

## CONSIDERATIONS ON THE CRITERIA, PARAMETERS AND TAX IMPLICATIONS OF DEPRECIATION

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### Abstract

The literature presents several methods of depreciation. In Romania, not all depreciation methods are recommended by existing legislation. In this paper we propose to address through the income tax three methods of depreciation of assets, which are recommended by our country's legislation, and to highlight the tax benefits of their application within the entities. In the first part we propose to define what are the criteria for evaluating of a assets depreciation and accounting parameters of the assets depreciation. In the second part of the paper will be presented depreciation methods as linear, diminishing and accelerating with the tax implications.

**Key words:** Assets, depreciation, tax

### Introduction

Tangibles are represented by assets generating economic benefits owned by a business over a long period. Assets of tangibles nature involved in several economic cycles not consumed at first use, does not change shape in the process of production, allocation of property value and the processes involved is made consistently throughout the life span (economic life).

The depreciation understand the systematic allocation of the depreciable amount of an asset over its useful life.

In this paper we propose to address three methods in terms of tax depreciation of property and to highlight the tax benefits of their application within the entities.

#### **1. Criteria for evaluating the depreciation of assets**

Depreciation of assets is a process of decline in value.

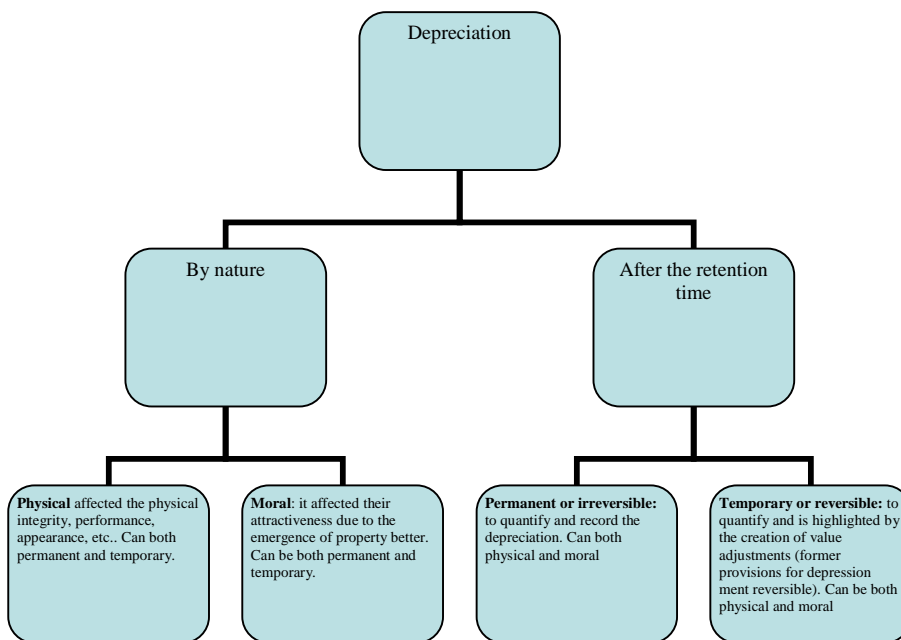
Causes of impairment include:

- Natural wear and / or abnormal due to normal operation and / or too intense that the asset;
- Deficiencies in maintenance and repair work;
- External causes (fires, explosions, weather, etc..)
- The emergence of more efficient asset of technical, technological, aesthetic, performance, etc..

Depreciation forms are can be classified as:

- Their nature;
- After the retention time.

Depreciation forms are represented schematically:



**Fig. 1 Depreciation forms**

The evaluation assets impairment involves consideration of the following criteria:

- a) The useful life.

It's called economic life of usefulness is determined that an entity has estimated for the asset subject to depreciation. Except land that is considered to have an unlimited life on other assets, the useful life is determined based on professional judgment and business strategy on the property.

Determining the useful life of an asset is based on:

- The estimated amount of use, based on production capacity or estimated;
- Obsolete estimated based on operating conditions;

- Obsolescence, occurred as a result of changes or improvements in production process or structure due to changes in market demand;
- Legal limits on the use of the asset (eg leases).

Currently in our country the useful lives (times of use) for property, plant (called tax assets) are established by Government Decision in the "Catalogue of useful life and classification of assets" (GD 2139/2004).

The life of an asset may be extended by a number of improvements that add performance or may diminish due to changes in technology or market structure.

b) The volume of activity or output.

It is used in buildings, special buildings, mines, mines with extraction solution by probes, quarries, mining of solid minerals, whose term of duration of use is limited exploitable reserves and can not receive other uses after depletion, and investments for stripping.

If their depreciation calculation is done according to the relationship:

$$A = A_{Re} \times E_a$$

A - annual depreciation;

where:  $A_{Re}$  - amortization 1,000 tons of exploitable reserve;

$E_a$  - the annual extraction of useful mineral (in thousand tons);

where:  $V_j$  - fair value of property;

$Re$  - exploitable reserve of useful mineral substances, (in thousand tons) at the start of each financial year.

In accordance with Law 571/2003 on fixed capital depreciation, amortization recalculate per product unit is:

- From 5 to 5 years in coal mines and quarries, as well as investments for the overburden;
- From 10 to 10 years in saline;
- Year when any significant changes (10%) in volume exploitable reserves.

## 2. Parameters accounting of depreciation of property

Parameters of depreciation accounting, expressed variables (sizes) are determined according to the amount of operating expenses that will affect the outcome of each accounting period.

Under the laws of our country they are:

- Input value (cost);
- Time (rate) of depreciation;
- Date of commencement of depreciation accounting;
- System (system or method) of depreciation.

a) The input.

Is determined by specific methods of procurement (input unit) of property.

This can be represented by: purchase cost, production cost, utility value, input value, fair value.

b) Rule (share) of depreciation.

Is represented by a percentage amount calculated according to the relation:

$$na = 1/Dvu \times 100$$

where: na - payback time or rate;

Dvu - useful life (during the economic use);

The useful life means life and economic use is:

- The period during which an asset is expected to be available for use by an entity in years;

- Number of product units or similar units that are expected to be obtained by using asset entity.

Norm of depreciation amortization depends on the regime used. So if degressive and accelerated depreciation amortization time is influenced by certain multipliers and when taking into account technological obsolescence, the duration of use recalculated taking into account its influence.

c) Date of commencement of depreciation accounting.

Under the laws of our country, depreciation of property is to begin next month commissioning until full recovery of the input value.

This time may be influenced by the enterprise development strategy, thus changing the depreciation.

International Standards of Accounting depreciation is calculated from the date of entry into the unit.

d) depreciation regime.

Is considering how to determine the irreversible impairment of property suffered during the operation.

The most important parameter aimed at integrated report accounting - tax on depreciation.

According to International Accounting Standard No. 16 "assets", "liquidation regime should be chosen according to the probability of generating future economic benefits associated with the asset".

Depreciation regime should be applied consistently (on a consistent method) unless there is a significant change from baseline in the development of economic benefits associated with the asset.

Depreciation for each accounting period shall be recognized as an expense, unless it is included in the carrying amount of another asset.

Although the literature devoted several schemes of depreciation of property (proportional, progressive, regressive, etc. summation figures.) Current legislation in Romania recommends the following modes: linear, degressive and accelerated.

Importance in the integrated report accounting - taxation, leads us to present distinctly showing each respective fiscal consequences of use in the management of the company.

### **3. Tax implications of depreciation of methods**

Careful analysis of the concepts, criteria and parameters on depreciation lead to the conclusion that it causes fiscal implications to the management of economic entities.

Fiscal implications are mainly generated by system (method, system) damping and other parameters on which the entity's management may intervene to influence the outcome of tax due to tax default budget and treasury.

#### ***Linear depreciation method***

Linear depreciation regime, is to include uniform costs of running a fixed amount of input value (depreciable) a fixed proportion to its useful life.

Liquidation regime is considered just in terms of fiscal management in terms of normal economic and legitimate in terms of normalizatorului.

The principle is:

- Determining the norm of linear depreciation

$$nal = 1/Dvu * 100$$

where: nal - time line depreciation;

Dvu - useful life.

- Determining the annual depreciation (Aa):

$$Aa = Vi \times nal$$

Vi - the value of the asset or cost.

Given the need to include depreciation as a result of each accounting period (month) shall be determined monthly amortization (Al) according to the relation:

$$Al = Aa/12$$

From the relations shown that regardless of the output produced or the rate at which assets are used, the depreciation will be the same from one accounting period (month) to another. The only parameter that could affect the company's fiscal management is the date of operation of the asset. On it may occur as follows:

- Commissioning of assets without formalities of reception;
- Unduly extend the technological testing, during which property generates economic benefits, without affecting the operating costs;
- Receipt of property to carry out technological tests for demonstrations and exhibitions, but in fact is used for productive activities (sales documents - subsequently drafted purchase);
- Recording of the receipt of property and depreciation calculation their impact on costs without receiving actual (real).

Compared with current practice in Romania International Accounting Standards provide:

- Deducting the original value or residual value of the revalued asset;
- Estimating the useful life of the entity.

The linear method is used by most of the Romanian entities due to the simplicity of calculations, (depreciation amount from the same accounting period to another) and tradition (custom).

#### ***Degrressive depreciation method***

Degrressive depreciation regime, is considered one of the systems derogatory depreciation of property, it allows recording of depreciation higher early in life and as he approaches the end of useful life depreciation decreases.

The method aims to encourage the modernization of the productive apparatus. Depreciation is greater in the first years of operation. Also, maintenance and repair costs increase with the use of property which makes the overall operating expense represented by depreciation and maintenance to flatten over time, because of higher depreciation expense is associated with lower maintenance in the early years sunlight-readable, and vice versa during the aging of the asset.

Depreciation is determined by the time (rate) of degressive depreciation, calculated by multiplying the norm of certain linear depreciation coefficients, depending on the useful life of property, namely:

- 1.5 for a useful life of 2 to 5 years;
- 2 for a useful life of 5 to 10 years;
- 2.5 for a useful life of more than 10 years.

Jurisdiction approval degressive depreciation regime, it is the Board of the economic entity, that the administrator for non-profit legal entities.

Diminishing balance method corresponds to a policy of investment, because it allows recovery from the first year most of the capital assets.

Accounting practice in the field are two types of application methods:

- Variant without the influence of obsolescence (AD1);
- Version with obsolescence influence (AD2).

International Accounting Standards recommended also other options, namely:

- Applies a constant rate of depreciation on a variable basis (ie net book value or amortized value remaining);
- Applies a variable percentage of depreciation on a constant basis (book value);
- Calculate the quantity of products produced, km traveled, number of hours of operation, etc..

#### ***Depreciation version without diminishing the influence of obsolescence (AD1)***

For the version of degressive depreciation calculation is AD1 following steps:

- Determine the time of degressive depreciation (nad) according to the relation:

$$n_{ad} = \left(\frac{1}{Dvu} \times 100\right) \times K$$

$$n_{ad} = n_{ad} \times K$$

K-multiplier (1.5, 2, 2.5) depending on the useful life (economic use).

- Determine the depreciation for the first year (A1), by multiplying the input (Vi) with normal depreciation of the asset that is diminishing:

$$A1 = Vi \times nad$$

- Determine the depreciation for the years ahead, by applying the rule of diminishing the value of remaining depreciation amortized until the depreciation is equal to or less than the annual depreciation resulting from dividing the remaining number of years remaining until the expiration useful life.

Since the condition is not fulfilled until the end of useful life, intangible is amortized linearly considering the remaining value (VRA) and the remainder of amortized (Ms).

Integration scheme of the set for the second year and next may be presented as follows:

- Determine the remaining amortized value (VRA) in year II:

$$Vra = Vi - A1$$

For the useful life between 2 to 5 years,  $k = 1.5$ , for a duration of 5 to 10 years,  $k = 2$ , and for a duration  $> 10$  years,  $k = 2.5$ .

- Depreciation for the year 2 and the following:

$$A2... = Vra \times nad$$

$$Ai \text{ until } Ad = \frac{Vra}{Dra \text{ (in years)}}$$

Dra - the remainder of amortized (in years)

- Depreciation in year "i" to end of useful life.

By the way are influenced by the results of each accounting period, depreciation generates diminishing fiscal implications as follows:

- Recording a higher amortization in the first years of operation of property, would bring down the financial profit and income tax, which will result in maintaining treasury;

- Recording of depreciation in the second smallest of useful life of property will increase profit and income tax, leading to decrease cash by paying a higher tax.

Recording method degressive depreciation as AD1 version does not exempt from tax on profit entity, leading only to delay its payment. This is

important especially in terms of inflation, the actual payment (the amount originally established) will be in a devalued currency.

In these conditions, the early use of depreciated assets degressive depreciation will record higher values and lower financial results, and in recent years depreciation will be lower which will entail higher financial results. In the first case we will record a lower tax and in the second a higher tax (while the other expenses and income are constant).

If degressive depreciation accounting will record the corresponding values of economic depreciation (linear) consemnându tax differences being mentioned in the "tax statement".

### ***Accelerated depreciation***

It is considered most advantageous depreciation regime in terms of economic entities tax interest.

Summary of depreciation is the first year (12 months) has a rate of 50% of the value of the tangible fixed assets (machinery, etc.).

For subsequent years, annual depreciation is calculated using the remaining amortized value and number of years remaining until the end of useful life.

Integration scheme for calculating depreciation as accelerated method is as follows:

- a) For the first year of use:

$$A1 = Vi \times 50 \%$$

where:

A1 - amortization related to the first 12 months of use asset.

Vi- the value of the asset.

- b) For subsequent years (the second year and until the expiration of normal use):

$$\text{For subsequent years } A2 \div n = Vr / Dra \text{ or } nar = 1/Dr \times 100$$

where:

A2 ÷ n - annual depreciation since the second and until the expiration of normal use of the asset

Vr - amortized value remaining

nar - normal depreciation on the amount remaining

Dr - length (number of years) remaining amortization.

In years in which use of accelerated approval was conditioned by territorial bodies of the Ministry of Public entities have established a file in support consists of:

- Data presentation;
- Indicators of economic efficiency;
- Indicators of financial efficiency.

Each of the indicators was calculated for both linear damping regime and for the accelerated.



All indicators have been established by a standard score. For indicators that are influenced by accelerated depreciation regime is set to reduce allowable levels 20% or 50% of the standard score for the linear depreciation regime.

Tax implications of accelerated depreciation manifests on tax deductible expenses in the first 12 months of operation, has a quota of 50% from the value of the asset and the next years the unamortized remaining value. This means that in the first year, we record a significant depreciation expense, leading to lower profits and income taxes.

In coming years, the costs are lower, leading to increased financial performance and corporate tax reduction experienced by the treasury, following the payment of income tax to the budget. In terms of inflation such payments shall be made in depreciated currency, which is also a tax advantage for the enterprise.

For businesses, accelerated method present tax advantages even more important as the useful life of assets is shorter.

The directors of the entity or persons performing the duties of administrators accounting policies will result in an internal manual. Upon the approval of accounting policies by administrators, staff responsible for execution of the accounting department should comply strictly accounting policies.

#### 4. Example:

It acquires a manufacturing line at a cost of 80,000 umn, VAT 24%. The useful life of 5 years. Required to calculate and record depreciation in the following systems: linear, digressive without influence obsolescence (AD1) and accelerated.

##### A. Linear method:

$$nal = 1/Dvu \times 100 = 1/5 \times 100 = 20\%$$

where:

$$nal = \text{linear depreciation system}$$

$$DVu = \text{useful life}$$

$$Am\ Anl = nal \times Vi, \text{ where}$$

$$Am\ Anl = \text{annual depreciation calculated in linear system}$$

$$nal = \text{linear depreciation system}$$

$$Vi = \text{input value}$$

$$Am\ anl = 20\% \times 80,000 = 16,000 \text{ u. n m / year}$$

**B. Degressive depreciation method,** without the influence of obsolescence (AD1)

$$nad = k \times nal,$$

where

$$nad = \text{degressive depreciation rule}$$

$$- 1.5; DVu \text{ between } 2 - 5 \text{ years}$$

$$k = f(DVu) = - 2; DVu \text{ between } [5.10 \text{ years})$$

- 2.5; DVu over 10 years

nal = linear depreciation system

In our case:

$$nad = 2 \times 20\% = 40\%$$

**- In year 1:**

Amd1 = nad x Vi, where

Amd1 AD1 = depreciation in the system, for the first year of use.

$$Amd1 = 80,000 \times 40\% = 32,000 \text{ u.m.n}$$

**- In year 2:**

Since 2:

Amd 2 ... and

VRA x nad, until the amount so obtained <= VRA, where

Amd i = 2 ... degressive depreciation obtained by AD1 method,

for the year 2, ..., i

VRA = depreciated value remaining after the previous year

nad = degressive depreciation rule

Nrar = number of years remaining for amortized

$$Amd 2 = 48,000 \times 40\% = 19,200$$

$$48,000 / 4 = 12,000$$

results that AMD 2 = 19.200 u.m.n

**- In year 3:**

$$Amd 3 = 28,800 \times 40\% = 11,520$$

$$28 \dots 800/3 = 9600 \text{ results that AMD3} = 11,520 \text{ umn}$$

**- In year 4:**

$$Amd 4 = 17,280 \times 40\% = 6912$$

$$17,280 / 2 = 8.640 \text{ results that AMD4} = 8.640 \text{ umn for } 8640$$

<6912

**- In year 5:**

$$Amd Amd 4 = 5 = 8640 \text{ u.m.n}$$

**C. Accelerated depreciation method:**

$$A1 = Vi \times 50\% = 80,000 \times 50\% = 40,000$$

$$A2 = Vr / Ms = 40,000 / 4 = 10,000$$

$$A3 = A4 = A5 = A2 = 10,000$$

**Table no. 1 Values calculated for the linear, degressive and accelerated depreciation methods**

Year	Vi	Linear	Degressive	Accelerated
1	80.000	16.000	32.000	40.000
2	80.000	16.000	19.200	10.000
3	80.000	16.000	11.520	10.000
4	80.000	16.000	8.640	10.000
5	80.000	16.000	8.640	10.000

### Conclusions

Although the literature devoted several schemes of depreciation of property, as mentioned in this article the current legislation in Romania recommends the following modes: linear, degressive and accelerated. Linear depreciation method is considered standard and accelerated depreciation and degressive amortismentele are considered derogatory depreciation methods, which depreciation is calculated based on supplements of tax provisions over the economic depreciation (linear).

Is justified by the tax advantage obtained as depreciation expense are tax deductible.

Apply in countries where accounting is connected to taxation. Tax depreciation is intended to maintain operational significance that keeping content current and the net result, which depends on tax options traders.

Separate presentation of the three methods of depreciation was motivated by the desire to highlight the integrated accounting report with the depreciation of property taxation. At the same time we also highlighted the consequences of using the company's fiscal management of the three types of depreciation.

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