



3rd GLOBAL CONFERENCE on BUSINESS, ECONOMICS, MANAGEMENT and TOURISM,
26-28 November 2015, Rome, Italy

The Impact Of Accounting Estimates On Financial Position And Business Performance – Case Of Non-Current Intangible And Tangible Assets

Ivana Mamic Sacer^{a*}, Sanja Sever Malis^a, Ivana Pavic^a

^a Faculty of Economics & Business, University of Zagreb, Trg J. F. Kennedyja 6, Zagreb 10 000, Croatia

Abstract

Financial statements represent a great source of information for company's financial position and business performance evaluation. Management judgment depends on the information base which is given at the time of judgement. Each judgement is by its nature subjective, so the results of the estimation can differ. Non-current tangible and intangible assets represent a significant proportion of assets of many companies. There is a plenty of space for applying accounting estimates in order to recognise and measure such assets. The research model confirmed the volatility of financial condition and performance of a company as a result of different accounting estimates.

© 2016 The Authors. Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Peer-review under responsibility of the Organizing Committee of BEMTUR- 2015

Keywords: accounting estimates; business performance; financial position; intangible assets; tangible assets

1. Introduction

“*Making good decisions and making them happen quickly are the hallmarks of high-performing organizations*” (Rogers and Blenko, 2006). Numerous strategic, tactical and operational decisions should be based on quality information. Therefore, objective and reliable accounting information is a prerequisite for proper decision making processes. Since financial statements portray financial position and business performance of a company they are an

* Ivana Mamic Sacer. Tel.: ++385-1-2383-126; fax: ++385-1-2335-633.
E-mail address: imamic@efzg.hr

inevitable source for decision making process. Items represented in financial statements should be measured by applying international or national financial reporting standards. Accounting principles for evaluation of those items are well known and dependent on historical or fair value. However, depending on the method of the evaluation, the item is more or less a subject of estimates. Even International Accounting Standards Board (IASB), as the International Financial Reporting Standards' standard-setter, admits that *"to a large extent, financial reports are based on estimates, judgements and models rather than being exact depictions"* (International Financial Reporting Standards Foundation, 2015). Making estimates implies a certain level of subjectivity. Two different estimates for an item can result with different accounting information. As a consequence, the financial health and performance of a company will vary; so can financial statements users' business decisions. The fact that many audit firms express adverse inspection regarding accounting estimates applied by companies (KPMG, 2015) confirms that accounting estimates are a top issue in the accounting profession. In addition, SEC has emphasized the importance of disclosures regarding critical accounting estimates (KPMG, 2015).

Non-current tangible and intangible assets represent a significant proportion of assets of many companies. Consequently, there is a plenty of space for applying accounting estimates in order to recognize and measure such assets. Taking into consideration the stated problem, the main research goals are: to differentiate accounting policies from accounting estimates, find out critical areas for management judgments of non-current intangible and tangible assets, design and apply the model for empirical testing of accounting estimates' influence on financial statements, discuss research findings and form research conclusions. The purpose of the study is to indicate the most sensitive areas of accounting estimates of non-current intangible and tangible assets and to emphasize the importance of disclosed information of accounting estimates for financial statements analysis of a company. Further, the goal of the study is to design the model for non-current intangible and tangible assets estimates testing and to draw a conclusion about the impact of accounting estimates on business security and performance.

2. Theoretical background

2.1. IFRS as a framework for accounting estimates

Making accounting estimates is a very complex process that connotes obtaining of all required information about the topic, understanding different accounting estimates' alternatives resulting from accounting standards and national laws, recognising the consequences of such alternatives and identifying the need of judgment's reassessment in the future. Accounting estimates can be observed from different party's point of view. First of all, standard-setters think on accounting estimates when developing accounting standards. They should *'create standards which allow judgement within a principles-based framework'* (ICAS, 2012). Next is a judgement in accounting where management make accounting estimates while accountants record business events resulting from such estimates in accounting evidence. There is also an auditor's view of estimates. Auditors should assess its client's accounting estimates when performing the audit of financial statements and forming an opinion about them. Finally, many regulators and other financial statements' users will be interested in information about applied accounting estimates. The Institute of Chartered Accountants of Scotland (ICAS, 2006) explains the Diamond of Trust between standard-setters, preparers, auditors, regulators and other users where all the mentioned parties should allow management to exercise judgement in presenting economic reality of business events.

In all cases, accounting standards represent an important source of accounting estimates. Since International Financial Reporting Standards are global accounting standards with more than 140 individual jurisdictional applications, while many national accounting standards converge with IFRS too, the paper considers IFRS as the most important regulatory framework for accounting estimates. The *Conceptual Framework for Financial Reporting* (IASB, 2010), as a part of IFRS, *"establishes the concepts that underlie those estimates, judgements and models. The concepts are the goal towards which the Board and preparers of financial reports strive."* The IFRS Framework understands relevance and faithful representation as fundamental qualitative characteristics in order to be useful for its users. The relevance of financial information can be affected by the level of measurement uncertainty that, according to the Framework, arises when an asset or a liability cannot be measured directly so must instead be estimated. According to the IASB (IASB, 2010) *"an estimate can provide relevant information, even if the estimate is subject to a high level of measurement uncertainty. Nevertheless, if measurement uncertainty is high, an estimate*

is less relevant than it would be if it were subject to low measurement uncertainty. Measurement uncertainty arises when a measure for an asset or a liability cannot be observed directly and must instead be estimated." In addition, the IASB in Exposure Draft of new Framework expresses that "neither a faithful representation of an irrelevant phenomenon nor an unfaithful representation of a relevant phenomenon helps users make good decisions" (IASB, 2015). Moreover, it gives an example where an estimate can be faithfully represented. This is the case where the reporting entity has applied an appropriate process, suitably described the estimate and explained any uncertainties that significantly affect the estimate. The Board still believes that if the estimate is not relevant, information provided will not be useful either. As a result, in order to be faithfully represented accounting estimates should be described, the nature and level of uncertainties need to be illustrated and disclosed in the notes to the financial statements.

Apart from qualitative characteristics of information, the Framework prescribes several accounting principles that ask for estimates. Furthermore, the IASB defines prudence as the exercise of caution when making judgements under conditions of uncertainty to ensure that assets or income are not overstated and liabilities or expenses are not understated (IASB, 2015). Such misstatements, towards the IASB, can lead to the overstatement of income or the understatement of expenses in future periods. The concept of estimates in exercising prudence principle can be the criterion for the categorisation of accounting into conservative and neutral accounting (Cooper, 2015). Conservative accounting favours a conservative bias in financial reporting. Opposite, Cooper finds neutral accounting as an accounting where financial statements represent a company's results neutral and without any systematic bias. Likewise, substance over form is a principle that requires estimation. Since economic reality of business events sometimes doesn't consist of the legal form of the event, the estimation should be done in order to faithfully represent the transactions.

Other than the Framework, International Financial Reporting Standards offer additional principles for different estimation areas regarding recognition and measurement of certain assets and liabilities. However, the Institute of Chartered Accountants of Scotland (ICAS, 2012) believes that principle-based standards provide a framework within which the economic substance of transactions can be faithfully represented, but requires the use of "good" judgment. Nonetheless, Brown, Collins and Thornton (Brown et. al., 1993) think that "accounting standards give practising accountants only incomplete direction, necessitating the application of professional judgment". Although they imply that professional standards cannot provide a complete guidance to preparers or to users, they emphasize that, even as such, estimates allow readers to conclude something about the disclosed information. This statement is approved by Mala and Chang (2015). They have found that the accuracy of the accounting judgment is greater when there is a provision of some form of decision aids for complex tasks. Available guidance on estimates is not the only feature that can influence the accounting estimation. Other variables that can have an impact on accounting estimates, among others, are experience, prior knowledge, education, culture, willingness to take risks or actions the company may undertake in the future.

2.2. Accounting estimates vs. accounting policies

Judgements in financial reporting relate not only to accounting estimates but also to accounting policies. Since accounting estimates are a result of the IFRS Framework, estimates are defined in the light of assets and liabilities' recognition and measurement in uncertain environment. Hence, it is important to distinguish accounting estimates from accounting policies. The Interpretations Committee has acknowledged that even distinguishing a change in accounting policy from a change in accounting estimate can require judgement and may be challenging (IFRS, 2014). IAS 8 *Accounting Policies, Changes in Accounting Estimates and Errors* describes a change in an accounting estimate as "an adjustment of the carrying amount of an asset or a liability, or the amount of the periodic consumption of an asset, that results from the assessment of the present status of, and expected future benefits and obligations associated with, assets and liabilities". Management should take into consideration new information when making changes in accounting estimates.

On the other hand, "accounting policies are the specific principles, bases, conventions, rules and practices applied by an entity in preparing and presenting financial statements" (IAS 8, para. 5). Therefore, during determination and implementation of accounting policies the judgment is required for making the choice of a certain policy. Supplementary, International Accounting Standard 1 *Presentation of Financial Statements* requires entities

to disclose the summary of the judgements apart from accounting policies and other significant notes. This summary should be presented ‘*apart from those involving estimations, that management has made in the process of applying the entity’s accounting policies and that have the most significant effect on the amounts recognised in the financial statements*’ (IAS 1, para. 122). Moreover, IAS 1 prescribes that an entity should ‘*disclose information about the assumptions it makes about the future, and other major sources of estimation uncertainty at the end of the reporting period, that have a significant risk of resulting in a material adjustment to the carrying amounts of assets and liabilities within the next financial year.*’ (IAS 1, para 125.) Besides the nature and amount of such information, the nature and amount of a change in an accounting estimate should be disclosed, too (IAS 8, para 39). Different accounting treatment of the changes in accounting estimates and the changes in accounting policies is the reason why it is important to distinguish these two terms. Sometimes it is difficult to differentiate them. This problem is recognised even by the IFRS standard-setter – the IASB. When this is the case, according to IAS 8, the change is treated as a change in an accounting estimate (IAS 8, para 35). This is approved by The European Securities and Markets Authority (ESMA) that admits that an additional guidance for solving this problem is needed. ESMA is of the opinion that references to a change in an accounting policy and a change in an accounting estimate should be aligned across various Standards (IFRS, 2014). Some of these problems will probably be included in the IASB’s Conceptual Framework project and thus will be more precisely determined in the future.

3. Empirical analysis of accounting estimates' influence on financial statements

IAS 38 *Intangible Assets* determines the accounting treatment of intangible assets and IAS 16 *Property, Plant and Equipment* the principles of accounting evidence of property, plant and equipment. Both standards are related to IAS 36 *Impairment of Assets* which offers additional setting for these assets.

The most significant areas of accounting estimates within the scope of IAS 38 and IAS 16 can be divided into two broad categories: classification estimates and estimates related to the measurement of the cost of assets. The most common recognition and classification estimates of intangible and tangible assets are (International Financial Reporting Standards Foundation, 2015):

- assessment of whether an entity controls intangible or tangible resources,
- differentiation research from development phase and their related costs,
- grouping of assets of a similar nature and
- distinguishing investment property from property which will be used for ordinary business operation and from property held for sale in the ordinary course of business.

Further, an entity can have significant estimates related to the measurement of the cost of an asset, such as:

- estimating the useful life,
- estimating the residual value,
- measuring the fair value or
- differentiation upgrade from cost.

Estimates of the value of intangibles have increasin certain industries, such as human capital intensive, high technology and innovative companies (OECD, 2015). Although, in practice, many entities apply conservative approach to research and development expenditures, Nixon (1997), stresses that the substantive evidence of R&D productivity at the firm level and the views of its empirical survey on the ex post benefits of R&D strongly suggest that many development projects still meet the criteria for capitalisation.

3.1. The research model design

In order to determine the impact of the accounting estimates on the financial position and business performance it is necessary to define the base model, assumptions and limitations of the created models. The methodology used in the empirical analysis comprises the design of balance sheet with the significant portion of non-current intangible and tangible assets and accompanied by income statement. The design of the balance sheet is presented in table 1 and income statement in the table 2. The portion of non-current intangible assets in the balance sheet is 11,45%, and the portion of the non-current tangible assets is 52,08%.

Table 1. Balance sheet

| Item | Base model |
|--------------------------------|------------|
| A) Noncurrent assets | 61.000 |
| I. Intangible assets | 11.000 |
| 1. Expenditure for development | 6.000 |
| 2. Licences | 5.000 |
| II. Tangible assets | 50.000 |
| 1. Land | 5.000 |
| 2. Buildings | 20.000 |
| 3. Equipment | 25.000 |
| B) Current assets | 35.000 |
| C) Total assets | 96.000 |
| A) Equity | 41.000 |
| I. Subscribed equity | 30.000 |
| II. Income (profit) | 11.000 |
| B) Noncurrent liabilities | 20.000 |
| C) Current liabilities | 35.000 |
| D) Total sources of assets | 96.000 |

Table 2. Income statement

| Item | Base model |
|----------------------|------------|
| I. Total revenues | 98.000 |
| II. Total expenses | 87.000 |
| 1. Interest | 2.000 |
| 2. Other expenses | 85.000 |
| III. Income (profit) | 11.000 |

Financial statements analysis instruments are used in order to quantify the impact of accounting estimates on the financial position and business performance. The aim of the research is to determine the influence of different management estimates on the overall financial position and business performance. In that sense the return on total assets (ROA) is selected as top ratio. In addition the two main components integrated in Du Pont top ratio (ROA) analysis, profit margin and total assets turnover ratio are also analysed. E. I. Du Pont de Nemours and Company developed this method of separating the rate of return ratio into its component parts. Net profit margin, total asset turnover, and return on assets are usually reviewed together because of the direct influence that the net profit margin and the total asset turnover have on the return on assets (Gibson, 2013). Furthermore, the total asset turnover ratio is considered as financial ratio for evaluating both the financial position and business performance (Zager et. al., 2008).

The selected ratios for measurement of the financial position are current ratio, equity to assets ratio and interest coverage ratio. The current ratio determines short-term debt-paying abilities of the company (Gibson, 2013). The firm's ability to carry debt, as indicated by the balance sheet, can be viewed by considering the equity to assets ratio. This ratio indicates the percentage of assets financed by the owners (Zager, et. al., 2008). The times interest earned ratio indicates a firm's long-term debt-payment ability from the income statement point of view (Gibson, 2013). Neglecting the tax influence is a basic assumption of the presented models. Therefore the profit before taxation is selected as measure of profitability for all the presented models.

Table 3. Research methodology with selected variables and ratios for evaluating financial position and business performance

| Selected variables | Measurement – financial ratio |
|--|--|
| <u>Intangible assets (IAS 38)</u> <ul style="list-style-type: none"> research expenditure – are recognised as an expense when it is incurred (model 1) development expenditure shall be recognised as asset if, and only if, the entity can demonstrate all the prescribed criteria (model 2) if management cannot meet the prescribed criteria - shall be recognised as an expense when it is incurred (model 3) licences – estimating the useful life indefinite useful life – the management estimates the indefinite useful life (model 1) finite useful life the management estimates the useful life over the 5 years (model 2) the management estimates the useful life over the 2 years (model 3) | <u>Business performance</u> <ul style="list-style-type: none"> return on total assets (income + interests / total assets) total assets turnover ratio (total revenues/ total assets) profit margin (income + interest/ total revenues) <u>Financial position</u> <ul style="list-style-type: none"> current ratio (current assets/current liabilities) equity to assets ratio (equity/ total assets) times interest earned (income+ interest/ interest) |
| <u>Tangible assets</u> Property, plant and equipment (IAS 16) <ul style="list-style-type: none"> equipment – estimating the residual value the management estimates that a residual value is zero (model 1) the management estimates a residual value at the higher level (model 2) the management estimates a residual value at the lower level (model 3) | |

3.2. Examples of applied accounting estimates on the intangible and tangible assets

In order to measure the impact of accounting estimates on the financial position and business performance the following typical areas of accounting estimates for noncurrent intangible assets are selected: 1) the distinction of research and development phase, 2) the assessment of indefinite and definite useful life for licences and 3) estimating the residual value of a equipment. It is important to stress out, that in order to show the impact of accounting estimates on the financial position and business performance remain unchanged.

3.2.1. The distinction of research and development phase

The first example model refers to the distinction of research and development phase. In that sense, it can be assumed that the entity is in the *phases of formulation, design, evaluation and final selection of possible alternatives for new and improved material for its new product*. Total costs of these research activities are 1.000 euro. According to the International Accounting Standard (IAS 38) *the formulation, design, evaluation and final selection of possible alternatives for new and improved materials for its new product* is the typical example of research activities (IAS 38, para. 56). The entity cannot demonstrate the existence of intangible assets that will generate probable future economic benefits. Therefore this expenditure is recognised as an expense when it is incurred. In addition the entity is conducting the development activities which *include the design and construction of prototypes and models of a new product*. The entity also *designs, construction and testing a chosen alternative for new or improved materials*. Total costs of these activities are 2.000 euro. According to the International Accounting Standard (IAS 38) *conducting the development activities which include the design and construction of prototypes and models of a new product* are the typical examples of development activities. Moreover *design, construction and testing a chosen alternative for new or improved materials* are also the typical examples of development activities (IAS 38, para. 59). An intangible asset arising from development (or from the development phase of an internal project) shall be recognised if, and only if, an entity can demonstrate all of the following (IAS 38, para.57):

- a) *the technical feasibility of completing the intangible asset so that it will be available for use or sale.*
- b) *its intention to complete the intangible asset and use or sell it.*
- c) *its ability to use or sale the intangible asset.*
- d) *how the intangible asset will generate probable future economic benefits. Among other things, the entity can demonstrate the existence of a market for the output of the intangible asset or the intangible asset itself or, if it is to be used internally, the usefulness of the intangible asset.*
- e) *the availability of adequate technical, financial and other resources to complete the development and to use or sell the intangible asset.*
- f) *its ability to measure reliably the expenditure attributable to the intangible asset during its development.*

a) MODEL 1 - the entity can demonstrate all the criteria from development

In the case when management can demonstrate all the mentioned criteria the cost arising from the development phase can be identified as intangible asset. This is because the development phase of a project is more advanced than the research phase. The estimation of management would increase the amount of total assets by 2.000 euro while the costs in the research activities would be recognised in the profit and loss account in the amount of 1.000 euro as presented in table 4 and table 5 (model 1). The assumption of the model 1 is that this expenditure for development is financed by current liabilities.

b) MODEL 2 - the entity cannot demonstrate all the criteria from development

If the management cannot demonstrate all the mentioned criteria the costs arising from the activities in the development phase are recognised in the profit and loss account. This estimation would increase the costs by total 3.000 euro as presented in table 5 (model 2).

Table 4. Balance sheet for different management estimates - the distinction of research and development phase

| Item | Base model | Model 1 | Model 2 |
|----------------------------|------------|---------|---------|
| A) Noncurrent assets | 61.000 | 63.000 | 61.000 |
| I. Intangible assets | 11.000 | 13.000 | 11.000 |
| 1. Development expenditure | 6.000 | 8.000 | 6.000 |
| 2. Licence | 5.000 | 5.000 | 5.000 |
| II. Tangible assets | 50.000 | 50.000 | 50.000 |
| 1. Land | 5.000 | 5.000 | 5.000 |
| 2. Buildings | 20.000 | 20.000 | 20.000 |
| 3. Equipment | 25.000 | 25.000 | 25.000 |
| B) Current assets | 35.000 | 35.000 | 35.000 |
| C) Total assets | 96.000 | 98.000 | 96.000 |
| A) Equity | 41.000 | 40.000 | 38.000 |
| I. Subscribed equity | 30.000 | 30.000 | 30.000 |
| II. Income (profit) | 11.000 | 10.000 | 8.000 |
| B) Noncurrent liabilities | 20.000 | 20.000 | 20.000 |
| C) Current liabilities | 35.000 | 38.000 | 38.000 |
| D) Total sources of assets | 96.000 | 98.000 | 96.000 |

The table 6 confirms the volatility of financial position and business performance of an entity as a result of different accounting estimates in the area of distinction the research and development phase of intangible assets. If the intangible assets represent a significant portion in the structure of total assets the differences can be more significant. The rate of return on assets and profit margin varies according the managements' estimates. In addition the indebtedness of a company's measured by the equity to assets ratio and interest coverage ratio differs among the

presented models. Under the assumption that the research and development activities are financed by the current liabilities the current ratio also has been changed.

Table 5. Income statements for different management estimates – the distinction of research and development phase

| Item | Base model | Model 1 | Model 2 |
|----------------------|------------|---------|---------|
| I. Total revenues | 98.000 | 98.000 | 98.000 |
| II. Total expenses | 87.000 | 88.000 | 90.000 |
| 1. Interests | 2.000 | 2.000 | 2.000 |
| 2. Research costs | 0 | 1.000 | 1.000 |
| 3. Development costs | 0 | 0 | 2.000 |
| 4. Other costs | 85.000 | 85.000 | 85.000 |
| III. Income (profit) | 11.000 | 10.000 | 8.000 |

Table 6. Impact of management estimates - the distinction of research and development phase

| Financial ratio | Base model | Model 1 | Model 2 |
|-----------------------------|------------|---------|---------|
| Total assets turnover ratio | 1,02 | 1,00 | 1,02 |
| Profit margin | 13,27% | 12,24% | 10,20% |
| Return on assets | 13,54% | 12,24% | 10,42% |
| Current ratio | 1,00 | 0,92 | 0,92 |
| Equity to assets ratio | 0,43 | 0,41 | 0,40 |
| Interest coverage ratio | 6,50 | 6,00 | 5,00 |

3.2.2. Estimating the indefinite and finite useful life of the licence

The second example for management estimates in the area of intangible assets is demonstrated on the licences. The management estimates whether the useful life of a licence is finite or indefinite. “An intangible asset shall be regarded by the entity as having an indefinite useful life, when, based on the analysis of all relevant factor, there is no foreseeable limit to the period over which the asset is expected to generate net cash inflows for the entity” (IAS 38, para. 88.). Many factors are considered in determining the useful life of an intangible asset including, among others, the expected usage of the asset by the entity, typical product life cycles and the stability of the industry in which the asset operates (IAS 38, para 90).

a) MODEL 1 – licence with indefinite useful life

According to the contract a company acquired the licence for the period of 5 years. This licence can be renewed by the entity without significant costs. The management of a company has the intention to renew that asset for infinite time. In addition there is an existence of the following factors which, among other indicate that an entity would be able to renew the contractual and other legal rights without significant costs when: “a) there is evidence, possibly based on experience, that the contractual or other rights will be renewed, b) there is evidence that any conditions necessary to obtain renewal will be satisfied and c) the cost to the entity of renewal is not significant when compared with the future economic benefits expected to flow to the entity from renewal” (IAS 38, para. 96). According to the given assumption the management estimates thd licence as having an indefinite useful life. An intangible asset with indefinite useful life is not amortised (IAS 38 para 89.) There is no foreseeable limit to the period over which the asset is expected to generate net cash inflows for the entity (IAS 38, para. 88.). According to the mentioned assumptions amortization costs are not recorded in the income statement.

b) MODEL 2 – licence with finite useful life - amortization period - 5 years

Model 2 refers to the example when a company acquires a licence over the period of 5 years. In other words, 5 years is the period over which an entity expects to use the asset. After the period of 5 years the licence can be renewed. The cost of renewal is significant. Management estimates the useful life of 5 years and the straight-line method is used as an appropriate method of amortization. The depreciable amount is the cost of an asset (5.000 euros). The amortization for the first year is recorded. The residual value of the licence with finite useful life is assumed to be zero. In addition the model is designed under the assumption that all the costs of amortization are period costs.

c) MODEL 3 – licence with finite useful life - amortization period - 2 years

The third example refers to a licence where the contractual and other legal rights expire after 2 years. The licence can be renewed after that period with significant cost. The management estimates the useful life over the two years and uses straight method of amortization. The model is also designed under the assumption that the residual value of the licence with finite useful life is zero and that all the costs of amortization are period costs. The same example could be applied on a property, plant and equipment according to the IAS 16 when estimating the useful life of a property, plants and equipments.

Table 7. Balance sheet for different management estimates – indefinite and finite useful life of licence

| Item | Model 1 | Model 2 | Model 3 |
|----------------------------|---------|---------|---------|
| A) Noncurrent assets | 61.000 | 60.000 | 58.500 |
| I. Intangible assets | 11.000 | 10.000 | 8.500 |
| 1. Development expenditure | 6.000 | 6.000 | 6.000 |
| 2. Licence (net) | 5.000 | 4.000 | 2.500 |
| II. Tangible assets | 50.000 | 50.000 | 50.000 |
| 1. Land | 5.000 | 5.000 | 5.000 |
| 2. Buildings | 20.000 | 20.000 | 20.000 |
| 3. Equipment | 25.000 | 25.000 | 25.000 |
| B) Current assets | 35.000 | 35.000 | 35.000 |
| C) Total assets | 96.000 | 95.000 | 93.500 |
| A) Equity | 41.000 | 40.000 | 38.500 |
| I. Subscribed equity | 30.000 | 30.000 | 30.000 |
| II. Income (profit) | 11.000 | 10.000 | 8.500 |
| B) Noncurrent liabilities | 20.000 | 20.000 | 20.000 |
| C) Current liabilities | 35.000 | 35.000 | 35.000 |
| D) Total sources of assets | 96.000 | 95.000 | 93.500 |

The table 9 confirms the volatility of financial position and business performance of an entity as a result of different management estimates of useful life of the intangible assets. As the changes in useful life did not have any impact on current assets and current liabilities, the current ratio remained unchanged. According to the presented models all other measures of financial position and business performance have been changed (table 9).

Table 8. Income statements for different management estimates - indefinite and finite useful life of a licence

| Item | Model 1 | Model 2 | Model 3 |
|----------------------|---------|---------|---------|
| I. Total revenues | 98.000 | 98.000 | 98.000 |
| II. Total expenses | 87.000 | 88.000 | 89.500 |
| 1. Interest | 2.000 | 2.000 | 2.000 |
| 2. Amortization cost | 0 | 1.000 | 2.500 |
| 3. Other costs | 85.000 | 85.000 | 85.000 |
| III. Income (profit) | 11.000 | 10.000 | 8.500 |

Table 9. Impact of management estimates – indefinite and finite useful life of licence

| Financial ratios | Model 1 | Model 2 | Model 3 |
|-----------------------------|---------|---------|---------|
| Total assets turnover ratio | 1,02 | 1,03 | 1,05 |
| Profit margin | 13,27% | 12,24% | 10,71% |
| Return on assets | 13,54% | 12,63% | 11,23% |
| Current ratio | 1,00 | 1,00 | 1,00 |
| Equity to assets ratio | 0,43 | 0,42 | 0,41 |
| Interest coverage ratio | 6,50 | 6,00 | 5,25 |

3.2.3. Estimating the residual value of the equipment

The impact of accounting estimates on the financial position and business performance of tangible assets is demonstrated on the case of equipment. One of significant estimates related to the measurement of the cost of assets refers to the estimating residual value. *“The residual value of an asset is estimated amount that an entity would currently obtain from disposal of the asset, after deducting the estimated costs of disposal, if the asset were already of the age and in the condition expected at the end of its useful life”* (IAS, para. 6).

a) MODEL 1 – the residual value of an equipment assumed to be zero

The model 1 is designed under the several assumptions that an entity acquired a equipment for conducting its business. The costs of equipment recognised in the balance sheet are 25.000 euros. The management estimated the useful life of 5 years and uses the straight-line method of amortization. The depreciable amount is the cost of an asset. The residual value of the licence with finite useful life is assumed to be zero. The management also estimates that the residual value is insignificant in the calculation of the depreciable amount. In addition it is important to stress out that all the costs of amortization are period costs.

b) MODEL 2 – the management estimated the residual value at the higher level

The model 2 refers to the example where management estimates the residual value of the equipment of 15.000 euro. In the case when costs of assets are 25.000 euro that means that the depreciable amount is 10.000 euros. The management estimates the useful life of 5 years and uses a straight-line method of amortization.

c) MODEL 3 – the management estimated the residual value at the lower level

The model 3 presents the example where management estimates the residual value of the equipment to the amount of 5.000 euro. In this case the depreciable amount is 20.000 euros. The management estimated the useful life of 5 years and straight-line method of amortization.

Table 10. Balance sheet for different management estimates - residual value of the equipment

| Item | Model 1 | Model 2 | Model 3 |
|----------------------------|---------|---------|---------|
| A) Noncurrent assets | 56.000 | 59.000 | 57.000 |
| I. Intangible assets | 11.000 | 11.000 | 11.000 |
| 1. Development expenditure | 6.000 | 6.000 | 6.000 |
| 2. Licence | 5.000 | 5.000 | 5.000 |
| II. Tangible assets | 45.000 | 48.000 | 46.000 |
| 1. Land | 5.000 | 5.000 | 5.000 |
| 2. Buildings | 20.000 | 20.000 | 20.000 |
| 3. Equipment | 20.000 | 23.000 | 21.000 |
| B) Current assets | 35.000 | 35.000 | 35.000 |
| C) Total assets | 91.000 | 94.000 | 92.000 |
| A) Equity | 36.000 | 39.000 | 37.000 |
| I. Subscribed equity | 30.000 | 30.000 | 30.000 |
| II. Income (profit) | 6.000 | 9.000 | 7.000 |
| B) Noncurrent liabilities | 20.000 | 20.000 | 20.000 |
| C) Current liabilities | 35.000 | 35.000 | 35.000 |
| D) Total sources of assets | 91.000 | 94.000 | 92.000 |

Table 11. Income statement for different management estimates for residual value of the equipment

| Item | Model 1 | Model 2 | Model 3 |
|----------------------|---------|---------|---------|
| I. Total revenues | 98.000 | 98.000 | 98.000 |
| II. Total expenses | 92.000 | 89.000 | 91.000 |
| 1. Interest | 2.000 | 2.000 | 2.000 |
| 2. Amortization cost | 5.000 | 2.000 | 4.000 |
| 3. Other costs | 85.000 | 85.000 | 85.000 |
| III. Income (profit) | 6.000 | 9.000 | 7.000 |

Table 12. Impact of management estimates – the residual value of the equipment on the financial position and business performance

| Financial ratios | Model 1 | Model 2 | Model 3 |
|-----------------------------|---------|---------|---------|
| Total assets turnover ratio | 1,08 | 1,04 | 1,07 |
| Profit margin | 8,16% | 11,22% | 9,18% |
| Return on assets | 8,79% | 11,70% | 9,78% |
| Current ratio | 1,00 | 1,00 | 1,00 |
| Equity to assets ratio | 0,39 | 0,41 | 0,40 |
| Interest coverage ratio | 4,00 | 5,50 | 4,50 |

Again, in the case of different estimation of the residual value of the equipment, the financial position and performance have been changed. The estimated residual value of the equipment influenced the cost of amortization

in the presented year and thus on the financial result (table 12.).

4. Conclusion

Financial statements portray entity's financial condition and business performance. To disclose that the financial statements of an entity are in conformity with financial reporting standards requires from management to make estimates and assumptions that affect the amounts reported in these statements and accompanying notes. Since each judgement is by its nature subjective, the results of the estimation can differ. Therefore, management should use all available and sufficient information when making accounting estimates. Persons in estimation processes should also react ethically and avoid any conflicts of interest. To confirm its objectivity in making estimates management should be able to approve the process of making estimates. It means, it will consider the critical areas of accounting estimates, discuss those estimates and its impact as well as document these processes. With regard to these tasks, management should review entity's critical accounting policies and related disclosures with the Audit Committee. The research was based on the testing the designed balance sheet with the significant portion of non-current intangible and tangible assets and the appropriate income statement. The selected variables (typical financial ratios) for the evaluation of financial position and business performance of a company have shown, for all conducted models, that financial position and business performance could materially depend on the made estimates. The research model confirmed the volatility of financial condition and performance of an entity as a result of different accounting estimates in cases where intangible and tangible assets represent significant part of the entities' assets. However, to minimise this problem, entities should disclose critical accounting estimates in the notes to the financial statements which will serve as the information base for all the interested users. Where the proportion of assets, for which the estimation is made, is not material, the volatility of financial condition and performance would not be significant. After all, sometimes, despite the proportion of assets, accounting estimates will still have a significant impact on financial statements.

Acknowledgements

This paper is the result of a project called "Analysis of accounting estimates' significance in the process of non-current intangible and tangible evaluation " which was financed by the University of Zagreb as the short-term research support for 2015.

References

- Brown, G. A., Collins, R. and Thornton, D. B. (1993) Professional judgment and accounting standards. *Accounting, Organizations and Society* 18 (4): 275–89.
- Cooper, S. (2015) A tale of "prudence", *Investor Perspectives, IFRS*, June 2015
- Gibson, C. H. (2013) *Financial Statement Analysis – 13th edition*, South-Western, Cengage Learning.
- IASB (2010) *The Conceptual Framework for Financial Reporting*. IFRS Foundation
- IASB (2015) *The Conceptual Framework for Financial Reporting. Exposure Draft ED/2015/3*. IFRS Foundation
- ICAS (2006) *Principles not Rules. A Question of Judgement*. Retrieved from https://www.icas.com/__data/assets/pdf_file/0020/2288/Principles-Not-Rules-A-Question-of-Judgement-ICAS.pdf
- ICAS (2012) *A professional judgement framework for financial reporting. An international guide for preparers, auditors, regulators and standard setters*. ICAS. Retrieved from https://www.icas.com/__data/assets/pdf_file/0013/2605/Professional-Judgement-Framework-Report-ICAS.pdf
- IFRS (2014) *Distinction between a change in accounting policy and a change in accounting estimate in Staff paper*. IFRS Interpretations Committee Meeting. (2014, March) Retrieved from <http://www.ifrs.org/Meetings/MeetingDocs/Interpretations%20Committee/2014/March/AP09%20-%20IAS%208%20Distinction%20between%20a%20change%20in%20policy%20estimate.pdf>
- KPMG (2015) *Getting Accounting Judgments and Estimates "Right". Board Perspectives*, Retrieved from <https://boardleadership.kpmg.us/content/dam/blc/pdfs/2014/accounting-judgments-estimates-board-perspectives.pdf>
- Mala, R., Chang, P. (2015) *Judgement and Decision-Making Research in Auditing and Accounting: Future Research Implications of Person, Task, and Environment Perspective*. *Accounting Perspectives*, 14: p. 1-50.
- Nixon, B. (1997) *The accounting treatment of research and development expenditure: views of UK company accountants*, *European Accounting Review*, 6:2, p. 265-277.

- OECD (2015) Corporate Reporting of Intangible Assets: A Progress Report, p.4. Retrieved from: <http://www.oecd.org/daf/ca/Intangible%20Assets.pdf>
- Rogers, P., Blenko, M.W. (2006) Who Has the D?: How Clear Decision Roles Enhance Organizational Performance. Harvard Business Review, January 2006. Retrieved from: <https://hbr.org/2006/01/who-has-the-d-how-clear-decision-roles-enhance-organizational-performance>
- The International Financial Reporting Standards Foundation (2015) IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors in A Briefing for Chief Executives, Audit Committees & Boards of Directors
- The International Financial Reporting Standards Foundation (2015) IAS 38 Intangible Assets and IAS 16 Property, Plant and Equipment in A Briefing for Chief Executives, Audit Committees & Boards of Directors
- Zager, K., Mamic Sacer, I. Sever, S. Zager, L. (2008) Analiza financijskih izvjestaja, Masmedia, Zagreb