

National and International Methods of Fixed Assets Depreciation

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Abstract: Depreciation is an extremely debated subject in the assets accounting area. Numerous articles were written on the subject and very different accounting solutions have been chosen from one country to another. Depreciation reflects best, the rate of consumption of economic benefits attached to the asset, knowing that, mainly, by using it, the asset is consumed.

Thus, it is considered that depreciation reflects the consumption of future economic benefits attached to an asset, as consequence of its use and as a result of physical or moral wear; the way of determining it is the incidence resultant of specific parameters such as the economic life, the salvage value, the chosen depreciation method etc.

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1. Introduction

Depreciation, as a process, is allocating, transferring the cost of assets on the expenditure period, in order to connect economic benefits attached to the asset with efforts to own it. Thus, the cost of the capitalized asset on entry into a balance account, tangible assets, for example, will be allocated to expenditure costs in proportion with obtaining future economic benefits, thus respecting the principle of connecting expenditure with the income period.

The value depreciation, according to IAS, is a loss of value occurred during the economic life of an asset, the consequence of the incidence of specific factors - internal or external - that make fair value, except for the costs of sale or the use value to be lower than the net book value. Thus, in order to measure depreciation during the asset life, the entity needs to know the size of accumulated depreciation that adjusts the initial cost to obtain, at t moment, of the net book value - the basis of comparison in quantifying the value depreciation.

As for the registering mode, the accounting of annual depreciation generates the debiting of an expenditure account of exploitation and the crediting of a specific account of depreciation. The value depreciation involves debiting an expenditure account and crediting the appropriate asset account (or for assets reevaluated in previous years, the cancellation of the revaluation effect and the recognition of difference through the appropriate expenditure account) just to point out the direct influence of the asset value loss. If depreciation is an allocation and a sharing of assets cost issue, depreciation is related to evaluation methods, the asset being highlighted not only in the balance sheet, but also in primary records to the new depreciated value.

2. International Accounting Standards and Depreciation Methods

To assess depreciation, the accounting practice uses several criteria, such as:

- the economic life;
- the volume of activity produced;
- the interest rate, etc.

According to the criteria mentioned, several methods of depreciation can be identified; most known are the following: the straight-line method, the degressive method, and the units of production method. International rules consider that, under one of the most important conventions on basic accounting, the correlation principle, the value of fixed assets is distributed through depreciation on periods benefiting from the asset use. No matter the method chosen, it must result in systematic and rational allocation of the depreciable amount, during the expected economic life of the asset.

According to the International Accounting Standards, it is deemed that the depreciation method should reflect the way in which future economic benefits of the asset are expected to be consumed by the enterprise and that the adequacy of the method must be reviewed at least annually if there occurred a change in the model set. Beyond this, the rule leaves to entities' appreciation the use of either method, although reminiscent of the straight-line method, degressive depreciation and depreciation proportional to use. However, it results of the rule provisions that the depreciation method is based on the way of determining the economic life over which the depreciated value is allocated – depending either on time or on the physical wear itself.

This is what gives rise to the two major categories of depreciation methods approved by standards, namely: methods based on time, and respectively methods based on real physical wear.

A) Depreciation methods based on time

In the specialized foreign literature, the straight-line method, respectively the accelerated methods (in the Anglo-Saxon literature) – the degressive depreciation method, the method of cumulating years of economic life etc. are considered methods based on time.

The straight-line method. According to this method, depreciation is considered a function of time rather than the result of use. The method is widely used in practice because of its simplicity and it consists of allocating, on costs of the period, a constant fraction from the depreciable basis, throughout the economic life of the asset. The size of depreciation per year is equal to the cost, decreased by the estimated residual value during the economic life of the asset.

The degressive depreciation method. Degressive methods, often called in the Anglo-Saxon literature accelerated methods, based on the passage of time, require the inclusion in expenses of a higher depreciation, during the first exercises of the asset use, compared to depreciation corresponding to the following exercises. The economic justification for these methods is that assets have a greater service capacity in the first years of life, then maintenance costs rise ever higher.

B) Depreciation methods based on real physical wear, the result of use. According to international standards, depreciation is not necessarily based on the economic life, in years. Annual depreciation can be calculated depending on the number of units produced by that asset, in one year; some physical indicators, specific to the analyzed asset, may be used here, such as the number of components, namely, products produced for an

installation, number of miles to go for a means of transportation etc.

This method is recommended especially for those assets that depreciate more by use rather than by the passage of years and aging, as well as for those assets for which the use rate is irregular. The annual depreciation method has the merit to fluctuate at the same time with the asset contribution of each year. The units production method, also called the functional depreciation method can be mentioned here. It is applicable only in terms of accurately assessing outputs obtained during the economic life of the asset.

C) Other depreciation methods.

Although IAS 16 does not talk about other depreciation methods, at different times and in various jurisdictions, other methods have been used. By way of information, we mention:

- the method of entry at the moment of withdrawal, involves passing the cost of the asset on expenditure, at its withdrawal, its non-recognition;
- the method of entry at the moment of replacement, recognizes in the accounts of fixed assets, their initial cost, and at the date of assets replacement, the corresponding replacement cost will be highlighted on the expenditure period;
- the depreciation method on homogeneous groups (or composites): it is considered homogeneous group, the sum of similar individual assets, compared with the composite group which brings together dissimilar individual assets. The starting point for measuring depreciation is the depreciation value of individual assets, parts of the group.
- implicit interest depreciation method, used in the specialized American literature; according to this method, the asset is viewed from the perspective of the investor who expects a certain remuneration from its invested capital.

The originality of the method is that it transforms the depreciation plan of fixed assets in a depreciation plan of investment; the investor's expected profitability is measured by the discount rate of future cash flows generated from operations of exploitation (the internal rate of return is considered and next to this rate, future cash flows are updated in order to recover the initial investment equal to the discount rate).

3. Depreciation Systems. Comparative Analysis

International differences in accounting practices related to depreciation come from different perceptions on:

- the evaluation of fixed assets subject to depreciation;
- the way of allocating value during the economic life of the asset.

Two depreciation systems have been shaped and strongly imposed in the international practice, namely the *European* and *Anglo-Saxon* systems. Next, the American, British, French and German depreciation systems will be analyzed in the attempt to emphasize differences between them.

U.S. accounting rules do not specifically dedicate an exclusive text to tangible assets; the analysis of those structures involves the use of the following regulations: ARB 43 - Depreciation and inflation; APB 6 - Depreciation and assets reevaluation (degressive depreciation method); APB 12 - Explanatory Notes and Annexes on depreciable assets, respectively corresponding depreciations; FAS 121 - Depreciation of long-term assets, FAS 66 – Sale of fixed assets.

North-American accounting practices respect the principle of historical costs, so that both in the United States and in Canada, the value of fixed assets is not likely to be subject to the reevaluation process, in most cases. *The basic rule in the assets evaluation* is

the historical cost; however, ARB 43 states that in the past, assets could be subject to *reevaluation or reassessment* and in these circumstances the depreciation basis was given by the reevaluated value, and not by the historical cost. For the American rulers, depreciation is not an evaluation issue, but a way of allocating cost, which is defined as *the process of allocating, on expenditure, the cost of tangible assets in a systematic and rational manner in those periods when benefits from the use of that asset are expected*. In order to calculate accounting depreciation, the salvage value is deducted of the assets cost, with the purpose to systematically distribute depreciation expense during the economic life. No principle sets the economic life of the assets, as long as it is the result of repairs and maintenance policy, practiced by each enterprise.

Although several depreciation methods are accepted, such as the straight-line method, the units of production method, the degressive method, the SOFTY method, the most common method remains, however the straight-line method. Differentiation should be remarked between the accounting depreciation and depreciation recognized for tax purposes which uses much shorter life durations for assets, neglects the salvage value in calculating the redeemable basis and prefers using the degressive depreciation methods. The American specialized literature acknowledges that inflation is a complex of phenomena that motivate the choice of accelerated depreciation; companies are, obviously, tempted to increase depreciation expenses and thus to reduce profits and, consequently avoid the decapitalization phenomenon.

FASB states clearly that, for accounting depreciations shown, an enterprise will not refer to the stipulated rules, in terms of tax; if tax depreciations differ from the accounting ones, adjustments as tax reprocessing are required. The two methods of tax depreciation introduced by the Congress - ACRS (Accelerated Cost Recovery System) in 1981 amended in 1986 by MACRS (Modified Accelerated Cost Recovery System) encouraged companies to invest in new tangible assets, allowing them to quickly recover the cost of those assets, using the following remedies: the concepts of estimated economic life and salvage value were abandoned and replaced with *a provision calculation for cost recovery based on the unadjusted cost of the asset for a period fixed by law, for all types of assets*.

In the **British system**, any asset that has a limited economical useful life must be registered for depreciation. In time, during the estimated useful life, depreciations should allow recovery of the input amount, from which to deduce the salvage value of assets deemed to the end of life.

As basis for depreciation is the cost minus the salvage value, but according to regulations in the matter, tangible assets can be accounted in a balance sheet, at a greater value than the historical cost, and without tax incidence. These are the so-called alternative treatments or *current cost accounting*, according to which the enterprise can choose between two methods: the market price valued for each asset at the end of previous year or the current price.

Most British enterprises evaluate tangible assets to their historical costs, except for a big part of the large enterprises which proceed from time to time to reevaluation of assets using market value in this respect. Especially, land and buildings are subject to periodic reevaluation. Some or all tangible assets may be subject to annual reevaluation, on grounds of replacement costs.

In general, British companies reassess usually land, not buildings and technical installations (because they are required to redeem them, on grounds of their accounting value). For assets highlighted at market value, subsequent depreciations will be determined

under the new reassessed value, respectively the remaining economic life.

In addition, although in the accounting practice it is considered, to a principle level, that an asset can not be accounted to an amount above fair value, in the UK, the annual inventory of this category of assets is not conducted. Consequently, a British company can keep an active asset at a higher value than fair value, even if it depreciates during the year, provided that such impairment is temporary. Some examples of depreciation methods:

- the straight-line method,
- the reducing balance method,
- depreciation proportional to inverse numerical order of years (SYDM),
- the units of production method

Most used *in British practice is the straight-line method*. In the **French** practice, enterprises can reevaluate fixed assets, but they use depreciation durations provided with indicative title of tax authority; the depreciation method pursues the economic impairment of the asset.

In **Germany**, unlike France, reevaluation is not allowed. The most frequent depreciation methods used by enterprises are: the straight-line method, the degressive depreciation, a combination of both and depreciation based on the real use of the asset.

Entities in **Romania** are required to depreciate tangible and intangible assets under the *Law on the capital immobilized in tangible and intangible assets*, using one of the procedures:

- straight-line depreciation;
- degressive depreciation;
- accelerated depreciation.

The competences of approval of the depreciation system are established by the board of the economic unit, respectively by the responsible for patrimony management, in the case of non-profit legal persons who according to the law, are doing business. Depreciation, through its calculation, is an effective tool for: calculating depreciation, correcting the effects of inflation and as a tool of economic policy, benefiting of fiscal rules which allow the development of the enterprise technical potential.

Correlated with the general regulatory framework in Romania for the calculation of depreciation of fixed assets, the basic component of depreciation schemes allowed in our country is the panel of regulated using terms, annual depreciation allowance and durations of total depreciation.

4. Conclusions

Practicing various depreciation schemes, from one country to another, leads to differences of depreciation size, recognizable in the annual accounts, with implications on the financial position, on the measure of various financial indicators, etc. In the spirit of IAS 16 "Intangible assets" rule, the company is the one that decides the depreciation method, at early stages of the asset but also in the process, when it could be necessary to use another method of depreciation, in accordance with the consumption modality of future economic benefits. It is also specified the need for consistency of the method chosen, except for modifications that require a change of depreciation method. As the assets evaluation at different times of use will be made more accurately and as close to the actual size of the market value – objective difficult to achieve, especially in the context of the Romanian economy, characterized by the absence of active markets to provide reliable and relevant information about assets – value depreciations will become special cases, arising from particular events, more easily identifiable than today.

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