

THESES OF THE DOCTORAL (PhD) DISSERTATION
THE IMPACT OF ACCOUNTING VALUATION OF ASSETS ON
ENTERPRISE VALUE IN TERMS OF IFRS AND US GAAP
ACCOUNTING SYSTEMS

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1. INTRODUCTION OF THE TOPICS AND OBJECTIVE

1.1. Background to the research

I first learned about International Financial Reporting Standards (IFRS) as an opportunity to unify accounting systems during my studies as a Master's student. The main purpose of creating IFRS was to create a unified global accounting system that supports and help with rapid capital flows, crosses national borders and increases investment opportunities. IFRS puts the interests of investors first and seeks to present a company's assets as faithfully as possible. IFRS are used as an accounting system in more than 140 countries and are mandatory for certain types of companies, while it is an option in other types of companies.

IFRS seek and place a strong emphasis on the presentation of assets at fair value, whereby companies are encouraged to use valuation techniques based on fair value for the initial and subsequent measurement of assets. It can also be concluded that an accounting system has been established which presumably seeks to present the company's assets at a value that most closely approximates their fair value. As mentioned above, many countries use IFRS as a mandatory or optional accounting system, but US GAAP is used in the US. There may be a number of reasons for this, but discussing them is not part of my research. Although IFRSs and US GAAP are converging, there are still several differences, even in the case of standards developed in joint cooperation. This is because different bodies are responsible for the adoption of standards and rules developed under the two accounting systems.

As a PhD student I had the opportunity to learn about the main valuation rules and procedures of US GAAP and IFRS accounting systems. While IFRSs strive to recognize assets at fair value, US GAAP, on the other hand, is based on much more conservative principles and does not allow for the revaluation of assets (VERNANDO, 2021; HONG et al., 2018). While IFRSs allow for the revaluation of several assets in order to recognize assets at fair value, US GAAP does not allow for the revaluation of assets even if the fair value significantly exceeds the recognized carrying amount. IFRS permits the reversal of impairment losses for certain assets if the fair value exceeds the carrying amount, whereas US GAAP does not permit the reversal of impairment losses. While IFRS allows the cost of research and development to be capitalized as an intangible asset, US GAAP charges the

costs incurred to the profit or loss for the year. In addition to the above, there may be a number of differences in the initial and subsequent measurement of assets in the two accounting systems. It can be concluded that companies may show a lower book value under US GAAP and a higher book value under IFRS. The question then arose as to which of the two accounting systems is more likely to produce a carrying amount that approximates fair value?

1.2. Objectives and presentation of the research hypotheses

The difference between book value and market value as reported by accounting played a role in the formulation of my research question. The question arose in my mind: for which accounting system (IFRS or US GAAP) can we talk about a higher or lower difference between book value and market value? The difference between the two values can be greatly influenced by the valuation procedures of the accounting system in question.

The main objective of my research was therefore to explore whether there is a difference between companies using IFRS and US GAAP in terms of book value and fair value. In particular, to examine the differences between the two accounting systems (IFRS and US GAAP) in terms of the valuation of assets. Since a company usually uses one accounting system to prepare its financial statements, my research examined two groups of companies using different accounting systems. The two groups of companies selected were the DAX German stock index and the DJIA (Dow Jones Industrial Average) index. The companies of the DJIA index use US GAAP accounting, while the companies of the DAX index use IFRS. The companies in both indices are listed companies and their market value can therefore be easily determined.

The objectives of my research were also to determine the P/BV ratio of the two index companies over several years, to identify the reasons for the difference in book value and to determine which accounting system is more capable of valuing assets more fairly when the market value is taken as the "fair" value of the company. For my research objective, I formulated four research questions from which I derived four hypotheses, which are presented in Table 1.

Table 1: Research questions and hypotheses

Research questions	Hypothesis
Is there a difference in the book value of assets between companies using IFRS and US GAAP?	<i>H1: The accounting system used has an impact on the book value of assets.</i>
Is the difference between book and market value greater for companies using US GAAP than for companies using IFRS?	<i>H2: Companies in the Dow Jones index have a higher P/BV than companies in the DAX index.</i>
Is there a difference in market value indicators between companies using IFRS and US GAAP?	<i>H3: The type of accounting system affects the evolution of market value indicators.</i>
Does the book value of individual assets affect the development of market value indicators?	<i>H4: The value of assets affects the evolution of market value indicators.</i>

Source: own editing

With my first hypothesis (H1) I sought to answer the relationship between the accounting system used and the book value of assets.

I based my second hypothesis (H2) on the fact that companies in the DJIA index, due to the "stricter and more conservative" US GAAP accounting system, report their assets at a lower value than companies in the DAX index, which uses IFRS. This means that the net book value of assets in the denominator is lower than their market value in the numerator. I have assumed that DAX index companies, using the revaluation options provided by IFRSs, show a net book value in their books closer to the market value.

My third hypothesis (H3) was firstly focused exclusively on the P/BV ratio. However, a more in-depth study of the literature revealed that several studies (SCHMIDLIN, 2014; JOOS, 1997; ARCE – MORA, 2010; KING - LANGLI, 1999) mention the relationship between market indicators and accounting. While the value of the P/BV and P/E ratios is strongly influenced by the accounting system used, the P/S ratio is likely to be the least affected. This is because the accounting treatment of revenues is the same in almost all accounting systems and there are only minor differences between systems. As explained above, I have divided my third hypothesis into three sub-hypotheses:

- *H3: The type of accounting system affects the value of market value indicators.*
 - *H3a: The type of accounting system affects the value of the P/BV ratio.*
 - *H3b: The type of accounting system affects the value of the P/E ratio.*
 - *H3c: The type of accounting system has an impact on the value of the P/S ratio.*

My fourth hypothesis (H4) was also originally focused exclusively on the P/BV indicator, but for the reasons mentioned above I have extended it to include the other market value indicators. If the accounting system used has an impact on the market value indicators, it can be assumed that the evolution of these indicators is influenced by the valuation procedures used in accounting. I also sought an answer to the question of which assets have an impact on the evolution of market value indicators. I also divided my fourth hypothesis into three sub-hypotheses:

- *H4: The value of assets affects the value of market value indicators.*
 - *H4a: The value of assets affects the value of the P/BV ratio.*
 - *H4b: The value of assets affects the value of the P/E ratio.*
 - *H4c: The value of assets affects the value of the P/S indicator.*

In order to verify the hypotheses formulated, a literature review was carried out on the valuation of companies, including market value based methods. I also analyzed the initial and subsequent valuation procedures of the two accounting systems (IFRS and US GAAP). Using the literature, I highlighted the differences and similarities between the systems, focusing on the assets included in the analysis. The analyses were performed using Microsoft Excel, the R statistical system and the STATA statistical system. I began the study with a descriptive statistical analysis and then conducted multiple statistical tests to confirm or reject hypotheses.

2. MATERIAL AND METHODS

My research involved both secondary and primary research Analysis and calculations were carried out using Microsoft Excel, the R statistical system and the STATA system.

2.1. Presentation of the data used

The data used in my research are data extracted from the financial statements of enterprises. In line with my objectives, I have studied two groups of companies operating in different accounting environments. When selecting the groups of companies, I considered it important to analyze companies from a stock exchange index with a nearly identical number of shares. With this in mind, I will examine and compare the valuation methods under the two accounting systems, International Financial Reporting Standards (IFRSs) and United States Generally Accepted Accounting Principles (US GAAP). For this analysis, I used data from the DAX German Stock Exchange Index and the Dow Jones Industrial Average (DJIA). I chose the companies of these two stock market indices because both stock market indices include the shares of nearly 30 of the largest companies in the region, which use different accounting systems. The companies in the DAX index prepare their financial statements in accordance with International Financial Reporting Standards, while the companies in the Dow Jones Industrial Average index use accounting principles generally accepted in the United States of America. I conducted my analysis for both groups of companies for 5 years, covering the period 2017-2021. Financial companies were excluded from the database due to their different financial statements, so the final database includes 33 companies from the DAX index and 24 companies from the DJIA index.

2.2 Presentation of the methodology

In order to verify the hypotheses, different statistical tests and methods have been applied. The statistical methods used to test the hypotheses and its result are presented in Table 2.

Table 2: Summary table of statistical methods used to test the hypotheses

Hypothesis	Method of verification
H1: The accounting system used has an impact on the carrying amount of assets.	Analysis of variance
H2: The P/BV values of the companies in the Dow Jones index are higher than those of the companies in the DAX index.	Analysis of variance Descriptive statistics
H3: The type of accounting system affects the value of market value indicators	Regression analysis
H4: The value of assets has an impact on the value of market value indicators.	Bivariate and multivariate stepwise regression analysis

Source: own editing

2.2.1. Regression analysis, collinearity in regression calculus

Regression analysis is used to estimation of relationships between a dependent (outcome) variable and one or more independent (explanatory) variables and whether the regression coefficients can be considered non-zero (WOOLDRIDGE, 2019). The essence of regression analysis is presented in Figure 1, where it can be seen that the variance of the dependent variable is essentially decomposed into two parts:

1. the variance defined by the independent variable(s).
2. the residual variance (residual variance, error), which cannot be determined by the variance of the independent variables.

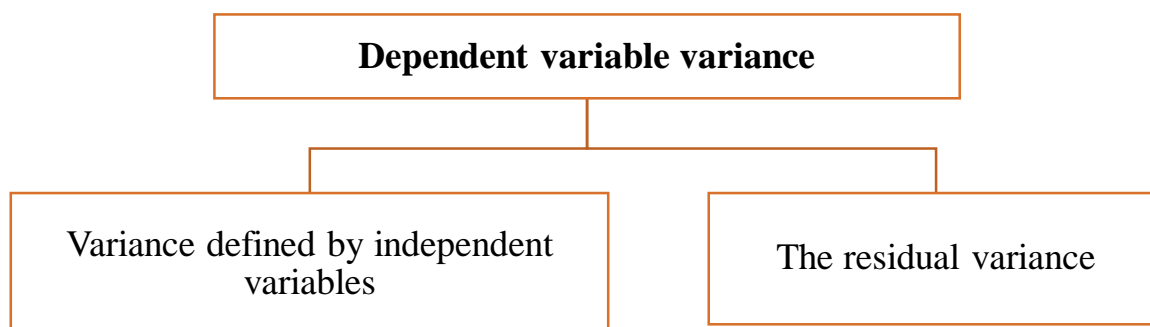


Figure 1: The essence of regression analysis

Source: own editing

The independent (explanatory) variable(s) are assumed to influence the dependent (outcome) variable (SOLTÉSZ-VÁRHELYI, 2019). Several types of regression models are used in statistical analyses, including linear regression, panel regression, logistic regression, etc. In the case of linear regression, we distinguish between simple (bivariate) linear regression and multivariate linear regression (NEWBOLD et al., 2020). In simple (bivariate) linear regression, we want to explain an outcome variable (dependent) by an explanatory (independent) variable, whereas in multivariate linear regression, several explanatory variables jointly explain the outcome variable.

In multiple linear regression, the explanatory (independent) variables may be:

- Uncorrelated independent variables
- Correlated independent variables

In the case of uncorrelated variables, the variables are independent of each other, which means that the resulting regression coefficients provide a unique estimate of the effect of each explanatory variable on the outcome variable. For example, if one independent variable explains 15% of the variance of the dependent variable and the other 11%, then in total the independent variables can explain 26% of the variance of the outcome variable and the two explanatory variables are independent of each other (Figure 2).

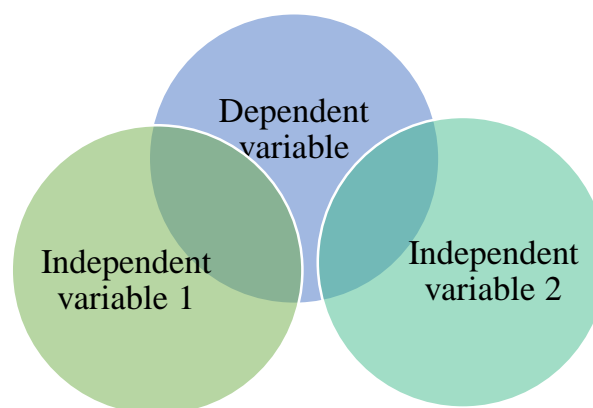


Figure 2: Plot of uncorrelated independent variables

Source: own editing, based on SPILSKI et al. (2018).

The correlated independent variables are not independent of each other, which means that we cannot clearly identify the effect of each regression coefficient on the outcome variable. As shown in Figure 3, the non-independent variables also interact with each other.

Consequently, a given area/part of the dependent variable is covered by both independent (explanatory) variables. In the case of correlated independent variables, variables that do not improve the efficiency of the regression calculation should be filtered out. Independent variables that do not significantly affect the dependent variable can be filtered out by several methods:

- Forced Entry
- Hierarchical (Blockwise)
- Stepwise methods

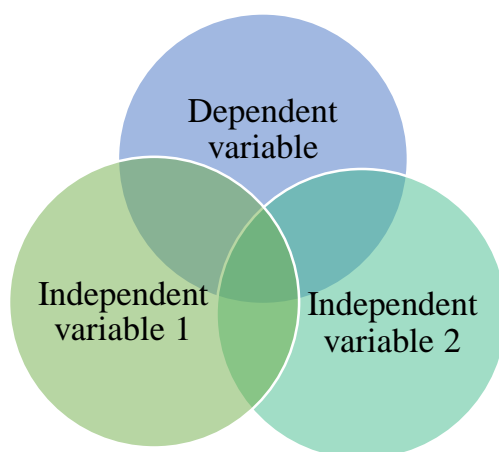


Figure 3: Plots of correlated independent variables

Source: own editing, based on SPILSKI et al. (2018).

The Forced Entry method allows all the independent (explanatory) variables selected to be included in the analysis at once. In contrast, in the hierarchical method, the researcher manually decides per block which independent variables are included and in which order they appear in the model. For economic research, the Stepwise method is most commonly used because, unlike the hierarchical method, the Stepwise method uses mathematical decisions and criteria to include or exclude independent (explanatory) variables from the model.

The Stepwise method has three main types:

- Forward (forward) method,
- Backward method,
- Stepwise (a combination of the first two) (JAMES et al., 2014; BRUCE - BRUCE, 2017)

In the case of the Stepwise method, the Akaike Information Criterion (AIC) is usually used to select the independent variables. Taking into account the AIC value, the three stepwise methods can be interpreted as follows:

- In the case of forward stepwise, the model first contains no independent variables, and then variables are added continuously until the AIC value improves.
- In backward stepwise, all independent variables are included in the model, and then variables that do not contribute to the improvement of the AIC value are continuously removed until the AIC value is improved.
- The Stepwise method combines the two methods above.

2.2.2 Use of analysis of variance in the analysis

Analysis of variance (ANOVA) is used to examine the effect of different variables by taking squares of variance into account. In analysis of variance, we can talk about dependent and independent sample designs. In an independent sample design, the data come from two different groups, whereas in a dependent sample design, the same data form both groups.

One extension of ANOVA is MANOVA (Multivariate analysis of variance), where several dependent variables are tested at the same time, unlike ANOVA, where there is only one dependent variable. Analysis of variance tests whether the independent variable has an effect on the dependent variable(s). If the independent variable does have an effect on the dependent variable(s), then the means of the groups formed according to the values of the independent variable differ (GYULAVÁRI et al., 2017).

3. MAIN FINDINGS OF THE DISSERTATION

The main objective of my research was to examine the difference between IFRS and US GAAP as two accounting systems, i.e. how asset valuation procedures affect the value of a company. To do this, I used accounting data from two groups of companies, the DJIA and the DAX index, which use different accounting systems to prepare their financial statements. The two accounting systems have different rules for the fair valuation of assets.

In the course of the research, I sought to answer the question: which accounting system is more appropriate for fair valuation of assets and which accounting system shows a value closer to market value in its books? I also examined the impact of specific asset classes on the evolution of market value indicators (P/BV, P/E, P/S).

In order to prove the first hypothesis (*H1: The accounting system used has an impact on the book value of assets*), I performed an analysis of variance, which showed that the accounting system used (IFRS and US GAAP) has an impact on the evolution of the value of all the asset groups under study, because the p-value for all the assets under study is less than 0.05, and therefore I accepted the first hypothesis.

Since the results of the descriptive statistics conducted at the beginning of the research showed that companies in the DJIA index have higher asset values than companies in the DAX index, I used the proportion of each asset as the dependent variable instead of the actual value of the assets to filter out the size of the companies, because the difference in size may affect the result of the analysis of variance. Based on the analysis of the ratios, I found that the accounting system used has an impact on the book value of cash and cash equivalents and of property, plant and equipment (*Table 3*).

This also confirms the significant valuation difference for property, plant and equipment as explained in the literature, as well as the difference in the recognition of cash and cash equivalents in the balance sheet.

**Table 3: Analysis of variance results for indicators
(independent variable: accounting system)
(df1 = 1; df2 = 277)**

Dependent variables	Test statistic (F-value)	P-value	Level of significance
Cash and cash equivalents / Total assets	0.27	0.000	***
Receivables / Total assets	0.473	0.492	
Inventories / Total assets	0.254	0.615	
Property, plant and equipment / Total assets	9.099	0.003	**
Financial fixed assets / Total assets	0.084	0.772	
Intangible assets / Total assets	0.536	0.465	
Goodwill / Total assets	0.268	0.605	

Source: own calculation with R.

The second hypothesis (*H2: Companies in the Dow Jones index have a higher P/BV than companies in the DAX index*) is based on the assumption that the DJIA index companies, in compliance with US GAAP accounting rules, should follow a more stringent asset valuation procedure in terms of fair valuation of assets, especially in the case of asset revaluations, than the DAX index companies. Consequently, the book value is lower than the market value for the DJIA index companies. I accept my second hypothesis, as the analysis of variance revealed a significant difference between the groups of companies using IFRS and US GAAP accounting. Furthermore, the descriptive statistical analysis clearly shows that companies using US GAAP have a higher P/BV ratio than those using IFRS. It can also be concluded that the median P/BV ratios of companies using US GAAP are, in all years, higher by an order of magnitude than those of the DAX index companies. In 2018 and 2021, the median of the DJIA index companies exceeds the top quartile of the DAX index companies (Figure 4). Assuming that the market is well valued, it can be concluded that the accounting value reported by companies using IFRSs deviates less from the market value.

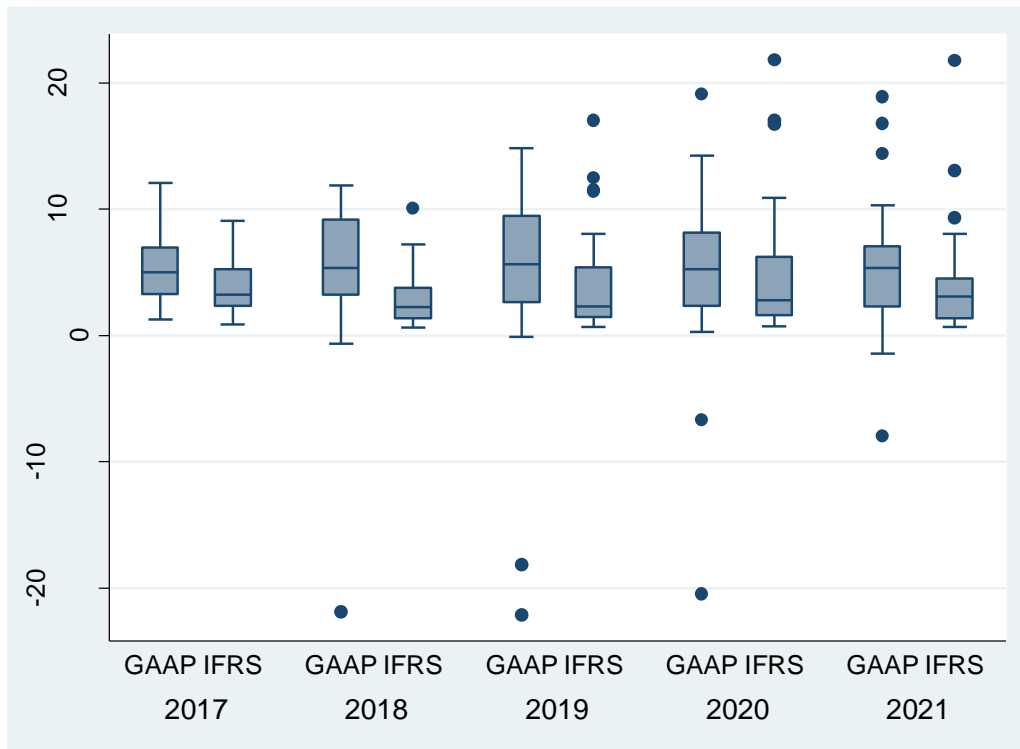


Figure 4: Evolution of the P/BV ratio for companies in the DAX and DJIA indices.

Source: Own calculation using STATA.

The third hypothesis (*H3: The type of accounting system affects the evolution of market value indicators*) was to investigate the impact of the accounting system used on market value indicators. The third hypothesis was divided into three sub-hypotheses, where I examined separately the evolution of the P/BV, P/E and P/S ratios of companies in the DJIA and DAX indices. The majority of researchers and practitioners agree that the evolution of P/BV and P/E is strongly influenced by the accounting system used, as both the initial and subsequent valuation of assets and the evolution of earnings can differ greatly due to the accounting system used. In order to accept or reject the hypothesis, I used regression analysis to find that the type of accounting system has an impact on the P/BV and P/E ratios. This finding supports the effect discussed and highlighted in most of the literature. The third sub-hypothesis of the third hypothesis, i.e. that the type of accounting system has an effect on the P/S ratio, was rejected, despite the fact that the regression analysis result showed a significant effect. The size of the companies in the two indices differs, so I assumed that the result of the regression analysis that the accounting system has an effect on the P/S ratio is due to the difference in size of the companies in the two groups of companies rather than

the accounting system used. To prove this, I conducted an analysis of variance (*Table 4*), where the independent variable was size.

**Table 4: Analysis of variance results for market value indicators
(independent variable: company size)**

Financial indicators	Test statistic (F-value)	P-value	Level of significance
P/BV	0.0619	0.8037	
P/S	4.1903	0.0416	*
P/E	0.109	0.7416	
P/EBITDA	0.000	0.9802	

Source: own calculation using R.

The fourth and final hypothesis (*H4: The value of assets affects the evolution of market value indicators*) was not only to examine whether the value of the company's assets affects market value indicators, but also which asset classes and to what extent they affect the evolution of market value indicators. Multivariate regression analysis was used to determine which asset groups have an impact on the value of market value indicators. Assets were included as independent variables and the stepwise method was used to avoid the problem of collinearity of independent variables. The results of the multivariate regression analysis, broken down by market value indicators, are summarized in *Table 5*. The table shows that the evolution of the P/BV ratio was affected by property, plant and equipment, intangible assets and cash and cash equivalents.

Table 5: Summary table of multivariate regression analysis results

Dependent variable	Significant independent variables
P/BV ratio	<ul style="list-style-type: none">- Cash and cash equivalents- Property, plant and equipment- Intangible assets
P/E ratio	<ul style="list-style-type: none">- Cash and cash equivalents- Receivables- Inventories- Property, plant and equipment- Financial assets invested- Intangible assets- Goodwill (Goodwill)
P/S ratio	<ul style="list-style-type: none">- Cash and cash equivalents- Inventories- Property, plant and equipment- Financial fixed assets- Intangible assets

Source: own editing

4. NEW AND NOVEL RESULTS OF THE DISSERTATION

1. It has been demonstrated that the accounting system used has an impact on the value of the book value of assets. Based on the results of the analysis of variance, I have concluded that the accounting system used (IFRS and US GAAP) has an impact on the evolution of property, plant and equipment and cash and cash equivalents, and therefore may also affect the determination of the enterprise value.
2. It was confirmed that the accounting value of companies differs from the market value of companies and that the enterprise value recorded in the accounts is in most cases lower than the market value of the company. My research has confirmed that the average P/BV of the companies in the study is higher than 3.9 for both groups of companies, and in most cases it is higher than 1. This suggests that certain value drivers are not taken into account by accounting systems in the subsequent measurement of assets.
3. It has been proven that the P/BV ratio of companies in the DJIA index is higher than that of companies in the DAX index. This may be due to the fact that the DJIA index companies use US GAAP accounting to prepare their financial statements, which is more strictly regulated and in many cases prohibits the revaluation of assets, unlike the DAX index companies, which use IFRS to prepare their financial statements. I have supported this finding of my research with descriptive statistics.
4. It has been demonstrated that the accounting system used has an impact on the development of P/BV and P/E ratios. To carry out the analysis, regression analysis was used, where the dependent variable was the market value indicator and the independent variable was the type of accounting system.
5. It was proved that the accounting system used has no effect on the evolution of the P/S ratio. The regression analysis results showed a significant effect, but the significant effect is rather caused by the different size of the groups of companies, which was confirmed by analysis of variance.

6. It has been proven that the evolution of the value of intangible assets and property, plant and equipment has an impact on the evolution of the P/BV ratio. The study was conducted using multivariate regression analysis and it was found that the significant difference noted in the literature review is reflected in the research results due to the valuation procedure of the assets under study.

5. PRACTICAL APPLICABILITY OF THE RESULTS

My dissertation aimed to examine the difference between the two accounting systems (IFRS and US GAAP) in terms of their impact on the valuation of assets.

Based on the results of my research, it is clear that the IFRS requirements and standards provide more scope for fair value accounting and encourage companies to use these models, as evidenced by the evolution of the P/BV ratio for companies in the DAX index and DJIA index.

After years of negotiation, the bodies responsible for the US accounting system were still unwilling to move to IFRS. There are a number of reasons for this, perhaps the most important of which is that if they move from US GAAP to IFRS, the organizations involved in US GAAP regulation (FASB and SEC) would lose control over the regulation of companies' financial statements. Consequently, I did not consider it important to mention as a suggestion the transition to IFRS for the US. However, it may be worthwhile to create new standards or to extend existing standards. This could include, for example, the valuation of property, plant and equipment at fair value, which could reduce the discrepancy between market value and accounting value, because this group of assets represents a significant part of companies' assets.

The more rigorous approach of US GAAP to the fair value recognition of assets can also be quantified and observed among the DJIA index companies over the five years under review. Despite the fact that most of the companies in the DAX index have a P/BV ratio of more than 1, they are still lower than the DJIA index. For companies using IFRS, the gap between market value and accounting value is smaller.

For the asset group property, plant and equipment, it would be worthwhile to allow the use of the revaluation model, because DANIEL et al. (2010) have shown that there would be companies in the US that would use fair value measurement if they had the option.

I also propose to revise the standards for reversing impairment of certain assets under US GAAP and to lift the prohibition on reversing impairment, which would also reduce the difference between book value and market value.

I recommend that for US GAAP, the value of experimental development be reported under intangible assets, because companies that engage in this type of activity invest large amounts in these activities and over time they are recovered through sales.

Apart from the differences in the valuation procedures of the two accounting systems, it should be noted that the difference between market value and book value is not solely the result of the assets not being carried at fair value. It may also be due to the presence of intangibles which are not or not fully allowed to be recorded by the accounting systems. This is because some of these assets do not meet the definition of intangible assets and their value cannot be measured reliably. In addition, the recognition of some intangible assets at market value may also be difficult because in many cases the market value of intangible assets already recognized in the books is difficult to measure. In response to this problem, I would propose the development of a specific standard to regulate intangible assets and to provide a broader opportunity for companies to present in a balance sheet, with the addition of intellectual assets, intangible assets that they measure and do not recognize in the accounting balance sheet. The expanded statement of financial position could be disclosed in the notes, giving companies greater freedom to assign values to intangible assets not included in the balance sheet on the basis of various internal estimates and calculations. The existence of an expanded balance sheet would not affect the usual accounting balance sheet prepared in accordance with the existing rules, but would provide many analysts and investors with the opportunity to gain a greater insight into the company's assets. Even though these assets cannot be measured reliably, having the background data and information would allow more reliable calculations and estimates to be made than without them.

Accounting, as an information system, seeks to show the assets, financial position and profitability of companies. It provides decision-makers (owners, investors, creditors, public authorities, etc...) with information on the company's assets and liabilities and results. For a potential investor, the statement of the company's financial position and results is considered to be relevant information. It is on the basis of the assets and liabilities and results shown in the accounts that the calculations on which investor decisions are based are made, particularly in the case of unlisted companies, for example when the intention is to acquire

all or part of the company. It follows that the type of accounting system used is a very important consideration, as each system prepares its financial statements according to different rules, guidelines, standards and regulations. An accounting system that applies a stricter and more cautious asset valuation procedure is more likely to result in assets being undervalued relative to their market value than a more 'flexible' accounting system.

The very high P/BV ratios of DJIA index companies are due to asset valuation procedures based on stricter accounting rules, while the lower P/BV ratios of DAX index companies are often due to accounting systems that tend to use fair value accounting. The P/BV ratio shows how far the market value deviates from the book value, and a potential investor should therefore take into account which accounting system is used to determine the value of the assets on the balance sheet. The results of the research confirm that the discrepancy between market value and book value is much greater for companies using US GAAP than for companies using IFRS.

If we accept the view, prevalent in modern corporate finance, that the long-term goal of companies should be to increase corporate wealth, corporate value, then the definition of value also has an important role to play in measuring corporate performance. This is particularly important for non-listed companies, because in their case there is no market-derived value. It is true that if we want to compare companies operating under the same accounting system, this is not too much of a problem because all companies value their assets in a nearly similar way. So the difference in value can be compared and evaluated. However, if we want to compare the performance, the increase in assets, of two companies using different accounting systems, the problem may arise.

6. LIST OF PUBLICATIONS RELATED TO THE DISSERTATION

Articles. studies

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7. PUBLICATIONS ON THE SUBJECT OF THE THESIS



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Candidate: Mirjam Hamad

Doctoral School: Károly Ihrig Doctoral School of Management and Business

MTMT ID: 10069427

List of publications related to the dissertation

Articles, studies (7)

1. Váradi, L., **Hamad, M.**: Az intellektuális tőke mérési lehetőségei egy vállalati példán keresztül.
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The Candidate's publication data submitted to the iDEa Tudóstér have been validated by DEENK on the basis of the Journal Citation Report (Impact Factor) database.

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