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ANALYSIS APPLIED TO THE IMPACT OF DEPRECIATION METHODS OF IMMOBILIZED ASSETS ON FINANCIAL PERFORMANCE

MARIA TOMA[1], LUIZA IONESCU[1] , MATHURIN FOUNANOU[2,3]

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Abstract. *Analysis of an enterprise's financial performance through the net result of the year is not significant because it takes into account the financial elements and the profit tax. The assessment of the real effort of the enterprise, its results and its difficulties requires the analytical investigation of the exploitation result, of the training conditions and of the determining factors of action. For the same operating conditions, enterprises can record different results due to factors independent of the company's effort. These are the accounting choice for depreciation methods, cost calculation, inventory valuation and provisioning.*

The exploitation result characterizes an enterprise's business and financial performance, independent of financial and fiscal policy, but takes into account the depreciation and provisioning policy, respectively inventory valuation policy. The main question is: what depreciation method is more efficient and effective? From this point of view, in the present paper we propose to approach methods of depreciation of fixed assets, and by comparing them to determine the effect they have on financial performance, especially on the result of exploitation.

Keywords: *depreciation, depreciation methods, linear depreciation, degressive depreciation, accelerated depreciation.*

1. INTRODUCTION IN THE THEORY OF ASSETS DEPRECIATION

Depreciation represents a gradual decrease in the value of input of fixed assets in order to bring them to real value with the role of rectifying the accounting value of assets with irreversible depreciation. It implies, on the one hand, the depreciation of the value of the assets and, on the other hand, the recovery of this depreciation in the expenses of each exercise. Fixed assets are not depreciated on the basis of the loss of value but on the basis of the systematic imputation of their cost of entry over a number of financial years. Consequently, depreciation is the result of a systematic and logical accounting method for the cost of fixed assets, applied in such a way as to impute part of that cost to each financial year that will benefit from the use of those assets [1].

In Romania, the depreciation of tangible assets is calculated for the period of one financial year, and the registration is made monthly, starting from the month following the month in which the immobilized assets entered into the patrimony and were put into

[1] Valahia University of Targoviste, Faculty of Economic Sciences, 130004 Targoviste, Romania.
E-mail: tomamioara@yahoo.fr; luizaionescu75@yahoo.com.
[2] Gaston Berger University of Saint-Louis, 3200 Saint-Louis, Senegal.
E-mail: mathurin_founanou@hotmail.com.
[3] Franche-Comté University, 25030 Besançon, France.

operation. Depreciation of fixed assets is governed by current tax legislation [2] , which requires assets to be depreciated according to their normal useful life, setting proportional quotas for each type of asset. Period depreciation does not take into account the possibility of emerging more efficient assets, which would put them out of service before their lifetime expires, as well as the possibility of intensive use of fixed assets that would lead to the same result. According to law [2], the depreciation recorded in the allowances is not subject to taxation, but the additional depreciation, without the approval of the tax authorities, is considered as profits and therefore subject to depreciation. It follows that depreciation is the allocation of the depreciable amount of an asset over its intended useful life. There are many concepts to this interpretation, but the interest for accounting is the following three concepts [3]:

- *depreciation as a value-adjusted asset value adjustment process.* Depreciation is the accounting statement of the loss of value provided by fixed assets as a result of impairment in time, physical or moral wear and tear. Starting from this interpretation, depreciation is intended to correct the value of fixed assets to bring them back to a value as close to reality.
- *depreciation as a process of transferring or allocating the cost of fixed assets to the expenses of the exercise.* Depreciation is the controllable resource from the past that produces future benefits. Assignment or transfer of value is made during the economic period of use of the depreciable asset. Therefore, the fraction of value displayed over time on the outcome of the exercise must be a rational dimension inscribed in the principles and rules of the true image. The "rational" determinant refers to the ratio between the fraction transferred from the carrying amount of the depreciable asset and the economic benefit to be derived from the use of the asset.
- *depreciation as a source of financing for the renewal of fixed assets.* Capital reconversion requires a simultaneous approach to depreciation as an investment recovery problem and as a source of funding for the renewal of fixed assets. According to Romanian accounting sources [4], all tangible and intangible fixed assets are subject to depreciation with the following exceptions: lakes, ponds, ponds that are not the result of investments as well as land including wooded land, except for land with economic destination obtained by sale and purchase documents, including compensation for expropriations. Young plantations and protection plantations are exempt from the calculation of depreciation until the transition of the young plantations and 5 years of plantation protection. Goodwill is not, as a rule, subject to depreciation, unless there is an irreversible depreciation that can be amortized. Paragraph 238 of the applicable legal regulations [5] provides:

(1) Depreciation is determined by the application of depreciation allowances on the value of the asset and the revalued amount of the asset.
(2) Depreciation of tangible assets is calculated from the month following the start-up to the full recovery of their value. In determining the depreciation of tangible assets, the economic use times and conditions of use are taken into account [6].
(3) Depreciation periods in accounting, determined in accordance with accounting policies, may differ from the depreciation periods used by entities for tax purposes.
(4) If tangible assets are put into retention, in accordance with the accounting policy adopted, the entity records in the accounts an expense with depreciation or an expense corresponding to the impairment loss found.
(5) A significant change in the conditions of use, such as the number of exchanges in which the asset is used, as well as in the case of investments or repairs other than those due to current maintenance or the aging of a tangible fixed asset may justify the revision of the depreciation period. Also, if the tangible assets are put into conservation, their use being interrupted for a long period of time, it may be justified to review the depreciation period.

(6) In the cases referred to in paragraph (5), including in the situation set out in point 100 of the applicable legal regulations [5], the depreciation period initially established may change, this revaluation resulting in a new depreciation expense over the remaining period of use. Also, section 239 of the current legal regulations [5] provides:
(1) Depreciation of tangible, leased or manned tangible fixed assets is calculated and recorded in the accounting by the entity that owns them.
(2) Investments in tangible assets used under a lease, management, management or other similar arrangement are subject to depreciation over the life of the contract. Upon expiration of the contract, the value of the investments made and the corresponding depreciation shall be transferred to the owner of the asset. Depending on the clauses contained in the contracts concluded, the transfer may be a sale of assets or another way of disposal. According to point 241 of the applicable legal regulations [5]:
(1) The land is not depreciated.
(2) Investments made for the arrangement of lakes, ponds, ponds, lands and other similar works are recovered by depreciation by inclusion in operating expenses in accordance with approved accounting policies based on their useful lives. All transactions are recorded in the accounts in accordance with these regulations [5].

2. METHODS OF DEPRECIATION

The Romanian legislative framework [5], point 240 provides:
(1) Entities amortize property, plant and equipment using one of the following depreciation methods:
a) linear depreciation realized by the uniform inclusion in the operating expenses of fixed amounts, determined in proportion to the number of years of economic use.
This method of annual depreciation (Da) is done in two variants:
1. dividing the input value (Vi) of the asset subject to depreciation to its normal service life (T) in years, according to the mathematical formula: $D_a = \frac{V_i}{T}$;
2. multiplying the input value (Vi) by the annual amortization rate (r_a), as follows:
$D_a = Vi \times r_a$, where $r_a = \frac{100}{T}$
b) degressive depreciation, which consists in multiplying the linear depreciation rates by a certain coefficient, in which case the applicable legislation.
This consists in multiplying the average linear depreciation rates by the coefficients provided by the legislation, respectively:
~ 1,5 for fixed assets with a normal service life of 2 to 5 years;
~ 2,0 for fixed assets with a normal use time of between 5 and 10 years;
~ 2,5 for fixed assets with a normal use time of more than 10 years.
These coefficients can only be modified by Government decision, at the proposal of the Ministry of Public Finance.
c) accelerated depreciation, which consists of the inclusion, in the first year of operation, in the operating costs of a depreciation of up to 50% of the value of the asset's input. The annual depreciation for the following financial years is calculated at the amortized cost, after the linear regime, by reference to the number of years of use remaining. Because the depreciation calculated must be correlated with the mode of use of the asset and since in rare cases a

tangible asset is consumed in the first year by up to 50%, it follows that the accelerated depreciation method is less used for accounting purposes.
d) depreciation calculated per unit of product or service, when the nature of the asset justifies the use of such a depreciation method.
(2) The depreciation method used should reflect how the future economic benefits of an asset are expected to be consumed by the entity.
(3) The depreciation method is applied in a consistent manner to all assets of the same nature and having identical use conditions, elements determined in accordance with the accounting policy adopted.
(4) The depreciation method can only be changed when it is caused by an error in estimating the mode of consumption of the benefits associated with that property.
(5) Depreciation for tangible assets is recorded in the accounts on expense accounts

3. CASE STUDY ON THE IMPACT OF METHODS OF DEPRECIATION OF IMMOBILIZED ASSETS ON THE OPERATING RESULT IN ROMANIAN ENTERPRISES

The enterprise's accounting choices in the field of costing, inventory valuation, inventory provision and asset depreciation method have a direct and significant effect on the operating result and indirectly on other interim management (result or profitability) balances. Therefore, the operating result is determined by:
- the intrinsic factors of exploitation;
- the accounting choice in terms of depreciation methods, cost calculation, inventory valuation, provisioning.

For the same operating conditions, enterprises may record different results due to factors independent of their own effort or market conditions. The analyst must identify the two categories of causes in order to make reliable recommendations for optimizing resource consumption [7] .

Under current legislation [5], Romanian companies are required to depreciate fixed assets using one of the following methods: linear, degressive and accelerated.

Applying degressive or accelerated depreciation leads, in the short term, to diminishing the operating result and tax liabilities of the enterprise. In the long run, the effects of the depreciation system on the result of cumulative operations and tax debt are no longer noticeable, as the decrease in operating result in the first years is offset by its increase in the last years of the depreciation period [7].

For example, we admit the case of S.C. Saricom S.A which recorded the following results during 2013-2017 (Table 1).

Table 1. Results on S.C. Saricom S.A. company [lei].

No.	Indicators	2013	2014	2015	2016	2017
1.	Gross operating result	1.500	1.500	1.500	1.500	1.500
2.	Other operating revenues	150	150	150	150	150
3.	Other operating expenses	60	30	90	30	60

At the beginning of year 2013, the enterprise acquired a fixed asset with a 5 year depreciation period of 6.000 lei. Calculate depreciation in a linear (Table 2), degressive (Table 3) and accelerated system (Table 4), and determine the impact of the three types of depreciation on the operating result.

Table 2. Linear depreciation table [lei].

Years of depreciation (T)	Input value (Vi)	Depreciation rate rd(%)	Annual depreciation (Da)	Cumulative depreciation (Dc)	Net book value (VNB)
1.	**2.**	**3.**	**4=2x3**	**5.**	**6=2-5**
2013	6.000	**20**	1.200	1.200	4.800
2014	6.000	**20**	1.200	2.400	3.600
2015	6.000	**20**	1.200	3.600	2.400
2016	6.000	**20**	1.200	4.800	1.200
2017	6.000	**20**	1.200	6.000	0

Depreciation rate =100/5 years = 20%

Table 3. Degressively depreciation table [lei].

Years of depreciation (T)	Input value (Vi)	Depreciation rate rd(%)	Annual depreciation (Da)	Cumulative depreciation (Dc)	Net book value (VNB)
1.	**2.**	**3.**	**4.**	**5.**	**6=2-5**
2013	6.000	**30**	1.800	1.800	4.200
2014	6.000	**30**	1.260	3.060	2.940
2015	6.000	**-**	980	4.040	1.960
2016	6.000	**-**	980	5.020	980
2017	6.000	**-**	980	6.000	0

Depreciation rate =100/5 years= 20% x 1,5=30%

Table 4. Accelerated depreciation table [lei].

Years of depreciation (T)	Input value (Vi)	Depreciation rate rd(%)	Annual depreciation (Da)	Cumulative depreciation (Dc)	Net book value (VNB)
1.	**2.**	**3.**	**4.**	**5.**	**6=2-5**
2013	6.000	**50**	3.000	3.000	3.000
2014	6.000	-	750	3.750	2.250
2015	6.000	-	750	4.500	1.500
2016	6.000	-	750	5.250	750
2017	6.000	-	750	6.000	0

Operating result (OR) characterizes the commercial and financial performance of an enterprise, independent of financial and fiscal policy. But it takes account of the depreciation and provisioning policy. Thus, the operating result is calculated using the following **mathematical models** [8]**:**

1. ***OR = OI – OC***, where OI represents operating income;
   OC – operating costs

or

2. ***OR = GOR +[(IPAOA+OOR) – (OEDPA+OOE)]***, where:
   GOR is gross operating result;
   IPAOA - income from provisions and adjustments for operating activities;
   OOR – other operating revenues;
   OEDPA - operating expenses on depreciation, provisions and adjustments;
   OOE – other operating expenses

Based on the information provided by S.C. SARICOM S.A., for determination operating result, we will apply the mathematical model 2.

Tabel 5. Operating result of S.C. Saricom S.A. [lei].

No.	Indicators	2013	2014	2015	2016	2017	∑
1.	**Gross operating result**	1.500	1.500	1.500	1.500	1.500	X
2.	**Other operating revenues**	150	150	150	150	150	X
3.	**Other operating expenses**	60	30	90	30	60	X
	Expenses with depreciation in:						
4.	**• linear mode**	1.200	1.200	1.200	1.200	1.200	6.000
5.	**• degressive regimen**	1.800	1.260	980	980	980	6.000
6.	**• accelerated regimen**	3.000	750	750	750	750	6.000
7.	**$OR_{Linear\ (1+2-3-4)}$**	+510	+480	+540	+480	+510	+2.520
8.	**$OR_{Degressive\ (1+2-3-5)}$**	-90	+420	+760	+700	+730	+2.520
9.	**$OR_{Accelerat\ ed\ (1+2-3-6)}$**	-1.290	+930	+990	+930	+960	+2.520

4. RESULTS AND DISCUSSION

From the data presented in the last table we can see that if the entity proceeds to the linear depreciation of the purchased equipment then the amount included monthly in the operating expenses is constant, respectively 1.200 lei. In the case of the use of the degressive method on operating costs, there are higher amounts in relation to linear depreciation in the first two years of operation. This has the economic justification that depreciation is higher in the first exercises due to the fact that the machine has a higher service capacity in the first years of its life, and then it carries out increasing maintenance costs that come to re- lower annual depreciation. We note that the accelerated system assumes a rapid recovery of the value of the machine to avoid moral wear. This method affects the entity's result in the first year (even negative) reduction, with the effect of lowering the corporate income tax, but at the same time enables the entity to use the available means resulting from the reduction of the tax liability for the acquisition of new fixed assets required.

We believe that accelerated depreciation and degressive depreciation responds better to the principle of prudence in the event of moral wear and tear of fixed assets, and values calculated based on these systems, whether above or below linear depreciation, are considered as tax depreciation (reflects the influence of taxation on accounting).

On the other hand, if we make a comparison between linear and accelerated depreciation, we can say that accelerated depreciation creates a spending surplus in the short run that damages the shareholders' interest, a dividend category. In this context, there are few cases where the business decision avoids using accelerated depreciation to the detriment of taxation. The choice of the degressive or accelerated system is beneficial to the enterprises that are or will be recovering in the first years after the investment, because the quick depreciation is degressive, the date of payment of a part of the tax may be deferred and thus benefit from the monetary depreciation. If they are deficient as a result in the coming years, businesses can "evade" definitively from taxation. However, in line with IAS 16, the depreciation method should be reviewed at least at the end of each financial year. Thus, if the expected pattern of the asset's economic benefits has changed significantly, the depreciation method should be changed to reflect the new pace.

5. CONCLUSIONS

The depreciation system directly affects the short-term operating result, but in the long run, the influence is mitigated even canceled because there are offsets between the results of the first periods with the results of the last periods. However, theory and practice recommend that the depreciation regime used be logical and systematic. In other words, the cost of entry should not be allocated arbitrarily to exercises, regardless of the manner in which the asset will lose its useful value over the years.

The depreciation regime chosen must reflect the reduction in the service capacity of the assets. To the question: "What method of depreciation is more efficient and effective?" - the answer is: depending on the enterprise's objectives, the "aggressiveness" it wants to address fiscal management and, of course, the decision of the general meeting of the shareholders or associates. It is known that the choice of a damping regime is a matter of appreciation. Under the circumstances in which an entity has the choice of depreciation, interest is, as a general rule, the investment interest, which competes with the state's fiscal policy.

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