

# Excel using in accounting

<sup>1</sup>Irena KOVÁČOVÁ

<sup>1</sup> Department of Theoretical and Industrial Electrical Engineering, Faculty of Electrical Engineering and Informatics, Technical University of Košice, Slovak Republic

<sup>1</sup>irena.kovacova@tuke.sk

**Abstract — the paper deals with Microsoft Excel in the accounting system single-entry bookkeeping. Specifically, the case stated inventory card, which is used to register and depreciation of tangible and intangible assets.**

**Keywords — depreciation, Excel, inventory card, simple accounting**

## I. INTRODUCTION

Accounting entities cashier bookkeeping system keep the following books: cash book, book debts and liabilities, and auxiliary books. One of the other books is the book of the records tangible assets and intangible assets. The book records the property consists of inventory cards property. Entity is required to record its fixed assets acquired on the card asset-current assets, including depreciation of assets each year.

Recording on inventory card, in Fig. 1. a mandatory defined. From this follows that evidence of non-current assets in the simple accounts is tax-oriented. In the inventory book shall be mandatory name, description or numerical designation, further appreciation of fixed assets, date of purchase, the selected method of depreciation, amortization group, the annual depreciation rate of income tax, the amount of tax depreciation for the tax year, net book value (cost - depreciation) and date and method of disposal.

Firma		INVENTÁRNA KARTA nehmotného majetku					
Názov majetku		Výrobné číslo		Pridelené inventarne číslo			
Forma nadobudnutia	Dodávateľ			CENA			
				Bez DPH	DPH 19%		
Doklad o nadobudnutí	Dátum nadobudnutia	Dátum zaradenia do používania			0		
				Spolu	0		
Forma odpisovania Rovnomerný odpis	Daňové odpisy Skupina č.		Vyradené dňa	Forma vyradenia (Doklad)			
ROČNÉ ZÚČTOVANIE ODPISOV							
ROK	CENA NA ZAČIATKU OBOBIA	Zvyšená hodnota	ROČNÝ ODPIS	CENA NA KONCI OBOBIA	POZNÁMKA		
1	0,00						
2							
3							
4							

Fig. 1. Inventory card

Tangible and intangible assets that have useful lives, possession, or maturity greater than one year and its value (initial value) in the individual case is greater than the amount determined under the Accounting Act, the tangible or intangible assets. Tangible and intangible assets are also called fixed (tangible and intangible), or capital assets.

Non-current assets in accordance with the Accounting Act stated at cost, replacement cost and conversion cost. Cost is the price at which the fixed assets acquired, including the cost of the acquisition, such as transportation, installation, duties and so on. The purchase price is valued fixed assets purchased. Replacement cost is the price at which assets would be acquired at the time accounted. Replacement cost is measured as donated assets, internally generated intangible assets, if the replacement cost is less than its own cost for which was created, intangible and tangible fixed assets, which has been identified as a surplus in inventory, and so on. Conversion cost includes all direct and indirect costs directly related to the creation of long-term assets (at his own expense). A summary of these costs is then appreciate the relevant fixed assets, unless the custom generated intangible costs were higher than the replacement cost (then the corresponding intangible assets valued at replacement cost). Input price of the property means the acquisition or replacement cost.

Accounting entity to acquire tangible fixed assets or intangible fixed assets not the entry price of the property to give one-time expenses. Must input price of such property to gradually transfer spending, over several years, according to depreciation groups. Tangible and intangible assets are in-use damages, which gradually loses its value, which actually translates into manufactured products or other performance of the undertaking in the form of costs. Cash expression rate of wear of fixed assets for a specified period (fiscal year) is known as depreciation of fixed assets. Each entity within the meaning of the accounting depreciation of tangible and intangible assets (excluding land, works of art and collections that are not depreciated). Accounting entities have compiled a depreciation schedule. For tax purposes, the depreciation plan (in inventory card) provides year depreciation entry price of tangible and intangible assets, the annual amortization and net book value of €. Accounting entity may choose a way of either uniform tax depreciation or accelerated depreciation for tax purposes. The decision on the method of depreciation is for the entrepreneur, but it is advisable to get expensive especially when subjects calculate depreciation schedule both ways and consider how it will affect the depreciation tax base in the coming years. Method of depreciation cannot be changed during the depreciation period. The depreciation plan is to be updated and in that case if the tangible assets are made technical improvements that increased the initial and residual value (§ 29 of the Income Tax).

Technical evaluation means expenses incurred for the reconstruction of tangible and intangible assets. For the reconstruction are considered as interference in tangible and intangible assets that have the effect of altering its intended use, a qualitative change in its performance and technical parameters. Modernization means extending equipment life and tangible and intangible assets of such components that the original did not include the assets, which are an integral part of the estate. Modernization does not act according to the technical evaluation of the property and does not increase the net book value of the input. If the property is technically evaluate technical evaluation price shall be added to the initial cost of the asset. The property can write off up input prices, or technical upgrade price. Depreciation and amortization are made once a year, on the day 12.31. of accounting year.

## II. PROCEDURE FOR SOLUTIONS

### A. *Functional Description of activity*

Details of the company are completed automatically from the file "database firiem.xlsx" stored in the same folder as it is assumed that the inventory card will work the firm concerned. The formula refers to a specific cell in that file, in sheet "Firma". If the cell on which the formula refers to empty, the formula does not list anything, if it has undergone the treatment, wrote out the formula 0.

After adding asset prices without VAT need be by unpacking bar to choose either 19% or 20% VAT, this selection is chosen the amount of VAT which is subsequently converted. The final price is the total price without VAT and VAT.

Annual depreciation accounting is completed automatically, according to the form of depreciation

and depreciation groups that screen by selecting the dropdown bars. The table adjusts to the number of lines by the depreciation of the appropriate number of years of depreciation of property. According to the chosen form of depreciation formula calculates annual depreciation according to the formula. When he was elected a steady depreciation (SD), the annual depreciation is calculated using the equation:

$$SD = \frac{\text{entry price}}{\text{depreciation period}} \quad (1)$$

The depreciation period is chosen according to the table Tab. 1:

Tab. 1. Table for SD

Steady depreciation	
Depreciation group	The depreciation period in years
1.	4
2.	6
3.	12
4.	20

If accelerated depreciation (AD) was elected the annual depreciation calculated using the following equations:

$$AD \text{ in } 1^{\text{st}} \text{ year} = \frac{\text{entry price}}{\text{coefficient for AD in } 1^{\text{st}} \text{ year}} \quad (2)$$

$$AD \text{ in next years} = \frac{2 \times \text{residual price}}{(X) - (Y)} \quad (3)$$

where  $X$  is coefficient for  $AD$  in next years,  $Y$  is number of years for which depreciation has been made.

The coefficients for accelerated depreciation are chosen according to the following table Tab. 2:

Tab. 1. Coefficient for AD

Depreciation group	Coefficient for accelerated depreciation		
	1st year	In next years	For increased residual price
1.	4	5	4
2.	6	7	6
3.	12	13	12
4.	20	21	20
5.	30	31	30

In the last year, the steady and accelerated depreciation is calculated using the following equation:

$$\text{final depreciation} = \text{entry price} - \text{all depreciations} \quad (4)$$

Everyone depreciation shall be rounded to the nearest euro upwards. The increased value is the amount by which the asset moreover, in a given year. This value is included in formulas to increase the value.

## B. Solution

In Fig. 2 shows the process flow diagram solution formula for calculating the annual depreciation of fixed tangible and intangible assets.

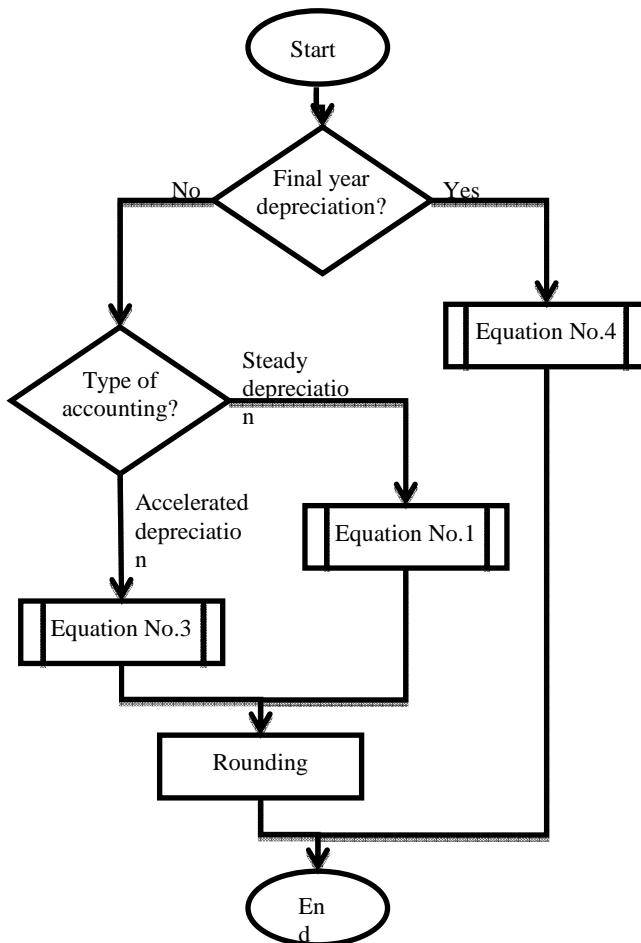


Fig. 2. Diagram for the calculation of annual depreciation of tangible and intangible assets

The following is a specific solution for the second year depreciation.

Final year deduction solved using IF function as follows:

`IF( (VLOOKUP($D$13; Hárok2!$A$3:$B$7; 2; FALSE) ) =A18; „true“; „false“ )`

Using the VLOOKUP function finds the number of years of depreciation group. The group is then compared with the current year depreciation in the corresponding row. If the value of the number of years of depreciation and current year amortization equal , to perform the function as true, if not, to perform the function false. Under the function of truth is the equation number 4, which is a result of depreciation in the final year, accounting for two billing methods and is written as follows:

`$B$17+SUM($D$17:D18)-SUM($E$17:E17)`

This feature is added to the initial price of all price increases since the beginning of depreciation and depreciation for the actual year and subtracts any depreciation previously done.

If the result of the previous IF was false, made another condition, this determines the type of calculation according to the method of accounting. The function is as follows:

`IF($A$13="Rovnomerný odpis"; „true“; „false“)`

If the selected "rovnomerný odpis" (steady depreciation), the result is true and the annual depreciation is calculated using equation number 1 as follows:

$(\$B\$17+\text{SUM}(\$D\$17:D18))/(VLOOKUP(\$D\$13;\text{Hárok2!A\$3:B\$7};2;\text{FALSE}))$

Function adds initial price and any increase in prices from the beginning the depreciation to the current year divided by the period of depreciation, which we obtained using VLOOKUP, as was previously mentioned.

If elected accelerated depreciation, the result IF the value false, then the annual depreciation is calculated using the equation number 3 as follows:

$2*(\$B\$17+ \text{SUM}(\$D\$17:D18)- \text{SUM}(\$E\$17:E17)) / (\text{VLOOKUP}(\$D\$13; \text{Hárok2!A\$3:B\$7}; 2; \text{FALSE})+ \text{IF}(\text{SUM}(\$D\$17:D18)=0; 1; 0)-\text{Hárok2!D3})$

All functions in this equation has already been mentioned above.

At finally, it is rounded annual depreciation (except the last year) up to the nearest euro, so that others IF function is used ROUNDUP as follows:

$\text{ROUNDUP}(\text{,,IF condition``};0)$

This function is rounded up to 0 decimal places.

Formula to not output error, unless specified initial value, and does not appear in the years that are larger than the depreciation period, the IF condition is added as follows:

$=\text{IF}(\text{OR}(A18="";H\$10="");"\text{";,,solution``})$

The resulting equation will look like this:

$=\text{IF}(\text{OR}(A18="";H\$10="");"\text{";}\text{IF}((\text{VLOOKUP}(\$D\$13;\text{Hárok2!A\$3:B\$7};2;\text{FALSE}))=\text{A18};\$B\$17+\text{SUM}(\$D\$17:D18)-\text{SUM}(\$E\$17:E17);\text{ROUNDUP}(\text{IF}(\$A\$13=\text{"Rovnomerný odpis"};(\$B\$17+\text{SUM}(\$D\$17:D18))/(\text{VLOOKUP}(\$D\$13;\text{Hárok2!A\$3:B\$7};2;\text{FALSE});2*(\$B\$17+\text{SUM}(\$D\$17:D18)-\text{SUM}(\$E\$17:E17))/(\text{VLOOKUP}(\$D\$13;\text{Hárok2!A\$3:B\$7};2;\text{FALSE})+\text{IF}(\text{SUM}(\$D\$17:D18)=0;1;0)-\text{Hárok2!D3});0)))$

### III. CONCLUSION

The advantage of inventory cards described in the article is that it speeds up the calculation of annual depreciation, which otherwise would have had to be calculated manually. Another advantage is that the inventory card is done in Excel, which can be given as an input formula, or refer to another table in another related ledger. The card can easily be modified for the needs of a particular entity.

### REFERENCES

- [1] [http://www.akopodnikat.sk/index.php?option=com\\_content&task=view&id=21&Itemid=77](http://www.akopodnikat.sk/index.php?option=com_content&task=view&id=21&Itemid=77) (5.1.2013)
- [2] Molnár, J. - Kováč, D.: Diagnostika napájacieho systému automobilu na báze Internetu. 1. vyd., TU Košice, 2011, 87 str., ISBN 978-80-553-0680-3
- [3] Vince, T. - Kováč, D. - Perekrest, A.: Remote measurements of variable topology electric circuit software. In: *Electromechanical and energy saving systems*, No. 3 (2011), pp. 178-181, ISSN 2072-2052
- [4] Zákon o dani z príjmov 595/2003 Z.z. účinný od 1.1.2013