# Benefits of Applying Different Depreciation Methods of Long-term Tangible Assets in a Company

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### **Abstract**

Long-term tangible assets comprise the major part of the available asset, and depreciation amounts compose a greater part of expenses. Therefore, it is very important to account these assets correctly because this influences the results of company activity. The topics of long-term assets depreciation have been investigated by different authors on theoretic and practical levels considering the peculiarities of a certain country. The authors of this article have aimed at investigating the influence of depreciation methods application on fee and profit accounting indices as well as at summarizing the necessity of accounting policy at a national level. The dependence of the calculated company profit on the depreciation method of long-term tangible assets is analyzed in the article.

*Keywords*: long-term tangible assets, depreciation method, accounting of long-term tangible assets.

### Introduction

Long-term tangible assets are physical property with enduring purpose and are related to the fields of company activity: manufacturing, trade, and service. Company's property must be useful and must have purpose. Thus, in order to manage a company properly, necessary tools and information must be available to feel certain about the assets size and depreciation, the price of available assets, and earnings gained with this property. It is also very important to know the productivity of assets and to be aware whether all the property is used to earn income, etc.

Since long-term tangible assets compose the major part of company's property and the depreciation amounts of these assets comprise a greater part of expenses, it is particularly important to account these assets properly applying various depreciation methods flexibly because this could significantly influence the results of company activity. The issues of long-term assets depreciation have been investigated by authors abroad, e.g., Jackson (2008),

Cole (2011), Danciu and Deac (2011) et al., and in Lithuania: Bruzauskas (2004), Kalcinskas (2007), Mackevicius (2008), Stonciuviene (2008). The choice of calculating methods, other long-term tangible assets, and other financial indices were analyzed by Jagminas et al., (2005), Rudzioniene and Zinkeviciene (2005), Bagdziuniene (2008), Mykolaitiene et al., (2010). Although the number of investigations concerning accounting and depreciation methods is insufficient, new calculating of the choice of long-term asset methods, new complements and changes of methodical recommendations and the legal base appear.

Investigators analyzing the choice of the accounting policy advise not to deviate from legal requirements. Correct presentation of financial results depends on accounting, and the accuracy of the data depends on the processing of economic event by initial accounting documents and on its correct fixing in accordance with general accounting principles. All this results in the following problems: i) what is the influence of frequently changing laws and other normative acts on correct accounting of long-term assets? ii) how the choice of optimal depreciation methods of long-term tangible assets confirming to business conditions can be balanced with Business Accounting Standards and the provisions of the Profit tax law?

The aim of the current article is to assess the advantages of different deprecation methods application on long-term assets in a company.

Research goals:

- 1. To analyze the peculiarities of long-term tangible assets accounting.
- 2. To investigate depreciation methods of long-term tangible assets and the preconditions for their application.
- 3. To accomplish the analysis of the accounting of company N's long-term tangible assets depreciation applying different depreciation methods.

Methods of the research are as follows: the analysis of scientific literature and legal acts, a case study, systemization, assessment, comparison and generalization, research of relevant company problems related to the requirements and application of legal acts of the Republic of Lithuania in the practice of company accounting. The results of the investigation in a Lithuanian enterprise can help international audience penetrate into the topics of cash flow management and encourage fulfilling the investigation of depreciation methods in the context of benefit and fee accounting policy considering the peculiarities of enterprise activities.

## 1. Peculiarities of the accounting of long-term tangible assets

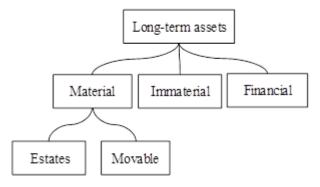
Long-term tangible assets are a part of company's property related to the fields of company activities, i.e. manufacturing, trade, and service. The wealth of different companies depends on company activity type, its size, and other factors. Accounting long-term assets is companies' pattern of presenting information about property state which is inherent to the best part of world companies (Breuer, 2011; Cole et al., 2011; Danciu and Deac, 2011; Istrate, 2011). The problems of long-term assets

accounting and the resultant intention to analyze them are related to the factors of fairness and utility. Typically, company's property must be useful and must have purpose. In order to manage company efficiently, the necessary information about company's assets and their depreciation, price, and earnings gained by this assets must be available. It has been observed while studying the conception of long-term tangible assets that there is no single definition, suitable for every case. Different points are emphasized in different situations but the essence remains the same. It is repeated in the definitions of assets that these assets are used for longer than one year. The term of assets use can be defined as a financial year or an accounting period but this period is understood as more than one year. Operation period distinguishes long-term assets from short-term assets. Long-term tangible assets are used for gaining company's earnings and these assets are depreciable. Generally, this feature is only inherent to long-term tangible assets. Various definitions of long-term tangible assets pursuant to the Lithuanian 12<sup>th</sup> Business Accounting Standard, the Profit tax law of the Republic of Lithuania, International Accounting Standard, and accounting handbooks, broadly used in the Lithuanian academic society, are presented in Table 1.

Table 1

## Definitions of long-term tangible assets

12 <sup>th</sup> Business Accounting Standard 'Long-term tangible assets' (2003)	Long-term tangible assets are tangible assets providing economic benefit for the company and used longer than one year and which acquisition (manufacturing) net cost is not less than minimal value of long-term tangible assets' unit estimated by the company.
Profit tax law of the Republic of Lithuania. (2001)	Long-term tangible assets are tangible assets used for gaining unit's earnings (receiving economic benefit) for longer than one year and the acquisition price of which is not less than the price of the unit of listed long-term assets group, as determined in the 1 <sup>st</sup> Annex of this law. Acquisition cost of these assets is included into unit's expenses piecemeal during the period of assets depreciation.
'International accounting standards'	Long-term tangible assets are such assets that used many times in manufacturing, trade, or service processes and retaining their natural form depreciate used for longer than one
(2001)	year.
Kalcinskas (2007)	Long-term tangible assets are capital goods (buildings, constructions, machines, equipment) used for a long time (not a single accounting period), and their value is transferred to production gradually during assets' depreciation.



**Figure 1.** Allotment of long-term assets agreeably to physical state (Source: prepared by authors in accordance with Business accounting standards (2010))

Summarizing the definitions of long-term tangible assets given by authors and legal acts, the following peculiarities can be noticed: 1) assets are used in a manufacturing or service process not once; 2) the value of assets acquisition estimated by the company is noteworthy; 3) assets must have an owner; 4) the term of assets depreciation is longer than one year; 5) assets must earn income for the company.

It is important to note assets distribution according to their physical state when studying the peculiarities of depreciation accounting of long-term assets (Figure 1).

Land, buildings, constructions, natural resources, and other similar tangible assets are attributed to the real estate. Movable property consists of equipment, vehicles, machines, and other suchlike tangible property. Intangible assets include software, development works, patents, licenses, brands, and other similar intangibles. Financial assets involve investment, sums receivable after one year, and other financial effects.

The lifetime of long-term tangible assets can be limited or unlimited. Land is attributed to the estate of indefinite use and thus depreciation is not calculated for it. All the rest long-term tangible assets have limited lifetime, and therefore depreciation is estimated for this property. Different depreciation values are obtained applying various depreciation methods (Danos and Imhoff, 1987; Mohrman, 2009; Noland, 2010; Jackson et al., 2011; Smolyak, 2012). Therefore, the problem of choosing a depreciation method and possibilities for its application are faced in the accounting of long-term tangible assets.

## 2. Problems of the depreciation accounting of long-term tangible assets

Acquisition value, efficient lifetime, liquidation value, calculation methods of depreciation beginning, methods and limitations of depreciation calculation of long-term tangible assets must be determined correctly when estimating the amount of long-term tangible assets depreciation during the accounting period. The most complicated and relevant issue concerning depreciation estimation is related to the calculation of assessable profits and profits taxation; therefore, the variety of different purchases of long-term tangible assets influencing the imputation of profits tax must be emphasized (Danos and Imhoff, 1987; Danciu and Deac, 2011; Manea, 2011). Currently, there is no unified methodology of financial long-term assets accounting in Lithuania because every company interprets the accounting of long-term assets in accordance with its own accounting policy (Staciokas and Jefimovas, 2005). If the methodologies of long-term assets financial accounting and its influence on the calculation of profits tax were unified, the increase of accounting work would be avoided and secondary information would remain qualitative enough because these are evenly accumulating expenses. Such accounting would serve the purpose only if it were meaningful to calculate all the earned income and incurred expenses and to analyze the results daily.

Depreciated sum of long-term tangible assets is compiled in the contra 'depreciation accounting form' during the whole period of assets use. This is a property account form with the residual, opposite to property account form since the depreciation is filed on the credit side. This account form is called 'property contra account' and sums recorded in this account reduce the initial (purchase) net cost of long-term tangible assets.

In accounting, the net cost of long-term tangible assets is distributed within the period of use in the company gradually writing off and including into the prime cost of the production (service) or is recognized as activity expenses (Kalcinskas, 2007). Accounting of long-term assets depreciation is regulated by 16th International Accounting Standard (IAS) internationally, and by the following documents - in Lithuania: Decree No. 955 of the Lithuanian Government considering the peculiarities of certain country accounting of July 30, 1998, 'The order of calculation of long-term assets depreciation (amortization) and accounting of assets' repair'; The Law of profits tax adopted on December 20, 2001 and 12th Business Accounting Standard valid since January 1, 2004. If the object of long-term assets consists of several constituents, conditionally independent parts, each of these parts can be accounted as a separate object of long-term assets (Decree of Lithuanian Government No. 955, 1998). Thus the object of depreciation calculation can be either a group of interdependent or uniform assets' units with an identical depreciation period, or separate parts of the object if depreciation periods or intensity do not concur. If a company can economically substantiate why separate parts of one or another object depreciate unevenly, it has the right to apply different standards for depreciation calculation of these parts. In that case it is necessary to assess impartially a purchase value of separate object parts. If not distinguished in purchase documents, this valuation must be performed by a properly qualified asset estimator. If separate parts of one object were appraised insomuch with the sum of their values not equal to the total object's purchase value, an adjustment coefficient is calculated. After adjusting the value of constituent parts, determined by asset estimator with this coefficient, a sum that must be recorded in accounting as acquisition value and used for depreciation calculation is obtained. All this creates great inconvenience in the accounting of long-term tangible assets. Separately worn objects of assets are detached in accounting; individual statements of assets introduction into exploitation must be drawn up. These assets are accounted in different inventory cards providing different inventory numbers. Maintenance expenses of such assets are accounted separately (Zakalskiene, 2007).

In accordance with the Lithuanian Government Decree No. 955 (1998) and Business Accounting Standards which entered into force on January 1, 2004, a depreciation calculation method and the estimated efficient lifetime should be reviewed periodically, and, if significant change of the expected economic benefits of the asset were observed, the depreciation method and efficient lifetime must be altered to reflect the new situation.

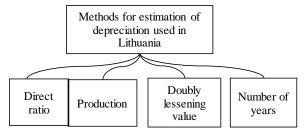


Figure 2. Methods for estimation of depreciation used in Lithuania (Source: Business Accounting Standards (2010))

The depreciation method used should reflect the pattern in which the company receives assets' economic benefits. Depreciation charge for each period will be recognized as expenses unless it is included into the carrying value of other assets. The 6th IAS provides the Straight-line method, the Variable declining method and the Units-of-production method (Business Accounting Standards, 2001; Summaries of International Accounting Standards, 2001). The result of the Straight-line depreciation method is a constant charge over a useful life of the asset. The result of the Variable declining balance method is decreasing the tax rate over the efficient lifetime of assets, and the result of the Units-of-production method is a tax based on the expected use of the assets or their usage in manufacturing production. The method applied for the assets is chosen according to the expected economic benefit nature and is consistently applied in every period, except when the nature of the expected benefits from the asset changed (Staciokas, 2005).

According to the Lithuanian Government Decree No. 955 (1998), a depreciation method may be changed only once during the lifetime of the assets, and only from accelerated to straight-line. However, the Profit tax law says that the same method should be used throughout the depreciation or amortization period of long-term assets. One document contradicts another (Stonciuviene, 2008). These objections are solved by the 12th Business Accounting Standard (2010), which provides that the depreciation method should be reviewed periodically and it can be modified in the light of significant change of assets' economic benefits. The Business accounting standard gives companies more flexibility; not only a switch into the Straight-line method is possible as before, but also the change of this method to the others is allowed. The Summa-of-the year's-digits method and the Variable declining balance method are not recommended for longterm tangible assets depreciation for financial accounting purposes, except when it is necessary to present fairly company's financial performance and assets' economic benefits (Staciokas and Jefimovas, 2005; Stonciuviene, 2008). Thus currently the following depreciation methods may be applied in Lithuania (Figure 2).

The choice of a depreciation method depends on the company's accounting policy (Kalcinskas, 2007). Frequently companies have only formal accounting policy which does not provide all procedures performed in company in detail. As a result of the chosen method of depreciation calculation, estimated depreciation amounts

of the same long-term assets might differ throughout the whole lifetime and this influences not only depreciation expenses but also the sums of assessable and net profits. The Summa-of-the year's-digits method and the Variable declining balance method are named as "calculation methods of accelerated depreciation". These methods cannot be designated as accelerated in financial accounting due to a contradiction to accounting principle depreciation calculation must confirm to actual depreciation of certain assets as accurately as possible. The conception of accelerated depreciation methods is applied in taxing accounting in order to show the possibility provided by the authorities to companies to reduce assessable profit by increased depreciation expenses (Jagminas et al., 2005; Zakalskiene, 2007; Corporate taxes, 2008). The government allows and encourages the application of these methods not because companies could pay less taxes but in order to provide them with an opportunity to renew their technical base and to develop manufacturing of production, start trade and supply services. According to Kalcinskas (2007), only large companies that intend to expand their activity and reasonably increase their sale volumes can behave like this. On all occasions, it is necessary to consider well all positive and negative aspects of accelerated depreciation methods when making a decision on their application (Kalcinskas, 2007).

Only two methods are mentioned in the Profits tax law, the Straight-line method or the Variable declining balance method. The latter could be used for equipment, all cars because these assets in economic activity are also incidental to economic obsolescence; besides, technological progress is huge in this field. Thus companies wherein such assets play a great part would be concerned about faster renewal.

Worldwide practice shows that the methods of accelerated depreciation calculation in financial accounting are also allowed in other countries, such as Germany, Italy, USA etc. (Corporate taxes, 2008; Mauro, 2008; Wong, 2009; Noland, 2010; Manea, 2011). Accelerated depreciation methods in the majority of countries are allowed for separate particularly progressive types of long-term tangible assets (De Waegenaere and Wielhouwer, 2011).

Residual value of long-term assets is a value depreciable in the future, decreasing with the increase of depreciated amount until the residual of depreciation account would becomes equal to the residual of purchase

Table 2

The consequences of incorrectly estimated depreciation amounts of long-term tangible assets included into net cost of the production (services)

Violation type	Positive result of violation	Negative result of violation	
Overestimation of the sum of capital allowances	1. Concealment of profit or reduction of profits tax  Sanctions:  Deficient amount of profits tax is reckoned in and the penalty of 10–50 % of the mentioned amount is imposed; delinquency charges are calculated from the unpaid penalty.  2. Reduction of residual value of long-term assets  Sanctions:  Deficient amount of property tax is reckoned in and the penalty of 10–50 % of the mentioned amount is imposed; delinquency charges are calculated from the unpaid penalty.	VAT, highway taxes are overpaid.	
Reduction of the sum of capital allowances	Overpayment of profits and real estate taxes	1. Evasion of profits tax object Sanctions: Deficient amount of profits tax is reckoned in and the penalty of 10–50 % of the mentioned amount is imposed; delinquency charges are calculated from the unpaid penalty.  2. Evasion of VAT and highway taxes objects Sanctions: Deficient amount of profits tax is reckoned in and the penalty of 10–50 % of the mentioned amount is imposed; delinquency charges are calculated from the unpaid penalty.	

cost account of long-term tangible assets. Thus, the purchase cost of long-term tangible assets during their whole lifetime will be transferred to summation of expenses incurred while manufacturing products or services (Kalcinskas, 1999, 2007; Zakalskiene, 2007). Depreciation recorded in company's accounting sometimes does not agree with physical depreciation of long-term assets and therefore loosely shows what part of certain assets was already depreciated during the whole period of assets' use. On occasion, the situation emerges when the residual value of a still usable object is equal to a few Euros. This happens because depreciation of long-term assets is an economic, but not a physical process (Kalcinskas, 1999; Ben-Shahar et al., 2009; Wong, 2009; Danciu and Deac, 2011).

If the depreciation amounts of long-term tangible assets are calculated incorrectly and are included into the net cost of manufactured production, these amounts are treated as the result of accounting violation. In the case of a company, such violations are relatively described as 'positive' or 'negative', and corresponding sanctions are applied in such cases (Table 2).

Consequently, the choice of a method for depreciation calculation is one of the most important moments in seeking accurate and beneficial for the company result of the long-term tangible assets accounting. After Business Accounting Standards came into force, the following methods for depreciation calculation of long-term tangible assets have been applied in financial accounting: the Straight-line method; the Unit of Production method; the Summa-of-the year's-digits method, and the Variable

declining balance method (12<sup>th</sup> Business Accounting Standard, 2010).

According to sources, in Lithuania, companies in order to avoid double depreciation calculation must choose methods vested by tax laws and have to begin calculating depreciation from the first day of the next month because a half-year method is not allowed in financial accounting. Hence, due to the present controversies, companies willing to avoid double work can only calculate depreciation by the Straight-line method and cannot change methods of depreciation estimation (Damasiene and Cibulskiene, 2002; Bagdziuniene, 2004, 2008; Jagminas et al., 2005; Mykolaitiene et al., 2010). Thus company's latitude to choose an economically grounded method of depreciation calculation and to reveal an actual and correct company picture is constrained (Stonciuviene and Tvilkaite, 2002). In order to implement the principle of accounting efficiency, such strict constraints should not be applied for companies on the purposes of taxes estimation (Jackson, 2008; Mohrman, 2009; Jackson et al., 2011).

In summary, it is true to say that depreciation in accounting is not understood as physical or moral depreciation of long-term tangible assets; it is not regarded as a drop of their market value but as gradual write-off of these assets into the expenses within assets' lifetime. In order to estimate a depreciation amount of the used long-term tangible assets during the accounting period, the following must be assessed: efficient lifetime, liquidation value, method of depreciation calculation, method of calculation beginning of depreciation, and limitations of

depreciation calculation (Bruzauskas, 2004; Mauro, 2008; Smolyak, 2012).

According to the authors of this publication, every company, independent of the nature of activities and geographical state, should choose a suitable, economically grounded method for depreciation calculation. There are plenty various methods for calculation of long-term assets deprecation in scientific literature, and the interpretation of their use is related to concrete cases (Damasiene and Cibulskiene, 2002; Jackson, 2008; Ben-Shahar and Sulganik, 2009; Mykolaitiene et al., 2010; De Waegenaere and Wielhouwer, 2011). The authors have accomplished a research in one Lithuanian company to demonstrate how estimated company's profit changes yearly using different depreciation methods.

## 3. Case study of long-term tangible assets depreciation by different methods

Carrier 'X' under a currently implemented project forecasts that in 2017 income received while exploiting assets will reach 36.97 million Euros.

In accordance with a valid company's business accounting policy, acquisition and residual value of the planned to purchase vehicles is provided for the period of 2013-2017, indicating a 20-year depreciation term (Table 3).

Thus, irrespective of a vehicles type, the same depreciation period, i.e. 20 years, will be applied to all of them. Analyzing how annual depreciation amount depends on a chosen depreciation method, the authors calculate depreciation of company's vehicles using different depreciation methods: the Straight-line method (SLN), the Unit of Production method (PM), the Summa-of-the year's-digits method (SYD), and the Variable declining

balance method (VDB). The following presumptions are made while analyzing data: 1) depreciation amount does not change during the whole exploitation; 2) accumulated (calculated) depreciation increases evenly; 3) residual value decreases evenly while reaches written-down value that should not be worn; 4) depreciation expenses must be the same during the whole exploitation term (Figure 4).

Depreciation of the last year is estimated by deducting residual value from the value of penultimate 19th year. It is noteworthy that the residual unworn value is written-off to expenses in the last year, therefore, this amount might significantly influence company's profit (Table 4).

After estimation of assets depreciation by all methods it was determined that the Unit of Production method would be using the smallest depreciation amount in the first year whereas the largest amount would be in the case of the Variable Declining Balance method. Pursuant to the predicted data of company's earnings and expenses (Table 5) profit changes applying different depreciation method have been calculated.

Pursuant to the given data, it can be determined that the annual depreciation amount directly depends on the intensity of vehicle use and more precisely reflects the degree of economic benefit for the company because depreciation expenses in the first year are the largest and decrease in every subsequent year. Thus, the rofit earned by vehicles continually increases (Figure 5).

Optimistically, the assumption is made that earnings should increase and thus profit would also increase every year but different yearly changes are provided, depending on the year. The biggest profit in the first year could be made applying the unit of production method, whereas the least profit would be made in the case of variable declining balance method and therefore the amount of profit tax in this case would also be less.

Table 3

## Forecasted company's income after project implementation

Year	2013	2014	2015	2016	2017
In total	30417088	31937942	33534839	35211581	36972160

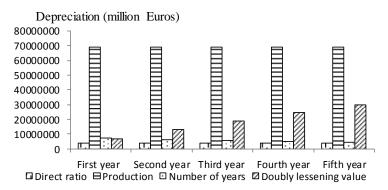


Figure 4. Assets depreciation within the first five years applying different depreciation methods

Table 4

## Assets depreciation in the first and the last year pursuant to different depreciation methods

	Depreciation	Depreciation	
Depreciation method	amounts, Lt (in	amounts, Lt (in the	
	the first year)	last year)	
Straight-line method (SLN)	3435825	3435825	
The Unit of Production method (PM)	767033	5068854	
Summa-of-the year's-digits method (SYD)	6544429	68716500	
Variable declining balance method (VDB)	6871650	9282580	

Table 5

## Forecasted earnings and profit within 2013-2017\*

Year	2013	2014	2015	2016	2017
Income	30417088	31937942	33534839	35211581	36972160
Expenses	2980875	3129918	3286414	3450735	3623272

<sup>\*</sup>Forecasted earnings and profit for 5 year period are provided according to methodology approved by the company.

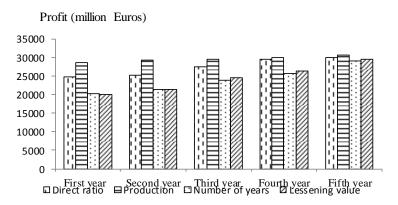


Figure 5. Dynamics of the enlargement of the profit earned by vehicles

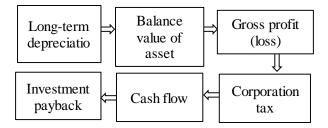


Figure 6. Logical scheme of the research

Company's profit was calculated only for 5 year period evaluating depreciation amounts of the first five years only (the whole period of assets depreciation is 20 years).

The obtained results show that different profit was calculated in every year applying different depreciation methods. As a profit tax depends on the profit size, the company is advised to change the accounting policy in the field of long-term tangible assets depreciation. Financial reserve for company's useful investment can be provided

by paying less profit tax in the first year of long-term tangible assets' usage.

Research has been accomplished following the logical scheme: depreciation of company's long-term assets directly influence assets' book value, net profit (loss), profits taxation, cash flows and the efficiency of investment projects (Figure 6).

The research is useful because: i) it reveals a new approach towards depreciation of long-term assets, whereas depreciation amounts can be distributed for the future periods as the initial parts of assets value [it explains

the impact of long-term assets depreciation on company's profit (loss)]; ii) it shows the influence of depreciation accounting results on tax volumes and cash flow; iii) research results can be applied when choosing the optimum depreciation method of long-term tangible assets which allows receiving the largest cash flow and quickening investment payback.

Studies on the choice of depreciation methodology of long-term assets should be continued. It is particularly important when evaluating the factors that determine profitability, forecasting possibilities for the development of company's activity. The analysis of the results within several accounting periods could assist the management of long-term tangible assets profitability and could also be useful for company's leaders to choose more suitable development strategy and investment.

### **Conclusions**

Knowing that depreciation expenses during the accounting period are related to the income earned within this period, it is recommended to choose the method of long-term tangible assets depreciation responsibly because company's financial results and investment during future periods depend on the decision made.

Pursuant to 12th Business Accounting Standard and the requirements of Profit tax law companies should periodically review and, if necessary, according to significant change of assets' economical use, choose such methodology of long-term tangible assets depreciation which, in default of current assets, would allow company applying the most suitable method at that point because it allows saving current assets at the expense of lower profit and advance profit tax.

In a Lithuanian enterprise the obtained results show that different profit was calculated applying different depreciation methods every year. As profit tax depends on the profit size, the company is advised to change the accounting policy in the field of long-term tangible assets depreciation. A financial reserve for company's useful investment can be provided by paying less profit tax in the first year of long-term tangible assets' usage.

While changing the fee legitimate base, further investigations are necessary to fulfill the standards of business accounting that help establish further financial indices of an enterprise, influence other economic factors on long-term asset depreciation.

The results of the investigation in a Lithuanian enterprise can help international audience penetrate into the topics of cash flow management and encourage fulfilling the investigation of depreciation methods in the context of benefit and fee accounting policy, considering the peculiarities of enterprise activities.

#### References

- 12-asis verslo apskaitos standartas "Ilgalaikis materialusis turtas" (2004). Apskaitos, audito ir mokesčių aktualijos, 13, (301).
- Bagdžiūnienė, V. (2004). Finansinės apskaitos pagrindai. Vilnius: Rosma.

- Bagdžiūnienė, V. (2008). Finansinių ataskaitų analizė. Vilnius: Rosma
- 4. Ben-Shahar, D., & Sulganik Eyal, B.E. (2009). Fair Depreciation: A Shapley Value Approach. *Journal of Theoretical Economics: Topics in Theoretical Economics*, 9, 1, 1-16.
- Breuer, A., Frumuşanu, M.L., Pereş, C.E., & Breuer, B. (2011).
   Depreciation of Fixed Assets in the Construction Field. Annals of Eftimie Murgu University Resita, Fascicle II, Economic Studies, 24-29
- Bružauskas, V. (2004). Kaip suartinti ilgalaikio turto finansinės apskaitos ir pelno mokesčio nuostatas? Apskaitos, audito ir mokesčių aktualijos, 11.
- Cole, V., Branson, J., & Breesch, D. (2011). The illusion of comparable European IFRS financial statements. Beliefs of auditors, analysts and other users. Accounting and Management Information Systems, 10, 2, 106-134.
- 8. Corporate taxes (2008). Country Commerce. Germany, 52-64.
- Damašienė, V., ir Cibulskienė, D. (2002). Nusidėvėjimo metodų lyginamoji analizė. Ekonomika ir vadyba: aktualijos ir perspektyvos, 21-25.
- Danciu, R., & Deac, M. (2011). Issues related to the accounting treatment of the tangible and intangible assets depreciation. Annals of the University of Oradea. *Economic Science Series*, 20, 2, 498-502
- 11. Danos, P., & Imhoff Eugene, A. (1987). *Intermediate accounting* (2nd edition). NJ: Prentise Hall, Englewood Ciffs New Jersey.
- 12. De Waegenaere, A., & Wielhouwer, J. (2011). Dynamic tax depreciation strategies. *OR Spectrum*, 33, 2, 419-444. http://dx.doi.org/10.1007/s00291-010-0214-3
- Istrate, C. (2012). Accounting & Management Information Systems. Contabilitate si Informatica de Gestiune, 11, 2, 243-263.
- Jackson, S.B. (2008). The Effect of Firms' Depreciation Method Choice on Managers' Capital Investment Decisions. Accounting Review, 83, 2, 351-376. http://dx.doi.org/10.2308/accr.2008.83.2.351
- Jackson, S.B., Liu, X., & Cecchini, M. (2011). Economic consequences of firms' depreciation method choice: Evidence from capital investments. *Journal of Accounting & Economics*, 48, 1, 54-68. http://dx.doi.org/10.1016/j.jacceco.2009.06.001
- Jagminas, V., Bagdzevičiūtė, A., Petrauskienė, D., ir Zakalskienė,
   R. (2005). Ilgalaikio turto apskaita ir apmokestinimas. Vilnius:
   Pačiolis
- Kalčinskas, G. (1999). Nauja ilgalaikio materialiojo turto remonto ir rekonstravimo tvarka daugiau tvarkos neįvedė. Apskaitos ir mokesčiu anžvalga.
- Kalčinskas, G. (2007). Buhalterinės apskaitos pagrindai. Vilnius: Pačiolis.
- Lietuvos Respublikos buhalterinės apskaitos įstatymas (2001) Nr. IX-574.
- Lietuvos Respublikos Finansų ministro įsakymas "Dėl pelno (pajamų) mokesčio apskaičiavimo". 1998 01 15. -Nr.12.
- Lietuvos Respublikos Pelno mokesčio įstatymas (2001) gruodžio 20 d. Nr.IX – 675.
- Lietuvos Respublikos Ūkio ministro ir Lietuvos Respublikos Finansų ministro 1999 m. gruodžio 24 d. įsakymas Nr. 428/301 "Dėl ilgalaikio materialiojo ir nematerialiojo turto nusidėvėjimo

- (amortizacijos) ekonominių normatyvų patvirtinimo" (2000). Valstybės žinios, 1-17.
- Lietuvos Respublikos Vyriausybės 1998 m. liepos 30 d. nutarimas Nr. 955 "Dėl ilgalaikio turto nusidėvėjimo (amortizacijos) skaičiavimo ir jo remonto darbų apskaitos tvarkos patvirtinimo" (1998). Valstybės žinios, 1.
- Mackevičius, J. (2008). Ilgalaikio materialaus turto kompleksinės analizės metodika. Verslas: teorija ir praktika, 9, (4), 237-244.
- Manea, M.-D. (2011). The depreciated replacement cost representation of fair value in accounting. Tendencies and perspectives in the Romanian accounting practice. Annals of the University of Oradea, Economic Science Series, 20, 2, 550-556.
- Mauro, B. (2008). Endogenous growth and time-to-build: The AK case. *Journal of Economic Dynamics & Control*, 32, 4, 1015-1040. http://dx.doi.org/10.1016/j.jedc.2007.04.002
- Mohrman, M.B. (2009). Depreciation of Airplanes and Garbage Trucks: Information Value and Fraud Prevention in Financial Reporting. *Issues in Accounting Education*, 24, 1, 105-107. http://dx.doi.org/10.2308/iace.2009.24.1.105
- Mykolaitiene, V., Vecerskiene, G., Jankauskiene, K., & Valanciene, L. (2010). Peculiarities of Tangible Fixed Assets Accounting. *Engineering Economics*, 21, (2), 142-150.
- Noland, Th.R. (2010). The sum-of-years' digits depreciation method: use by SEC filers. *Journal of Finance & Accountancy*, 5, 1-12.
- Smolyak, S.A. (2012). Models for Estimating Depreciation in Plants, Machinery, and Equipment: Analysis and Proposals. *Journal of Property Tax Assessment & Administration*, 9, 3, 47-73.
- Stačiokas, R., ir Jefimovas, B. (2005). Turto apskaita įmonėje. Kaunas: Technologija.
- Stončiuvienė, N. (2008). Ilgalaikio materialiojo turto apskaita: ar išnaudojamos VAS teikiamos apskaitos metodų pasirinkimo galimybės. Apskaitos, audito ir mokesčių aktualijos, 44, (524).
- Stončiuvienė, N., ir Tvilkaitė, N. (2002). Ilgalaikio materialiojo turto nusidėvėjimo apskaitos tobulinimas. *Organizacijų vadyba:* sisteminiai tyrimai, 24, 151-159.
- Summaries of International Accounting Standarts. International Accounting Standards (2001).
- Tarptautiniai apskaitos standartai (2001). Vilnius. Lietuvos Respublikos audito, apskaitos ir turto vertinimo institutas.
- Wong, W.K. (2009). Backtesting the tail risk of VaR in holding US dollar. Applied Financial Economics, 19, 4, 327-337. http://dx.doi.org/10.1080/09603100802167312
- 37. Zakalskiene, R. (2007). Pirma paruosk, paskui naudok. Kas žinotina įsigijus ilgalaikį turtą? *Apskaitos ir mokescių apzvalga*, 5.

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### Skirtingų ilgalaikio materialaus turto nusidėvėjimo metodų taikymo įmonėje nauda

## Santrauka

Ilgalaikis materialus turtas sudaro didžiąją įmonės turimo turto dalį, o šio turto nusidėvėjimo sumos sudaro sąnaudų dalį, todėl labai svarbu šį turtą apskaityti teisingai, lanksčiai taikant įvairius turto nusidėvėjimo metodus, nes tai turi reikšmingos įtakos įmonės veiklos rezultatams. Dėl pasirinkto nusidėvėjimo skaičiavimo metodo to paties ilgalaikio turto apskaičiuotos nusidėvėjimo sumos gali skirtis per visą turto naudojimo laikotarpį, o tai veikia ne tik nusidėvėjimo sąnaudas, bet ir apmokestinamojo bei grynojo pelno dydžius. Remiantis LR Vyriausybės

nutarimu Nr. 955 (1998) ir nuo 2004 metų sausio 1d. įsigaliojus Verslo apskaitos standartams, nusidėvėjimo skaičiavimo metodas bei turto naudingo tarnavimo laikas turi būti periodiškai peržiūrimi ir , jei pastebimas reikšmingas laukiamos iš to turto ekonominės naudos pasikeitimas, nusidėvėjimo skaičiavimo metodas ar naudingo tarnavimo laikas turi būti pakeisti taip, kad atitiktų pasikeitusią situaciją. Taikomas nusidėvėjimo metodas turi atspindėti modelį, kuriuo remiantis įmonėje gaunama turto ekonominė nauda. Nusidėvėjimo dydis per kiekvieną laikotarpi turi būti pripažintas sąnaudomis, išskyrus atvejus, kai jis įtraukiamas į kito turto apskaitinę vertę. Šeštasis Tarptautinis apskaitos standartas (TAS) numato tiesiog proporcingą, mažėjančios vertės metodą ir vienetų sumos metodą. Tiesiog proporcingo nusidėvėjimo metodo rezultatas yra pastovaus dydžio mokestis per visą turto naudojimo laiką. Mažėjančios vertės metodo rezultatas - per turto naudingo tarnavimo laiką gaunamas mažėjantis mokesčio dydis, o vienetų sumos metodo rezultatas - gaunamas mokestis, pagrįstas tikėtinu turto panaudojimu arba jį naudojant vertinant pagamintą produkciją. Turtui taikomas metodas yra parenkamas atsižvelgiant į laukiamą ekonominės naudos gavimo pobūdį ir yra nuosekliai naudojamas nuolat, išskyrus atvejus, kai keičiasi iš to turto laukiamos naudos gavimo būdas. Remiantis Lietuvos Respublikos Vyriausybės nutarimu Nr.955 (1998), nusidėvėjimo skaičiavimo metodas gali būti keičiamas tik vieną kartą per to turto naudojimo laikotarpį ir tiktai iš pagreitinto į tiesinį. Tačiau pelno mokesčio įstatyme rašoma, jog tas pats metodas turi būti naudojamas per visą ilgalaikio turto nusidėvėjimo ar amortizacijos laikotarpį. Kadangi vienas dokumentas prieštarauja kitam, šiuos prieštaravimus išsprendžia 12 - asis Verslo apskaitos standartas (2010), kuris numato, kad nusidėvėjimo metodas turi būti periodiškai peržiūrimas ir gali būti keičiamas, atsižvelgiant į reikšmingą turto ekonominės naudos pasikeitimą. Verslo apskaitos standartas įmonėms suteikia daugiau laisvės, galima keisti ne tik į tiesiogiai proporcingą metodą kaip buvo anksčiau, bet ir šį metodą į kitus. Metų skaičiaus ir dvigubas - mažėjančios vertės - metodai nerekomenduojami taikyti skaičiuojant ilgalaikio materialiojo turto nusidėvėjimą finansinės atskaitomybės sudarymo tikslams, išskyrus tuos atvejus, kai to reikia norint teisingai parodyti įmonės veiklos rezultatus ir turto teikiamą ekonominę naudą.

Šio straipsnio autoriai vienoje Lietuvos transporto įmonėje atliko tyrimą, kurio tikslas – parodyti, kaip naudojant skirtingus nusidėvėjimo metodus, kiekvienais metais kinta apskaičiuojamas įmonės pelnas. Imonės pelno kitimo skaičiavimai, kurie siejami su ilgalaikio materialaus turto nusidėvėjimo apskaitos metodika, taikant skirtingus nusidėvėjimo metodus, turi prasmę moksliniu ir praktiniu požiūriu, nes tai padeda formuoti pelno mokesčio perspektyvas. Nepriklausomai nuo transporto priemonių rūšies joms visoms buvo taikomas vienodas nusidėvėjimo laikotarpis - 20 metų. Analizuojant, kaip metinė nusidėvėjimo suma priklauso nuo pasirinkto nusidėvėjimo metodo, straipsnio autoriai skaičiuoja imonės transporto priemonių nusidėvėjimą taikant skirtingus nusidėvėjimo metodus: tiesiogiai proporcingas (tiesinis) metodas, produkcijos metodas, metų skaičiaus metodas bei mažėjančios vertės Analizuojant duomenis, daromos tokios prielaidos: 1) nusidėvėjimo suma per visą eksploatacijos terminą nesikeičia; 2) sukauptas (priskaičiuotas) nusidėvėjimas didėja tolygiai; 3) likutinė vertė tolygiai mažėja, kol pasiekia likvidacinę vertę, kuri neturėtų būti nudėvima; 4) nusidėvėjimo sąnaudos per visą eksploatavimo terminą turi būti vienodos. Vertinant optimistiniu požiūriu, daroma prielaida, kad pajamos turėtų didėti, taigi pelnas taip pat kiekvienais metais didės, tačiau kiekvienais metais numatomi skirtingi pasikeitimai. Nustatyta, kad pirmaisiais metais didžiausio pelno įmonė pasiektų taikydama produkcijos metodą, o pasirinkus mažėjančios vertės metodą pirmaisiais metais įmonės pelnas būtų mažiausias, todėl ir pelno mokesčio taikant šį metodą suma būtų mažesnė. Transporto įmonė, kurioje atliktas tyrimas, pagal dabartiniu metu vykdomą projektą, prognozuoja, kad 2017 metais pajamos, gautos eksploatuojant turtą, sieks 36,97 mln. eurų. Remiantis galiojančia šios įmonės verslo apskaitos politika, planuojamų įsigyti transporto priemonių įsigijimo ir likutinė vertė numatoma 2013-2017 metų laikotarpiui, nurodant 20 metų nusidėvėjimo terminą. Įmonės pelnas skaičiuotas tik 5 metų laikotarpiui, įvertinant tik pirmųjų penkerių metų nusidėvėjimo sumas (visas turto nusidėvėjimo laikotarpis – 20 metų). Apskaičiavus turto nusidėvėjimą remiantis visais metodais, nustatyta, kad, taikant produkcijos nusidėvėjimo metodą, nusidėvėjimo suma pirmaisiais metais būtų mažiausia, o taikant mažėjančios vertės metodą pirmųjų metų nusidėvėjimo suma būtų didžiausia. Remiantis įmonės pajamų ir sąnaudų prognoziniais duomenimis, apskaičiuotas pelnas keičiasi, taikant skirtingą nusidėvėjimo metodą.

Atliktas tyrimas naudingas, nes: 1) atskleidžia naują požiūrį į ilgalaikio turto nusidėvėjimą - nusidėvėjimo sumos gali būti paskirstytos būsimiems laikotarpiams kaip pradinės turto vertės dalys (paaiškina ilgalaikio turto nusidėvėjimo poveikį įmonės pelnui (nuostoliui); 2) parodo nusidėvėjimo apskaitos rezultatų įtaką mokesčių apimtims ir pinigų srautams; 3) tyrimo rezultatai gali būti pritaikyti pasirenkant palankiausią ilgalaikio turto nusidėvėjimo metodą, leidžiantį gauti didžiausius pinigų srautus ir paspartinti investicijų atsipirkimo laiką.

Žinant, kad patirtos ataskaitinio laikotarpio nusidėvėjimo sąnaudos siejamos su to laikotarpio uždirbtomis pajamomis, rekomenduojama atsakingai pasirinkti ilgalaikio materialiojo turto nusidėvėjimo metodą, nes nuo priimto sprendimo priklausys įmonės ateinančių laikotarpių finansiniai rezultatai bei investavimas. Pasinaudojus 12— uoju Verslo apskaitos standartu bei remiantis pelno mokesčio įstatymo reikalavimais, įmonės turėtų periodiškai peržiūrėti ir, jei reikia, atsižvelgiant į reikšmingą turto ekonominės naudos pasikeitimą, pasirinkti tokią ilgalaikio materialaus turto nusidėvėjimo metodiką, kuri padėtų įmonei, trūkstant apyvartinių lėšų, panaudoti naudingiausią tuo metu metodiką, nes leistų sutaupyti apyvartines lėšas, kadangi reikėtų mokėti mažesnį pelno ir avansinio pelno mokestį.

Gauti tyrimo rezultatai rodo, kad naudojant skirtingus nusidėvėjimo metodus kiekvienais metais apskaičiuojamas skirtingas pelnas. Kadangi nuo pelno dydžio priklauso pelno mokestis, įmonei rekomenduojama pakeisti apskaitos politiką ilgalaikio materialaus turto nusidėvėjimo metodų taikymo srityje. Mokant mažesnį pelno mokestį pirmaisiais ilgalaikio materialaus turto naudojimo metais, galima numatyti lėšų rezervą įmonei naudingoms investicijoms. Šio straipsnio autorių nuomone, kiekviena įmonė turėtų pasirinkti jai tinkamą ekonomiškai pagrįstą nusidėvėjimo skaičiavimo metodą. Kadangi mokslinėje literatūroje gausu įvairių ilgalaikio turto nusidėvėjimo skaičiavimo metodų, kurių taikymo interpretacija siejama su konkrečiais atvejais, šio straipsnio autorių tyrimo rezultatai patvirtina poreikį sudaryti kiekvienai įmonei galimybę lanksčiai taikyti konkrečios šalies ir tarptautinius apskaitos standartus, priimant sprendimus dėl pelno mokesčio paskirstymo numatytame laiko horizonte.

Reikšminiai žodžiai: ilgalaikis materialusis turtas, nusidėvėjimo metodas, ilgalaikio materialaus turto apskaita.

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