AMORTIZATION METHODS OF FIXED ASSETS AND THEIR IMPLICATIONS ON THE RESULT OF THE EXERCISE

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Abstract: *In the context of the market economy, a company can obtain remarkable results, in the conditions of competition, only if the finished products obtained, the works executed and the services provided, are qualitatively superior and at an acceptable price. Obtaining high quality goods involves good quality raw materials, efficient means of production and a highly qualified workforce. Their acquisition involved a financial effort for each economic unit and therefore the acquisition operations must be analyzed very well before being performed, calculating the financial effects they involve, for the entire period of depreciation of fixed assets. Implicitly, the calculation and recording of amortization of fixed assets is an approach of maximum importance because it influences the cost of production obtained, being made with the help of accounting records from each entity. Thus, amortization is an extremely sensitive topic for asset accounting. The main question that arises is related to the most efficient method of amortization.*

Keywords: *amortization, amortization methods, fixed assets*

INTRODUCTION

In accounting, the elements of income and expenses that refer to a period have the role of determining the result of the exercise, profit or loss for that period. In connection with amortization, we can state that it represents the fractional expense, from the cost of the assets subject to depreciation, which are used in an established accounting period. Amortization contributes to determining the net value of an asset, after deducting it from its carrying amount. The net value of the fixed asset will be recorded in the balance sheet [2,4,15].

Thus, depreciation represents the distribution process, but also the recovery of the depreciable value related to an asset during its useful life. There are many definitions regarding the concept of amortization in addition to this general interpretation. According to one of them, amortization is defined as a source of financing with the role of renewing the asset [5,6,9].

We can say that the role of amortization is to deduct that annual depreciable value, which is calculated based on the total value of the asset over the total useful life, a value that will keep in the company resources to help rebuild assets, even by using existing assets

Fixed assets gradually lose their value in use due to use, the action of natural agents or technical progress. This physical and value depreciation is called wear [1,8,12].

Amortization represents the gradual decrease in the input value of fixed assets in order to bring them to their real value. The role of amortization is to rectify the carrying amount of irreversibly depreciated fixed assets. On the one hand, amortization involves the depreciation of the value of fixed assets, and the recovery of this amortization from the expenses of each year on the other hand [12].

From a scientific point of view, by amortization we mean the way in which the cost of fixed assets is carried out during their useful life. The definition is quite difficult for a non-financier to digest, especially as it also means a calculated expense.

Another easy-to-understand definition is that amortization is "the gradual recovery, both from an accounting and fiscal point of view, of all costs related to the acquisition, construction, production, assembly, installation or improvement of depreciable assets" [10].

Fixed assets are cushioned on the basis of the systematic attribution of their entry cost to a number of years and not on the basis of value loss.

Amortization is according to N. Feleaga and I. Ionascu, the result of an accounting procedure of logical and systematic distribution of the cost of fixed assets, applied so as to impute a part of this cost to each year, which will benefit from the use of those fixed assets [3].

In accounting, amortization is both an expense that affects the result for the year and a corrective element of the carrying amount, which determines the net carrying amount of depreciable fixed assets, which is recorded in the balance sheet [4,6].

The calculation of the amortization of tangible assets, according to the Romanian Fiscal Code, is practiced for the period of a financial year, and the registration is made monthly, starting with the following the month in which the fixed assets entered the unit's patrimony and were put into operation [11].

The regulation of the depreciation of fixed assets is made by the fiscal legislation in force, where it is specified that the fixed assets be cushioned according to their useful life (normal time of use), establishing proportional quotas for each category of fixed assets. However, depreciation over time does not take into account the situation in which improved assets may appear, which would take out existing ones before their expiration, but also the situation of intensive use of fixed assets that would determine the same result.

According to the legislation in force [11], amortization recorded in the established quotas is not subject to taxation, but additional amortization, without the approval of the tax authorities, is considered profits and is therefore subject to depreciation.

We can say that amortization involves allocating the depreciable value of an asset during its intended useful life. There are many concepts, but interest in accounting has the following [2,4,8] :

- amortization as a process of correction of the value of fixed assets.
- amortization as a process of transfer or distribution of the fixed assets cost over the expenses of the year.
- amortization as a resource to finance the renewal of fixed assets.

According to the Fiscal Code, they do not represent depreciable assets: lands, including forested ones; paintings and works of art; goodwill; lakes, ponds which are not the result of an investment; public domain goods financed from budgetary sources; any fixed asset that does not lose its value over time due to use, according to the rules; own rest homes, protocol dwellings, ships, aircraft, cruise ships, other than those used for economic activity; intangible assets with an indefinite useful life, thus classified according to the applicable accounting regulations [11].

MATERIALS AND METHODS

In the article, the comparative method was used, through which the methods of amortization of fixed assets were used, and after comparing them to determine the effect they have on the result for the year.

Amortization is a typical taxation problem, finding its expression both in the depreciation regimes opposable to economic agents, and in the degree of deductibility of depreciation, when determining the taxable profit.

Such a situation is explained by the subjectivism of the operating periods, regulated by norms, to which all economic agents must align, as well as by the depreciation methods used.

Also, the inductive method was used, with the help of which concrete facts were generalized, analyzed, synthesized and formulated conclusions on each case investigated.

RESEARCH RESULTS

In this paper we have proposed, starting from the points of consensus between professional accountants, to address the methods of amortization of fixed assets, and after comparing them to determine the effect they have on the result of the year.

To calculate the amortization of an asset, we must take into account the following parameters: the book value; normal operating time; the chosen amortization regime [5,9].

Normal operating times coincide with economic operating times, in which the income from the use of property, plant and equipment is greater than the expenses necessary for operation, maintenance and repair.

In Romania, the normal durations of use of tangible assets are found in the "Catalog on the classification and normal operating times of fixed assets" which includes the classification of fixed assets used in the economy and their normal operating times, which correspond to amortization periods in years, related to the linear amortization regime [13,14].

Redeemable fixed assets were classified according to the identification elements: classification code; the name of the group, subgroup, class, subclass and family of property, plant and equipment; normal service life (years of use), in years [14].

Romanian companies amortize their tangible and intangible assets according to the legislation in force using one of the following amortization regimes: linear, degressive, and accelerated [1,5,8,9].

Linear amortization consists in the inclusion in the operating expenses of fixed amounts, established in proportion to the useful lives of tangible assets.

Linear amortization (Aa) is calculated by applying the annual depreciation rate (Ca) to the input value of property, plant and equipment (Vi). The annual straight-line amortization rate (Ca) is obtained by dividing the number 100 by the normal useful life (dn) [1,5,8,9].

$$\mathbf{A_a = V_i * C_a} \quad \mathbf{(1)}$$

$$\mathbf{C_a = 100/d_n} \quad \mathbf{(2)}$$

$$\mathbf{A_a = V_i / d_n} \quad \mathbf{(3)}$$

Linear amortization is the classic, traditional regime, being the easiest to use, but it does not take into account the influence of moral wear, which leads to the replacement of assets in a short time.

The recording of amortization in accounting involves the use of the following accounts [4,5,8]:

Account 280 "Amortization of intangible assets"

Account 281 "Amortization of property, plant and equipment"

Account 6811 "Operating expenses on amortization of fixed assets"

We set out to calculate the linear amortization of an equipment purchased on January 1, 2020, whose input value is 36,000 lei without VAT, to which is added 19% VAT, which will be depreciated over a period of 5 years.

Registration of the purchase of the equipment, at the price of 36,000 lei without VAT, 19% VAT:

%	=	***404*** *„Suppliers of fixed assets”*	***42,840 lei***
2131 *„Technological equipment (machines, machinery and work installations”*			*36,000 lei*
4426 *„Deductible VAT”*			*6,840 lei*

Table 1 shows the annual amorization.

Table 1.

Linear depreciation

Year	Input value (lei)	Amortization		Net book value (lei)
		Annually (lei)	Cumulative (lei)	
2020	36,000	7,200	7,200	14,400
2021	36,000	7,200	14,400	21,600
2022	36,000	7,200	21,600	28,800
2023	36,000	7,200	28,800	36,000
2024	36,000	7,200	36,000	0

Recording the monthly amortization of the equipment:

6811 *„Operating expenses on amorization of fixed assets”*	=	***2813*** *„Amorization of installations, means of transport, animals and plantations”*	***600 lei***

The operation related to the amortization registration is repeated in all 60 months, until the equipment is fully depreciated. The advantage of straight-line amortization is that it is simple to apply, thus being the most widely used, due to the uniformity of expenses for the financial year and costs over time. However, the method also has limitations which consist in the fact that the reduction of the value of the goods is not constant throughout the lifetime, it does not take into account the decrease of production capacity and the increase in maintenance costs due to wear.

From a fiscal point of view, the method has the advantage of reducing the tendency of enterprises to avoid taxation, but does not take into account the influence of ethnic progress (moral wear).The use of this regime is approved by the board of directors of the enterprise, respectively by the person responsible for the management of the patrimony, on the date of commissioning.

Degressive amortization involves a more pronounced amortization of fixed assets, in the first years after its commissioning, being subjected to a higher degree to the effects of moral wear and to which the need for modernization, refurbishment or even replacement is much more obvious.

The method involves multiplying the average linear amortization rates by the coefficients according to the legislation [4,5,8] :

- 1.5 if fixed assets with a normal useful life of 2 to 5 years;
- 2.0 if the fixed assets with a normal useful life of between 5 and 10 years;
- 2.5 if the fixed assets with a normal duration of use longer than 10 years;

This method consists in practicing higher amortization in the first years of use of the asset, and then the annual amortization is gradually reduced. This amortization procedure can be applied in two variants.

Variant I. The use of a constant rate at the degressive base, implies the multiplication of the linear amortization rate with a multiplier coefficient (K) established by law.

We calculated the amortization using the degressive amortization regime for a piece of equipment purchased on January 1, 2020, whose input value is 36,000 lei without VAT, to which is added 19% VAT, which will be depreciated over a period of 5 years.

The annual linear amortization rate (Ca) is: Ca = 100/dn = 100/5 = 20%, the multiplication coefficient is 1.5, and the calculated degressive rate is 30% (20% * 1.5).

In table 1 we presented the annual degressive amortization (variant I).

Table 2.

The amortization in the degressive regime (variant I)

Year	Input value (lei)	Amortization		Net book value (lei)
		Annually (lei)	Cumulative (lei)	
2020	36,000	10,800	10,800	25,200
2021	36,000	7,560	18,360	17,640
2022	36,000	5,880	24,240	11,760
2023	36,000	5,880	30,120	5,880
2024	36,000	5,880	36,000	0

In 2022, the linear amortization is 17,640 lei/3 years = 5,880 lei, and the degressive one is 17,640 * 30% = 5,292 lei. Degressive amortization is less than linear amortization, so from 2022 the equipment is amortizate on a straight-line basis.

Variant II. A degressive rate is applied to a fixed calculation basis, in which case the degressive rate will be determined as a ratio between the numbers of years, in reverse order to their numbering, to the sums of the figures expressing the number of years of use of the equipment.

Depreciation was calculated using the degressive amortization regime for a company that purchased equipment on January 1, 2020 whose input value is 36,000 lei without VAT, to which is added 19% VAT, which will be amortized over a period of 5 years.

Amortization is calculated by applying degressive rates to the carrying amount of the equipment.

By adding the numbers that express the order of the years of operation we obtain 15 = 1 + 2 + 3 + 4 + 5.

The degressive rates (Rd) will be: 5/15, 4/15, 3/15, 2/15, 1/15.

Degressive amortization (Ad) is calculated by applying the degressive rate (Rd) to the input value of fixed assets (Vi). [4, 5]

$$A_d = V_i * R_d \quad (4)$$

Table 3.

The amortization in the degressive regime (variant II)

Year	Input value (lei)	Degressive rates (lei)	Degressive amortization (lei)	Net book value (lei
2020	36,000	5/15	12.000	24.000
2021	36,000	4/15	9,600	14,400
2022	36,000	3/15	7,200	7,200
2023	36,000	2/15	4,800	2400
2024	36,000	1/15	2,400	0

Degressive amortization compared to linear amortization has the advantage that it helps the company's treasury in situations when it uses its liquidity for investments. It also allows to achieve savings with more important taxes at the beginning of the useful life of fixed assets, the consequence being that in the coming years, investments will be less important.

The use of the degressive amortization regime is made with the approval of the board of directors/asset manager, as the amortization rates are higher, the profit is jeopardized, so this regime will be applied in conditions where profitability allows.

In addition to the advantage that the degressive amortization regime mitigates the effects of moral wear, by recovering the input value of the fixed asset in a shorter period, the method also has the disadvantage that firm cannot quantify the effect of moral wear on fixed assets, the multiplication coefficients having no basis real calculation.

Accelerated amortization involves the inclusion in operating expenses, in the first year of operation, of an annual amortization of 50% of the input value of the fixed asset. For the following financial years, the annual amortization will be calculated at the remaining amount to be depreciated, according to the linear regime, by relating it to the number of years of use remaining [5,8].

For the use of the accelerated amortization regime, approval must be obtained from the Ministry of Public Finance, at the proposal of the general meeting of shareholders or associates, for companies, respectively the board of directors, for autonomous utilities, based on substantiation documentation.

The documentation will include information, grouped by:

- presentation data: gross profit, net profit, turnover, own and permanent capital, tangible assets, current assets, operating income, operating expenses;
- indicators of economic efficiency: rates of equity and permanent capital against fixed assets, rate of immobilization of fixed assets from total assets;
- indicators of financial efficiency: rate of return on resources, rate of financial return, rate of return on income.

We considered the same example to exemplify the accelerated amortization regime through which company purchases equipment in 2020, with an input book value of 36,000 lei without VAT, 19% VAT, which is amortized over a period of 5 years as it is presented in Table 4.

Table 4.

Accelerated amortization

Year	Input value (lei)	Amortization		Net book value (lei)
		Annually (lei)	Cumulative (lei)	
2020	36,000	18,000	18,000	18,000
2021	36,000	4,500	22,500	13,500
2022	36,000	4,500	27,000	9,000
2023	36,000	4,500	31,500	4500
2024	36,000	4,500	36,000	0

Analysis of the data from table no. 4 shows that in the first year of operation (2020) the amortised equipment is in proportion of 50% of its input value, respectively 18,000 lei, and in the remaining four years, the amortization is calculated using the linear regime, its value amounting to of 4,500 lei.

Amortization is a topic of taxation, which finds its expression on the one hand in the amortization regimes opposable to economic agents and on the other hand in the degree of deductibility of amortization, when calculating the taxable profit.

This situation can be explained by the subjectivism of the duration of operation which is regulated by norms and which must be applied by all economic agents, as well as by the amortization regimes used.

CONCLUSIONS

According to the Romanian accounting standard, the amortization of tangible assets begins in the month following their commissioning, until their full recovery.

From the presented data we can observe the following aspects:

- if the unit uses the linear amortization of the purchased equipment, the amount included monthly in the operating expenses is constant, respectively 7,200 lei.

- if it uses the degressive method, on the operating expenses are included in the first two years of operation higher amounts (years 2020 and 2021) compared to the linear amortization and the one in degressive system corresponding to the subsequent exercises. The economic justification is the fact that the amortization is higher in the first years, due to the higher service capacity of the machine in the first years of life, after which it implies higher maintenance expenses, which come to replenish the lower annual amortization.

- the accelerated system involves the faster recovery of the value of the machine to avoid moral wear. This method decreases the entity's profit in the first year and has the effect of reducing the profit tax due to the state budget. It also creates the possibility for the company to use the availabilities obtained from the reduction of the fiscal obligation for the acquisition of new fixed assets.

We appreciate that of the three amortization regimes, accelerated amortization and degressive amortization, best respond to the precautionary principle, in the event of the intervention of the moral wear of property, plant and equipment, and the values calculated based on these methods, whether above or below linear amortization, are considered tax amortization.

The comparison between straight-line and accelerated amortization indicates that accelerated amortization creates a short-term surplus of expenses, which affects the interests of associates oriented towards obtaining dividends.

One problem in accounting practice is the change in the amortization method. In this situation, the change must be motivated, so that there is no suspicion of an artificial increase in expenses in order to reduce the profit.

If a company has the possibility to choose the amortization method, the interest is the investment one, which competes with the state fiscal one.

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