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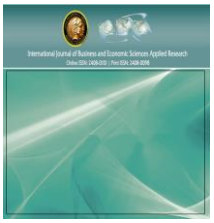

Influencing Factors on Earnings Management
Empirical Evidence from Listed German and Austrian Companies

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Abstract

Purpose *– Since the 1960s earnings management has been a widely researched area and became presumably known by the current accounting scandals. This paper aims at empirically showing which factors affect earnings management.*
Design/methodology/approach *– According to former research literature factors are derived, which might influence the companies' earnings management behavior. These factors are the applied accounting standard, the industry sector and the country of official quotation. Although several measurements for earnings management like abnormal accruals or income smoothing exist, this paper is predominantly using the distribution of net income scaled by total assets (RoA) respectively total sales (RoS) as earnings management measure. These earnings management measures have been selected as they can measure the frequency of earnings management in reality and no estimates are necessary.*
Findings *– In general, analyses show that the distribution in earnings management intervals differ from the total population. Most noteworthy is that by adoption of principle-based accounting standards (IFRS/US-GAAP), in case of this study no differences of earnings quality was observable. The other two variables yield in mixed results due to the robustness checks, which indeed questions the scaling variables for data-sets including the financial industries.*
Research limitations/implications *– First, according to the chosen measurement parameter no distinct assertion concerning the reasons for execution or non-execution of earnings management can be deduced. Second, the method of earnings management's identification is not dividable and therefore real-, accounting-, legal- and illegal-earnings management cannot*

be identified. Third, the research results are just partially generalizable concerning representativity (e.g. other countries, non-market listed companies) and taken for granted just for similar data-sets

Originality/value *– Although prior studies presume a rise in earnings quality, which indicates a decrease in earnings management by the adoption of principle-based accounting standards (IFRS/US-GAAP) in comparison to national GAAP, there is no difference or superior accounting standard identifiable through the results.*

Keywords: *Earnings Management, Accounting Standards, Scaling Variables, Earnings Distribution*

JEL Classification: *M40, M42, M49*

1. Introduction

Since the end of the 1960s earnings management has been a current issue (Szczesny, 2007, p. 109) and extensive empirical research has been conducted in this field (Burgstahlerand Dichev, 1997; Copeland, 1968; DeAngelo, 1986; Dechow, Richardson, and Tuna, 2003; Dechowand Sloan, 1991; Glaum et al., 2004; Healy and Kaplan, 1985; Jeanjean and Stolowy, 2008; Jones, 1991; Kirchheimer, 1968; Leuz et al., 2003; Stolowy and Breton, 2004; Van Tendeloo and Vanstraelen, 2005). Earnings management got widely known by the accounting scandals concerning Enron, Worldcom and Parmalat. Notably, Austrian and German accounting scandals included the BAWAG, the Hypo Alpe Adria Bank, Comroad and the Bankgesellschaft Berlin.

In the available literature different terms and definitions for earnings management exist and are widely accepted. In order to cope with the empirical investigation within the scope of this paper the term is defined according to (Wagenhofer and Ewert, 2007, p. 237), outlined in the following: Earnings management is the figuration and adoption of financial statements, conducted mostly by executive staff, by means of corporate policy or accomplishing personal targets, within or without the limits of statuary regulations. The adoption of the financial statements comprises accounting as well as real[1] economic activities.

Researchers use various terminology to describe earnings management: in particular accounting policy, accounting manipulation, accounting-"Hocus-Pocus" or "Rumpelstilzchen"-accounting, in German literature referred to by "Bilanzpolitik" or "Gewinnsteuerung".

Besides, research concerning the measurement of earnings management, different objectives of earnings management were detected. Wagenhofer and Ewert (2007, pp. 245–255) distinguish between the following targets of earnings management:

- Maximization of income
- Minimization of income
- Income smoothing over the years
- Achieving targets (e.g. analysts prognoses, previous year's income)

During the last decades, various measurements and different approaches have been developed, e.g. the use of discretional accruals or the distribution of income to measure earnings management. The major method to analyze earnings management is the use of (discretional) accruals.

Our study is aimed to analyze the effect of the applied accounting standard, the industry sector and the country of official quotation on earnings management. Our unique setting allows us to compare the earnings

[1] Real earnings management: as defined in e.g. Ge and Kim (2014)

management behavior under different accounting standards that are applied in one institutional environment[2]. We extent the existing earnings management literature by a comparison of earnings management behavior in two insider economic countries[3]. To round off our analysis we also aim to investigate if differences in the earnings management behavior between various industry sectors exist. In the literature review section the different factors are deduced from former research work and its importance for reducing the research gap concerning the influencing factors on earnings management is shown.

As studies are lacking statistical analyses of the distribution of income to detect earnings management, this paper aims at empirically showing which factors influence earnings management and to what extent. According to former research literature, influencing factors are identified that might bias the companies' earnings management behavior.

In this case, the accounting standard, industry sector as well as the country of official quotation were identified. Subsequently, the influencing factors are tested against the data-set (2,203 company years from Austrian and German listed companies collected from the Bloomberg Database) and the earnings management intervals (Glaum et al., 2004) (245 company years). The research design mainly complies with the research design used in Jeanjean and Stolowy (2008). Non-parametric tests are applied (Mann-Whitney-U test and Kruskal-Wallis-Test), by using a 5% significance level, as a result of the non-existence of normal distribution in the total data-set (Kolmogorow-Smirnow-Test). The findings indicate that there is no distinct difference concerning earnings management by applied accounting standard, which is to be interpreted that no increase in earnings quality is discernable by usage of International Financial Reporting Standards (IFRS) or United States-General Accepted Accounting Principles (US-GAAP) in contrast to Austrian-General Accepting Accounting Principles (AT-GAAP) or German-General Accepted Accounting Principles (GE-GAAP). For the other two influencing factors the results differ according to robustness checks and just indicate that the scaling variables (RoA respectively RoS) are to be questioned.

In the next section a short literature review is presented. In the third section the development of the hypotheses is described. Section 4 outlines the research design and provides several insights. Section 5 presents the performed data analysis as well as the measures and the distribution of the data-set. Subsequently, section 6 states the results of the described data analysis, whereas the discussion of the results follows in section 7. Section 8, 9 and 10complete the paper by providing research limitations, conclusions and potential areas of further research.

2. Literature Review

Earnings management literature has had a long history and has been focusing on examining why, how and in which situations earnings management is pursued and which consequences earnings management behavior is likely to have (McNichols, 2000, p. 314; Szczesny, 2007, p. 102).

According to McNichols (2000, p. 314) and Szczesny (2007, pp. 102–107) research designs on earnings management mostly use discretionary or specific accruals (Beuselinck and Deloof, 2014; Kraft et al., 2014; Trombetta and Imperatore, 2014; Tsipouridou and Spathis, 2014; Ye, 2014; DeAngelo, 1986; Dechowand Sloan, 1991; Dechowet al., 1995; DeFondand Jiambalvo, 1994; Healy and Kaplan, 1985; Jeter andShivakumar, 1999; Jones, 1991; Peasnell et al., 2000; Sok-Hyon Kang and Sivaramakrishnan, 1995; Van Tendelooand Vanstraelen, 2005), whereas a minority of studies use the distributions of

[2] In both countries - Austria/Germany - different accounting standards were allowed throughout the observation period.

[3] We used the companies' country of official quotation as indicator for the country.

earnings (Degeorge et al., 1999; Burgstahlerand Dichev, 1997) or measures of income smoothing(Bouwman, 2014; Cai et al., 2014) to examine earnings management.

In the following the mostly used accrual models are listed:

- DeAngelo's random walk model (DeAngelo, 1986)
- Healy's average method(Healy and Kaplan, 1985)
- Industry model by Dechow and Sloan (Dechow and Sloan, 1991)
- Jones model(Jones, 1991)
- Modified Jones model developed by DeFond and Jiambalvo (DeFond and Jiambalvo, 1994)
- Modified Jones model by Dechow, Sloan, and Sweeney (Dechow et al., 1995)
- Kang and Sivaramakrishnan model (Kang and Sivaramakrishnan, 1995)
- Cashflow Jones model of Jeter and Shivakumar (Jeter and Shivakumar, 1999)
- Margin model developed by Peasnell, Pope, and Young (Peasnell et al., 2000)
- Van Tendeloo and Vanstraelen model (Van Tendeloo and Vanstraelen, 2005)

Burgstahler and Dichev (1997) and Degeorge, Patel, and Zeckhauser (1999) analyze the distribution of income as an earnings management measure and find that the frequency of small losses is unusually low, whereas the frequency of small profits is comparatively high in an interval of ± 1% of the operative income scaled by the equity's market value (Burgstahler and Dichev, 1997). Burgstahler and Dichev (1997) further show that 30% to 44% of companies with small losses conduct earnings management to report profits. Their data-set consists of listed companies retrieved from industrial and research Compust at databases from 1976 to 1994. The advantages and disadvantages of the distribution of the income method have been extensively discussed (Beaver et al., 2007; Daske et al., 2006; Dechow et al., 2003; Durtschi and Easton, 2005; Glaum et al., 2004; Jacob and Jorgensen, 2007; Jeanjean and Stolowy, 2008; Vidal, 2010). Predominantly, the scale variables, the interval width of the earnings management intervals and the distribution of unmanaged earnings are issues in these discussions.

Literature also focuses on the differences in earnings management behavior between countries. The following studies analyze the German and Austrian market: Leuz, Nanda, and Wysocki, (2003) use the model of Myers, Myers, and Skinner (2007) and show that insider economics like Germany and Austria conduct earnings management to a higher extent than outsider economics like the USA or the UK. Glaum, Lichtblau, and Lindemann (2004) as well as Leuz, Nanda, and Wysocki (2003) examine the differences in the income distribution in Germany and the USA and come to the result that in both countries earnings management is conducted and that the aim to reach analysts' prognoses is more important in the USA than in Germany. Respectively, a research gap is observable; a lot of comparison exists regarding insider economics vs. outsider economics whereas little is known about the relationship between insider economics like Austria and Germany.

Glaum, Lichtblau, and Lindemann (2004) as well as Van Tendeloo and Vanstraelen (2005) analyze German companies using the models of Myers, Myers, and Skinner (2007), Jones (1991) and the modified Jones model by DeFond and Jiambalvo (1994). Their studies determine that earnings management behavior differs regarding accounting standards. Coppens and Peek (2005) investigate the income distribution of countries with weak and strong ties between tax law and the commercial code and come to the conclusion that in countries with strong ties between tax law and commercial law more earnings management is conducted.

Coppens and Peek (2005) and Zimmermann and Goncharov (2006) analyze German companies using the models of Pincus and Rajgopal (2002) and the modified Jones model by Jeter and Shivakumar (1999). The results show that companies using US-GAAP conduct less earnings management than others. Burgstahler and Eames(2006) and Zimmermann and Goncharov (2006) use the

model of Myers, Myers, and Skinner (2007) and survey the income distribution of European companies and show that public companies conduct less earnings management than private companies.

According to the formerly mentioned results (Coppens and Peek, 2005; Leuz et al., 2003; Van Tendeloo and Vanstraelen, 2005; Zimmermann and Goncharov, 2006), it can be assumed that a difference in earnings management reasoned by the applied accounting standard exists.

Burgstahler, Hail, and Leuz (2006) as well as Dücker and Wagenhofer (2007) focus on examining Austrian companies. They concluded that no significant increase in earnings quality, which would induce a decrease in earnings management, was observable in Dücker and Wagenhofer's (2007) study on temporary observations between 1996 and 2005.

De Almeida et al .(2006) analyzed the industries' influence on earnings management by building on research statements by Ghemawat (2002) and Palepu and Healy (2008) that profitability of companies is explainable by industry factor and therefore De Almeida et al.(2006) interpreted that industry sectors conduct earnings management to a different extent. Nevertheless, this study, by using the model of Kang and Sivaramakrishnan (1995), could not prove and underpin the importance of the industry factor as explanatory power, however, no study provides argumentation using the distribution of income, thus, research is needed.

Earnings management literature during the last fifty years has exposed various research designs for detection of influencing factors, incentives and consequences of earnings management. Therefore, a variety of widely accepted research possibilities can be deduced and put in consideration to suit the hypotheses and the research design described in the following sections.

3. Development of Hypotheses

In accordance with the influencing factors mentioned above, three hypotheses are developed.

As listed companies in Germany and Austria have been allowed to apply national GAAP, IFRS or US-GAAP for their consolidated statements[4], the influence of various accounting standards on earnings management in one institutional environment can be evaluated (Wagenhofer, 2010, pp. 23–33).

The first hypothesis can be stated as follows:

H1: The extent of earnings management is dependent on the applied accounting standard.

All industries[5] are included in the analyses, as the paper aims at investigating whether earnings management differs by industries. Some studies like De Almeida et al. (2006) analyzed the industries' influence on earnings management using accrual models. According to these studies, this paper builds upon previous research and analyzes whether the extent of earnings management differs by industry.

Therefore, the second hypothesis can be stated as follows:

H2: The extent of earnings management differs by industry.

Last, by reviewing the insider economics more detailed, historically deducible multiple institutional and legal similarities between Austria and Germany exist (Wagenhofer and Ewert, 2007, pp. 23–30)[6]. Despite the historical aspects the early implementation of

[4] Until 2007.

[5] The industries used are in accordance with those used by the Vienna Stock Exchange (http://www.wienerborse.at/help/e/index.htm) and the Deutsche Börse Group.

[6] Cf. Wagenhofer, A./Ewert R. (2007), [Unternehmensrechnung] Corporate Accounting, 23 pp. with reference to Ballwieser (2006), [NutzenHandelsrecht] Usefulness German Commercial Code, in Ballwieser, W./Moxter, A./Nonnenmacher, R. (Hrsg.), [Rechnungslegung] Accounting; Schneider, D. (1997), [Rechnungswesen] Accounting, 11 pp., Schröer, T. (1993), 19th Century; with further reference.

a two-level enforcement procedure in Germany which came into force in July, 1st 2005[7] shifts a step away from the resemblant development of both countries. In contrast to Germany, Austria just implemented the enforcement procedure by law in 2012[8], thus, this development is not relevant for this study anymore. However, as the similar development of both countries seems more significant for this study it is expected that there are no differences in earnings management behavior between Germany and Austria.

Thus, the third hypothesis can be stated as follows:

H3: The extent of earnings management does not differ between Austrian and German companies.

4. Research Design

With regard to the three different earnings management measures used in literature (accruals, income smoothing, distribution of income), discussed in-depth in section 2, due to a lack of statistical analysis of income distribution in the earnings management research (Burgstahler and Dichev, 1997; Degeorge et al., 1999), this study uses the distribution of income as distinct measure for earnings management, as it was already applied in the study of Jeanjean and Stolowy (2008). In concrete terms, this study analyzes the distribution of net income scaled by return on assets (RoA) and return on sales (RoS) of listed German and Austrian companies. Further, the main focus lies on investigating various influencing factors on earnings management. The selected factors are: The applied accounting standard, the country of official quotation and the company's industry sector. These earnings management measures were chosen, due to the fact that they are suitable to measure the frequency of earnings management in reality. That clearly distinguishes this survey from other papers.

Primarily, the distribution of RoA is used as earnings management scale variable, in particular the ±1% interval was analyzed. For clarification Equation 1 is inserted.

$$\mathrm{RoA}_{\mathrm{EBIT}} = \frac{EBIT_t}{totalAssets_{t-1}} * 100 \quad (1)$$

Due to the fact that the amount of assets within various companies differs widely, robustness checks were executed by usage of the scale unit RoS, focusing on the same time lapse from 1998 to 2010. Additionally, for robustness' purposes all analyses are carried out in an interval width of ±2%.

To address the major difference between RoS and RoA Equation 2 is inserted below:

$$\mathrm{RoS}_{\mathrm{EBIT}} = \frac{EBIT_t}{Sales_{t-1}} * 100 \quad (2)$$

Moreover, Odds Ratios (OREM) are used to analyze the quantity of RoA in the earnings management intervals[9]. These ratios are the same as used by Glaum, Lichtblau, and Lindemann (2004).

Equation 3 illustrates the ratios in detail, in which n_p stands for the quantity of positive observations (≥ 0), n_n is the number of negative observations and $n_{pn}$the total quantity of observations.

$$OREM = \frac{n_p - n_n}{n_{pl}} \quad (3)$$

As this paper also reviews the industry sector the companies are listed according to the categories of industry used by the Vienna Stock Exchange which correspond to those of the Frankfurt Stock Exchange[10]. These

[7] §§ 342b to 342e HGB-Germany: http://dejure.org/gesetze/HGB/342b.html

[8] Bundesgesetzblatt I 21/2013, Republik Österreich 11.01.2013: http://www.ris.bka.gv.at/Dokumente/BgblAuth/BGBLA_2013_I_21/BGBLA_2013_I_21.pdf

[9] The earnings management interval is ±1% resp. ±2% or RoA resp. RoS.

[10] Vienna Stock Exchange: http://www.wienerborse.at/help/d/Branchen.htm; Frankfurt Stock Exchange: http://dax-indices.com/DE/MediaLibrary/Document/Equity_L_6_16_d.pdf.

categories are mainly in accordance with SIC respectively NACE classification of industries.

Although previous research (Burgstahler and Dichev, 1997; Jeanjean and Stolowy, 2008) has shown distorted effects by comprising the financial industries' sector, the related companies are included in the analyses. The financial industries contain a wide range of up-to-now not researched areas concerning the specific regulations or the development of earnings management since the start of the financial crisis in 2008. After an initial analysis including the financial industries, research is also conducted to review if exclusion is necessary. However, this exclusion provides no significantly different results; therefore the financial industry remains in the data-set.

Focusing on the research design, it is in accordance with Jeanjean and Stolowy (2008), but covers additional influencing variables like country and industry sector. Instead of a chi-square test a Kruskal-Wallis-H test and a Mann-Whitney-U test are used to analyze the earnings distribution. The decision to use the latter mentioned is based on the asymmetrical distribution and the multi dimensionality of the data. This fact can be clearly grasped by reviewing Figure 1 and Figure 2.

By comparison to the widely used accruals as variables, this method does not need any estimates due to the fact that the data is based on real company data. Subsequently, the frequency of earnings management can be examined in reality. On the contrary, the missing opportunity to question reasons for earnings management limits this way of analyzing.

To retrieve the necessary data, the Thomson database was reviewed targeting Austrian and German companies which issue common shares and existed before December 2000. On behalf of this resulting 1250 companies the list was extended using companies listed in the DAX (Deutscher Aktien index), MDAX (Mid-Cap-DAX) as well as all companies which issued common shares at the Vienna stock exchange and are listed according to the rules of the regulated market, target date July 1st 2011. The decision for these indices is chosen to include the biggest capital market oriented companies and due to the availability of data. The data itself was collected from the Bloomberg database, including the timeframe IFRS and US-GAAP was applicable for financial statements (Wagenhofer, 2010, pp. 113–115) - in total thirteen periods. In total data from 230 companies was collected. Next, using the scaling variable RoA (Equation 1) the year t-1 is needed, subsequently, 57 companies did not fulfill the requirement. Therefore, the resulting data-set consists of 173 listed companies including in total 2,203 company years.

5. Data Analyses

In accordance with the hypotheses and the research design mentioned in section 3 and 4, in the following used variables and statistical tests are explained:

Table 1: Description of Variables and Statistical Tests

Name	Description	Manifestation	Statistical Methods
EBIT/Total Assets	EBIT/Total Assets	RoA	Continuous Variable
EBIT/Sales	EBIT/Sales	RoS	Continuous Variable
ACC_STD	Differences in income distribution by accounting standard	1 = IFRS 2 = US-GAAP 3 = GE-GAAP 4 = AT-GAAP	Kruskal-Wallis Test
Country	Differences in income distribution by country	1 = Germany 2 = Austria	Mann-Whitney-U Test Odds Ratios
Industry	Differences in income distribution by industry	1 = individual goods & services 2 = consumer products 3 = technology & telecom 4 = consumer services 5 = financial industries 6 = utility sector 7 = health care 8 = basic industries	Kruskal-Wallis Test

5.1 Measure of Asymmetry

As a measure of asymmetry odds ratios are used. The odds ratios show that the frequency of small profits (SP) is much higher than those of small losses (SL). This indicates, according to the definition, it is assumable that the companies conduct earnings management to report profits (Glaum, Lichtblau, and Lindemann, 2004).

These, in total 245 company years, as visible in Table 2 (IW[11] 1%, Total (AT+GE)) are the resulting earnings management interval. The interval width 2% is listed providing evidence for the robustness checks and the two right sided columns display the quantity of 1%, respectively 2%, IW of RoA company years of total quantity company years (positive (profit), negative (losses)).

Table 2: Odd Ratios

	Annual Result	Quantity Companies	RoA	IW 1%	IW 2%	Qty. of 1% in % of Total Qty.	Qty. of 2% in % of Total Qty.
GE	Positive	1420	SP	96	173	6,76%	12,18%
	Negative	126	SL	36	60	28,57%	47,62%
AT	Positive	603	SP	94	144	15,59%	23,88%
	Negative	54	SL	19	23	35,19%	42,59%
Total (AT+ GE)	Positive	2203	SP	190	317	9,39%	15,67%
	Negative	180	SL	55	83	30,56%	46,11%

IW = interval width, SP = small profits, SL = small losses, GE = Germany, AT = Austria

[11] IW is interval width, means e.g. 1% IW RoA equals ±1% RoA per year as earnings management interval

Table 2 further displays that much more Austrian than German companies report small profits: About 16% respectively 24% (Table 2 – highlighted in red) of the profits are categorized as small (1% respectively 2% of RoA), whereas only 7% respectively 12% (Table 2 – highlighted in red/dark) of the German profits can be categorized as small. This can be interpreted that concerning descriptive overview first indices are visible that contrary to H3, a difference between German and Austrian companies is exhibited. These findings are in accordance with those of the results of the 1% interval width RoS analyses.

5.2 Distribution of the Total Data-Set

The analyses of the total data-set of 2,203 company years show that there is a highly significant difference between all manifestations of variables.

Figure 1: Distribution of RoA

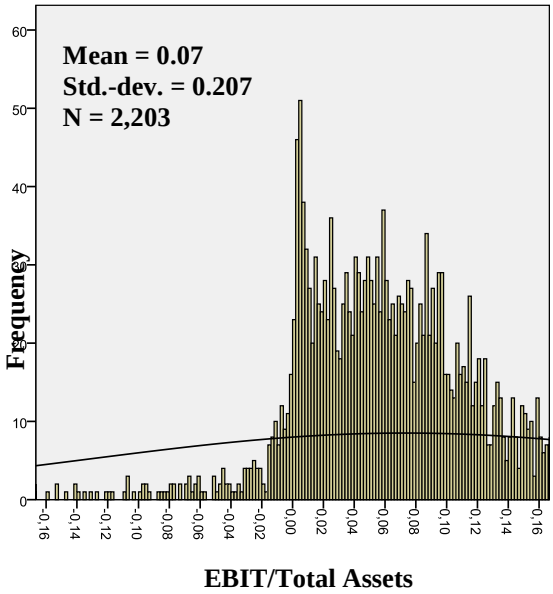
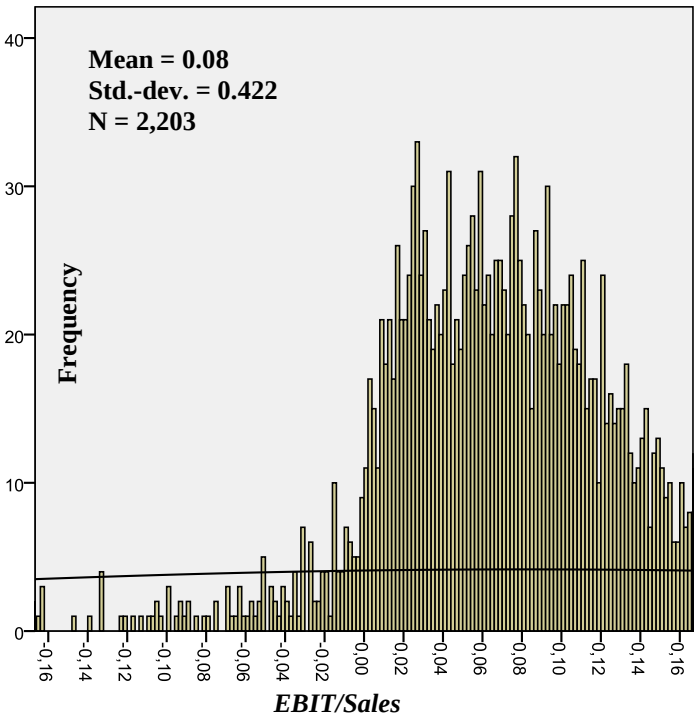


Figure 1 reveals the distribution of the RoA executed on the whole data-set. Even from the total results' distribution it can be seen that there are much more small profits than losses. The figure further displays that the data is not normally distributed, so the use of nonparametric statistics is necessary (Bühl, 2009, pp. 348–360).

Figure 2 presents the distribution by applying the RoS. This variable is also presented to provide further evidence by lowering the influence on assets. Like in Figure 1, it can be seen that there are much more small profits than losses and also the distribution of small profits according to the intervals is clearly reflected.

Figure 2: Distribution of RoS



6. Results

This section provides the results of this paper, in particular using nonparametric statistics[12] of the earnings management interval related to each hypothesis. Executing the non-parametric tests, described afterwards, on the total data-set shows significant differences between the various industries, the country of official quotation as well as the applied accounting standards.

6.1 Accounting Standard

First, the variable accounting standard is reviewed by using the four most influential accounting standards for the chosen geographic area: The International Financial Reporting Standards (IFRS), the United States General Accepted Accounting Principles (US-GAAP), the Austrian General Accepted Accounting Principles (AT-GAAP) and the German General Accepted Accounting Principles (GE-GAAP). These variables are examined by usage of the RoA by applying the earnings management interval ± 1%. The results are shown in Figure 3.

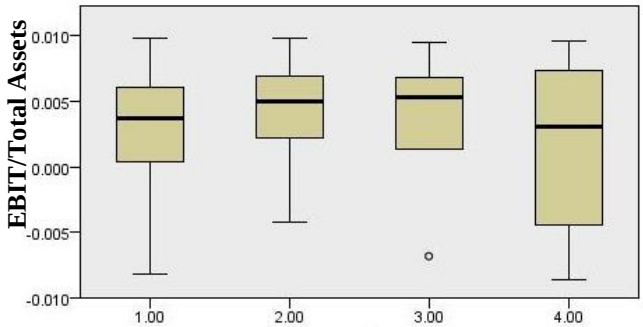
For the variable accounting standard a Kruskal-Wallis-H test (nonparametric test) for independent samples is used. The results provide evidence that there are no significant differences (p-value: 0.358) between the distribution of the categorical variable (accounting standard). The findings indicate that there is no difference in the earnings management behaviour between companies applying the four different accounting standards and lead – in accordance with the robustness tests (2% IW RoA) – to the rejection of H1. All robustness tests for the accounting standards show the same results as in Figure 3. Thus, no influence of the accounting standard on the earnings management

[12] The significance level of all analyses is 0,05. The tests were performed with SPSS.

behavior can be measured. These results indicate that on contrary to the former litrature all accounting standards provide the same earnings quality. Further, these results show that in contrast to the total data-set within the earnings management interval no difference in earnings' distribution is detected.

Figure 3: Kruskal-Wallis Test (Accounting Standard)

Quantity	245
H-Value	3.224
Degrees of Freedom	3
Asymptotic Significance	0.358

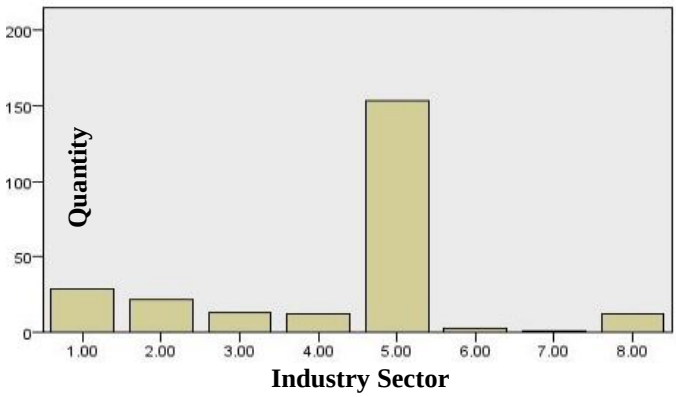


1 = IFRS
2 = US-GAAP
3 = AT-GAAP
4 = GE-GAAP

6.2 Industry

To get a vast overview of the different industries included in the data-set, Figure 4 is inserted to depict which industry sectorsare represented in the sample.

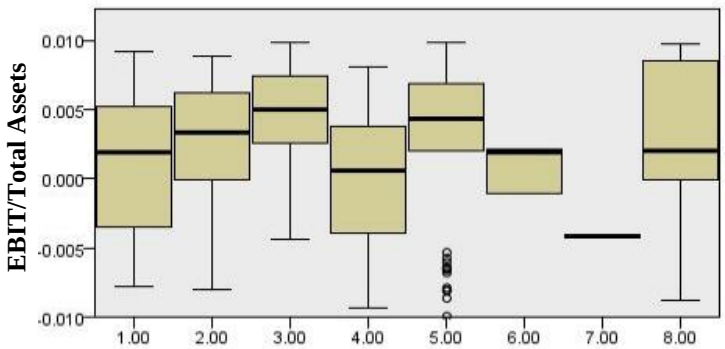
Figure 4: Quantity of Companies per Sector



1 = industrial goods & services
2 = consumer products
3 = technology & telecom
4 = consumer services
5 = financial sector
6 = utilities
7 = health care
8 = basic industries

As clearly observable, the financial sector is the most decisive within the data-set. On contrary to this research project many studies excluded the financial industries from their analysis (Burgstahler and Dichev, 1997; Glaum et al. 2004; Jeanjean and Stolowy, 2008). However, as there were no significant differences detected while excluding the financial sector it remains in the data-set. Therefore the results are displayed in Figure 4.

Figure 5: Kruskal-Wallis Test (Industry)



1 = industrial goods & services
2 = consumer products
3 = technology & telecom
4 = consumer services
5 = financial sector
6 = utilities
7 = health care
8 = basic industries

Quantity	245
H-Value	15.539
Degrees of Freedom	7
Asymptotic Significance	0.03

Next, a Kruskal-Wallis-H Test is executed against the data-set providing the results displayed in Figure 5. The figure shows that the medians of the different industry sectors discern. Thus, it can be interpreted that the distribution differs by industry. Subsequently, as distribution differs by industry, the results indicate clearly that earnings management differs by industry as well. Within the predefined significance level (p-value: 0.03) H2 can be supported. The test is replicated; using the 2% IW RoA (robustness purpose) and the results clearly indicate supporting H2.

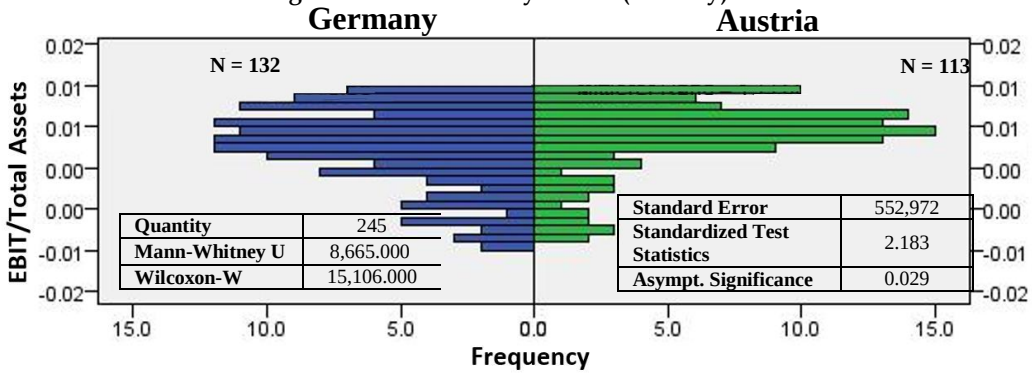
Information about the categorical variables shows that a majority of the small profits and losses come from financial industries. Therefore, this analysis is replicated with EBIT scaled by Sales (RoS) to reduce the influence of the financial industries' sector. Surprisingly, by executing the statistical tests against the data-set, the results are quite different from those by the usage of EBIT scaled by assets and show that there are no meaningful differences between the different industries anymore (± 1% interval width p-value is 0.242, ± 2% interval width p-value is 0.29).

6.3 Country

As only two independent samples (Austrian vs. German companies) are examined, a Mann-Whitney-U test is performed. Contrary to the predictions made within the development of the third hypothesis, that there is no difference in earnings management between Austrian and German companies, the earnings management behavior differs by country. Therefore, H3 is to be rejected according to the 1% IW (p-value: 0.029). Thus, it could be interpreted that the earlier enforcement implementation of Germany could be a reason for this result. However, by executing the robustness check 2% IW (p-value: 0.125), the results with more than twelve percent, in contrast to 1% IW, support H3.

Although about twice as many German observations are included in the total data-set, nearly the same number of observations is chosen for the earnings management intervals of Austrian and German companies (113 Austria vs. 132 Germany). This limitation of German companies should provide a higher comparability. The results confirm the odds ratios presented in Table 2.

Figure 6: Mann-Whitney-U Test (Country)



7. Discussion of Results

The analyses show that the distribution in the earnings management intervals differs from the distribution of the total population. Further, it is clearly visible through the odds ratios and the analyses of the total data-set that it is assumable that earnings management is conducted by the reviewed companies to report (at least small) profits.

The analyses of the distribution of earnings indicate that results vary when being executed on the total data-set by the applied accounting standard. However, it is similarly distributed in the set earnings management intervals. According to these results, which show that the distribution does not differ by accounting standard, it is to be stated that distribution does not differ. All executed statistical tests and robustness checks came to the same results and underpin the findings that H1 has to be rejected. Although prior studies presume a rise in earnings quality, which indicates a decrease in earnings management by the adoption of principle-based accounting standards (IFRS/US-GAAP) in comparison to national GAAP (rule-based accounting standards) there is no difference or superior value observable in the results.

On the contrary, distribution of earnings is likely to differ by industry and country. For the variable 'industry' the results are not concise. If RoA are used as scaling variable, the distribution differs by industry clearly and therefore, H2 can be supported in the 1%interval width as well as in the 2% interval width. This result is mostly driven by the financial industries and the public services sector. After the execution of the first robustness checks, applying the variable RoS to lower the implications of the financial sector, the results change surprisingly and indicate no significance anymore and H2 has to be rejected.

Focusing on the results of the variable 'country' (Austria vs. Germany), it is likely that earnings management behavior differs by country. This can be presumed as the distribution discern significantly. According to the 1% IW RoA H3 has to be rejected, whereas the 2% IW RoA cannot confirm the results and indicates support for H3. Therefore, no explicit proposition can be postulated.

In general, all analyses show that the distributions of the results in the earnings management intervals are more similar than those of the total population. The robustness tests partially support the results. Table 3 provides a quick overview of all collected results.

The reviewed time frame indicates the following results: Concerning the analyzed time frame, the medians differ by year, but are not significantly different (significance level: 0.05). Information about the categorical variable further shows that in the years 2001 and 2002 as well as 2008 and 2009 25 to 30

Table 3: Main Results.

Variable	Interval width		Result
	1%	2%	
ACC_STD [RoA]	The distribution does not differ by accounting standard.	The distribution does not differ by accounting standard.	According to these results, H1 is rejected.
Industry [RoA]	The distribution differs by industries.	The distribution differs by industries.	According to these results, H2 is supported.
Industry [RoS]	The distribution does not differ by industries.	The distribution does not differ by industries.	According to these results, H2is rejected.
Country [RoA]	The distribution differs by country.	The distribution does not differ by country.	The tests do not indicate a definite result, as according to the results in the 1% interval H3is rejected and in the 2% interval H3is supported.

percent more observations are contained in the earnings management intervals than in other years. This might have been caused by the scandal of Enron in 2001 and the start of the economic crisis in 2008. No change in earnings management behavior which can be measured is indicated within the data during the whole time.

8. Limitations

Due to the research setting the limitations are mentioned as follows:

First, according to the chosen measurement model no distinct assertion concerning the reasons for conducting earnings management can be deduced. Further, not yet discovered parameters can have meaningful influences on the data as it is or may be of importance for further explainability of non-explainable results. Aspects which might influence earnings management could be, e.g. the regulative and institutional environment of a company, the elected auditor or the management's personal targets.

Second, the method of earnings management's identification is not dividable and therefore real-, accounting-, legal- and illegal-earnings management cannot be split while researching and accordingly no conclusion concerning result implications outside the norm can be drawn.

Third, the research results are just partially generalizable concerning representativity (e.g. other countries, non-market listed companies) and taken for granted just for similar data-sets.

9. Conclusion

Generally, the results differ from the authors initial expectations. It is important to point out that our study provides insights concerning the influencing factors on earnings management. For our analysis we specifically chose the applied accounting standard, the industry sector and the country of official quotation to show the effect and relevance of these vital factors in practice.

One of the biggest challenges for researching earnings management is the choice of the model to measure earnings

management. Although accrual models are decisively used in literature our aim was to measure earnings management in reality without the need of estimations. By using Burgstahler and Dichev's model (1997) we provide evidence that earnings management behavior leads to unified results within the earnings management intervals (Glaum et al. 2004). In the following the main results are subsumed:

First, the applied accounting standard does not lead to significant differences in earnings quality, thus although former mentioned literature clearly elaborates on the superior value of principle-based accounting standards compared to rule based accounting standards, no superior value of any accounting standard can be identified.

Second, we find that the earnings management behavior differs by industry using the scaling variable RoA. When applying RoS as scaling variable the distribution does not differ anymore. Thus we conclude, that the scaling variable is to be questioned.

Third, we analyze if differences between earnings management behavior between insider economics (Austria/Germany) exist. Our results are mixed but indicate that differences in the earnings management behavior of insider economics could exist.

Our study contributes to the literature dealing with the influencing factors on earnings management. Within the following section we elaborate on further research opportunities.

10. Further Research

Further research opportunities are seen in analyzing more factors and their effects on earnings management as e.g. corporate governance regulations, auditors, audit opinion, size of the audit committee and company size. In particular, the relation between earnings management and auditors, audit opinion and size of the audit committee could be added to possible analyses.

The most vital question concerning research design is the choice of the scaling variable**.** Therefore, the scaling factor or benchmark, as there could be more adequate scaling factors or benchmarks, need to be reviewed. Specifically, for the financial industries' sector a better benchmark should be found, as this sector is very important and affects other sectors. Finding adequate benchmarks for various groups of companies could improve empirical earnings management research by far.

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