EU-US trade deal: Value relevance and conservatism in converging accounting standards

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ABSTRACT

This thesis examines the differences regarding the relation between conditional conservatism and price value relevance in the EU and US. In particular, it investigates whether the relation differs in context of different accounting standards. This paper further investigates how the presence of accruals is related to conservatism and value relevance. In total, 985 firms are extracted from the ORBIS database, 616 firms from the EU complying IFRS and 369 firms from the US complying GAAP. Consequently, 985 firms over a period of 5 years, from 2009 to 2013, results in a total of 4925 firm-year-observations. OLS regressions are carried out to measure conditional conservatism, price value relevance and accrual intensity. Results show that US based firms are more conservative in their accounting practice and therefore have lower value-relevant financial information. European firms, on the other hand, appear to have low levels of conservatism and high value relevance. The presence of accruals and the relation between conservatism and price value relevance did not appear to have a positive relation. However, the regression did show another relation. Interestingly, the presence of accruals is negatively related to conservatism and positive to value relevance. In conclusion, IFRS and US GAAP compliance do not appear to have relational differences regarding conservatism and value relevance. Even more so, results show equal relational directions in the presence of accruals.

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Keywords

Standard setters, accounting standards, value relevance, conservatism, income statement approach, valuation, accounting information.

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1. INTRODUCTION

Anno 2015, the European Union (EU) and the United States (US) are talking terms over the creation of a Transatlantic Trade and Investment Partnership (TTIP). The aim of the TTIP is to establish a partnership which, by breaking down economic barriers (e.g.: tariffs, restrictions, quotas), should improve the current trade situation between the EU and US. Eventually, the TTIP will lead to more welfare and higher utility through the establishment of new jobs, economic growth, lower prices and a higher variety of products (European Commission, 2015).

Before the TTIP will be established, both parties have to discuss political, economic, social, environmental and legal differences. One of these discussions is the accounting practice that will be used in the TTIP for financial reporting. The purpose of good financial reporting is to provide investors and other stakeholders with relevant and reliable information. The mandatory accounting practice in the EU is the International Financial Reporting Standard (IFRS), whilst the US uses the Generally Accepted Accounting Principles (GAAP). These two are worldwide the two dominant accounting practices and it is likely that the new accounting standard, after converging, will become the universally used practice. Hence, convergence of EU's and US' accounting standards will probably be key for the establishment of a uniform 'international accounting language'.

According to the Financial Accounting Standard Board (FASB), the most important characteristics of good financial reporting are 'reliability' and 'relevancy'. As well as the FASB, the American Institute of Certified Public Accountants' (AICPA) Jenkins Committee (1991) found the same results with regard to the most important financial reporting characteristics. Even more so, also academics came to the conclusion that relevancy and reliability are the most important properties of financial information (Barth, et al. 2001; Jonas & Blanchet, 2000). In addition, Barth, et al. (2001) combined the two properties and used it to describe the concepts of 'value relevance'. Financial information is said to be value relevant if it is associated with market values (Barth, Beaver, & Landsman, 2001). There is much literature about value relevance under different accounting standards. One of main causes, explaining differences in value relevance, is related to the level of conservatism in accounting. Different accounting standards tend to favor, or cause more, conservative behavior than others (Barth et al. 2001; Basu 1997; Penman and Zhang 2002; Van Tendeloo & Vanstraelen, 2005). For example Pham (2009) found that firms complying IFRS appear to be more conservative, whereas Gordon, Jorgensen and Linthicum (2008) found the opposite to be true.

Both conservatism and value relevance have been core subjects in the accounting literature. One of the trends that researchers are particularly interested in is the decline in value relevance. Some argue that value relevance is declining because: "accounting is broken", and is no longer representing what is important (Dontoh, Radhakrishnan & Ronen, 2004). Others argue that the decline in value relevance is caused by increased conservatism in accounting (Francis & Schipper, 1999). There are even researchers who argue that there is no significant relation between increased conservatism and declined value relevance (Balachandran & Mohanram, 2011). Hence, conservatism in accounting might only be partly explaining the decline in value relevance.

To sum up, literature states that different types of accounting standard result in different levels of conservatism and that increased conservatism might be the reason for declined value relevance. This thesis combines both subjects and focuses on the relational difference between value relevance and conservatism under different accounting standards. So, in view of the TTIP, this paper will answer the following research question: "to what extent is the relation between conservatism and value relevance different under US' GAAP and EU's IFRS?"

The answer to this question may be of potential interest to a broad diversity of people. Aside from firms operating in the TTIP, the answer might also be relevant for auditors, private and institutional investors, governmental agencies, and politicians that are currently negotiating the TTIP. In addition, this research will add to the already existing pool of literature examining value relevance, conservatism and differences in accounting standards.

2. LITERATURE REVIEW

2.1 Conservatism

2.1.1 Concept and theory

Traditionally, conservative accounting has been described by the following expression: "anticipate no profits, but anticipate all losses" (Bliss, 1924). Nowadays, the literature is split into two types of conservatism. On one hand, conservatism is the decision of writing down in response to 'bad' news while not writing up in response to 'good' news (Basu, 1997), also known as 'conditional conservatism' (Beaver & Ryan, 2005) and the 'income statement approach' (Zhang, 2000). On the other hand, conservatism is the undervaluation of net assets by pre-determined accounting practices (Kieso et al., 2004), also known as unconditional conservatism (Beaver & Ryan, 2005) and the 'balance sheet approach' (Zhang, 2000).

There is a clear gap in the literature lacking an explanation of why firms want to be conservative. Hence, a theory solely for conservative behavior is missing. Nevertheless, there are broader theories that can help to understand why regulators, standard setters and firms tend to be conservative. Some argue that conservative behavior is determined by the socio-cultural background of an individual and the intention to avoid risk by being conservative (Hofstede & McCrae, 2004). Others argue that firms want to be conservative because "conservatism benefits users of the firm's accounting reports" (Watts 2003a, p209). According to Watts (2003a) conservatism in firms exist because of contracts between different stakeholders and because it is part of the organization. Conservative accounting is a way to deal with 'moral hazards' which arise due to 'asymmetric information', 'asymmetric payoffs', a 'limited horizon' and 'limited liability' (Watts, 2003a). The idea that asymmetric information is a reason for conservative behavior was already suggested by Lambert (2001) in his paper: "Contracting Theory and Accounting". Lambert (2001) states that contracting theory is a theory that focuses on the behavior of people, when both parties tend to have different incentives to perform due to asymmetry. This idea of 'moral hazards' and information asymmetry amongst various parties is also used by Morris (1987) in his theory about the agency problem. Second, 'asymmetric payoffs' are related to litigation costs (e.g.: prosecution costs) which tend to be higher when assets are overstated relative to when assets are understated (Watts, 2003a). Third, a 'limited horizon' is related to the taxation and reporting of profits and losses, "asymmetric recognition of gains and losses enables managers of profitable firms to reduce the present value of taxes and increase the value of the firm" (Watts 2003a, p209). Hence, there is an incentive for earnings management. Lastly, 'limited liability' is, like the shareholder litigation costs, related to the cost of being wrong. There is asymmetry in standard setters and regulators' costs because they are more likely to face criticism when firms overstate relative to when firms understate (Watts, 2003a). This

asymmetry between standard setters, regulators and firms is also consistent with the opportunistic behavior assumption in Agency Theory (Morris, 1987).

2.1.2 How is conservatism examined?

Literature shows various ways in which conservatism can be examined and measured. All types of measurement can be put into either one of these two groups, the 'balance sheet approach' or the 'income statement approach'. The former is a measure of unconditional conservatism, which focuses on pre-determined accounting policies, and the latter is a measure of conditional conservatism, which is situational and event-driven (e.g.: 'what to do in a given situation'?) (Beaver and Ryan, 2005).

The most often used measurement models for the balance sheet approach, examining unconditional conservatism, are those of Beaver and Ryan (2001), the model of Penman and Zhang (2002), the Feltham-Ohlson valuation model and the accrual measurement model of Givoly and Hayn (2002). Beaver and Ryan's (2001) method, also called BR-CONS, uses book-to-market ratios and returns taking into account fixed time effects. The model is used to measure the downward bias in book values relative to market values, indicating conservative accounting. Penman and Zhang's (2002) method, also called C-SCORE, uses R&D and advertisement expenses capitalized for a specific year, and LIFO reserves scaled by net operating assets. This method is used to uncover 'hidden reserves' which are indications of conservative accounting (Penman & Zhang, 2002). The Feltham-Ohlson valuation model examines the degree of net asset undervaluation, by regressing the market value of abnormal earnings, assets and investments (Watts, 2003b). Lastly, the Givoly and Hayn (2000) approach uses accrual intensity as an indicator of conservatism.

The most often used measurement models for the income statement approach, examining conditional conservatism, are the model of Basu (1997), the model of Khan and Watts (2009) and the Asymmetrical Accrual to Cash-Flow (AACF) model of Ball and Shivakumar (2005). The Basu model examines the relation between earnings and stock returns. In this model, returns are used as a dummy variable for news. When returns are negative the dummy variable takes the value 1 indicating 'bad' news and when returns are positive the dummy variable takes the value of 0 indicating 'good' news. There has been some criticism on the Basu model as it does not consider or take any firm-specific factors into account (Khan & Watts, 2009). In addition, the model appears to be biased as Dietrich et al. (2007) found that results showed firms were conservative while they were not in reality. Furthermore, one of the parameters in the Basu model is 'return' which, if mispriced, will not give a good proxy for 'bad' or 'good' news (French, Schwert, & Stambaugh, 1987). Khan and Watts (2009) tried to improve the Basu model by adding firm-specific factors such as size, market-to-book and leverage. The firm specific factors are used to determine firm's investment opportunities which, according to them, have effect on the level of conservatism (Khan and Watts, 2009). Downside of this model is the fact that it can only be used in countries which share the same institutional framework as the US (Watts, 2003b). The AACF-model of Ball and Shivakumar (2005) can, in contrast to Basu based models, be used for non-listed firms. The AACF-model does not proxy for 'good' or 'bad' news. Instead, it proxies for negative cash-flows scaled by total assets, which indicate conservative accounting. Furthermore, the model uses accruals scaled by total assets as dependent variable and cash flows scaled by total assets as independent variable.

2.1.3 Findings in conservatism literature

The main indication of conditional conservatism is the timelier loss recognition in response to 'bad' news (e.g.: Basu, 1997; Watts, 2003a; Givoly, 2000). This means that 'bad' news would present itself timelier than 'good' news, indicating conservatism.

The conservatism literature shows context dependent research where conservatism has been examined under different accounting standards. Andre and Filip (2012) examined the level of conservatism after the mandatory adoption of IFRS in the EU and found that conservatism had declined. They analyzed 7378 firm-year-observations over a period of 5 years from 2003 to 2007 and used the Basu model to do so. In addition, Andre and Filip (2012) also analyzed country specific factors that could lead to a decline in conservatism. These country specific factors include: code versus common law, level of perceived governance, shareholder protection and enforcement, countries with important debt markets and countries with less developed equity markets. Pham (2009) on the other hand, examined the difference in conservatism complying IFRS or US GAAP. His results show that firms complying IFRS tend to have smaller book-to-market ratios and therefore tend to be more conservative than firms complying US GAAP.

Other parts in the conservatism literature focus on unconditional conservatism which is the downward bias in book values. Balachandran and Mohanram (2011) focused on unconditional conservatism as prior research had identified it as the main driving force for the decline in value relevance (Lev and Zarowin, 1999). Their research analyzed 100984 firm-year-observations over a period of 30 years from 1975 to 2004. Consistent with prior findings they found that conservatism had increased. Correspondingly, they identified two possible causes for the increased conservatism. First, there has been an increase in accounting assets that are, in general, more subjective to conservative behavior (e.g.: intangible assets). Second, financial reporting simply has become more conservative due to timelier loss recognition.

In conclusion, current trends and findings in conservatism are sometimes contradicting, making it difficult to draw a single conclusion. Watts (2003b) found that these contradicting results are caused by the effect of time-series in research, variations across firms, variations across countries (e.g.: institutional differences), contractual variations and discrimination among conservatism explanations.

2.2 Value relevance

2.2.1 Concept and theory

Value relevance is the combination of 'reliability' and 'relevancy' which are the most important characteristics of financial data (Barth et al., 2001). Financial information is said to be value relevant if it is associated with market values (Barth et al., 2001; Lev and Zarowin, 1999; Francis and Schipper, 1999). Most studies that examine value relevance do not offer any underlying explanation of their methodology which leads to lack of understanding in the underlying logic (Holthausen & Watts, 2001). Nonetheless, the two most used theories explaining, and related to, financial reporting are 'direct valuation theory' and 'inputs to equity valuation theory' (Holthausen & Watts, 2001; Balachandran & Mohanram, 2011).

Direct valuation theory states that accounting earnings should be associated with market values. In addition, according to the direct valuation theory, standard setters and regulators want to know which book values are associated with which market

values. Hence, the theory assumes that standard setters and regulators are interested in which variable is more, or most, associated with market value changes (Dhaliwal et al., 1999). However, the FASB refutes this assumption and fully contradicts direct valuation theory as an explanation of value relevance. "Financial accounting is not designed to measure directly the value of a business enterprise, but the information it provides may be helpful to those who wish to estimate its value" (FASB 1978, viii). In addition, the International Accounting Standards Boards (IASB), whom is responsible for the IFRS, also does not support the direct valuation assumption (IASB, Conceptual Framework for Financial Reporting, section: 1.35(a)-(e)). The inputs to equity valuation theory on the other hand, state that the role of accounting data is to provide information for valuation model inputs (Holthausen & Watts, 2001). This, according to the FASB, is only partly true as financial reporting has a multitude of functions and objectives (Financial Accounting Standard Board, 2010). According to Barth (1994), incremental association studies provide the best explanation for value relevance theory as these studies use 'standard-setting theory' as underlying explanation. This theory suggests that the statements made by accounting regulators should determine whether accounting practices are value relevant or not (Barth, 1994; Holthausen & Watts, 2001). Instead of focusing on shareholders and investors this theory revolves around standard setters to determine whether financial information is value relevant.

2.2.2 How is value relevance examined?

The value relevance literature distinguishes between price value relevance, return value relevance and value relevance from perfect foresight. Price value relevance measures the adjusted R^2 of regression with stock price as dependent variable and book value per share and earnings per share as independent variables (e.g.: Francis and Schipper (1990), Lev and Zarowin (1999)). Return value relevance also measures the adjusted R^2 of regressions but takes returns as dependent variable and earnings and level of earnings as independent variables, also known as the Easton and Harris model (1991). Lastly, the perfect foresight measure examines the stock returns that could have been earned when investors would have had perfect foresight and thus determines the accuracy of book values.

There are a few known problems with the before mentioned measurement models. First, Kothari and Zimmerman (1995) concluded that price models, in general, have a less biased earnings response coefficient compared to return models. Therein against, return models face less econometric problems in comparison with price models (Kothari and Zimmerman, 1995). Hence, depending on the research context both price and return models may be effective (Kothari & Zimmerman, 1995). Furthermore, Balachandran and Mohanram (2011) also found downsides to the value relevance measures. First, most measures of value relevance focus on bottom-line accounting numbers instead of line accounting numbers. Second, there has been an increase in financial disclosures making it more difficult to get a full image of a firm's assets and liabilities. Third, current value relevance measures may also capture other value, value of non-financial information, which disrupts the value relevance as it might deviate from the true value.

Other methods used to measure value relevance are the balance sheet model, the earnings model and the Ohlson model. The balance sheet model is used on the premise that market value of equity is equal to the market value of all assets minus the market value of all liabilities (Schiebel, 2007). The earnings measure is particularly useful for listed firms because it regresses the market capitalization on earning variables. Lastly, the Ohlson model states that the stock price of a firm can be written as a linear function of its earnings and book values. This model offers a benchmark when examining the relation between financial data and other information (Harris, Lang, & Mőller, 1994).

2.2.3 Findings in value relevance literature

Most research examined the difference in value relevance after adoption or between different accounting standards. Devalle (2010) researched whether value relevance improved after the mandatory adoption of IFRS in the EU. They used the Ohlson model to measure value relevance on a sample of 3721 firms listed on five European stock markets. Their results indicate that value relevance has improved after the mandatory adoption. This is in line with the findings of Morias and Curto (2009) who used the earnings model on a sample of 6977 listed European firms, over a period of 6 years from 2000 to 2005. These results are in line with the findings of Kargin (2013) who analyzed listed firms in Turkey from 1998 to 2011. In addition, Morias and Curto (2009) concluded that there are additional differences in value relevance caused by country specific factors such as the tax system and the level of legal enforcement. Soderstorm and Sun (2007) share this idea and argue that, even after the mandatory adoption of IFRS, differences between countries exist because of country specific institutional factors.

Lin, Riccardi and Wang (2012) did not examine value relevance after the adoption of a new accounting standard. Instead, they analyzed a sample of high-tech German firms and researched the differences in value relevance between two accounting standards, German GAAP and IFRS. Their results show that IFRS leads to more earnings management and less timely loss recognition. However, the main and somewhat contradicting finding was higher value relevance for firms complying GAAP. These results contradict previous findings as previous findings found that value relevance had increased after adoption of IFRS from GAAP. Atwood et al. (2011) also examined the differences in value relevance between two different accounting standards. They analyzed 8405 firms spread over 33 countries over a period of 7 years, from 2002 to 2008, and looked at the association between current accounting earnings and future cash flows. Their results show that earnings reported complying US GAAP are more associated with future cash flows than those under IFRS.

Some researchers did not find any significant difference in value relevance among US GAAP or IFRS (Van der Meulen et al., 2007). Van der Meulen et al. (2007) examined 128 firms and only found differences regarding the predictability, which was superior for firms complying US GAAP. Likewise, Dontoh, Radhakrishnan and Ronen (2004) came to the conclusion that value relevance was not increasing or decreasing because of conservatism. Instead, their results indicate that value relevance had declined because of an increase in non-information based trading.

2.3 Relationship between conservatism and value relevance

This part of the literature review will focus on research done on the relationship between conservatism and value relevance. Balachandran and Mohanram (2011), who studied the assertion of increasing conservatism being the driving force of declining value relevance, focused on firms in the US. Their results were unexpected as they did not find statistical evidence that unconditional conservatism was the main driving force for declining value relevance. This contradicts the results of Lev and Zarowin (1999) who found unconditional conservatism to be the main driving force for decreased value relevance. Even more unexpected, firms with increasing unconditional

conservatism showed a smaller decline in value relevance than firms with steady unconditional conservatism.

Others focused on conditional conservatism instead of unconditional conservatism in relation to value relevance. Kousenidis, Ladas and Negakis (2009) researched the relationship between conditional conservatism and return value relevance in a European context. They analyzed a sample of 127 listed firms and looked at the relationship before the mandatory adoption of IFRS. They divided the time period in two phases, before and after the crisis. Their results show that conditional conservatism increased after the crisis as regulations on accounting policies were sharpened. Furthermore, they found that value relevance had declined from 1989 to 2003. Almost like the results of Balachandran and Mohanram (2011), Kousenidis, Ladas and Negakis (2009) found that firms with higher levels of conservatism tend to have higher value relevance, whereas firms with lower levels of conservatism tend to show lower value relevance.

Brown et al. (2006) did not focus on the EU or US but examined the relation on an international scale. Moreover, Brown et al. (2006) also included country specific factors when examining the relationship between conservatism and value relevance. Their research included 20 countries from 1993 to 2004. Brown et al. (2006) used the Basu model and the AACF-model to measure conditional conservatism. After finding a positive relation, between conditional conservatism and value relevance in countries with high accrual intensity, they investigated the effect of accruals on the relationship between value relevance and conservatism. They concluded that the relationship between conservatism and value relevance depends on the accrual intensity. This might be a reason of why Balachandran and Mohanram (2011) did not find a significant relationship between declining value relevance and increasing conservatism as they did not focus on the accrual intensity.

Maganaris (2011) also looked at the relationship between conservatism and value relevance, taken into account, the effects that IFRS had on this relationship. They examined a period from 1999 to 2008 which was divided into two sub-periods; 1999 to 2004 and 2005 to 2008. By subdividing the period of analysis they got a clear idea of what happened after the mandatory adoption of IFRS in 2004. Their measurement model for value relevance was based on the Easton and Harris model of earnings. For measuring conditional conservatism they used the Basu measure. In conclusion, they found that more conditional conservatism is related to less value relevance of earnings after the adoption of IFRS, indicating a negative relationship. However, these results were not applicable for Germany.

2.4 Conclusion

Most literature shows that value relevance has increased after the adoption of IFRS. However, differences amongst countries still exist due to institutional factors (Soderstorm & Sun, 2007). The conservatism literature is indifferent, in the sense that, results vary a lot depending on the research carried out. Literature on the relationship between conservatism and value relevance also report different results but most studies found evidence of a negative relation between conservatism and value relevance. This literature review formed the basis for developing the hypotheses which will be explained in the next section. The next part will also elaborate on how each hypothesis will be tested and the regression models used to determine the level of conservatism, value relevance and accrual intensity. In addition, regression models will be based on models used in the literature.

3. METHOD

3.1 Accounting standard, conditional conservatism and price value relevance

This thesis investigates whether there is a difference between price value relevance and conditional conservatism complying different accounting standards, i.e.: IFRS and US GAAP. Accountants are more likely to be conservative in situations facing 'bad' news than situations of 'good' news. Immediate transparency in accounting numbers facing 'bad' news leads to maximization of personal utility for the accountant. Firstly because the transparency of 'bad' news creates a situation in which it only can get better. Secondly, by not acting in response to 'good' news, the current situation remains unchanged while the future situation becomes more promising. Hence, due to opportunistic behavior and timelier loss recognition, I expect that there will be a negative relation between conditional conservatism and price value relevance. This is in line with the results of Kousenidis, Ladas and Negakis (2009) and Maganaris (2011). Eq. (1)[1] is used to investigate the level of conditional conservatism. In addition, eq. (2) [2] is used to examine conditional conservatism by controlling for growth options and leverage. Lastly, eq. (3)[3] examines the level of price value relevance. In order to test these hypotheses a sample of 616 EU firms and 369 US firms over a period of 5 years from 2009 to 2013 will be analyzed. The hypotheses are as follows:

Hypothesis 1. Firms complying US GAAP are likely to exhibit a negative relation between conditional conservatism and price value relevance.

Hypothesis 2. Firms complying IFRS are likely to exhibit a negative relation between conditional conservatism and price value relevance.

$$E_{i,t} = \alpha_0 + \beta_1 NW_{i,t} + \beta_2 R_{i,t} + \beta_3 NW_{i,t} * R_{i,t} + \varepsilon_{i,t} \quad \textbf{(1)}.$$

Where

$E_{i,t}$ Is earnings measured as net income of firm 'i' in year 't' scaled by beginning of the period market value,

$R_{i,t}$ Is return for firm 'i' in year 't', measured by subtracting the initial stock price from the ending stock price (period 1), adding dividends for the period and dividing this by the initial stock price,

$NW_{i,t}$ Is a dummy variable for news that takes 1 if $R_{i,t} < 0$, indicating 'bad' news, and takes 0 otherwise,

$\varepsilon_{i,t}$ Is the error term.

To control for leverage and growth options modifications were made in eq. (1) resulting in eq. (2). Controlling for growth options is important as it tends to be associated with information asymmetry and "conservatism increases following increases in information asymmetries" (LaFond and Watts, 2008, p.476). In addition, LaFond and Watts (2008) also control for leverage measured as total liabilities scaled by shareholders' funds. The presence of debt makes managers act more conservative as debt repayments have to be made which leads to lower tolerance for risk.

$$E_{i,t} = \alpha_0 + \beta_1 NW_{i,t} + \beta_2 R_{i,t} + \beta_3 NW_{i,t} * R_{i,t} + \beta_4 G_{i,t} + \beta_5 G_{i,t} * NW_{i,t} + \beta_6 G_{i,t} * R_{i,t} + \beta_7 G_{i,t} * R_{i,t} * NW_{i,t} + \beta_8 LV_{i,t} + \beta_9 LV_{i,t} * NW_{i,t} + \beta_{10} LV_{i,t} * R_{i,t} + \beta_{11} LV_{i,t} * R_{i,t} * NW_{i,t} + \varepsilon_{i,t}$$ **(2).**

[1] Eq. (1) is based on Givoly and Hayn (2000, p.292) and Basu (1997, p.13).
[2] Eq. (2) is based on Latridis (2011, p. 95)
[3] Eq. (3) is based on Balachandram & Mohanram (2011, p. 276)

Where

$E_{i,t}$ Is earnings measured as net income of firm 'i' in year 't' scaled by beginning of the period market value,

$R_{i,t}$ Is return for firm 'i' in year 't', measured by subtracting the initial stock price from the ending stock price (period 1), adding dividends for the period and dividing this by the initial stock price

$NW_{i,t}$ Is a dummy variable for news that takes 1 if $R_{i,t} < 0$, indicating 'bad' news, and takes 0 otherwise,

$G_{i,t}$ Is total market value scaled by total book value of firm 'i' in year 't',

$LV_{i,t}$ Is total liabilities scaled by shareholders' funds of firm 'i' in year 't',

$\varepsilon_{i,t}$ Is the error term.

The most important coefficients in eq. (2) are $\beta_3 (R * NW)$, $\beta_7 (G * R * NW)$ and $\beta_{11} (LV * R * NW)$. The β_3 gives an indication of the incremental increase in the relationship between earnings and return when return is negative. Hence, when β_3 is positive and significant it means that 'bad' news is reflected timelier in earnings than otherwise, indicating conditional conservatism. Furthermore, a positive and significant β_7 means that firms have information asymmetry caused by growth options. Growth options are unidentifiable for outsiders so the information asymmetry between managers and outsiders is expected to be larger when more growth options are present. Thus, more information asymmetry means higher levels of conditional conservatism. Lastly, a significant β_{11} measures the "contracting demand" for conservative investments as leverage measures the relative non-growth option investments (LaFond and Watts, 2008). A larger amount of liabilities disciplines managers to be more careful as investments are made with someone else's capital, which has to be paid back. In addition, leverage tends to decline in the presence of growth options because leverage measures the relative non-growth options (LaFond and Watts, 2008).

$$\ln SP_{i,t} = \alpha_0 + \beta_1 \ln EPS_{i,t} + \beta_2 \ln BVPS_{i,t} + \varepsilon_{i,t} \quad \textbf{(3)}.$$

Where

$\ln SP_{i,t}$ Is the natural log of stock price for firm 'i' in year 't',

$\ln EPS_{i,t}$ Is the natural log of earnings per share for firm 'i' in year 't',

$\ln BVPS_{i,t}$ Is the natural log of book value per share for firm 'i' in year 't',

$\varepsilon_{i,t}$ Is the error term.

Eq. (3) is used to determine price value relevance. The most important statistic is the adjusted R^2 of regressions because a high and significant R^2 is indicating high price value relevance and a low R^2 is indicating low price value relevance. There are two known problems with eq. (3). First, the regression constrains the coefficients of earnings per share (ln EPS) and book value per share (ln BVPS) to represent one coefficient for all industries. Since industries can differ a lot in the variables used, Balachandram and Mohanram (2011) suggest to control for industries. However, Balachandram and Mohanram (2011) found, after they controlled for industries, that there was no significant difference on the adjusted R^2 so it will not be implemented in the regression model. Second, Givoly and Hayn (2002) found that the incidence of loses has increased over time. Balachandran and Mohanram (2011) solved this problem by controlling for losses. Results showed a significant impact when losses were controlled for. Hence, it will be implemented in the regression model. This thesis will control for losses by creating a dummy variable that takes 1 when earnings per share (ln EPS) are negative and 0 otherwise. Eq. (4)[4] displays the new regression model including the dummy variable.

$$\ln SP_{i,t} = \alpha_0 + \beta_1 \ln EPS_{i,t} + \beta_2 \ln EPS_{i,t} * L_{i,t} + \beta_3 \ln BVPS_{i,t} + \beta_4 \ln BVPS_{i,t} * L_{i,t} + \varepsilon_{i,t} \quad \textbf{(4)}.$$

Where

$\ln SP_{i,t}$ Is the natural log of stock price for firm 'i' in year 't',

$\ln EPS_{i,t}$ Is the natural log of earnings per share for firm 'i' in year 't',

$\ln BVPS_{i,t}$ Is the natural log of book value per share for firm 'i' in year 't',

$L_{i,t}$ Is a dummy variable that takes 1 if $\ln EPS_{i,t} < 0$, and 0 otherwise.

$\varepsilon_{i,t}$ Is the error term.

3.1.1 Robustness test hypothesis 1 and 2

Another way to examine conservatism is by focusing on earnings changes. Eq. (5)[5] is used to measure earnings changes in conservatism. Following Basu's (1997) findings it becomes apparent that, in contrast to 'good' news, earnings changes from 'bad' news are more likely to reverse in the future. The reversal of negative earnings changes might be an indication of earnings conservatism. Hence, eq. (5) will be used to test the robustness of conditional conservatism following eq. (2).

$$\Delta E_{i,t} = \alpha_0 + \beta_1 D\Delta E_{i,t-1} + \beta_2 \Delta E_{i,t-1} + \beta_3 \Delta E_{i,t-1} * D\Delta E_{i,t-1} + \varepsilon_{i,t} \quad \textbf{(5).}$$

Where

$\Delta E_{i,t}$ Is change in net income of firm 'i' in year 't' scaled by market value,

$D\Delta E_{i,t-1}$ Is a dummy variable that takes 1 if $\Delta E_{i,t-1} < 0$ in year 't-1' and 0 otherwise,

$\Delta E_{i,t-1}$ Is change in net income of firm 'i' in year 't-1', scaled by market value,

$\varepsilon_{i,t}$ Is the error term.

A significant negative β_3 ($\Delta E * D\Delta E$) would give evidence of earnings conservatism through reverse of negative earnings changes. However, it is important to note that this robustness test does not take into account the growth options and leverage as did eq. (2).

3.2 Conditional conservatism, price value relevance and accrual intensity

Conditional conservatism can be measured in a multitude of ways but the two most often used models either based on accruals or the Basu measure. Concerning accruals, Givoly and Hayn (2000) suggest that accruals, over time, are an indication of conservatism. Moreover, Brown et al. (2006) found that there is a positive relationship between conditional conservatism and price value relevance in countries where there is high accrual intensity. This paper will also examine the accrual intensity of firms in the US and the EU. Watts (2003a) states that in the presence of accruals, conservatism decreases the opportunistic behavior of managers. In addition, accruals provide managers with more choices in how to act in a given situation providing better value-relevant accounting information (Brown 2006; Ball and Shivakumar 2006). Hence, in the presence of accruals,

[4] Eq. (4) is based on Balachandran & Mohanram (2011, p.277)
[5] Eq. (5) is based on Latridis (2012, p. 106).

conservatism decreases the opportunistic behavior of managers more, than in firms where presence of accruals is less (Brown et al., 2006). Therefore, I expect that conservatism and value relevance will be higher in presence of accruals as there is less opportunistic behavior and more choices in how to act in a given situation. Moreover, the expectation of higher value relevance is also in line with prior hypotheses 1 and 2 as these are also built on the assumption that the presence of opportunistic behavior leads to a negative relation. Furthermore, another reason is that accrual accounting should provide better value-relevant financial information, based on results of prior research (Brown 2006; Ball and Shivakumar 2006). Eq. (6)[6] is used to measure accruals. To test these hypotheses a sample of 616 European firms and 369 US firms over a period of 5 years from 2009 to 2013 will be analyzed. The hypotheses are as follows:

Hypothesis 3. The relation between conditional conservatism and price value relevance is positively related to the presence of accruals for US GAAP complying firms.

Hypothesis 4. The relation between conditional conservatism and price value relevance is positively related to the presence of accruals for IFRS complying firms.

$$ACC_{i,t} = \alpha_0 + \beta_1 DCF_{i,t} + \beta_2 CF_{i,t} + \beta_3 DCF_{i,t} * CF_{i,t} + \varepsilon_{i,t} \quad (6).$$

Where

$ACC_{i,t}$ Is accruals scaled by total assets for firm 'i' in year 't', accruals measured as: $\Delta Inventory + \Delta debtors + \Delta other\ current\ assets - \Delta creditors - \Delta other\ current\ liabilities - depreciation$,

$CF_{i,t}$ Is operating cash-flow scaled by total assets for firm 'i' in year 't',

$DCF_{i,t}$ Is a dummy variable that takes 1 if $CF_{i,t} < 0$ and takes 0 otherwise,

$\varepsilon_{i,t}$ Is the error term.

The $\beta_3(DCF * CF)$ is the coefficient that determines conservatism. It shows that accruals are more likely when operating cash-flows scaled by total assets are below zero. Hence, when β_3 is positive and significant it means that there is a high accrual intensity and when β_3 is low it means low accrual intensity.

4. DATA

For testing the hypotheses, this study extracted a sample of firms originating from two geographical locations, i.e. the European Union (28) and the United States. The sample only consists of listed firms that practice either IFRS or US GAAP (Local) as these are the units of analysis. Financial data was collected from the ORBIS database. The search provided data for 985 listed firms, 616 firms from the EU complying IFRS and 369 firms from the US complying US GAAP. 985 listed firms over a period of 5 years, from 2009 to 2013, leads to a total of 4925 firm-year-observations. The most recent year 2014 is excluded as not all firms have data for this year available. After accounting for missing values and outliers the total amount of firm-year-observations for the IFRS group is 2834 and for the US GAAP group is 1759. Furthermore, the hypotheses will be tested using OLS regression analysis.

This thesis accounts for residuals that are not normally distributed by drawing a histogram of residuals (Appendix A). It will account for heteroscadesticity by plotting residuals and predicted Y-values. This showed a normal distribution, ruling out the problem of heteroscadesticity (Appendix B). Lastly, multicollinearity was examined by looking at the correlation of the independent variables (Appendix C). Both the VIF and tolerance levels show multicollinearity but there are some situations in which, the problem of multicollinearity, safely can be ignored (Statistical Horizon, 2012). First, when variables with high VIFs are control variables and the variables of interest do not have high VIF scores. Second, when high VIF scores are caused by products of other variables. Third, when variables with high VIF scores are indicator, or dummy variables, which represent categorical variables. In conclusion, there is no multicollinearity that effects the data in a way which makes the numbers difficult to interpret. Lastly, this thesis uses interaction variables in its regression models. The interaction variables were created by the product of two centered variables. The centered variables were created by subtracting the mean of a variable from its original value.

5. RESULTS

5.1 Descriptive statistics

Table 1 presents the descriptive statistics for the firm samples analyzed. The IFRS group displays the mean and standard deviation (SD) for firms complying IFRS and the US GAAP group displays the mean and SD for firms that comply US GAAP.

Table 1

Descriptive statistics.

	IFRS group		US GAAP group	
Variables	Mean	SD	Mean	SD
E	79.789	49.752	63.137	28.223
G	0.002	0.002	0.003	0.006
R	0.267	0.381	0.231	0.309
LV	1.388	0.903	1.592	1.334
ln SP	3.190	1.379	3.581	0.640
ln EPS	0.494	1.487	1.277	1.238
ln BVPS	-0.295	1.408	2.682	0.693
ACC	0.043	0.056	0.039	0.066
CF	0.107	0.069	0.118	0.066
Sample size	N=2834		N=1759	

The IFRS sample consists of 2834 firm-year-observations whilst the US GAAP sample consist of 1759 firm-year-observations. E is net income scaled by market value. G is market value scaled by book value of a firm. LV is total liabilities scaled by shareholders' funds. Ln SP is natural log of stock price at the end of the year. Ln EPS is the natural log of earnings per share. Ln BVPS is the natural log of book value per share. ACC is accruals measured as Δinventory + Δdebtors + Δother current assets - Δcreditors - Δother current liabilities - depreciation. CF is cash flow scaled by total assets. R is return measured as $(P_1 - P_0) + D/P_0$ where P_1 is the ending stock price, P_0 is initial stock price and D is dividends.

The descriptive statistics show that firms complying IFRS have higher earnings (E) but also more variety in earnings than firms complying US GAAP. Furthermore, US GAAP compliance tends to have more growth options (G) than IFRS compliance. Also the ratio between liabilities and shareholders' funds (LV) appears to be higher, on average, for firms who comply US GAAP. All stock related variables, stock price (ln SP), earnings per share (ln EPS) and book value per share (ln BVPS) show a higher mean for firms complying US GAAP with the exception of returns (R) which are higher in the EU. Furthermore, accruals (ACC) tend to be higher for IFRS compliance whereas

[6] Eq. (6) is based on Brown (2006, p. 615).

operating cash flows (CF) appear to be higher for US GAAP compliance. Lastly, descriptive statistics are gathered from a sample of 2834 firm-year-observations for the IFRS group and 1759 firm-year-observations for the US GAAP group. The following sections will elaborate on the results starting with hypothesis 1 and 2 followed by hypothesis 3 and 4.

5.2 Accounting standard, conditional conservatism and price value relevance

Panel A and B of table 2 show that hypothesis 1 holds with an adjusted R^2 of 0.036 statistical significant at $F < 0.01$. Firms complying US GAAP are likely to exhibit a negative relation between conditional conservatism and price value relevance. The first statistic of importance shows a negative coefficient of -0.074 for the interaction variable news and returns ($NW * R$). This negative coefficient is an indication of 'bad' news not being reflected timelier than otherwise. Hence, conditional conservatism is not present through timelier loss recognition. However, this coefficient is neither statistical nor economical significant, questioning the reliability. Nevertheless, results contradict the findings of Basu (1997) who concluded that timelier loss recognition was present and therefore also conservative behavior. The second statistic is growth options (G). The US GAAP group shows a positive economic and statistical significant coefficient of 0.155 for growth options ($G * R * NW$) statistical significant at $p < 0.05$. Growth options are unidentifiable for outsiders, so the information asymmetry between managers and outsiders is expected to be larger when growth options (G) are present. More information asymmetry indicates more conditional conservatism as conservatism is a response to information asymmetry (Khan and Watts, 2009). The general idea is that conservatism leads to higher quality of earnings because conservatism yields lower earnings and therefore should have higher earnings quality (Penman & Zhang, 2002). In addition, the combination of conservative accounting and growth options suppresses the earnings and returns leading to reserves. Consequently, as soon as these reserves are used to make investments higher rates of return and earnings are the result. When these changes in investments are merely temporary the real quality of earnings and return could be questionable (Penman & Zhang, 2002). The last statistic of importance is the leverage coefficient ($LV * R * NW$) which is negative and both statistical and economic significant with a coefficient of -0.293, significant at $p < 0.01$. A negative significant coefficient is measuring the "contracting demand" which means that firms with more leverage do not necessary report earnings in a more conservative manner (LaFond & Watts, 2008). When firms take additional funds in the form of liabilities, a situation is created in which conservatism will likely be more present as managers are constrained and more conscious about not being conservative as they have to pay back debt. Findings were expected because leverage tends to decline in the presence of growth options as leverage is the demand for non-growth options (LaFond & Watts, 2008). Hence, the negative coefficient can be explained through the positive coefficient of the interaction variable of growth options ($G * R * NW$). In conclusion, conservative accounting appears to be present for US GAAP complying firms as most of the relevant variables are statistical and economical significant. This supports the findings of Pham (2009); US GAAP compliance leads to less conservative accounting.

Second, table 2 panel B also shows that firms complying US GAAP have a significant adjusted R^2 of 0.348, statistical significant at $F < 0.01$. A significant value of 0.348 implies that price value relevance is low for US GAAP complying firms. The R^2 is low because Balachandran and Mohanram (2011) found on average an adjusted R^2 of 0.700 in price value relevance for US firms in the period of 1975 to 2004. However, due to economic downturns (e.g.: great recession of 2007 to 2009) there is a possibility that conservatism has increased more, (e.g.: stricter governance mechanism) and therefore price value relevance decreased more. This supports the conclusion of LaFond and Watts (2008) who argue that governance mechanism create demand for conservatism which is an efficient mechanisms to mitigate information asymmetry, benefiting shareholders. In conclusion, firms complying US GAAP appear to have high levels of conditional conservatism and low price value relevance indicating a negative relationship. Hence, hypothesis 1 holds.

Table 2

Accounting standard, conditional conservatism and price value relevance.

US GAAP group		IFRS group	
Variables	Coefficients	Variables	Coefficients
Panel A conditional conservatism			
NW	0.032 *(0.351)*	NW	0.056 *(0.831)*
R	-0.070* *(-1.607)*	R	0.030 *(0.781)*
NW * R	-0.074 *(-0.955)*	NW * R	0.028 *(0.497)*
G	-0.106*** *(-2.892)*	G	-0.252*** *(-5.094)*
G * NW	0.085 *(1.158)*	G * NW	0.121* *(1.772)*
G * R	-0.152*** *(-3.490)*	G * R	0.098* *(2.094)*
G * NW * R	0.155** *(2.013)*	G * NW * R	0.122* *(1.729)*
LV	-0.110* *(-1.869)*	LV	0.084* *(1.764)*
LV * NW	-0.277*** *(-2.901)*	LV * NW	0.033 *(0.494)*
LV * R	-0.113** *(-2.314)*	LV * R	0.002 *(0.058)*
LV * NW * R	-0.293*** *(-3.343)*	LV * NW * R	0.018 *(0.322)*
Constant	62.727*** *(44.702)*	Constant	80.373*** *(38.285)*
R^2 adjusted	0.036*** *(7.029)*	R^2 adjusted	0.107*** *(31.857)*
Sample size	N=1759	Sample size	N=2834

***, ** and * point to statistical significance at the 1%, 5% and 10% level (two-tailed). The t-statistic is in parentheses under the coefficients. The F-statistic is in parentheses under the adjusted R^2. The interaction variables were created by the product of two centered variables. The coefficients represent the standardized coefficients. The regression analyzed 985 firms, 369 in the US GAAP group and 616 in the IFRS group. This led to 1759 and 2834 firm-year-observations respectively. The dependent variable (E) is net income scaled by market value, whereas the explanatory variables are return (ln SP), growth options (G) measured as market value scaled by book value and leverage (LV) which are total liabilities scaled by shareholders' funds. NW is a dummy variable that takes 1 when returns are negative, indicating 'bad' news and 0 otherwise.

Panel B price value relevance

ln EPS	-0.061*** *(-2.944)*	ln EPS	0.640*** *(43.988)*
ln EPS ∗ L	0.055*** *(2.686)*	ln EPS ∗ L	-0.122*** *(-10.520)*
ln BVPS	0.586*** *(30.358)*	ln BVPS	0.327*** *(23.012)*
ln BVPS ∗ L	-0.006 *(-0.313)*	ln BVPS ∗ L	0.110*** *(9.755)*
Constant	3.579*** *(270.054)*	Constant	3.111*** *(219.733)*
R^2 adjusted	0.348*** *(235.958)*	R^2 adjusted	0.862*** *(4420.593)*
Sample size	N=1759	Sample size	N=2834

***, ** and * point to statistical significance at the 1%, 5% and 10% level (two-tailed). The t-statistic is in parentheses under the coefficients. The F-statistic is in parentheses under the adjusted R^2. The interaction variables were created by the product of two centered variables. The centered variables were created by subtracting the mean variable from the original variable. The regression analyzed 985 firms, 369 in the US GAAP group and 616 in the IFRS group. This led to 2834 and 1759 firm-year-observations respectively. The dependent variable (ln SP) in panel B is natural logarithm of stock prices, whereas the explanatory variables are earnings per share (ln EPS) and book value per share (ln BVPS). The control variable are losses (L) which is a dummy variable that takes 1 when earnings per share are negative and 0 otherwise.

Panel A and B of table 2 show that hypothesis 2 holds with a significant model of 0.107, significant at F < 0.01. Firms complying IFRS are likely to exhibit low conditional conservatism and high price value relevance. The first statistic of importance shows there is a positive coefficient of 0.028 for the interaction variable news and returns (NW ∗ R). This means conservatism is present as "conservatism results in losses being anticipated in earnings but gains being postponed pending realization" (Basu, 1997, p34). However, the coefficient is not economic nor statistical significant at p > 0.1, reducing the reliability of the coefficient. The second statistic is the interaction variable of growth, returns and news (G ∗ R ∗ NW). The coefficient of this interaction variable is 0.122 and is statistical significant at p < 0.1. This is an indication of information asymmetry between managers and outsiders due to growth options and therefore conditional conservatism. This also supports the results of Khan and Watts (2009) who found that growth options lead to information asymmetry indicating more conditional conservatism as conservatism is a response to information asymmetry. However, this is a sign of conditional conservatism through asymmetry not through earnings. The last statistic of importance is the interaction variable for leverage, return and news (LV ∗ R ∗ NW). This variable shows a positive coefficient of 0.018 insignificant at p > 0.1, nor is the coefficient economical significant. This indicates that the demand for non-growth options for IFRS complying firms is low. Overall, compared to the US, there does not appear to be much conservative accounting for European firms as two out of three statistics show very insignificant economic and statistical coefficients. Hence, conservative accounting in the EU is low. This conclusion supports the results of Gordon, Jorgensen and Linthicum (2008) who found that IFRS compliance leads to less conservative accounting. However, it contradicts the results of Pham (2009) who found that the opposite to be true.

Second, regarding price value relevance, table 2 panel B shows that firms complying IFRS show high price value relevance with a significant adjusted R^2 of 0.862 which is statistical significant at F < 0.01. These results show that accounting numbers under IFRS are closer associated with market values increasing predictability. This results contradict the work of Atwood (2011) who also controlled for losses and found that US GAAP was superior regarding predictability. Differences may be accounted for as Atwood (2011) did not focus on the EU as such but on IFRS compliance worldwide. In conclusion, firms complying IFRS show low conditional conservatism and high price value relevance indicating a negative relationship between conditional conservatism and price value relevance. Hence, hypothesis 2 holds.

5.2.1 Robustness test hypothesis 1 and 2

Table 3 shows the results of the robustness check with regard to conditional conservatism.

Table 3

Robustness test conditional conservatism

US GAAP group		IFRS group	
Variables	Coefficients	Variables	Coefficients
DΔE	-0.022 *(-1.188)*	DΔE	0.024 *(1.109)*
ΔE	0.794*** *(42.165)*	ΔE	0.951*** *(28.740)*
DΔE ∗ ΔE	-0.018 *(1.149)*	DΔE ∗ ΔE	0.857*** *(26.150)*
Constant	5.809*** *(9.945)*	Constant	15.944*** *(16.836)*
R^2 adjusted	0.654*** *(926.388)*	R^2 adjusted	0.352*** *(446.554)*
Sample size	N=1472	Sample size	N=2457

***, ** and * point to statistical significance at 1%, 5% and 10% level (two-tailed). The t-statistic is in parentheses under the coefficients. The F-statistic is in parentheses under the adjusted R^2. The interaction variables were created by the product of two centered variables. The centered variables were created by subtracting the mean variable from the original variable. The parentheses underneath the constant represent the standard error of the constant. The regression analyzed 985 firms, 369 in the US GAAP group and 616 in the IFRS group. This led to 1472 and 2457 firm-year-observations. This is less than previous analyses because not all firms had data available for the year 2008 (lagged year). The dependent variable is change in earnings (ΔE) and the independent variables are change in net income in year t-1 scaled by market value (ΔE_{t-1}), and a dummy variable that takes the value 1 if $\Delta E_{i,t-1} < 0$ and 0 otherwise.

The US GAAP group has a significant model with an adjusted R^2 of 0.654, statistical significant at F < 0.01. The robustness test for the US GAAP group shows a negative coefficient for the interaction variable which is an indication that earnings conservatism, or conditional conservatism, is present through negative earnings changes. However, the coefficient does not appear to be economic or statistical significant as p > 0.1, reducing the reliability of the coefficient. The IFRS group also has a statistical significant model with an adjusted R^2 of 0.352, statistical significant at F < 0.01. Furthermore, the IFRS group shows a positive coefficient for the interaction variable. This is an indication that earnings conservatism is not present for firms complying IFRS. In addition, the interaction coefficient for the IFRS group is both statistical and economical significant at p < 0.01.

In conclusion, the US GAAP group shows a negative coefficient indicating the presence of conservatism. This finding is not in line with the previous findings regarding hypothesis 1. Previous findings showed a negative insignificant coefficient of -0.074, implying no conservatism. Whereas the

robustness test of conservatism found a negative insignificant coefficient of -0.018 indicating earnings conservatism. However, both coefficients are statistical insignificant lowering the reliability of the robustness test with respect to US GAAP and questioning the usefulness. The IFRS group shows a positive coefficient which indicates that conservatism through negative earnings is not present. This finding is also not in line with previous findings regarding hypothesis 2. Previous findings showed a positive insignificant coefficient of 0.028, implying conservatism. Whereas the robustness test found a positive significant coefficient of 0.857, significant at $p < 0.01$, indicating earnings conservatism. In conclusion, there is stronger statistical evidence to believe that conservatism in the IFRS group is not present.

5.3 Conditional conservatism, price value relevance and accrual intensity

Table 4 shows the accrual intensity for US GAAP and IFRS compliance. The most important coefficient is the coefficient of the interaction variable between operating cash flow scaled by total assets and the dummy variable that takes 1 if $CF_{i,t} < 0$ ($DCF * CF$). This coefficient indicates that accruals are more likely when operating cash flows scaled by total assets are below zero. Hence, accrual presence and magnitude.

Table 4

Accrual intensity.

US GAAP group		IFRS group	
Variables	Coefficients	Variables	Coefficients
DCF	-0.226* *(-1.721)*	DCF	0.388*** *(4.522)*
CF	0.183*** *(7.337)*	CF	0.130*** *(6.242)*
DCF * CF	-0.278** *(-2.142)*	DCF * CF	0.312*** *(3.729)*
Constant	0.037*** *(19.855)*	Constant	0.046*** *(33.904)*
R^2 adjusted	0.036*** *(22.846)*	R^2 adjusted	0.015*** *(15.802)*
Sample size	N=1759	Sample size	N=2834

***, ** and * point to statistical significance at the 1%, 5% and 10% level (two-tailed). The t-statistic is in parentheses under the coefficients. The F-statistic is in parentheses under the adjusted R^2. The interaction variables were created by the product of two centered variables. The centered variables were created by subtracting the mean variable from the original variable. The parentheses underneath the constant represent the standard error of the constant. The regression analyzed 985 firms, 369 in the US GAAP group and 616 in the IFRS group. This led to 2834 and 1759 firm-year-observations respectively. The dependent variable (ACC) is accruals, accruals measured as ΔInventory+Δdebtors+Δother current assets-Δcreditors-Δother current liabilities-depreciation, scaled by total assets. The explanatory variables are operating cash-flow scaled by total assets (CF) and a dummy variable (DCF) that takes 1 when CF is negative and 0 otherwise.

The US GAAP group has a significant model with an adjusted R^2 of 0.036, significant at $F < 0.01$. Results show a negative economic and statistical significant coefficient for the interaction variable of -0.278, statistical significant at $p > 0.05$. So, the negative relationship is an indication that accruals are less likely when operating cash flows scaled by total assets are below zero. This means that accrual intensity is low for firms complying US GAAP.

The IFRS group also has a significant model with an adjusted R^2 of 0.015, significant at $F < 0.01$. Furthermore, there appears to be a positive economic and statistical significant coefficient for the interaction variable of 0.312, statistical significant at $p > 0.01$. Hence, accrual intensity is high for firms complying IFRS.

Table 5

Summary of results.

	US GAAP group	IFRS group
Statistics	Coefficients	Coefficients
CC1	-0.074	0.028
CC2	0.155***	0.122*
CC3	-0.299***	0.018
RCC	-0.018	0.857***
VR	0.348***	0.862***
ACC	-0.278**	0.312***

***, ** and * point to statistical significance at the 1%, 5% and 10% level (two-tailed). This table presents a summary of the most important statistics regarding conditional conservatism (CC), robustness check for conservatism (RCC), price value relevance (VR) and accrual intensity (ACC). Conditional conservatism is subdivided into the three statistics of importance: the interaction variable between return and news (CC1), the interaction variable between return, news and growth options (CC2) and the interaction variable between return, news and leverage (CC3).

Table 5 shows that hypothesis 3 is rejected. Hence, the hypothesis that the relation between conditional conservatism and price value relevance would be positively related to the presence of accruals for US GAAP complying firms is rejected. Instead, accruals appear to be positively related to value relevance as US GAAP compliance shows low value relevance and low accrual intensity. In addition, accruals appear to be negatively related to conservatism as there is high conservatism and low accrual intensity. Hence, hypothesis 3 is rejected contradicting the results of Brown et al. (2006). However, "a consistent predominance of negative accruals across firms over a long period is, ceteris paribus, an indication of conservatism" (Givoly and Hayn 2000, p292). Thus, it might be that the firms in the US GAAP group show a predominance of negative earnings indicating conservatism. This thesis did not investigate this further but it might be interesting for future research to investigate the predominance of negative earnings for US GAAP complying firms.

Table 5 also shows that hypothesis 4 is rejected. So, the hypothesis explaining that the relation between conditional conservatism and price value relevance would be positively related to the presence of accruals for IFRS complying firms is rejected. Instead, accruals are, also for the IFRS group, positively related to value relevance and negatively to accrual intensity. Hence, hypothesis 4 is rejected, again contradicting Brown et al. (2006). Differences may be accounted for as Brown et al. (2006) had an international scope whereas this thesis only focuses on the US and EU. Furthermore, Brown et al. (2006) analyzed the period before the global financial crisis in 2008. Crises as severe as those might influence the accrual intensity leading to different results.

The similar results regarding the relation between accrual intensity and value relevance, and accrual intensity and conservatism, for both US GAAP and IFRS, might be an interesting topic for further research. As prior research determined the presence of accruals to be positively related to the relation between value relevance and conservatism (Brown, 2006).

6. CONCLUSION

This paper focuses on listed firms in the EU and US and investigates whether there is a difference in the relationship between conditional conservatism and price value relevance complying different accounting standards. In addition, this paper analyzed accrual intensity for both IFRS and US GAAP.

The purpose of this paper was to give answer to the following research question: "to what extent is the relation between conservatism and value relevance different under US' GAAP and EU's IFRS?" Results show a negative relation between price value relevance and conditional conservatism for both US GAAP and IFRS. These are interesting findings as it confirms expectations for rule-based and principle-based accounting. US GAAP accounting is rule-based, hence there are strict rules and regulations on how to proceed in a given situation. This raises the inability or handicap of not being able to reevaluate or change accounting numbers when additional information becomes available. This, in combination with the conclusion of Watts (2003a) which tells us that overstatement is more expensive than understatement, explains why firms complying US GAAP show high conservatism. IFRS accounting on the other hand is principle-based, hence there are merely principles on how to act in a given situation. There is more way to maneuver or revaluate when additional information is available. Hence, the likelihood of capturing the real market value, through situational changes in book values, is higher. This reasoning is confirmed as IFRS complying firms have higher price value relevance.

This paper contributes to the literature by offering evidence that firms complying US GAAP use a conservative approach in their income statement accounting, decreasing the reliability, as book values are less likely to represent market values. In addition, this thesis also provides evidence that firms complying IFRS have more reliable financial information, book values offer a good representation of market values, strengthening the predictability of European firms. Furthermore, due to principle-based accounting changes can be made fairly easy. Hence, there is less need to be conservative as values can be revaluated as soon as additional information presents itself. This research also contributes to the accounting standard literature by explaining the differences that results from principle-based versus rule-based accounting regarding the IFRS and US GAAP. This paper further offers evidence that the presence of accruals is not influencing the relation between conservatism and value relevance but is influencing them independently, positively for value relevance and negatively for conservatism. This implies that accruals do give managers more choices in how to act in a given situation which provides better value-relevant financial information, consisted with Brown et al. (2006) and Ball and Shivakumar (2006). The most interesting implication is the fact that, in the presence of accruals, conservatism does not decrease the opportunistic behavior of managers. On the contrary, in the presence of accruals there is less conservative behavior whereas a more conservative approach is visible when there is low accrual intensity. Hence, reducing the amount of accruals might increase the conservative behavior of firms which might be of potential interest to managers and outside investors analyzing a firms prospects. Lastly, some practical contributions regarding the TTIP negotiations. Currently, politicians, standard setters and regulators are negotiating the establishment of a uniform accounting language through convergence of IFRS and US GAAP. The knowledge of principle-based accounting, creating more reliable financial statements, and rule-based accounting, leading to a conservative approach with respect to the income statement, is crucial information when considering the convergence of both accounting standards.

Theoretical implications of this thesis are the negative relationship between conditional conservatism and price value relevance. This reconfirms the findings of Kousenidis, Ladas and Negakis (2009) and Maganaris (2011). On one hand, US GAAP compliance shows higher levels of conservative accounting in comparison with IFRS compliance, reconfirming results of Pham (2009). On the other hand, IFRS complying firms show higher price value relevance in comparison with US GAAP compliance. Other theoretical implications are related to accrual intensity in relation to conservatism and value relevance. Existing literature showed that accrual intensity is related to the relation between conservatism and value relevance. This thesis implies that this does not appears to be true. Instead, there appears to be an independent relation between accrual intensity and conservatism and accrual intensity and value relevance. Furthermore, practical implications are related to the convergence negotiations of the FASB and IASB to establish a uniform accounting language for the TTIP. Concerning the negotiations, this paper can be used to identify differences in European and US accounting behavior.

There are several limitations regarding this bachelor thesis. First, the sample consists of 985 firms which is, compared to other studies, rather small. A small sample size limits the generalizability of the result with respect to the EU and US. Second, only listed firms are analyzed in both the US and EU. Analyzing non-listed firms might lead to different results. Third, this thesis only looks at conditional conservatism and its relation to price value relevance. It is therefore impossible to conclude that conditional conservatism is causing declining value relevance. The only concluding remark that can be made regarding the relation is that conditional conservatism is part of the explanation of price value relevance. Lastly, conditional conservatism is only part of conservatism, hence this paper did not focus on unconditional conservatism. This thesis also only focuses on price value relevance and not on other types such as earnings value relevance or value relevance under perfect foresight. Studying these different forms of value relevance and conservatism might offer a more complete image.

Further research might examine different forms of value relevance and unconditional conservatism so that politicians, negotiating the TTIP, can make better judgements to converge accounting standards in the most optimal way. In addition, it might be interesting to focus on what is most important, conservative behavior or value-relevant financial information. Results could help negotiators with the converging of accounting standards and whether the EU or the US should converge more or less, depending on which of the two is most important. In addition, some theoretical direction for further research might focus on other cultures and levels of conservatism. As some cultures tend to be more conservative and less risk averse than others. Therefore, it might be an interesting topic to link cultural behavior to accounting behavior. Furthermore, if the TTIP will be created, it might be interesting to see what has changed in conservatism and value relevance. By examining the period in the EU and the US before the creation of the TTIP and after the creation of the TTIP. If findings still show the same results regarding differences in conservatism and value relevance than this might be an indication of country-specific, firm-specific or institutional differences. By examining these specific factors it becomes clearer how differences arise value relevance and conservatism. Lastly, it might be interesting to investigate whether there is an optimal amount of value relevance and conservatism. Hence, quantifying the optimal level of value relevance and conservatism in a way which is beneficial for all stakeholders.

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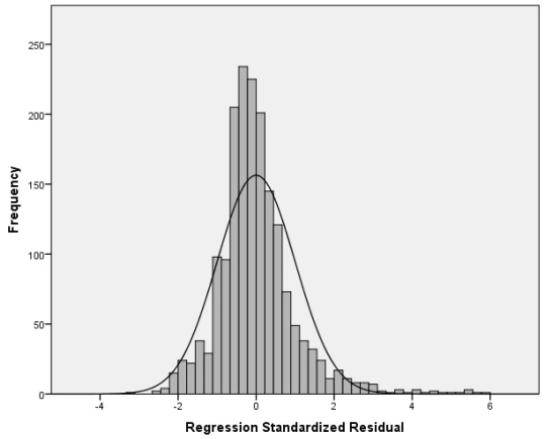
9. APPENDIX

9.1 Appendix A

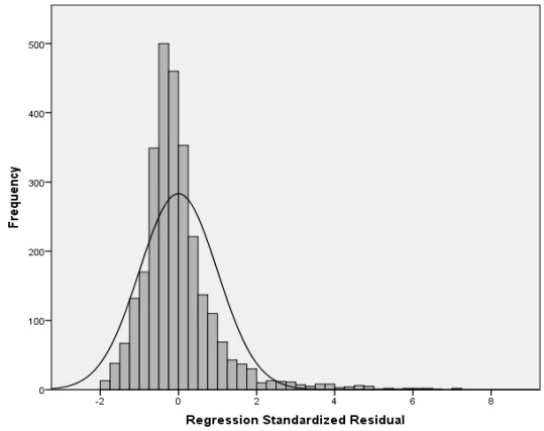
Figure A1. Regression model of conditional conservatism.

Histogram of residuals.

Panel A US GAAP group



Panel B IFRS group

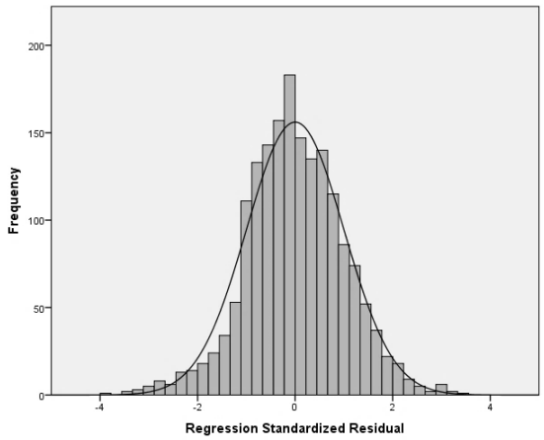


To control for normal distribution both histograms were made. Both the IFRS as the US GAAP group show normal distribution for regression model eq. (2) the conditional conservatism regression.

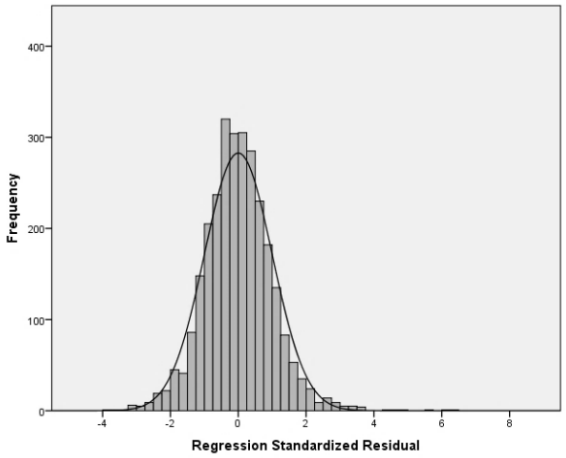
Figure A2. Regression model of price value relevance.

Histogram of residuals.

Panel A US GAAP group



Panel B IFRS group

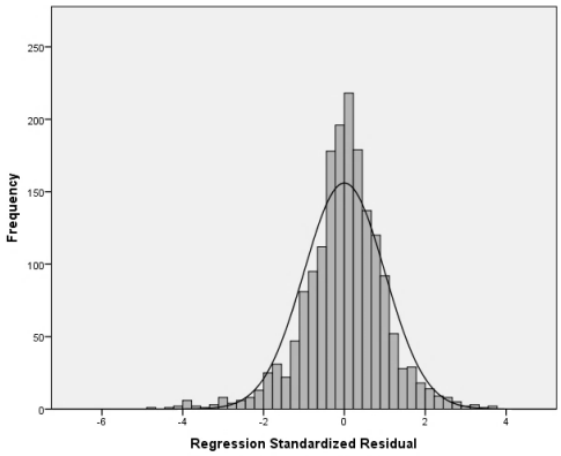


To control for normal distribution both histograms were made. Both the IFRS as the US GAAP group show normal distribution for regression model eq. (4) the price value relevance regression.

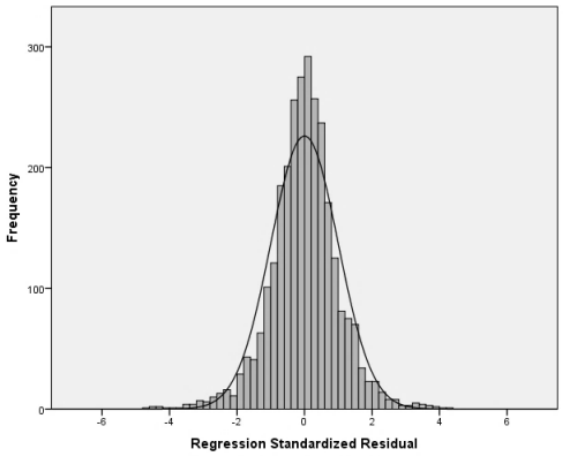
Figure A3. Regression model of accrual intensity.

Histogram of residuals.

Panel A US GAAP group



Panel B IFRS group



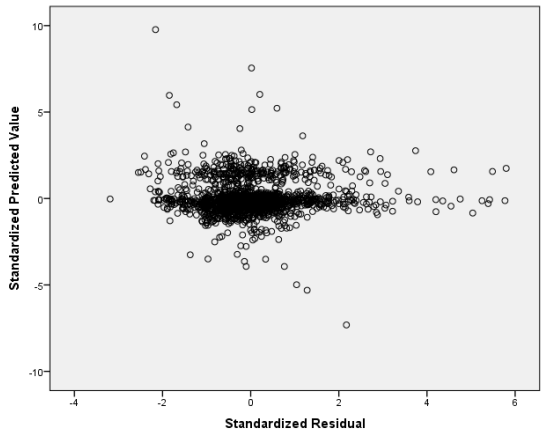
To control for normal distribution both histograms were made. Both the IFRS as the US GAAP group show normal distribution for regression model eq. (6) the accruals intensity regression.

9.2 Appendix B

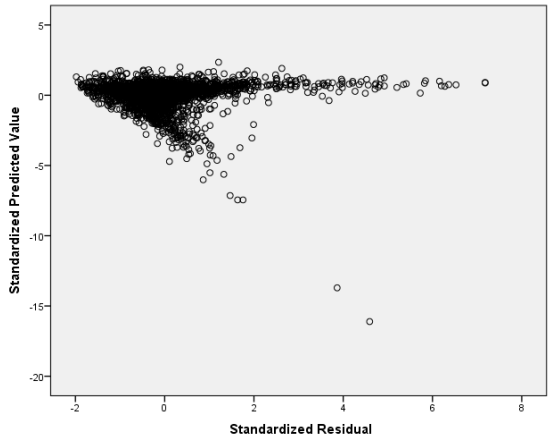
Figure B1. Regression model of conditional conservatism.

Plot of residuals versus predicted Y-values.

Panel A US GAAP group



Panel B IFRS group

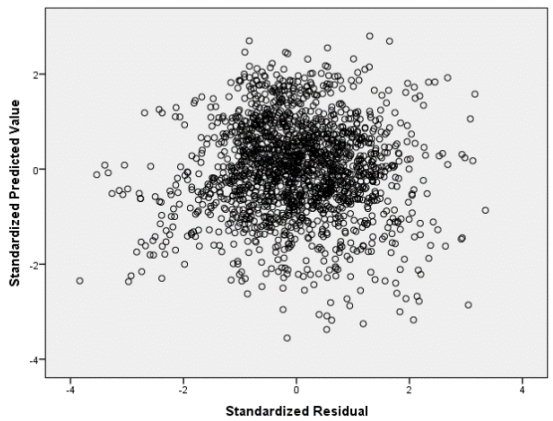


The conditional conservatism regression shows that if variance of residuals (errors) are not constant there is a heteroscadesticity problem. Hence, by examining the curvature of the plots in panel A and B we can conclude that heteroscadesticity is not present.

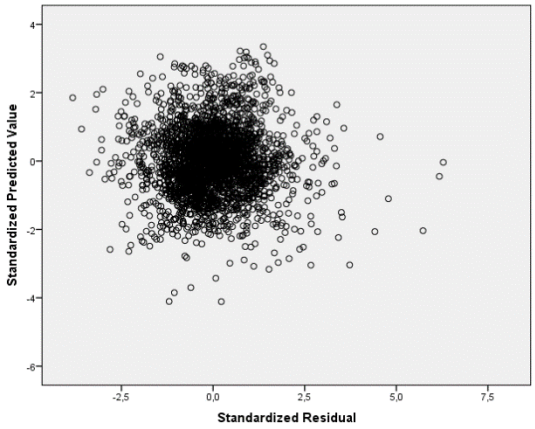
Figure B2. Regression model of conditional conservatism.

Plot of residuals versus predicted Y-values.

Panel A US GAAP group



Panel B IFRS group

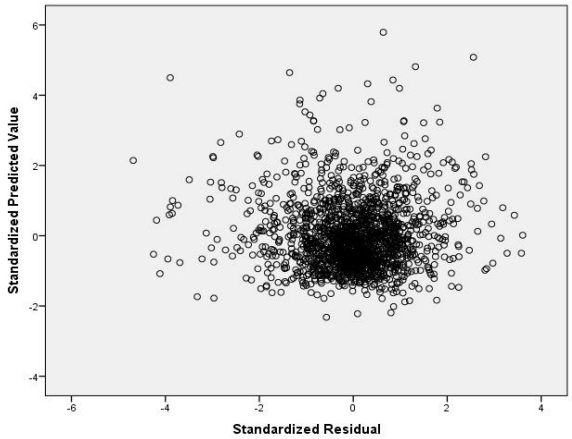


The price value relevance regression shows that if variance of residuals (errors) are not constant there is a heteroscadesticity problem. Hence, by examining the curvature of the plots in panel A and B we can conclude that heteroscadesticity is not present.

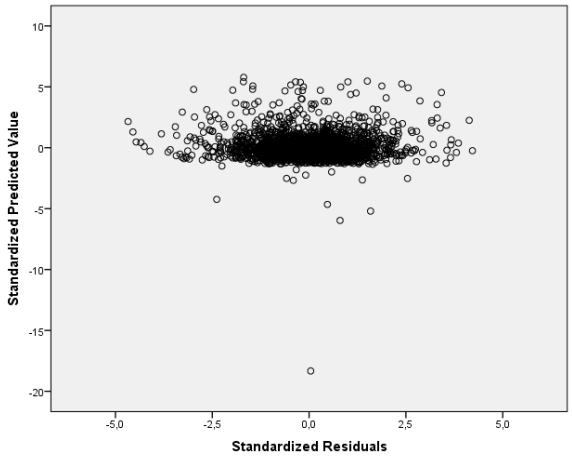
Figure B3. Regression model of conditional conservatism.

Plot of residuals versus predicted Y-values.

Panel A US GAAP group



Panel B IFRS group



The accrual intensity regression shows that if variance of residuals (errors) are not constant there is a heteroscadesticity problem. Hence, by examining the curvature of the plots in panel A and B we can conclude that heteroscadesticity is not present.

9.3 Appendix C

Table C1.

Multicollinearity statistics.

US GAAP group			IFRS group		
Variables	T	VIF	Variables	T	VIF
Panel A Regression model eq. (2) conditional conservatism					
NW	0.067	14.984	NW	0.070	14.326
R	0.289	3.460	R	0.217	4.618
NW ∗ R	0.090	11.063	NW ∗ R	0.098	10.246
G	0.410	2.439	G	0.128	7.790
G ∗ NW	0.102	9.764	G ∗ NW	0.068	14.783
G ∗ R	0.288	3.475	G ∗ R	0.143	7.002
G ∗ NW ∗ R	0.093	10.795	G ∗ NW ∗ R	0.064	15.662
LV	0.159	6.293	LV	0.138	7.238
LV ∗ NW	0.060	16.638	LV ∗ NW	0.069	14.392
LV ∗ R	0.229	4.362	LV ∗ R	0.253	3.959
LV ∗ R ∗ NW	0.071	14.036	LV ∗ R ∗ NW	0.097	10.314
Panel B Regression model eq. (4) price value relevance					
ln EPS	0.855	1.169	ln EPS	0.230	4.348
ln EPS ∗ L	0.850	1.176	ln EPS ∗ L	0.363	2.754
ln BVPS	0.995	1.005	ln BVPS	0.242	4.135
ln BVPS ∗ L	0.987	1.013	ln BVPS ∗ L	0.387	2.585
Panel C Regression model eq. (6) Accrual intensity					
DCF	0.032	31.514	DCF	0.047	21.216
CF	0.885	1.130	CF	0.803	1.245
DCF ∗ CF	0.032	30.812	DCF ∗ CF	0.050	20.165

Table 7 checked for multicollinearity between independent variables. Panel A shows the multicollinearity for regression eq. (2), panel B for regression eq. (5) and panel C for regression eq. (6). A high VIF score and low T (for tolerance) is an indication for multicollinearity. However, there are some situations in which, this problem of multicollinearity, safely can be ignored. First, when variables with high VIFs are control variables and the variables of interest do not have high VIF scores. Second, the high VIF scores are caused by products of other variables. Third, variables with high VIF scores are indicator, or dummy variables, that represent categorical variables (Statistical Horizon, 2012). Hence, there is no multicollinearity that effects the data in a way which makes the numbers difficult to interpret.