Earnings Management within Family Firms

Differences between family firms and non-family firms

Roel Lamerikx

Date: 12-09-2012
Summary

This thesis is about earnings management within family firms and focuses on differences between family firms and non-family firms. Using a model based on the Roychowdhury (2006) model, I find convincing evidence that family firms do less real-based earnings management than non-family firms. Furthermore, I find evidence that larger family firms (in terms of total assets) do more real-based earnings management than smaller family firms. This is consistent with family firms having a more long-term focus, since real-based earnings management harms firm value in the long run. In contrast to the findings on real-based earnings management, I do not find convincing evidence for a relation between accrual-based earnings management and whether a firm is a family firm. The results should be interpreted with caution, since the sample is rather small and only consists of firms listed at the Frankfurt Stock Exchange.
4.4 Summary

5. Conclusion and Limitations: directives for future research

5.1 Summary and conclusion

5.2 Limitations

5.3 Possibilities for future research

References
1. Introduction

Family firms are special kinds of companies, which form a great portion of the total amount of companies. In Western Europe, 44 percent of all companies is a family firm (Faccio & Lang, 2002). Following Anderson and Reeb (2003), we define family firms as firms of which a fraction of equity is owned by the founding family and/or where a family members is present in the board of directors. Family firms are more effective than non-family firms, especially in a financial crisis. Managers in family firms can make decisions much quicker because there are less organizational layers and they can cross these layers faster. Because the shareholders in family firms are not just after maximizing firm value and quick profits, they can make decisions much more thoughtful and with a long-term focus. Furthermore, within a family firm, there is a real bond between the firm and its employees, which makes the employees put in more effort in the firm. This makes family firms unique and gives them a competitive advantage (Baker Tilly Berk & Nyenrode Business University, 2011).

Like any other firm, family firms have to deal with agency problems. Ali, Chen and Radhakrishnan (2007) identify two types of principal-agent problems. Type 1 agency problems deal with differences in objectives between managers (agent) and the shareholders (principal). The major question here is: Are managers doing what the shareholders want them to do? The difference in objectives could lead to more earnings management, because managers want to address to the demands and goals of shareholders, since they are often compensated based on reaching this goals. As well, since reputation is very important for a family firm, reaching analysts goals is very important for the company. Type 2 agency problems deal with differences in objectives between controlling shareholders and non-controlling shareholders (Ali et al., 2007). This often occurs when the controlling shareholders (in family firms, this is the family) choose for a different strategy then the non-controlling shareholders want them to do. Besides, the controlling shareholders could withhold information from the non-controlling shareholders, so that they are not aware of certain issues that matter within the firm. Previous research of Ali et al. (2007) indicates that type 1 agency problems appear less in family firms than in non-family firms, since there are more possibilities to (directly) monitor the management. In the meantime, type 2 agency problems appear more in family firms than in non-family firms since management is less independent from the controlling shareholders, and therefore the controlling shareholders, which is the family in family firms, are very influential compared to non-family firms.

Following Leuz, Nanda and Wysocki (2003), earnings management is defined as the alteration of firms’ reported economic performance by insiders to either mislead some stakeholders or to influence contractual outcomes (Healy & Wahlen, 1999). So, earnings management is about manipulating a firm’s earnings to benefit from it (either for the firm or for yourself as a manager). This manipulating has therefore a negative image to the outside world. They question themselves: Is this according to the rules? Is this the way we want our businesses to behave? Earnings management could occur more in family firms (Jiraporn & DaDalt, 2009; Wang, 2006) since type 2 agency problems
As well, it could be possible that there is less earnings management in family firms (Fan and Wong,
2002), since type 1 agency problems occur less. Therefore, the research question is as follows:

“Does earnings management occur more in family firms than in non-family firms?”

This research is done by using models for accrual-based earnings management and real-based
earnings management. The model for accrual-based earnings management is developed by Jiraporn
and DaDalt (2009), using discretionary current accruals as developed by Teoh, Welch and Wong
(1998). I introduce an extra control variable, namely sales growth. This model is used for real-based
earnings management as well, but for real-based earnings management we use 4 different measures
introduced by Roychowdhury (2006) and Cohen and Zarowin (2010), the abnormal cash flow from
operations, the abnormal cost of production, the abnormal discretionary expenses and a
combination of the last two as a proxy for the total amount of real-based earnings management.
I use data from 2008-2011, using a sample of German listed firms. To identify whether a firm is a
family firm the ‘DaxPlus Family Index’ is used.
I find convincing evidence that family firms engage in less real-based earnings management than
non-family firms. This real-based earnings management is done by both manipulating real activities
via the acceleration of timing of sales through increased price discounts and/or more lenient credit
terms as manipulating real activities via reporting lower cost of goods sold by increased production
which makes the fixed costs being spread over a greater amount of produced goods, as manipulating
real activities via decreasing expenses such as research and development expenses, advertising
expenses and selling, general and administrative expenses.
However, I don’t find convincing evidence that family firms engage in more or less accrual-based
earnings management than non-family firms.
This research contributes to the existing literature because not many research has yet been done on
the relationship between earnings management and family firms, while this type of companies is a
very large portion of the total amount of firms. Previous research focusses on the United States
(Jiraporn & DaDalt, 2009; Wang, 2006) and Eastern Asia (Fan & Wong, 2002). In Europe, there has
been no research on this matter. Research on earnings management in Europe focusses on the
difference between listed and non-listed firms (Burgstahler, Hail & Leuz, 2006) or the differences
between countries (Leuz et al., 2003).
From a societal view, the relevance of this topic can be found with the investors. Investors could
change their strategy because they probably don’t want to be involved in a firm that manages its
earnings. On top of this, shareholders could be warned for possibly being misled by the figures
that are issued. This research could advise these investors about whether to invest in family firms or
rather in non-family firms.
This research will be structured as follows: In chapter 2 the relevant literature will be discussed. This
chapter will go into depth on earnings management and family firms. After that, the relationship
between this two will be explained, first using the agency theory and then with the help of the
theories of the alignment effect and the entrenchment effect as defined by Wang (2006).
At the end of chapter 2, the hypotheses will be formulated, with help of the discussed literature. In chapter 3 the research design is explained, starting with the data selection process. Than the models that will be used are discussed. Chapter 4 will be about the results, analyzing the data that is collected using the research models. In chapter 5, the thesis will be concluded, which will include the conclusion of the empirical results, the limitations of the research and there will be suggestions for further research.
2. Literature review and hypotheses

2.1 Agency theory

This thesis will start with a brief introduction of the agency theory within the firm (section 2.1.1). Following this, the agency issues between owners and managers (section 2.1.2) and between controlling shareholders and non-controlling shareholders (section 2.1.3) will be discussed. After that, section 2.2 will be about family firms and the special things of agency theory within a family.

2.1.1 Agency Theory within the firm: An introduction

An organization is the nexus of contracts, written and unwritten, among owners of factors of production and customers. These contracts are the internal ‘rules of the game’ (Fama & Jensen, 1983). Agency problems arise because these contracts are not costlessly written and enforced. The cost that arise from agency problems are agency costs (Fama & Jensen, 1983). The contracts are between a principal and an agent, who acts and makes decisions on behalf of the principal (Douma & Schreuder, 2008). Agency relations can be found within firms and between firms, and are not optimal when the agent has incentives to undertake different actions then the principal wants the agent to do. This happens often when both the principal and the agent are utility maximizers. The principal could limit divergences from his interest by establishing appropriate incentives for the agent and by monitoring the agent, which provides the agency costs because it is generally impossible for the agent or the principal to make optimal decisions from the principals viewpoint at zero cost. (Jensen & Meckling, 1976). Establishing the appropriate incentives for the agent could be done by positive monitoring (encourage a manager to maximize the utility of the principal, for example by setting up a contract where he has (monetary) advantage from doing this).

Within this research, we focus on the two most important agency problems in public firms: problems that arise from the separation of management and ownership and conflicts between controlling shareholders and non-controlling shareholders (Ali et al., 2007).

2.1.2 Agency issues between managers and shareholders

Agency problems between managers and shareholders are called type 1 agency problems (Ali et al., 2007). The agency relation between shareholders and managers can be about two things: (1) about the incentives that a manager has not to follow the goals of the shareholders. Shareholders want managers to maximize shareholder value, and therefore firm value. However, managers could have incentives not to maximize firm value in the long run, but to maximize (for example) profit in the short run, because they can gain from this, because of a bonus for higher short-term profit or because a reputation boost when achieving a higher profit.. (2) Sometimes the shareholders cannot monitor the manager effectively, because of a huge amount of effort or high cost are involved to do this (Eisenhardt, 1989).

Managers have incentives to take different managerial decisions than shareholders want them to take (Fama & Jensen, 1983; Shleifer & Vishny, 1997), because they could have (financial) benefit from this. This benefit could be because they reach certain objectives in their contracts, which makes them
receive a bonus, while this could harm the firm value in the long run. This moral hazard could be diminished by non-pecuniary rewards. When a manager feels respect from the shareholders and the whole firm, he could be handling more in accordance with the goals of the firm and its shareholders. But, also really small things within the firm could play a role in having a manager act the way the shareholders want him to, such as an attractive secretary (Jensen & Meckling, 1976). However, giving contracts to managers based on their performance, in such a way that the goals of the manager become the same as the goals of the shareholders is the most common method to diminish the differences in interest between managers and shareholders. Next to a fixed salary, managers should receive variable compensation, which is based on reaching certain performance measures. These performance measures should be chosen very carefully. They need to reflect a managers’ choices of action and there should be alignment between the set of performance measures and the objectives of the firm. Note that a single performance measure can never reflect shareholder value and managerial performance in the long-term in a good way, so that it is always a search to the optimal set of performance measures, which could be about accounting numbers (profit) but also about things such as customer satisfaction (Indjejikian, 1999). Following the informativeness principle, these contracts need to be adjusted continuously and so there is a continuous trade-off between risk and incentives (Holmström, 1979). Incentive contracting could be costly to a firm, since managers don’t like risk (they are risk averse) and when they are not sure of their compensation, because they cannot always influence the outcome of their performance measures, they want to be compensated for the extra risk they are bearing. Total compensation and so total costs for the firm could turn out to be higher. Therefore, the continuous search for better performance measures keeps on going within the firms. Firms want to have a set of performance measures with low noise, which means that they are not affected by outside factors such as luck (either good or bad), which the manager cannot influence, and high distortion, which means that actions of the manager that affect firm value are well reflected in the outcome of the set of performance measures (Baker, 2000). When a set of performance measures has high noise, the risk for a manager is rather high because he cannot really influence the measure. He would want to be compensated for this risk. When a set of performance measures has low distortion, a manager could have incentives to shirk and put less effort in the firm, because his actions are not well-reflected in his compensation package. Jensen and Murphy (1990) find that managers are rewarded ‘best’ with respect to the pay-performance incentives when they have stockholdings in the firm. This is somewhat logical, since they become shareholders then and therefore have long-term incentives as well. Jensen and Murphy also show that managers are affected by the risk of dismissal. Healy (1985) finds that bonus schemes creates incentives for managers to make certain accounting choices that maximize the value of their awarded bonus. This maximizing of accruals and making certain accounting choices will be discussed extensively in section 2.3, where earnings management will be discussed, and in section 2.4, where the focus is on earnings manipulation via accruals.
2.1.3 Agency issues between controlling shareholders and non-controlling shareholders

Agency problems between controlling and non-controlling shareholders are called type 2 agency problems (Ali et al., 2007). An example of an issue between these two groups is that controlling shareholders can sell their shares to other investors, who then become controlling shareholders, without that the non-controlling shareholders have any possibility to prevent this from happening. The controlling shareholders could choose for a policy which is not the policy that the non-controlling shareholders want for the firm. The controlling shareholders can extract value from the firm because of their policy decisions (Fama and Jensen, 1983; Shleifer and Vishny, 1997). There are three ways in which a controlling shareholder may extract private benefits from the firm (Gilson and Gordon, 2003): By taking a disproportionate amount of the corporation’s ongoing earnings, by freezing out the minority and/or by selling control. Moreover, information could be withheld from the non-controlling shareholders (Fan & Wong, 2002).

Gilson and Gordon (2003) find that non-controlling shareholders will prefer the presence of a controlling shareholder so long as the benefits from reduction in managerial agency costs are greater than the costs of private benefits of control, so, when the agency costs from type 1 agency problems are bigger than the agency costs from type 2 agency problems, non-controlling shareholders prefer controlling shareholders.

Maury and Pajuste (2002) find that in companies with larger ownership from a controlling owner, dividend payout is negatively related to the control stake of the controlling shareholder(s). However, in countries with more strict legal systems, minority shareholders have (and use) the legal power to force firms to pay out dividends (La Porta, Lopez de Silanes, Shleifer & Vishny, 2000). A research by La Porta, Lopez de Silanes, Shleifer & Vishny (1998) shows that in German-civil-law and Scandinavian countries, the quality of law enforcement is the best and the risk for expropriation is the lowest. This is high compared to French-origin and English origin law countries. The law, both corporate law and other law gives minority shareholders certain powers to protect their investments against expropriation by controlling shareholders (La Porta et al., 2000). This investor protection is very important, since investors won’t invest if it is just giving your money to a person who will do something with it because they face a greater risk. When they still can influence their money, they will invest sooner and more.

Controlling shareholders could have a minority of the cash flow rights, while owning a large part of the voting rights. They want to maintain this control, especially when there are significant private benefits of this control, regardless of its efficiency for the other shareholders (Bebchuk, 1999). Even if it would be efficient, the controlling owner is less likely to relinquish control since a majority of the efficiency gains will flow to the other shareholders, who have more cash flow rights (Cronqvist & Nilsson, 2003). Family firms are great examples of these controlling minority shareholders, which we see in practice very often. The next section will discuss family firms, and especially its advantages and disadvantages compared to non-family firms, from an agency theory perspective.
2.2 Family Firms

As mentioned before, family firms form an important part of the total number of firms. Faccio and Lang (2002)’s research was about the number of family firms. They found that a portion of 44% of all the firms in Western Europe is a family firm. In the same study, Faccio and Lang show that in Germany, the area that is researched in this research, 64% of all the firms are family firms. Anderson and Reeb (2003) find that approximately one third of all firms in the S&P 500 is a family firm. The definition used in this research is the definition Anderson and Reeb (2003) adopted: A firm is seen as a family firm if a substantial fraction of the share capital is owned by the founder or his family, or when one or multiple family members have a seat in the supervisory board and/or the board of directors. This definition is further specified by the boundaries that will be drawn in the dataset. The firms that will be in this dataset are firms from the ‘DAXplus Family Index’, an index from the Frankfurt Stock Exchange. The firms in this index are firms in which the founding family holds at least a 25% share of the voting rights or sits on the management or supervisory board and hold at least a 5% share of the voting rights. (Deutsche Börse, 2010)

Family firms are unique because of their ownership structure. Often, the company is owned by the family for a long time and the family connects its reputation to the firm (Chen, Chen and Cheng, 2008), which gives the firm an extra objective to avoid negative publicity. The most important motive for keeping the reputation of the firm up is the dynastic motive (Casson, 1999). They want to pass the firm through to the next generations. The family is keeping a lot of influence at the daily course of business, because family members still fill in a lot of positions in the management board and/or the supervisory board. This could be risky, because it implies that the managers and supervisors are selected from a small group of candidates, which can make the firm overlook better candidates (Anderson, Mansi & Reeb, 2003).

What distinguishes family firms from other non-family firms is trust, which is an important factor in a successful family firm. Trust obviates the need for monitoring cost or performance-based contracts, but in the same time it increases effort within the firm, which leads to higher profits. So, trust is what brings competitive advantages to a family firm (Chami, 2001).

2.2.1 Agency issues within family firms

Type 1 agency problems occur less in family firms then in non-family firms (Ali et al., 2007; Chrisman, Chua & Litz, 2004; Fama & Jensen, 1983). Nevertheless, they still exist and do not disappear completely because of e.g. altruism (Schulze, Lubatkin, Dino & Buchholtz, 2001). The differences in the occurrence of these type 1 agency problems between family firms and non-family firms could be explained by the fact that in family firms managers and shareholders are often members of the same family and therefore are expected to have the same objectives and if not, families will monitor managers stronger (Demsetz & Lehn, 1985) because they have good knowledge about their firms’ activities (Anderson & Reeb, 2003). When the CEO of a family firm is a founding family member, the firm performs better (Anderson, Mansi & Reeb, 2003). Family firms with professional CEO’s face less severe agency problems arising from the separation of ownership and management (Chen, 2006). Moreover, Chen (2006) finds that family firms are less likely to grant stock options to their CEO’s,
that there is a lower proportion of equity-based compensation and that the total compensation of CEO’s in family firms is lower. As well, Achleitner, Rapp, Schaller and Wolf (2010) find that variable compensation in family firms is tied more to accounting numbers than in non-family firms. This is consistent with family firms facing less agency problems of type 1. Managers, especially from outside the firm, could have more incentives to manage earnings, but the trust by the shareholders is such that they expect managers not to think just about themselves. This trust could have downsides as well when incompetent managers are trusted too long. Family firms lose value because of this (Shleifer & Vishny, 1997).

Within family firms, there is a greater risk that type 2 agency problems will occur (Ali et al., 2007). Many previous research, including Fama and Jensen (1983) and Shleifer and Vishny (1997), showed that value is pulled out of the firm by the family and therefore withheld from the minority shareholders, so the non-family shareholders. Ali et al. (2007) find that family firms provide less voluntary disclosures about corporate governance practices. This is consistent with the incentives for family firms to reduce the transparency of corporate governance practices. The goal of this could be to get family members into the boards without possible interference from non-family shareholders. This is consistent with family firms facing more agency problems type 2. In the view of the non-controlling shareholders, the family often hangs on to the control too long. So, family firms are less likely to be taken over compared to other firms (Cronqvist & Nilsson, 2003).

Family firms overall face less severe agency problems than non-family firms. This should lead to less earnings management (Ali et al., 2007). In sections 2.3, 2.4 and 2.5, earnings management via both manipulation of accruals and manipulation of real activities will be discussed extensively.

2.3 Earnings management

In this section, earnings management will be discussed. This section is divided into four subsections. In the first subsection a definition of earnings management will be provided, in the second subsection factors that could cause earnings management will be discussed. A distinction between accrual-based earnings management and real-based earnings management will be made in the third and fourth subsection. In these sections we will discuss the both ways of managing earnings.

2.3.1 Definition: What is Earnings Management?

An accounting choice is any decision whose primary purpose is to influence (either in form or substance) the output of the accounting system in a particular way, including not only financial statements published in accordance with GAAP, but also tax returns and regulatory filings (Fields, Lys & Vincent, 2001). CEOs have to make accounting decisions all the time. Simple choice like LIFO vs. FIFO or depreciation rates can have significant influence on the outcome: the accounting numbers. Some managers apply the accounting standards and make accounting choices to influence the accounting numbers in such a way that they give an image of the firm that is advantageous to them and is not (completely) reflecting the true situation. This manipulation of the accounting numbers and therefore the accounting earnings is called earnings management.

The definition for earnings management that is used in many research, including e.g. Leuz et al.
(2003) and Othman and Zeghal (2006) follows the definition that is introduced by Healy and Wahlen (1999):

“Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers.”

However, in this research, we take this definition as a definition for accrual-based earnings management. Lately, there have been a number of studies that discuss the possibility that managerial intervention in the reporting process can occur not only via accounting estimates, but also through operational decisions (Roychowdhury, 2006). Several researches point to e.g. acceleration in sales or delaying research and development as examples of earnings management as well. This earnings management via operational decisions is called real-based earnings management. Because past research does not really define earnings management as a whole, so including real-based earnings management, past research will be discussed following the developments in this research area in the past. Starting with earnings management as if it was accrual-based earnings management and after this making the distinction between accrual-based and real-based earnings management.

2.3.2 Factors that cause Earnings Management
There has been a lot of research on factors that cause earnings management. This subsection gives an overview of this previous research.

Managers are eager to achieve objectives. There are three very important motives for a firm to do earnings management:

1) they want to avoid small losses and rather achieve small profits. This striking difference is an indication of earnings management (Burgstahler & Dichev, 1997; Degeorge, Patel & Zeckhauser, 1999; Graham, Harvey & Rajgopal, 2005).

2) CEOs find it important to meet or beat the analysts’ forecasts. (Burgstahler & Eames, 2006; Graham et al., 2005).

3) CEOs want to meet or beat their last year’s earnings as well (Degeorge et al., 1999; Graham et al., 2005).

When firms bring negative surprises in their earnings, this leads to abnormal negative reactions in the stock price, especially for growth firms (Skinner & Sloan, 2002). With earnings manipulations, this losses could be prevented.

DeFond and Jiambalvo (1994) find that companies that do not repay their debts according to the agreed contract have even more incentives to manage earnings, because higher earnings can make them pay back their debt faster and because they don’t want to violate the debt covenants (Dichev & Skinner, 2002). Also, firms manage earnings to attract external financing at low cost (Dechow, Sloan & Sweeney, 1996).

Next to the incentives for the firm, managers could have their own personal incentives to manipulate the earnings. Managers could have reasons to manage earnings because their remuneration package
is often (partly) determined based on these earnings (Guidry, Leone & Rock, 1999), but when non-financial performance measures are included in managers’ bonus contracts, they manipulate less accruals (Ibrahim & Lloyd, 2011). Earnings management is often associated with developments in share prices, Bergstresser and Philippon (2006) find that CEOs whose overall compensation is more sensitive to the company’s share prices have incentives to lead companies with higher levels of earnings management. However, this increase could be diminished when audit committees adjust their oversight effort (Laux & Laux, 2009). The dividend policy of a firm could be an incentive for manipulating the earnings figures (Kasanen, Kinnunen & Niskanen, 1996). Another well-known incentive for managing earnings is insider trading (‘handel met voorkennis’) (Beneish, 1999).

There are also corporate governance and/or legal issues that influence the degree of earnings management. Othman and Zeghal (2006) and Burgstahler et al. (2006) find that the degree of earnings management correlates with the effective tax rate. The higher the tax rate, the more earnings management there is. In this case the managing is done to lower the earnings, so that the firm has to pay less taxes. There is less earnings management in countries with a more strict legal system and more legal obligations (e.g. Burgstahler et al., 2006; Jones, 1991). This means that when firms and managers feel less (legal) pressure to make the financial statements reliable, they actually will be less reliable. Furthermore, Burgstahler et al. (2006) find that firms that are required to disclose more information to their shareholders (so, where rights of minority shareholders are protected) will release more reliable financial statements. Next to this, Burgstahler et al. (2006) find that there is a correlation between earnings management and the capital market structure. Several researches, including Teoh et al. (2008) find that firms manage earnings positively for stock market purposes (Healy & Wahlen, 1999), especially when they are close to public offering.

Firms in countries with a stronger investor protection regime do less on managing earnings because the strong protection limits insiders’ ability to acquire private control benefits, which reduces their incentives to mask firm performance (Leuz. et al., 2003). Earnings quality becomes even higher when they are audited by a big-4 auditor (Francis & Wang, 2008). Klein (2002) finds a negative relation between earnings management and audit committee independence and board independence. So, this means that better monitoring (which is assumed for a more independent board/audit committee) provides less earnings management (Dechow et al., 1996). However, a fully independent audit committee does not have this relation.

When the manipulation of earnings by firms are made public, costs of capital of these firms increase significantly (Dechow et al., 1996).

In general, there are two ‘types’ of earnings management. The so called accrual-based earnings management is the most well-known type. The second type of earnings management is real-based earnings management. The both types of earnings management will be explained in the next subsections.
2.4 Accrual-based Earnings management

Most of the earnings management literature focussed on accrual-based earnings management. It is the most well-known form of earnings management. This section will be about accrual-based earnings management. In subsection 2.2.1 the term is explained and previous research will be discussed. Subsection 2.2.2 will give some insight in the models on measuring accrual-based earnings management. The models will not be discussed into detail. The model for accrual-based earnings management used in this research will be discussed extensively in the research method (section 3).

2.4.1: What is accrual-based earnings management?

Firms can apply the accounting standards to record transactions and events in several ways to get advantage from it. Decisions on applying these accounting standards are becoming visible when calculating accounting accruals. Accrual-based earnings management is manipulation of accruals with no direct cash flow consequences (Roychowdhury, 2006). Examples include underprovisioning for bad debt expenses and delaying asset write-offs. Accruals can be divided in discretionary accruals and non-discretionary accruals. Discretionary accruals can be influenced by management’s accounting choices, while non-discretionary accruals cannot be influenced by the management’s accounting choices. Profit can be adjusted both negatively and positively, so discretionary accruals can be either positive or negative. That is just about ‘taking’ your profit in a certain year or just not taking your profit in a certain year. The latter is called big bath accounting. Something else what firms try to do via accrual-based earnings management is income smoothing. The goal is than to let the income be somehow the same over the years, so to let the development of income numbers be a rather ‘smooth’ line, instead of big differences between the years.

The quality of the accruals is negatively related to the absolute magnitude of accruals, the length of the operating cycle of a firm, loss incidence and the standard deviation of sales, cash flows, accruals and earnings (Dechow & Dichev, 2002). This means that when a firms performance is more unsure, accrual quality will be lower, so there are more incentives to manage earnings. Accrual quality is positively related to firm size (Dechow & Dichev, 2002).

Firms that mandatory adopted IFRS in strong enforcement regimes, like e.g. Germany, document a decrease in accrual-based earnings management after the adoption (Parbonetti, 2011).

2.5 Real-based Earnings management

Since actually most of the earnings management research is done using accrual-based earnings management, this topic is discussed some more extensively because specific research on manipulating real activities is done by researchers, while the studies in the earnings management part are mostly about accrual-based earnings management. First an introduction is given and after that factors that determine real-based earnings management is discussed. Than we make a comparison between real-based earnings management and accrual-based earnings management. Are there any preferences for one of both. Finally, we discuss the methods of manipulating real activities.
2.5.1: What is real-based earnings management?

Roychowdhury (2006) defines real activities manipulation (or real-based earnings management) as “departures from normal operational practices, motivated by managers’ desire to mislead at least some stakeholders into believing certain financial reporting goals have been met in the normal course of operations.” These departures do not necessarily contribute to firm value even though they enable managers to meet reporting goals. Managers engage in these activities either because they perceive private benefits (so, they expect to get a higher compensation) or because they are acting as agents in value-transfers amongst stakeholders (Roychowdhury, 2006). An example of the latter is earnings management to avoid governmental intervention. This definition is consistent with the description of the goals of earnings management in section 2.3.1.

Managers could engage in some methods of real activities manipulation, like for example price discounts. However, this is only seen as earnings management when managers engage in these activities more extensively than is normal given their economic circumstances (Roychowdhury, 2006). So, as long as they make a higher profit because of these manipulation methods, it is not seen as real-based earnings management. However, when they just give discounts to meet a certain earnings target, they are engaging in real-based earnings management. Graham et al. (2005) showed that managers rather manage earnings via real-based earnings than via accrual-based earnings management, and that they think real activities manipulation is a way to meet or beat their targets, even though they know that this manipulation might harm firm value in the long run. Real-based earnings management might harm firm value because even though the profits in the current year might be higher, the future cash flows might turn out to be even lower. For example, customers can expect to get price discounts in the future as well, which means that the margins become lower and profits become lower. Evidence from e.g. Roychowdhury (2006) and Cohen, Dey and Lys (2008) shows that there is real-based earnings management around thresholds and also to try to avoid negative annual forecast errors. More than half of the managers (55.3%) in the Graham et al. (2005) research stated that they would delay starting a new project to meet an earnings target, even if such a delay entailed a small sacrifice in value. Other consequences of real-based earnings management is that firms that engaged in it experience a significant decline in their subsequent performance (Gunny, 2005). However, this is not the case when firms manipulated their business operations to meet analyst forecasts (Xu & Taylor, 2010).

There are at least two possible reasons for the greater willingness of managers to manipulate earnings through real activities instead of through accruals (Graham et al., 2005; Roychowdhury, 2006). The first reason is that manipulation of accruals draws more attention from auditors and regulators than real decisions about pricing and production. This increases the marginal cost of accruals manipulation. Zang (2005) documents that managers switch from accruals manipulation to real-based earnings management activities in response to increased litigation risk after the filing of federal class action securities lawsuits against their firms. The second reason is that depending only on accrual manipulation entails the risk that the difference between the unmanaged earnings and the earnings threshold is larger than what can be adjusted through accrual manipulation. Since real activities manipulation cannot be manipulated at year-end, the firm will not reach its goal when this
is the case. However, Huang, Lenk and Szezesny (2006) find that firms with the risk of falling under the minimum profitability level required for raising capital from the stock market initially choose to inflate accruals to boost earnings. These firms resort to manipulation of real business activities when they run out of accounting discretion to further inflate earnings via accruals (Xu, Taylor & Dugan, 2007). When real-based earnings management becomes relatively less costly, firms are more likely to implement real-based earnings management (Demski, 2004).

Lin, Radhakrishnan and Su (2006) show that firms use real-based earnings management and accrual-based earnings management simultaneously. Opposed to the effect on accrual-based earnings management, firms in countries with strong enforcement regimes, like e.g. Germany, that mandatory adopted IFRS document an increase in real-based earnings management after the adoption (Parbonetti, 2011).

There is some evidence that managers switch from accrual-based earnings management to real-based earnings management when the corporate governance in a country is stricter. Cohen et al. (2008) find that real-based earnings management significantly increased after the Sarbanes-Oxley act (SOX) was passed (in 2002), while before that there was a decreasing trend in real activities manipulation. Accrual-based earnings management occurred in the opposite way. Before the passage of SOX there was a slight increase of accrual-based earnings management, while afterwards a significant decrease was noticed. A possible explanation for this is that manipulating real activities is harder to detect. However, contrary to this, accruals manipulation does not consume cash and is less costly to the firm. (Xu et al., 2007).

Contrary to prior research of e.g. Huang et al. (2006) and Zang (2005), Graham et al. (2005) find that manager prefer real-based earnings management over accrual-based earnings management. They give two possible explanations for this striking difference. The first possible explanation is that the accounting scandals at Enron and WorldCom and the requirements imposed by Sox may have changed managers’ preferences for the mix between accrual-based earnings management and real-based earnings management. Alternatively, managers could be just more willing to admit they manipulate real activities than to admit they manipulate accruals.

There are several ways through which real-based earnings management can be done. Graham et al. (2005) reported that 80% of their survey participants would cut on R&D expenses, advertising expenses and maintenance to meet an earnings target. Most of the evidence on real activities manipulation centers on cutting Research and Development expenses (R&D) in an opportunistic way. Dechow and Sloan (1991) find that CEOs reduce the spending on R&D towards the end of their tenure to increase short-term earnings, this is the so-called ‘horizon problem’. Compensation committees know about this problem and can often successfully mitigate it (Cheng, 2004). Moreover, more independent boards reduce the probability that a firm will manipulate its real activities through cutting R&D spending (Garcia Osma, 2008). As well, Perry and Grinaker (1994) and Bange and De Bondt (1998) find that firms cut on R&D when their earnings fall short of analysts’ expectations. However, the existence of institutional investors mitigates the manipulation of real activities (Bushee, 1998). Furthermore, there is some evidence that suggests that managers engage in different real-based earnings management in addition to cutting R&D expenses. Roychowdhury
(2006) finds that firms manage earnings by price discounts, overproduction and reductions in
discretionary expenditures to avoid losses or to meet analysts’ forecasts. Chapman and Steenburgh
(2010) find that managers change their marketing mix to manipulate their real activities. Their
research concluded that managers use price discounts en advertising expenses to influence the
timing of consumer buying behavior. Further, firms time their sales of long-term assets and
investments in order to smooth earnings and mitigate debt covenants (Bartov, 1993). Next to
research on operating activities and real-based earnings management, there has also been research
on financing activities. Firms use stock repurchases to meet or beat analysts’ forecasts (Hribar,
Jenkins & Johnson, 2006) and when firms have concerns about meeting earnings targets and
obtaining financing use more stock options and less restricted stocks in executive compensation
(Carter, Lynch & Tuna, 2007). Finally, Barton (2001) found that firms use derivatives to reduce
quarterly earnings volatility.

2.6 Hypotheses

Family firms could have incentives to manage more earnings, because there are more agency
problems of type 2 (Ali et al., 2007). These are the problems between controlling shareholders and
non-controlling shareholders. The controlling shareholders could manipulate earnings to e.g. prevent
the non-controlling shareholders from finding out that wealth is expropriated from the firm.
On the other hand, they could have incentives to manage less earnings as well because there are less
agency problems of type 1 (Ali et al., 2007). These are the problems between owners (shareholders)
and managers. Because there are less agency issues, the incentives are approximately equal (by all
means less diverging) and the monitoring from shareholders is more tight. Therefore, there could be
less earnings management.

Previous research gives competing and different results about whether there is more or less accrual-
based earnings management in family firms. In the United States, Wang (2006) and Jiraporn and
DaDalt (2009) find that family firms do less accrual-based earnings management. Cascino, Pugliese,
Mussolino and Sansone (2010) find a similar result in Italy. However, contrary to this, Fan and Wong
(2002) find that family firms in East Asia do more accrual-based earnings management. Because of
this competing results, the first hypothesis will be non-directional. This could end up going both
sides.

H1: There is a difference in the amount of accrual-based earnings management between family firms
and non-family firms.

The second hypotheses will be about real-based earnings management.

Hutton (2007) states that family firms are likely to do less real-based earnings management. It is
perceived as value destroying in the future and since family firms are long-term oriented and often
hold a large part of the shares, they are less likely to manipulate real activities to meet a certain
earnings target. Family firms are less attracted to short-term profits in comparison to non-family
firms and since this is the only goal and advantage of real-based earnings management, family firms
are expected to do less real-based earnings management.
As far as known, there is no previous research on real-based earnings management within family firms and the differences with non-family firms. Because of this, the hypothesis will be non-directional, even though the expectation is that there will be a negative relation.

H₂: There is a difference in the amount of real-based earnings management between family firms and non-family firms.

The first hypothesis will be tested using the model introduced by Jiraporn and DaDalt (2009), which is a modified version of the Jones (1991) model. The second hypothesis will be tested using the model designed by Roychowdhury (2006), which has been adjusted for this research.

There are 2 possible effects in the relationship between family firms and accrual-based earnings management. The first effect is the alignment effect. The alignment effect means that family firms have incentives not to manage earnings (Wang, 2006), because it wants to watch over the reputation of the firm and therefore the reputation of the family. This means that the controlling shareholders will be closer to the management, because they want to monitor closely and that is why there would be less type 1 agency problems as well. When there is accrual-based earnings management, they will discover that sooner. As well, Ali et al. (2007) find that the earnings quality in family firms is higher, which implies that there is less accrual-based earnings management in family firms.

A competing view is the theory of the entrenchment effect. This effect is about agency problems between controlling and non-controlling shareholders (Wang, 2006), so type 2 agency problems. It states that there would be more accrual-based earnings management in family firms, because the controlling shareholders could enrich themselves at the expense of the non-controlling shareholders, as previous research have shown (Fama & Jensen, 1983; Shleifer & Vishny, 1997). The alignment effect and the entrenchment effect will be discussed in the following sections.

2.7 The alignment effect and accrual-based earnings management

The theory of the alignment effect is based on the argument that family firms have incentives to report more reliable financial statements, which will lead to a higher earnings quality (Tong, 2007; Wang, 2006). Higher earnings quality induces less accrual-based earnings management. This would be the case because the shareholders (within family firms, this is the family) are closer to the management (Demsetz & Lehn, 1985; Shleifer & Vishny, 1997). The management could be monitored more closely, and therefore there will be less type 1 agency problems within family firms. Because of the tight monitoring, family firms can make decisions faster. The firm will be incentivized more to make long-term decisions instead of decisions that are beneficial in the short term (Wang, 2006), but could harm the firm in the long run. That is because family members often work longer periods in the firm, which makes the family more concerned with the firms’ daily business. In this, the dynastic motive plays a role (Casson, 1999): the firm has to be passed on to the next generations. Moreover, the family will be watching for the reputation of the family, which is connected to the firm. Of course, detection of earnings management is not good for the reputation, so the family has incentives not to manage earnings and report earnings of higher quality (Tong, 2007). The upsides
don’t offset the downside. That family firms watch for their reputation is also coming back in the findings of Chen et al. (2008). This research indicates that family firms will issue profit warnings sooner than non-family firms. They don’t withhold bad news from the shareholders and other stakeholders. Because of the value that is attached to the reputation, family firms will be less opportunistically in their disclosures. They are more likely to warn for bad news and they have larger analyst following (Ali et al., 2007). Furthermore, they will extract less value from the firm for their own good. This leads to a higher earnings quality which means that there is less earnings management. On top of this, bond holders view founding family ownership as an organizational structure that better protects their interests: there are less agency conflicts between equity claimants and debt claimants (Anderson & Reeb, 2003).

However, there is a downside to the alignment effect. There will be a higher earnings quality, but the demand for high quality disclosures will be lower, since non-controlling shareholders know the objectives of the family: long-term objectives. These non-controlling shareholders attach less value to high quality disclosures, what gives the family firm incentives to disclose lower quality information (Wang, 2006).

Previous research that has found an alignment effect concentrates on the United States (Ali et al., 2007; Jiraporn & DaDalt, 2009; Tong, 2007; Wang, 2006).

2.8 The entrenchment effect and accrual-based earnings management

The competing view for the alignment effect is the entrenchment effect. This effect indicates why family firms would actually do more earnings management than non-family firms. This effect is based on the argument that controlling shareholders want to withhold value from the non-controlling shareholders (Fama & Jensen, 1983; Shleifer & Vishny, 1997). The controlling shareholders could pull profit out of the company to enrich themselves, at the expense of the minority shareholders (Wang, 2006). This theory is consistent with the findings of Ali et al. (2007), who find that there are more type 2 agency problems within family firms. The findings of Fan and Wong (2002) are consistent with the entrenchment effect theory. However, this research is done in East Asia, where financial reporting is less transparent than in the United States. As well, in East Asia is the legal system less strict and there is a lower demand for earnings quality (Wang, 2006), which implies that there is probably more earnings management. With the entrenchment effect, there will be an increase in the demand for earnings quality (Wang, 2006). Stakeholders observe the danger of lower quality disclosure and therefore demand for higher quality disclosure. This demand could diminish the entrenchment effect, at least for a large part.

Previous research that has found an entrenchment effect is conducted in East-Asia (Fan & Wong, 2002; Jaggi, Leung & Gül, 2009), Australia (Setia-Atmaja, Haman & Tanewski, 2011) and Italy (Bar-Yosef & Prencipe, 2011).
3. Research method

In this chapter, the research method will be explained. At first, the data selection process will be discussed. After that the both models used in the research, based on the Jiraporn and DaDalt (2009) model for accrual-based earnings management and on the Roychowdhury (2006) model for real-based earnings management, will be discussed. Including the control variables. At the end of this chapter the method of calculating the discretionary current accruals will be discussed.

3.1 Sample

This research will be on both listed family firms as listed non-family firms in Germany. The research will focus on the last four years of which the accounting data are known, 2008, 2009, 2010 and 2011. To decide whether a firm is a family firm, the ‘DaxPlus Family Index’ will be used. This index is a sub-index of the Frankfurt stock exchange, which is used to keep hold of the performance of family firms. To be included in this index a firm needs to fulfill one of the following criteria:
- at least 25 percent of the stock is owned by the family and/or
- A family member takes place in the board of directors and/or the supervisory board and the family owns at least 5 percent of the stock capital.

At the moment 119 firms are included in the DaxPlus Family Index. The sample will be supplemented with other firms listed at the Frankfurt stock exchange. The data will be acquired using Compustat global. Using these data, the measures for accrual-based earnings management and real-based earnings management will be computed. Finally, the regression analysis will be performed.

3.2 Accrual based Earnings management

There are two well-known models for accrual-based earnings management. The most important and most wide-used model is the Jones (1991) model, which is modified in a number of studies (e.g. Jiraporn & DaDalt, 2009; Teoh et al., 1998), mostly to make it suitable for a specific research. The Jones model is based on discretionary accruals. These discretionary accruals are not affected by the normal operations within the company, but only by management interference. In this research, the version of Jiraporn and DaDalt (2009) is used. This model is based on discretionary current accruals. These discretionary current accruals are based on the short-term working capital of the firm. They are seen as a proxy for the degree of earnings management.

The ‘competing’ model is based on the model by Dechow and Dichev (2002). This model focuses on the relationship between accounting accruals and firm characteristics. This Dechow/Dichev model is used and modified by a number of studies, e.g. Ball and Shivakumar (2006). Ball and Shivakumar use the accruals in their study of earnings management in private companies in the UK. Although this model takes into account the nonlinear nature of accounting accruals, contrary to the Jones model (2006), I will not discuss this model into detail since my focus is on public firms.
3.2.1. Model

For testing accrual-based earnings management, a modified version of the Jones (1991) model is the most reliable (Dechow, Sloan and Sweeney, 1995). In this research, another modified version will be used to measure earnings management, namely the model that Jiraporn and DaDalt (2009) to test (accrual-based) earnings management in the United States. This model uses discretionary current accruals, which is done because these accruals are most vulnerable to manipulation (Teoh et al., 1998; Xie, Davidson & DaDalt, 2003). In section 3.3, there will be an explanation on how the discretionary current accruals are calculated.

The Jiraporn and DaDalt (2009) model uses the discretionary current accruals as the dependent variable and it has 4 independent variables, among which a dummy variable for family firms (which takes a value of 1 when the firm is a family firm and a value of 0 when it is a non-family firm) and 3 control variables:

1) Firm size, which is measured as the natural logarithm of the total assets of the firm,
2) Leverage, which is calculated using the total debt ratio. This ratio is calculated by dividing the total debt of the firm through the total assets,
3) Performance, which is calculated using Net income. Net income than is divided through the total assets of the firm. Hence I don’t use EBIT like Jiraporn and DaDalt, since the definition for EBIT is not interpreted the same across all firms.

Furthermore, I will insert a control variable which is inspired by the literature discussed.
4) A dummy variable that takes a value of 1 when a loss occurred (negative net income) for a firm and 0 otherwise.
5) Sales growth, which is calculated as the percentage growth of sales from the year t-1 to the year t.

The model than will be as follows:

$$DCA = \beta_0 + \beta_1 * D_FAM + \beta_2 * SIZE + \beta_3 * LEV + \beta_4 * PERF + \beta_5 * D_LOSS + \beta_6 * GROWTH$$

In which:

DCA = Discretionary Current Accruals. In this, the absolute number will be used. This means that we only look at the degree of accrual-based earnings management, and not whether the earnings are manipulated to the positive side or to the negative side.

D_FAM = Dummy variable for family firms (1 if the firm is a family firm, 0 otherwise).
SIZE = The natural logarithm of the total assets of the firm.
LEV = Leverage.
PERF = Performance. Computed by dividing net income of the firm through total assets of the firm.
D_LOSS = Dummy for loss-making firms (1 if the firms had a loss, 0 otherwise).
GROWTH = Growth in sales.

$\beta_1$ will give the relation between accrual-based earnings management and whether the firm is a family firm. When $\beta_1$ is negative, there is less accrual-based earnings management within family firms, compared to non-family firms. When $\beta_1$ is positive, there is more accrual-based earnings management within family firms, compared to non-family firms.
3.2.2 Calculation of the discretionary current accruals

Jiraporn and DaDalt (2009) calculate the discretionary current accruals the same way as several other researchers, like e.g. Xie et al. (2003). This calculation is based on a model that is developed by Teoh, Welch and Wong (1998), which is a modified version of the Jones (1991) model. Total accruals are divided into current accruals (CA) and long-term accruals (LA) (Teoh et al., 1998). As told before, this research uses current accruals, because they are the most vulnerable for manipulations (Jiraporn & DaDalt, 2009). Current accruals are defined as the change in noncash current assets minus the change in current operating liabilities (Teoh et al., 1998). They are sometimes called working capital accruals as well. The calculation goes as follows:

\[ CA = \Delta \left[ \text{current assets} - \text{cash} \right] \]
\[ \quad - \Delta \left[ \text{current liabilities} - \text{current maturity of longterm debt} \right] \]

Subsequently, the non-discretionary current accruals (NDCA) will be calculated. These accruals are perceived as not able to be influenced by the management. This growth in sales cannot be included in the measure for accrual-based earnings management. The calculation of the non-discretionary current accruals is done using the following formula:

\[ \text{NDCA}_{it} = \hat{a}_0 \left( \frac{1}{TA_{it-1}} \right) + \hat{a}_1 \left( \frac{\Delta \text{SALES}_{it} - \Delta A/R_{it}}{TA_{it-1}} \right) \]

In this formula, \( TA_{it-1} \) stands for the total assets in the previous year, \( \Delta \text{SALES}_{it} \) stands for the change in sales in the year that is measured with respect to the previous year. \( \Delta A/R_{it} \) stands for the change in Accounts receivable. \( \Delta \text{SALES}_{it} - \Delta A/R_{it} \) is in this formula to take into account the possibility that earnings are manipulated using the credit sales.

To determine the unknown variables \( \hat{a}_0 \) and \( \hat{a}_1 \), the following regression will be performed. Then, \( a_0 \) and \( a_1 \) will be placed where \( \hat{a}_0 \) and \( \hat{a}_1 \) were in the formula for calculating the non-discretionary current accruals.

\[ \frac{CA_{jt}}{TA_{jt-1}} = a_0 \left( \frac{1}{TA_{jt-1}} \right) + a_1 \left( \frac{\Delta \text{SALES}_{jt}}{TA_{jt-1}} \right) + \varepsilon_{jt} \]

In this formula, the \( j \) stands for the number of firms in the industry, except the firm where the accruals are computed for. \( CA_{jt} \) is for the total current accruals of all firms in the industry in the year \( t \) and \( TA_{jt-1} \) is for the total assets in the industry in the year \( t-1 \). Teoh et al. (1998) define firms in the same industry as firms for which the first two digits in the SIC-code are equal. This in contrast to Wang (2006), who uses a definition of the same three-digit SIC-code for firms in one industry. The Wang definition is not used here because of the sample size. There are 10 firms needed per industry-year to run this regression.

To finish the calculation, the discretionary current accruals (DCA) will be calculated. These are the current accruals that could be manipulated. These accruals will be used as dependent variable in the regression. The calculation of the discretionary current accruals will be done using the following formula:
In the model, the absolute value of DCA will be used because this study is about the amount of manipulation. The direction (either positive or negative) is not important in this case.

3.3 Real-based earnings management

Contrary to accrual-based earnings management, not many research has yet been done on real-based earnings management. Partly because real-based earnings management is ‘found’ just shortly. Partly because earnings management via real activities is harder to detect than earnings management via accruals. That is probably also the reason why there is just one model developed and used in the literature. Roychowdhury (2006) is the first to design a model to detect real-based earnings management, this model is adjusted for some industry-specific or variable-specific research. The model considers the abnormal levels of cash flow from operations (CFO), discretionary expenses and production costs to study the level of real activities manipulations. In section 3.3.1, these three proxies will be discussed and afterwards the model for the regression will be discussed in section 3.3.2.

3.3.1 Proxies for real-based earnings management

Following Roychowdhury (2006) and Cohen et al. (2008), I use the abnormal levels of cash flow from operations (CFO), discretionary expenses and production costs to assess the level of real-based earnings management. The focus is on three manipulation methods and the impact they have on the three variables (Cohen et al., 2008):

1) Acceleration of the timing of sales through increased price discounts or more lenient credit terms. They will temporarily increase sales volumes and therefore boost current period earnings, assuming that the margins are positive. However, both will result in lower cash flows in the current period.

2) Reporting of lower cost of goods sold through increased production. Managers can increase production in order to increase earnings, because they can spread the fixed costs over a larger number, so lowering the fixed costs per unit. This means that cost of goods sold (COGS) is decreased and so the firm can report higher operating margins. However, there are higher annual production costs and lower cash flows from operations.

3) Decreases in discretionary expenses including advertising expenses, R&D expenses and SG&A (selling, general and administrative) expenses. Reducing these expenses will boost current earnings but the future earnings are likely to drop.

First, the normal levels of CFO, discretionary expenses and production costs are generated, using the model developed by Dechow, Kothari and Watts (1998) as implemented in Roychowdhury (2006). Normal CFO is expressed as a linear function of sales and change in sales. This model is estimated by running the cross-sectional regression for each industry and year:

\[
\frac{CFO_{it}}{Assets_{it,t-1}} = k_1 \frac{1}{Assets_{it,t-1}} + k_2 \frac{Sales_{it}}{Assets_{it,t-1}} + k_3 \frac{\Delta Sales_{it}}{Assets_{it,t-1}} + e_{it}
\]
Just as with the accruals model, these regressions are run with industry-data. For this model 15 observations per industry-year are required.

Abnormal CFO is actual CFO minus the normal level of CFO calculated using the formula above. Production costs are defined as the sum of COGS and change in inventory. COGS is modeled as a linear function:

\[
\frac{COGS_{it}}{Assets_{it-1}} = k_{1t} \frac{1}{Assets_{it-1}} + k_2 \frac{Sales_{it}}{Assets_{it-1}} + \varepsilon_{it}
\]

Next, inventory growth is modeled as follows:

\[
\frac{\Delta INV_{it-1}}{Assets_{it-1}} = k_1 \frac{1}{Assets_{it-1}} + k_2 \frac{\Delta Sales_{it}}{Assets_{it-1}} + k_3 \frac{\Delta Sales_{it-1}}{Assets_{it-1}} + \varepsilon_{it}
\]

Using the previous two equations (COGS and inventory growth), the normal level of production costs are estimated. Production costs are thus the sum of cost of goods sold and change in inventory. The higher the residual, the larger is the amount of inventory overproduction, and the greater is the increase in reported earnings through reducing the cost of goods sold (Zang, 2011):

\[
\frac{Prod_{it}}{Assets_{it-1}} = k_{1t} \frac{1}{Assets_{it-1}} + k_2 \frac{Sales_{it}}{Assets_{it-1}} + k_3 \frac{\Delta Sales_{it}}{Assets_{it-1}} + k_4 \frac{\Delta Sales_{it-1}}{Assets_{it-1}} + \varepsilon_{it}
\]

The normal level of discretionary expenses is modeled as follows:

\[
\frac{DiscExp_{it}}{Assets_{it-1}} = k_{1t} \frac{1}{Assets_{it-1}} + k_2 \frac{Sales_{it-1}}{Assets_{it-1}} + \varepsilon_{it}
\]

After this, the abnormal CFO (R_CFO), abnormal production costs (R_PROD) and abnormal discretionary expenses (R_DISX) are computed as the difference between the actual values and the normal levels as predicted (Cohen et al., 2008; Roychowdhury, 2006; Zang, 2011). These three variables are used as proxies for real-based earnings management. When the cash flow from operations is relatively low and/or the discretionary expenses are relatively low and/or the production costs are unusually high, firms are likely to manage earnings upwards.

Following Cohen and Zarowin (2010) and Zang (2011) I also use one single measure for real-based earnings management to capture the total extent of real-based earnings management. This measure (RM_proxy) is computed by multiplying the discretionary expenses (R_DISX) by negative 1 and adding this number up to the abnormal production costs (R_PROD). Note that the abnormal cash flows from operations (R_CFO) is not included here, because the net effect is ambiguous (Zang, 2011): Price discounts, channel stuffing and overproduction decrease these cash flows, while cutting discretionary expenditures increases them. The regression model will be ran with the three individual variables as well, because the individual variables may have different implications for earnings that may be diluted when just the single measure is used (Cohen et al., 2008). In the following section, the regression will be outlined.
3.3.2 Model
To estimate the model for real-based earnings management, the same model will be used with the same control variables as for accrual-based earnings management. The only difference is the dependent variable, which will be the RM_proxy variable that is discussed before. Three regressions will also be ran using the three proxies (R_CFO, R_PROD and R_DISX) as dependent variables, to find out more about the precise real activities that are manipulated.

\[
RM_{\text{proxy}} = \beta_0 + \beta_1 \times D_{\text{FAM}} + \beta_2 \times \text{SIZE} + \beta_3 \times \text{LEV} + \beta_4 \times \text{PERF} + \beta_5 \times D_{\text{LOSS}} + \beta_6 \times \text{GROWTH}
\]

In which:
- \(RM_{\text{proxy}}\) = The sum of the discretionary expenses multiplied by negative one and the abnormal production costs. Separate regressions will be run as well using the three proxies discussed in the previous section, \(R_{\text{CFO}}, R_{\text{DISX}}\) and \(R_{\text{PROD}}\) as dependent variables.
- \(D_{\text{FAM}}\) = Dummy variable for family firms (1 if the firm is a family firm, 0 otherwise).
- \(\text{SIZE}\) = The natural logarithm of the total assets of the firm.
- \(\text{LEV}\) = Leverage.
- \(\text{PERF}\) = Performance. Computed by dividing net income of the firm through total assets of the firm.
- \(D_{\text{LOSS}}\) = Dummy for loss-making firms (1 if the firms had a loss, 0 otherwise).
- \(\text{GROWTH}\) = Growth in sales.
4. Results

This chapter will be about the results. In section 4.1, some descriptive statistics will be provided. Section 4.2 will then discuss the results on accrual-based earnings management. In section 4.3 the results on the real-based earnings management model will be presented.

4.1 Descriptive statistics

4.1.1 Accrual-based earnings management

In the 2008-2011 period, there are 2085 firm years available of companies that are listed at the Frankfurt Stock Exchange. After selecting the industries with the required minimum of 10 firms per two digit SIC-code industry and deleting the firms that lack sufficient data for computing the accruals and running the regression model there are 874 firm-year observations left over the four years, among which are 181 firm-year observations for family firms. Table 4.1 provides the distribution of family firms and non-family firms over the years. Notice that not all firms already disclosed the information over 2011. Worth noticing is that probably more family firms already did disclose the information relative to non-family firms.

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family firms</td>
<td>46</td>
<td>47</td>
<td>46</td>
<td>42</td>
<td>181</td>
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<tr>
<td>Non-Family firms</td>
<td>209</td>
<td>193</td>
<td>170</td>
<td>121</td>
<td>693</td>
</tr>
<tr>
<td>Total amount of firms</td>
<td>255</td>
<td>240</td>
<td>216</td>
<td>163</td>
<td>874</td>
</tr>
<tr>
<td>Proportion of family firms</td>
<td>0.18</td>
<td>0.20</td>
<td>0.21</td>
<td>0.26</td>
<td>0.21</td>
</tr>
</tbody>
</table>

Table 4.1: Overview of the firms in the accrual-based earnings management sample.

Table 4.2 gives an overview of the difference between family firms and non-family firms in the sample. Family firms are larger than non-family firms (SIZE) and have a lower amount of leverage (LEV), which means that they relatively have less debt compared to non-family firms. As well, we can conclude that family firms perform better than non-family firms and that less losses occur within family firms. Sales growth does not differ significantly between family firms and non-family firms (GROWTH), and that applies for the absolute amount of the discretionary current accruals as well.

This means that there are no significant differences in the degree of accrual-based earnings management. However, there is a significant difference in the ‘normal’ value of DCA. This means that family firms manipulate the accruals more upwards (and non-family firms more downwards).

However, since accruals are believed to get back to 0 over time, this could reverse in the future or could have been negative in the past. To interpret this difference, future research is required. The financial crisis could have something to do with this. As well, non-family firms could have taken ‘big baths’ more often, which returns in the higher amount of losses and the lower profits.
<table>
<thead>
<tr>
<th></th>
<th>Family firms</th>
<th>Non-Family firms</th>
<th>Difference (t-stat)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DCA</td>
<td>0.496869</td>
<td>0.46494</td>
<td>-1.261</td>
</tr>
<tr>
<td>DCA_VALUE</td>
<td>0.471794</td>
<td>0.37823</td>
<td>-2.554**</td>
</tr>
<tr>
<td>SIZE</td>
<td>14,512757</td>
<td>13,894801</td>
<td>-3.434***</td>
</tr>
<tr>
<td>LEV</td>
<td>0.452981</td>
<td>0.510498</td>
<td>3.012***</td>
</tr>
<tr>
<td>PERF</td>
<td>0.029686</td>
<td>-0.019948</td>
<td>-3.023***</td>
</tr>
<tr>
<td>D_LOSS</td>
<td>0.19</td>
<td>0.34</td>
<td>3.943***</td>
</tr>
<tr>
<td>GROWTH</td>
<td>0.281859</td>
<td>0.141071</td>
<td>-0.985</td>
</tr>
</tbody>
</table>

Table 4.2: Analysis of the differences between the means of the variables of both family firms (N=181) and non-family firms (N=693) for the accrual-based earnings management sample.

** and ***: statistical significance at the 0.05 and 0.01 levels, respectively.

4.1.2 Real-based earnings management

For the real-based earnings management sample, I started again with the 2085 available firm years. Because this model requires a minimum of 15 firms per two-digit SIC-code industry there were 490 firm years left after deleting the firms that lacked sufficient data for computing the proxies for real-based earnings management and running the regression models. Among the firm years in the sample are 151 family firm years, which are relatively more firm years than for the accrual-based model.

Table 4.3 provides the distribution of the firms over the years and per type of firm. The portion of family firms is now comparable to that in previous research such as Wang (2006), although this research concentrates on accrual-based earnings management.

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family firms</td>
<td>28</td>
<td>40</td>
<td>41</td>
<td>42</td>
<td>151</td>
</tr>
<tr>
<td>Non-Family firms</td>
<td>83</td>
<td>86</td>
<td>89</td>
<td>81</td>
<td>339</td>
</tr>
<tr>
<td>Total amount of firms</td>
<td>111</td>
<td>126</td>
<td>130</td>
<td>123</td>
<td>490</td>
</tr>
<tr>
<td>Proportion of family firms</td>
<td>0.25</td>
<td>0.32</td>
<td>0.32</td>
<td>0.34</td>
<td>0.31</td>
</tr>
</tbody>
</table>

Table 4.3: Overview of the firms in the real-based earnings management sample.

In table 4.4 the differences between family firms and non-family firms within the real-based sample are displayed. Notice that this sample is way more homogeneous than the accrual-based sample. In this sample, there is no real difference in size, growth or leverage between family firms and non-family firms, while in the other the differences in size and leverage were highly significant. This could influence the results and therefore affect the validity of the research. Performance is less significant than in the other sample, but the family firms (still) perform better than the non-family firms and also record less losses.

Family firms have (highly significant) higher abnormal cash flows from operations (R_CFO), have (highly significant) lower abnormal production costs and have significantly higher abnormal discretionary expenses compared to non-family firms. This indicates that family firms do less real-based earnings management, according to all three proxies. In addition to this, the single real-based earnings management measure (RM_proxy) also has a (highly significant) lower value for family firms than for non-family firms.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Family firms</th>
<th>Non-Family firms</th>
<th>Difference (t-stat)</th>
</tr>
</thead>
<tbody>
<tr>
<td>R_CFO</td>
<td>0.0258</td>
<td>-0.0065</td>
<td>-3.056***</td>
</tr>
<tr>
<td>R_PROD</td>
<td>-0.0558</td>
<td>-0.0053</td>
<td>3.008***</td>
</tr>
<tr>
<td>R_DISX</td>
<td>0.0571</td>
<td>0.0189</td>
<td>-2.221**</td>
</tr>
<tr>
<td>RM_PROXY</td>
<td>-0.1128</td>
<td>-0.0241</td>
<td>2.761***</td>
</tr>
<tr>
<td>SIZE</td>
<td>14,5022</td>
<td>14,6564</td>
<td>0.816</td>
</tr>
<tr>
<td>LEV</td>
<td>0.467</td>
<td>0.5074</td>
<td>1.643</td>
</tr>
<tr>
<td>PERF</td>
<td>0.0114</td>
<td>-0.0348</td>
<td>-2.038**</td>
</tr>
<tr>
<td>D_LOSS</td>
<td>0.1987</td>
<td>0.3186</td>
<td>2.740***</td>
</tr>
<tr>
<td>GROWTH</td>
<td>0.101</td>
<td>0.1574</td>
<td>0.827</td>
</tr>
</tbody>
</table>

Table 4.4: Analysis of the differences between the means of the variables of both family firms (N=151) and non-family firms (N=339) for the real-based earnings management sample.

** and ***: statistical significance at the 0.05 and 0.01 levels, respectively.

### 4.2 Results on accrual-based earnings management

The results of the regression analysis on accrual-based earnings management are presented in table 4.5. The absolute value of discretionary current accruals is used as dependent variable.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Beta</th>
<th>T-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>0.496</td>
<td>5.982***</td>
</tr>
<tr>
<td>D_FAM</td>
<td>0.013</td>
<td>0.426</td>
</tr>
<tr>
<td>SIZE</td>
<td>0.000</td>
<td>-0.051</td>
</tr>
<tr>
<td>LEV</td>
<td>-0.45</td>
<td>-0.795</td>
</tr>
<tr>
<td>PERF</td>
<td>0.207</td>
<td>2.682***</td>
</tr>
<tr>
<td>D_LOSS</td>
<td>-0.13</td>
<td>-0.388</td>
</tr>
<tr>
<td>GROWTH</td>
<td>0.031</td>
<td>2.960***</td>
</tr>
</tbody>
</table>

| F-statistic | 4.177*** |
| Adjusted R² | 2.1%     |

Table 4.5: Regression analysis for the accrual-based earnings management model (N = 874).

***: statistical significance at the 0.01 level.

The model is significant and therefore useful and explains 2.1% of the variation in the DCA variable. This appears not to be much, but it is more than the R² of 1.2% from the Jiraporn and DaDalt (2009) model, which did not use the dummy variable for loss-making firms and used the EBIT ratio for performance instead of the scaled net income. Previous research found a significant positive relationship between accrual-based earnings management and family firms, but this research does not find this relationship. For the variable SIZE, there is no sign and this could go either way and this variable is far from significant. This means that there will probably be no relation between firm size and accrual-based earnings management. Leverage appears to have a negative relation to accrual-based earnings management, but is as well not significant. Firms that report losses tend to manipulate accruals less, but this is not a significant relation as well. Firms that perform better do more accrual-based earnings management. The variable PERF (performance) is significant at the 0.01 level. Firms with a higher sales growth also manage
significantly more earnings via accruals, the variable GROWTH is highly significant at the 0.01 level. After this, I ran the regression for just the family firms. Compared to the sample of all the firms, the coefficient for performance (PERF) stays significant and positive. However, there is no significant relation for harder growing firms (GROWTH) in terms of sales. We find that bigger family firms (SIZE) and family firms with a higher degree of leverage (LEV) do less accrual-based earnings management than smaller family firms and family firms with a lower degree of leverage, respectively. This is consistent with the findings of Wang (2006) and Jiraporn and DaDalt (2009) for a sample combining family firms and non-family firms. The result of this regression are presented in table 4.6.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Beta</th>
<th>T-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>1.027</td>
<td>5.967***</td>
</tr>
<tr>
<td>SIZE</td>
<td>-0.028</td>
<td>-2.223**</td>
</tr>
<tr>
<td>LEV</td>
<td>-0.271</td>
<td>-1.907*</td>
</tr>
<tr>
<td>PERF</td>
<td>0.293</td>
<td>1.897*</td>
</tr>
<tr>
<td>D_LOSS</td>
<td>-0.042</td>
<td>-0.671</td>
</tr>
<tr>
<td>GROWTH</td>
<td>0.015</td>
<td>1.346</td>
</tr>
</tbody>
</table>

F-statistic 4,606***
Adjusted R² 9.1%

Table 4.6: Regression analysis for the family firms in the accrual-based earnings management sample (N = 181)
***, ** and *: Statistical significant at the 0.01, 0.05 and 0.10 levels, respectively.

4.3 Results on real-based earnings management

In table 4.6, the results of the regression analysis for the four real-based earnings metrics are presented. In this regression are consecutively R_CFO (model 1), R_PROD (model 2), R_DISX (model 3) and RM_PROXY (model 4) used as dependent variables. Table 4.7 shows us that all four models are highly significant and useful. In model 1, we see that the most important variable of interest, the dummy for family firms, gives a significant positive relation between family firms (D_FAM) and the abnormal cash flow from operations (R_CFO). This already gives one indication that family firms engage in less real-based earnings management. We also see that the abnormal CFO is very significantly associated with performance (PERF). This is logical, because these two are closely connected and they both tell us something about the performance of the firm. All the other variables are not significant. From model 2, it is shown that the dummy for family firms (D_FAM) is significantly negatively related to abnormal production costs (R_PROD). This means that family firms engage in less earnings management via real activities by increasing production to lower cost of goods sold. Also shown is that the abnormal cost of production are significantly negatively related to performance (PERF). This means that firms that are performing better do less real-based earnings management by increasing production costs. This indicates that real-based earnings management is especially used around thresholds. We also see a positive relation between leverage (LEV) and abnormal production costs. This means that firms with higher proportion of debt manipulate real activities via overproduction to reach higher profits. This could be because of debt covenants. The other variables are not significant. The dummy variable for family firms (D_FAM) is significantly
positively associated with abnormal discretionary expenses (R_DISX) in model 3. This shows us that family firms engage in less real-based earnings management by decreasing R&D expenses and SG&A expenses. Again, a significant negative relation has been found between both leverage (LEV) and performance (PERF) and real-based earnings management. The other variables, growth, the dummy for loss-making firms and size are insignificant. Model 4 is about the single measure for real-based earnings management, RM_PROXY. We see that the dummy for family firms (D_FAM) is significantly negatively related to this single measure, which shows (together with all the previous models) that family firms do less real-based earnings management than non-family firms. Furthermore, we see a significant positive relation between real-based earnings management and the degree of leverage within a firm.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R_CFO</td>
<td>R_PROD</td>
<td>R_DISX</td>
<td>RM_PROXY</td>
</tr>
<tr>
<td>Intercept</td>
<td>0,042</td>
<td>-0,083</td>
<td>0,042</td>
<td>-0,125</td>
</tr>
<tr>
<td>D_FAM</td>
<td>0,022</td>
<td>-0,044</td>
<td>0,041</td>
<td>-0,084</td>
</tr>
<tr>
<td>SIZE</td>
<td>-0,004</td>
<td>-0,055</td>
<td>-0,011</td>
<td>-0,000</td>
</tr>
<tr>
<td>LEV</td>
<td>0,026</td>
<td>0,055</td>
<td>-0,153</td>
<td>0,028</td>
</tr>
<tr>
<td>PERF</td>
<td>0,249</td>
<td>-0,110</td>
<td>-0,194</td>
<td>0,084</td>
</tr>
<tr>
<td>D_LOSS</td>
<td>0,007</td>
<td>-0,014</td>
<td>-0,006</td>
<td>-0,008</td>
</tr>
<tr>
<td>GROWTH</td>
<td>0,004</td>
<td>0,010</td>
<td>-0,03</td>
<td>0,012</td>
</tr>
<tr>
<td>F-statistic</td>
<td>26,211***</td>
<td>4,149***</td>
<td>7,407***</td>
<td>3,636***</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>23,6%</td>
<td>3,7%</td>
<td>7,3%</td>
<td>3,1%</td>
</tr>
</tbody>
</table>

Table 4.7: Regression analysis for the real-based earnings management models (N = 490).

*** and **: statistical significance at the 0.01 and 0.05 level, respectively.

After this, I ran a regression with just the family firms, which is presented in table 4.8. This yields a remarkable observation, which shows that, within family firms, size is significantly positively related to the degree of real-based earnings management. This shows that bigger family firms (in terms of total assets) do more real-based earnings management than smaller family firms, which opposes to the results of Roychowdhury (2006) who shows that bigger firms (so not specifically family firms) do less real-based earnings management. In my regression for non-family firms, I find that bigger non-family firms do significantly less real-based earnings management relative to smaller non-family firms. The bigger family firms especially manipulate their real activities via unusual high production costs, so by overproduction to lower cost of goods sold, and via unusual low discretionary expenses. For abnormal CFO, the results are inconclusive in both my research and Roychowdhury’s (2006) research.

Further research is needed for this observation, since I have a small sample size of just 151 family firms.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>R_CFO</td>
<td>Beta</td>
<td>T-statistic</td>
<td>Beta</td>
<td>T-statistic</td>
</tr>
<tr>
<td>Intercept</td>
<td>0.055</td>
<td>0.879</td>
<td>-0.345</td>
<td>-2.677***</td>
</tr>
<tr>
<td>SIZE</td>
<td>0.002</td>
<td>0.492</td>
<td>0.018</td>
<td>1.932*</td>
</tr>
<tr>
<td>LEV</td>
<td>-0.147</td>
<td>-3.630***</td>
<td>0.022</td>
<td>0.264</td>
</tr>
<tr>
<td>PERF</td>
<td>0.176</td>
<td>3.494***</td>
<td>-0.148</td>
<td>-1.432</td>
</tr>
<tr>
<td>D_LOSS</td>
<td>0.008</td>
<td>0.318</td>
<td>0.060</td>
<td>1.223</td>
</tr>
<tr>
<td>GROWTH</td>
<td>0.035</td>
<td>1.099</td>
<td>0.111</td>
<td>1.720*</td>
</tr>
<tr>
<td>F-statistic</td>
<td>12.421***</td>
<td>2.347**</td>
<td>4.741***</td>
<td>2.315**</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>27.6%</td>
<td>4.3%</td>
<td>11.1%</td>
<td>4.2%</td>
</tr>
</tbody>
</table>

Table 4.8: Regression analysis for the family firms in the real-based earnings management sample (N = 151)

***, ** and *: Statistical significant at the 0.01, 0.05 and 0.10 levels, respectively.

4.4 Summary

In table 4.9 there is an overview of the hypothesis that are tested and the results hereof.
This table summarizes section 4.2 and 4.3.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Accepted</th>
<th>Rejected</th>
<th>Inconclusive</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. There is a difference in the amount of accrual-based earnings management between family firms and non-family firms.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. There is a difference in the amount of real-based earnings management between family firms and non-family firms</td>
<td>X</td>
<td></td>
<td></td>
<td>Negative relation. Less real-based earnings management within family firms</td>
</tr>
</tbody>
</table>

Table 4.9: Summarizing the results from section 4.2 and 4.3.
5. Conclusion and Limitations: directives for future research

In this final chapter, the conclusions of this research will be discussed in section 5.1. Section 5.2 will be about the limitations of this research. Finally, in section 5.3 there will be some possibilities and recommendations for future research.

5.1 Summary and conclusion

This research tries to find out whether family firms do more or less earnings management than non-family firms do. The two types of agency problems, type 1 between managers and shareholders and type 2 between controlling shareholders and non-controlling shareholders are respectively less and more playing a role within family firms (Ali et al., 2007). This could lead to incentives to do more or less accrual-based earnings management. More accrual-based earnings management because there are more agency problems of type 2 or less accrual-based earnings management because there are less type 1 agency problems (Wang, 2006). For real-based earnings management within family firms, there was (as far as I know) no previous research, but the expectation was that there would be less real-based earnings management, because it is seen as value destroying and because family firms hold a large part of the shares in their firms and are therefore long-term oriented, it is expected that family firms are less likely to manipulate real activities in order to meet an earnings benchmark (Hutton, 2007).

I did this research using two models, one for accrual-based earnings management and one for real-based earnings management. For the accrual-based earnings management part of this study, I used a model by Jiraporn and DaDalt (2009), using discretionary current accruals as developed by Teoh et al. (1998), with an extra control variable (growth) used by e.g. Wang (2006). For the real-based earnings management part, I used a model by Roychowdhury (2006) with a small adjustment as made by Cohen and Zarowin (2010). After this, I adjusted this model for use in this research, by introducing a dummy variable for family firms and adding the control variables that I used in the accrual-based model as well. These models were run with two different samples with firms listed at the Frankfurt Stock Exchange for the timeframe 2008 – 2011. To decide whether a firm was a family firm, I used the ‘DAXPlus Family Index’, an index for family firms at the Frankfurt Stock Exchange.

I find no conclusive evidence that there is a difference in the total degree of accrual-based earnings management between family firms and non-family firms in Germany. However, there is a difference in the direction of earnings management. Family firms tend to engage in more positive accrual-based earnings management than non-family firms. However, the evidence for this is rather small and there should be further research on this topic. This result means that there is also no statement to be made about the presence of either an alignment effect or an entrenchment effect with German family firms.

I do find convincing evidence that there is a difference in the total degree of real-based earnings management between family firms and non-family firms in Germany. Family firms engage in significant less real-based earnings management practices, both manipulating real activities via the
acceleration of timing of sales through increased price discounts and/or more lenient credit terms as manipulating real activities via reporting lower cost of goods sold by increased production which makes the fixed costs being spread over a greater amount of produced goods, as manipulating real activities via decreasing expenses such as research and development expenses, advertising expenses and selling, general and administrative expenses. Real-based earnings management is seen as value destroying. The profit will go up for one year, but decreasing your costs now will come back in the future. Less advertising now probably means less sales in the future, providing discounts now will make customers expect those discounts in the future as well, which will decrease earnings by either lower prices or less sales. Family firms are more focused on the long term, because they hold a large part of the ownership and the family reputation is connected to the firm. Furthermore, I also find evidence that larger family firms do more real activities manipulation than smaller family firms.

5.2 Limitations

This research has a number of time-consuming proceedings. It could be very time consuming to find out whether a firm is a family firm. This can be looked up in firms’ annual reports or by questionnaires. This research is using the ‘DAXPlus family index’ to identify family firms. This makes it much easier to make the distinction between family firms and non-family firms and to get a useful sample. This definition is rather strict, so it makes the research more reliable. However, it could be a reason for the inconclusive outcome of the accrual-based earnings management hypotheses. The model of Jiraporn and DaDalt (2009) is no common used model. However, it uses discretionary current accruals which are developed by Teoh et al. (1998), an adaptation of the widely-used modified Jones (1991) model. The Jiraporn and DaDalt (2009) model lacks the use of a growth opportunities variable. I inserted sales growth, following Wang (2006). Other research, especially on real-based earnings management insert the market-to-book ratio as a proxy for growth opportunities. I did not use this because finding market capitalization for all firms at certain dates is time consuming and I lacked sufficient data.

Real-based earnings management is a relatively young research subject, but it is becoming accepted to involve real-based earnings management as well when studying earnings management, next to accrual-based earnings management. However, because it is rather new, not much research has been done after empirical models to detect real-based earnings management. There are still improvements to the Roychowdhury (2006). Some of those are already included in this thesis. However, because of this, it could be the case that this model still has some teething problems and that the results for researches using this model are not fully reliable.

Many earnings management models make use of larger samples than I do. The Wang (2006) sample for accrual-based earnings management uses 3456 firmyears, while mine uses 874 and the Roychowdhury (2006) and Zang (2011) researches after real-based earnings management use respectively 21758 and 6574 firm-year observations, while mine only uses 490. Furthermore, the portion of family firms in my accrual-based sample is relatively small. Furthermore, this research is just about Germany and therefore these results cannot just be universalized. Further research is necessary for this.
5.3 Possibilities for future research

At first, the research could be done using a larger sample, with for example more firms or covering more years to find out whether the real-based earnings management effects holds for a larger sample within Germany and to find out whether the accrual-based earnings management effects become significant when more data is used.

The research could also be done in different countries, to see whether the real-based earnings management effect is a universal effect and/or the accrual-based earnings management effect does exist in other countries, which is my expectation. The latter could be done testing for the entrenchment effect and the alignment effect as well.

In the real-based earnings management sample, I found a surprising effect for bigger family firms, who do significantly more manipulation of real activities than smaller family firms. Future research could focus on whether this relation holds for a larger sample and/or in other countries. Future research could also focus on the direction of accrual-based earnings management. Not only find out whether there is more/less accrual-based earnings management but also whether this is income decreasing or income increasing.

Furthermore, as far as I know, this research is the first that is performed in the period within and just after the worldwide credit-crisis. This could have had influence on my results because companies could become more prudent or could get into financial distress and need manipulation in order to stay alive. Further research is necessary to find out whether this plays a role.
References

Books

Articles


