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Why is Depreciation Interpreted as a Cash Fund?

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Abstract. The author brings to light the historical reasons for the emergence of two opposing interpretations of the depreciation amounts of fixed assets existing in Russia. One of them considers depreciation as a good, a source of cash fund, and the second one – as a loss, deduction from the book value of fixed assets. The history of this contradiction is discussed in detail, the arguments of each side are analyzed, the positioning of depreciation in the modern balance sheet, its accounting procedure and its role in business reality are analyzed. The second part of the paper provides the rationale for treating depreciation only as a depreciation of fixed assets, and shows the inconsistency of treating depreciation as a source.

Keywords: depreciation; profit; sophism; net balance; gross balance; debit; credit

Stating the Problem

Discussions about the economic nature of depreciation began in Russia in the early twentieth century and continue to this day. Currently in our country there are two main approaches to the interpretation of the amounts reflected on the credit of the accounting account 02 “Depreciation of fixed assets”. According to one of them, depreciation is a monetary fund accumulated by the subject for the restoration of depreciated fixed assets (PPE). This approach is followed by most economists, financiers and some of the older generations of accountants.

According to the other approach, depreciation has no connection with cash. To the credit of the account 02 are the amounts reflecting (approximately) the amount of depreciation of fixed assets as a result of its operation. These amounts reduce the book value of fixed assets (due to what it is called residual) and simultaneously increase the cost of the organization’s products. This interpretation is shared by a much smaller number of economists, but the majority of accountants, including methodologists who write normative documents regulating

the accounting procedure (it is no coincidence that they do not mention the term "depreciation fund").

It is not hard to check who is right. It is enough to refer to the balance sheet to see that the amount of accumulated depreciation in the vast majority of organizations significantly (often by orders of magnitude) exceeds the amount of their cash. However, supporters of the monetary interpretation it does not confuse, which sometimes leads to misunderstandings and conflicts. Let's take a real-life example.

Enterprise N is a rather large Novosibirsk enterprise, a local monopolist in the provision of socially important services that is 100% owned by the mayor's office. Its fixed assets, created in the Soviet period, are 75% depreciated, and regulated tariffs for services to the population allow financing only current expenses. In 2005 the company's management, having presented competent calculations, applied to the owner for a subsidy to upgrade the fixed assets. The economic department of the mayor's office did not even consider the calculations: "You have a huge amount of money in the depreciation fund. Use them first, and only then ask for help."

According to the balance sheet, confirmed by the auditors, all assets of the VC at the time were 20 units (all figures are stylized), of which current assets (including money) – 10 units, and the residual value of fixed assets, reflected in the balance sheet – 10 units.

The latter was formed from the original cost of fixed assets in 40 units, minus depreciation (30 units). Thus, the assumption of the City Hall economists looked absurd: depreciation was three times higher than the value of all current assets of the VC, and orders of magnitude higher than the amount of money that has ever been in the organization. But the economists were stubborn, and the management of the company proposed to their auditors to explain in writing how exactly the depreciation fund should be used to restore the depreciated fixed assets. The answer prepared by the author of these lines, its content is used when writing this paper.

When preparing the answer to the Novosibirsk Mayor's Office, we took into account the precedent that occurred in Moscow. In 2005, at Chagino substation, a transformer burned out, which caused rolling blackouts in the capital and a number of neighboring areas; the losses were huge. Chubais, then head of RAO UES, explained to the government that the equipment is obsolete, the tariff is regulated, and

money for renovation can only be found in the budget. One of the most famous economists, academician (now deceased), responded in the same way as officials from Novosibirsk City Hall: RAO UES has a huge depreciation fund, start using it. When RAO UES auditors claimed that there is no such fund at the company, two deputies of the State Duma suggested that the Prosecutor General's Office check if Chubais moved the depreciation fund abroad.

The monetary treatment of depreciation is still in place today. Over the past 20 years several dissertations on the use of the depreciation fund for the renovation of fixed assets have been successfully defended. The famous economist G.I. Khanin in his latest book, in particular, states that shopkeepers in the Soviet period worked "without paying depreciation deductions <…> [while] part of profit and depreciation are used for accumulation purposes". [Khanin, 2020. Vol. 1. P. 250, 319].

One of Russia's leading accountants, V.V. Kovalev commented on the situation in the following way: "…economists still believe that the depreciation fund in any enterprise exists and is a source of financing capital investments, at the expense of which it is possible to acquire new fixed assets. In fact, the situation looks quite different, the depreciation fund has long been absent, and the previous understanding of it was very far from the true situation". [Kovalev, 2016. P. 465].

In the author's opinion, this statement is correct in its essence, but insufficient for its understanding. Neither Kovalev nor other supporters of the non-monetary interpretation of depreciation explain what led economists and some accountants to believe that organizations have monetary depreciation funds, what their errors are, whether a depreciation fund ever really existed, and if so, where it disappeared to. In the author's view, these questions can only be answered in the context of the history of the balance sheet.

Pages of Balance Sheet History

"The theory of accounts, and with it all accounting, must be derived from the balance sheet. Each account is explained on the basis of the place of the corresponding item in the balance sheet."

A. Calmes

"Everyone can state that it is almost impossible, even for accountants, to understand balance sheets as they are drawn up."

E. Leote, A. Guilbeau

Historical Form

Bookkeeping and balance sheets were given to Europeans at once in a ready-made form, but without explanation. In 1494 the first work on accounting, Luca Pacioli's treatise "On Accounts and Records" (hereafter Treatise), was published in Venice. It played a tremendous role in the spread of accounting. "Rarely does the first book on any subject dominate literature in the way that the Treatise did. It is almost without exaggeration to say that for 150 years the texts appearing in England, France, Germany, Italy, and the Netherlands were "at best reworkings of Pacioli, and at worst slavish translations, without reference, if only as a courtesy, to the original author." [Littleton, 1966. p. 4.]

For all its popularity, the Treatise was merely a technical manual of record keeping, with no theoretical or historical commentary. Its last chapters described the procedure for drawing up a balance sheet, allowing all the debit balances of accounting accounts to be shown on the left side of the balance sheet, and all the credit balances on the right. The sides of the balance sheet were called the same as the sides of the accounts: debit and credit.

Debit in the Treatise was defined simply as the left side and credit as the right side of an accounting account. So far no one has been able to add anything to this definition: "The words 'debit' and 'credit' are simply accounting terms for the right and left sides of an account." [Needles et al., 1993. P. 38]. Russian A.P. Rudanovsky, who dealt much with this problem, called such definitions "feldfebelnye", but did not offer others. Thus, the balance sheet procedure was simple: on which side of the account is its balance, on such side of the balance it is reflected. But the basis for grouping data in the

balance sheet was completely incomprehensible, and the results of such a procedure looked ridiculous. For example, on the left side of the balance sheet, along with the active items of money, goods, etc., there was an item of loss, which was in its real content the direct opposite of the assets. And on the right side, along with the real liability, accounts payable, were capital and profits, which were the opposite of liabilities (Table 1). Naturally, the totals of the balance sheet sides were values without any contents.

Table 1. **Original (historical) balance sheet form**

Debit	Credit
Asset (including original cost of fixed assets) *Loss*	*Equity* (including profit and depreciation) Accounts Payable
Total = sum of debit balances	**Total = sum of credit balances**

Let us emphasize: on both sides of the balance sheet not only heterogeneous, but directly opposite indicators were mixed (and added up!). This should be striking to the eye of any unbiased person. But accountants didn't question it. The vast majority of them thoughtlessly copied accounting techniques: "…many minor questions of accounting technique persisted for at least four centuries simply because they were grafted on by Pacioli; they existed like buttons on coat sleeves long after their practical meaning was lost." [Littleton, 1966. p. 4].

What caused such conservatism? There have been no serious studies on this subject. Some foreign historians, perhaps not without reason, believe that the accountants were satisfied with the atmosphere of mystery surrounding their activities. In the author's opinion, another important reason was the complexity of accounting. No generally accepted theory of this unprecedentedly universal and flexible system has appeared even in our age of information technology. What to say about the 16th-17th centuries: the general information culture of Europe was then close to zero; only a few people knew the usual division operation in decimal arithmetic. Europeans of that time did not have a chance to comprehend accounting and were limited to a literal copying of accounting techniques in general and the balance sheet form in particular. The latter has become an unusually persistent stereotype over the centuries.

Disguise of problems

At the beginning of the 19th century the incomprehensible headings of the balance sheet sides – Debit and Credit – were replaced by economically meaningful ones – Assets and Liabilities. Nothing else was changed in the balance sheet, and that was its first reform. No one claimed to be its author, and the reasons for it were not explained. We can assume that the accountants were prompted to this innovation by the questions of the owners, who wanted to understand what the Debit and Credit mean. Apparently, this was a banal disguise for misunderstanding the balance sheet. No such questions were asked after the reform, but new ones appeared.

After a series of high-profile bankruptcies of large joint-stock companies, lawsuits began. And accountants were required to explain why losses were reflected in assets. They were not prepared for that. The most authoritative accountants of the time – the Frenchmen E. Leote and A. Guilbeau – in 1889 even went so far as to admit the incorrectness of grouping data in the balance sheet: "Everyone can state that it is almost impossible, even for accountants, to understand Balances as they are prepared… There is no unity of classification of values, all things are mixed up, are not in their places". [Leote, Guilbeau, 1924. P. 336].

At first this idea was greeted with delight: "Leote and Guilbaud made the first step in the strict separation of the concepts of debit and credit from the concepts of asset and liability, which not only practitioners but also accounting theorists considered identical… Mixing debit and credit with asset and liability distorts the real results of economic activity… becomes a tool of the most harmful hoax. This result of the research of Leote and Guilbeau must be regarded as the greatest discovery in the field of accounting." [Rudanovsky, 1912. P. 248.]

But what to do with this greatest discovery, how to use it in practice? It would be better to find a new, understandable basis for grouping data in the balance sheet. Or at least move some items to other sections; first of all, the losses. Neither of these was the answer. Leote suggested leaving the losses where they were, but renaming them "fictitious asset". But this angered the users, who did not want to see anything fictitious on the balance sheet.

Accountants had one thing to do: prove that losses were also an asset. The leaders of accounting thought (in Russia – E.E. Sivers) worked on this, but without success. N.S. Lunsky[1] called Sivers' explanations anecdotal, but did not offer his own. Thus, for decades accountants-practitioners had absolutely no idea what to answer the managers who signed the statements to the damning question: why are losses reflected in the asset?

It was not until 1938 that perhaps the best of sophisms was invented in the USSR. The loss item was renamed. But not to "fictitious assets," as Leote and Guilbeau suggested, but to "diverted funds. In doing so, a synonym was suggested for the title "Assets" – "Household Assets". This created the illusion of homogeneity of the items on the left side of the balance sheet. Everything reflected on it is "funds": non-current, current, and distracted. The sophism[2] was that losses were inherently not funds[3], but it was not easy to see that.

The goal was achieved: the users' questions stopped. It was now explained to them and to novice accountants: the balance sheet is a document, the assets of which represent economic means, and the liabilities – their sources. In fact, up to 1992 only debit balances were represented in the assets of balance sheets, and only credit balances – in the liabilities. The concepts of "debit" and "credit" were interpreted as purely technical, conventional terms, while "asset" and "liability" were treated as highly economically meaningful. No one wanted to notice this obvious contradiction.

However, the balance sheet problems showed up on the other side. The first third of the twentieth century was the time of formation of financial analysis in Russia. This science was created by a group of famous accountants: A.P. Rudanovsky, N.A. Blatov, N.S. Lunsky and others. And they found that the historical balance sheet is unsuitable for calculating all financial ratios using the indicators of capital

[1] Lunsky began as a teacher of mathematics and was the author of thirty textbooks and manuals on commercial arithmetic, stock exchange and higher financial calculations. Later, after becoming a recognized leader of accountants in the USSR, he retained his common sense and disbelief in accounting sophisms, which, however, he did not particularly flaunt.

[2] "A sophism is an outwardly correct but essentially false inference based on a deliberately incorrect selection of starting points." [Wikipedia]. Sophisms are not uncommon in science.

[3] Funds are what can be used to achieve some goal, but no goal can be achieved with losses.

and assets. As shown in Table 2, the size of these indicators were overstated in the historical balance sheet by the amount of losses and depreciation. The loss, instead of reducing capital, increased assets. Similarly, depreciation was not deducted from the original cost of fixed assets (as it is in today's balance sheet), but was reflected in the capital section with a positive sign, increasing it.

Table 2. **Balance sheet form in 1939–1991**

Assets (economic means)	**Liabilities (sources of economic funds)**
Fixed assets ***at cost (i.e., residual value, as in a modern balance sheet + depreciation)***[4]	Share capital Profit ***Depreciation***
Total: Non-current assets + ***depreciation***	Total: Equity + ***depreciation*** + ***loss***
Current assets	Liabilities
Distracted funds (including losses)	
Totals[5] = Assets (non-current and current) + ***depreciation*** + ***loss***	Totals = Equity + Liabilities + ***depreciation*** +***loss***

Note. Differences from the modern balance sheet are shown in bold italics

[4] The original and residual values of fixed assets, as well as their accumulated depreciation, are related by a simple formula: Residual Value = Original Cost – Depreciation. This formula has been known for a long time, but until 1992, the residual value was not reflected in the balance sheet. Instead, only original cost and depreciation were shown on the balance sheet – on different sides of the balance sheet and with positive signs. In fact, from 1494 until 1992, depreciation, as conceived by the creators of the accounting system, incomprehensible but rigorously carried out, was for some reason transferred to the right side of the balance sheet with a positive sign (a hypothesis of the reasons for this is the subject of a separate article). Below we will show that the reform of 1992 was reduced to the return of depreciation to its natural place in the balance sheet (see the examples in Tables 3, 4 and 5).

[5] The historical balance sheet total could never find an economically meaningful name. The only correct name – the sum of debit/credit balances – required a corresponding renaming of the side headings and then an explanation: what are debits and credits? After long behind-the-scenes discussions, we settled on the term "Balance Sheet Currency", which is abstruse and incomprehensible. Perhaps this is why it was accepted without objections or questions, and it has long outlived the balance sheet form that gave birth to it. The result of the modern balance sheet – Assets, is economically meaningful, but for some reason it is called "Balance Sheet" – just like the document itself. So accountants and financiers, to avoid confusion, still call the sum total of the modern balance sheet. "Balance sheet currency" is one of the relics of the historical form that has survived to this day. It will be shown below that another such relic is the treatment of depreciation as a financial source.

Thus, the stronger the wear and tear on fixed assets and the more losses an enterprise incurred, the better its financial situation looked. The example shown in Table 3 shows that the balance sheets of the weakest enterprises, unprofitable, with a large amount of highly worn out fixed assets looked the best.

Table 3. **Historical balance sheet of a loss-making enterprise with a large amount of PPE that is 90% worn out (notional example)**

Assets		**Liabilities**	
Fixed assets (original cost)	100	Charter fund	5
Materials	10	Profit	–
Debtors	10	***Depreciation fund***	***90***
Cash Resources	10	**Total Equity**	**95**
Losses (diverted funds)	***45***	Liabilities	80
Balance currency	**175**	**Balance currency**	**175**

In fact, if we present the same data in a modern form (table 4), it becomes clear that the real assets of the enterprise are only 40 units (in the historical balance sheet they are overstated by more than four times), and the real amount of equity is not plus 95, but minus 40 (the statutory fund 5 minus losses 45).

Table 4. **Modern balance sheet of the same unprofitable enterprise with a large amount of fixed assets, worn out up to 90% (conditional example, continued)**

Assets		**Liabilities**	
Property, plant and equipment (net book value)	10	Charter fund	5
Materials	10	Profit	–
Debtors	10	***Loss***	***– 45***
Cash Resources	10	**Total Equity**	**– 40**
	–	Liabilities	80
Balance	**40**	**Balance**	**40**

Thus, the accounting community again encountered problems with the historical balance, but instead of searching for and eliminating their causes, it again resorted to a palliative. Along with the historical balance sheet, another balance sheet began to be compiled, with data grouping that would avoid the distortions noted. It was called the net balance, while the historical balance was called the gross balance. The net balance sheet coincided with the modern balance sheet: depreciation in it was reflected on the left side with a minus sign, deducted from the initial value of fixed assets; losses were reflected with a minus sign on the right side in the capital section, reducing its size.

The net balance sheet was in no way inferior to the historical balance sheet and was clearly superior to it in the main respects. First, it allowed the formation of correct financial ratios. Secondly, it was understandable: the items of loss and depreciation were in their natural places and with their own sign. After all, both of them are deductions by their economic essence: losses reduce capital, depreciation – the original cost of fixed assets. Now everything was ready for the refusal from the historical form, except for the theoretical justification. They did not look for it, it was decided to continue forming both balance sheets.

The gross balance sheet in this pair still played a dominant role. It was a part of official reporting, was the basis for theoretical constructions, and was the basis of the educational process. The net balance sheet was used only for the purposes of financial analysis.

In order to explain the emergence of the balance-net, without emphasizing the problems of the balance-gross, again resorted to sophisms. One of the founders of domestic balance sheet science, N.A. Blatov, assured that the balance sheet-net is just a simplification of the balance sheet-gross [Blatov, 1931. P. 33]. One of the author's previous works [Tsygankov, 2013. P. 274–278] shows what Blatov's sophism consisted in.

In the modern literature on the topic of accounting, the problems of historical balance are masked by obscure technical terms. "Balance sheet-brutto – a balance sheet in which the counter (regulatory) accounts are given, with their balance included in the currency (i.e., the total) of the balance sheet" [Kovalev, 2010. p. 48]. "Balance-net balance is a balance sheet, in the currency of which the balance of

counterpart (regulatory) accounts is not included" [Ibid. P. 53] [Ibid. P. 53]. The definitions are incorrect in the very basis: balance sheets consist not of accounts, but of items, and are intended for making economic decisions. The definitions refer only to accounts and there is not a single facet of economic content. There are no answers to the questions about the origin of both balances, their advantages and disadvantages, and the necessity of their coexistence. These lacunas are filled above; it is necessary not only for the purposes of this article.

Balance sheet reforms in Russia 1992–2003

All balance sheet reforms in the five centuries after Luca Pacioli were merely attempts to disguise the problem of grouping data in this document and were reduced to renaming the items and sides of the balance sheet. In 1992, a fundamentally new phase of reform began, which consisted in *changing the grouping of balance sheet items*. Apparently, these innovations had no theoretical platform: they were introduced cautiously, step by step, with intervals of several years, and were not accompanied by comments. As a result, five balance sheet items changed their side and sign to the opposite.

The first step of the reforms – in 1992, the depreciation item was moved to its natural place: from the liabilities to the assets of the balance sheet with a change of sign to negative (Table 5). The first minus in the balance sheet for five centuries appeared. It was so unfamiliar that it was disguised by marking it (for some reason) with parentheses. And during the next four years the balance sheet asset reflected all three interrelated items, clearly demonstrating the economic nature of depreciation.

Table 5. **Excerpt from Balance Sheet Asset 1992–1996 fixed assets depreciated by 70% (conditional example)**

Fixed assets at original cost	100
Depreciation	(70)
Fixed assets at residual value	30

It should be reminded that up to 1992 the balance sheet was used not only as the main document of financial reporting, but also as a classifier of items presented in it according to their economic content. No exceptions were made. Loss was treated as an asset only

because it was presented as an asset, depreciation as a source only because it was presented as a liability. In 1992, an exception to this rule appeared. No one, however, dared to declare: "According to the new positioning of depreciation in the balance sheet, it should be treated as a deduction from the original cost of PPE". Theoreticians and historians were like water in their mouths: the ungrounded order of the Ministry of Finance was followed in silence; no questions were asked. And in 1996, again according to the order of the Ministry of Finance and again without comments and questions, the original cost of PPE and depreciation disappeared from the balance sheet altogether: it left only the item "Fixed Assets", which now reflects their residual value. This can only be regretted: the balance sheet of 1992–1996 was clearer and more informative. However, the role of depreciation in the new format of the balance sheet has not changed.

Similarly, according to dry orders of the Ministry of Finance, which do not contain any justifications and explanations, four more items, including the notorious loss, have changed their sign and side of the balance sheet. There was no analysis of the previous errors and no search for their causes. The sophisms of famous accountants, who explained why the loss is an asset, were forgotten at once and are not recalled until now – they were too absurd. The sophism about depreciation as a financial source is more plausible and many people continue to believe it.

Balance sheet reforms abroad

Abroad, reformers went further. They drew attention to the mix of data on the right side of the balance sheet, where under the heading "liability" capital and liabilities payable (accounts payable) were reflected and added up. Apparently, the reformers reasoned, the liability is something bad, something that should be less. And liabilities do fit into this logic. But capital is the economic opposite of liabilities – the more of it, the better. This has long been pointed out by many famous economists who refused to recognize capital as a liability. And accountants in English-speaking countries decided to do something: they replaced the heading on the left side of the balance sheet with Capital and Liabilities. In the author's opinion, this once again shows that the economic nature of capital and liabilities

is incompatible to such an extent that it is impossible to find a common name for them[6].

This was followed by the second step. Apparently, someone remembered the school rule: only homogeneous values can be added up. And the liability had to be divided into two independent sections: "Capital" and "Liabilities". The balance sheet turned from a two-sided document into a three-element one. The idea of equality, previously emphasized in every possible way, including by the name itself, disappeared. It had to be changed: now the document is called a statement of financial position.

Not everyone agreed with the new form. Accountants are very conservative, and the balance sheet for five centuries was a bilateral document. Hence its familiar name and allegory in the form of two-cup scales in a state of equilibrium, depicted on the international coat of arms of accountants. Hence the familiar division of items into funds and sources. "Where are the sources to be found in the new form?" – conservatives asked. And the IFRS (International Financial Reporting Standards) Council met their needs, allowing from 2009 to use both names and make a balance sheet both on the new (vertical) and the old (horizontal) form.

So, accountants all over the world are firmly convinced that accounting should be understood through the balance sheet. But they have yet to learn how to understand the balance sheet itself.

For several centuries, accountants, with amazing ingenuity, have clung to the debit-credit principle of grouping data in the balance sheet. And then in ten years they abandoned it without any discussion, comment or question. In fact, today there is no basis for grouping items in the balance sheet, except for the orders of the regulator (in Russia it is the Ministry of Finance). And no one is looking for this basis. This has given room for different interpretations of the economic nature of balance sheet items, primarily depreciation.

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[6] Nevertheless, Russian accountants still persist in their search for common ground between capital and liabilities. Some of them treat liabilities as borrowed capital, others treat capital as the organization's obligations to the owner, and others call capital and liabilities as sources. The incorrectness of all three interpretations is shown in the author's work [Tsygankov, 2015. P. 64–65].

Most accountants of new generations interpret depreciation as a deduction from the original cost of fixed assets – in accordance with its role in the modern balance sheet. And their older colleagues rely on the former sophisms, treating depreciation as a source of cash fund. The majority of economists remain faithful to traditions: the Ministry of Finance is not an authority for them, no one has refuted the previous interpretations. These historical reasons cause the co-existence of opposite interpretations of depreciation, which will be discussed below.

Modern interpretations of depreciation

"All the difficulties associated with depreciation stem from the fact that it is understood to mean two different things: the need to renew equipment and the inevitability of its depreciation… no one specifies, when speaking of depreciation, whether he means depreciation-renewal or depreciation-impairment."

A. Bourlot

All current interpretations of depreciation originate from one of three basic approaches:

– depreciation as a method of systematic revaluation of fixed assets;
– depreciation as an accumulation of cash
– depreciation as a combination of revaluation and accumulation.

Depreciation as a method of systematic revaluation of fixed assets

According to this approach, depreciation is a completely cashless operation. The amount of depreciation accruals accumulated on account 02 has nothing to do with money: it is not an accumulation, but a loss, not a fund, but a hole in the balance sheet – the amount of the value of fixed assets lost by them in the course of operation. "Depreciation is understood as: a) a gradual decrease in the value of a depreciable asset due to its wear and tear; b) the process of transferring one-time expenses associated with the acquisition of a long-term asset to the costs of accounting periods during the calculated useful life of this asset" [Kovalev, 2016. P. 468]. The author fully agrees with this formulation.

Unfortunately, the Russian legislator did not dare to directly define depreciation in the regulatory documents and indicated only two of its features: a) it reduces the original cost of fixed assets and b) depreciation is accrued regardless of the results of the organization's activity: "25. Fixed assets are reflected in the balance sheet at book value, which is their original cost, reduced by the amount of accumulated depreciation; 29. Depreciation on fixed assets is accrued regardless of the results of the organization's activity in the reporting period"[7]. There is not a word about accumulation of cash fund in the standard, as well as there is no negation of it.

In IFRS depreciation is defined directly: "6. Carrying amount is the value at which an asset is recognized in the financial statements after deducting accumulated depreciation…. Depreciation is the systematic allocation of the depreciable amount of an asset over its useful life"[8]. There is no mention of a cash fund here either, but a key term of the definition needs clarification. The drafters of IAS16 "Property, Plant and Equipment" believed that depreciation is so imprecise that it is unworthy to be called an estimate of the loss of value of PPE; depreciation is just a distribution. It means distribution of the amount paid when acquiring an item of PPE between all periods of its useful life.

In the author's opinion, it is possible to argue with the thesis about the inaccuracy of assessment of PPE depreciation by means of amortization of their historical cost.

Advantages of depreciation

Let's start with the analysis of alternatives. According to the Conceptual Framework for Financial Reporting (hereinafter – CFR), assets (including PPE) can be valued in three other ways besides historical cost.

1. At fair value, i.e. at the selling price of the asset at the measurement date (market approach).

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[7] Federal Accounting Standard FAS6/2020 "Property, Plant and Equipment" URL: http://www.consultant.ru/document /cons_doc_LAW_365338/76123180f1200d66eb1102dd61173d0f8d64d569/

[8] International Financial Reporting Standard (IAS) 16 Property, Plant and Equipment URL: https://www.minfin.ru/common/upload/library/2015/01/main/IAS16.pdf

2. At the acquisition cost of an equivalent asset at the measurement date (cost approach).

3. At the present value of cash flows that the organization expects to receive as a result of the use of the asset (income approach).

For fixed assets valuation the first two methods are equally problematic, as they rely on market valuations, and there are no representative markets of used fixed assets, each of which is depreciated differently.

The third method requires forecasting the inflation rate and cash flows from specific fixed assets for the entire period of their remaining service by means of discounting the forthcoming net cash receipts to the current date, often for tens of years. In the author's opinion, the accuracy of such a forecast is out of the question. Suffice it to say that the world's best experts are unable to predict the level of oil prices even for the next few months, and the latter largely determine the size of cash flows from almost all OS. The accuracy of inflation forecasting can be judged by D. Powell's statements during the last two years. There is no need to talk about discounting and accounting for upcoming risks.

In Russia, the method of PPE valuation *at replacement cost*, determined by the amount of costs required to create a similar asset, taking into account its depreciation, is also widely known. But this method actually requires making an estimate for the creation of each fixed asset. It is extremely labor-intensive and by no means guarantees accuracy. It is known, for example, that the actual cost of construction of the tunnel under the English Channel exceeded the estimated three times; the cost of construction of the stadium "Zenit-Arena" increased from 8 to 50 billion rubles. The number of fixed assets at large enterprises is counted in tens of thousands, all of them are worn out in different ways and all of them must be assessed within 90 days, allotted for the preparation of annual reports. It is clear that in practice the assessment of replacement cost is carried out in a "semi-ceiling" way, it is summarized under the wishes of the customer, and its accuracy is highly questionable. This is the costliest and the most subjective method of valuation. IFRS and now RAS do not mention it, but some economists still rely on it.

Thus, G. I. Khanin in his alternative financial calculations relied not on the residual, but on the replacement cost of fixed assets of the Soviet period, which he himself approximately derived, charged depreciation on this cost and became convinced "that the industries considered profitable by Rosstat are in fact deeply unprofitable" [Khanin, 2020. Vol. 1. P. 320]. It is difficult to find anything more subjective than the assessment of the replacement cost of the OS of entire industries in the retrospective of decades. Such a method, as rightly noted by Khanin's opponents [Klistorin, Teslya, 2020. P. 183–184], allows us to come to any conclusions.

In contrast to these methods, the assessment of OS by the method of historical cost amortization has clear advantages. Firstly, it is the most objective and verifiable method, based on two objective indicators: the acquisition cost of PPE, recorded in primary documents, and useful life for each group of PPE, established on the basis of statistical observations. Secondly, it is the cheapest (in the conditions of computerization – practically free) and the fastest method of evaluation. Depreciation is accrued at the end of each month regardless of the results of the organization's work by the software method without the participation of not only appraisers but also accountants.

The significance of these advantages is noted in the FAC: "6.69. In many situations, it is easier and *less costly* to estimate historical cost rather than current cost. In addition, estimates based on historical cost are usually *understandable and verifiable*" (emphasis of author).

The thesis about inaccuracy of PPE valuation obtained by the depreciation method is conditional. Of course, the assessment of individual fixed assets, conducted by impartial and qualified specialists, will be more accurate than depreciation. But the accuracy of assessment of thousands of heterogeneous and differently depreciated fixed assets (buildings, structures, cars, machine tools, electronics, etc.), carried out within a limited period of time by a limited number of specialists, will naturally be much lower. Taking this into account, the accuracy of PPE revaluation by depreciation of the historical cost can be considered acceptable. It is hardly possible to identify the most accurate method of PPE valuation: after all, there is no correct (objective, absolutely impartial) valuation.

The worst depreciation of the historical cost of fixed assets shows itself in periods of high inflation, such as that in Russia in the 1990s. But during this period the revaluation of fixed assets was carried out almost annually in accordance with the coefficients established by the Government of the Russian Federation, and then depreciation was charged to the new book value. As we can see, in this case, too, it is possible to avoid expensive and subjective professional evaluation, ensuring acceptable accuracy.

Thus, in the author's opinion, depreciation is not an allocation, but the cheapest and fastest, simple and verifiable way to revalue PPE with sufficient accuracy. In IFRS terms, depreciation is more correctly called revaluation of PPE by the method of distribution of its original cost, but not distribution.

By the way, in the latest edition of the Conceptual Framework for Financial Reporting 2018, Chapter 6 "Valuation" recognizes depreciation as a means of revaluation: "6.7 The historical cost of an asset is updated over time to reflect the consumption of part or all of the economic resource that forms that asset (depreciation of fixed or intangible assets)".

Necessity of depreciation

Cash for the acquisition of fixed assets is spent once, and at that moment no losses arise: instead of the spent cash on the balance sheet of the organization another asset appears – a fixed asset of the same value. Then this object is used for some period of time (sometimes – up to several decades), gradually wearing out and losing its value; it is this loss that is the loss distributed between all periods of the PPE use. Gradual depreciation of PPE is reflected by successive deductions of depreciation amounts from the book value of PPE and their allocation to the cost of production. Marx aptly called this transfer of the cost of PPE to the cost of the finished product (in a simplified version, for example, in trade – immediately to the expenses of the period).

Let's assume that the organization has refused to accrue depreciation. In this case, during the whole service life all more worn out and less valuable fixed assets will be reflected in the balance sheets as new ones, and the profit will be overstated as if there were no expenses for the acquisition of fixed assets. The financial position

and financial results of the organization will be presented in the statements unreasonably optimistic, it will require the payment of more profit tax and more dividends to the owners and will imperceptibly lead to the depletion of the organization's capital. However, all these consequences will manifest themselves only at the moment of writing off the fully depreciated fixed assets: the value of assets and capital, having sharply decreased, will correspond to reality, the financial result will become negative, compensating for overstatements of previous years. This is how many railway companies went bankrupt in the XIX century, which prompted accountants to charge depreciation [Littleton, 1966. P. 223–242].

Summarizing the preliminary results, we summarize the arguments in favor of depreciation only as a means of revaluation of fixed assets.

1. The balance sheet is traditionally a classifier of its items according to their economic content. Each item should be understood on the basis of the role it plays in the balance sheet. Therefore, proponents of treating depreciation as a financial source should either abandon it or demand that the balance sheet be reformed by moving depreciation to its former place – in the Capital and Reserves section with a positive sign. In the latter case, as shown above, for the purposes of financial analysis it will be necessary to make a net balance sheet as well.

2. In the vast majority of organizations, the size of depreciation, as a rule, exceeds the size of cash and cash equivalents by times and often by orders of magnitude. If we consider practice to be the criterion of truth, this is enough to recognize the invalidity of monetary interpretations of depreciation.

3. A complete analog of depreciation and from the economic and technical points of view is the "Reserve[9] for the decline in the value of tangible assets", reflected in the accounting account 14. The credit of this account and the debit of the expense account reflect

[9] Reserve and fund are almost synonymous in explanatory dictionaries: both mean a stock of something. One of the peculiarities of the national accounting terminology is that the word "reserve" denotes the exact opposite – loss of value, deduction from assets. That is why accountants who think of depreciation as merely a markdown call it a reserve, confusing the uninitiated. This is one of the reasons why accumulated depreciation is misconstrued as a fund.

the amounts of the reduction in the cost of materials. The balance sheet reflects the difference between the amounts of acquisition of materials and the amounts of their impairment: in the same way as reflected in the balance sheet residual value of fixed assets. However, the amounts of impairment of materials are treated as a loss rather than a source of cash.

Depreciation and amortization as a source of cash similar to profits

Some economists still consider depreciation as a financial source similar to profit. Moreover, they argue that depreciation is better than profit – because it does not have to be earned and it is not taxed! "The most available sources of financing are the enterprise's own funds. They include, as you know, profit and depreciation fund. The first component is quite often absent at an enterprise for reasons of unprofitability of production or use of profit for other purposes. Depreciation funds are a constant source of renewal of fixed assets" [Leizin, 2006. [Leizin, 2006. P. 3].

Such interpretations are easily reduced to absurdity. Following them, it is possible to abandon profit maximization altogether. There is no need to reduce costs or increase revenue, capturing new markets; it is enough to buy more expensive, but badly worn fixed assets every year – they cost inexpensive, and they are put on the balance sheet together with depreciation. This will replace profit.

Besides, there is a logical flaw here: the whole and its part (or rather, only one of the three parts) are put in the same row. After all, depreciation is included in profit as a negative part of it. Recall: profit is calculated as the difference between income and expenses, and expenses are made up of three main components: Depreciation, Materials and Salaries. Thus,

$$Profit = Income - Amortization - Materials - Salaries.$$

Materials and payroll expenses are treated as profit in the same way as depreciation. Why aren't these expenses also put on the same level as profit? Maybe they are a good thing, a source of own funds, and they should be increased too?

Proponents of the monetary interpretation of depreciation, of course, rely on some logic. But it is difficult to identify and falsify it:

as a rule, the monetary interpretation is presented without justification and explanation, as a self-evident truth. One of the few exceptions we find in the article by A. Orlov.

It begins with a daring challenge to the canons of economic science: "In economic theory, the position that depreciation is the value transferred from the means of labor has been established. Practice refutes this position. In fact, depreciation and profit have one source – additional consumer value produced in excess of costs" [Orlov, 2010. P. S. [Orlov, 2010. P. 86]. Then follows the clarification: "…in reality there is not the inclusion of part of the cost of fixed capital in the value of the product, but on the contrary – the subtraction of a certain amount from the amount of money received from the buyer, necessary for full or partial reimbursement of worn-out means of labor" [Ibid. P. 89]. [Ibid. P. 89].

Reading this, you cannot believe your eyes. But only until the author has not defined what he understands by depreciation. This is done, unfortunately, only in the second part of the work, in the section with the revealing title "Depreciation – part of surplus value": "Amortization … is the mandatory deductions of certain amounts from the sale of the product to the insurance or accumulation fund of the owner for the purpose of compensation" [Ibid. P. 95]. [Ibid. P. 95].

Here we can exhale: under depreciation Orlov understands deductions (compulsory for some reason, but this is details) of a part of cash proceeds to the fund for renewal of fixed assets. Such deductions have nothing to do with depreciation; otherwise Orlov is right. As a result of such deductions, the cost of PPE depreciation is really not included in the cost of the product, no revaluation occurs. On this basis, the author concludes: "Gradually, a certain part of revenue was allocated and steadily fixed as an independent element of commodity value – depreciation… The watershed between profit and depreciation is conditional and relative, and their economic nature is the same" [Orlov, 2011. P. 96].

Apparently, Orlov (and not only him) was misled by the linkage of depreciation with investment, which we will consider further.

Depreciation as a synthesis of revaluation of fixed assets and accumulation of the cash fund

The initiators of this interpretation were accountants of older generations, brought up on the historical form of the balance sheet. They were in a difficult position: the order of accounting depreciation in the accounts indicated that it was not related to the accumulation of cash funds, that depreciation was a markdown of the value of fixed assets as a result of their depreciation, but in the balance sheet depreciation was reflected on the source side; the latter had to be explained. The way out was found in the sophism linking depreciation of fixed assets with accumulation of cash for their renovation.

"The economic mechanism of gradual transfer of the cost of fixed assets to the finished product and accumulation of the monetary fund for replacement of worn-out copies is called depreciation… Together with the proceeds for the sold products, depreciation amounts arrive at the settlement account of the enterprise, where they are accumulated. Depreciation charges are spent directly from the settlement account to finance capital investments in fixed assets" [Paliy, 1992. P. 21][10].

It is not surprising that this definition was taken on faith: it was formulated by a very famous accountant, without any reservations, in a tone that does not allow doubts. It is not easy to notice an incorrect starting point in it: linking depreciation proper and monetary investments in the fund for renewal of fixed assets into a single economic mechanism. Apparently, such a linkage was in use abroad as well. This is indicated by the objections to it on the part of authoritative American accountants:

"The amount shown in the statements as depreciation does not reflect the accumulation of any material object. It is only that portion of the original cost of the asset that has already been expensed.

Sometimes a business sets aside money to purchase new assets, creating a depreciation fund. This is a financing operation, and it

[10] Written in 1992 (after the balance sheet reform) by V. F. Paliy (1926–2013), one of the most respected accountants of the USSR and Russia, author of the first Law "On Accounting" (1996).

is completely unrelated to the accounting procedure of recording depreciation" [Anthony, Rees, 1993. p. 134][11].

This small statement is deliberately divided into two paragraphs: the first one deals with depreciation, the second one – with monetary investments in the fund for renewal of fixed assets. This additionally emphasizes the differences between these processes and the lack of connection between them.

In Russia, similar objections are also raised: "… the depreciation fund is understood as a really reserved amount of money accumulated for the acquisition of new objects to replace retired ones" [Nechitaylo, 2013. P. 132] and "… depreciation accounts reflect the amount that has no real monetary embodiment" [Ibid. P. 168]. [Ibid. P. 168].

In the author's opinion, both American and Russian accountants are essentially right. But calling the cash fund depreciation fund, they use the term of their opponents, which gives reason to understand that they agree with the linkage. It would be more correct to state categorically: there is no depreciation fund at all, the fund intended for renovation of fixed assets should be called renovation (or investment).

A quite sufficient argument against the above linkage is the discrepancy, often by orders of magnitude, between the amounts of depreciation and cash in organizations' reports. This discrepancy is quite understandable. Cash proceeds are the source of financing the entire activity of the organization: replenishment of inventories, payment of salaries, renewal of fixed assets, etc. The decisions on specific directions of expenditures are made by the organizations. Decisions on specific areas of expenditures are made depending on many circumstances. As a rule, first of all, material stocks are replenished and salaries are paid. Inexpensive fixed assets are also purchased directly from the proceeds. If there is a need for expensive fixed assets, the organization does not always create a fund from its own cash for their acquisition. Fixed assets can be rented,

[11] Anthony is one of the most famous accountants in the United States. His picture is in the Accounting Hall of Fame, inaugurated in Ohio in 1950, along with the pictures of one hundred other accountants from around the world who have made the greatest contributions to accounting.

leased, or a loan can be raised for their acquisition: in all these cases, payments are gradually made from the proceeds.

Thus, accumulation of a cash fund is only one of the alternatives. And even if it turns out to be preferred by the owners for one reason or another, when determining the size of this fund, the amounts of accrued depreciation are taken into account, if at all, then in the last place. For example, it would be absurd to allocate money every month for the renovation of a new building that has just been purchased and has a service life of one hundred years. At the same time, if a significant expansion of the business is planned, the investment fund may greatly exceed the amount of accumulated depreciation. Besides, an organization that uses only leased fixed assets and does not accrue depreciation at all can create such a fund.

Let us summarize the above. Renovation fund and depreciation have nothing in common neither in their essence nor in their form. The necessity and the size of the renovation fund are determined by the management of the organization taking into account the strategic development plans, multiple alternatives and the current financial situation. Depreciation is accrued programmatically at the end of each month regardless of any plans, performance results and even the availability of cash. The linkage between depreciation and accumulation of the fund for renovation of fixed assets from cash diverted from the economic turnover has no basis. It was required by accountants of previous generations to explain the positioning of depreciation in the liability side of the historical balance sheet and has survived until now as a certain relic.

Conclusion

So why is depreciation still treated as a cash fund? In the author's view, it is because historians have not investigated the fallacies and palliatives that saturate the history of the balance sheet. Because theorists have never found a basis for grouping data in the balance sheet. Because the anonymous authors of the recent balance sheet reform have not seen fit to explain its necessity and purpose. All of this makes it impossible to explain why depreciation has been reflected in the liability side of the balance sheet for so long, and why it should now be reflected in the asset side.

Under these circumstances, the author could only appeal to his own history of the balance sheet (there is no other), the realities of accounting and business, and common sense. The basis for the grouping of items in the balance sheet received five hundred years ago from Italy is still unclear. What is known is that a number of the items on that document, including depreciation, were not on the correct side. But accountants accepted this form of balance sheet as an axiom and masked its shortcomings with sophisms. At the end of the last century, Russian lawmakers decided to reform the balance sheet; in the course of the reform, five of its items, including depreciation, changed sides and sign (to negative). All these were steps in the right direction, but the reform had no theoretical justification and was not accompanied by comments. There was no analysis of previous mistakes, they were simply forgotten. The old sophisms were not criticized, but gradually fell away by themselves. Only the most plausible of them, linking depreciation of fixed assets with their renovation, remained. It now contradicts both the realities of business, the accounting techniques in the accounts, and the new form of the balance sheet.

This sophism should be decisively abandoned by explicitly defining at the regulatory level (for example, in FSAS6 "Fixed Assets") what depreciation is and, no less importantly, what it is not. It is also necessary to abandon the relic of the historical balance sheet – the concept of "depreciation fund", thus clearly divorcing the concepts of depreciation and renovation of fixed assets. Given the long-standing nature and scope of disagreements, this is a task of great practical significance.

The article reveals numerous gaps in the theory and history of accounting. They, of course, affect not only the interpretation of depreciation. To fill them, it is necessary to answer questions that are not even posed now: what should be the basis for grouping balance sheet items, how are they related to each other, how should all of them be correctly defined? And also to explain what debit and credit are and why they became the basis for such an absurd grouping of items in the historical balance sheet. All this is the subject of a separate large study.

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