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# National culture, ownership concentration and earnings management

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## **Abstract**

This research studies the relationship between earnings management as the dependent variable, and national culture, ownership concentration and the interaction between national culture and ownership concentration as the independent variables. It tries to add to the current literature by taking into account two forms of earnings management: real and accrual-based earnings management, by using the national culture model of Gray (1988) instead of the popular Hofstede model, and by taking into account the interaction between national culture and ownership concentration. 12254 companies were analyzed, the results showed that both measures of national culture: secrecy and conservatism had a negative effect on real earnings management. However, no significant effects were found for national culture on accrual-based earnings management, and for ownership concentration and the interaction term on both measures of earnings management. The main implication of this study is that national culture impacts earnings management, but that there is still work to do in order to find out how culture and ownership concentration influence earnings management.

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## 1. Introduction

A couple of months ago, the South-African furniture producer Steinhoff made the newspapers for misstating its assets and earnings. According to the PWC, which was the auditor that identified the fraud, Steinhoff misstated its assets and earnings by 6.5 billion euros. The company used artificial transactions to inflate the value of the company and its revenues (Accountant week, 2019). De Steinhoff case is not a unique incident; earnings management is a widely studied phenome and occurs in many other companies.

Cohen and Zarowin (2008) differentiate between two forms of earnings management: real, and accrual-based earnings management. Accrual-based earnings management is the manipulation of a firm's' earnings through pure accounting choices. Real earnings management involves earnings management techniques that impact actual cash-flows and hence have a real effect on firms. Examples of such real earnings management techniques are the acceleration of sales, cutbacks on research and development or advertising expenses, and increasing production in order to lower cost of goods sold.

Incentives that are found to impact earnings management are for example: the reward structure (Bergstresser & Philippon, 2006), equity issuance (Teoh, Welch & Wong, 1998), debt covenants (Kim & Pevsner, 2010), takeovers (Erickson & Wang, 1999) or a managerial switch (Pourciau, S. 1993). Not only incentives play a role regarding earnings management, but there are also restraining factors that impede the possibilities of managers to undergo earnings management. Examples of these 'restraining factors' are: the composition of the board of directors (Cornett, Marcus & Tehranian, 2008), the regulatory environment (Memis & Cetenak, 2012), the level of protection of minority investors (Leuz, Nanda & Wysocki, 2003), the size of the auditor (Becker, DeFond, Jiambalvo, and Subramanyam, 1998) and audit effort (Caramanis & Lennox, 2008).

While most earnings management research sees managers from a rational perspective and in conflict with their shareholders. This research sees managers as persons with individual values influenced by their national culture and takes into account the fact that majority shareholders sometimes collide with managers to expropriate other smaller shareholders. This study will challenge this perspective by using the independent variables of national culture and ownership concentration.

National culture has been discovered to impact companies in many ways. For example, the composition of the board of directors is influenced (Li & Harrison, 2008). Also, the level of innovation differs across cultures (Van Everdingen & Waarts, 2003), furthermore decision making and the organizational structure are influenced by national culture (Khatri, 2009), additionally ethics and social performance are related to culture (Ringov & Zollo, 2007). There is also some research done about the relationship between national culture and earnings management but the results are mixed and sometimes contradicting. For example, regarding the cultural factors uncertainty avoidance and individualism, there is mixed evidence. Some found a positive relationship for individualism and a negative one for uncertainty avoidance (Han, Kang, Salter, & You 2010). Others found a negative relationship regarding individualism (Desender, Castro, & De León 2011) and positive one regarding uncertainty avoidance (Nabar & Boonlert-U-Thai 2007).

One of the reasons that there is contradicting evidence with respect to national culture could be that most research<sup>ers</sup> uses the framework of Hofstede (1980) to define the independent variable of national culture, while his conceptualization of culture is not adapted into accounting. Another reason that there are mixed results could lie in the fact that most studies do not differentiate between real and accrual-based earnings management. My study will add towards the current literature

regarding national culture and earnings management by taking into account both real and accrual-based earnings management and by using the framework of Gray (1988) to operationalize national culture which is an adaptation of the framework of Hofstede (1988) and is modified towards accounting.

Research regarding ownership concentration is dominated by the alignment vs entrenchment debate and has found various positive and negative effects of ownership concentration on companies. Positive effects are for example higher R&D investments (Baysinger, Kosnik & Turk 1991), lower risk-taking (Shehzad, de Haan and Scholtens 2010) and lower levels of non-related diversification (Hill & Snell, 1989). Negative effects found are less disclosure (Jiang, Habib & Hu, 2011), lower CSR performance (Dam & Scholtens 2013) and board independence (Setia-Atmaja, 2009). Also, the relationship between ownership concentration and earnings management has some inconsistent findings. Some found a negative relationship (Alves, 2012), others a positive (Velury & Jenkins, 2006) and others both a positive and negative one depending on the percentage of ownership concentration (Ding, Zhang, and Zhang 2007). My research will add towards the current literature by looking at the difference between the effect of ownership concentration on real earnings management versus its effect on accrual-based management. To see whether the direction of the relationship between ownership concentration and earnings management differs between these two forms of earnings management. Another addition of my research towards the current literature is the analysis of the interaction between national culture and ownership concentration to see whether national culture weakens or strengthens the effect of ownership concentration. The research question that will be used to gather the knowledge to test the usefulness of these conceptualizations of national culture and earnings management, and the interaction between national culture and ownership concentration will be: *“What is the effect of national culture and ownership concentration on real and accrual-based earnings management and does national culture influence the effect of ownership concentration?”*

The results showed significant effects for both secrecy and conservatism which are two measures of the accounting culture by Gray( 1988), on real earnings management. This shows that the accounting culture does matter and impacts the trustworthiness of the financial statements. However, for accrual-based earnings management, ownership concentration and the interaction term no significant effects were found. There still needs to be done research on the effects of ownership concentration, secrecy, and conservatism to examine how these factors lead to earnings management because their effects are not straightforward. Regarding the insignificant results with respect to the interaction between national culture and ownership concentration, an explanation could be that the cultural background of the owners has an effect but the culture of the company they own does not.

The structure of this paper is as follows: Chapter two will give an overview of the literature with respect to earnings management, ownership concentration and national culture and the interplay between these variables. Furthermore, hypothesis will be formulated. The third chapter will be about the research design and will cover the conceptual model and the operationalization of the main, and-control variables. The fourth chapter will show the results. This fifth and final chapter of this paper will be the conclusion and discussion of the results.

## 2. Literature review

### 2.1. Earnings Management

Earnings management is defined by Leuz, Nanda, and Wysocki (2003) as follows: “the alteration of firms reported economic performance by insiders to either mislead some stakeholders or to influence contractual outcomes”.

The literature covers two types of earnings management: real and accrual-based earnings management. Where accrual-based management focuses on manipulating financial statements by means of pure accounting choices, Real earnings management involves changing real behavior, in order to bring certain accounts at a desirable amount (Cohen & Zarowin, 2008). Earnings management is driven by various incentives and is confined by the existence of different forms of restraining factors. The next sections will cover the two forms of earnings management and give an overview of the research done regarding the incentives that trigger and the factors that restrain earnings management.

#### 2.1.1. Accrual-based earnings management

Accrual-based earnings management typically takes the form of high positive or negative accruals, to move some of the current year’s earnings over to the next year, or to move some of next year’s earnings over to the current year (Cohen & Zarowin, 2010). Advantages of this type of earnings management are that it does not impact the inflow of cash and does not impact the long-term viability of a firm. Furthermore, accrual-based earnings management is harder to detect and can be conducted within the boundary of accounting standards. Another benefit is the fact that these accruals can be manipulated after real income is known, and there is few uncertainty about the effect of the accruals on reported earnings. Disadvantages of accrual-based earnings management are the fact that it is punishable by law, in case earnings management activities lead to accounting regulation being violated. Besides that, executing accrual-based earnings management in a certain year to increase income means that in the next year income will decrease more strongly, which can create a spiral whereby earnings management increases every year in order to outweigh the income decreasing effect of earnings management in the previous year (Badertscher, 2011).

#### 2.1.2. Real earnings management

Real earnings management is typically associated with an aggressive approach to increase short-term sales by offering clients more favorable prices and terms. Another technique is to increase production levels to allocate fixed costs over a bigger number of units in order to decrease cost of goods sold. A final technique managers use to manipulate earnings through real earnings management, is by decreasing selling, general and administrative expenses, research and development investments and advertising costs which increases short-term profits (Roychowdhury, 2006). Reasons for managers to choose real earnings management over the somewhat simpler accrual-based earnings management is because real earnings management is harder to detect by auditors and is associated with more discretion for the manager (Gunny, 2005). Disadvantages of real earnings management are the fact that it has a real effect on the cash flow of organizations and that it is harmful to the future viability of a company. Besides that, its effect on real earnings is initially unknown because the expenditures are made before income over the year is revealed (Badertscher, 2011).

These two forms of earnings management are not stand-alone practices but are dependent upon each other. (Achleitner, Günther, Kaserer and Siciliano, 2014) found evidence that there is a trade-off regarding the two earnings management strategies. The choice for a certain strategy depends

on the price the company pays for the disadvantages of the strategy. The authors also discovered that the two forms of earnings management are also used to correct each other. In case real earnings management has a too strong effect it is compensated with lower accruals, while in the case of a too weak effect, accruals are manipulated upwards more strongly. The thesis that these two forms of earnings management are substitutes, is also the main rationale behind the different hypothesis regarding the different forms of earnings management, which will be stated later on in this paper.

### *2.1.3. Incentives*

Most earnings management literature is about either the incentives or the opportunities which lead to earnings management. Various incentives have been found to trigger the manipulation of financial statements. In most cases it involves trying to increase reported earnings for example, to achieve the earnings level anticipated by analysts in order to retain the reached amount of earnings in the past, or in order to keep the net income in the green all in case the company would just fell short without earnings management (Degeorge, Patel & Zeckhauser 1999). In the next section there will be a sum-up of incentives that drive managers to undertake earnings management.

Firstly, the reward structure of CEO's can create incentives. Bergstresser & Philippon (2006) show that bigger stock-based compensation leads to bigger amounts of earnings management in order to capitalize on stock options.

Another example of an incentive that triggers manipulation of a firm's income is the case of a take-over which is financed by offering the shareholders of the acquiring company, equity. There is a tendency by managers to artificially boost a firm's share-price in order to decrease the number of shares to be offered to shareholders. These effects become stronger with an increase of the relative size of the acquired company (Erickson, & Wang 1999).

Also, forecasts which are too optimistic can create another incentive for managers to adjust earnings artificially. Shareholders can sue companies for releasing over-optimistic forecasts, this legal threat creates pressure for managers to increase earnings to meet their forecasts and stay away from possible lawsuits (Kaszniak, 1999).

Furthermore, the issuance of equity can provide managers with motivations to manage earnings upwards for example through using accruals, but also by other techniques like offering discounts in order to increase revenue in the short term, or by decreasing allocated fixed costs through increasing the production rate (Cohen & Zarowin, 2010). Teoh, Welch, and Wong (1998) also found equity issuance to be related to earnings management. The discovered income-increasing earnings management activities leading to higher earnings in the year preceding the issuance of shares and lower earnings in the two years after the issuance.

Another incentive could arise in the case of a buyout of shareholders by a firms own management. Under such conditions, it is tempting for managers to use income-decreasing earnings management techniques in order to make the company appear less profitable. This strategy makes a lower buy out price seem legitimate which is, of course, perceived favorable by the top management who will buy those shares (Perry & Williams, 1994).

Another important reason for managing earnings upwards is the achievement of contractual thresholds in the case of debt covenants. Especially in the case of few negotiation space to determine a new threshold when missing the previous threshold, managers are incentivized to increase earnings (Kim & Pevzner, 2010). These are reasons to manage earnings upwards, but sometimes there are circumstances in which a downward alteration of earnings is desired by management. This could be the case if thresholds will not be achieved, and it is more worthwhile to manage earnings downward

to such a degree, that it will cost few efforts to reach the threshold the next time (Degeorge, Patel & Zeckhauser, 1999).

Also, the protection of an industry through an increase in income taxes, can be a reason for companies to show that they are in a tough situation and make them decrease earnings to influence the outcomes of an investigation of such an import tax by policymakers (Jones, 1991). Finally, the negotiation of debt contracts can be a reason to decrease earnings in order to get favorable terms (Saleh & Ahmed, 2005).

In the case of a new manager being appointed, there is an incentive for the manager to use income-decreasing earnings management tactics in order to lower income in the first year after the appointment. The manager subsequently blames his predecessor of the low earnings in the first year and takes credit of the artificially higher earnings in the next year (Pourciau, S. 1993).

#### *2.1.4. Restraining factors*

These are all incentives for managers to commit to earnings management, but for these incentives to lead to actual earnings management, there has to be an environment which facilitates the manipulation of the financial statements. Various factors simplify or harden the execution of earnings management.

One important restraining factor is the composition of the board of directors, more external board members in the form of institutional investors lower the presence of earnings management. Institutional owners are in the position to provide efficient oversight on the firm's management and limit the room for managers to game the earnings of a company (Cornett, Marcus & Tehranian, 2008). Also, Klein (2002) analyzed the effect of external board members on earnings management and found that the lower the number of external board members, the higher the chance of earnings management. Another restraining factor is the independence of the audit committee and the independence of the compensation committee (Klein, 2002). A more independent audit committee is in a better position to be objective and monitor management more efficiently.

Furthermore, the judicial environment a company finds itself in can have an impact on the manipulation of a firm's earnings. Countries with a bigger adherence of the government to the law, experience higher levels of earnings quality (Memis & Cetenak, 2012). Besides that, the level of investor protection is found to influence earnings management. More and stronger rights for minority investors take away the room for directors to manipulate earnings (Leuz, Nanda & Wysocki, 2003). Moreover, family-owned companies are found to undergo fewer earnings management because of the closer supervision of the board, and the more future-oriented view from managers who are part of the owning family (Wang, 2006).

Additionally, the amount of disclosure is found to impact earnings management. The more information is disclosed, the better the opportunities for shareholders to monitor management and evaluate the trustworthiness of financial statements. It is therefore not surprising that increased levels of information asymmetry increase the chance of earnings management occurring (Richardson, 2000).

Becker, DeFond, Jiambalvo, and Subramanyam (1998) found that being audited by one of the six biggest auditors leads to lower levels of earnings management, because these auditors are more likely to find errors and issue a qualified opinion because of those errors. Also, the effort an auditor puts into an audit affects the level of earnings management. The lower the effort an auditor puts into the audit, the higher the chance of earnings management being detected and the more often earnings management appears. This effect is found for positive accruals in order to manage income upwards (Caramanis & Lennox, 2008).



Also, the presence of analysts can confine managerial discretion to game earnings. Analysts have a big audience and have the necessary skills to interpret financial statements and determine their truthfulness and communicate their findings to the other investors. These factors make them a strong oversight source and prevent managers from undertaking earnings management. The impact of analysts is stronger when analyst size and importance increase (Yu, 2008).

In conclusion, it can be stated that most earnings management research focuses on the conflict between management and shareholders. Those researchers see managers as rational persons with individual preferences regarding the financial picture of a company, motivated by various incentives to show either a higher or lower profit towards the shareholders than actually achieved, mitigated by certain constraining or facilitating factors. However, people are not only rational but do also have cultural values that influence the degree, to which managers value incentives to commit earnings management. These cultural values also influence their ethical beliefs and their susceptibility towards earnings management. Another fact that is somewhat ignored is that managers are also not always in conflict with shareholders but can also collide with them to expropriate other shareholders. My study will try to add towards the mainstream in the earnings literature by analyzing the impact of national and ownership concentration, and the interaction between them. This study investigates how cultural values shape earnings management and what the effect is of shareholders on earnings management and how these two effects interact with each other.

## **2.2. National Culture**

While the framework of Gray (1988) is used in this study, most research with respect to the influence of national culture on organizations is done using the Framework of Hofstede (1980). For this reason, this section will start with an overview of the effects of some dimensions of Hofstede's cultural framework on companies. Subsequently, the two dimensions of Gray, which will be used in this research, will be highlighted. Namely: transparency vs secrecy and conservatism vs optimism.

### **2.2.1. Hofstede's cultural framework**

The framework invented by Geert Hofstede (1980) initially incorporated four dimensions: individualism, power-distance, uncertainty avoidance, and masculinity.

In individualistic countries, people are operating more or less independent from each other. In these cultures, people are responsible for themselves and do not look after other people in society. In collectivistic cultures people are dependent upon each other, they look after each other and feel attached to the group or society they belong to.

Power-distance is about the acceptability of current power structures and adherence to a hierarchical power structure. In countries with high power distance, power is less dispersed and this concentration of power is being accepted. People respect the current distribution of power, rules, and norms, and punish others who do not. In cultures with fewer power-distance, the distribution of power is challenged and people put less importance on hierarchy, rules and norms.

Uncertainty avoidance is about the stance of a culture towards the acceptability of ambiguity. In countries with high uncertainty avoidance, people prefer to have a grip on the future. These cultures want to preserve the current situation and oppose change, while promoting consistency and adherence to current rules and regulations. In cultures with lower amounts of uncertainty avoidance change is more embraced and people are accepting uncertainty and are more open against novel ideas and changes in practices.

Masculinity is compared with femininity. In masculine cultures values like success, prosperity, performance, and self-consciousness are important. In feminine cultures, on the other hand, there is a bigger focus on the other individuals which results in values like caring for the other and humility being more important. Where masculine cultures focus on the individual, feminine cultures put much more importance on the people around us (Li & Harrison, 2008).

### *2.2.2. Research under the Hofstede framework*

One factor that is impacted by national culture is board composition. More external board members are found in the more individualistic, masculine, uncertainty avoidant and higher power distance cultures. These cultures also have more often the CEO appointed as chair of the board of directors. Cultural values underlying these relationships are giving voice to concerns of various individuals (individualism), more stability (uncertainty avoidance), extracting information from a broader number of sources (masculinity) and powerful leadership (individualism, masculinity and power distance) (Li & Harrison, 2008).

Another factor influenced by national culture is innovation. There are higher levels of innovation in more individualistic, low power distance, masculine, low uncertainty avoidant countries. Values determining these effects are more power for individual top managers (individualism), top-down communication with a strict hierarchy (power distance), a strong focus on performance (masculinity) and openness to risk-taking (uncertainty avoidance).

Also, social responsibility is influenced by national culture. In countries with high levels of power distance, there is a lower social, and environmental performance because socially responsible ideas from lower-level employees are not embraced by top management. Also, masculinity leads to lower social responsibility because these cultures focus on increasing performance which is done at the cost of social responsibility (Ringov & Zollo, 2007).

Furthermore, high power distance is associated with a top-down communicating pattern with a focus on the superior person. While in cultures with lower power distance there is more slow and shared decision making. Also, the organizational structure in cultures with high power distance is more fragmented and specialized into different organizational departments (Khatri, 2009).

The attitude of a country towards uncertainty can influence the financial environment of the country. Countries with high levels of uncertainty avoidance have a preference for banks over stock markets which is stronger than in cultures which are more open to uncertainty. The reason for this preference could be found in the fact that cultures which are averse of uncertainty are also averse of risk-taking with respect to their financial position. Banks stabilize future risk through offering fixed contracts and loans while exchange markets increase exposure to risk because of their volatility (Kwok & Tadesse, 2006).

Masculinity impacts the working environment. In more feminine cultures people are more content with their jobs. People in masculine cultures are less satisfied with their salaries, their opportunities to improve their knowledge and skills, the actual contents of their jobs and the relation with their co-workers. The amount of uncertainty avoidance also impacts the degree of job satisfaction. In countries which are more tolerant towards uncertainty, people are more satisfied with their jobs with respect to the interaction with their colleagues, the amount they get paid, the opportunities to build their knowledge and skills and the strategy and tone at the top (Eskildsen, Kristensen, & Gjesing Antvor, 2010).

The level of individualism in a country influences the desirability of a performance evaluation system that is adapted towards the needs of the employees. In countries with high levels of

individualism, there is a bigger preference for such performance management systems because employees want their individual situation to be addressed through the performance management system (Chow, Lindquist & Wu, 2001).

In the USA with its lower power distance, people are less satisfied with ambitious performance targets than in China, which is a culture with a stronger power distance. A reason for this effect could be that the higher level of power distance in China makes ambitious targets more acceptable because they accept the authority of the target setter (Chow, Lindquist & Wu, 2001).

The earnings management literature under the Hofstede framework is not always consistent. For example, the effect of individualism on earnings management is not clear because some authors found a negative (Desender, Castro & De León, 2011) and other authors a positive relationship (Han, Kang, Salter & You, 2010). The same goes for uncertainty avoidance because some found a negative relation (Han, Kang, Salter, & You 2010) and others found a positive one (Nabar & Boonlert-U-Thai 2007).

### *2.2.3. The framework of Gray*

Gray (1988) made an adaptation to the Hofstede framework because he believes that the distinction of cultural values used by Hofstede does not affect accounting directly, but that these cultural values jointly determine the accounting 'subculture'. For this reason, Gray build on the Hofstede framework to create a new model where each of his dimensions is calculated by using multiple Hofstede's dimensions. The dimensions used by Gray are professionalism versus statutory control, uniformity versus flexibility, conservatism versus optimism and secrecy versus transparency. The last two dimensions will be used in this study.

Professionalism vs Statutory control is about the degree to which people are expected to follow the rules. In countries with high levels of statutory control, people adhere to the rules and there is few room for discretion. In countries with high levels of professionalism, people are expected to use their own judgment and there is much more discretion.

Uniformity vs Flexibility covers the level to which accounting practices in various companies look alike. In countries with high levels of uniformity, there is isomorphism regarding the use of accounting systems and there is a tendency towards using the same accounting system in different companies. In countries with high levels of flexibility, there is much variation between accounting practices across firms because these practices are adapted towards the specific needs of these firms.

Conservatism vs Optimism addresses the carefulness regarding accounting measures. In countries with high levels of conservatism, there is a more conservative approach towards measurement while in optimistic cultures managers use more aggressive accounting techniques.

Secrecy vs Transparency handles about the degree to which accounting information is disclosed to outsiders. In countries with high levels of secrecy, information is disclosed only to the people who are directly related to management while in countries with high levels of transparency accounting information is dispersed towards outsiders more often.

### *2.2.4. Research under the Gray framework*

Most research under the gray framework has focused on the validity of the framework. Salter and Niswander (1995) tested the framework by posing thirteen hypotheses, results supported however less than half of those hypotheses. However, Eddie (1990), Braun and Rodriguez Jr (2008) found support for all four dimensions of the Gray framework. So, there is still a debate about the usefulness of the framework. Perhaps that is the reason that few researchers use the framework as their

independent variables. This is also the reason why the next section gives an overview of the literature regarding the variable's conservatism and secrecy, sometimes analyzed at the company level.

### ***Conservatism***

Kim and Zhang (2016) found the level of conservatism regarding the disclosure of bad and good news being negatively related to the chance of the price of stock to suffer a strong decline. The authors argue that this kind of conservatism functions as a governance mechanism that restrains managerial efforts to disguise bad performance, and forces managers to disclose bad news timely. Another argument used is that earlier disclosure of bad news leads to corrective actions by management, in order to act on bad performance, which saves the company from undertaking unprofitable projects for too long. This earlier disclosures decrease the chance of sudden and severe stock price declines. Conservatism, in the sense of recognizing losses earlier and revenues later, leads to better financial performance regarding higher gross margins and cash flows. This financial performance effect could be explained by arguing that timelier recognition of losses, leads to managers being reluctant taking on loss generating projects, and stimulates them to cease projects if they appear to be heading towards a loss. Also forecasts, provided by management to show expected financial performance, are impacted by accounting conservatism. Higher levels of conservatism lead to forecasts being issued less often, on a less timely basis and containing fewer information. This relation could be explained by viewing conservatism and forecasts as interchangeable governance mechanisms that reveal bad news in a timely manner (Hui, Matsunaga & Morse, 2009). Conservatism is also found to have an effect on long term profitability and the efficiency of a firm's investments decisions. Explanations for this relationship are that conservatism leads to more transparency towards shareholders which allows them to provide better oversight on management investment activities. Also, the cost of borrowings and equity is expected to be lower in the case of accounting conservatism which fosters profitability (Lara, Osma, & Penalva, 2016).

### ***Secrecy***

Hope, Kang, Thomas, & Yoo (2008) studied the effect of secrecy on auditor choice. They found that higher levels of secrecy in a country lowers the chance of choosing a Big 4 auditor. As a reason for this relation, the authors state that companies with higher levels of secrecy do not want to share too much information to outside investors, and a Big 4 auditor could require more disclosure than a smaller auditor. Another reason could be that Big 4 auditors do not want to engage with a client that withholds much information and imposes too much risk on the auditor. This negative relationship between secrecy and the choice of a Big 4 auditor is mitigated by the international orientation of a company, because more international oriented companies are less influenced by the national culture. Higher levels of transparency give potential buyers more information, which reduces the risks of buying a firm's assets and causes assets to be sold more often. Because assets are sold more easily, transparency facilitates risk-taking by managers and causes investments to be less effective (Burkhardt & Strausz, 2009). Also, more transparency leads to lower credit spread levels because there are lower levels of information asymmetry which reduces the risk-taking associated with the bonds and hence lowers the risk premium (Yu, 2005). Finally, the liquidity of stock is impacted by secrecy, in companies with higher levels of secrecy the liquidity of stock changes more often and more strongly. A reason for this effect is that transparency gives investors more information, which enables them to determine more precisely the value of a firm. More accurate information about the firm value, reduces the chance of unexpected downfalls of a stock price and creates stability with respect to the pace in which stock

gets sold (Lang, & Maffett, 2011).

It can be questioned if the four Hofstede dimensions have a stand-alone impact. These four dimensions are all present in a culture and impact accounting together with much more other factors, and it can be questioned whether it is good to disentangle these four dimensions. The framework of Gray combines the four dimensions of Hofstede because he believes that these factors jointly affect the accounting culture of a country. The effect of accounting transparency and conservatism is purely researched in accounting related topics. These two dimensions have a much more direct impact on the accounting environment than the dimensions used by Hofstede which is why research from the Gray perspective can add value towards the current Hofstede stream.

After showing the effect of these two Gray, and the four Hofstede dimensions on various aspects of accounting, it is time to take a look at the effect of culture on the accounting variable used in this study, namely earnings management.

### **2.3. National culture and earnings management**

The two dimensions of national culture used in this research can be seen as restraining factors because less secrecy and more conservatism can be expected to constrain management efforts to manipulate earnings. But national culture can sometimes also create incentives, for example, in the case of masculinity it can be argued that the performance-driven nature of masculine cultures creates incentives to show good performance, which can trigger earnings management in case performance is lower than expected.

The effect of secrecy on earnings management is studied by Houqe, Monem, Tareq and Van Zijl (2016). They found secrecy to be negatively related to earnings quality. Other authors also found countries with high levels of secrecy to be related to higher levels of earnings management, but these authors found this effect to be mitigated by the use of IFRS standards. The effect of the implementation of IFRS on the quality of a firm's earnings is more strongly positive in countries with higher levels of secrecy (Ahmed & Duellman, 2011).

Because secrecy leads to earnings management being harder to detect, it can be expected that managers will use accrual-based earnings management more often in secret countries, which is supported by the findings noted above. However, as in secret countries accrual-based earnings management is an appropriate way to commit earnings management it can be expected that there is less need for real earnings management. Therefore, the following hypotheses are formulated:

*H1a: secrecy is positively related to accrual-based earnings management.*

*H1b: secrecy is negatively related to real earnings management.*

Conservative accounting standards mitigate incentives to undertake earnings management, because it dampens the effect of earnings management on the stock market. This dampening effect is caused by the tendency of conservative accounting to show lower earnings than actually achieved. To offset this, as the authors call it "downward bias", managers have to take earnings management to such a high amount, that it is less worthwhile for managers to manipulate earnings in conservative countries (Chen, Hemmer & Zhang, 2007).

Conservative accounting is expected to lead to earnings management being less attractive. However, this relation can be expected with respect to accrual-based earnings management, because conservative accounting policies limit the room for management to use aggressive accrual-based

techniques to manipulate earnings. Contrary to accrual-based earnings management real earnings management could be expected to be more prevalent in conservative countries, because the accounting policies offer fewer room to manipulate earnings, so it is more attractive to use real techniques to increase earnings. Another reason that real earnings management could be more attractive in conservative cultures, could be that the downward bias makes it more attractive to use the ex-ante technique of real earnings management. Because income is already downward biased, a rough technique like real earnings management has still a useful effect in case income turns out to be higher than expected since income would still be too low without earnings management. Therefore, the next hypotheses are as follows:

*H2a: conservatism is negatively related to accrual-based earnings management.*

*H2b: conservatism is positively related to real earnings management.*

#### **2.4. Ownership concentration**

Ownership concentration refers to the degree to which shareholdings of a company concentrated in the hands of few. Power can be concentrated in the hands of institutions, families or private investors. Most research uses share percentages as an indicator of the level of ownership concentration, but Edwards and Weichenrieder (2004) use a more in-depth approach and differentiate between control and- cash-flow rights. Also, the level at which ownership concentration is measured differs across studies. Claessens and Djankov (1999) look at the top five shareholders while Rubin (2007) looks at the percentage of shares owned by certain groups of shareholders. While the measurement of ownership concentration differs between studies the main concept remains the same and it is a widely studied factor which effects will be explored in the following sections.

##### *2.4.1. The entrenchment vs alignment debate*

The literature regarding the effect of ownership concentration is characterized by the discussion whether ownership concentration has a positive or a negative effect on firms. A positive effect of ownership concentration is referred to as the alignment effect whereas the negative effect is called the entrenchment effect. These effects are characterized as follows.

Entrenchment effect: A disadvantage of large ownership is that stricter monitoring also dampens the inclination of management to undertake new initiatives and investments, because large shareholders have a strong voice in the firm's strategy, and management has fewer freedom to come up with their own ideas (Burkart, Gromb, & Panunzi, 1997). Another negative effect of large shareholders is the risk of expropriation of minority shareholders by that large shareholder. Which takes the form of diverting resources from a company for the managers' own good at the expense of the other minority owners (Novaes, 1999).

Alignment effect: For large shareholders, it is more worthwhile to undertake the costs to monitor managers because their wealth depends on a substantial amount on the profits of a firm. Therefore, interventions from shareholders in order to increase a firm's revenue will be higher in case of a large owner, who has the incentives to monitor management and take action in case there is room for improvement (Shleifer & Vishny, 1986).

##### *2.4.2. Research regarding ownership concentration*

The next section shows an overview of the research done with respect to ownership concentration where both positive and negative effects of ownership concentration are identified. Various authors

have conducted research on the effect of ownership concentration on firm performance. These studies yielded various results. Heugens, Van Essen and van Oosterhout (2009) found a positive relationship between ownership concentration and financial performance. Claessens and Djankov (1999) found a positive relationship between ownership concentration and profits and labor productivity. But four other studies (Chen, Cheung, Stouraitis & Wong, 2005; Demsetz & Villalonga, 2001; Margaritis, & Psillaki, 2010; Omran, Bolbol, & Fatheldin, 2008) Found no significant relationship. The reason that so many studies did not find any results could be explained by arguing that there is not a straightforward effect of centered ownership on performance, both the entrenchment and alignment effect could be present at the same time and both have their own impact on various other factors that impact performance. Therefore it makes more sense to look at other factors that are more directly affected by ownership concentration, which will be done in the following section.

One of these factors is the amount of risk-taking. Shehzad, de Haan, and Scholtens (2010) researched the amount of risk-taking in banks and its relation to ownership concentration found higher levels of ownership concentration to lead to higher levels of capital adequacy ratios. Which means the bank has more cash relative to the risk it exposes itself. Also, the percentage of impaired loans relative to total gross loans is lower in banks with concentrated ownership which are both findings that show that concentrated ownership leads to lower risk-taking in banks.

Also, the stock market is impacted by ownership concentration. Edwards and Weichenrieder (2004) analyzed the relation between the market value of equity and ownership concentration. The authors used two measures of ownership concentration: ownership concentration with respect to control rights and ownership concentration with respect to cash-flow rights. They found different effects with respect to the value of the shares for both forms of ownership concentration. Concentrated ownership of control rights led to lower share values while ownership concentration of cash-flow rights led to higher share values. The first relation is in line with the entrenchment effect showing that higher levels of control rights in the hands of few shareholders create incentives for those shareholders to expropriate minority shareholders. The second relation is in line with the alignment effect showing that a greater dependence of owners on cash flows creates incentives for owners to increase the cash flow of the company and thereby its share value. Another effect related to the stock market is that increased levels of ownership concentration lead to stock being sold less often, because of the increased information asymmetry that is associated with high levels of ownership concentration by investors. Another reason for this relationship could be that large owners sell their shares less often, which could lead to fewer shares changing hands (Rubin, 2007).

Furthermore, investments are impacted by ownership concentration. The effect of ownership concentration on investments is partly moderated by the type of owner. In the case of non-institutional ownership concentration, there is a tendency to invest redundant cash flows. This relation is positive, meaning that in the case of high positive cash flow, investments increase, probably caused by the desire of the controlling shareholders to extract cash-flows surpluses from the company by investing it in assets which are quickly sold to companies owned by the shareholders. In the case of institutional ownership, the link between cash flows and investment is weakened (Goergen & Renneboog, 2001). Also, the level of disclosure is impacted by ownership concentration. High levels of ownership concentration can create incentives for large owners to hide information from other shareholders in order to facilitate expropriation. This could be an explanation for the positive relationship between ownership concentration and the size of the bid-ask spread, the latter is perceived to be an indicator for information asymmetry because a large bid-ask spread shows that investors perceive large amounts of uncertainty (Jiang, Habib & Hu, 2011).

With respect to CSR, ownership concentration is found to have a negative impact. This negative impact on ownership concentration could be explained by arguing that large shareholders have a strong grip on the company and do not want the company to divert their money to other stakeholders, employees or environmental issues (Dam & Scholtens 2013).

Dividend payments are affected by the level of ownership concentration. In companies with higher levels of ownership concentration, there are lower levels of dividend payouts compared to net income. An explanation for this relation could be that controlling shareholders want to extract private benefits from the firm. In the case of lower dividend payouts, there is less cash flowing to the minority shareholders and there is more money for the shareholders to be diverted to their own pockets (Harada, & Nguyen, 2011).

Ownership concentration is also found to impact board independence. In companies with shareholders which own at least twentypercent of the shares, there are fewer independent directors found in the corporate board. A reason for this effect could be that controlling shareholders, who want to expropriate minority shareholders, do not want external board members, who are expected to preserve the interests of all shareholders, including minority shareholders and lower the opportunities for controlling shareholders to divert cash from the company (Setia-Atmaja, 2009).

In the case of a few institutional owners, R&D expenditures are found to be increased. This could be the case because institutional owners have more balanced portfolios which allows them to accept the risk-taking that is associated with R&D expenditures (Baysinger, Kosnik & Turk 1991). Ownership concentration also functions towards the diversification aspirations of top management. Managers could sometimes be obsessed with increasing the size of their firm and expanding their own power. Diversification into businesses that a company is not familiar with is one way to achieve that desire for firm growth. However large owners of a company already have their portfolios diversified and hence are skeptical against non-related diversification which is why ownership concentration is found to lower the amount of non-related diversification (Hill & Snell, 1989).

Also, accounting and control is studied in the context of ownership concentration. In the case of high private ownership, managers are monitored more closely which makes it less necessary to use accounting-based information to evaluate the performance of the managers. This is why in these companies managers are less often paid on the basis of accounting benchmarks, compared to companies with fewer levels of private ownership (Ke, Petroni, & Safieddine, 1999). Also, compensation practices differ within firms with higher ownership concentration. Controlling shareholders monitor shareholders more closely and have a bigger propensity to use fewer objective measurements, instead of using accounting numbers-based compensation (Ke, Petroni & Safieddine, 1999).

Concluding it can be stated that the literature shows various effects of ownership concentration on various factors, like the stock market, research and development, investments, diversification, corporate responsibility, risk-taking and dividend payouts, accounting and control and disclosure. However, these effects support both the entrenchment hypothesis and the alignment hypothesis. Also the inconsistent results regarding the effect of ownership concentration on performance show that ownership concentration has not a straightforward positive or negative impact on companies .But that there is a wide range of both positive and negative effects of ownership concentration on companies.



## **2.5. Earnings management and ownership concentration**

The relation between earnings management and ownership concentration is also studied. For example, ownership concentration is found to lead to more aggressive accounting practices because of the higher pressure controlling shareholders can exert on managers to create a more beautiful financial picture. Ding, Zhang, and Zhang (2007) studied the relationship between ownership concentration and earnings quality and found that below the controlling level of 50 percent ownership, ownership concentration leads to lower levels of earnings management, but that after the 50 percent mark ownership leads to higher levels of earnings management. There is however also evidence that the relationship between ownership concentration and earnings management is negative and linear (Alves, 2012), or positive in the case of institutional ownership (Velury & Jenkins, 2006). Others found a positive relation with accrual-based earnings management and a negative one with respect to real earnings management, the latter because of better monitoring of managers which leads to lower opportunities for real earnings management (Hsu, & Wen, 2015). Beuselinck and Manigart (2007) found that higher share percentages of investors lead to higher levels of earnings management and losses being reported later and untimely.

I will follow the study of Hsu and Wen (2015) and see ownership concentration as a constraining factor in relation to real earnings management because of tighter supervision. I will regard ownership concentration as an incentive in the case of accrual-based earnings management, because ownership concentration causes the wealth of the owners to depend on the performance of the company, which can be boosted by manipulating accruals to show higher earnings. Therefore, the following hypothesis will be stated:

*H3a: ownership concentration is positively related to accrual-based earnings management.*

*H3b: ownership concentration is negatively related to real earnings management.*

## **2.6. Ownership concentration and national culture**

With respect to interaction effects, there can be made a distinction between moderating and mediating effects. Baron and Kenny (1986) refer to a moderating variable as follows: “a qualitative or quantitative variable that affects the direction and/or strength of the relation between an independent or predictor variable and a dependent or criterion variable. Moderation is thus about the impact of a variable on the beta value of another variable, it does not look at the stand-alone effect of a variable, but at its effect on the relationship between two other variables. A mediation variable, on the other hand, is impacted by the independent variable and has a stand-alone effect on the dependent variable. The mediating variable performs as a link between the independent variable and the dependent variable. Incorporating the effect of the mediating variable makes the effect between the independent and dependent disappear, while a moderation variable does not affect the stand-alone relation between the dependent and independent variable in a model.

While national culture has been found to have an impact on earnings management it is doubtful whether the accounting culture determines the level of ownership concentration. Therefore a mediating relationship is not expected. A moderating relationship, however, could be expected. Because national culture can be expected with respect to accrual-based earnings management to strengthen (weaken) the positive effect of ownership concentration because it creates more (fewer) opportunities or incentives for owners to use accrual-based earnings management. In the case of real

earnings management, the effect of national culture can be expected to be fully in the context of incentives. Because ownership concentration is expected to be negatively related to real earnings management, fewer (more) opportunities for owners to use accrual-based earnings management will create more (less) incentives to use real earnings management which will lead to a weaker (stronger) relation in the context of real earnings management.

These two rationales lead to the following argumentation: Ownership concentration is expected to lead to higher levels of accrual-based earnings management because owners have incentives to expropriate minority shareholders. On top of that, in the case of high levels of secrecy, there is more room for owners to manipulate earnings through managing accruals because of the lower detection chance in these cultures. Because the desires of owners to manipulate earnings through accruals are facilitated in more secret countries the following hypothesis is formulated:

*H4a: For accrual-based earnings management, secrecy strengthens the effect of ownership concentration.*

Because in more secret countries there is more room for accrual-based earnings management owners are less motivated to use real earnings management to increase earnings. However, the negative monitoring effect of large owners on real earnings management is still present. Which is why the negative relation between ownership concentration and real earnings management will be expected to be stronger. This leads us to the next hypothesis:

*H4b: For real earnings management, secrecy strengthens the effect of ownership concentration*

In the case of high levels of conservatism earnings management through accruals is less attractive for concentrated owners because there have to be large accruals to outweigh the downward bias of conservative accounting. Because conservatism restrains owners to use accrual-based earnings management the following hypothesis is formulated:

*H4c: For accrual-based earnings management conservatism weakens the effect of ownership concentration.*

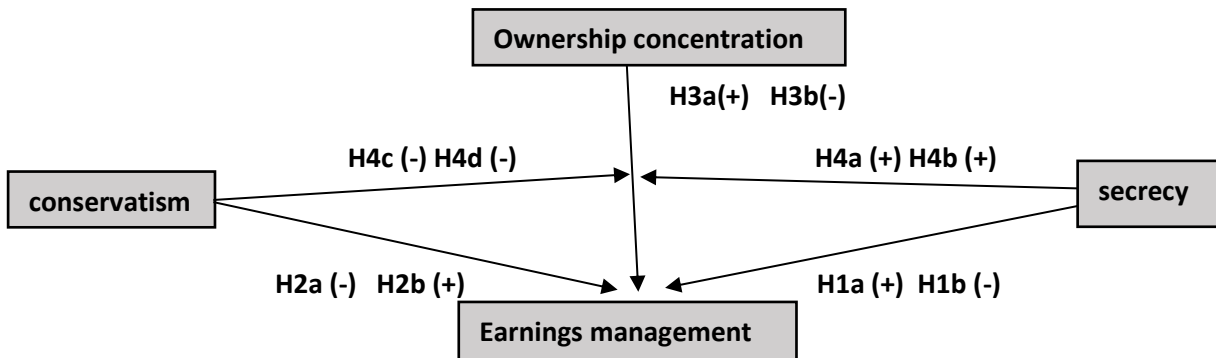
In highly conservative countries real earnings management is more prevalent because of the unattractiveness of accrual-based earnings management. In these cultures, it can be tempting for concentrated owners to use real earnings management to manipulate earnings which can be expected to make the negative effect of the stricter monitoring by concentrated owners less strong. Which leads us to the last hypothesis:

*H4d: For real earnings management conservatism weakens the effect of ownership concentration*

### 3. Research Design

#### 3.1. Conceptual model

Figure 1- conceptual model



Hypothesis 1a and 1b refer to the relationship between secrecy and earnings management. Hypothesis 2a and 2b are about the effect of conservatism on earnings management. Hypothesis 3a and 3b handle about the impact of ownership concentration on earnings management. Hypothesis 4a and 4b are about the impact of secrecy on the relationship between ownership concentration and earnings management. Hypothesis 4c and 4d cover the impact of conservatism on the relationship between ownership concentration and earnings management.

#### 3.2. Main variables

##### 3.2.1. Dependent Variables

##### **Real earnings management**

The dependent variable in my research is earnings management, which can be split up in accrual-based and real earnings management. Real earnings management will be operationalized by splitting up the three categories of real earnings management: accelerating sales, increasing production and decreasing SG&A, R&D and advertising expenses. I will follow the operationalization of Cohen and Zarowin (2008). They define normal accelerated sales as follows:

$$\frac{CFO_{it}}{Assets_{i,t-1}} = k_1 \frac{1}{Assets_{i,t-1}} + k_2 \frac{SALES_{it}}{Assets_{i,t-1}} + k_3 \frac{\Delta SALES_{it}}{Assets_{i,t-1}} + \varepsilon_{it}$$

Normal production is calculated using the following formula:

$$\frac{PROD_{it}}{Assets_{i,t-1}} = k_1 \frac{1}{Assets_{i,t-1}} + k_2 \frac{SALES_{it}}{Assets_{i,t-1}} + k_3 \frac{\Delta SALES_{it}}{Assets_{i,t-1}} + k_4 \frac{\Delta SALES_{i,t-1}}{Assets_{i,t-1}} + \varepsilon_{it}$$

Normal SG&A, R&D and advertising expenses are calculated as follows:

$$\frac{DISX_{it}}{Assets_{i,t-1}} = k_1 \frac{1}{Assets_{i,t-1}} + k_2 \frac{SALES_{i,t-1}}{Assets_{i,t-1}} + \varepsilon_{it}$$

CFO is cash from operations, Sales is Sales in a given year, Assets is the book value of the assets. PROD is the sum of the cost of goods sold and the change in inventory. DISX is the sum of SG&A, R&D and advertising expenses.

Real earnings management is calculated by adding up the error terms of these three regressions. These regressions are run on the industry level to control for industry-specific differences affecting earnings management. The error terms of Sales and the SG&A, R&D and advertising expenses regressions are negated because the lower the cash flow from operations and discretionary expenses, the higher real earnings management should be.

### **Accrual-based earnings management**

Accrual-based earnings management will be calculated by following the model of Cohen and Zarowin (2008)

$$\frac{TA_{it}}{Assets_{i,t-1}} = k_1 \frac{1}{Assets_{i,t-1}} + k_2 \frac{\Delta Rev_{it}}{Assets_{i,t-1}} + k_3 \frac{PPE_{it}}{Assets_{i,t-1}} + \varepsilon_{it}$$

In this formulae TA is total accruals measured by earnings before interest and taxes – cash flows from operations, Rev is Sales Revenue, PPE is property, plant, and equipment.

The estimated coefficients from the first regression, which is also controlled for by industry, k1t, K2, K3 and the constant for each industry are inverted in the next regression to estimate the normal accruals.

$$NA_{it} = \hat{k}_1 \frac{1}{Assets_{i,t-1}} + \hat{k}_2 \frac{(\Delta Rev_{it} - \Delta AR_{it})}{Assets_{i,t-1}} + \hat{k}_3 \frac{PPE_{it}}{Assets_{i,t-1}}$$

This formula shows the normal accruals: NA, in this formula the change of Account receivables (AR) is introduced. The difference between (TAit/ Assets I, t-1) and NAit are the discretionary accruals (DA)

### **3.2.2. Independent variables**

#### **Ownership concentration**

Ownership concentration will be operationalized as the percentage of shares owned by the three largest shareholders. Klassen (1997); Claessens and Djankov (1999) use the number of shares owned by the top five shareholders which are in this research limited to three.

#### **National Culture**

Culture will be operationalized by using the dimensions of Gray (1988). Two of his dimensions will be used, namely conservatism vs optimism and secrecy vs transparency. Conservatism vs optimism is about the stance of management to use either conservative or more aggressive accounting policies. Secrecy vs transparency is about the attitude of management towards disclosing its financial information towards a broad group. In cultures with higher amounts of secrecy, there is fewer transparency and information is only dispersed to those people who have a direct relationship with the firm.

Gray uses Hofstede's (1984) dimensions as a construct to define his dimensions, so I will use his transformation of the Hofstede's' dimensions as the basis for the operationalization. High conservatism is associated with high uncertainty and low masculinity and individualism.

**In formula form:** + conservatism = + uncertainty – masculinity – individualism

In order to get a positive relationship in cases conservatism leads to higher levels of earnings management, I will multiply the masculinity and individualism dimensions with -1. The three scores will be added and divided by 3 to get the average of the 3 scores.

**The equation will be:**  $\text{conservatism} = (\text{uncertainty} - 1 * \text{masculinity} - 1 * \text{individualism}) / 3$

Secrecy is associated with high uncertainty and power distance and low masculinity and individualism.

**In formula form:**  $+ \text{secrecy} = + \text{uncertainty} + \text{power distance} - \text{masculinity} - \text{individualism}$

To get a positive relation this time masculinity and individualism will be negated and the four scores will be added and divided by 4.

**The equation will be:**  $\text{secrecy} = (\text{uncertainty} + \text{power distance} - 1 * \text{masculinity} - 1 * \text{individualism}) / 4$

#### *National culture \* ownership concentration*

The interaction term will be created by multiplying the secrecy and conservatism variable with the variable of ownership concentration.

### **3.3. Control variables**

There will also be a few control variables based on the study of (Han, Kang, Salter, & Yoo, 2010), namely: Return on Assets, leverage, firms suffering a loss, and leverage

#### **Return on assets**

Companies with a low return on assets have an incentive to engage in earnings management. This variable will be operationalized as the return on assets for a specific firm as used by Abdul Rahman and Haneem Mohamed Ali (2006).

#### **Firm Size**

Large firms are stricter monitored which leads to fewer earnings management. This variable is measured by looking at the total asset value of the company as used by Rahman and Haneem Mohamed Ali (2006).

#### **Leverage**

High amounts of leverage lead to lower dependence on external capital and provide more incentives to earnings management. Leverage is also used as a control variable by Han, Kang Salter and Yoo (2010). In this research, the debt to equity ratio is taken to determine leverage.

#### **Loss**

There will be a dummy for firms suffering a loss because a negative income also creates incentives for earnings management. A company will be given the value 1 in case of a loss and a 0 in case of no loss.

### **3.4. Regressions**

There will be eight regressions in total. Two for secrecy, two for conservatism, two for ownership concentration and four for the interaction term. For each variable, there will be two regressions for ABEM (accrual-based earnings management) and REM (real earnings management).

#### **3.4.1. secrecy**

$$1a \text{ ABEM} = B_0 + B_1 \text{ secrecy} + B_2 \text{ ROA} + B_3 \text{ Leverage} + B_4 \text{ Loss} + B_5 \text{ Size} + \epsilon$$

$B_1$  will be expected to be positive, because in more secret countries there is less monitoring from shareholders and there are more opportunities to use accrual-based earnings management techniques.

$$1b \text{ REM} = B_0 + B_1 \text{ secrecy} + B_2 \text{ ROA} + B_3 \text{ Leverage} + B_4 \text{ Loss} + B_5 \text{ Size} + \epsilon$$

$B_2$  will be expected to be negative because the more secret the country, the more attractive accrual-based earnings management and the less need for real earnings management.

#### 3.4.2. conservatism

$$2a \text{ ABEM} = B_0 + B_1 \text{ conservatism} + B_2 \text{ ROA} + B_3 \text{ Leverage} + B_4 \text{ Loss} + B_5 \text{ Size} + \epsilon$$

The coefficient for conservatism is expected to be negative, because higher levels of conservatism lead to accrual-based earnings management being less worthwhile.

$$2b \text{ REM} = B_0 + B_1 \text{ conservatism} + B_2 \text{ ROA} + B_3 \text{ Leverage} + B_4 \text{ Loss} + B_5 \text{ Size} + \epsilon$$

$B_1$  will be expected to be positive, because accrual-based earnings management is less popular in conservative countries which could make real earnings management be seen as a decent alternative.

#### 3.4.3. ownership concentration

$$3a \text{ ABEM} = B_0 + B_1 \text{ ownership concentration} + B_2 \text{ ROA} + B_3 \text{ Leverage} + B_4 \text{ Loss} + B_5 \text{ Size} + \epsilon$$

As stated in our hypotheses, ownership concentration is expected to be positively related to accrual-based earnings management, because concentrated ownership is associated with expropriation of shareholders. Which is why  $B_1$  is expected to be positive.

$$3b \text{ REM} = B_0 + B_1 \text{ ownership concentration} + B_2 \text{ ROA} + B_3 \text{ Leverage} + B_4 \text{ Loss} + B_5 \text{ Size} + \epsilon$$

$B_1$  will be expected to be negative, because higher levels of ownership concentration lead to better monitoring of management, which leaves fewer room for managers to harm the value of a company by using real earnings management.

#### 3.4.4. Ownership concentration and National culture

In these regressions, the centered variables of secrecy, ownership concentration and conservatism are taken because otherwise, the coefficients of these variables would show the effect in case the other variable used in the interaction is zero.

$$4a \text{ ABEM} = B_0 + B_1 \text{ ownconc} * \text{secrecy} + B_2 \text{ Secrecy} + B_3 \text{ Conservatism} + B_4 \text{ Ownership concentration} + B_5 \text{ ROA} + B_6 \text{ Leverage} + B_7 \text{ Loss} + B_8 \text{ Size} + \epsilon$$

The interaction term will be expected to be positive, because in more secret countries there is more room for owners to use accrual-based earnings management to expropriate minority shareholders, and there will be a stronger effect of ownership concentration.

$$4b \text{ REM} = B_0 + B_1 \text{ ownconc} * \text{secrecy} + B_2 \text{ Secrecy} + B_3 \text{ Conservatism} + B_4 \text{ Ownership concentration} + B_5 \text{ ROA} + B_6 \text{ Leverage} + B_7 \text{ Loss} + B_8 \text{ Size} + \epsilon$$

The interaction term will be expected to be positive, because in more secret countries the negative effect of ownership concentration will be more pronounced because owners have fewer incentives to use real earnings management to inflate earnings.

$$4c \text{ ABEM} = B_0 + B_1 \text{ ownconc} * \text{conservatism} + B_2 \text{ Secrecy} + B_3 \text{ Conservatism} + B_4 \text{ Ownership concentration} + B_5 \text{ ROA} + B_6 \text{ Leverage} + B_7 \text{ Loss} + B_8 \text{ Size} + \epsilon$$

B1 will be expected to be negative, because in more conservative countries accrual-based earnings management will be less attractive for owners as a tool to boost earnings. And the effect of ownership concentration will be less strong.

$$4d \text{ REM} = B_0 + B_1 \text{ ownconc} * \text{conservatism} + B_2 \text{ Secrecy} + B_3 \text{ Conservatism} + B_4 \text{ Ownership concentration} + B_5 \text{ ROA} + B_6 \text{ Leverage} + B_7 \text{ Loss} + B_8 \text{ Size} + \epsilon$$

The relation between conservatism and ownership concentration and real earnings management will be expected to be negative, because in more conservative countries accrual-based earnings management is less popular and the owners will have more incentives to use real earnings management to manipulate earnings and the negative effect of ownership concentration on real earnings management through its monitoring role will be weakened.

### 3.5. Data

In this research, 12254 listed industrial companies from the year 2016 are analyzed. The data is mainly from Orbis, some variables are extracted from Compustat. The Hofstede dimensions are extracted from geerthofstede.com. Companies which did not have information on the component variables, which were used to calculate the independent and dependent variables, were excluded. The total shares held by the top three owners is calculated partly by using Excel and partly by using Compustat. The analysis will be done with the use of STATA.

## 4. results

### 4.1. Assumption testing

In this study five assumptions were tested. The first assumption is that all variables are at the interval and without error. This assumption is partly satisfied. All variables, except for the dummy variable of loss, are at the interval level. The measurement is not without error because a quick inspection of one company (Samsung) by the author yielded various errors. However, these errors are expected to be not correlated to any of the variables of the model.

The second assumption is that the mean value of the error term is zero for every variable. This assumption is tested by performing a t-test on the error terms of the model. The t-tests showed that zero was always within the confident bound of 95 percent so the error term does not differ significantly from zero so this assumption is satisfied.

The absence of heteroscedasticity is the third assumption, which is tested by regressing the variance of a model, on the independent variables of the model. The results showed that there was no heteroscedasticity involving the models with accrual-based earnings management as the dependent variable. However, all the regressions with real earnings management as the dependent variable showed heteroscedasticity with respect to return on assets and the loss dummy. There was no heteroscedasticity regarding the independent variables, only on the control variables.

The fourth assumption is that the error term is uncorrelated to each of the independent variables. Correlation with the error term was tested by regressing the error term on the independent variables. No regression yielded a significant relationship between the error term and an independent variable, so this assumption is satisfied.

The last assumption is that there is no multicollinearity. To test this assumption the variables

except for the interaction terms are regressed on each-other. Subsequently, the VIF factor and the VIF tolerance were established to test for multicollinearity. The highest VIF factor was 1.6 which is quite low regarding the threshold value of 5-10.

## 4.2. Findings

### 4.2.1. Descriptives

Table 1- descriptive statistics

Variable	Observations	Mean	Std.Dev.	Min	Max
Secrecy	12254	6,39	11,22	-21,25	31,50
Conservatism	12254	-12,42	12,52	-40,00	14,00
Ownership concentration	12254	63,18	43,39	2,51	300,00
Ownconc*secrecy	12254	32,14	44,76	0,00	300,00
Ownconc*conservatism	12254	31,36	42,48	0,00	282,38
Real Earnings management	12254	0,19	0,81	-65,93	11,35
Accrual-based Earnings management	12254	0,02	0,63	-17,23	30,03
Return on Assets	12254	0,04	0,14	-3,01	2,15
Loss	12254	0,21	0,41	0,00	1,00
Size	12254	2.06 bln,	11 bln.	28	4.35 bln.
leverage	12252	0,80	60,95	-6539,69	597,68

secrecy= (uncertainty+ power distance -1\* masculinity -1\* individualism)/4, conservatism= (uncertainty -1\* masculinity - 1\*individualism)/3, ownership concentration= percentage of share owned by the top 3 shareholders, return on assets= total assets/ net earnings, leverage= total debt/total equity, size= total assets, loss= 1 for firms with a negative income and a 0 for firms with a positive income

The descriptive statistics show both negative ranges for secrecy and conservatism. The range for conservatism is more negative because 2 of the 3 Hofstede variables to determine conservatism were negated while for secrecy there were 4 variables of which two positive and two negative. Ownership concentration runs from 2.51 to 300. Ownership concentration can be 300 because the database where the ownership percentage data were retrieved from did not show indirect share percentages. Which means that the top three owners could own for example 100 percent of the shares of a company that owns 100 percent of the shares in the company of interest. Orbis would then state that all three owners own 100 percent of the shares of the company of interest which generates a total of 300 in case you combine the top 3 shareholder percentages. This is, of course, a limitation of this study, but this problem is not expected to be correlated to earnings management. Both real and accrual-based earnings management have positive means which is an indication that companies use earnings management more often to manipulate earnings upwards than downwards. Loss has a mean lower than 0,5 showing that most companies are making a profit in 2016. The companies had on average 2.05 billion dollars of total assets. The leverage ratio has a mean of 0.82 meaning that on average liabilities are 0.82 percent of equity and that most companies are mainly financed by equity.



#### 4.2.2. Secrecy

Table 2—secrecy and earnings management

	ABEM Beta(p-value)	Predicted sign	REM Beta(p-value)	Predicted sign
Secrecy	0,0 (0,40)	(+)	-0,01** (0,00)	(-)
Return on assets	0,63*** (0,00)		0,61*** (0,00)	
Leverage	0,00 (0,96)		0,00 (0,37)	
Size	-0,00 (0,94)		-0,00*** (0,00)	
Loss	-0,01 (0,43)		-0,19*** (0,00)	
Constant	-0,02** (0,00)		0,24*** (0,00)	
Log Likelihood	-11619.96		-14555.34	
Observations	12554		12554	

\*  $p < 0,05$ , \*\*  $p < 0,01$ , \*\*\*  $p < 0.001$ , ABEM= accrual-based earnings management, REM= real earnings management, secrecy= (uncertainty+ power distance -1\* masculinity -1\* individualism)/4, return on assets= total assets/net earnings, leverage= total debt/total equity, size= total assets, loss= 1 for firms with a negative income and a 0 for firms with a positive income

With respect to our first regression, where accrual-earnings management was the dependent variable, a positive relationship was expected. The argumentation according to hypothesis 1a was that in more secret countries there is more room to use accruals to manipulate earnings, because the financial statements are provided to fewer people. This should lead to a lower chance of earnings management being detected. With respect to the second regressions, which is linked to hypothesis 1b with real earnings management as the dependent variable. More secrecy was expected to lead to higher levels of accrual-based earnings management, which should reduce the need for real earnings management.

The results show a quite insignificant relationship in the first regression, with a p-value of 0.4, so there is no evidence found regarding secrecy and accrual-based earnings management. Regarding the control variables only return on assets is significant with a p-value smaller than 0.001 and a beta of 0.633 a positive relationship is found in this model. Meaning that a higher return on assets leads to higher levels of accrual-based earnings management. The other control variables are highly insignificant in this model. The second regression shows a negative and significant relationship with a beta of -0.005 and a p-value smaller than 0.01. Return on assets has also a positive and significant effect in this model with a similar beta and p-value as in regression 1a. Contrary to regression 1a, in regression 1b also size and the loss dummy have an effect on earnings management. With a beta of -0.000 and a p-value smaller than 0.001 size has a negative effect on earnings management in this model. The loss dummy is also significant under the 0.001 threshold and has a beta of -0.186, which means that companies making a profit have incentives to have higher levels real earnings management. The results of the second regressions are in line with hypothesis 1b. However, the positive effect for accrual-based earnings management was not found, so there has to be another reason why real earnings management in more secret countries is lower. Apparently, there are other governance mechanisms that mitigate the effect of accounting transparency. Probably one of those

governance mechanisms could be trust. In more secret countries, where information is dispersed to only a few people, trust could play a more important role. Rus and Iglič (2005) posit trust as a governance mechanism that prevents parties involved from selfish behavior. Real earnings management could harm the trust between shareholders and management and could have more severe consequences in secret countries, than in countries where the market is a more effective governance mechanism. Another reason for lower real earnings management in secret countries, could be that in those countries there is fewer monitoring, and worse performance than the previous year is not punished that hard, compared to countries where analysts notify every slight decrease in performance. John, Litov, and Yeung (2008) state that monitoring leads to lower risk-taking in the fear of losing job security. Not undergoing earnings management is also a kind of risk for managers because bad performance can be punished. The lower monitoring by shareholders in secret countries could take off the pressure of managers to report attractive figures and make earnings management less necessary. Maybe these two effects are in the case of accrual-based earnings management somewhat out weight by the larger attractiveness of accrual-based earnings management, because fewer people read the financial statements and could detect it.

Concluding it can be stated that only real earnings management seems to be affected by secrecy probably, because in more secret countries trust is more important. Another reason could be that performance is not monitored that precisely as in countries which are more transparent, and bad performance is punished less quickly so there are fewer incentives to undergo real earnings management. Maybe the attractiveness of accrual-based earnings management out weights this effect, which could be why no significant negative relationship was found.

#### 4.2.3. Conservatism

Table 3-conservatism and earnings management

	ABEM Beta(p-value)	Predicted sign	REM Beta(p-value)	Predicted sign
Conservatism	0,000 (0,51)	(-)	-0,003 (0,09)	(+)
Return on assets	0,64*** (0,00)		0,61*** (0,00)	
Leverage	0,00 (0,95)		0,00 (0,37)	
Size	-0,00 (0,92)		-0,00*** (0,00)	
Loss	-0,01 (0,44)		-0,19*** (0,00)	
Constant	-0,02 (0,07)		0,19*** (0,00)	
Observations	12252		12252	
Log likelihood	-11620.10		-14558.41	

\*  $p < 0,05$ , \*\*  $p < 0,01$ , \*\*\*  $p < 0,001$ , ABEM= accrual-based earnings management, REM= real earnings management, conservatism= (uncertainty -1\* masculinity - 1\*individualism)/3, return on assets= total assets/ net earnings, leverage= total debt/total equity, size= total assets, loss= 1 for firms with a negative income and a 0 for firms with a positive income

Regression 2a has accrual-based earnings management as the dependent variable and was expected according to hypothesis 2a to show a negative coefficient for conservatism. The argumentation was that conservatism would lead to a “negative bias” regarding a firm's earnings, making it harder to overcome lower earnings with earnings management. Regression 2b is related to hypothesis 2b which expected a positive effect of conservatism on real earnings management, because of the lower attractiveness of accrual-based earnings management in more conservative countries

The results show an insignificant relationship for accrual-based earnings management with a p-value of 0.51. In regression 2a like in regression 1a return on assets is the only significant control variable with a beta of 0.635 and a p-value smaller than 0.001. In the second regression, conservatism has a p-value of 0.09 and a beta of -0.003. Which is insignificant according to this table however, the hypothesis is one-sided because a positive effect is expected. Because STATA interpreted the regression as a two-sided one, the p-value of 0.09 needs to be divided by two which leaves us with a p-value of 0.045 which is significant under the 5 percent threshold.

A reason that no effect is found for accrual-based earnings management could be that the “negative bias” is anticipated by shareholders. For example, if the negative bias is constant, the bias is the same in the previous year which is an important benchmark for shareholders to evaluate the performance of the company. So, earnings management is still attractive in order to show better performance than the previous year. The second regressions showed a significant effect on real earnings management. However, the direction of the relation is contrary to our hypothesis, negative. An explanation for this relationship could be that the “negative bias” in more conservative countries is also harder to overcome with real earnings management. Which makes real earnings management unattractive in countries with high levels of conservatism. However, the same effect was expected for accrual-based earnings management, but wasn't found. Maybe the difference could lie in the fact that accrual-based earnings management is an ex-post technique while real earnings management is an ex-ante technique to manipulate income. Zang (2011) notes that accrual-based earnings management as an end of year technique, provides more certainty with respect to its effect on net income than real earnings management. It could be that the “negative bias” distorts the expected income so much that it is unattractive to anticipate on beforehand but that at the end of the year conservatism does not make it less attractive to use accrual-based earnings management. Like in regression 1b return on assets, size and the loss dummies have a significant impact. These effects are again positive for ROA and negative for size and loss.

Concluding it can be stated that only a negative relationship was found regarding conservatism and real earnings management. An explanation could be that the “negative bias” regarding earnings in conservative countries does not affect ex-ante accrual-based earnings management, because the relative performance compared to the previous year can be still improved, since the bias is constant. But the “negative bias” is so strong, that it is unattractive in conservative countries to manipulate earnings in advance by lowering expenses or increasing production.

#### 4.2.4. Ownership concentration

Table 4-ownership concentration and earnings management

	ABEM Beta(p-value)	Predicted sign	REM Beta(p-value)	Predicted sign
Ownership concentration	-0,00 (0,33)	(+)	0,00 (0,54)	(-)
Return on assets	0,64*** (0,00)		0,57*** (0,00)	
Leverage	0,00 (0,96)		0,00 (0,43)	
Size	-0,00 (0,88)		-0,00** (0,00)	
Loss	-0,01 (0,45)		-0,20*** (0,00)	
Constant	-0,01 (0,24)		0,21*** (0,00)	
observations	12252		12252	
adjusted R-squared	0,02		0,03	

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ , ABEM= accrual-based earnings management, REM= real earnings management, ownership concentration= percentage of share owned by the top 3 shareholders, return on assets= total assets/net earnings, leverage= total debt/total equity, size= total assets, loss= 1 for firms with a negative income and a 0 for firms with a positive income

In regression 3a which is linked to hypothesis 3a, ownership concentration was expected to be positively related to accrual-based earnings management. The argument was that higher levels of ownership concentration make a couple of shareholders to depend on a relatively large degree on the performance of the company which creates incentives to manipulate earnings. In regression 3b which is related to hypothesis 3b, a negative relationship was expected, because concentrated ownership means better monitoring, which leads to lower incentives to impact real performance in order to boost earnings.

The results show for both regressions an insignificant relationship, in regression 3a ownership concentration has a p-value of 0,33 and in regression 3b 0,54. This is contrary to the findings of Hsu and Wen (2015) who found a positive relationship for accrual-based earnings management and a negative one for real earnings management.

Maybe the explanation could be found in the fact that only industrial companies were studied. Maybe different types of owners, industrial, banks or institutional, have different effects on accrual and real earnings management and these effects cancel each other out. For example, Valéry and Jenkins (2006) found that concentrated institutional ownership leads to lower quality of net income, while Alves (2012) found a negative relation between ownership concentration and earnings management, while controlling for institutional ownership. Another reason for these insignificant effects could be that ownership concentration has only an effect after a certain threshold. For example, Ding, Zhang, and Zhang (2007) discovered a negative relationship under the 50 percent threshold and a positive one above the 50 percent threshold. Maybe these two effects cancel each other out, in case there is no differentiation between controlling and non-controlling owners like in this research. Also, the fact that the top three shareholders are taken as a measure could be an explanation for the insignificant relationship. It could be that the misuse of power to manipulate earnings is motivated by

personal incentives of an individual shareholder and is not something that is done in a collective approach together with other shareholders. Like in the previous regressions return on assets has a positive impact in both models, but loss and size have a significant effect only in the model with real earnings management as its dependent variable.

Concluding it can be stated that no significant relationship has been found. An explanation could be that this study does not differentiate between controlling and non-controlling shareholders, different types of shareholders and that it looks at the top three shareholders instead of the largest one.

#### 4.2.5. Ownership concentration\*national culture

interaction ownership concentration and national culture

	ABEM β/P	Pred. sign	REM β/P	Pred. sign	ABEM β/P	Pred. sign	REM β/P	Pred. sign
Ownconc*Secrecy	-0.00 (0.33)	(+)	0.00 (0.38)	(+)				
Secrecy dummy (centered)	0.02 (0.36)		-0.16** (0.00)					
Ownership concentration	-0.00 (0.96)		0.00 (0.08)		-0.00 (0.94)		0.00 (0.11)	
Return on Assets	0.64*** (0.00)		0.60*** (0.00)		0.64*** (0.00)		0.60*** (0.00)	
Leverage	0.00 (0.95)		0.00 (0.34)		0.00 (0.95)		0.00 (0.34)	
Size	-0.00 (0.91)		-0.00*** (0.00)		-0.00 (0.91)		-0.00*** (0.00)	
Loss	-0.01 (0.42)		-0.18*** (0.00)		-0.01 (0.43)		-0.18*** (0.00)	
Ownconc*Conservatism					-0.00 (0.29)	(-)	0.00 (0.25)	(-)
Conservatism dummy(centered)					0.02 (0.37)		-0.10 (0.06)	
Constant	-0.01 (0.27)		0.21*** (0.00)		-0.01 (0.29)		0.20*** (0.00)	
Observations	12252		12252		12252		12252.	
Log likelihood	-11619.35		-14549.50		-11619.29		-14553.27	

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ , ABEM= accrual-based earnings management, REM= real earnings management, secrecy dummy is 1 for the countries that belong to the upper half of the countries with respect to secrecy and a 0 for the countries which are in the lower half regarding secrecy, conservatism dummy= 1 for the upper half countries with respect to conservatism and a 0 for the lower half countries with respect to conservatism, Ownership concentration= percentage of share owned by the top 3 shareholders, return on assets= total assets/ net earnings, leverage= total debt/ total equity, size= total assets, loss= 1 for firms with a negative income and a 0 for firms with a positive income

Regarding regression 4a, which was linked to hypothesis 4a, which expected a positive effect of secrecy on the relationship between ownership concentration, because more secrecy gives owners more room to use accrual-based earnings management to manipulate earnings. Regression 4b was expected to show a positive interaction term because in more secret countries the negative effect of ownership concentration was expected to be stronger. The argumentation in hypothesis 4b was that owners themselves have fewer incentives to use real earnings management, because there is more room for accrual-based earnings management. Regression 4c was expected in hypothesis 4c to show a negative

coefficient for the interaction term, because in more conservative countries there is fewer room for owners to use accrual-based earnings management. Regression 4d was also expected to a negative coefficient according to hypothesis 4d. The argumentation there was that in more conservative countries owners have fewer room for accrual-based earnings management which makes real earnings management more attractive as it can be regarded as a substitute for accrual-based earnings management. Because real earnings management is more attractive for owners in conservative countries, the negative effect of ownership concentration because of better monitoring was expected to be weakened.

The results however showed no significant effects with p-values of 0.97, 0.61, 0.54, 0.42 for regressions 4a-4d respectively. A reason for these large insignificant effects could be that while companies are affected by the culture of the country of the companies headquarters, owners could originate from other countries than the country of a firm. Therefore, the culture of the country a company resides in does not necessarily relate to the cultural values of the owners. Besides that, in contrast to most earnings management where managers themselves are motivated to manipulate earnings, ownership concentration can force managers to undertake earnings management while managers are reluctant. Because force is applied from the outside, cultural values of managers can be "overruled" by owners. While the negative effect of secrecy on real earnings management is still present, the interaction term makes the negative effect of conservatism disappear. Regarding the control variables, like in the previous regressions, a positive effect is found for return on assets on all regressions. For real earnings management, negative effects are found for the loss dummy and the size variable.

Concluding it can be stated that no significant interaction effects are found. Explanations could be that national culture of a company does not apply to the shareholders, because they can be from different countries and can use their power to force their will upon managers neglecting cultural values.

## **5. Conclusion and discussion**

In this study, 12252 companies were analyzed in order to research whether ownership concentration and national culture have an effect on accrual-based and real earnings management. Most research sees managers as rational persons, driven by incentives and restricted by restraining factors to undergo earnings management and as persons being in conflict with their shareholders. This study sees people as not purely rational but also as individuals with culturally influenced values. Also, the thesis that managers are always in conflict with their shareholders is contested, because shareholders and managers can also work together in order to manipulate net income. In order to test these alternative viewpoints, national culture and ownership concentration are used as the independent variables. Also, the interaction between these two variables is analyzed. While most research regarding national culture has been done under the Hofstede dimension, this research uses two dimensions of the accounting culture as defined by Gray, namely secrecy and conservatism. These accounting dimensions are expected to more directly influence national culture, compared to the more general dimensions of Hofstede.

Results showed a negative effect of secrecy on real earnings management, which is in line with the hypothesis that in more secret countries accrual-based earnings management is more popular, which leads to real earnings management being less popular. However, no significant effect was found on accrual-based earnings management. So the result is in line with the hypothesis, but the

argumentation of the hypothesis is rejected. Maybe in more secret countries trust is more important which makes real earnings management more harmful to a company. Another reason could be that there are fewer incentives to use earnings management, because there is fewer monitoring and hence fewer punishment of bad results. It might be that accrual-based earnings management is such attractive in secret countries that this effect is partially outweighed for accrual-based earnings management. In the case of conservatism, no significant relationship was found for accrual-based earnings management and a negative relationship was found for real earnings management. Both results are not in line with the hypothesis that conservatism leads to accrual-based earnings management becoming more, and real earnings management becoming less attractive. Maybe the reason could be that while there is a “downward bias” regarding net income in conservative countries. Relative performance compared to the previous year is not affected by the constant bias and makes ex-post accrual-based earnings management not less attractive. Real earnings management could be less attractive in conservative countries because the “downward bias” distorts projected income and makes it harder to anticipate on with the ex-ante technique of real earnings management.

No significant effects were found for ownership concentration where a positive one was expected for accrual-based earnings management and a negative one for real earnings management. An explanation could be that this study takes into account the top three shareholders instead of the largest shareholder. Other reasons could be that this study does not differentiate between different types of shareholders and does not look at the controlling threshold of 50 percent.

No significant effects were found for the interaction term. Maybe the owners are not impacted by national culture, because they could be from other countries or they are can use their power to force their will upon managers, ignoring the cultural values in the country of the company.

The main implication of this study is that national culture does impact earnings management. It shows that in countries with higher levels of secrecy and higher levels of conservatism, real earnings management is less prevalent. These are signs that the accounting environment has an impact on the behavior of managers, and that shareholders should take into account the accounting culture of a company when reading a financial statement. This research adds toward previous studies by examining the impact of the Gray dimensions of national culture on earnings management. While effects were found for real earnings management, no effects were found for accrual-based earnings management. Future research could explore factors that drive the difference between real and accrual-based earnings management. Regarding ownership concentration, no results were found while previous research did find results. It shows that the operationalization of ownership concentration is important in order to find an effect on earnings management. Different operationalizations could yield positive, negative or even insignificant results. The accounting culture is not found to have impacted the behavior of owners. Maybe future research could examine the relationship between the cultural background of the owners and its impact on the relationship between ownership concentration and earnings management.

Limitations of this study are the fact that the database where the ownership data are retrieved from (ORBIS) does not differentiate between direct and indirect ownership. Therefore it could be that the top three shareholders of a company own together 300 percent of the shares according to ORBIS. This problem is, however, not expected to be more or less strong with different values of the independent variables. Another limitation is that the data collection is not always accurate. A quick survey by the author of Samsung showed that both COMPUSTAT and ORBIS did not always document the actual figures from the financial statements. This problem is again expected to be non-related to any of the independent variables, but it still has an impact on the validity of the earnings management

measures, wherein multiple case deltas are used to calculate the variables. Because changes between years are relatively small it could be that the database shows a positive delta while in fact, the change is negative. This way misstatements could have a strong effect on the validity of the earnings management measures.

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