude of the costs and the real results will be valid alternative: attributed to depreciation deductions from the estimates, according to the cost of production or losses.

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