Received: 1st February 2017

MEASUREMENT OF LONG-LIVED NON-FINANCIAL ASSETS IN LATVIAN LISTED COMPANIES: THE COST MODEL VERSUS THE REVALUATION MODEL

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ABSTRACT

This paper deals with analysis of how Latvian companies listed on the Baltic Stock Exchange measure their long-lived non-financial assets. In the year 2014 the average proportion of these assets in their balance sheets was 48% and for some of the companies it was even up to 97%. Therefore, the information related to long-lived non-financial assets presented in financial statements plays a significant role in assisting its users to predict companies' future cash flows and financial results. Often these assets are also related to significant capital investment decisions that should be performed in a strictly planned and wise manner. Decisions about these assets made by a company's management are critical not only for the company's efficient asset management, but also for its future value, stock price and shareholders' wealth.

The objective of this study was to investigate which of the two models (cost model / revaluation model) are applied in Latvian companies listed on the Baltic Stock Exchange to measure their long-lived non-financial assets, and how the financial results and future market prices of these companies could be influenced based on the model selected. The author's conclusions are based on a study of Western publications and analysis of practices at Latvian listed companies. The results of this research should be beneficial for academic researchers as well as educators and practitioners of financial statement analysis.

Keywords: long-lived non-financial assets, revaluation model, cost model, financial statements.

INTRODUCTION

Today, information reflected in a company's financial statements plays a significant role in decision-making processes by its existing or potential investors. Financial information does have a significant influence on investors' behaviour with respect to portfolio selection, affecting security prices and, therefore, also the terms on which a company is able to obtain additional financing (Palea, 2013).

In the process of decision-making about financing and possible future investments in a particular company, including its long-lived non-financial assets, it is important for information available to be transparent, fairly reflecting the real situation in the company with possible basic risks, especially in case a large proportion of the company's balance sheet value has been located in these assets. Financial information should be free of material misstatements and faithfully represent a company's financial performance per particular period. There is a significant relationship between financial transparency and efficiency of capital allocation. "Financial accounting information plays a critical role as a corporate governance device in disciplining managers to invest in profitable projects and refrain from investing initially in value-destroying projects" (Habib, 2008).

Since nowadays the measurement of a company's long-lived non-financial assets are regarded as one of the most important areas of financial accounting, it is important for the recognition and measurement processes of these assets to be correct, transparent, and in accordance with respective accounting and reporting regulations. Although various

international financial accounting and reporting standards have been developed, many of them are not complete. For example, International Accounting Standard 16 "Property, Plant and Equipment" and International Accounting Standard 38 "Intangible Assets" allow a company to choose between two completely opposite models for measurement of long-lived non-financial assets right after initial measurement of its cost – the cost model or the revaluation model. The choice of model influences the company's financial results per particular period in completely different ways. The issue of fair value versus historical cost has been and continues to be one of the most challenging problems in literature (Brinza, Bengescu, 2016). Furthermore, a comparability problem regarding companies' financial statements arises. Both standards mentioned above allow a company to choose between two diametrically opposed models. One of the problems is that both of the suggested models, according to International Accounting Standard 16 "Property, Plant and Equipment", are actually completely opposed. Companies applying the revaluation model will increase the value of their assets and equity and will improve their debt ratios. Companies applying the fair value model will decrease their profits legally, getting the possibility to pay lower dividends, receive a state subsidy, etc. (Talnagiova, Cerna, 2011). According to research by Rodriguez-Perez, Slof, Sola, Torrent and Vilardell (2011), there are significant differences in accounting numbers when applying one of the two possible models. Nevertheless, the change from historical-cost to fair-value accounting will change analysts' perceptions only of some of the companies without any major impact on the appraisal of all companies.

In this paper, the author analysed application of these two models in Latvian companies listed on the Baltic Stock Exchange. The findings of this research paper should be beneficial for academic researchers as well as educators and practitioners of financial statement analysis. The results obtained will provide the author with the possibility to identify possible issues in the accounting practice of measuring long-lived non-financial assets and to formulate directions for further research.

THEORETICAL FRAMEWORK OF THE RESEARCH

Importance of measuring long-lived non-financial assets' value creation process

Today, in various businesses, long-lived non-financial assets are one of the most significant items in a company's balance sheet – those used for more than one accounting period, ensuring a company's basic business operations, and also those basically generating the profit. Accordingly, a significant part of a company's value and also its stock price has been located in balance sheet positions of companies' long-lived non-financial assets.

Empirical studies demonstrate that due to the current global economic situation many companies worldwide, in order to survive in the global marketplace, are forced to develop different strategies to create company value. Companies try to increase their value via income, market value, value added activities for their products and services, and even knowledge-based management. A company's tangible and intangible assets are involved in this value creation process as very important elements (Poenaru, Halliburton, 2011; Woodruff, 1997; Garinina, 2009). As a logical result, the information reflected in the company's financial statements plays a significant role in the value creation process for every company worldwide. A company's value is strongly associated with information

contained in perceived quality measures. Usually companies' stock prices increase or decrease right after announcements of favourable or unfavourable quarterly earnings. Plus, often companies' management acts from the short-term perspective since the implication for managers is to get current-term earnings up or there will be a significant risk of losing investors' confidence (Aaker, Jacobson, 1994). As Warren Buffet states: "Trust is like the air we breathe. When it's present, nobody really notices. But when it's absent, everybody notices" (Sandlund, 2002:70). Quite often there is a situation in which a company's management is able to control the application processes of definite accounting standards and, further, how information has been reflected to the company's shareholders and other stakeholders. This issue has been related to the accounting and reporting processes of a company's long-lived non-financial assets as well. Furthermore, in some situations the proportion of these assets in the company's total balance sheet value is quite significant (as it is for Latvian companies listed on the Baltic Stock Exchange, reflected in Table 1 below); there is not only a risk of purposeful manipulations in figures reflected in the company's financial statements, but also a significant risk of the wrong decisions being taken by shareholders toward future activities with these assets in order to define value creation opportunities (investments, acquisitions). Therefore, the author believes that the model selected to measure a company's long-lived non-financial assets after initial recognition does have a significant influence on the results and data reflected in a company's financial statements. The same issues arise if we compare a company's performance with that of its key competitors. It is important for the company's shareholders to have access to all the information needed. Also, the quality of this information is critical.

Table 1

Long-lived non-financial assets of Latvian companies listed on the Baltic Stock Exchange (2007 to 2015)

Industry (code)	Average total assets of Latvian companies listed on the Baltic Stock Exchange (2007 to 2015, EUR)	Ratio of long-lived non-financial assets to total assets of Latvian companies listed on the Baltic Stock Exchange (2007 to 2015, EUR)
Utilities (code: 7000)	721,773,556	69.95%
Health care (code: 4000)	67,286,019	53.77%
Industrials (code: 2000)	41,029,116	38.36%
Basic materials (code: 1000)	40,021,234	59.51%
Consumer goods (code: 3000)	17,557,865	33.74%
Technology (code: 9000)	13,121,402	9.20%
Financials (code: 8000)	6,089,279	96.78%
Telecommunications (code: 6000)	2,329,164	0.00%

Source: Author's own research on the basis of annual reports of Latvian companies listed on the Baltic Stock Exchange

Other studies show that the modern concept of measurement was introduced to accounting as early as the 1960s. It is a challenge that there are only a few definitions of the term "measurement" available in the literature. The term "measurement", in the Conceptual Framework (IASB, 2010), is defined as follows: "the process of determining the monetary amounts at which the elements of the financial statements are to be recognized and carried in the balance sheet and income statement". There are two theories of measurement – classical and modern. The classical theory was dominant till the late 1940s and the modern one was adopted in the 1960s. Today, the International Accounting Standard Board is slowly returning to the classical measurement theory (Vehmanen, 2013). There are many unresolved issues concerning the conceptual definition of accounting measurement and the concept guiding standard setters' choice of measurement base (Barth, 2014).

After initial recognition, each long-lived non-financial asset a company owns should be measured based on two methods – the cost model and the revaluation model. Regarding intangible assets – usually they are measured using the cost model, except in cases where an active market for the particular intangible asset exists. In such cases it is also acceptable to apply a revaluation model. In the case of tangible assets, the company is allowed to choose which of the two models to apply – either the revaluation model or the cost model – and define it as its accounting policy for tangible assets. Comparing the effect on a company's profit/loss, it was discovered that it is absolutely evident that if the company revaluates its assets to its fair value (increases the value of the particular asset to fair value), it has less profit/loss than in the application of the cost model (Talnagiova, Cerna, 2011). This issue is actually a question for accounting experts, business leaders, economists, and even politicians who state that the concept of fair value accounting is correct and even useful, but its application is problematic. There are even some experts who believe that fair value measurement is deepening the financial crisis. It is necessary to use both approaches – fair value and revaluation – in accounting to provide correct information to various users of financial information. Even an entity's specific measurement for non-financial long-lived assets could be used rather than fair value measurement. Fair value measurement is more appropriate for financial assets (Dvořáková, 2009). Historical cost and fair value accounting should not be regarded as competitors because each serves different purposes. Historical cost provides investors with the cost of investment, while fair value provides a measure of what the management expects to get in return from the definite asset. Therefore, to ensure complete and useful information for investors, both historical cost and fair value should be applied only together (Betakova, Hrazdilova-Bockova and Skoda, 2014). Rodriguez-Perez et al. (2011) state that accounting numbers do differ significantly in case tangible long-lived non-financial assets have been accounted for at fair value instead of at historical cost. The amount of this difference depends on the type of company and particular long-lived non-financial asset.

Cost model versus revaluation model

According to International Accounting Standard 16 "Property, Plant and Equipment" and International Accounting Standard 38 "Intangible Assets", a company possessing long-lived non-financial assets in its balance sheet permits these assets to be measured using either the cost model or the revaluation model. Applying the cost model, tangible assets, after recognition, have been carried at their cost minus subsequent

depreciation and impairment. Applying the revaluation model, the same assets should be carried at a revalued amount at their fair value on the date of revaluation less subsequent depreciation and impairment. Right after recognition, intangible assets should be revaluated in the same way, the only exception being if fair value can be determined by reference to an active market. Such active markets are expected to be uncommon for intangible assets.

The significant shift from accounting based on historical costs to accounting based on fair value is regarded as a conceptual revolution in accounting (Brinza, Bengescu, 2016). Rodriguez-Perez et al. (2011) state that historical costs are regarded as more objective and reliable than the fair value or revaluation model. Nevertheless, the literature on fair value accounting indicates that it provides more relevant information to investors than the historical cost model. In comparison with the cost model, this model is more relevant. Barth et al. (2001) and Wallison and Isaac (2008), cited in Siekkinen (2016), conclude that fair value accounting has been supported and also criticized by academics and practitioners. Some of them maintain that fair value accounting ensures that shareholders receive the most relevant information. At the same time, opponents blame fair value accounting in the recent financial crisis. Investors are ready to pay more for fair value assets than for historical values or non-fair values. A completely different view states that there is no mutual influence between fair-value accounting and the severity of the 2008 financial crisis (Laux, Leuz, 2010).

Because of the option to choose between two models, a significant risk of possible manipulative activities arises. Since companies' managers are allowed to choose which of the various valuation methods for long-lived non-financial assets (historical, fair value, mixed) in order to evaluate a fund's properties, it is possible to manipulate information and avoid possible declines in the company's net asset value (Pinto, 2013). In situations where fair value accounting has been applied, more information has been provided to its users. This model does have a negative impact on a company's profit/loss and its application process is more complex and more expensive in comparison with the cost model (Talnagiova, Cerna, 2011).

The overall concept of fair value accounting is correct and even useful. The problem is its application in practice. Therefore, a suggestion has even been made to implement an additional alternative reporting document providing information on the fair value measurement of long-term non-financial assets (Dvořáková, 2009). To ensure the highest quality of financial reporting, it is advisable to apply both of these models (Betakova, Hrazdilova-Bockova, Skoda, 2014). Mládek 2009, cited in Talnagiova and Cerna (2011). Implementing both models will also decrease the existing direct conflict with the concept of comparability between or among companies. The facts mentioned above lead to the idea that fair value accounting has a significant influence on companies' values and their shareholders' decisions (Roggi, Giannozzi, 2015).

RESEARCH METHODOLOGY

The review of theory conducted in the previous section of this research paper allowed the author to form a general idea of the interest in the topic "measurement of long-lived non-financial assets in Latvian listed companies: the cost model versus the revaluation model" as well as the extent of its development in the scientific literature and to formulate the following basic research questions (RQs):

- Which model has been selected – the cost model or the revaluation model – by Latvian companies listed on the Baltic Stock Exchange for measurement of their long-lived non-financial assets?
- What kind of issues should a company consider regarding the measurement of non-financial long-lived assets (the cost model and the revaluation model)?

In order to answer RQ1 and RQ2 the author analysed existing approaches and possible problems at Latvian companies listed on the Baltic Stock Exchange related to practical experience in measuring long-lived non-financial assets.

Methodology – the empirical sample consists of 25 Latvian companies listed on the Baltic Stock Exchange. The author developed a survey exploring the measurement practices for long-lived non-financial assets at Latvian companies listed on the Baltic Stock Exchange. Therefore, the author used real data (information) obtained from 25 out of 26 Latvian companies listed on the Baltic Stock Exchange in the period of the end of 2007 to 2015. Companies represent the following industries – basic materials (code: 1000), industrials (code: 2000), consumer goods (code: 3000), health care (code: 4000), telecommunications (code: 6000), utilities (code: 7000), financials (code: 8000), and technology (code: 9000).

The author has analysed financial statements and developed a questionnaire for Latvian companies listed on the Baltic Stock Exchange, obtaining answers to the following questions about measurement of long-lived non-financial assets:

1. What is the name of your company? (not mandatory)
2. What is the operating sector of your company?
3. Which of the two models – the cost model and/or the revaluation model – has been applied at the company to measure each group of tangible long-lived non-financial assets after initial recognition?
4. Which of the two models – the cost model and/or the revaluation model – has been applied at the company to measure each group of intangible long-lived non-financial assets after initial recognition?
5. Has the company ever changed the model for its long-lived non-financial asset measurement after initial recognition? What were the key reasons for this?
6. What are possible problems and your opinion / suggestions for implementation in the legislation regarding long-lived non-financial asset measurement after initial recognition?

ANALYSIS OF THE RESEARCH RESULTS

Based on results of this survey, the author came to the conclusion that most of the tangible and intangible assets of Latvian companies listed on the Baltic Stock Exchange are measured after their initial recognition by use of the cost model. Information reflected in Table 2 below shows that a minority of companies apply the revaluation model to tangible long-lived non-financial assets like land, property and plant or technological equipment and automobiles – 16% to 20%. Table 3 below shows that the situation with intangible assets is even worse – there are only a few companies evaluating some of their intangible assets with the revaluation model – 4% to 8%. The author therefore agrees with Betakova, Hrazdilova-Bockova, and Skoda, who state that historical cost and fair value accounting should not be regarded as competitors. They should be used for different purposes – historical cost provides investors with the cost of particular investments, while

fair value provides a measure of what a company's management expects to get in return from this particular asset. Therefore, in order to ensure complete and useful information for investors, both the historical cost and fair value models should be applied only together (Betakova, J., Hrazdilova-Bockova, K., Skoda, 2014). This is even more important today, when the economic situation in the Republic of Latvia and the Baltic States and even on a global level is not stable and predictable.

The author also discovered a positive trend related to these two models. 28% of companies confirmed that they have changed their model during business activities. The key reasons were the planned economic benefits of this particular asset in the opinion of the company's management – 12%; the technical condition of this asset – 7%; and credit policy or other reasons – 9%. In these cases, the risk of possible manipulative activities on the part of the management and earning management arises. Therefore, it is important for the company's shareholders to be familiar with issues related to the two diametrically opposed models – the cost model and the revaluation model. One positive aspect in this situation is the fact that, actually, data among companies can be compared since almost all of them apply the same model to measure their long-lived non-financial assets – the cost model. For investors, this is not ideal since the revaluation model provides them with more relevant information.

Table 2

Measurement methods for tangible (fixed) assets of Latvian companies listed on the Baltic Stock Exchange (2015)

Fixed assets	Cost model (%)	Revaluation model (%)
Land	84	16
Property, plant	80	20
Technological equipment and automobiles	84	16
Ships	92	8
Airplanes	96	4
Vehicles	80	20
Furniture and equipment	96	4
Office equipment	100	0

Source: Author's own research

Table 3

Measurement methods for intangible assets of Latvian companies listed on the Baltic Stock Exchange (2015)

Intangible assets	Cost model (%)	Revaluation model (%)
Patents	96	4
Licences	92	8
Concessions	96	4
"Know-how"	96	4
Copyrights	92	8
Trademarks	96	4
RandD	NA*	NA*
Goodwill	NA*	NA*

Source: Author's own research

* not applicable (NA) because of the limited number of companies (less than 3%) and out of the research scope.

Based on the results of the survey conducted, there were no opinions or suggestions to be implemented in related legislation regarding measurement of companies' long-lived non-financial assets after their initial recognition. This fact proves the author's opinion that companies' management and shareholders are not familiar with important and unresolved issues related to the measurement process for these assets.

CONCLUSIONS

The author found that most tangible and intangible assets owned by Latvian companies listed on the Baltic Stock Exchange are measured after their initial recognition by use of the cost model. This is not good for investors since another model – the revaluation model – provides them with more relevant information. Also, there are significant differences in accounting numbers when applying one of the two possible models. Due to these differences, the issue of the comparability of companies' financial statements also arises. Therefore, to ensure comparability and transparency of financial information pertaining to these assets, it is advisable to use both of these models for measurement of long-lived non-financial assets after initial recognition. It is even advisable to introduce a new, additional alternative reporting document describing the measurement of companies' long-lived non-financial assets after their initial recognition.

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