Erasmus School of Economics

Accounting, Auditing & Control

Financial crisis and accounting conservatism

A comparison between family and non-family companies

Master thesis

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Preface

Hereby I present the final assignment of the master Accounting, Auditing & Control. In approximately a half year I spend my time on a specific part of accounting research: conservatism. A subject I became more and more interested in. It is interesting to note that although there are GAAP, that managers still have influence on the reported figures, which can be done using for example conservatism. That has advantages and disadvantages. That makes it a very interesting discussion.

I wrote this thesis by Deloitte. I want to thank them that I had that opportunity. It was a privilege that I could use their facilities, knowledge and data. I would not have had enough data for the family companies if I did not had the Deloitte-database. It was pleasant to work at a professional environment.

Finally, I would like to thank my supervisor: Dr. Sc. Ind. A.H. van der Boom. He gave good and clear comments, so that I could improve this thesis.

Steven Pothof
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1. Introduction

It was 2007 when a major financial crisis hit the world economy. The crisis, also known as the credit crunch, was caused due to the stagnant housing market in the United States, the bundled mortgages (packaged as bonds) in the lowest segment became rapidly less worth (Ivry, 2008). As a consequence banks were going bankrupt and governments tried to maintain the financial system by investing money in these banks. Because of globalization the crisis came also to the Netherlands. Also the Dutch government had to invest in banks to save those banks. The Dutch state is now 100% owner of the ABN AMRO bank (ABN AMRO Group N.V., 2009). ING received 10 billion euros financial support from the Dutch government. A bankrupt bank would be a great catastrophe for the economy because that would mean that people cannot get their money back from the bank. This has the result that people will consume less (because they have less money), profits of companies will be lower and therefore jobs will be less available. In this case people will lose their jobs which results into even less consumption. This could result into a vicious circle. Because of the fear that people lose their jobs people may also consume less. This could result in the same vicious circle. In figure 0 is a graph of the consumer confidence and willingness to buy of people in the Netherlands. The graph shows that after 2007 willingness to buy decreased from positive to negative. This is according to the expectation in a financial crisis.
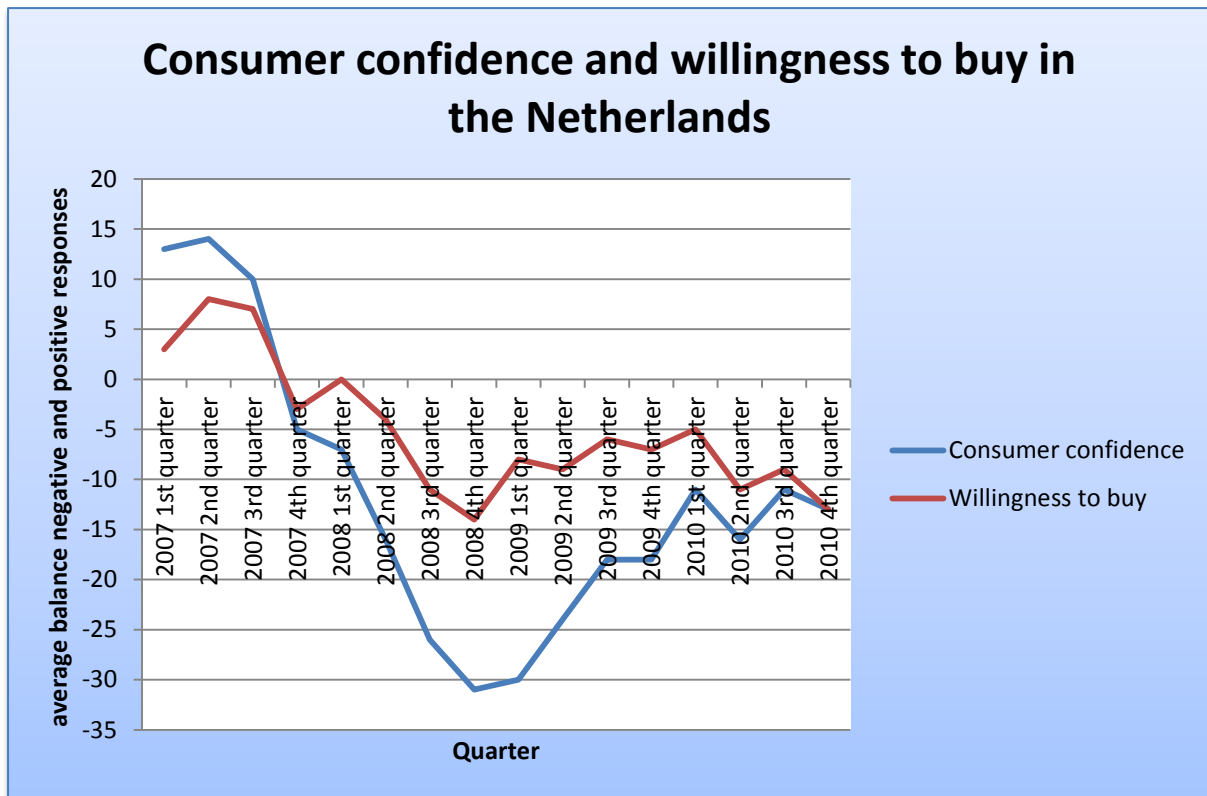
Fig. 0 Consumer confidence and willingness to buy in the Netherlands (CBS statline)

Because of less willingness to buy of customers, profits of companies will decrease. This thesis will investigate how managers changed or didn't change the way they report on company performance and financial position during this financial crisis. There are different incentives why a manager would change the way they report. A manager for example wants to maintain his bonus, which is based on a certain profit. When profits decrease he may try to report as much profit as possible (within what is allowed within the rules).

Because cash flows will decrease, there will be companies that can't pay their creditors. The manager of the creditor company then has a choice when he will take the loss of that bad debt. If a manager applies conservatism then he should recognize this loss as soon as possible when he has a suspicion that the debtor will not pay. In this case the profit would be lower than when he doesn't apply conservatism. This difference might create an incentive for managers to change the applied degree of conservatism.

Managers have discretionary room within the rules and regulations concerning financial reporting for changing the applied degree of conservatism. The way they report is therefore dependent on the behavior of a manager. This thesis will investigate whether conservatism is increased or decreased during the financial crisis.

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There might also be a difference between family and non-family companies. This thesis will therefore also investigate this. The reason why this comparison is made is because there could be a difference in incentives to apply conservatism of the managers: for example when profits will be lower (for example because of a financial crisis) the bonus of a manager will therefore be lower. A manager of a non-family company could therefore reduce conservatism and try to raise short-term profits to maintain his bonus. A manager of a family company may also like to raise the profit but he also has others incentives. Because he is also owner of the company he also wants to maximize firm value on the long-term, and may therefore be more prudent and will report more conservative.

A company is a family company when at least two of the following criteria are met (Flören, 2002):

1. More than 50% of all shares is owned by one family
2. One family has ultimate influence on decision making
3. A majority or at least 2 members of the board of directors are in one family.

In the sample also companies which are owned by one stockholder and who is also in the board of directors are added. Non-family companies are all the other companies but this thesis will concentrate on listed companies. In these companies nobody in the board of directors have more than 50% of the shares in the company or ultimate influence on decision making.

1.1 Relevance

This thesis can be useful for investors (like banks and shareholders), analysts and standard setters. If there is a difference in conservatism, investors and analysts should take that information into account when they compare two or more companies. If an analyst makes correction for conservatism on the financial statements than the comparability of companies is increased and therefore analysts and investors can make better decisions.
Standard setters can also make use of this thesis. Also standard setters can make use of this information. If they know that there is a difference they can try to make rules where every company must apply the same degree of conservatism. In this way standard setters can try increase comparability.

1.1.1 Accounting conservatism and financial crisis

Accounting conservatism in relation with a financial crisis is investigated before. There are many papers about the Asian financial crisis of 1997. For example the working paper of Vichitsarawong et al. (2010). However the financial crisis from 2007 is different than others; some researchers say that this crisis is the worst crisis since 1930 (Pendery 2009). It is also different because the Asia crisis had influence on developing countries. The financial crisis of 2007 had influence on completely developed countries. There could also be a difference in outcome because of different rules and standards. Here in the Netherlands companies report in Dutch GAAP or in IFRS. These rules are different from the rules used in Asia (where they have different rules in every country). The rules give the discretionary room in which a manager can make choices. Therefore different rules can have a major impact.

1.1.2 Comparison between family and non-family companies

Prior research makes a comparison between large and small companies. This is also interesting for this thesis because family companies are often smaller than non-family companies. So family companies can be indicated in most times as small and non-family as large. An article of Hermann et al. (2008) makes a comparison between big4 audited companies and non-big4 audited companies. This difference is almost the same as the difference between small and large companies because large companies are often audited by big-4 and smaller companies by other firms. But these studies have been done with a sample in the USA. The research in the Netherlands will probably have another outcome. This is because the Netherlands has different rules and standards. In the USA there is US GAAP (Generally Accepted Accounting Principles). In the Netherlands there are two different standards. IFRS (International Financial Reporting Standards) is mandatory for all listed companies. Dutch GAAP is mandatory for all other companies, but they are allowed to report in IFRS.

1.2 Research question, sub-questions and structure

The research concerns the period 2006 till 2009. The year 2006 can be indicated as pre-crisis period. 2007 and 2008 are the years of the start of the crisis. The sample ends with 2009, that is not the end of the crisis, but the data for 2010 was not yet available when selecting the sample. When the crisis will end is still not known.

This thesis will use the following main question:

What difference can be noticed in the application of earnings conservatism during the financial crisis of 2007 between family and non-family companies, in the Netherlands?

To answer this question, this thesis makes use of different sub-questions:

1. *What is the relevance of this research and for whom is it interesting?*
2. *What is accounting conservatism?*
3. *Is conservatism good or bad?*
4. *What are the incentives to apply (or not to apply) conservatism?*
5. *From which research perspective will this research be done and what are the assumptions of this perspective?*
6. *Which models have been developed to detect conservatism?*
7. *What can be learned from prior research on this topic?*
8. *What is a proper research design for this research and what are the limitations of this design?*
9. *What are the results of the empirical research of this thesis?*
10. *What are the findings after analysis of the results and what are the limitations?*
11. *Are there recommendations for future research?*

1.3 Methodology

As will be explained further in this thesis the research will be based on The Positive Accounting Theory from Watts and Zimmerman (1986) and the agency theory. First will be started with literature research. After that an empirical research is done. Three models to detect conservatism will be used: the convergence of earnings and (non-operating) cash flows, skewness of earnings and variability of earnings. All models are by Givoly & Hayn (2000).

The sample consists of two groups of 70 firms. The first sample consists of 70 Dutch B.V. (limited liability companies) firms which are all classified as family company. The second sample consists of 70 large Dutch stock listed N.V. companies (joints-stock companies). Annual financial statement information from 2006 till 2009 is extracted from Amadeus database supplemented with information from company.info.

1.4 Structure

The remaining of this paper will follow a structure that follows the sub-questions.

Sub-question 1 is already answered in this chapter

In chapter 2 sub-question 2 will be answered, this chapter explains different definitions of conservatism and explain what earnings and balance sheet conservatism.

In chapter 3 is explained how conservatism affects the usefulness of financial statements and explain whether conservatism is good or bad. This will answer sub-question 3.

In chapter 4 is explained why there would be or would not be conservatism. This will answer sub-question 4.

In chapter 5 is explained which research perspectives there are and which perspective this thesis will follow. This will answer sub-question 5.

Chapter 6 explains different methods to measure/detect conservatism and explain the limitations. This will answer sub-question 6.

In chapter 7 is an extensive literature review. This helps with developing hypotheses. Sub-question 7 can be answered after this chapter.

Chapter 8 presents the sample, method, hypotheses and limitations. This is the first step in the empirical research. It will answer sub-question 8.

Chapter 9 will give the results of the empirical study. That is the last step of the research. It will answer the last sub-questions (9, 10 and 11).

The thesis ends with a conclusion.

2. What is accounting conservatism?

2.1 Introduction

This chapter is about the meaning of the word conservatism. Some definitions from previous research and standard setters will be described. The difference between balance sheet conservatism and earnings conservatism will also be discussed. After this chapter sub-question 2 is answered: *What is accounting conservatism?*

2.2 Definitions

Conservatism (IASB called it prudence) was for a long time an aspect of faithful representation in the framework for International Financial Reporting Standards. According to this framework prudence is: "the inclusion of a degree of caution in the exercise of the judgments needed in making the estimates required under conditions of uncertainty, such that assets or income are not overstated and liabilities or expenses are not understated'' (IASB, 2001, paragraph 37).

In the newest version prudence is no longer part of faithful representation. IASB removed this because they think that including prudence is inconsistent with the qualitative characteristic neutrality (Deloitte, 2010).

The Financial Accounting Standards Board also has a definition: ''. . . if two estimates of amounts to be received or paid are about equally likely, conservatism dictates using the less optimistic estimate.'' (Financial Accounting Standard Board, 1980)

The IASB uses a definition that leaves room for professional judgment. Because how big should the degree of caution be? The definition of the FASB leaves less room for judgment. In its definition a manager should always choose for the less optimistic estimate.

Researchers also have definitions. "Anticipate no profit, but anticipate all losses" (Bliss 1924) and "the accountant's tendency to require a higher degree of verification to recognize good news as gains than to recognize bad news as losses" (Basu, 1997).

This paper will follow the definitions of Basu and the IASB. Bot definitions give room for professional judgments of managers. If there isn't room for judgment then managers can't change the degree of conservatism.

2.3 Explanation of conservatism

There are basically two types of conservatism. Earnings conservatism and balance sheet conservatism. First will the types will be explained and after that the relation between the two explained.

2.3.1 Earnings conservatism

A definition of earning conservatism is: "a timelier recognition of bad news in earnings relative to good news" (Basu, 1997). Earnings conservatism is conservatism that has effect on the income.

Earnings conservatism does not have a consistent effect on the earnings. There is always a correction in a later period. For example if the manager expects a gain which he does not recognize in the first year, the profit is understated in year 1. But the next year the profit is realized and therefore the profits in year 2 are overstated (Lara & Mora, 2004). Because earnings conservatism has a temporary effect it is also often called temporary conservatism.

2.3.2 Balance sheet conservatism

A definition of balance sheet conservatism is from Feltham and Ohlson (1995): "a persistent understatement of book value of shareholders' equity". This means that in this type assets will be valued lower and/or liabilities valued higher than in a situation without conservatism. It is inevitable in contradiction with earnings conservatism that balance sheet conservatism has a persistently effect on the balance sheet. For example if there are unrecognized intangible assets, which are not recognized, the assets are therefore understated (Lara & Mora, 2004). Because balance sheet conservatism has a consistently effect on the balance sheet it is also called consistently conservatism.

2.3.3 Relation between earnings and balance sheet conservatism

The two types of conservatism can affect each other but that is not always the case. For example if goodwill is immediately amortized by debiting it directly to equity (instead of to the income statement), there is no effect in the earnings (and therefore no effect on earnings conservatism). This practice is still allowed under Dutch GAAP (RJ 216.218).

Lara & Mora (2004) found that the existence of balance sheet conservative practices is associated with reduced levels of earnings conservatism. But it can be that an understatement of assets will not lead to earnings conservatism, for example the case with non-recognized

intangibles. Also the immediate full write-off of goodwill directly debited to equity does not result into different earnings.

To give an example: let's look to an example of an asset. A fixed asset will have depreciation every year. The economic lifespan is estimated. This has an effect on both balance sheet and earnings. For example: an asset of €100.000, annual revenue of €30.000 and the only expenses are depreciation expenses. When the manager estimates the lifespan he could be more conservative and chooses a very low lifespan of for example 5 years. Actual lifespan is 10 years. The following table shows what happens at the end of year 1:

	5years	10 years
Revenue	€ 30.000,00	€ 30.000,00
Depreciation	€ 20.000,00	€ 10.000,00
Profit	€ 10.000,00	€ 20.000,00
Book value asset	€ 80.000,00	€ 90.000,00

There is not only a difference in book value of the asset but also on the profit. In this case balance sheet conservatism affects earnings conservatism. Both earnings and assets are understated.
The following table shows what happens at the end of year 7:

	5years	10 years
Revenue	€ 30.000,00	€ 30.000,00
Depreciation	€ -	€ 10.000,00
Profit	€ 30.000,00	€ 20.000,00
Book value asset	€ -	€ 30.000,00

There is no depreciation for the 5year lifespan, because the asset was already fully depreciated after year 5. In this case can be seen that earnings are reversed. In the first 5 years the profits were understated, now they are overstated. But it is interesting to note that balance sheet conservatism did not reverse. The book value is still lower than the actual value.

This research will focus on earnings conservatism, because earnings are a performance proxy. Many bonuses of managers depend on the earnings. During a financial crisis, earnings will probably be lower than in a normal situation. This will probably give incentives for managers to reduce or increase the level of conservatism.

Now will be explained what happens in both earnings and balance sheet conservatism using an example from Basu 1997. Basu explains what happens when the estimation of the useful life of a fixed asset changes. When the estimation of the useful life of an asset will be longer, then the manager has two options:

1. He does not change the book value (Historical cost accounting). In this case the depreciation cost will be lower in the next periods.
2. He immediately raises the book value to fair value, and therefore reports a one-time profit.

The first case is a more conservative method. The two options are also available when the estimation useful life will be shorter. But in this case (when conservatism is applied) you do not choose the first option, but you will immediately report a loss. Thus, in conservatism you discriminate between a potential profit and a potential loss. Always the safest option is chosen (Basu 1997).

2.4 Relationship with earnings management

One of the definitions of Earnings management is: *"Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to either mislead some stakeholders about the underlying economic performance of the company or in influence contractual outcomes that depend on reported accounting numbers." (*Healy and Wahlen, 1999).

Management can have various incentives to apply earnings management. For example when a bonus of a manager is dependent on the profit. Ronen and Yaari (2008) explained three types of earnings management: White, Grey and Black earnings management. White earnings management is when it is used by using the discretionary room in accounting rules and regulations in order to signal the manager's private information on future cash flows. There is gray earnings management when management chooses an accounting treatment with the purpose to maximize the utility of management or what is economically efficient for the company. Black earnings management can also be seen as fraud and has the purpose to misrepresent or reduce transparency of financial reports. (Ronen and Yaari, 2008)

Changing conservatism will have an effect on earnings and can therefore be seen as a subset of earnings management. This thesis assumes that management uses the discretionary room of

accounting standards in order to maximize management's own utility or for what is best for the company. Therefore this thesis assumes that accounting conservatism can be seen as gray earnings management.

2.5 Summary

This chapter explained what conservatism is. There are different definitions from standard setters and researchers. Conservatism can be divided into two types: balance sheet and earnings conservatism. The two can affect each other. But why is conservatism so important, or isn't it? That will be explained that in the next chapter.

3. Usefulness of financial information when conservatism is applied

3.1 Introduction

Conservatism has an effect on financial statements. The question is whether conservatism will lower the usefulness of financial information. There are different views whether conservatism is a bad or a good thing and what effect it has on the financial statements. This chapter will give an answer on sub-question 3: *Is conservatism good or bad?*

3.2 Good

Conservatism can be seen as good behavior because it increases firm value because they constrain managements' opportunistic payments to themselves and other parties, such as shareholders (Watts, 2003a). This statement would imply that management is opportunistic. When firm value increases because of conservatism then this increase is shared among all parties of the firm according to Watts (2003a). In this way everyone's welfare is increased. Conservatism is therefore a good contracting mechanism (Watts, 2003a).

Conservatism is also good behavior because it can reduce litigation cost and reduce income taxes. These are also reasons why managers would apply conservatism, but this will be more elaborated in the next chapter.

3.3 Bad

Understatement of earnings in the current period can lead to overstatement of earnings in future periods by causing an understatement of future expenses (Watts, 2003a). The overstatement is not conservative and therefore not desirable.

Because of this effect the accounting information does not give a true and fair view about the company performance and financial position. Stakeholders need to have true and fair financial statements otherwise they could make a wrong decision.

In the latest development of the conceptual framework of financial reporting of the IASB conservatism (prudence) is removed. The IASB argues that is in contradiction with the principle of neutrality (Deloitte, 2010). This principle is part of faithful representation and is according to the IASB: "A neutral depiction is without bias in the selection or presentation of financial information." (IASB, 2010) If there is conservatism they argue that there is a bias in the presentation of financial information and it is therefore not neutral.

If this research finds that conservatism is still present than the IASB has failed in trying to eliminate conservatism.

3.4 View of this thesis

Conservatism is in this chapter defined as bad or as good as long as it is within the discretionary room that managers have of rules and regulations concerning financial information. As long as managers do not commit fraud it is not a case of bad and good. If the rules allow conservatism which can be seen as bad, then the rules should be adjusted.

It also depends from which perspective you will look at it. For example if you own a share in a company, which has understated profits. When it turns out that the company actually had more earnings, than is that a nice surprise. But when someone just sold the share, than he will not be very happy when it turns out that the company actually had more earnings.

3.5 Summary

Conservatism can have good and bad effects. It can increase firm value but on the other hand it will probably lower the usefulness of financial statements. The IASB thinks that conservatism is not desirable. This research gives an answer whether the IASB is succeeded in eliminating conservatism. Conservatism is in the view of this thesis not bad when it is allowed in the rules.

4. Explanations of conservatism

4.1 Introduction

This chapter describes some explanations for the use of conservatism by managers. Explanations for conservatism from Watts (2003a) will be described by focusing on underlying incentives for managers and firms. Also the possible effects of these incentives in a financial crisis will be discussed. The chapter ends by stating incentives for management not to apply conservatism. At the end this chapter answers sub-question 4: *What are the incentives to apply (or not to apply) conservatism?*

4.2 Contracting explanation

In various contracts between a firm and third parties accounting data play an important role, especially when accounting data are part of the conditions. This can be for example a debt contract or a management compensation contract. (Watts and Zimmerman 1986). Bankers are only concerned about the repayment of the loan. That is why they will have a contract with some lower bound constraints. Every contract may have its own constraints and conservative measures. For example, investors can demand to ask a certain minimum liquidity, otherwise the company need to pay back the loan. That is why managers have incentives to exercise conservatism (within the boundaries of the constraints); otherwise they will for example lose an important loan (Watts 2003a). Because profits will be lower in a financial crisis, the manager may reduce conservatism on order to comply with a contract.

4.3 Litigation explanation

Companies will also apply conservatism because of litigation. Kellogg (1984) finds that in securities litigation, buyers' lawsuits against auditors and firms outnumber sellers' lawsuits by a ratio of 13 to 1. Since the expected litigation costs of overstatement are higher than those of understatement, management and auditors have incentives to report conservative values for earnings and net assets. This could therefore be a very good reason to apply conservatism during a financial crisis. The last thing what a manager wants is a lawsuit.

4.4 Income tax explanation

Taxable income and methods of calculating taxable income is in some countries linked to reported earnings. This was for example in the past the case in the US. But also in Germany,

(before the adoption of IFRS in 2005) was German accounting significantly affected by tax rules (Deloitte & Touche, 2001). This is why taxable income has long influenced reported earnings (Watts, 2003). Guenther et al. (1997, 230-234) suggest that accounting methods used for reporting to shareholders still influence taxable income. A relation between taxable income and reported earnings is needed. This is therefore for every country different. In the Netherlands are different rules for reporting for external purposed and for fiscal purposes. In the Netherlands there are therefore two different financial statements. This suggests that this explanation does not hold for this research.

4.5 Impact of IFRS/Regulatory explanation

Rules and regulation regarding financial reporting also provides incentives for firms' reported financial statements to be conservative (Watts, 1977). The room of professional judgment that a manager has is dependent of the rules and regulations for financial reporting.

Using an example using the International Financial Reporting Standards (IFRS) from the IASB will be explained how accounting standards influence the discretionary room for conservatism. IASB- rules (IFRS) are since 2005 mandatory for all stock exchange listed companies in the European Union.

Hellmann 2008 studied the accounting standards of IFRS on the possibility to apply accounting conservatism (called prudence in IFRS) using three specific standards within IFRS: (1) judgment related to the recognition of deferred tax receivables pertaining to loss carry forwards (IAS 12); (2) judgment regarding the capitalization and impairment of development costs (IAS 38); (3) judgment regarding the use of the percentage-of-completion method and the zero-profit recognition method during the completion of construction contracts (IAS 11). He also studied the differences between IFRS and previous standards that were applied before IFRS in many jurisdictions.

Hellman examined these standards in detail and finds out how conservatism could be applied within the boundaries of these standards.

Hellmann (2008) found that the cases related to loss carry forwards (IAS 12), development costs (IAS 38) and construction contracts (IAS 11) pointed at the need for making judgments regarding probabilities and other estimates under these standards. Because of this judgment making, opportunities for earnings conservatism are increased in comparison with other standards that were applied in many countries. Thus, although prudence is no longer a

qualitative characteristic according to the IASB, the possibilities are not eliminated under IFRS.

4.6 Agency theory

There are different reasons why there would be conservatism. But why would there be no conservatism? The answer can be found in the agency theory (Jensen & Meckling, 1976). The theory states that there is a difference in interest between principal and agent, this results into a conflict of interest. Because there is also information asymmetry between principal and agent there is an opportunity for the agent to act in what is best for his own interest.

In firms, the principal would be the owners of the company. The owners can be for example shareholders. They want to maximize firm value, in this way they have a maximum return on shares. The manager (the agent) on the other hand has a different target. He wants to maximize his own bonus (Healy, 1985). If the bonus of the manager is dependent on earnings, the manager has an incentive to reduce conservatism. A lower degree of conservatism results into a higher profit, and therefore a higher bonus (But as explained earlier in chapter 3.2, conservatism can increase firm value. Thus, reducing conservatism may mean that the value decreased).

During a financial crisis profits will probably be lower than during a normal situation. This gives an extra incentive for managers to lower the applied degree of conservatism. Otherwise managers will have a lower bonus/income than normal.

This theory could also explain a difference between companies with one ultimate owner and companies with lots of shareholders. Because if you are a manager and you also own the company, there is no agency problem. The manager is the principal and the agent at the same time. He will probably do what is best for his company. Reasons for conservatism like contracting explanations and litigation explanation will probably therefore have a stronger effect.

4.7 Summary

In this chapter are different reasons for accounting conservatism explained. Standard setters also have an influence on accounting conservatism. The agency theory can explain why managers would not apply conservatism. The agency theory can also explain why there would be a difference between companies with one ultimate owner and other companies. This

chapter helps with formulating different hypotheses for this research. If for example a manager cares more about his short-term bonus than the increased risk for litigation then he would reduce conservatism.

5. Research approaches

5.1 Introduction

This chapter focuses on different research approaches. Different approaches will be discussed. Also will be explained why this thesis will follow or not follow an approach. This chapter will therefore answer sub-question 5: *From which research perspective will this research be done and what are the assumptions of this perspective?*

5.2 Market based accounting approach

This approach tries to find a relation between share price reactions and the public release of accounting information (Brown, 1994). This approach is often used in measuring conservatism. Then this approach focuses on differences in share price reactions between good news and bad news.

A limitation about this approach is that efficient markets are needed. The efficient market hypothesis (EMH) from Fama et al. (1969) describes three levels of efficiency. The weak form assumes that share prices reflect all historic share prices. The semi-strong form of the EMH assumes that every publicly available information is reflected in the share price. It also assumes that new available information will be immediately adjusted (there is no time lag). The last form is the strong form of the EMH. In this form both privately as publicly known information is incorporated fully and correctly in the share price. If the strong form is applicable there is no possibility to realize an abnormal return (Fama et al., 1969).

For this research stock prices are needed. Stock price information is only available for listed companies. In the research of this thesis the sample contains unlisted companies, so the market based accounting approach is therefore not appropriate.

5.3 Positive accounting theory

Positive accounting theory tries to describe, explain and predict particular actions and situations. This is different than normative theories, which describe how a particular practice should be undertaken (Deegan & Unerman, 2006). Positive accounting theory however focuses in relationships between individuals involved in providing resources to an organization (for example owners, managers, debt providers etc.) and how accounting is used

to assist in the functioning of these relationships (Deegan & Unerman, 2006). A specific theory within this approach is The Positive Accounting Theory form Watts and Zimmerman (1986). This theory focuses on the relationship between managers and accounting choices. (Watts and Zimmerman, 1986).

There are two main assumptions in this theory: there exist information asymmetry between manager and stakeholder and manager will always act in the way what is best for them. This is also known as the agency theory which is described in chapter 4,6.

Watts and Zimmermann (1986) made 3 hypotheses about the behavior of managers why a manager would apply a certain way of reporting: the bonus plan hypothesis, debt hypothesis and political cost hypothesis:

5.3.1 Bonus plan hypothesis

According to the bonus plan hypothesis managers will use the reporting methods that will maximize their bonuses. This does not imply that they will maximize profits. For example a bonus plan has an upper bound; every profit above this bound will not generate a bonus. The manager will reduce the profit in year1 (till just below the upper bound), so that he can report more profit in year 2 (where he maybe not reached his upper bound yet). In this way he will get a higher bonus than normal (Watts and Zimmerman, 1986).

5.3.2 Debt covenant hypothesis

Debt contracts are made by lenders in order to reduce the probability that the funds will not be repaid. The probability that the debt will not be repaid is caused by activities of the recipient. In these contracts the lenders may formulate conditions for the loan: for example a certain minimum of ROA. If the company can't satisfy the conditions then the firm must pay the loan back. This is not desirable because this can lead to bankruptcy. In order to comply with the contracts, managers may apply earnings management. (Deegan and Unerman, 2006)

5.3.3 Political cost hypothesis

According to the political cost theory there are companies that do not want to present high profits, because if high profits attract a lot of political attention. For example: Shell Oil Company. Shell is not the most "green" company. It is polluting the environment. If it reports a lot of profit, governments will probably charge more taxes. But there can be more sorts of

costs: employees that demand a raise, consumers who will not buy anymore because of a protest and lawsuits from environment associations (like Greenpeace). These extra costs are not desirable because these costs will lower the profit. (Watts and Zimmerman, 1986)

5.4 Behavioral approach

The behavioral approach analyzes the reactions towards the release of information (Moser, 1998). This can be done in a laboratory. For example: analyzing a process within a panel. A survey may also be part of this approach.

If this research is done using this approach, a survey may for example be made. In this survey managers will be asked whether they have or have not applied conservatism. However this comes with some limitations. It is not certain that every manager answer with honesty and it is not even sure whether managers will answer.

Also in this approach the sample is in most times very small it gives weaker evidence than other approaches. Those are the reasons why this approach is not chosen for this research.

5.5 Summary

There are different approaches to do this research. A common approach is the market based accounting approach. This approach finds relation between share price reactions and the release of information. This approach can only be done when there are stock markets (and therefore only for listed companies). The positive accounting theory approach describes, explains and predicts the reactions of managers. The behavioral approach analyzes reactions towards the release of information through for example a survey.

This research is based on the positive accounting theory because this research uses the process of describing, explaining and predicting how conservatism changes in the financial crisis caused by motives of management. Also the assumption of the positive accounting theory will be taken into account and will be one of the bases of the hypotheses.

6. How to measure conservatism

6.1 Introduction

If we want to research whether conservatism is changed during a crisis we need to have a method to measure conservatism. There are different models for this purpose. The most methods are based on statistical regression. This chapter explains the different methods, find the advantages and disadvantages. This helps with understanding the limitations of prior research and this will also explains why a certain model is chosen for this research. This chapter will answer sub-question 6: *Which models have been developed to detect conservatism?*

6.2 Basu's regression model

Probably the most used method is the Basu regression model from 1997. This method is a market-based model. In this method Basu compares the stock returns with the accounting earnings. The complete model consists of 4 different methods that will be discussed in the next sub-chapters. Basu assumes that the market price reflects all publicly known information (Basu 1997). This model is dependent on the assumption that markets are efficient in the semi-strong form of EMH. So all publicly available information is reflected in the share price, not only the accounting information (Fama et al. 1969). As explained earlier in our definition of earnings conservatism, earnings conservatism is that bad news is reflected earlier than good news in the earnings. That's why a difference in share price returns and earnings is expected. It is a method to detect **earnings conservatism**.

Basu (1997) uses positive (negative) annual stock returns as proxies for good (bad) news and finds that the sensitivity of earnings to negative returns is greater than that of earnings to positive returns. This indicates conservatism.

6.2.1 Earnings method

The Basu model is a regression model. In this way Basu can find the relationship between economic income, as measured by stock returns and accounting income (Vichitsarawong et al. 2010).

$$X_{it} \, / \, P_{it \, 1} \; = \; \alpha_0 \; + \; \alpha_1 DR_{it} + \; \beta_0 R_{it} + \; \beta_1 R_{it} * DR_{it}$$

X_{it} / P_{it} = Net income before extraordinary items per share of firm i, deflated by beginning of period share price.

R_{it} = returns for firm i, including dividend, over the firm's fiscal year t, starting 9 months before end fiscal year and ending 3 months after ending fiscal year.

DR_{it} = dummy variable, equaling one if there is 'bad' news and zero is there is 'good' news. Bad news is a negative return and good news is a positive return.

It is important to see why the fiscal year is not taken, but 9 months before the end of the year and 3 months after ending fiscal year. This is because accounting information will usually become approximately 3 months after the end of the year publicly available. In the Netherlands the period is different: any financial statement in the Netherlands should be reported within 5 months after the ending of the accounting period. Postponement for 6 months is also possible under special circumstances (Klaassen & Hoogendoorn, 2006). Basu expects that the slope coefficient (β_0) to be greater for the 'bad' news companies, because earnings are predicted to reflect 'bad' news more quickly and completely than 'good news'. Basu also expects a higher R^2 for the 'bad' news firms than for the 'good news' firms, because earnings are more likely to reflect 'bad' news in a timely manner (Basu 1997).

6.2.2 Cash flow method

Basu also has a second method, which uses cash flows. The idea behind it is that, under conservatism, unrealized losses will be immediately reflected in income but not immediately in cash flows. The following formulas are used:

$$XE_{it} = X_0 + X_1 DR_{it} + \beta_0 R_{it} + \beta_1 R_{it}*DR_{it}$$
$$CFO_{it} = X_0 + X_1 DR_{it} + \beta_0 R_{it} + \beta_1 R_{it}*DR_{it}$$
$$CFOI_{it} = X_0 + X_1 DR_{it} + \beta_0 R_{it} + \beta_1 R_{it}*DR_{it}$$

Where: XE_{it} = per share earnings before extraordinary items and discontinued operations for firm i in fiscal year t, deflated by price per share at the beginning of the fiscal year

CFO_{it} = cash flow from operations for firm i in fiscal year t, deflated by price per share at the beginning of the fiscal year

$CFOI_{it}$ = cash flow from operations and investments for firm i in fiscal year t, deflated by price per share at the beginning of the fiscal year

R_{it} = returns for firm i in the period starting 9 months before the end of the fiscal year t and ending 3 months after fiscal year-end

DR_{it} = dummy variable: 1 if Rit < 0, 0 if Rit ≥ 0

Basu therefore expects the following two things when there is conservatism:

1. Earnings reflect 'bad news' in a timelier manner than cash flows reflect 'bad news'.
2. This difference in timing (caused by hypothesis 1) between cash flows and earnings is greater for 'bad news' than for 'good news'.

6.2.3 Earnings persistence

There is only a limited amount of news directly reflected in current year's earnings. The rest of the information will be reflected in earnings in the future. So in conservatism is expected that bad news is immediately reflected in current year, and therefore a one-time decrease of earning. Good news will probably cause a persistent increase in earnings. Because of this fact Basu expects the following:

"Negative earnings changes have a greater tendency to reverse in the following period than positive earnings changes."(Basu 1997).

He therefore makes the following regression equation, which is also an adjustment of his first formula (Basu 1997):

$$\Delta X_{it} \ / \ P_{it\ -1} \ = \ \alpha_{o} \ + \ \alpha_{1D} + \ \beta_{0} \ X_{it-1}/P_{it\ -2} \ + \ \beta_{1D}*\Delta X_{it-1}/P_{it-2}$$

ΔX_{it} = change in earnings for firm i in fiscal year t over fiscal year t-1

P_{it-n} = price per share at year-end of fiscal year t-n

R_{it} = returns for firm i in the period starting 9 months before the end of the fiscal year t and ending 3 months after fiscal year-end

D= dummy variable: 1 if $\Delta X_{it-1}/P_{it-2}$< 0, 0 if $\Delta X_{it-1}/P_{it-2}$≥ 0

Basu expects in case of conservatism that the slope ($[\beta_0 + \beta_1] / \beta_0$) is higher in positive earnings changes than on negative earnings changes (Basu, 1997).

6.2.4 Effect of conservatism on the capital market

The last model that Basu uses examines the relation between the capital market's reaction and the news of earnings. The information content is measured by the earnings response coefficient (ERC). The ERC is the abnormal return per unit of unexpected earnings at the earnings announcement. Unexpected earnings are the real earnings less expected earnings.

$$R = a + b(ern - u) + e$$

R = the expected return

a = benchmark rate

b = earning response coefficient

(ern-u) = (actual earnings less expected earnings) = unexpected earnings

e = random movement

This formula is calculated for each firm separately. Basu expects that when there is conservatism, firms with positive changes have a higher ERC (b) than firms with negative changes in earnings.

6.2.5 Limitations on Basu's model

Although the Basu model is a common used method, there is a lot of criticism on it. The first one is an obvious one. Only listed companies can be investigated; otherwise there will not be any stock information. This method therefore ignores private companies (Ball and Shivakumar 2005).

Basu made the assumption that a negative stock return equals bad news and a positive equals good news. But sometimes the stock price can move because of the stock market sentiment. This has nothing to do with a good and bad news. Basu does not make a correction for this in his model. (Givoly & Hayn, 2000)

Basu made the assumption that there are efficient markets. This Efficient Market Hypothesis (EMH) is explained in chapter 6.2.1. But Dietrich et al (2007) argue that if bad news is reflected more quickly than good news because of conservatism, that the EMH of the semi-strong form cannot be assumed. Also the effect that bad news has a stronger effect on earning than good news, can lead to inefficient markets (Dietrich et al., 2007).

There is also criticism that Basu does not take firm specific characteristics into account. These differences in size, leverage etc. can contribute to another degree of conservatism. Khan & Watts made a correction to the model, so that these differences are taken into account (Khan & Watts, 2009).

6.3 Givoly & Hayn methods

One of the major limitations of the Basu model is that is relies on the stock price movement to identify good and bad news. Givoly & Hayn (2000) use in their research different methods that not make use of the stock market. This makes it an excellent model to investigate firms that are not publicly listed. This is also a method that detects **earnings conservatism**.

6.3.1 Skewness of earnings

As explained earlier, in conservatism there is an early and full recognition of unfavorable events in the financial statements and a delayed and gradual recognition of favorable events (Givoly & Hayn, 2000). In the case of conservatism, there should therefore be a negatively skewed distribution of earnings. An example of a negatively skewed distribution is in figure 1.
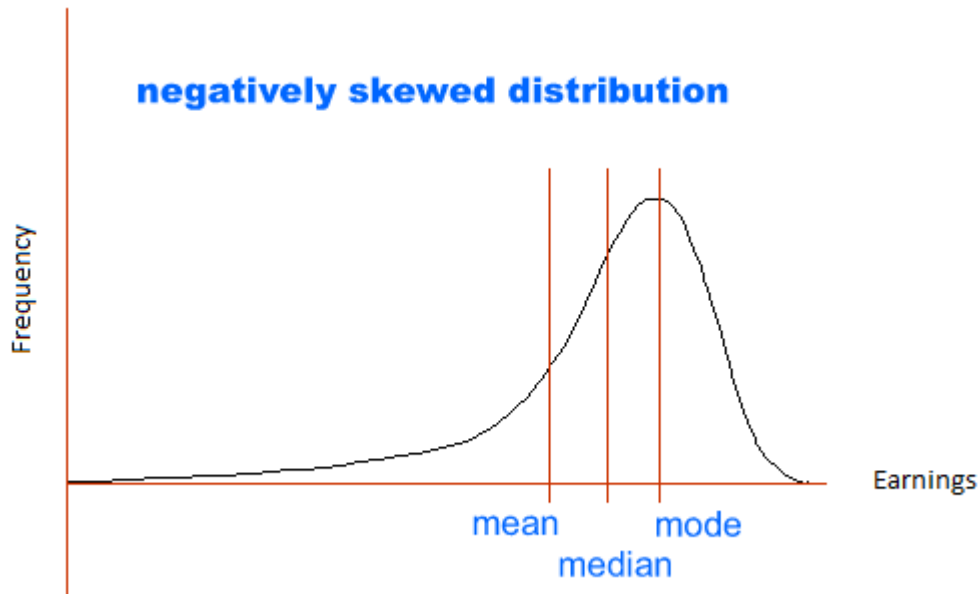
Fig. 1 negatively skewed distribution

Givoly & Hayn give a formula to calculate this skewness.

$$y = \sum_{t=1}^{n} [E(x_t - \mu)^3]/\sigma^3$$

Where: y = skewness

E = expectation

x = ROA (Net income/total assets) or CFO/Total assets (CFO = cash flow from operating activities)

μ = The mean of x

σ = The standard deviation of x

n = number of observations

In conservatism Givoly & Hayn expect a negative value of Y.

This formula can be calculated for every year, and plotted in a graph. The slope of that graph can indicate whether conservatism is increased, decreased or remained the same over time. The outcome of the research of Givoly & Hayn is in figure 2. In figure 2 there can be seen that the distribution of earnings is more and more negatively skewed over time. Givoly &

Hayn use a cross-sectional analysis and time-series analysis. In time-series analysis you take every year the same sample. In other words: the sample does not change over time. In cross-sectional a sample of all firms available in that year is taken. That a firm is not in the sample the next year is not taken into account.

There are two limitations. When there is earnings management, specifically the big bath strategy[1], there is also a negatively skewed distribution.

Another limitation is that operating accruals may also contain investment accruals if an asset purchased in cash is written off as an operating expense rather than capitalized (Zhang, 2008).

That is why Givoly & Hayn also calculate the skewness with cash flows from operations (CFO)/total assets instead of the ROA. This is to make sure that the negative skew is not caused by cash flows (Givoly & Hayn, 2000).
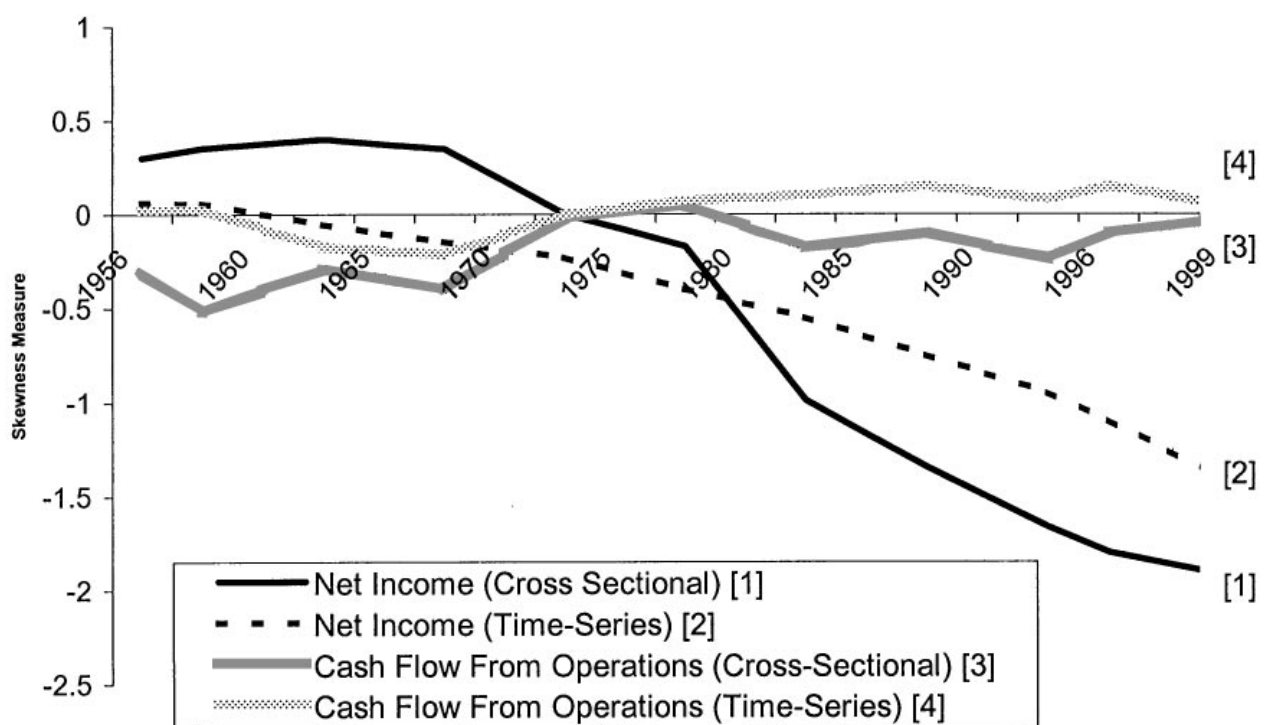
Fig. 2 Time-series and cross-sectional skewness measures of earnings and cash flows (constant sample of 896firms). (Basu, 1997)

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[1] Big Bath is an earnings management technique whereby a one-time charge is taken against income in order to reduce assets, which results in lower expenses in the future (Healy, 1985).

6.3.2 The convergence of earnings and (non-operating) cash flows

The difference between earnings and cash flows are called accruals. If is a loss expected, a loss is reflected in earnings that is currently not reflected in the cash flows. Earnings are lower than cash flows; there is therefore a negative amount of accruals. Therefore are negative accruals a proxy for conservatism (Givoly & Hayn, 2000).

Givoly & Hayn make a difference in operating accruals and non-operating accruals. Operating accruals are a caused by day-to-day activities are the operating accruals and all the other accruals are non-operating accruals. A good example of a non-operating accruals is a bad debt provision. The difference between operating and non-operating accruals is made because Givoly & Hayn argue that a manager does not have influence on operating accruals but does have on non-operating accruals. It is also important to note that accruals and earnings will be taken before the deduction of depreciation and amortization. This is because Givoly & Hayn also think that they are caused by day-to-day operations.

There may be other explanations when there are decreasing non-operating accruals: restructuring, mergers & acquisitions, increased cost of pension and post-retirement benefits, growth & inflation (Givoly & Hayn, 2000).

6.4 Beaver & Ryan

Beaver & Ryan 2005 made a model that is based on the difference between market value and book value (book-to-market ratio). The general idea is that under conservatism the book value of assets will be understated. Because of the efficient markets, the market price will reflect the real value of the assets. Thus, if there is a low book-to-market ratio, there may be conservatism. (Watts 2003b) This is a method that detects balance sheet conservatism.

6.5 Khan & Watts

On the model Basu are different variations with improvements, for example the g- and c-score of Khan & Watts (2009). One of the limitations of the Basu model is that it doesn't take firm specific characteristics into account (size, leverage etc.). The model of Khan & Watts does take that into account.

Because this method is still relying on stock prices it is still not interesting for this research.

6.6 Summary

Some models measure balance sheet conservatism and others measure earnings conservatism. Many models rely on the assumption that the markets are efficient. There is also a model that does not make use of stock markets, and it is therefore very appropriate to investigate none publicly listed companies. This method is therefore appropriate for this research. Every model has its limitations. The use of multiple models will accumulate to stronger evidence. Comparing a model that not makes use of the stock market with a model that does use it will probably also lead to better evidence. The choice of the model is dependent whether you want to investigate stock listed or non-stock listed companies. In the latter case you cannot make use of the stock market and therefore Givoly & Hayn's (2000) models could be perfect. This model can also be used for stock listed companies. If stock markets can be used then there is more choice in models. Although there are many critics of the Basu model, it is still a model that is used quite often. This research will make use of the Givoly & Hayn models. That's because this model does not make use of stock markets and it is therefore appropriate for this research.

7. Prior research

7.1 Introduction

This chapter will give an overview on research that has been done in the past. Prior research can contribute to building hypotheses for this research. This chapter is divided into different paragraphs. Prior literature where conservatism is measured over multiple years will be first explained. After that, literature that made a connection with a financial crisis is explained. This chapter ends with literature that made a distinction between publicly and privately owned companies. After this chapter sub-question 7 can be answered: *What can be learned from prior research on this topic?* A list of the most important prior literature is summarized in appendix A.

7.2 Conservatism over time

In 1997 Basu conducted a study that investigates conservatism over time. Basu used his own method (which is explained in chapter 6.2) which consists of 4 models. He studied the years 1963 until 1990. He studied only the United States and that makes it harder for this research to generalize the conclusions for this research, because of different legislation and different corporate governance in the USA in comparison with the Netherlands. The sample consists of all firms with returns data on the CRSP NYSE/AMEX Monthly files and with accounting data on COMPUSTAT. This is approximately 1000firms. Basu found with all the four models that the applied degree of conservatism is increased over time. Basu thinks that this is because of increased auditor's liability exposure (Basu, 1997). Basu argues that the auditor has an impact on the applied degree of conservatism. Several other researchers studied this effect. Hermann et al. (2008) studied the effect of audit fees on conservatism. They made an analysis of differences between big4-audited companies and non-big4-audited companies. After analyzing a sample of 2543 firms in Thailand (1997- 2003) with the Basu regression model, they found out that companies who are audited by big4 are more conservative than other companies during the Asian financial crisis (Hermann et al, 2008). There is a working article of Gul et al. (2011) which states that conservatism dropped significantly during the financial crisis of Asia (1997). There was seen a negative relation between conservatism and audit fees (Gul et al, 2011).

Givoly and Hayn (2000) also studied accounting conservatism over time. They did this research with their own methods: skewness of earnings and the convergence of accruals (see chapter 7.3) and market-to-book ratio. The period is very large: 1950 till 1998. The sample is from 593 to 9000 (in first years less firms were available in the COMPUTSTAT database) USA firms. The conclusion of the research is that conservatism is increased over time. All models that they used indicate this outcome. This research is consistent with the outcome from the outcome of Basu.

7.3 Conservatism in relation to a financial crisis

7.3.1 Introduction

The financial crisis of 2007 is quite new (not even finished) and there is therefore not much research done. But there are some working papers and there are articles that investigate other crises (like the Asia crisis of 1997).

7.3.2 Different studies

Hermann et al. made a comparison between big4 audited firms and non-big 4 audited firms. But they did this with analyzing difference during the Asian financial crisis. They investigated 2543 Thai firms in the period 1997 till 2003. That is a period during the crisis and after the crisis. Using the Basu model, Hermann et al found that there was significant increase in conservatism after the crisis. This increase was for both big4 audited firms and non-big4 audited firms. But during the crisis there was a difference: Big4 audited firms are more conservative than non-big4 audited firms. That this significant difference is disappeared after the crisis can be a result of more stringent control by regulatory bodies, improved corporate governance and conscientious adoption of IAS (International Accounting Standards) in Thailand. These increased controls are introduced in Hong Kong, Malaysia, Singapore and Thailand. The aim was to stabilize their financial systems (Hermann et al., 2008).

Vichitsarawong et. al. (2010) also investigated the Asian financial crisis of 1997. This study investigated the countries that took measures to stabilize their financial system: Hong Kong, Malaysia, Singapore and Thailand. The sample consists of 1500 companies. The period is 1995 till 2004, therefore a pre-crisis, crisis and post-crisis period. The study showed (by

using the Basu model) that all the measures that were taken probably worked because conservatism in the pre-crisis period was higher than during the crisis and after the crisis. But that also shows that conservatism during the crisis was lower than after the crisis and lower than before the crisis (Vichitsarawong et al, 2010).

Wu (working paper, 2010) investigated the effect of accounting conservatism on the shareholder value during the financial crisis of 2007. The method that they use for detecting conservatism is the C-score from Khan & Watts (2009) and they used cumulative stock returns as a proxy for firm value. There was a sample of 5500 American firms. The authors found strong evidence that there is a positive association between conservatism and stock returns during the crisis of 2007. This evidence is even stronger because they used alternative proxies for conservatism, different beginning dates of the crisis, using non-financial companies in the sample and using different statistical methods. Overall, the result provides supportive evidence to the positive accounting theory that conservatism is an efficient governance mechanism to mitigate information risk and control for agency problems, and shareholders benefit from conservative accounting (Wu, 2010).

There is another working paper by Gul et al. (2011) that investigated conservatism during the Asian financial crisis of 1997. But Gul et al. defined the years of financial downturn in 1996 till 1997. They have therefore a pre-crisis period from 1990 till 1995. They investigated 4041 firms from Hong Kong using the Basu 1997 model. The outcome showed a decrease of conservatism during the financial crisis. The author call this a hidden cost, because managers are more likely to report more aggressively than usual and therefore audit fees will be higher (Gul et al., 2011).

7.3.3 Summary

All prior research shows us that after the Asian financial crisis conservatism is increased. This is probably because of more stringent control by regulatory bodies, improved corporate governance and conscientious adoption of IAS (International Accounting Standards). Prior research also showed that conservatism was low during the crisis in comparison with before and after the crisis.

7.4 Distinction between public and private companies

Ball & Shivakumar (2005) made a comparison between private and public companies in the United Kingdom. In the UK both companies face the same regulation on auditing, have same accounting standards and face same tax rules. But they still expect that private companies have a lower quality of financial reports than public companies, because of different market demand. Ball & Shivakumar used the timeliness of loss recognition as a proxy for quality. The sample consists of 54,778 private firms and 1475 public firms in the UK from 1989 till 1999. The results showed that private firms recognize losses in a less timely manner than public companies (Ball & Shivakumar, 2005). In my opinion, these results suggest that private companies are less conservative than public companies.

7.5 Summary

We can learn from prior research that there is a relation between the auditor and the amount of conservatism. Also we can learn that in 1950 till 2000 in the USA the amount of conservatism increased. 2 different studies with 2 different methods showed this result. Other studies showed that during the Asia crisis of 1997 conservatism was decreased and after the crisis increased. The question that needs to be asked is if this is also valid for the current financial crisis of 2007.

At the end the outcome of a research that made a comparison between private and public companies in the UK is explained. There was a significant difference which claims that private companies are less conservative than public companies. These conclusions give indications that there is difference between smaller and larger companies. This helps with formulating hypotheses which are formulated in the next chapter.

8. Research design

8.1 Introduction

This chapter is about the research design. The sample selection is explained in paragraph 2. The hypotheses development is discussed in paragraph 3. The model that this research uses will be explained and the last paragraph is about the limitations of this research. This chapter will answer sub-question 8: *What is a proper research design for this research and what are the limitations of this design?*

8.2 Sample

The sample will consist of 138 Dutch firms divided into 2 groups: family and non-family. Several firms from 2006 until 2009 will be investigated. The financial crisis in the Netherlands started half 2007 but became really heavy in 2008. That is why 2006 and 2007 will be taken as pre-crisis years and 2008 and 2009 as crisis years. There is no post-crisis period because it is debatable when the crisis is finished, if it is already finished. The year 2005 is excluded because of the introduction of IFRS for listed companies. That could give a bias, as already explained in the regulatory explanation in chapter 4.5.

There will be started with the selection of the family firms. This is the most difficult step because not much information is available. Information is available through Amadeus database and company.info. These databases are not available for everyone. A subscription from a firm is needed for Amadeus. Company.info can be found via Erasmus University. All companies in the Netherlands that has one ultimate owner or a family who owns 50.01% of the shares or more are selected. Financial companies will be excluded because they tend to recognize unrealized earnings in their financial statements. They also show stronger correlations between book value and market value of net assets than nonfinancial firms do. They are therefore not comparable with non-financial companies. It is quite common in other studies to do this. At the end, there were 70 firms which were appropriate. The list of firms is in appendix B2.

The sample of the non-family firms is as large as the family firms. All firms listed on Euronext Amsterdam are selected. Financial companies and companies that are cross listed will be excluded. After that a random sample of 70 firms is made. The list of companies is in appendix B1.

8.3 Hypotheses development

In order to develop a hypothesis it is very important to study prior literature. The hypotheses will be based on the outcome of prior research. There are many different studies that give conflicting clues on what outcome to expect for the empirical part of this research. These differences will be discussed and explained why at the end is chosen for a specific hypothesis.

8.3.1 Contracting explanation

The contracting explanation explains why there might be a change of conservatism because of contracts. This is already discussed in chapter 4,2. For example, if a company wants a loan. The bank could demand that the company for example has a certain minimum of ROA. This target may be met by reducing conservatism. During financial crises it may be harder to meet those targets. This could mean that conservatism in both groups of the sample (family and non-family) is decreased.

Large public companies could have more power in negotiating with third parties than smaller companies. The assumption in thesis is made that family companies are often relatively small companies and non-family companies relatively large companies. Non-family companies may therefore have less strict targets on the contract, because of the larger negotiating power of non-family companies. This could mean that non-family companies do not need to lower conservatism in order to meet their contract targets. This could mean that there is a difference between family and non-family companies.

8.3.2 Litigation explanation

The litigation explanation explains that companies might report more conservative to avoid lawsuits. This is more elaborated in chapter 4,3. If the assumption is made that profits during a financial crisis are lower for every company than the last thing a company wants during crisis is to have an expensive lawsuit. That is why companies might report more conservative during a financial crisis.

Because a non-family company is usually larger the company might get much more public attention than family companies. This might lead to increased litigation risk. That is why non-family companies may report more conservative than family companies.

8.3.3 Agency theory

This theory could explain why there would not be conservatism which is already discussed in chapter 4,6. Managers are motivated by their own interests. For example they can adopt some standards to raise their own bonus instead of choosing what is best for the stakeholder. During the financial crisis profits started to fall down. Conservatism leads to even lower profits. If bonuses are dependent on profit then there is a good reason to lower conservatism. In this way profits will be larger and then managers can maintain their bonus. That would mean that during a financial crisis all companies will reduce conservatism in order to maintain profits and the corresponding bonuses.

In case of family companies it is often that members of the family also have a management position in the company. In this case there is not an information asymmetry between principal and agent, because the agent and principal are the same people. This could mean that they do not only care about their bonus, but also shareholder value. Non-family companies on the other hand still have the agency problem. This might mean that the 2 groups have a different strategy in order to maximize their own wealth. Non-family companies will reduce conservatism in order to maintain profits and the corresponding bonuses and family will maximize shareholder value and therefore increase conservatism. This might mean that non-family companies report less conservative than family companies.

8.3.4 Prior literature concerning conservatism over time without impact of a financial crisis

Basu (1997) and Givoly & Hayn (2000) studied how conservatism evolved over time. Both conclusions indicate that conservatism increased over time. If the financial crisis does not have an impact on how managers change the way on reporting then this research will probably indicate also a further increase of conservatism.

Hermann et al (2008) investigated how the type of auditor affects conservatism. They found that companies audited by a big-4 firm are more conservative than other companies. The assumption in this thesis is made that non-family companies are large companies and are therefore in most times audited by a big-4 firm. Family companies, on the other hand, are in

most times small companies and are therefore in most times audited by a non-big-4 firm. This could mean that non-family companies are more conservative than family companies.

8.3.5 Prior literature concerning the development of conservatism with impact of a financial crisis.

In the previous paragraph is prior literature discussed that investigated firms in years which does not had an impact of a financial crisis. The impact of a financial crisis could mean that the outcome of this thesis is different. The only research that is done which can help in developing hypotheses is research that investigated the Asian financial crisis of 1997.

It is hard to predict whether the outcomes of these studies are also valid in the Netherlands. There is different legislation and different regulators. The outcomes of the studies from Vichitsarawong et al (2010), Wu (working paper, 2010) and Gul et al. (2011) show that conservatism is decreased during the Asia crisis. The results of this thesis will show whether also in the Netherlands the financial crisis is associated with a decrease of conservatism.

8.3.6 Hypotheses

In the previous chapters the outcomes of prior research are discussed and what those outcomes will indicate for the outcome of this research. The indications from prior research are contradicting. Contracting explanation, agency theory and prior research that investigated conservatism during the Asia crisis indicate that conservatism might be decreased during the financial crisis. Litigation and prior research without the impact of a crisis indicate that conservatism might increase over time. This thesis makes the assumption that a financial crisis has a major impact on how managers behave and report during a crisis. Managers from non-family companies may have different incentives than managers from family companies due to the fact that managers from family companies are also in an important degree owners of the company. This thesis investigates 3 hypotheses and based on this information the first hypothesis will be:

H0: Conservatism in non-family companies is decreased during the financial crisis

This hypothesis is based on the thought that managers of non-family companies have a strong incentive to maximize their own bonus. Reducing the amount of conservatism can be a tool to maintain the bonus that managers had before the crisis.

Managers of family companies do not care about their bonus as much as managers of non-family companies. Because managers of family companies are also in an important degree owner, they are also focused on the long-term benefits, which is the value of the company. In order to maximize shareholder value they need to be very cautious. Litigation risk is therefore not desirable and a good relation with third parties (like a bank) is very important during a financial crisis. That is why family companies might report more conservative during the financial crisis. That leads to the following hypothesis.

H0: Conservatism in family companies is increased during the financial crisis

These hypotheses only say something about the direction of conservatism, whether it increased or decreased. But it does not say anything about whether family companies report more or less conservative than non-family companies. Just like the previous hypothesis, is it for managers of family companies more important to be cautious than managers of family companies. That leads to the following hypothesis:

H0: Conservatism is higher for family companies than for non-family companies

8.4 Methodology

In this sub-chapter will the methods that will be used step by step explained.

Three different models invented by Givoly & Hayn (2000) will be used. The first model uses the "convergence of earnings and cash flows from operations". This method is a time-consuming method because the information that is needed is not for the private companies available in a database. To make the results stronger 2 other tests of Givoly & Hayn (2000) will be used: "skewness of earnings" and "variability of earnings". These models require less information and can be done a lot quicker.

First will be started with combining the two groups (family + non-family in one group). In this way we can measure how much conservatism there is in the whole population. After that the same test is done but then separately for the two samples. In this way the differences can be measured.

8.4.1 Convergence of earnings and cash flows from operations

As mentioned earlier in this thesis. Givoly & Hayn (2000) expect that when there is conservatism there will be an accumulation of negative accruals in the long-run. They do this by calculating the non-operating accruals. These accruals are not caused by day-to-day activities, and it is therefore assumed that management has more influence on these accruals (Givoly & Hayn, 2000).

Calculation of non-operating accruals

To measure these accruals Givoly & Hayn used three formulas. Total accruals and operating accruals must be calculated first. In this way the non-operating accruals can be calculated:

$$\text{Non-operating-Accruals}_t = \text{Total Accruals}_t - \text{Operating-Accruals}_t$$

Accruals can be calculated in different ways. This thesis follows the formula of Givoly & Hayn (2000), which is:

Calculation of total accruals

$$\text{Total Accruals (before depreciation)} = (\text{Net Income} + \text{Depreciation}) - \text{Cash Flow from Operations}$$

In this thesis the following definitions (Amadeus database) of the variables are used:

Variable	Definition (Amadeus database)
Depreciation	Total amount of depreciation and amortization of the assets
Net income	Profit (Loss) after Taxation
Cash Flow From Operations	The amount of cash a company generates from the revenues it brings in, excluding costs associated with long-term investment on capital items or investment in securities. The precise calculation is the one that each

	firm made in his annual statement. This can be done either according to the direct method or the indirect method.

It is important to note that Givoly & Hayn add depreciation back to net income. They argue that extracting depreciation and amortization from the non-operating accruals result into accruals that consist primarily of such items as loss and bad debt provisions (or their reversal), restructuring charges, the elect of changes in estimates, gains or losses on the sale of assets, asset write-downs, the accrual and capitalization of expenses, and the deferral of revenues and their subsequent recognition (Givoly & Hayn, 2000). This is important because these accruals are subject to management discretion (although some are dictated by GAAP).

Calculation of operating accruals

The operating accruals are calculated by the following formula:

$$\Delta \text{ Operating accruals} = \Delta \text{ Accounts Receivable} + \Delta \text{ Inventories} + \Delta \text{ Prepaid Expenses} - \Delta \text{ Accounts Payable} - \Delta \text{ Taxes Payable}$$

The Amadeus database does not follow this classification but has other classifications. For this thesis this formula is therefore adjusted to:

$$\Delta \text{ Operating accruals} = \Delta \text{ Debtors} + \Delta \text{ Stock} + \Delta \text{ Other current assets} - \Delta \text{ cash} - \Delta \text{ creditors} - \Delta \text{ Other current liabilities}$$

Variable	Definition (Amadeus database)	Covers which variable from original formula
Debtors	Trade receivables (from clients and customers only)	Together with other current assets it will cover accounts receivable and prepaid expenses

Stock	Total inventories (raw materials+in progress+finished goods)	It will cover inventories
Other current assets	All other current assets such as receivables from other sources (taxes, group companies), short term investment of money and Cash at bank and in hand.	Together with debtors it will cover accounts receivable and prepaid expenses. But cash and cash equivalents should be excluded.
Cash	The amount of cash at bank and in hand of the company.	This has to be excluded from other current assets.
Creditors	Debts to suppliers and contractors (trade creditors)	Together with other current liabilities it will cover accounts payable and taxes payable.
Other current liabilities	Other current liabilities such as pension, personnel costs, taxes, intragroup debts, accounts received in advance, etc.	Together with creditors it will cover accounts payable and taxes payable.

All the standard formulas are now rewritten in a way so that as much data as possible can be gathered from the databases. The next step is to gather this information and store that information in an excel sheet. All the variables are taken for 2006, 2007, 2008 and 2009. Not all data that is needed is available, therefore the next step will be gathering the missing data. This is done by reading the individual financial statements of companies. Also data that is needed for other methods are also gathered, that is the most efficient way.

When all the data is complete, then the outcome of the formula can be calculated.

This will give the non-operating accruals for every company and for 5 years. This variable will be divided by assets in order to eliminate company size effects.

For each year the outcomes of all firms are added together, to calculate an annual average for each variable. The same process must be done for each group separately.

These outcomes will be plotted in a graph with the non-operating accruals divided by assets on the y-axle and year on the x-axle. This gives 3 lines: for non-family group, family group and the combined group. Empirical analysis will be the first step of analysis. An upward slope will be an indication of decrease of conservatism and vice versa. A line below the x-axle is an indication of existence of conservatism. Also statistical analysis will be done using SPSS. This can indicate whether there is a significant difference between the groups and a significant slope. A one sample t-test is a test that can indicate whether the mean differs significantly from a specific value (in this case that would be zero). This can be helpful because if negative accruals differ significantly from zero then there may be conservatism. This test however can only be done when the population is normally distributed (which is not the case when there is conservatism). Therefore a non-parametric test will be done. A one sample Wilcoxon signed rank test is the non-parametric counterpart of the one sample t-test. This test uses the median instead of the mean. A Mann-Whitney test is a non-parametric test that can test whether there is a difference between two groups. This is used to test whether conservatism is significantly higher or lower for family companies than for non-family companies.

8.4.2 Skewness of earnings

For this method there are three things needed: assets, net income and cash flow from operations.

$$ROA = \text{Net income/Assets}$$

Assets are funded by both equity and debt. That is why ROA or return on assets measures how companies convert their investment into profits. A higher ROA means therefore that a company is better in converting investment into profit. But this calculation has a limitation. In the ROA does the numerator include only the earnings available to equity shareholders, while the denominator includes the assets claimed by all providers of capital to the firm. This problem is solved by using the operating ROA (Palepu et. al., 2010). This thesis will use the "normal" ROA. This formula is also a lot used in other research. Because Givoly & Hayn

also used this formula, using the same formula makes this research comparable with the research of Givoly & Hayn.

Givoly & Hayn use the 5-year moving average for each year. This is not possible in this research. This research investigates only 5 years, if an average is taken then there will be only one variable left. Therefore no average is calculated.

The following formula is used by Givoly & Hayn to calculate the skewness:

$$skew = \sum_{f=1}^{n} [E(x_f - \mu)^3]/\mu^3$$

Where: x = ROA per firm
           μ = The mean ROA of the sample
           σ = Standard deviation of the sample
           n = sample size
           E= expectation of…
           f = firm

This formula is used for each year separately. This gives 5 outcomes per group of firms. The skewness measures will be plotted with the outcome on the y-axle and year on the x-axle. The graph shows whether conservatism increased, decreased or remained the same. A decreasing slope indicates increasing conservatism and vice versa. The lower the line: the more existence of conservatism. Also statistical analysis will be done in order to see whether the outcome is significant. In this analysis a z-score is calculated to check whether the skewness is significant.

Also a skewness of cash flows from operations divided by assets (CFOA) is calculated and plotted. If the skewness of CFOA is approximately 0 and ROA is negatively skewed, there is conservatism. If the skewness of CFOA is not zero, than the skewness of earnings may not be caused by conservatism (Givoly & Hayn, 2000).

8.4.3. Variability of earnings

As a last proxy for conservatism the variability of earnings will be used. For this method the standard deviation of ROA and CFOA is plotted.

The standard deviation of a distribution shows how much variability there is from the mean. For example there are two grades: a 3 and a 9. This gives a mean of 6. Two other grades: a 7 and a 5 also give a mean of 6. The mean therefore says nothing about the actual grades. A high standard deviation means that the spread from the mean is very high (in the example is this the case for the first 2 grades). A low standard deviation means that the spread from the mean is low (the case in the second example). There is an empirical rule that says that in case of a normal distribution approximately 95% of all observations of sample are between the mean minus twice the standard deviation and the mean plus twice the standard deviation (Field 2009).

The formula to calculate the standard deviation is as followed (Field 2009):

$$S = \sqrt{\frac{1}{N-1}\sum_{i=1}^{N}(x_i - x)^2}$$

Where:

S = standard deviation of the sample

N = number of observations

x = the mean of the sample

x_i = observation

Standard deviation is calculated for each year separately. That gives 5 standard deviations per group. The standard deviation of ROA of one sample group is plotted into a graph with standard deviation on the y-axle and year on the x-axle.

Increasing standard deviations of ROA will give evidence for increasing conservatism and vice versa. (Givoly & Hayn, 2000). Thus, an upward slope can be seen in case of increasing conservatism and vice versa. After empirical analysis there is also statistical analysis done in order to verify whether the outcomes are significant.

8.5 Limitations

If there is a difference in conservatism between family and non-family companies, this can be caused by different accounting standards. Dutch listed companies are obliged to report in IFRS. Non-listed companies can report in IFRS of Dutch GAAP. Different standards can

mean that different amounts of conservatism are obliged. This research can only investigate whether there is conservatism, not what the cause is.

There is not controlled for industry or firm specific characteristics. Due to small sample size this was not possible.

8.6 Summary

Three hypotheses will be investigated. In public companies conservatism is decreased, in private companies conservatism is increased. This will lead to the third hypothesis that conservatism in public companies is lower than in private companies.

The following three models will be used: Convergence of earnings and Cash flows from operations, skewness of earnings and variability of earnings.

The sample is divided into two groups:

1. Non-family companies, with the criterion that no shareholder has 50% or more of all the shares.
2. Family companies, with the criterion that there is one shareholder (or one family) who owns more than 50% of the shares.

9. Results and analysis

9.1 Introduction

This chapter will show the statistics and graphs that is the outcome after executing the research design. These results will be the basis of the analysis at the end of this chapter. This chapter will answer sub-question 9: *What are the results of the empirical research of this thesis?*

9.2 Statistics

The underlying assumption in all hypotheses is that profits decline during the financial crisis. Before the hypotheses can be tested, the assumption needs to be tested. Therefore the profits are plotted in figure 1a. Also the profits divided by assets are plotted, to make family companies more comparable with non-family companies. Assets can be seen as an indicator for firm size, in this way there is controlled for firm size. This graph is plotted in figure 1b.

What can be seen is that the sample of family and non-family together indicate that profits indeed were lower after 2007. That is also the case for the non-family sample alone. But the family sample alone does not indicate a decrease. This may due for example to less conservatism. That is tested when testing the hypotheses.
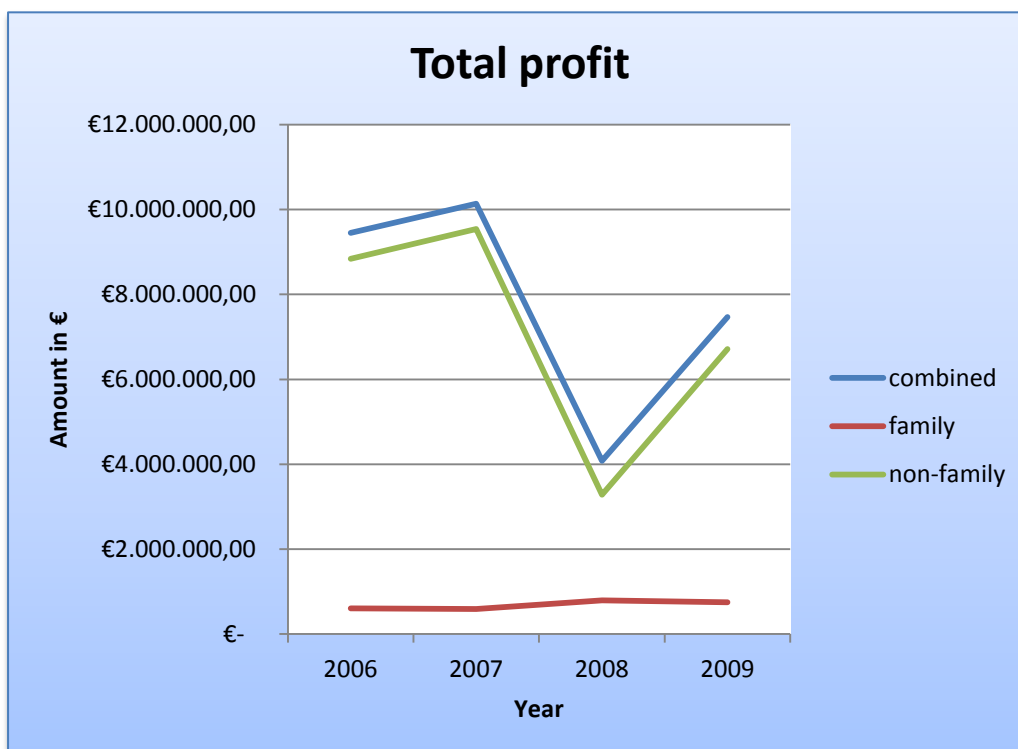
Fig1a: Total profits
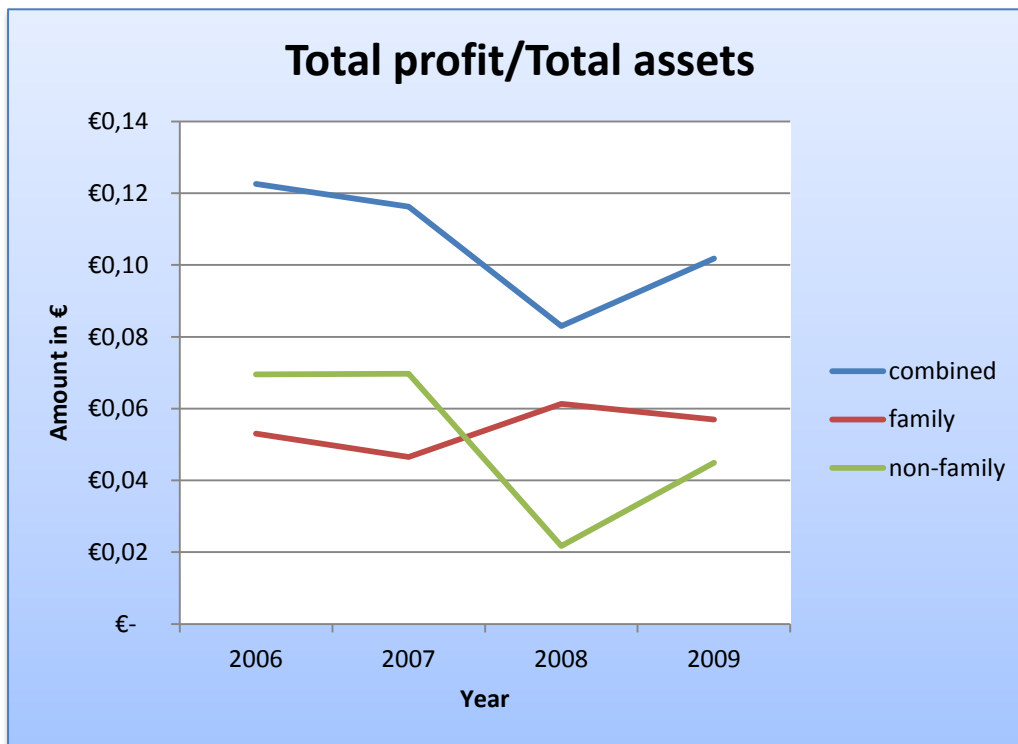
Fig 1b: Total profits divided by total assets

9.3.1 The convergence of non-operating accruals

As explained earlier in a state of conservatism there is expected that there is an accumulation of negative accruals in the long run for a firm when there is conservatism. If all companies are added together and there are negative accruals then it is an indication for the existence of conservatism. This paragraph shows all the relevant statistics regarding negative accruals.

In appendix C is a list (table 1a) of the statistics of the non-operating accruals. The table shows the mean, mode, standard deviation, minimum, maximum and the sum. The standard deviation gives an idea how spread the results are. A high standard deviation makes it more difficult to generalize the results for the whole population.

Unfortunately, the results give a very high standard deviation. The reason of this is the firm size.

A big firm gives big accruals and vice versa. The solution is to correct for firm size. That is done in table 1b of appendix C. In this table the statistics are given for the non-operating accruals divided by assets. In this case assets is used a proxy for firm size.
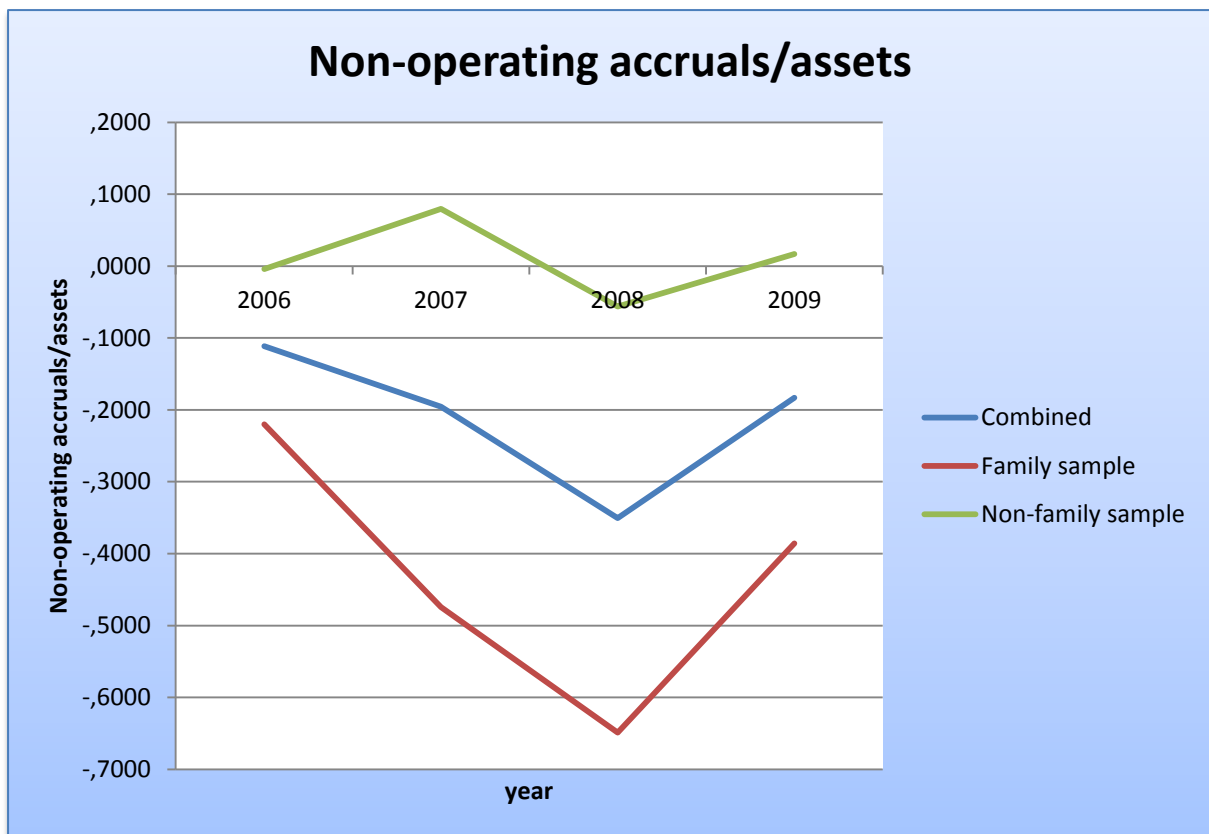
Fig. 2 the mean of non-operating accruals divided by assets

In figure 2 is the mean of non-operating accruals/assets plotted. In a state of conservatism then should the line be below 0. A downward slope would mean that conservatism is increased over time and vice versa.

If the line is below the x-axle, which is the case when there are negative accruals, there is an indication for conservatism. If we combine the family sample with the non-family sample, then we get the blue line in figure 1. This line is below zero and gives an indication that there is conservatism applied in the Netherlands.

Testing hypothesis 1

The first hypothesis is:

> *H0: Conservatism in non-family companies is decreased during the financial crisis*

In this case there would be upward slope for non-family companies after 2007/2008. What can be seen in figure 2 is that the line moves around the x-axle. In 2006 till 2007 an upward slope, there is less conservatism. In 2007 there is a transition point. Conservatism is increased till 2008 (in the middle of the financial crisis). In 2008 there is another transition point,

conservatism decreases till 2009. It looks like the non-operating accruals are not significantly positive or negative. To test this hypothesis, a one sample t-test is done.

One-Sample Test

	Test Value = 0					
					95% Confidence Interval of the Difference	
				Mean		
	t	df	Sig. (2-tailed)	Difference	Lower	Upper
nonopadjusted2006	-,253	69	,801	-,00391	-,0347	,0268
nonopadjusted2007	2,495	69	,015	,07952	,0159	,1431
nonopadjusted2008	-1,019	69	,312	-,05616	-,1661	,0538
nonopadjusted2009	,675	69	,502	,01673	-,0327	,0661

Table 1: One sample t-test of non-operating accruals in non-family sample

In table 1 are the probability values that the mean differs significantly from zero. If the significance level is below 0,05 then the mean differs significantly from zero. This is the case for 2007.

However this test assumes that negative accruals are normally distributed. But when there is conservatism, we would expect a negatively skewed distribution.

Therefore a non-parametric test is a more appropriate test. The One Sample Wilcoxon Signed Rank test is performed.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The median of nonopadjusted2006 equals 0.	One-Sample Wilcoxon Signed Ranks Test	.713	Retain the null hypothesis.
2	The median of nonopadjusted2007 equals 0.	One-Sample Wilcoxon Signed Ranks Test	.000	Reject the null hypothesis.
3	The median of nonopadjusted2008 equals 0.	One-Sample Wilcoxon Signed Ranks Test	.283	Retain the null hypothesis.
4	The median of nonopadjusted2009 equals 0.	One-Sample Wilcoxon Signed Ranks Test	.013	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Table 2: One-sample Wilcoxon signed ranks test

In table 2 is the outcome of the test. SPSS automatically makes the decision to reject or retain the null hypothesis. In 2007 and 2009 the median differs significantly from 0.

With this in mind there is in 2006 and 2008 no conservatism. In the graph is an upward slope after 2008. This indicates even less conservatism; or negative conservatism. The hypothesis is therefore not rejected.

Testing hypothesis 2

The second hypothesis is:

> *H0: Conservatism in family companies is increased during the financial crisis*

If this hypothesis will hold there would be a decreasing slope of the red line after 2007/2008. The opposite is true. From 2006 till 2008 there is a downward slope which will argue that conservatism is increased. But in 2008, which is together with 2007 the start of the financial crisis there is a transition point. 2008 is a maximum of conservatism and after that

conservatism has been decreased. This is contradicting with the hypothesis which says that conservatism is increased after 2007/2008. Hypothesis 2 is therefore rejected.

Testing hypothesis 3

The third and last hypothesis of this thesis is:

H0: Conservatism is higher for family companies than for non-family companies

If this hypothesis holds then we would expect that in figure 2 the line for family companies is lower than for non-family companies. In figure 2 the line for family companies (red line) is in every year lower than the line for non-family companies (green line). This would suggest that the hypothesis will not be rejected. To test this, an independent t-test can be performed. This outcome can be found in table 5 of appendix C. But this test assumes that the non-operating accruals are normally distributed. In case of conservatism we expect a negatively skewed distribution. A non-parametric test is therefore a better solution. A Mann-Whitney test is a good solution.

Test Statistics[a]

	nonopadjusted2 006	nonopadjusted2 007	nonopadjusted2 008	nonopadjusted2 009
Mann-Whitney U	2039,000	2052,000	2165,000	2301,000
Wilcoxon W	4524,000	4467,000	4650,000	4716,000
Z	-1,584	-1,529	-1,053	-,480
Asymp. Sig. (2-tailed)	,113	,126	,292	,631
Exact Sig. (2-tailed)	,114	,127	,294	,634
Exact Sig. (1-tailed)	,057	,064	,147	,317
Point Probability	,000	,001	,001	,001

 a. Grouping Variable: group
Table 3: Mann-Whitney test

In table 3 the statistics can be found for the Mann-Whitney test. If the exact (2-tailed) significance level is lower than 0,05, then the 2 means are significantly different.

Thus the mean of the non-family sample is not significantly different than the family sample. The hypothesis is rejected.

Summary of the convergence of non-operating accruals

The convergence of non-operating accruals method rejected 2 out of 3 hypotheses.

The first hypotheses was that non-family companies decreased the amount of conservatism during the crisis. The hypotheses was not rejected.

The second hypothesis was that family companies increased conservatism during the financial crisis. This hypothesis was rejected.

The third hypothesis was that non-family companies were less conservative than family companies. There was no significant difference found, therefore this hypothesis was rejected.

9.3.2 Skewness of earnings

To test the magnitude of the previous test, another test is performed. If the conclusions of this test are the same of the previous test, then the evidence is stronger.

In this method the ROA is calculated. This thesis calculates the ROA using the following formula:

$$ROA = Net\ Profit/\ Total\ Assets$$

The statistics for the ROA (mean, mode, maximum, minimum and the sum) are given in table 2 of appendix C.

The skewness of ROA is then calculated by using SPSS. The results are plotted in a graph(Figure 3).

In case of conservatism there can be seen a line below the x-axle (which is a negative skewness). There is therefore reduced conservatism when there is an upward slope and vice versa.
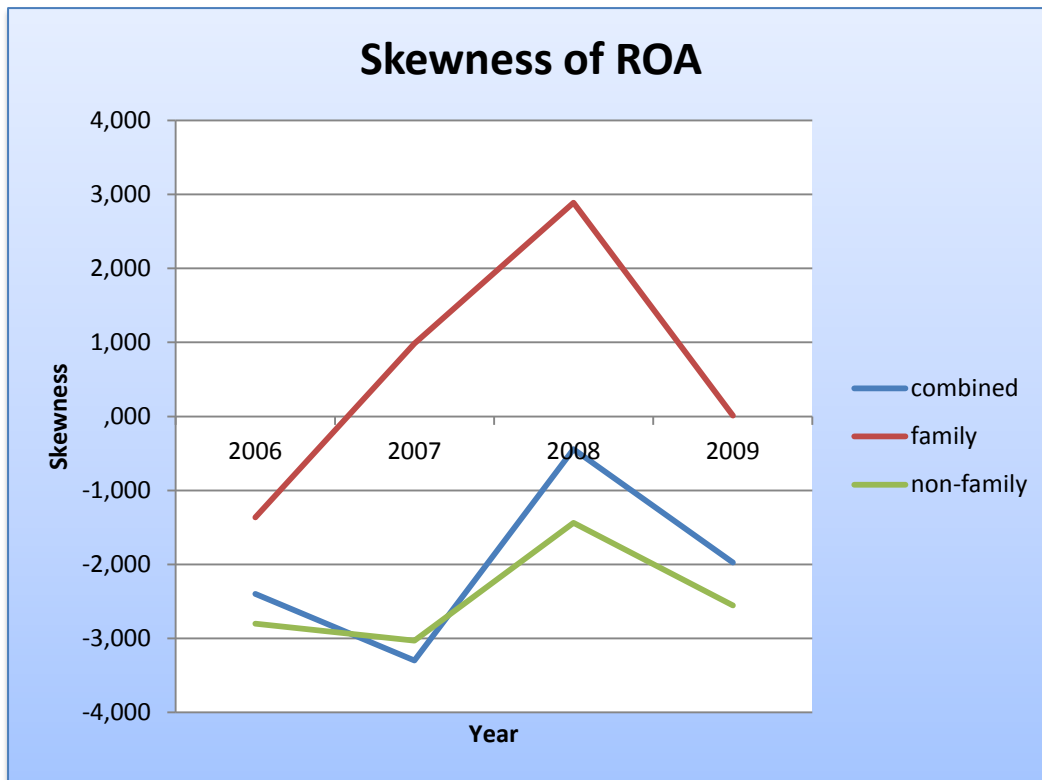
Fig. 3 Skewness of ROA

Testing hypothesis 1

The first hypothesis is:

H0: Conservatism in non-family companies is decreased during the financial crisis

If the hypothesis is true then in figure 3 we would expect that the green line is below the x-axle and has an upward slope after 2007/2008.

The whole green line is below zero, and indicates that there was conservatism in every year. This is contradicting with the outcome of the negative non-operating accruals. To know for sure whether ROA is negatively skewed we can calculate a Z-score.

The z-score can be compared with a z-score of a significance level of 5%.

The z-score is calculated with the following formula:

$$Z\text{-score} = \text{Skewness/Std. error of skewness}$$

This information can be found in Table 3 of appendix C.

	Skewness	Std. Error of skewness	Z-score
2006	-2,802	0,287	-9,76307
2007	-3,027	0,287	-10,547
2008	-1,437	0,287	-5,00697
2009	-2,552	0,287	-8,89199

Table 4: Z-score of skewness of ROA for non-family sample

These Z-scores are all far below 5% (z-score of 1,96). Therefore in every year the skewness is significant. This would indicate that there was conservatism in every year.

In figure 3 there can be seen that in 2007 till 2008 there was an upward slope. This indicates that conservatism decreased in that period, which is in accordance with the hypothesis. It is also the same conclusion as with the previous method. Just like in the previous method after 2008 conservatism was increased again. Both methods give approximately the same conclusion about the direction of the level of conservatism.

The amount of conservatism however is not the same. In the previous method there was no indication for conservatism in 2007 and 2009, in this method we saw conservatism in every year. The hypothesis is therefore not rejected.

Testing hypothesis 2

The second hypothesis is:

H0: Conservatism in family companies is increased during the financial crisis

In this hypothesis holds then in figure 3 we should see a downward slope after 2007/2008 for the red line.

Just like in the first hypothesis the significance of the skewness is tested by calculating a z-score.

	Skewness	Std.error of skewness	z-score
2006	-1,365	0,289	-4,72318
2007	0,984	0,289	3,404844

2008	2,885	0,289	9,982699
2009	0,011	0,289	0,038062

Table 5: Z-score of skewness of ROA for family sample

With a reference z-score of 1,96 we can see that 2006 had a significant negatively skewed distribution of ROA, in 2007 and 2008 there was a significant positively skewed distribution of ROA and in 2009 no significant skewed distribution of ROA. This would indicate conservatism in 2006. In 2007, 2008 and 2009 there was no conservatism. Conservatism was therefore decreased during the financial crisis, which is the same conclusion as with the previous method. Therefore the hypothesis is rejected.

Testing hypothesis 3

The third and last hypothesis of this thesis is:

> *H0: Conservatism is higher for family companies than for non-family companies*

In this case we should see in figure 3 the green line always above the red line. This is not the case. The red line is always above the green line. This indicates that family companies do not have a higher level of conservatism than non-family companies, the opposite is true. The outcome is in accordance with the previous method. The hypothesis is rejected.

Magnitude of the test

As explained earlier in this thesis, the skewness can also be explained by the skewness of cash flows. That is why also the skewness of cash flows divided by assets (CFOA) is calculated with SPSS. The results are in table 6(a, b and c) of appendix C. The skewness is also plotted in figure 4.
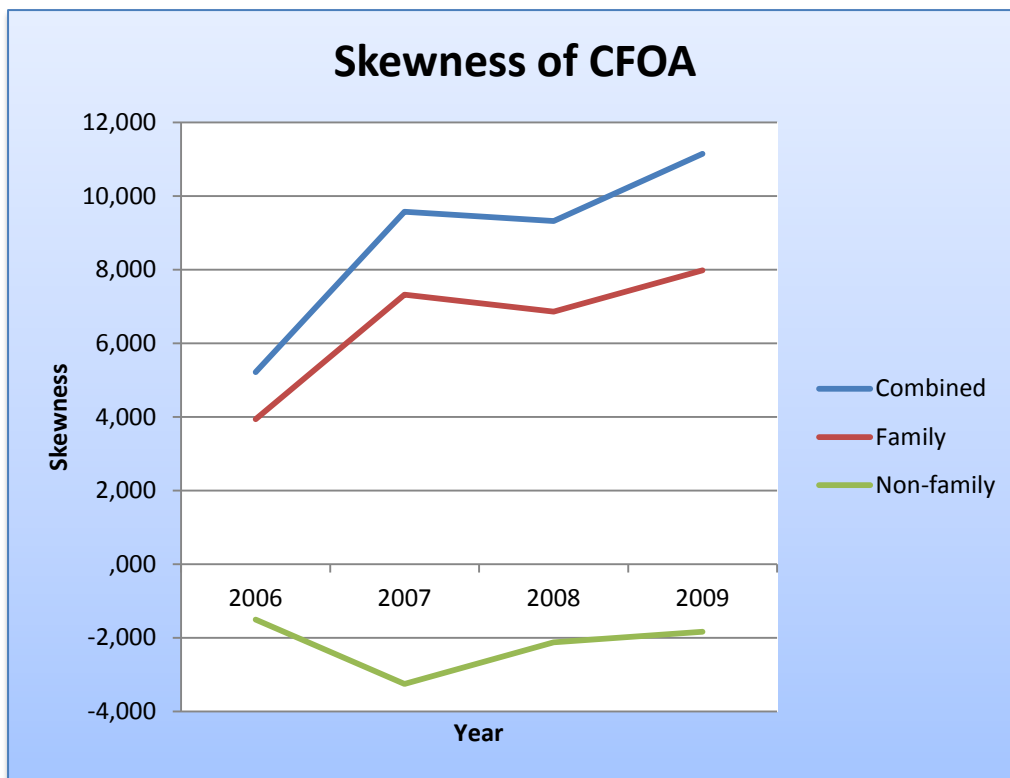
Fig. 4 skewness of Cash flow from operations divided by assets

In figure 4 we can see that the skewness of CFOA is not equal to 0, this could mean that the skewness of ROA is not caused by conservatism but is caused by a skewness of cash flows. A z-score test is done to verify this statistically. The outcome can be found in table 6. The z-scores are way higher than 1,96 (z-score for probability of 5%). This indicates that the skewness differs significantly from zero. This means that the negative skewness of ROA may not be caused by conservatism. This limitation can also be caused due to a small sample. But given that the results are in accordance with the negative non-operating accruals makes the results more reliable.

Combined			
	Skew	Std. Dev	Z-score
2006	5,215	0,204847	25,45742
2007	9,570	0,204847	46,71781
2008	9,318	0,204847	45,48952
2009	11,141	0,204847	54,38564
Family			
	Skew	Std. Dev	Z-score

	Skew	Std. Dev	Z-score
2006	3,937	0,28675	13,73109
2007	7,319	0,28675	25,52559
2008	6,858	0,28675	23,91758
2009	7,982	0,28675	27,83755
Non-family			
	Skew	Std. Dev	Z-score
2006	-1,504	0,28675	-5,24635
2007	-3,258	0,28675	-11,3627
2008	-2,127	0,28675	-7,41607
2009	-1,839	0,28675	-6,41283

Table 6: Z-score of the skewness of CFOA

Summary of skewness of earnings

The skewness of earnings method, just like the previous method, rejected 2 out of 3 hypotheses.

The first hypotheses was that non-family companies decreased the amount of conservatism during the crisis. The hypotheses was not rejected.

The second hypothesis was that family companies increased conservatism during the financial crisis. This hypothesis was rejected.

The third hypothesis was that non-family companies were less conservative than family companies. There was no significant difference found, therefore this hypothesis was rejected. These results are in accordance with the previous method.

9.3.3 Variability of earnings

As last check the variability of earnings is analyzed. Also in this method the income is deflated by assets. This gives the ROA. In this method the standard deviation is calculated which is already done by the skewness of earnings method. If the standard deviations increases then there is an indication for conservatism. A high standard deviation is linked to conservatism, because with accounting conservatism the losses are fully recognized and the recognizing of gains is delayed. As a result the variability of the ROA will also be higher. At the end also the standard deviation of cash flow from operations divided by assets is calculated. These should remain constant over time when the standard deviation of ROA changes. The results of the calculation for ROA can be found in table 2 of appendix C. The results of CFOA can be found in table 6a, b and c of appendix 3. The results are also plotted in a graph (figure 5 and 6). If there is an increase in conservatism then there is an upward slope and vice verca.
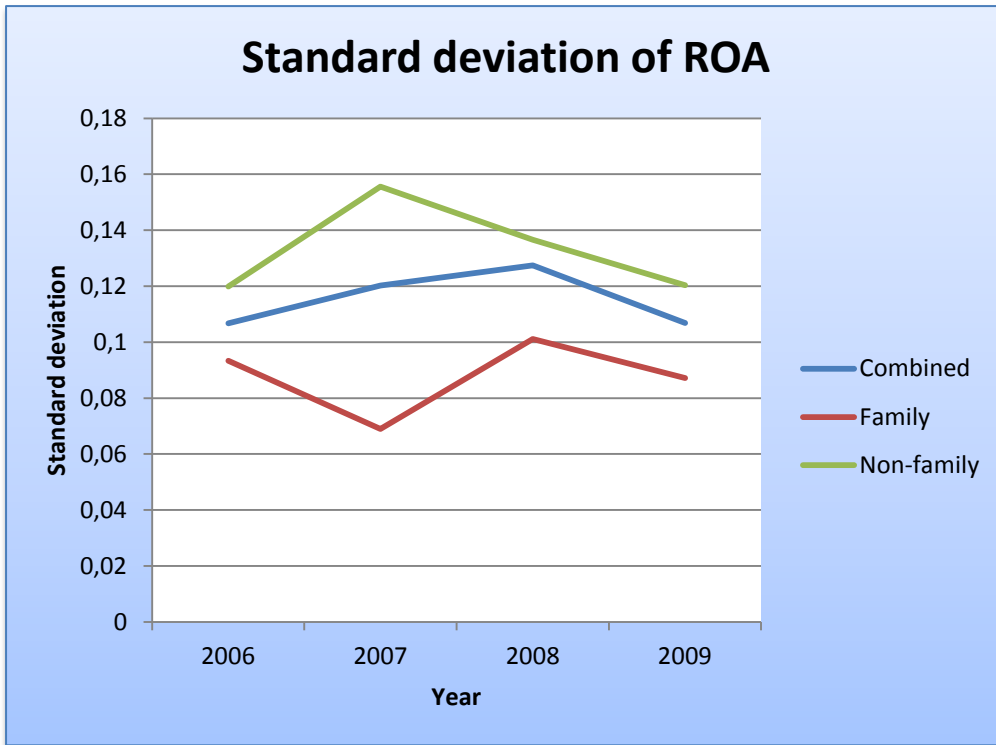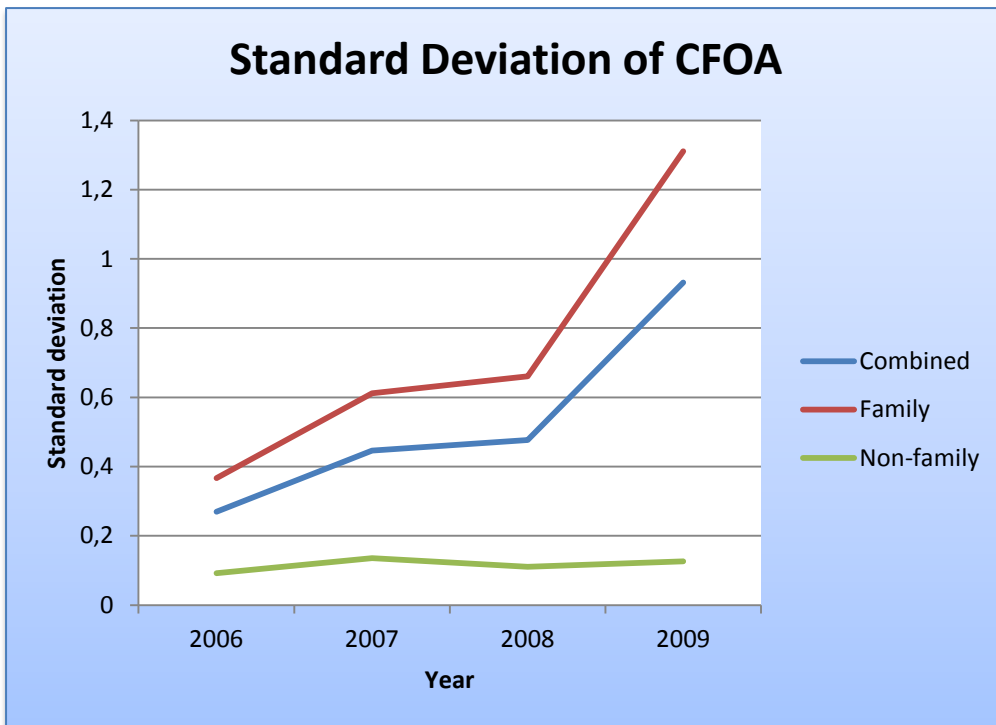
Fig. 5: Standard deviation of ROA

Fig. 6: Standard deviation of CFOA

Testing hypothesis 1

The first hypothesis is:

H0: Conservatism in non-family companies is decreased during the financial crisis

In figure 5 an upward slope could indicate an increase of conservatism and vice versa, therefore a downward slope after 2007/2008 (start of the crisis) for the green line in figure 5 is expected for this hypothesis. The slope is indeed downward after 2007. This gives an indication for a decreasing amount of conservatism in the financial crisis. However, an increase of standard deviation could instead of conservatism also be a cause of the crisis: some companies may suffered more from the crisis than other companies.

In figure 6 the green line should be approximately the same in every year in order to verify that the standard deviation of ROA is caused by conservatism and not by a change in standard deviation of cash flows . There is no big change in standard deviation of CFOA for the green line. The change in standard deviation of ROA is therefore probably caused by conservatism. Also with skewness of CFOA it is important to note that the crisis may be the impact instead of conservatism.

The results are the same as with the previous 2 methods. Also in this case the hypothesis is not rejected.

Testing hypothesis 2

The second hypothesis is:

H0: Conservatism in family companies is increased during the financial crisis

In this case there should be seen an upward slope for the red line in figure 5. From 2007 till 2008 an upward slope is seen. This indicates that conservatism indeed increased in the financial crisis. This is contradicting with the results in the previous methods. However the standard deviation of CFOA in figure 6 does not remain stable over the years, which indicated that the change of standard deviation of ROA may not be caused by conservatism.

The hypothesis cannot be rejected for this method but other methods indicate another conclusion which makes that overall the hypothesis will be rejected.

Testing hypothesis 3

The third and last hypothesis of this thesis is:

H0: Conservatism is higher for family companies than for non-family companies

This hypothesis can't be tested because this method does not say anything about the level of conservatism but on the direction of conservatism. There can't be a conclusion taken.

Summary of variability of earnings

The variability of earnings method did not reject 2 out of 3 hypotheses and did not test the third hypothesis.

The first hypotheses was that non-family companies decreased the amount of conservatism during the crisis. The hypotheses was not rejected.

The second hypothesis was that family companies increased conservatism during the financial crisis. This hypothesis was, in contrary to the other methods, not rejected.

The third hypothesis was that non-family companies were less conservative than family companies. This method could not test this hypothesis.

9.4 Limitations

There are some limitations in the research that can't be eliminated. There are limitations in the research design which are discussed in the research design (chapter 8.5). A difference in conservatism can be due to different legislation (IASB-GAAP vs. Dutch-GAAP) in the sample group instead of management decisions. Also for firm specific characteristics is not controlled.

In the statistics some other limitations were revealed. In the method of skewness of earnings it is important that the skewness of non-operating cash flows would remain stable over time. This is not the case. This problem can be caused by a relatively small sample. In further research it is therefore advisable to investigate multiple countries so that a bigger sample can be taken. The same problem is spotted in the method variability of earnings.

This research does not make use of stock markets, this has advantages but also disadvantages. Stock markets can't be used because of the fact that family companies are not stock listed. The methods that remain available have a weaker magnitude. The outcome is not always caused by conservatism but also other factors could give the outcome. For example: restructuring, mergers & acquisitions, increased cost of pension and post-retirement benefits, growth & inflation (Givoly & Hayn, 2000). To control for these factors each country should be investigated whether one of these factors was applied in one of the firms. Another solution for this problem is taking a much bigger sample. Research for multiple countries is therefore necessary to get a bigger sample.

9.5 Statistics summary

This chapter explained how variables are calculated and give the analysis of the outcomes of the calculations. Three methods were used and they gave approximately the same conclusions. An overview is given in table 7. Because all 3 methods gave approximately the same conclusion the overall conclusion is quite strong.

	Negative non-operating accruals	Skewness of earnings	Variability of earnings	Overall conclusion
Hypothesis 1	Not rejected	Not rejected	Not rejected	Not rejected
Hypothesis 2	Rejected	Rejected	Not rejected	Rejected
Hypothesis 3	Rejected	Rejected	Not Available	Rejected

Table 7: Overview of the (non-)rejection of the hypotheses

According to the tests was seen that family companies decreased their conservatism, which was not expected. This can explain the increasing profits in the financial crisis for this sample.

9.6 Analysis

The previous chapter was about the statistics and whether the hypotheses were retained or rejected. This chapter is about why some hypotheses were rejected and what for explanation can be found.

9.6.1 First hypothesis

The first hypothesis was:

H0: Conservatism in non-family companies is decreased during the financial crisis

This hypothesis is not rejected using all three methods. An explanation can be found in lower profits. Graphs 1a and 1b showed that profits declined in the crisis. In non-family companies, managers usually get large bonuses based on for example profits. If profits decline than it has an effect on the bonus of managers. Managers want to maximize their own welfare (according to the agency theory). That would mean that they will try to raise profits. They can do this by reducing the amount of conservatism. The agency theory gives therefore a good explanation why this hypothesis is not rejected. It can also be that the manager did this in order to increase firm value. A big decrease in profits is not desired by shareholders, therefore reducing the decrease will raise firm value.

We can also zoom further in the periods. There are within the periods some changes. During the start of the crisis (2007) there was seen an increase of conservatism but in 2008 this was reversed. It might be that the crisis had an impact which took a while for managers to adapt to.

It is interesting to note that prior research relating to the Asia crisis indicated decrease of conservatism during the financial crisis. In this research there was no indication of decrease found for non-family companies. That could mean that there was another reason in Asia why conservatism decreased or the Asia crisis had another impact than the current financial crisis. It could also mean that there were other factors why this crisis does not had influence on conservatism. For example the accounting GAAP are more stringent relating to conservatism here than in Asia, making Dutch non-family companies less able to report more conservative.

9.6.2 Second hypothesis

The second hypothesis was:

H0: Conservatism in family companies is increased during the financial crisis

This hypothesis is rejected using 2 of 3 methods. A significant decrease was seen instead of an increase. The contracting explanation might give an explanation on why there was a decrease instead of an increase of conservatism. When a family company needs money they go to a bank or another third party. But it is not like a big public company that a family company can go to the stock market. This has the implication that a family usually has a few large share/stakeholders instead of many small stake/shareholders like public companies. A few large stakeholders mean that stakeholders have more negotiating power. Bankers can for example demand a certain minimum profit. Family companies need to have that profit otherwise they will lose an important loan, which will lead to bankruptcy. That is probably why managers of family companies will decrease conservatism, in that way they can maintain a certain profit level.

It can also be that there was a different reaction than what was expected because this thesis used family companies which also had manager who are not also shareholder of the company. The assumption was made that in family companies the managers also have the shares, but that is not always the case.

This outcome is the same as from prior research relating to Asia crisis. As explained earlier, accounting rules may have influence. This research showed that the outcome of non-family companies was contradicting with the outcomes of prior research, but family companies not. Non-family companies have to comply with IFRS, family companies with Dutch GAAP (RJ) and that GAAP may be more comparable to Asia GAAP. This could give an explanation why this research had the same conclusion for family companies as prior research relating to the Asia crisis.

9.6.3 Third hypothesis

The third hypothesis was:

H0: Conservatism is higher for family companies than for non-family companies

This hypothesis is rejected using 2 of 3 models; this hypothesis is not tested using the third model. What was seen that conservatism in family companies was actually significantly lower than non-family companies. There could be different reasons why family companies report less conservative. The contracting explanation may also explain the outcome of this test. Investors/bankers have greater negotiating power on family companies than on non-family companies this is because family companies are more dependent on that loan while big non-family companies can also go to the stock market. This results into harder contracts for family companies. Therefore family companies need to be low in conservatism in order to meet the contract requirements.

Prior research of Hermann et al.(2008) showed that during the crisis big4 audited companies reported more conservative than non-big4 audited companies. If the assumption is made that non-family companies are in most times audited by big 4 audit firms and family companies by other audit firms, then the outcome of this research is corresponds with the research of Hermann et al (2008).

Conclusion

This final chapter will present the answer on the main question which was:

What difference can be noticed in the application of earnings conservatism during the
financial crisis of 2007 between family and non-family companies, in the Netherlands?

Earnings conservatism is conservatism that has an effect on the earnings of a company. The profit of a conserve company is understated in comparison with a company that is not conservative. This understatement of earnings will be corrected in a later period. In this case the earnings are overstated.

The discussion is whether earnings conservatism is a good thing. A bit of caution in presenting earnings (recognizing profits) can be a good thing because it can reduce litigation cost and maybe some income taxes. That is also good for investors in that company. The problem is however that this understatement is corrected in the next period. You cannot keep continuing with increasing conservatism. That leads to increasing litigation cost and increasing income taxes.

This thesis explained that according to the agency theory managers try to maximize their own wealth. They can do this by maximizing profits, for example to increase bonuses. Conservatism leads to lower profits and it may therefore be as low as possible to maximize profits. This explanation can also indicate a difference between family companies and non-family companies. In a family company the manager is also the owner of the company and may therefore be more conservatism, because he does not want to lose his company. Managers of non-family family companies however may be less conservatism because they do not own the company.

There are different methods to test whether conservatism is applied. This thesis used 3 different methods by Givoly & Hayn (2000). The methods make use of non-operating accruals, skewness of earnings distribution and standard deviation of earnings.

First was tested whether profits were declining during the financial crisis of 2007. This was indeed the case for non-family companies. Family companies however reported no decreasing profits. If the assumption is made that profits decrease for all companies during a

financial crisis, then it may indicate that family companies decreased conservatism in order to maintain the same level of earnings.

Results showed no indication (with all 3 methods) of decreasing conservatism during the financial crisis in non-family companies. That explains why profits were lower than before the financial crisis of 2007.

Results showed also that for family companies conservatism decreased instead of the expectation that conservatism was increased. This result is also consistent with the earning which did not change in the financial crisis.

There must be searched for other explanations why this result was found. Probable explanations are explained in the next chapter: recommendations of further research.

The last hypothesis that was tested was whether non-family companies have an overall lower degree of conservatism than family companies. This hypothesis was rejected. There was seen that family companies are less conservative than non-family companies.

To answer the main question: There was seen that there is a difference between family and non-family companies. There can be seen that overall non-family companies are more conservative than family companies. During the crisis family companies decreased there level of conservatism, while non-family companies maintained the same level.

There can be different explanations why the outcomes differ from the hypotheses. It is important to keep in mind that conservatism cannot be increased every year. Certainly earnings conservatism is not permanent. Conservatism in the first year is reversed in the next years. That is why it is not always possible to further increase conservatism. Prior literature found increasing conservatism, that might therefore be a reason why in this research no increase was found (although a manager may wanted to increase conservatism). This thesis found that there are many factors that affect the amount of conservatism. It is hard to verify that some changes are a cause of the crisis. Extensive further research is therefore necessary. In the next chapter are some recommendations for further research to solve some limitations of this research.

Recommendations for further research

Although this research is carefully planned there still exist some limitations. Some limitations are inherent and can't be solved. Other limitations may be solved by doing further research.

Because the research is conducted in the Netherlands only a relatively small sample was taken. According to the law of large numbers the average of the results obtained from a large number of trials should be close to the expected value, and will tend to become closer as more trials are performed (Bernoulli, 1713). It is therefore advisable that also other countries will be taken into account. More countries means more companies, and of course a larger sample.

This research only shows whether there is conservatism of not and how it evaluates over time. But the research does not say why certain choices are made by managers. A probable explanation why non-family companies report more conservative than family companies is that contracting explanation and litigation explanation may be stronger for non-family companies. Behavioral research might be a solution for this problem.

There is also the possibility that the difference is due to different legislation. A solution is to try to eliminate all differences with an accounting analysis. This however requires a lot of time and effort.

A bigger sample gives also the possibility to divide the sample into industries. This helps with eliminating industry effects.

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Appendices

Appendix A: List of prior research

Author	Object of study	Sample size	Sample country	research period	Methodology	Outcome
Prior literature with models to measure conservatism						
Basu, S. (1997)	the effects of the conservatism principle on reported financial statements	All firms in COMPUSTAT database	USA	1963-1990	Regression of earnings on returns (Basu method)	The level of accounting conservatism has increased over time
Givoly, D & Hayn, C. (2000)	The changing time-series properties of earnings, cashflows and accruals: Has financial reporting become more conservative?	593samples in 1950 to 9000 in the late 90s(because of increase in compustat database) Constant sample is therefore 896 firms from 1968 to 1998	USA	1950-1998	Basu and Givoly & Hayn method	The level of accounting conservatism has increased over time

Beaver & Ryan (2005)	The development of a model which captures the interaction between conditional and unconditional conservatism	-	-	-	-	-
Prior literature that investigates relation between accounting conservatism and other aspects						
Herrmann, D. (2008)	Difference in conservatism between big4-audited companies and non-big4audited companies	2.543 firms	Thailand	1997-2003	Basu's regression model	companies audited by Big 4 firms report more conservatively than companies audited by non-Big 4 firms
Ahmed, A & Duellmann, S. (2007)	Accounting conservatism and board of director characteristics: An empirical analysis	306 firms out of the S&P 500	USA	1999-2001	Basu method	An increase of the percentage of inside directors leads to a decrease in accounting conservatism, and an increase of the percentage of shares held outside the firm leads to an increase of accounting conservatism

Gul, A et al. (2011)	Relation between accounting conservatism and audit fees	4.041 firms	Hong Kong	1990-1997	Basu method	The conservatism level dropped significantly during the period of financial downturn. And this has te effect that auditing fees increased.
Hellman N. (2008)	The impact of IFRS on accounting conservatism	3 cases	-	-	Case study	There are increased opportunities for managers to apply temporary conservatism
Ball, R. & Shivakumar, L. (2005)	The relationship between accruals and loss recognition	All firms in COMPUSTAT and CRSP database	USA	1987-2003	Basu method	there is no linear relation between cash flows and accruals.
Prior literature that investigates conservatism during a financial crisis						

Vichitsarawong, T. et. al. (2010)	conservatism and timeliness of earnings of firms in Hong Kong, Malaysia, Singapore, and Thailand during the period surrounding the 1997 Asian financial crisis.	1500 firms	Hong Kong, Malaysia, Singapore and Thailand	1995-2004	Basu method	There was less accounting conservatism during the Asian financial crisis
Wu, Q. (working paper) (2011)	The Benefits of Accounting Conservatism to Shareholders: Evidence from the Financial Crisis (not yet finished working paper)	5500 firms	USA	2006	Khan and Watts (2009) C-score	Conservatism is an efficient governance mechanism to mitigate information risk and control for agency problems, and shareholders benefit from conservative accounting
Prior literature about that explain theories						
Fama et al. (1969)	Efficient market Hypothesis	940 stock splits	USA, NYSE	1927-1959	Regression analysis	There are three efficiency hypotheses which can be used as an assumption in other models
Prior literature that explains conservatism						

Watts, R (part 1) (2003a)	Descriptive paper about implications of accounting conservatism and alternative explanations					
	-	-	-	-	-	
Watts, R (part 2)(2003b)	The paper is a summary of the evidence on the presence of accounting conservatism				-	
	-	-	-		-	

Appendix B1: List of non-family sample firms

Name

1	Aalberts Industries N.V.	36	Koninklijke Vopak N.V.
2	Accell Group	37	Koninklijke Wegener N.V.
3	AKZO Nobel N.V.	38	Koninklijke Wessanen N.V.
4	Amsterdam Molecular Therapeutics Holding N.V.	39	Macintosh Retail Group N.V.
5	And International Publishers N.V.	40	Mediq N.V.
6	Arcadis N.V.	41	N.V. 'De Porceleyne Fles/Thooft & Labouchere
7	Ballast Nedam N.V.	42	N.V. Nederlandsche Apparatenfabriek 'Nedap'
8	Batenburg Beheer N.V.	43	NedSense enterprises N.V.
9	BE Semiconductor Industries N.V.	44	Neways Electronics International N.V.
10	Beter Bed Holding N.V.	45	Nieuwe Steen Investments N.V.
11	Brunel International N.V.	46	Nutreco
12	Crown Van Gelder N.V.	47	Océ N.V.
13	Ctac N.V.	48	OctoPlus
14	DOCdata N.V.	49	Oranjewoud N.V.
15	DPA Group N.V.	50	Ordina N.V.
16	Draka Holding N.V.	51	Punch Graphix N.V.
17	Exact Holding N.V.	52	Qurius N.V.
18	Fornix Biosciences N.V.	53	RANDSTAD HOLDING N.V.
19	Fugro N.V.	54	RoodMicrotec N.V.
20	Gamma Holding N.V.	55	Roto Smeets Group N.V.
21	Gemalto N.V.	56	Spyker Cars N.V.
22	Grontmij N.V.	57	Stern Groep N.V.
23	Groothandelsgebouwen N.V.	58	Telegraaf Media Groep N.V.
24	H.E.S. Beheer N.V.	59	Tie Holding N.V.
25	Heijmans N.V.	60	TKH Group N.V.
26	Heineken Holding N.V.	61	TNT N.V.
27	Hitt N.V.	62	TomTom N.V.
28	Holland Colours N.V.	63	Unit 4 Agresso
29	ICT Automatisering N.V.	64	USG People N.V.
30	Imtech N.V.	65	Wavin N.V.
31	Kendrion N.V.	66	wolters kluwer
32	Koninklijke Ahold N.V.	67	Cryo Save group
33	Koninklijke Brill	68	CSM
34	Koninklijke DSM N.V.	69	Koninklijke reesink nv
35	Koninklijke KPN N.V.	70	Sligro food group

Appendix B2: List of family sample firms

Name

1	A. A. ter Beek	36	RITMEESTER B.V.
2	a. hakpark bv	37	ROSEN EUROPE B.V.
3	A. Jansen BV	38	SCANIA EUROPE HOLDING B.V.
4	A.M. van Opijnen Holding B.V.	39	SCHAEFFLER NEDERLAND holding B.V.
5	ACTEBIS COMPUTERS B.V.	40	SIACOM NEDERLAND B.V.
6	Aleman-Bouw Beheer B.V.	41	SIJBEN ONROEREND GOED B.V.
7	APT KURVERS B.V.	42	SKIDATA B.V.
8	B+P SOLUTIONS B.V.	43	Specsavers international
9	Benno en Guy Leeser Holding B.V.	44	Steegman Holding B.V.
10	BYK-CERA B.V.	45	Steemeijer beheer B.V.
11	De Heus Beheer B.V.	46	Steenbergen Holding B.V.
12	EERSTE NEDERLANDSCHE FABRIEK VAN WEEGWERKTUIGEN JAN MOLENSCHOT EN ZOON B.V.	47	STIENSTRA HOLDING B.V.
13	EF EDUCATION B.V.	48	STILL INTERN TRANSPORT B.V.
14	F. Bos holding	49	SULO B.V.
15	HANS EINHELL NEDERLAND B.V.	50	TETRA LAVAL HOLDINGS B.V.
16	Harlingen holding industries	51	TIMMERIJE B.V.
17	hoogwegt groep B.V.	52	Van Bentum Recycling Centrale B.V.
18	INDUSTRIA TECHNISCHE VERLICHTING B.V.	53	van leeuwen buizen europa b.v.
19	Keune beheer B.V.	54	Van Oord Dredging And Marine Contractors
20	knaapen groep B.V.	55	Van Santen Holding B.V.
21	Koninklijke Joh. Enschedé B.V.	56	Van Tilburg Mode en Sport B.V.
22	Koninklijke wagenborg	57	Van Wanrooij Bouw & Ontwikkeling B.V.
23	L.P.D. VAN DER KOOIJ BEHEER B.V.	58	Van Werven Holding B.V.
24	Langen holding B.V.	59	VERHOEVE GROEP BV
25	Leopard Holding Nijmegen B.V.	60	Vewé beheer B.V.
26	markeur houdster	61	VINK LISSE B.V.
27	MICRO WAREHOUSE B.V.	62	VITRA (NEDERLAND) B.V.
28	Mijwo beheer B.V.	63	Vreugdenhil groep B.V.
29	MISCO NEDERLAND B.V.	64	WATTS INDUSTRIES EUROPE B.V.
30	Nelemans Combinatie B.V.	65	Westland kaas groep
31	Nolet Beheer B.V.	66	Zeeman groep B.V.
32	Noortman Master Paintings B.V.	67	ZIEGLER BRANDWEERTECHNIEK B.V.
33	Poiesz Beheer B.V.	68	Janssen de jong groep
34	pon holdings	69	Metro distributie Nederland
35	Priva holding	70	Ovako twente

Appendix C: SPSS output

This appendix will give all relevant SPSS output, that is used in the analysis of the empirical data.

Table 1a

A list of non-operating accruals, not corrected for company size.

Non-operating accruals				
Total sample	2006	2007	2008	2009
N	140	140	140	140
Mean	9506,41	17165,95	-22209,76	-4619,10
Median	128,50	1185,45	172,00	835,00
Std. Deviation	226923,047	347508,368	438787,941	290125,780
Minimum	-1255631	-3432757	-4562465	-2790351
Maximum	1436738	1505000	1693000	1340000
Sum	1330897	2403233	-3109366	-646673
Non-family sample				
N	70	70	70	70
Mean	32095,46	82939,97	12828,29	40148,34
Median	-1290,00	5536,00	-403,00	3200,50
Std. Deviation	259241,102	245687,186	269364,327	210795,143
Minimum	-816000	-190000	-995583	-561000
Maximum	1436738	1505000	1693000	1340000
Sum	2246682	5805798	897980	2810384
Family sample				
N	70	70	70	70
Mean	-13082,64	-48608,07	-57247,80	-49386,53
Median	1528,00	129,50	392,50	120,00
Std. Deviation	188396,285	417293,987	559296,005	347943,824
Minimum	-1255631	-3432757	-4562465	-2790351
Maximum	726425	406182	756624	276885
Sum	-915785	-3402565	-4007346	-3457057

Table 1b

A list of non-operating accruals, corrected for company size (non-operating accruals divided by assets).

Non-operating accruals divided by assets				
	2006	2007	2008	2009
N	139	139	139	139
Mean	-,1113	-,1955	-,3504	-,1830
Mode	-22,79a	-61,13a	-69,26a	-41,67a
Std. Deviation	2,22899	5,68395	6,20142	3,96489
Minimum	-22,79	-61,13	-69,26	-41,67
Maximum	7,80	25,10	17,62	13,81
Sum	-15,47	-27,18	-48,70	-25,43
Non-family sample				
N	70	70	70	70
Mean	-,0039	,0795	-,0562	,0167
Mode	-0,56	-0,31	-3,54	-1,39
Std. Deviation	,12897	,26669	,46119	,20721
Minimum	-,56	-,31	-3,54	-1,39
Maximum	,45	1,99	1,28	,52
Sum	-,27	5,57	-3,93	1,17
Family sample				
N	70	70	70	70
Mean	-,2202	-,4746	-,6489	-,3855
Mode	-0,22	-0,47	-0,64	-0,38
Std. Deviation	3,16893	8,08306	8,81199	5,63709
Minimum	-22,79	-61,13	-69,26	-41,67
Maximum	7,80	25,10	17,62	13,81
Sum	-15,20	-32,75	-44,77	-26,60

Table 2

A list of Return-on-Assets, calculated by dividing net profit by total assets.

	ROA			
	2006	2007	2008	2009
Combined sample				
N	140	140	140	140
Mean	,0455	,0477	,0388	,0286
Median	,0553	,0569	,0464	,0363
Std. Deviation	,10678	,12028	,12746	,10680
Minimum	-,51	-,73	-,43	-,61
Maximum	,36	,32	,64	,37
Sum	6,37	6,68	5,43	4,00
Family sample				
N	70	70	70	70
Mean	,0484	,0577	,0804	,0508
Median	0,0558	0,0480	0,0529	0,0463
Std. Deviation	,09334	,06897	,10115	,08721
Minimum	-,40	-,04	-,08	-,21
Maximum	,36	,26	,64	,37
Sum	3,34	3,98	5,55	3,51
Non-family sample				
N	70	70	70	70
Mean	,0427	,0372	-,0044	,0063
Median	,0551	,0599	,0383	,0264
Std. Deviation	,11987	,15563	,13661	,12032
Minimum	-,51	-,73	-,43	-,61
Maximum	,29	,32	,23	,22
Sum	2,99	2,61	-,31	,44

Table 3

Skewness statistics for ROA

Skewness of ROA				
Combined	2006	2007	2008	2009
N	140	140	140	140
Skewness	-2,398	-3,298	-,442	-1,975
Std. Error of Skewness	,205	,205	,205	,205
family sample				
N	70	70	70	70
Skewness	-1,365	,984	2,885	,011
Std. Error of Skewness	,289	,289	,289	,289
non-family sample				
N	70	70	70	70
Skewness	-2,802	-3,027	-1,437	-2,552
Std. Error of Skewness	,287	,287	,287	,287

Histogram of ROA of the combined sample.

ROA2008

Mean = 0,04
Std. Dev. = 0,127
N = 140

ROA2009

Mean = 0,03
Std. Dev. = 0,107
N = 140
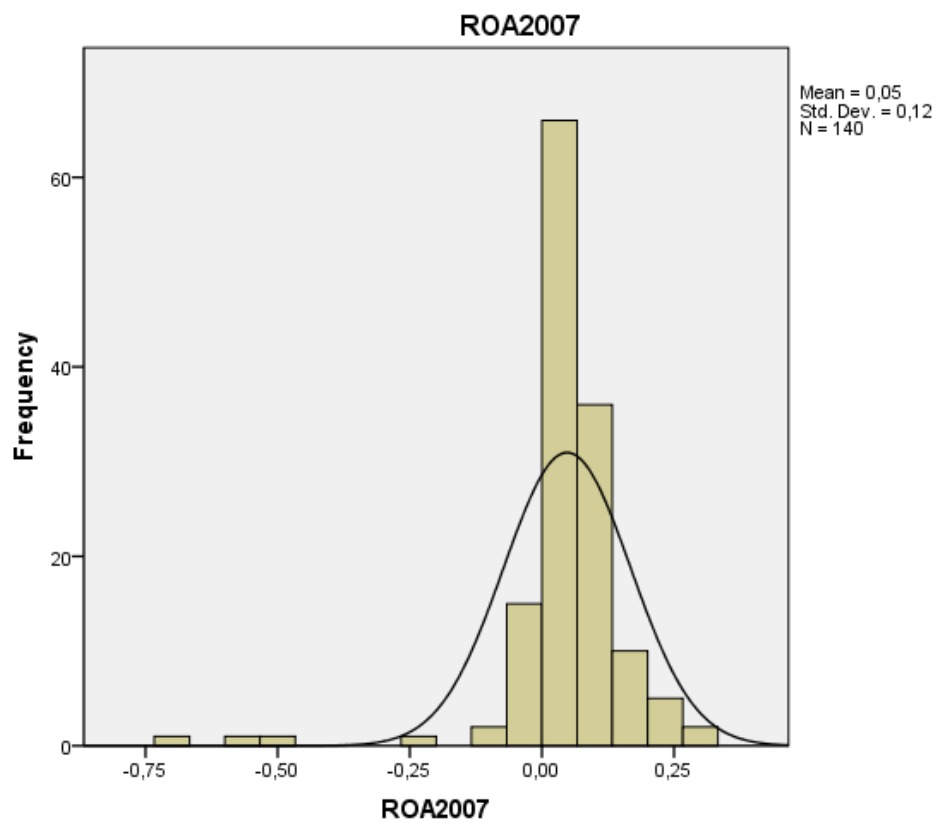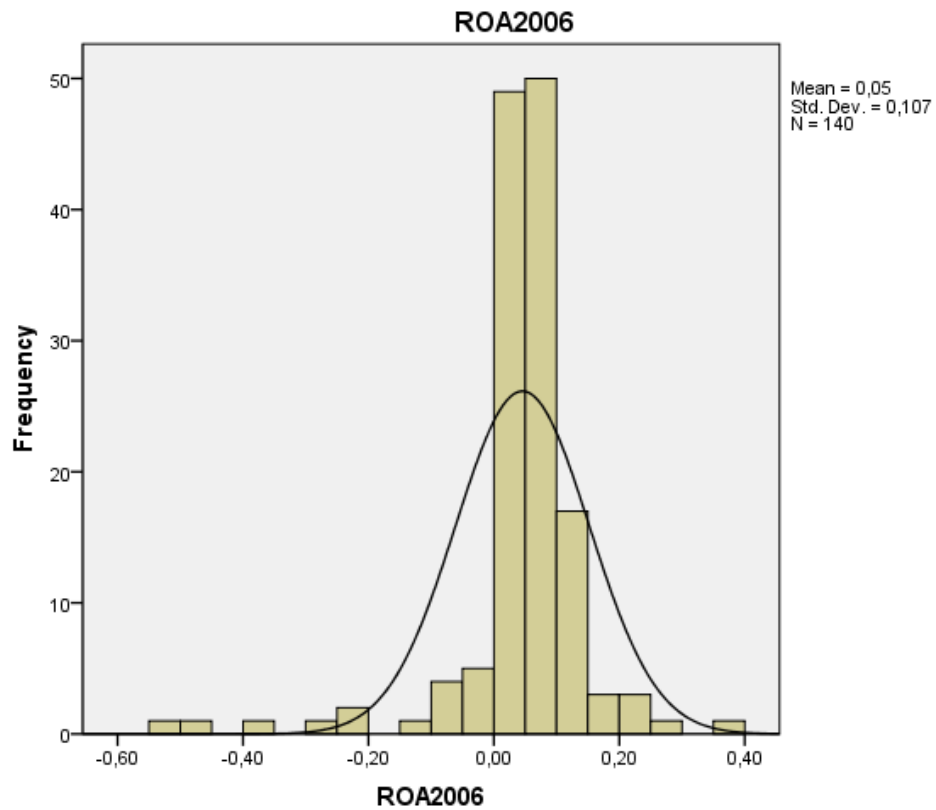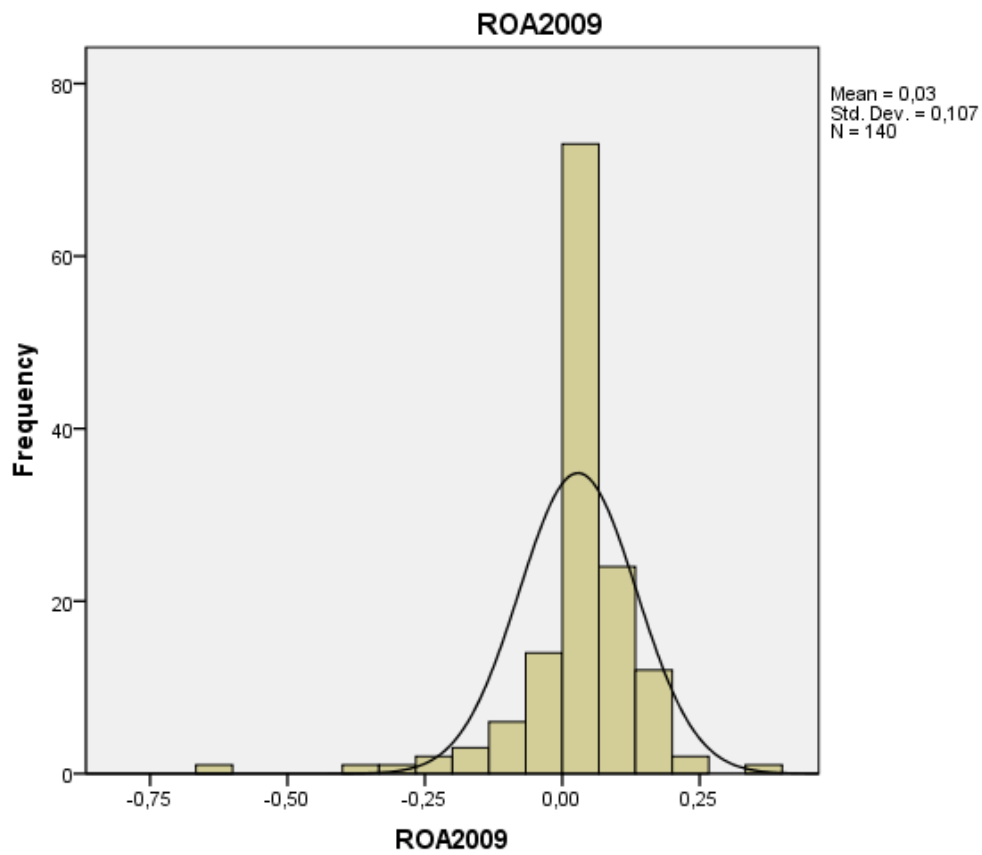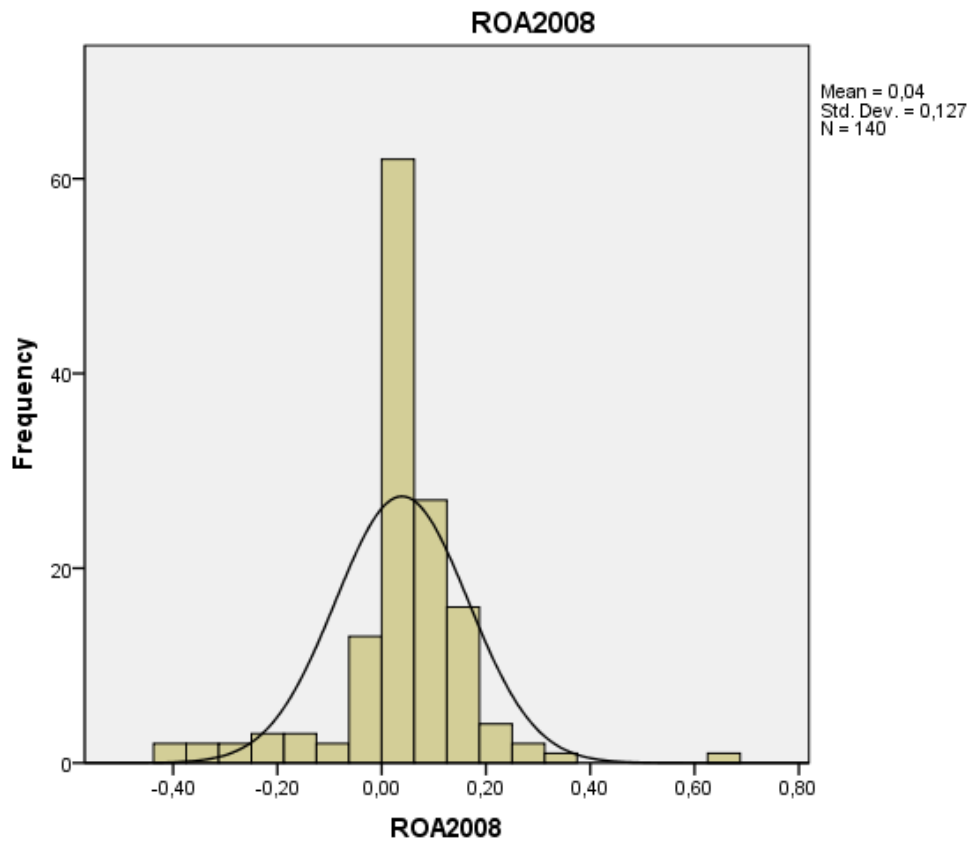
Table 4b

Histogram of the family sample.
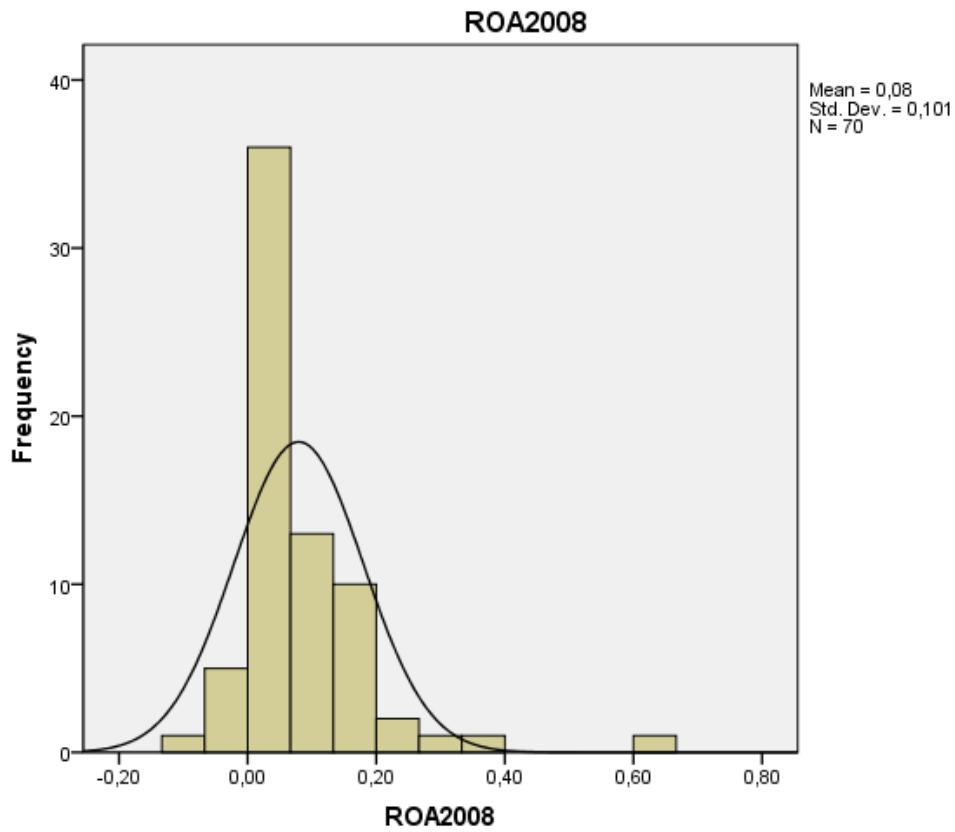
ROA2008

Mean = 0,08
Std. Dev. = 0,101
N = 70
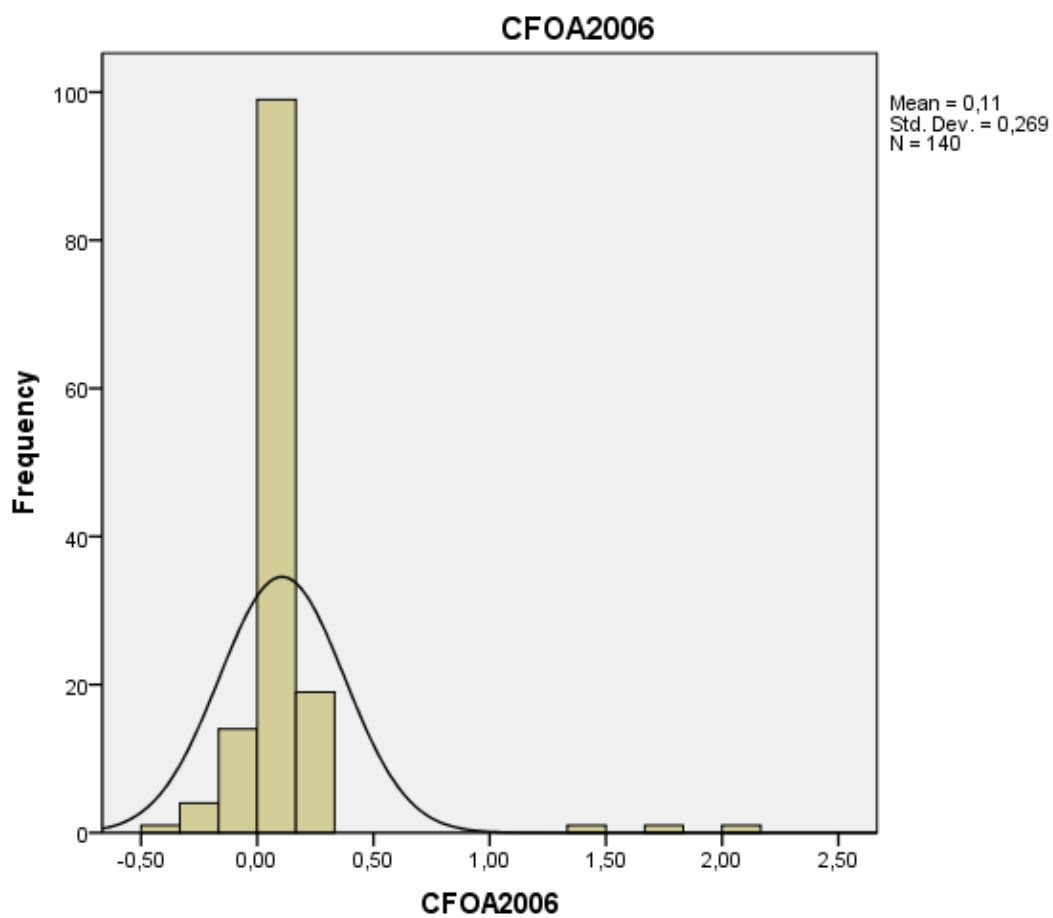

ROA2009

Mean = 0,05
Std. Dev. = 0,087
N = 70
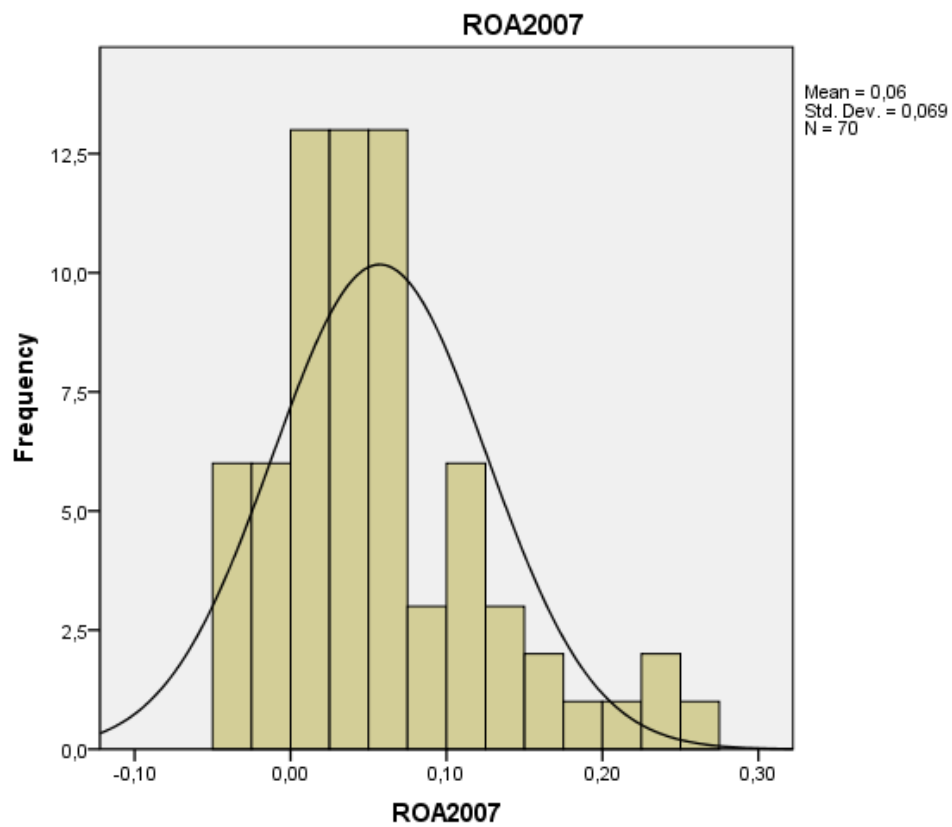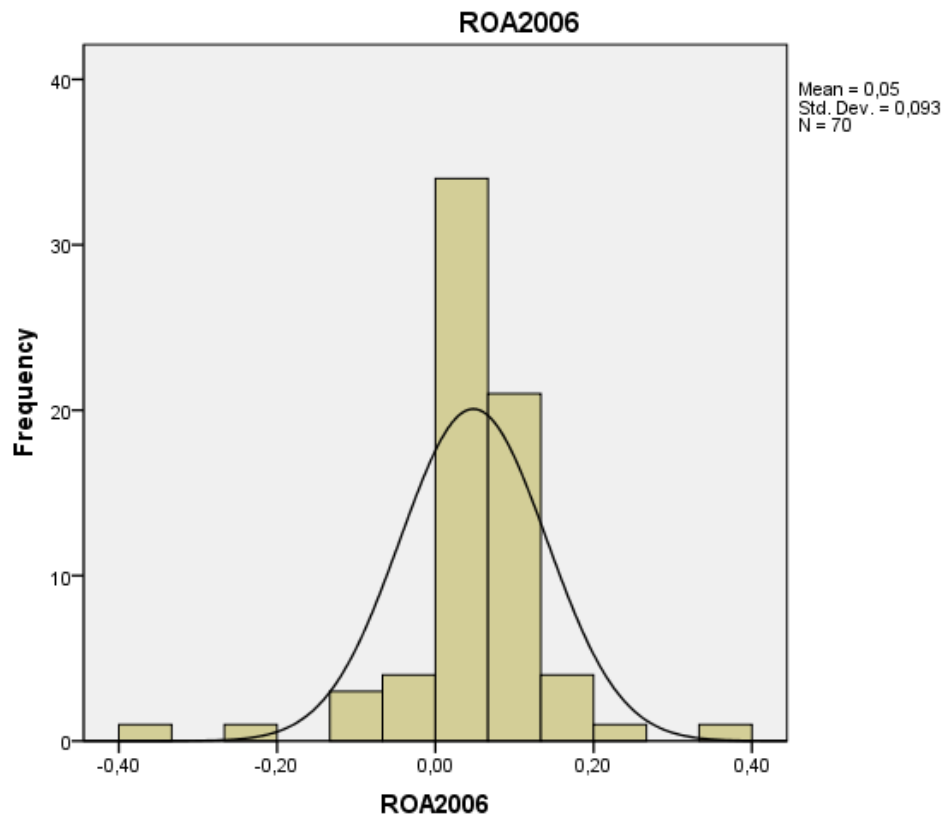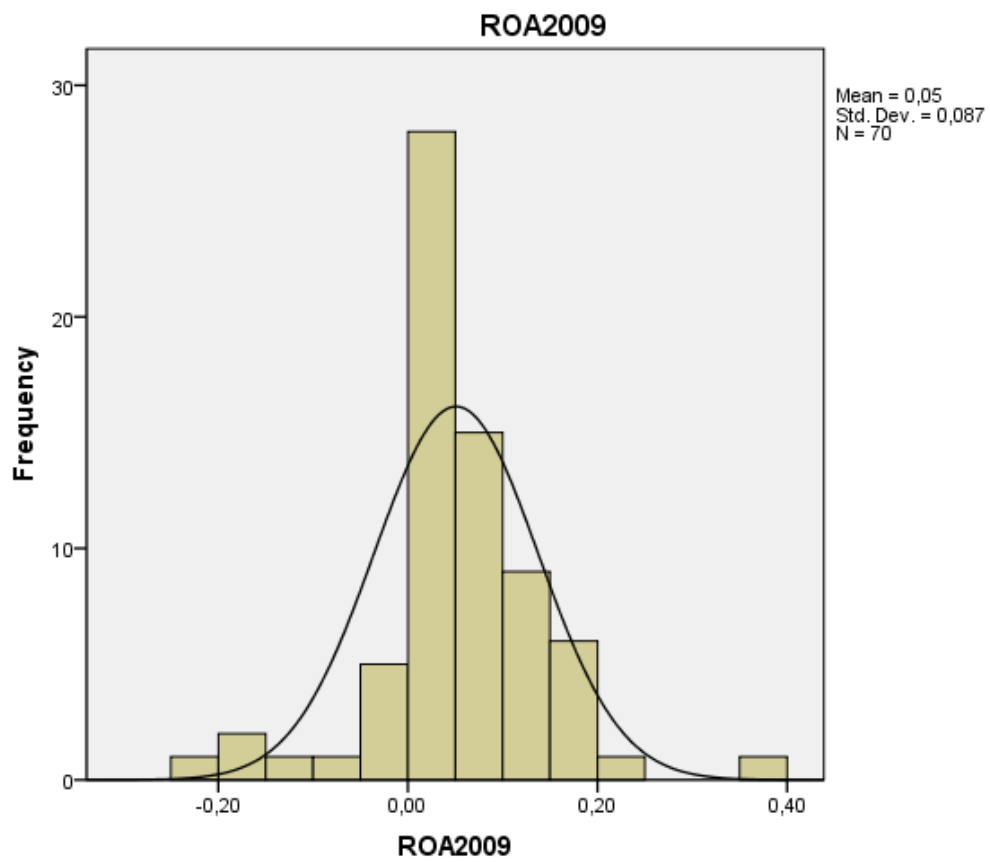
Table 5

SPSS independent t-test for adjusted non-operating accruals for compare the mean of the family sample with the mean of the non-family sample.
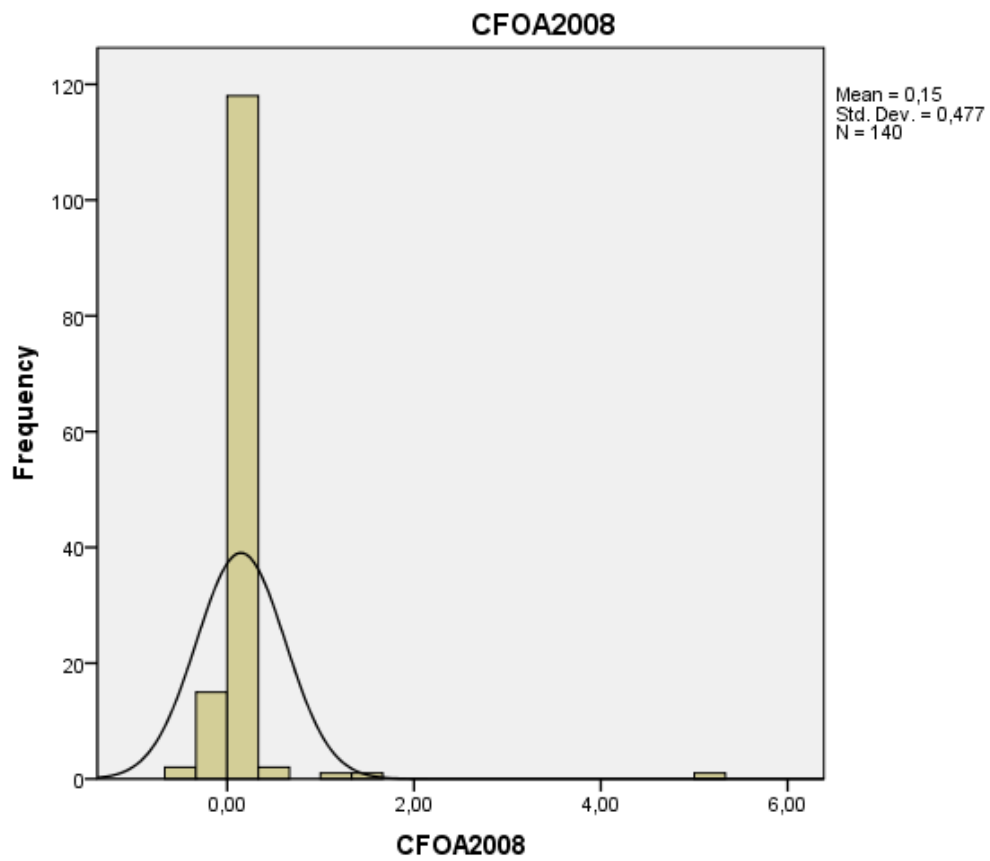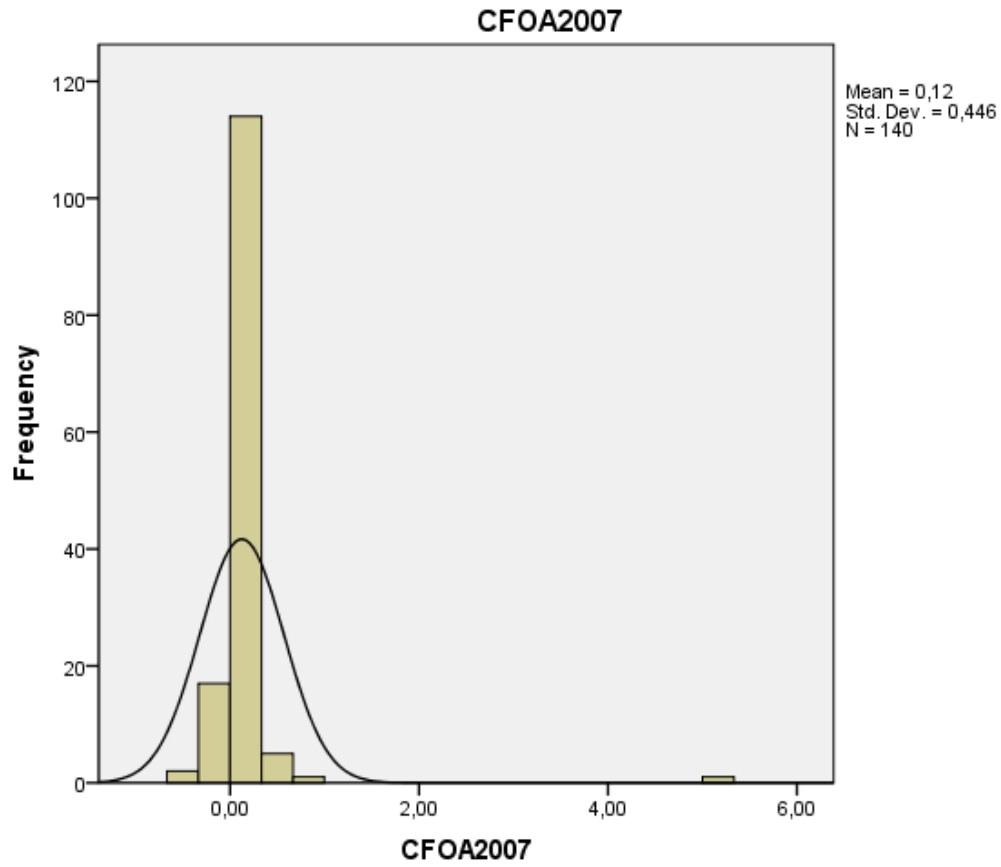
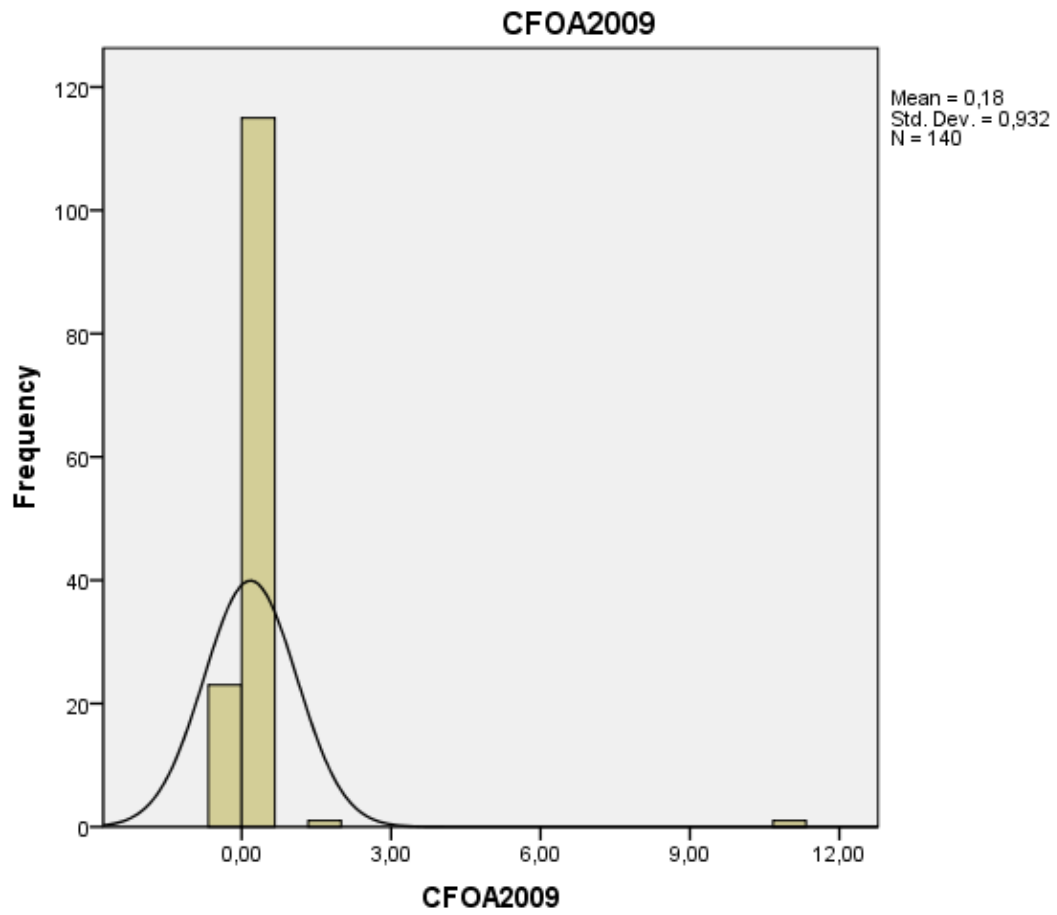|		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
2006	Equal variances assumed	8,882	,003	-,571	137	,569	-,21634	,37906	-,96590	,53322
	Equal variances not assumed			-,567	68,222	,573	-,21634	,38181	-,97818	,54550
2007	Equal variances assumed	4,101	,045	-,573	137	,567	-,55409	,96659	-2,46546	1,35728
	Equal variances not assumed			-,569	68,146	,571	-,55409	,97361	-2,49682	1,38864
2008	Equal variances assumed	4,647	,033	-,562	137	,575	-,59271	1,05464	-2,67819	1,49277
	Equal variances not assumed			-,558	68,367	,579	-,59271	1,06227	-2,71223	1,52681
2009	Equal variances assumed	5,920	,016	-,597	137	,552	-,40228	,67419	-1,73544	,93088
	Equal variances not assumed			-,592	68,181	,556	-,40228	,67908	-1,75729	,95274

Table 6a

Statistics for cash flow from operations divided by total assets and histograms for the combined sample.

Statistics				
	2006	2007	2008	2009
N	140	140	140	140
Mean	,1063	,1248	,1474	,1768
Median	,0751	,0812	,0928	,0932
Std. Deviation	,26927	,44624	,47659	,93188
Skewness	5,215	9,570	9,318	11,141
Std. Error of Skewness	,205	,205	,205	,205
Minimum	-,36	-,65	-,45	-,58
Maximum	2,09	5,01	5,28	10,90
Sum	14,88	17,47	20,63	24,75

Mean = 0,11
Std. Dev. = 0,269
N = 140

94

CFOA2007

Mean = 0,12
Std. Dev. = 0,446
N = 140

CFOA2008

Mean = 0,15
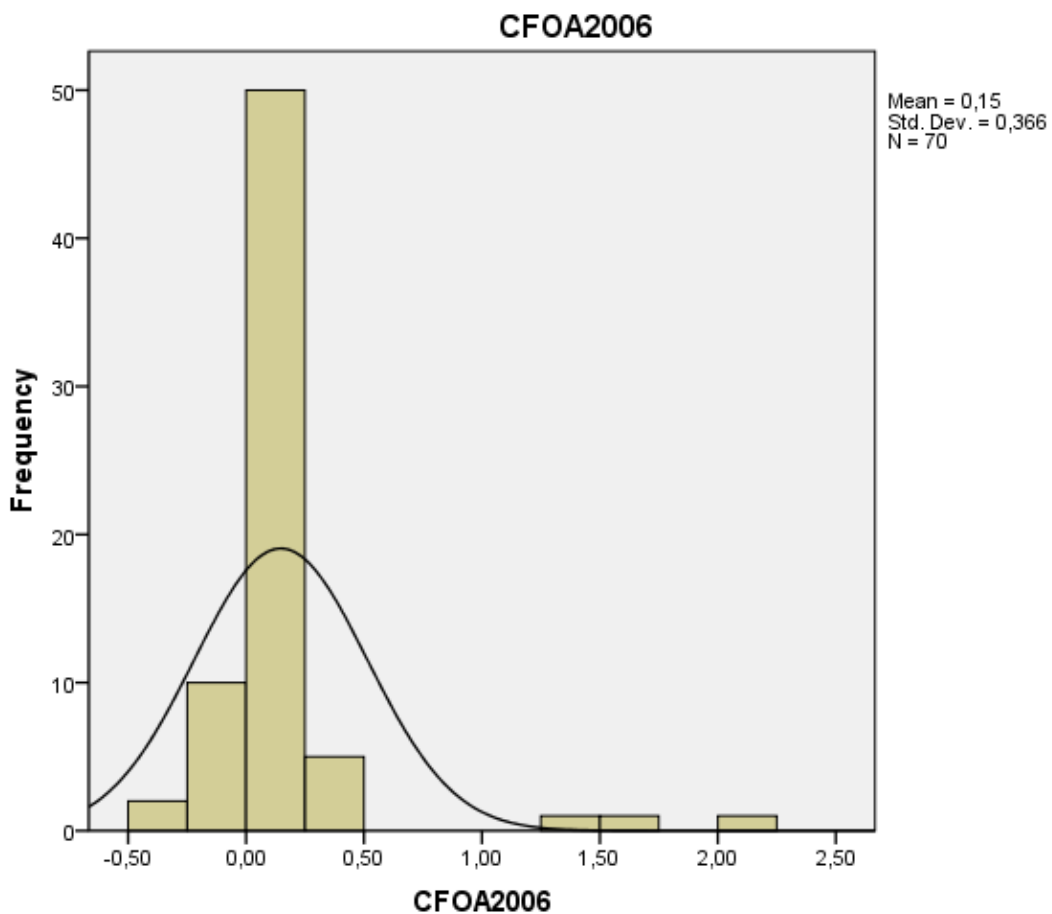Std. Dev. = 0,477
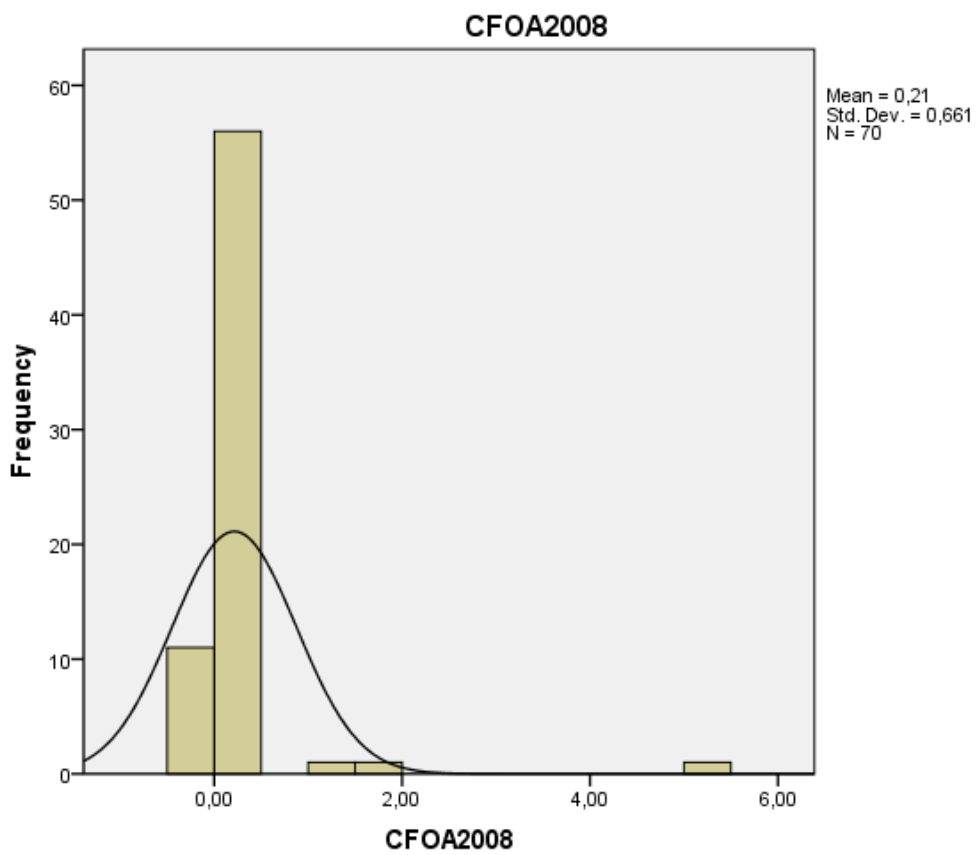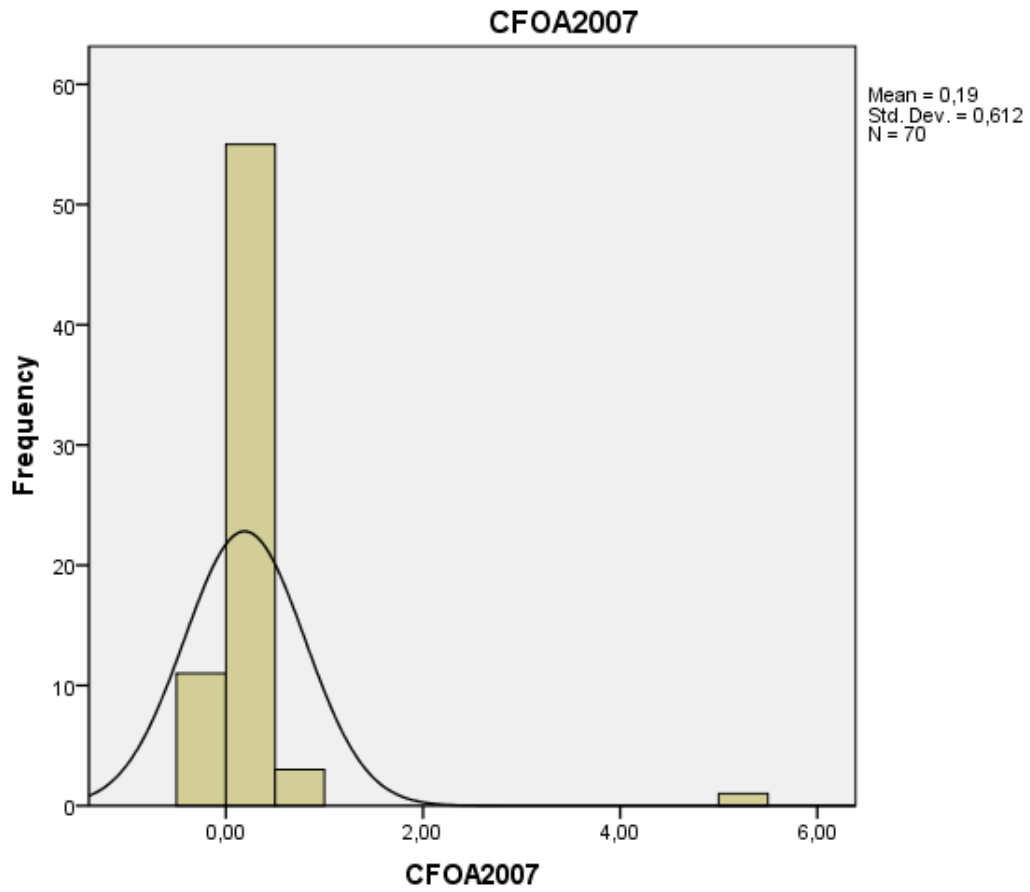N = 140

95

CFOA2009

Mean = 0,18
Std. Dev. = 0,932
N = 140

Table 6b

Statistics for cash flow from operations divided by total assets and histograms for the family sample.

Statistics				
	2006	2007	2008	2009
N	70	70	70	70
Mean	,1472	,1903	,2135	,2657
Median	,0775	,0879	,1067	,0853
Std. Deviation	,36624	,61161	,66072	1,31050
Skewness	3,937	7,319	6,858	7,982
Std. Error of Skewness	,287	,287	,287	,287
Minimum	-,28	-,19	-,42	-,34
Maximum	2,09	5,01	5,28	10,90
Sum	10,30	13,32	14,94	18,60

CFOA2006

Mean = 0,15
Std. Dev. = 0,366
N = 70

CFOA2007

Mean = 0,19
Std. Dev. = 0,612
N = 70

CFOA2008

Mean = 0,21
Std. Dev. = 0,661
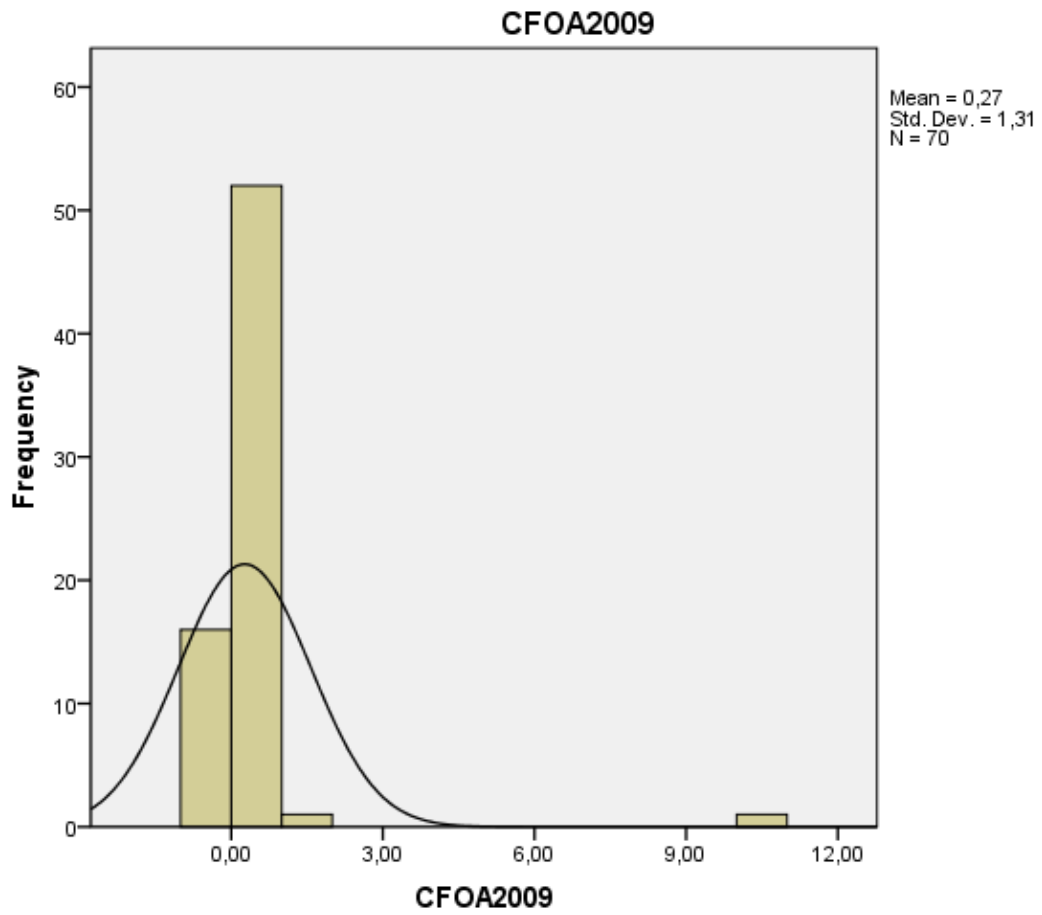N = 70

CFOA2009

Mean = 0,27
Std. Dev. = 1,31
N = 70

Table 6c

Statistics for cash flow from operations divided by total assets and histograms for the non-family sample.

Statistics				
	2006	2007	2008	2009
N	70	70	70	70
Mean	,0654	,0593	,0813	,0879
Median	,0686	,0783	,0846	,0961
Std. Deviation	,09236	,13561	,11026	,12633
Skewness	-1,504	-3,258	-2,127	-1,839
Std. Error of Skewness	,287	,287	,287	,287
Minimum	-,36	-,65	-,45	-,58
Maximum	,32	,28	,32	,53
Sum	4,58	4,15	5,69	6,15

CFOA2006

Mean = 0,07
Std. Dev. = 0,092
N = 70

CFOA2007

Mean = 0,06
Std. Dev. = 0,136
N = 70

CFOA2008

Mean = 0,08
Std. Dev. = 0,11
N = 70

CFOA2009

Mean = 0,09
Std. Dev. = 0,126
N = 70