

THE INFLUENCE OF ACCOUNTING EVIDENCE OF SELF-MANUFACTURED GOODS INVENTORIES ON THE INFORMATIVE VALUE OF SELECTED FINANCIAL RATIOS

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Abstract

In the current global world the importance of financial markets is growing and investors need to compare the financial health of companies with the help of financial analysis. The results of financial ratios are mainly influenced by presumptions according to those financial statements have been prepared.

This article analyses the accounting evidence of self-manufactured goods inventories according to the Czech accounting legislation and the IFRS. Firstly, a short overview about the importance of financial accounting for financial analysis is provided and then the key differences between the Czech accounting legislation and the IFRS are highlighted. This is followed by a description of self-manufactured goods inventories and an analysis of the requirements for their recognition, measurement and presentation according to the Czech accounting legislation and the IFRS. Finally, the influence of different accounting requirements of the Czech accounting legislation and the IFRS on the informative value of selected financial ratios is analyzed.

Introduction

In today's global world when the markets are more connected than ever before the information about the financial position and performance of companies is becoming more important. If the capital providers want to choose into which company they should invest their resources, they need to compare the contemporary financial position and performance of selected companies and try to forecast their future development [14], [9].

To select the best investment opportunity, the analysis and comparison of companies have to be made. The companies could be estimated with the help of financial analysis, especially through the comparison of selected financial ratios of these companies. This analysis is suitable especially for external users of financial information because they don't have any access to the internal data of the company. Financial ratios could also be called accounting ratios [12, p. 654] because they describe the relationship between certain items of financial statements. Therefore it has to be ensured that financial reporting grants "...a fair presentation of an organization's economic activities." [7, p. 22]

It is necessary to keep in mind that the input data of the ratios are rather hard to compare. A major part of these input data comes namely from financial statements of the companies compared, which can use different forms of disclosure and presentation of financial information in financial statements and they can prepare their financial statements according to different methods [4]. These differences exist basically even between the companies that prepare their financial statements within the frame of the same accounting system and they are probably larger when an international comparison is made. Therefore, companies from various countries generally prepare their financial statements according to a different, mostly

national, accounting system [2]. Consequently, before the final selection of the best company is made the differences between these accounting systems and their influence on the informative value of the selected financial ratios have to be carefully analyzed.

1 Key differences between the Czech accounting legislation and the IFRS

The differences between the Czech accounting legislation and the IFRS can be seen in many areas: different requirements of disclosure and presentation of financial information, various methods of recognition, measurement and presentation of similar items of financial statements. [11] The inconsistency of these two accounting systems flows mainly from their legal status. A strong difference exists between the continental European model which is based on the Roman law and the Anglo-Saxon approach, which applies the common law [3].

The Czech accounting legislation represents a national accounting system, which is based on rules that are set directly by Czech state offices or indirectly through the implementation of EU directives. General rules are set by the Accounting act No. 563/1991, which specifies general requirements for financial accounting. More detailed requirements are further stated by ministerial regulations and the Czech accounting standards that are related to specific groups of accounting entities. Therefore, in this text the Regulation No. 500/2002 [13] will be taken into account which is designed for business entities. The Czech accounting legislation is also strongly influenced by tax law because gross profit determined according to the accounting rules is subsequently used as a basis for calculation of the income tax. Further weakness flows from the absence of a common conceptual framework. It means, that in the Czech accounting legislation there is no comprehensive view of basic accounting concepts for the preparation of financial statements, nor there are any definitions of qualitative characteristics of financial information or a description of the basic elements of financial statements or requirements for their recognition. [10]

On the other hand, the IFRS represent a single set of understandable and enforceable global accounting standards that were created by using the common law (Anglo-Saxon) approach. Therefore these standards are not issued in the form of a law, but they represent an accounting system that is based on principles [1]. This system is designed to "...provide information about the financial position, performance and changes in the financial position of an entity that is useful to a wide range of users in making economic decisions." [5, § 12] These standards are created especially for listed companies because the use of these accounting standards represents an important presumption for the effective functioning of financial markets. Thus no direct interconnection exists between the IFRS and tax law as is common in the case of the continental European model.

The differences between the two above mentioned accounting systems will be demonstrated by the example of financial statements that are prepared according to each system, especially in the balance sheet and income statement. The form of the financial statements is different in both cases arising from the legislative status of each system. The Czech legislation prescribes one compulsory vertical pattern for the balance sheet and two vertical patterns for the income statement whereas expenses could be categorized by nature or by function. These patterns for financial statements were implemented according to the optional patterns that are contained in the European 4th Directive on Accounting. Both of the statements could be presented in a full or simplified extent. The full extent has to be used by joint-stock companies and companies whose financial statements have to be proved by an auditor.

On the other hand, the IFRS do not determine what pattern of balance sheet or income statement has to be used, so the companies could prepare their statements according to their needs. However, this does not mean that they present the financial statements in whichever

way they want. The companies have to respect the minimum requirements which are determined in the IAS 1, so they don't have to maintain a strict order in the items presented in financial statements. After the amendment of the IAS 1, which was due to be applied for annual periods beginning either on or after January 1st, 2009, the term balance sheet was replaced by statement of financial position and income statement was renamed and restructured to statement of comprehensive income. Within this text, will be used the former names of both statements will be used because they can also be used in this sense for financial statements that are prepared according to the Czech legislation.

2 Recognition, measurement and presentation of self-manufactured goods inventories

Self-manufactured goods inventories represent an important items of assets for the entities that produce and sell goods,. This group usually includes work-in progress, semi products, finished goods and merchandise if it was produced by the company itself. For self-manufactured goods inventories, a difference exists in the calculation of the operating profit for the period, which consists in the adjustment of operating revenues, or expenses. [8]

The Czech accounting legislation separately recognizes individual parts of self-manufactured goods inventories such as work-in progress, semi products, finished goods as well as self-manufactured goods merchandise. Self-manufactured goods inventories are measured with costs of conversion, which include direct costs of production and a part of indirect costs related to the production of these inventories. As the amount of these costs, real costs of conversion or costs figured out in the cost calculation could be used. The range of direct and also indirect costs which could be embodied in the costs of conversion depends on the method of production. [13, § 49] The allocation of particular direct and indirect costs to the items of self-manufactured goods inventories according to the Czech accounting legislation is presented in table 1.

Tab. 1: Measurement of self-manufactured goods inventories

Item of self-manufactured goods inventories	Allocation of appropriate costs
Work in progress in short-term uninterrupted production cycle	direct material costs
Semi products or finished goods in short-term uninterrupted production cycle	direct material and labour costs
Self-manufactured goods inventories in mass or large-series production	direct material, labour and other direct costs
Self-manufactured goods inventories in small-series or piece production, custom manufacturing or production with long-term production cycle	direct material, labour and other direct costs + production overhead (+ exceptionally administrative overhead, which could be included only when the production cycle is longer than 12 months)

Source: Author's adaptation according to the Regulation No. 500/2002, § 49 [13]

The increase of self-manufactured goods inventories represents an increase of revenues (item - change in self-manufactured goods inventories) in the same amount, whereas the decrease of these inventories is entered in the ledger in reverse order. For the sale of finished goods the increase of revenues from sales of own products is connected with the increase of cash or trade receivables in the same amount. Then the decrease of self-manufactured goods inventories follows, which is related to the decrease of change in self-manufactured goods inventories in the same amount.

The IFRS describe their requirements related to self-manufactured goods inventories in the IAS 2 but this standard does not regulate the area of construction contracts and agricultural produce at the point of harvest. The self-manufactured goods inventories contain work-in progress, finished goods and in the case of the service provider, inventories include the costs of the service for which the entity has not yet recognized the related revenue. The inventories are measured with costs of conversion, which include costs directly related to the units of production, such as direct labour. They also include a systematic allocation of fixed and variable production overheads, whereas fixed overheads are based on the normal capacity of the production facilities and variable overheads are changing with the volume of production, such as indirect materials and indirect labour. [6, § 12] Other costs, such as abnormal amounts of wasted materials, labour, storage costs which are not necessary in the production process before a further production stage, and selling costs etc., are recognized as expenses during the period in which they are incurred.

In the phase of production the costs of self-manufactured goods inventories are recorded on the accounts of self-manufactured goods inventories and are connected with the decrease of assets or increase of liabilities in the same amount. These costs shall be recognized as an expense in the same period in which the related revenue is recognized. The expense is connected with the decrease of self-manufactured goods inventories and the revenue is related to the increase of cash or trade receivables in the same amount.

2.1 Illustrative accounting transactions

With the help of an illustrative accounting transaction, the differences between the Czech accounting legislation and IFRS will be demonstrated in the area of self-manufactured goods inventories. Especially the influence of different accounting requirements of both accounting systems on the items presented in the balance sheet and income statement will be analyzed. To enable a more precise analysis some assumptions have been admitted. When analyzing this problem, the requirements of accounting legislation will be respected, not taxation requirements. The items in the income statement are analyzed by nature not by function. This should enable higher comparability of income statements because this analysis is mostly used in the Czech Republic and IFRS enable this type of analysis as well. For simplification, by depreciation of long lived assets no difference will be made between the Czech legislation and the IFRS, although there will usually exist some differences between the requirements of these systems.

For the following illustration, a stock company is supposed that was established in the Czech Republic without public subscription of shares. The company was recorded into the Companies Register on January 1st, 2010. The signed legal capital is in the amount of 5,000,000 Czech crowns (CZK). The company is engaged in production and sale of goods and the number of its staff recalculated on a full-time job basis is 100. As the starting point for further calculations some selected assets, equity and liabilities are anticipated. The amounts of these items at the beginning of the period are presented in table 2.

Tab. 2: Balance sheet at the beginning of the period

Balance sheet on the January 1ST, 2012			
Tangible long-lived assets depreciated	7,000,000	Legal capital	5,000,000
Accumulated depreciation of the tangible long-lived assets depreciated	-1,300,000	Retained earnings	300,000
Material in inventory	800,000	Long-term bank credit	2,000,000
Cash in bank	800,000		
Total assets	7,300,000	Total equity and liabilities	7,300,000

Source: Author's computation

To demonstrate the differences between the Czech accounting legislation and the IFRS concerning the evidence of self-manufactured goods inventories two illustrative accounting operations have been chosen. The first transaction represents the consumption of raw material in the amount of 1,500,000 CZK, payable wages in the value of 850,000 CZK and depreciation of tangible long-lived assets in the amount of 650,000 CZK. For further simplification, it is assumed that for the production of the finished goods no other inputs are needed. The following transaction records an increase of finished goods in the amount of 3,000,000 CZK. The last transaction consists in the sale of finished goods for 3,600,000 CZK. The trade receivable incurred on the grounds of this sale is payable before the end of the period. The finished goods in the amount of 2,400,000 CZK were sent to the customer immediately after the sale. The influence of these two accounting transactions on the balance sheet is presented in table 3 and the impact on the income statement is demonstrated with the help of table 4.

Tab. 3: Balance sheet at the end of the period

Balance sheet on December 31ST, 2012			
Tangible long-lived assets depreciated	7,000,000	Legal capital	5,000,000
Accumulated depreciation of the Tangible long-lived assets depreciated	-1,950,000	Retained earnings	300,000
Material in inventory	400,000	Operating income	1,200,000
Finished goods	600,000	Long-term bank credit	2,000,000
Trade receivables	3,600,000	Short-term payable	1,100,000
Cash in bank	800,000	Liabilities to employees	850,000
Total assets	10,450,000	Total equity and liabilities	10,450,000

Source: Author's computation

In the balance sheet there is no difference between the two systems because the difference between them consists in the different structure of operating profit, which could not be presented in the balance sheet. The amount of finished goods, operating income as well as other items is not influenced by the selected transactions.

Tab. 4: *Income statements at the end of the period*

Income statement according to the Czech legislation on Dezember 31ST, 2012		Income statement according to the IAS/IFRS on Dezember 31ST, 2012	
Revenues - sale of goods	3 600 000	Revenues - sale of goods	3 600 000
Change in self-manufactured goods inventories	600 000	- Raw material	-1 200 000
- Raw material	-1 500 000		
Value added	2 700 000	Value added	2 400 000
- Wages	-850 000	- Wages	-680 000
- Accumulated deprecitation	-650 000	- Accumulated deprecitation	-520 000
Operating profit (EBIT)	1 200 000	Operating profit (EBIT)	1 200 000

Source: Author's computation

The income statement is firstly presented according to the Czech accounting legislation and secondly according to the IFRS. Different accounting requirements have caused the structure of the operating profit to be different. In the income statement prepared according to the IFRS the item "value added" is undervalued by 300,000 CZK in comparison to the other one. This is on the one hand caused by omission of the item "change in self-manufactured goods inventories" and on the other hand by recognition of the expenses in the lower amount so that the requirements of IFRS reflect the actual costs of goods sold in the period. The operating profit is the same in both cases although both accounting systems use different tools for calculation of the operating profit for the period. Nevertheless, this different approach must not influence the amount of the operation profit.

3 The influence of different accounting requirements of the Czech accounting legislation and the IFRS on the informative value of selected financial ratios

In this part, three selected financial ratios will be calculated and compared, which should be mostly able to demonstrate the influence of a different accounting system on the informative value of these ratios. As the input data for these ratios, the amounts from the balance sheet and the income statements presented in the previous part will be used. The following financial ratios has been selected:

$$\text{Return on expenses} = \text{profit} / \text{expenses} \quad (1)$$

This ratio represents a measure of business profitability, whereas it expresses the relationship between the profit of the company and the expenses spent on the production. In this case the operating profit is measured in the relation to the sum of direct material, labour costs and depreciation of tangible assets.

$$\text{Value added/sales ratio} = \text{value added} / \text{sales} \quad (2)$$

With the help of this ratio the profitability of the company could be measured. This ratio expresses the relation of the value added by the company to the amount of its sales.

$$\text{Value added per staff} = \text{value added} / \text{number of staff} \quad (3)$$

This ratio expresses the productivity of the operating activities of a company. In this case, the value added within the operating cycle is measured to the amount of employees working in the company.

By all above mentioned ratios the higher amount of these ratios means the better partial financial health of the analyzed company. Each of these three ratios will be computed twice in

order to highlight the difference between the Czech legislation and the IFRS. The results of the selected ratios are presented in table 5.

Tab. 5: *Financial ratios calculated on the basis of a different accounting system.*

Financial ratio	Czech legislation	IAS/IFRS
Return on expenses	1.20	1.50
Value added/sales ratio	0.75	0.67
Value added per staff	27,000	24,000

Source: Author's computation

In the previous table, it can be seen that the profitability measured by the first ratio is 1.25 higher when IFRS is applied than in the case of use of the Czech legislation. This is due to the difference in the amount of expenses which are 600,000 CZK lower than according to the Czech legislation. In the case of both subsequent ratios, their value is higher according to the Czech legislation. So by using the Czech legislation the productivity of the company seems to be better because the value added per staff is higher. This is caused by recognition of the item "change in self-manufactured goods inventories" according to the Czech legislation and on the other hand by recognition of the expenses in a lower amount according to the IFRS than in the case of the Czech legislation.

Conclusion

In this article, it has been examined if and eventually how significantly the recording of self-manufactured goods inventories according to the Czech accounting legislation and the IFRS is able to change the results of three selected financial ratios. It has been confirmed that differences between the Czech accounting legislation and IFRS exist. These differences influence the amounts disclosed, especially in the income statement, as well as the results of the selected financial ratios. In this context, using the same approach as required according to the IFRS could also be suggested in the Czech Republic. This method of calculating operating profit better reflects the true and fair view of the amount of revenues and expenses of the company. Further, it could be interesting to examine how the results of the above mentioned analysis would change if the differences in the measurement of self-manufactured goods inventories would be taken into consideration.

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Literature

- [1] AGOGLIA, C. P.; DOUPNIK, T. S.; TSAKUMIS, G. T.: Principles-Based versus Rules-Based accounting Standards: The Influence of Standard Precision and Audit Committee Strength on Financial Reporting Decisions. *Accounting Review*. Sarasota: American Accounting Association, 2011, Vol. 86, Iss. 3, p. 747-767. ISSN 0001-4826.
- [2] ALEXANDER, D.; NOBES, CH.: *Financial accounting. An international introduction*. Harlow: Prentice Hall, 2010. ISBN: 978-0-273-72164-2.

- [3] D'ARCY, A. Accounting classification and the international harmonization debate – an empirical investigation. *Accounting Organizations and Society Kidlington*: Elsevier, 2001, Vol. 26, Iss. 4-5, p. 327-349. ISSN 0361-3682.
- [4] DE FRANCO, G.; KOTHARI, S. P.; VERDI R. S. The Benefits of Financial Statement Comparability. *Journal of Accounting Research*. Malden: Wiley-Blackwell, 2011, Vol. 49, Iss. 4, p. 895-931. ISSN 0021-8456.
- [5] IASB. Framework for the Preparation and Presentation of Financial Statements. [online] London: IASCF, c1989. [accessed 2012-06-02] Available from WWW: <<http://eifrs.iasb.org/eifrs/bnstandards/en/framework.pdf>>.
- [6] IASB. IAS 2 – Inventories. [online] London: IASCF, c2003. [accessed 2012-06-01] Available from WWW: <<http://eifrs.iasb.org/eifrs/bnstandards/en/ias2.pdf>>
- [7] INGRAM, R. W.; ALBRIGHT, T. I.: *Financial accounting: Information for Decisions*. Mason: Thomson South-Western, 2007. ISBN 978-0-324-31341-1.
- [8] KOVANICOVÁ, D.: *Abeceda účetních znalostí pro každého*. 18. aktualizované vydání. Praha: Polygon, 2008. 413 p. ISBN 978-80-7273-152-7.
- [9] LEV, B.; LI, S.; SOUGIANNIS, T.: The usefulness of accounting estimates for predicting cash flow and earnings. *Review of Accounting Studies*. Dordrecht: Springer, 2010, Vol. 15, Iss. 4, p. 779-807. ISSN 1380-6653.
- [10] MALÍKOVÁ, O.; BRABEC, Z.: Project of Updating the Conceptual Framework of the IAS/IFRS and its Influence on the Accounting in the Czech Republic. *Acta Academica Karviniensia*. 1st edition. Karviná: Slezská univerzita v Opavě, 2011, Vol. 2011, Iss. 1. pp. 79-91. ISSN 1212-415X.
- [11] MALÍKOVÁ, O.; BRABEC, Z.: The Influence of a Different Accounting System on Informative Value of Selected Financial Ratios. *Technological and economic development of economy*. Vilnius: Vilnius Gediminas Technical University (VGTU) Press Technika, 2012, Vol. 18, Iss. 1, p. 150-164. ISSN 2029-4913.
- [12] NOBES, C.; PARKER, R.: *Comparative international accounting*. Harlow: Prentice Hall, 2010. ISBN 978-0-273-72572-6.
- [13] *Vyhláška č. 500/2002 Sb., pro účetní jednotky, které jsou podnikateli účtujícími v soustavě podvojného účetnictví.*
- [14] WAHLEN, J. M.; WIELAND, M. M.: Can financial statement analysis beat consensus analysts' recommendations? *Review of Accounting Studies*. Dordrecht: Springer, 2011. Vol. 16, Iss. 1, p. 89-115. ISSN 1380-6653.

VLIV ÚČETNÍHO ZACHYCENÍ VNITROPODNIKOVÝCH ZÁSOb NA VYPOVÍDACÍ SCHOPNOST VYBRANÝCH UKAZATELŮ FINANČNÍ ANALÝZY

V současném globálním světě roste význam finančních trhů a investoři potřebují porovnat finanční zdraví podniků pomocí finanční analýzy. Hodnoty ukazatelů finanční analýzy jsou ovlivněny zejména předpoklady, na jejichž základě byly sestaveny účetní výkazy.

Článek analyzuje, jakým způsobem jsou zásoby vlastní výroby účetně zachyceny podle české účetní legislativy a IFRS. Nejprve je zmíněna významnost finančního účetnictví pro finanční analýzu a poté jsou uvedeny klíčové rozdíly mezi českou účetní legislativou a IFRS. Následující část je věnována deskripci zásob vlastní výroby a analýze požadavků české účetní legislativy a IFRS na jejich vykazování, oceňování a zveřejňování. Závěrem je analyzován vliv rozdílných požadavků české účetní legislativy a IFRS na vypovídací schopnost vybraných ukazatelů finanční analýzy.

DER EINFLUSS DER BUCHHALTERISCHEN ERFASSUNG INNERBETRIEBLICHER BESTÄNDE AUF DIE AUSSAGEFÄHIGKEIT AUSGEWÄHLTER FINANZANALYSE- INDIZES

In der gegenwärtigen globalen Welt wächst die Bedeutung der Finanzmärkte und die Investoren müssen die finanzielle Gesundheit der Unternehmen mit Hilfe einer Finanzanalyse vergleichen. Die Werte der Indizes der Finanzanalyse werden besonders von Voraussetzungen beeinflusst, auf deren Grundlage buchhalterische Nachweise erstellt wurden.

Dieser Artikel analysiert, auf was für eine Weise die Bestände der eigenen Produktion nach der tschechischen Buchhaltungslegislative und der IFRS erfasst werden. Zuerst wird die Bedeutsamkeit der Finanzbuchhaltung für die Finanzanalyse hervorgehoben und hernach werden Schlüsselunterschiede zwischen der tschechischen Buchhaltungslegislative und der IFRS angeführt. Der nachfolgende Teil befasst sich mit der Beschreibung der Bestände der eigenen Produktion sowie der Analyse der Anforderungen der tschechischen Buchhaltungslegislative und der IFRS an deren Aufweisung, Bewertung und Veröffentlichung. Als Abschluss wird der Einfluss der unterschiedlichen Anforderungen der tschechischen Buchhaltungslegislative und der IFRS an die Aussagefähigkeit ausgewählter Finanzanalyse-Indizes analysiert.

WPLYW KSIĘGOWEJ EWIDENCJI ZAPASÓW PRZEDSIĘBIORSTWA NA WARTOŚĆ INFORMACYJNĄ WYBRANYCH WSKAŹNIKÓW ANALIZY FINANSOWEJ

W obecnym globalnym świecie rośnie znaczenie rynków finansowych i inwestorzy potrzebują porównania kondycji finansowej przy wykorzystaniu analizy finansowej. Wartości wskaźników analizy finansowej są zależne przede wszystkim od danych, na podstawie których sporządzono sprawozdania finansowe.

W artykule dokonano analizy księgowania zapasów własnych produktów z punktu widzenia czeskich przepisów i MSSF. W pierwszej kolejności podkreślono znaczenie rachunkowości finansowej dla analizy finansowej, następnie wskazano kluczowe różnice pomiędzy czeskimi przepisami w zakresie rachunkowości a MSSF. W dalszej części opisano zapasy własnych produktów oraz przeanalizowano wymagania czeskich przepisów z zakresu rachunkowości a MSSF w zakresie ich ewidencjonowania, wyceny i publikowania. Na zakończenie analizie poddano wpływ odmiennych wymagań wynikających z czeskich przepisów i MSSF na wartość informacyjną wybranych wskaźników analizy finansowej.