



MASTER THESIS

Are earnings or cash flows a better predictor of future firm performance in European firms after IFRS implementation

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Preface

This thesis is written for the completion of my master program in accounting and finance.

The motivation for this thesis came from my keen interest in accounting and more specifically on how financial figures can affect business decisions. I started investigating several articles on accruals, earnings, cash flows and the information they provide in order to find a topic that is relevant to these issues but also has not yet been explored. After examining several academic articles I came to the conclusion that is worth investigating the relation of earnings and cash flows with future firm performance using a newer time frame compared to the research that has already been done on the topic and includes the years after IFRS implementation.

I would like to thank my family for their support through the process of selecting and writing my thesis and my supervisor Prof.dr E.A. de Groot for his patience and advice over various subjects of my thesis as well as my friends at university who helped overcome some of the initial burdens of writing my thesis.

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Abstract

Earnings and cash flows are important pieces of information in financial statements that investors examine closely to assess the future performance of firms and to maximize the returns on their investments. Although there are several studies that claim that either cash flows or earnings can better explain the future performance of a company and, therefore, can provide more useful information to investors and accounting regulators, there is still a dearth of research on the comparative analysis of earnings and cash flows in explaining future performance. The question as to which measure is superior in predicting future returns is also particularly relevant from an academic perspective because it examines the usefulness of financial reporting figures. The purpose of my study is to extend the current literature on the relative impact of earnings and cash flows on future performance, by examining data after the IFRS implementation in Europe. This event has brought about several changes, such as a decline in earnings management, that could, alter the relationship between earnings or cash flows and the future performance of firms.

In order to assess the amount of information that earnings and cash flows provide, I regresses earnings and cash flows with future cash flows, which I have chosen as a metric for the future performance of firms. The statistical tests were made with data from Compustat for European firms in the period 2005–2016, that is, after the IFRS was introduced. The tests were made in order to ascertain the respective abilities of earnings and cash flows from operation in predicting future firm performance. The results of my study imply that cash flows from operation, rather than earnings, are more accurate in predicting the future performance of a firm.

1. Introduction

Investors always want to maximize the returns on their investments. In order to do so, they ought to utilize every fragment of information they can get so as to best evaluate the companies and the various financial products they plan to invest. Studies showing investors both how to increase the amount of information obtainable from financial statements and which pieces of information are the most important to investors can lead to better accounting quality and hence lead to improved investment efficiency. (Healy and Palepu, 2001). Two very important pieces of information that investors are looking when evaluating companies are earnings and cash flows. Due to their significance different academic studies has been published that explore which of the two measures has the most predictive ability on future firm performance which is often depicted as future stock returns, future earnings, future cash flows or intrinsic value of equity.

On the one hand there are earnings. Earnings entail an important piece of information in the accounting process that can provide important insights to investors. Several researches highlight the importance of earnings. There is Ball and brown (1968) which is the first research that shows that accounting earnings and stock returns are associated. There is also Cready and Gurun (2009) which finds that positive or negative earnings surprises can impact aggregate stock returns. An important part of earnings is the accrual component. This component includes adjustments for revenues and expenses that managers record and are not supported by invoices or by other documents. Accruals are utilized because of the revenue recognition principle. This states that earnings are required to be recognized when occurred. Hence the accrual component is necessary in order to solve the mismatching problems that occur because the company is in continuous operation¹. Hence the accrual component makes earnings a more reliable measure of future firm performance than cash flows which lack the accrual component. There are a lot of studies that support the idea that earnings are superior to cash flows in explaining future firm performance. First of all, there are studies that find superior performance of earnings in predicting future stock returns. Dechow (1994), Charitou & Clubb (1999) and Ali and Pope (1995) For US firms. Charitou (1997) for UK firms Charitou et al. (2000) for Japanese firms Haw & Daqing & Woody (2001) for Chinese firms. furthermore, Subramanyam and Venkatachalam (2007) finds that earnings can better predict intrinsic value of equity and Kim and Kross (2005) find superior performance of earnings in predicting future cash flows.

On the other hand, there are cash flows. Cash flows do not have an accrual component. The accrual component although it can more accurately depict information for a company that is in continuous operation is also the part of earnings that can be manipulated by managers in order to hide earnings decreases and losses (Burgstahler and Dichev 1997). This earnings manipulation often leads investors to be misguided and not being able to value the company correctly or predict its future with accuracy. Therefore, investors should also look to other financial figures that do not include an accrual component in order to predict the future performance of companies. The most important of those

¹ accounting principles are discussed in most accounting books

figures are cash flows. Operating cash flows are a good alternative to earnings because due to the lack of the accrual component cannot be manipulated using deferring accounting practices. Some articles that highlight the dominance of cash flows over earnings are those of Sloan (1996), Houge and Loughram (2000) and Pincus, Rajgopal and Venkatachalam (2006). Those articles have shown that investment strategies which go long on low accrual companies and short on high accrual companies have abnormal returns.

There is also research on the predictive power of earnings and cash flows that conclude that earnings and cash flows have equal power in predicting future firm performance. Such articles have included, for example, those of Hodgson and Clarke (2000) and Bowen, Burgstahler and Daley (1987); these articles have argued that both measures can carry incremental information and can give useful information to investors. It is therefore clear that there are many articles investigating those relations as well as different aspects of these relations. There are three different streams of literature one that is supporting earnings one in support of cash flows and one that supports neither of them.

However, most of the previous research undertaken has involved an old-time frame with most studies having data before 2005; the research question, however, can be repeated with a more recent time frame when IFRS (International accounting standards) has been implemented. IFRS was first implemented in 2005 by IASB in order to increase accounting quality and consistency, and it is the most important accounting change that has happened over the past decade. Publicly traded companies in many countries have been forced to change their financial reporting in order to meet the international accounting standards. According to many studies, those changes have brought positive results that have given investors more information when looking at the financial reporting, and they have lowered the information asymmetry. There are several reasons to suspect that the changes that IFRS has brought could change the information obtained from earnings, cash flows, and their components and so also alter the relation between earnings, cash flows and future firm performance. The various changes that the IFRS has brought have been supported by various articles. There are various changes in the economic environment: mainly in the reduction of earnings management, which was achieved primarily by reducing the opportunities for managers to manipulate earnings and also by reducing timely loss recognition. Articles such as Zeghal, Chtourou and Sellami (2011) for French firms have shown a reduction of earnings management after IFRS implementation. There is also Landsman, Maydew and Thornock (2012) which shows an increase in the information content of earnings announcements in countries that have adopted IFRS. There has also been some research who have supported the idea that the IFRS has brought negative effects because each country has distinct characteristics (for example countries have different legal systems) that cannot be captured if all countries follow a single set of accounting rules. Examples of such articles include Paananen and Lin (2008) for German firms Jeanjean and Stolowy (2008) for French UK and Australia and Ahmed, Neel and Wang (2013) for a sample of 13 countries. Of course, the changes are not the same for every country and depend also on the legal system that a country had in place (Clarkson et al. (2011))² before the implementation,

² Clarkson et al. (2011) have found that value relevance improves more on code law countries compared to common law countries

nevertheless, the majority of academic articles have revealed an improvement in accounting quality. From the above we can assume that there is considerable evidence that reinvestigating the question regarding the predictive ability of earnings and cash flows can be repeated with a more recent time frame after IFRS implementation.

1.2 Research Question

Scholars have debated the predictive qualities of both earnings and cash flows; indeed, there are many articles that have emphasized the importance and significance of both measures Mulenga & Bhatia (2016). Both measures have been used for valuation purposes, but the significance of each measure has been different as well as the amount of information that the investors can receive from each of them. It is also clear that IFRS implementation has brought considerable changes to financial statements Landsman et al. (2012), Ho, Liao, and Taylor (2015) and Chen et al. (2010). This study contributes to the discussion between earnings and cash flows and does so by applying newer research data in order to test those relations in the current market conditions.

More specifically the research question of this paper is: **“Do earnings or cash flows help to better predict the future performance of a company after IFRS implementation?”**

The future of a company is depicted with future cash flows a measure that is widely used by analysts. A sample of firms from 27 European countries was chosen for this research, in a time frame after the IFRS implementation, from 2005 to 2016.

1.3 Academic Relevance

There are two primary reasons that render this study significant for scholars: first, the relative impact of the two accounting variables on the future of a company; second, the effect that the modern economic environment and the IFRS can have on those relations.

Previous academic articles have revealed a wide discussion on the topic. There are many articles that have explored whether earnings or cash flows are more prevalent and also that have explored which component of earnings (accruals or cash flows) can better explain the future of a company (Dechow 1994, Sloan 1996, Chan, Jegadesh, and Lakonishok 2006). These studies have measured the future performance of a company with future stock returns, but there have also been studies that have used other metrics to operationalize the future of a company, such as unexpected returns (Bowen, Burgstahler and Daley 1987), future cash flows (Dechow, Kothari, Watts and Ross 1998), and intrinsic value of equity (Subramanya and Venkatachalam (2007). Furthermore, some articles have analyzed the various components of accruals and have also taken into consideration fund flows (Ali and Pope 1995). Furthermore, there has been research examining the cross country differences in accounting practices and how they affect firm's performance: such as Australia (Hodgson and Clarke 2000), China (Haw, Daqing and Woody 2001), the UK (Charitou 1997) and Japan (Charitou, Clubb and Andreou 2000). It is interesting to investigate the relation of earnings and cash flows with future firm performance because we can see which of the two components of earnings can give the most consistent information.

Therefore, an extension of the current research with newer data will help investors policy makers to make better financial decisions.

The second reason this research is relevant for academics concerns the IFRS and the changes brought to the economic environment and to financial statements, in particular. These changes could affect the quality of earnings and cash flows and the impact they have with various indicators for a company's future performance, such as future stock returns, future cash flows, and future earnings. Accordingly, new information and results could be obtained by analyzing data from countries after the IFRS implementation, and this can further help us to understand those relations and how they are formed in the modern economic environment. There are also other indications that the association between accruals and cash flows has been changing in recent years. A study by Bushman, Lerman and Zhang in 2016 has indicated that the correlation between accruals and cash flows have been declining over the years, and it has almost disappeared in the last years. Thus, this evidence points suggests that research drawing on a more contemporary time frame could be of interest to academics.

1.4 Practitioner Relevance

The results of this study are important to two groups of individuals: investors and policy makers.

The main contribution of this study is aimed at investors, financial analysts, and market practitioners. Financial measures can reflect the fundamental value of a company and can help to predict its future value. So, it is important for investors to know which financial measure can help them to obtain a better understanding about the future of a company in order to optimize their decisions. The two financial measures that are mainly used by investors are earnings and cash flows; each of these two can potentially give slightly different results regarding the future of a company and can, therefore, lead to different investment decisions. The results of this research could, thus, help investors to identify the predictive power of these two measures and, hence, to ascertain which measure they should pay more attention to when they are making decisions.

Regulators and policy makers should also be interested in this study, especially if it shown that earnings and therefore accruals have a low explanatory power for the future of a company. The aim of accruals is to leave certain decisions to the discretion of managers when the earnings of a company are reported in order to give more information to investors about the fundamentals of a firm and in order to not mislead them and drive them toward incorrect verdicts. Accordingly, policy makers could be interested in a study that provides hints as to the explanatory power of earnings because such a study could show whether additional laws and regulations might be required to increase the credibility of earnings; such measures could entail, for example, regulations about the reduction of earnings management. In addition, policy makers should be interested in how the implementation of the IFRS has affected financial statements. Since the data of this study was taken after the IFRS implementation, this study could give some indications to regulators about the effects of the IFRS on financial statements and various accounting numbers such as earnings cash flows and accruals.

1.5 Structure of the Thesis

Chapter 2 starts with a brief overview of the relevant theory regarding accruals, cash flows and earnings management as well as a review of the relevant past literature and continues with the development of the research hypothesis. Chapter 3 describes the regressions performed in this research, defines the variables used in the regressions, discusses the sample, and finally provides some descriptive statistics. Chapter 4 presents the results of the regressions and discusses them. Chapter 5 provides some concluding remarks.

2 Theoretical Background

2.1 Theory accruals and accounting principals

Accrual accounting is the current accounting method that has been made mandatory by both the FASB and the IASB. Accruals are, essentially, the difference between accounting earnings and underlying cash flows. Therefore, they represent the non-cash component of earnings. They are used to correct any shifts that the cash flow component of earnings has. Managers are responsible for the correct development of accruals since they have superior information about their respective companies. Managers are allowed to use from a variety of accounting methods so as to compute earnings and other financial measures. In contrast, accruals can also distort true information about a company because managers who are responsible for them can often have incentives for manipulating information in order to show a different, less 'true' performance for their companies and, thus, to earn bonuses. For example, in a situation where a company has shown high sales in the past but has experienced declining sales in the current year, managers might want to increase accruals in order to meet analysts' expectations.

This manipulation of accounting figures in order not to report the objective reality of a company but, rather, to show positive earnings or to meet specific earnings targets has been termed earnings management. Usually, earnings management is used to either meet or beat analysts' expectations. There can also be other reasons, such as to meet certain debt covenants³. If a company has undertaken significant debt. Several studies have indicated that meeting or beating these expectations can be beneficial for a company. Burgstahler and Eames (2006) have shown how firms can manage their earnings to meet analysts' expectations. They have also shown that firms can manage their earnings in both an upward and a downward manner. The above evidence has indicated that net earnings might not represent the true objective measure of economic reality.

A cash flow statement depicts the cash transactions of a company and helps investors to have a better understanding of cash inflows and outflows within the various operations of a given company. Earnings and cash flows are interlinked, and the accrual component is what separates these two measures. Thus, cash flows represent the part of earnings without accruals. More specifically, cash flows from operation show a company's cash flows that are received from regular business operations. Cash flows do not engender the same problems as earnings since cash flows only record cash transactions, and, thus, they cannot

³ Debt covenants refer to agreements between the borrower and the lender. They often refer to financial ratios that must be maintained

be manipulated by accruals and accounting policies (as earnings are), and they are, therefore, measures of less subjectivity. Therefore, in general, cash flows can provide different information to investors, but they do suffer from timing and matching problems, which ensure that it is more difficult to have an accurate image of the economic reality of a given firm.

Accordingly, both earnings and cash flows can provide relevant information and can help investors and managers in their decisions. This is the reason why they are both reported in financial statements. The problem that must be tackled is which of these two measures can help us understand better the future of a company. As both earnings and cash flows have their advantages and disadvantages, many academic studies (as presented below) have tried to ascertain which measure is superior and if either of the two can provide information about the future performance of a firm that the other measure cannot provide. With the implementation of the IFRS, the current state of the research can be further expanded since there are clues that the IFRS has made earnings more consistent.

2.2 Literature Review and hypothesis development

There are four different streams of literature that are examined in this thesis. The first three are directly associated with the relationship between earnings and cash flows: the first concerns the role of earnings in predicting the future performance of a company; the second concerns the role of cash flows in predicting the future performance of a company; and the third concerns academic articles that have claimed that the two measures carry the same amount of information. The fourth stream of literature has examined the changes that the IFRS has brought about for earnings management and other variables that can affect the quality of earnings, accruals, and cash flows. Each section in this chapter discusses a different stream of literature and includes not only articles that correspond directly to this topic but also articles that contain relevant information for this study.

2.2.1 Earnings over cash flows in predicting future firm performance

Many academic articles have shown the dominance of earnings in contrast to cash flows. Below, I briefly summarize these articles and their main points⁴.

First, Ball and Brown (1968), who conducted the earliest research on the subject, have shown that earnings and future stock returns are associated. The variables used were income and companies' stock prices. The data included US firms for the period 1946-1966. Some other older articles that have investigated earnings and cash flows are those of Greenberg, Johnson and Ramesh (1986) and that of Wilson (1986), both of which have found clues that earnings show superior performance in predicting future firm performance and, more specifically, future stock returns.

One of the most important early articles that supported the hypothesis of earnings carrying more explanatory power than cash flows was that of Dechow (1994), which showed some indications for the superiority of earnings over accruals in predicting stock returns. More specifically, the article showed several cases in which accruals could better depict firms' stock returns. The study

⁴ A more detailed overview of those articles can be found in the literature matrix on the appendix in pages 26-27

included a sample, consisting of firms listed on the New York Stock Exchange from 1960 to 1989. The results of the study have shown that earnings can better predict stock returns over short time intervals but that cash flows are a better predictor over longer time intervals. Earnings, furthermore, are also better at predicting stock returns when firms undergo large changes in their working capital. Similar research has been undertaken by Ali and Pope (1995); however, their research has also introduced fund flows and has compared their performance with cash flows and earnings. The data for their research was taken from the Global Vantage Industrial/Commercial Database. A sample of 247 UK firms was used, and the sample period was from 1984 to 1990. The results of the study have indicated that earnings could explain stock returns best, then fund flows, and, last, cash flows. The study has also found that all three measures carry incremental information but that cash flows, contrary to earnings, show incremental information only in some of the tests—thus rendering earnings the superior measure. Dechow, Kothari, and Watts (1998) have undertaken a different approach in order to identify if earnings or accruals can better predict future cash flows and if the predictive power of earnings over cash flows changes, depending on the operating cycle. It was found that, in general, earnings could better predict future cash flows. In addition, as the operating cycle increases, so the power of earnings diminishes.

The previous articles mentioned have checked the predictive ability of earnings and cash flows on firms in USA. There are also articles that have checked the predictive ability of those accounting measures in different countries. The study of Charitou et al. (2000) has checked the association that earnings and cash flows have on security returns on the Japanese capital market. The sample period was 1985–1993. The study is in favor of earnings since it indicates that earnings have a higher association with security returns than cash flows but that cash flows can also play an important role when earnings are transitory. Two further studies by Charitou have revealed the predictive ability of earnings and cash flows for UK firms. Charitou and Clubb (1999) have found that earnings are superior to cash flows in predicting future stock returns. The study has tested this relationship in UK firms using longer time intervals. The data consisted of 520 UK companies; the time period was 1985–1992. The results have indicated that earnings are superior but that over longer intervals the explanatory power of cash flows is increased significantly. Charitou (1997) has hypothesized that the magnitude of accruals, the measurement interval, and the operating cycle will determine if earnings or cash flows have a stronger association with security returns. The data consisted of 2,894 firms; the sample period was 1985–1992. The results have indicated that both earnings and cash flows are associated with security returns, although earnings are associated more strongly. Also, cash flows become a better predictor of stock returns as the absolute magnitude of aggregate accruals increases, as the time interval increases, and as the operating cycle is decreasing. Finally, Bartov, Goldberd and Myung (2001) have tested the explanatory power of earnings and cash flows on stock returns in different countries, those with an Anglo-Saxon system and those without. This regional categorization was made by examining financial reporting and how much it is influenced by capital that is raised by either public, market, or private sources. The study has found that earnings hold more explanatory power in equity valuation for Anglo-Saxon countries (the UK, Canada, and the US) but not for non-Anglo-Saxon countries (Germany and Japan). It must be mentioned also

that the results from Japan are different from the previously mentioned study of Charitou, Clubb and Andreou (2000), which has found that earnings carry more incremental information than cash flows on security returns in the Japanese capital market.

Subramanyam and Venkatachalam (2007) have used a unique variable to represent the future of a company; they have employed the ex-post intrinsic value of equity⁵ as the dependent variable and earnings and cash flows as the independent variables. Their sample consisted of 7,840 firms, in the years 1988–2000. The results have indicated that earnings are superior to cash flows in predicting the intrinsic value of equity. Interestingly, this study also performed two regressions, with future earnings and future cash flows as the independent variables. The results of those regressions have shown the superiority of earnings and accrual accounting. Kim and Kross (2005) have investigated the predictive ability of earnings over future cash flows across four different time periods, from 1973 to 2000. The authors have found that the predictive ability of earnings over future cash flows increases over time but also that, in all the four different time periods, earnings have a higher explanatory power than cash flows.

Haw, Daqing and Woody (2001), basing their research in the Chinese capital market, have provided a unique perspective since earnings and cash flows were tested in an emerging capital market. Just like the previous studies, the authors have found the incremental information that earnings, cash flows, accruals, and the components of accruals (discretionary and non-discretionary accruals) carry over stock returns. The sample of the study consisted of all listed Chinese firms. The results of the study have once more indicated that earnings and accruals can better predict stock returns. The same is true for discretionary and non-discretionary accruals. Another study that takes data from a developing market is that of Ebaid (2011), who has researched earnings and cash flows in the Egyptian market. The study has supported the idea that earnings can better predict future firm performance through an examination of future cash flows.

Some more studies worth mentioning are also Farshadfar and Monem (2013) is also noteworthy, wherein it was tested if components of accruals and cash flows can better predict future cash flows of a company. The study finds that accrual components can better predict future cash flows when the firms have a long operating cycle and cash flows are a better predictor of future cash flows on small firms and on firms with a large operating cycle. Badertscher, Collins and Lys (2012) have regressed future cash flows with current cash flows and accrual components for companies that use accruals to meet or beat analyst goals. As a peripheral result, their study has shown that cash flows have a better explanatory power than accruals.

Conclusions: From the above literature, one can conclude that earnings appear to have a larger explanatory power in predicting future firm performance when tested in a variety of different samples and also when tested through different variables that represent future firm performance. However, all the above

⁵ Intrinsic value of equity in Subramanyam and Venkatachalam (2007) is referring to the method of representing the true value of equity and it is calculated by using the dividend discount model and using a three-year horizon model by using dividends and cash distribution of stock repurchases

literature has employed a dated time frame thus demonstrating the need for similar research in a more recent time frame so as to render this research investigation more relevant and, thus, important.

2.2.2 Cash flows over earnings in predicting future firm performance

There are also many articles showing that accruals and, therefore, earnings can give misleading information and that investors should look more closely at cash flows when they are undertaking their valuations⁶.

Sloan (1996) has shown clearly the problems that accruals and, therefore, earnings have when predicting firm performance. More specifically, the article has shown that earnings are more likely to persist in the future if they are based more on the cash flow component rather than the accrual component. The data of Sloan's study was from the period 1962–1991. The results have shown that investors do not value correctly the accrual component of earnings. The article has shown, by sorting firms according to the amount of their accruals, that high accrual portfolios have negative returns, while low accrual portfolios have positive returns. And by following a strategy where you go long on low accrual companies and short on high accrual companies can yield abnormal returns. This was named the accrual anomaly and many researchers after Sloan have investigated the accrual anomaly. The research of Sloan was an incentive for more research on the topic: other studies following a similar methodology have also found that earnings and accruals are weaker in predicting firm performance. Houge and Loughram (2000) have continued the work of Sloan (1996), showing that earnings can give misleading information because, in general, high accruals are transitory, the firms showing those accruals underperform in contrast to high cash flows that persist, and the firms having low accruals overperform the market. The data that this article used was from the Nasdaq NYSE Amex, for the period 1963–1993. The results have indicated that portfolio returns are positively associated with high cash flow returns and negatively associated with high accruals. The study also finds that a trading strategy that is based on cash flows in which high-cash-flow firms are bought and in which high-accrual firms are sold gives excess returns. Another research on the accrual anomaly is Pincus, Rajgopal and Venkatachalam (2006) which investigates the stock market of 20 different countries to find if the accrual anomaly is present. The research investigates the period of 1994–2002 and finds that the accrual anomaly is present but only common law countries and more specifically on USA Canada UK and Australia.

Finger (1994) has tried to find if earnings or cash flows can better predict future earnings and future cash flows. The sample in this research consisted of 50 firms, from the years 1935–1987. The results have indicated that the model that includes cash flows gives superior results than the models that include only earnings. Moreover, the results have shown that for short horizons cash flow performs better than earnings. Chan et al. (2006) have adopted a different approach and have tried to show that accruals are not a suitable predictor of future returns. The article has also claimed that high accruals can lead to poor future returns. The data used was from the NYSE AMEX and NASDAQ and included all stocks, for the time period 1971–1995. It was shown that high-

⁶ A more detailed overview of those articles can also be found in the literature matrix on the appendix in pages 28–29

accrual firms have negative cash flows as a result of their high accruals. Furthermore, the authors have claimed that high-accrual firms have performed well in the past, and for them to continue to show successful returns they might manipulate their accruals. Also, after a year, the return of firms with high accruals tends to decline. Finally, Ball et al. (2016) have shown that measures that do not rely on accruals can better predict stock returns than measures that include accruals such as net income. The study examined its data in the period 1963–2004 and used AMEX, NASDAQ, and the NYSE. The results indicated that cash-based measures tend to outperform accrual-based measures. Although this study is focused heavily on accruals it is still relevant because as said accruals is an integral part of earnings while cash flows are completely deprived of accruals.

Lastly, there are two more recent studies which investigate the predictive ability of earnings and cash flows on future cash flows. Nallareddy, Sethuraman and Venkatachalam (2018) have found clear evidence for the superiority of cash flows over earnings in predicting future cash flows on both US and international firms. The study has also claimed that the results of academic studies for this question is mixed because of the different methodologies that are used. Lorek and Willinger (2009) has also find that current cash flows and not earnings can better predict future cash flows on a sample of 1178 firms on years 1989 to 2004.

Conclusions: The above articles have claimed that cash flows are more relevant and can give superior information to investors and analysts; they have achieved this mainly by showing the weakness that accruals have but also by depicting the dominance and persistence of cash-based measures.

2.2.3 Earnings and cash flows carry the same amount of information

Some articles have shown that neither earnings nor cash flows carry more information than the other or that both can carry useful information, depending on various variables such as firm size or the amount of transitory earnings⁷.

Clarke (2000) has tried to find the ability of earnings and cash flows to predict future stock returns in Australian firms. The data in this case consisted of 121 Australian firms, for the years 1989–1996. The results have indicated that earnings have less explanatory power for larger firms than for smaller firms. Furthermore, it has been shown that earnings and cash flow returns follow a nonlinear relationship with future returns. Finally, when larger firms were taken into account, cash flows have greater explanatory power and so can better predict future returns. An older article with similar results is that of Bowen, Burgstahler and Daley (1987), which identified the associations between unexpected security prices, unexpected earnings, and unexpected cash flows. In that research, 98 firms were used, for the years 1972–1981. The results have indicated that earnings carry incremental information above cash flows. Also, cash flows were shown to carry incremental information greater than earnings. Finally, there is Mulenga & Bhatia (2017) that summarizes all the academic articles that investigate the relationship between earnings, cash flows and future cash flows. This summary includes all time periods until 2016 and all different countries that the researches has been conducted. The article finds that out of

⁷ A more detailed overview of those articles can be found in the literature matrix on the appendix in pages 29

the 26 articles that has been written on the subject they are 10 in favor of earnings and 16 in favor of cash flows.

Conclusions: These articles have shown that statistical analysis does not point to one of the two measures as being dominant; moreover, in specific cases, such as when the size of the firm is taken into account, both measures can give superior information.

2.2.4 Changes that IFRS has brought that could alter the relationship between earnings or cash flows and the future performance of a company
In this section, I present articles that have shown the various changes that the IFRS has brought and how those changes can potentially affect the relationship of earnings and cash flows with future firm performance⁸. This section covers two different streams of literature: the first has found evidence that accounting quality has stayed the same or has decreased after the IFRS, while the second has found evidence that accounting quality has been increased after the IFRS. Although the majority of the literature has noticed an increase in earnings quality after the IFRS implementation, there are some articles that have arrived at the opposite conclusion

Jeanjean and Stolowy (2008) have examined the effect of the IFRS adaptation on earning management in Australia, the UK, and France. Their sample was collected during the transitional period from local GAAP (general accepted accounting principles) to IFRS, which was between 2004 and 2006. Their results have generally shown an increase in earnings management in all three countries after the transition; but this was only statistically significant in France. Ahmed, Neel and Wang (2013) have also found similar results since they have tested accounting quality after the IFRS implementation by using 1,631 firms from 20 countries, in the period 2000–2007. The results of this study have indicated a reduction in timely loss recognition as well as in volatility of earnings and, in contrast, an increase in income smothering and accrual aggressiveness, both of which indicate a reduction in accounting quality. Paananen (2008) has tested the effects of IFRS implementation on German firms. His results have implied that accounting quality has been reduced after the IFRS since earnings and equity value have become less value relevant and earnings smoothing has been increased.

Accounting and accrual quality have been largely associated with the amount of earnings management that companies exercise. There are several articles that have shown an increase in earnings management and, therefore, a decrease in accounting quality. Zeghal, Chtourou. and Sellami (2011) have tested if earnings management is reduced because of the high enforcement of the IFRS. The sample of this study consisted of 353 French firms, in the period 2003–2006. The results have shown a reduction of discretionary accruals and, therefore, of earnings management. Another study by Barth, Landsman, and Lang (2008) have endeavored to find if the implementation of accounting standards can be associated with higher accounting quality, as measured by earnings management, timely loss recognition⁹, and value relevance. The sample

⁸ A more detailed overview of those articles can be found in the literature matrix on the appendix in pages 30-31

⁹ Timely loss recognition refers to losses being reported at the time that they occur rather than some future date

consisted of 327 firms that have adopted the IFRS during the period 1994–2003, from 21 countries, including 11 European countries. The results have indicated that the firms that have adopted the IFRS show less earning management, more timely loss recognition, and more value relevance. In addition, it has been shown that other economic variables are not responsible for the changes after the transition to the IFRS. Earnings management and timely loss recognition as proxies for accounting quality have also been examined by Chen et al. (2010), who have used a large sample from 15 European countries. Their data consisted of all publicly traded firms, during the years 2000–2007 (2000 to 2004 are defined as the pre-adoption period, while 2004 to 2007 as the post-adoption period). The results of the study have indicated that the IFRS reduced earnings management and timely loss recognition in most of the situations. Finally, Ho, Liao, and Taylor (2015) have investigated if there is a reduction in both accruals-based earnings management as well as real earnings management in Chinese firms after the IFRS implementation. The Chinese market might be different from the European market (the focus of this research), but there is still a clear indication of an improvement in earnings management after the IFRS. The sample consisted of 597 Chinese firms. The study had two different hypotheses: the first checked if accrual-based management is affected by IFRS; the second hypothesis checked if activity-based earnings management is affected by the IFRS. The results have shown a reduction in both forms of earnings management. It was also shown that value-relevance has been increased after the IFRS implementation.

Some articles have shown an increase in earnings quality by exploring alternative measures. Landsman, and Maydew and Thornock (2012) have found an increase in abnormal return volatility and return volatility in firms that have adopted the IFRS and especially in countries with strong legal systems. Their sample consisted of 6,067 firms, for the period 2002–2007. Clarkson et al. (2011) have examined the impact of the IFRS in equity value and earnings. Their data was collected from 14 European countries and Australia and consisted of 3,488 firms. The results of their study have indicated that in common-law countries, value relevance¹⁰ has been decreased but that the opposite is true for code-law countries.

Finally, Ball (2006) has elaborated on the various advantages and disadvantages that the IFRS has brought. The first part of this article has discussed if the IASB has managed to achieve its stated objectives, which include developing high-quality, understandable, and easy-to-implement standards and promoting the application of these standards. The author has subsequently claimed that the IFRS has induced better financial statements as they are now timelier, more comprehensive, and more accurate. Other advantages of the IFRS, according to the author, entail that small investors can better compete with professional analysts, also IFRS make companies more comparable, and IFRS reduces the difference in the accounting standards between countries. The IFRS has also promoted fair value accounting¹¹ according to the author. Finally, in this article, some concerns were presented, namely that the implementation would be

¹⁰ Value relevance is the ability of information disclosed by financial statements to capture and outline firm value.

¹¹ Fair value accounting refers to an alternative way of measuring assets and liabilities that will most accurately capture changes on that asset liability

uneven between countries because of differences in markets in the various countries and because of a lack of enforcement mechanic.

The majority of studies about the IFRS and the changes that it has brought about to the economic environment have shown a positive contribution of the IFRS to accounting quality seeing that a substantial number of the articles have shown a reduction in earnings management, value relevance, and timely loss recognition. However, there are some articles that have shown a reduction in accounting quality; thus, there is reason to believe that the IFRS might not have changed accounting quality in a significant way. All these articles have ensured that it is now most interesting to reinvestigate the relations of earnings and future firm performance and cash flows and future firm performance since those relations might have changed compared to the period before the IFRS was implemented.

2.2.5 General literature conclusions

Based on the above literature, some conclusions can be drawn regarding the research question. First of all, there is no clear consensus as to whether earnings or cash flows are better at predicting future performance, which is usually measured by means of future stock returns, future cash flows, or intrinsic value of equity. There are advocates, and there are academic articles on both sides of the argument, and there is also some academic research showing that the two measures can provide the same amount of information. Accordingly, the research question still does not have a definite answer, and further research should be undertaken in order to draw more accurate conclusions. The time frame of most of the studies is also old with very few studies investigating the predictive ability of earnings and cash flows after IFRS implementation. This is important because there are plenty of articles showing that IFRS has brought considerable changes to accounting quality.

Therefore, there is a gap in the academic research on the predictive ability of earnings and cash flows which my study addresses as it tries to find the predictive ability of earnings and cash flows by using a newer time frame after IFRS implementation.

2.3 Hypothesis Development

As the previous chapter has illustrated, there is scope for further investigation on income, cash flows and their association with future firm performance because the current research cannot agree which of the two measures is superior as there are research papers in favor of both earnings and cash flows.

For a hypothesis to be formed I had to find a variable that would reliably measure the future firm performance. I have chosen future cash flows because there is a measure that is widely used in academic research in order to test the predictive ability of earnings and cash flows but also because various valuation methods use measures that are very close to future cash flows such as free cash flows to calculate future firm performance. Also, the hypothesis is formed in favor of cash flows because although academic research supports both measures the newest articles (Nallareddy, Sethuraman and Venkatachalam (2018) and Ball et al 2016) are in favor of cash flows rather than earnings.

The hypothesis is as follows:

Cash flows rather than earnings are better at predicting future cash flows on European firms after IFRS implementation.

3. Research Design

The research design for this study is a quantitative research that entails a non-experimental, correlational, and observational design. As with any correlational observational study, the observations of a target population are collected without any manipulation of the data on the part of the researcher. Accordingly, this design can only establish associations between study variables that have been collected and cannot establish causal claims.

3.1 Model specification

The data for this study was collected from Compustat. The data consists of firms, according to a range of years. There are $N = 6,187$ firms (i) and $t = 12$ time points (t), measured in years that range from 2005 to 2016.

The following regressions were performed in order to detect which of the two variables (earnings or cash flows) can better explain future earnings.

$$CF_{i,t+1} = \beta_0 + \beta_1 E_{i,t} + \epsilon_t \quad (1)$$

$$CF_{i,t+1} = \beta_0 + \beta_1 CF_{i,t} + \epsilon_t \quad (2)$$

To further check the relation of earnings and cash flows with future cash flows, I performed a regression that includes both earnings and cash flows. The regression is as follows:

$$CF_{i,t+1} = \beta_0 + \beta_1 E_{i,t} + \beta_2 CF_{i,t} + \epsilon_t \quad (3)$$

The variables for the above regressions are as follows:

E: Income before extraordinary items

CF: Cash flows from operations

$CF_{i,t+1}$ cash flows from operations at time t+1

Table 1 depicts all the variables used in the regressions. All the respective Compustat items are shown as well.

Table 1
Variable Definition

Regression Variable	Name	Compustat Item
$E_{i,t}$	Income before extraordinary items	Income before extraordinary items and non-controlling interests at year t
$CF_{i,t}$	Cash flows from operations	Operating activities - net cash flow at year t
$CF_{i,t+1}$	Future cash flows	Operating activities - net cash flow at year t+1

3.2 Additional tests

In order to further investigate the hypothesis, I repeat regressions 1 2 and 3 first for each industry separately and then for each financial year (2005-2016).

I also investigate if the relation changes for high and low accrual companies. In order to do that I group companies into quintiles according to their accrual ratio and I perform regressions 1,2 and 3 for each quintile. In order to calculate the accrual ratio for each firm I perform the following steps:

1) I calculate accruals for each firm by using the formula below:

$$\text{Accruals} = (\text{CA} - \text{CE}) - (\text{CL} - \text{DCL}) - \text{D}^{12}$$

Where: CA= Change in current assets

CE= change in cash and cash equivalents

CL= Change in current liabilities

DCL= Change in debt on current liabilities

D= Depreciation

2) After calculating accruals, I divide accruals with total assets in order to calculate the accruals ratio.

3) I separate the firms into quintile according to their accrual ratio.

All additional tests are performed in order to see if the relations stay the same under different specifications.

3.3 Data

The data was taken from Compustat Global. In case of missing data, individual data was excluded. The data consisted of firms from the 27 European countries after the implementation of the IFRS. I chose European countries for my sample because of the common characteristics they share; this ensures that the data is more coherent and can provide a better analysis. The exact time frame for the data is 2005-2016 (2004 data were also used in order to calculate total accruals for 2005).

Table 2 depicts all the different industries as well as the number of firms and the total number of firm years for each industry.¹³

¹² The formula is derived from Sloan 1996

¹³ For this research to stay in line with all the previous research that have been done financial service firms (SIC Codes 6000-6799) are excluded from the sample

Table 2
Number of firms per industry

Industry Name	Number of Firms	% of total Firms	Number of Firm Years
<i>Agriculture, Forestry and Fishing</i>	32	0,52	350
<i>Construction</i>	117	1,89	1247
<i>Manufacturing</i>	2031	32,83	20238
<i>Retail Trade</i>	263	4,25	2515
<i>Services</i>	1879	30,37	10424
<i>Transportation, Communications, Electric, Gas and Sanitary service</i>	519	8,39	5219
<i>Wholesale Trade</i>	1078	17,42	2116
<i>Mining</i>	114	1,84	1140
<i>No classifiable</i>	154	2,49	1496
<i>Total</i>	6187		44745

Many of the variables did not conform to normality and were very heavily skewed and kurtotic (in some cases, exceeding a kurtosis value of 1,000); thus, the first step was to normalize the data. The first approach was to mathematically transform the data through use of a logarithmic function of the variables; however, several variables (such as income before extraordinary items or cash flow from operation) had negative values. The logarithmic function of a negative value is undefined, leaving it as missing data.

Therefore, if this method were followed, all negative values would have to be excluded from the analysis, and this would have reduced the sample significantly and would also have biased the results. In order to solve this problem, I have scaled all variables with total assets and winsorize them at 95% and 5% levels.

3.4 Descriptive Statistics

Table 2 presents descriptive statistics of all the variables that are used for the regressions and the equations.

Table 3
Descriptive Statistics

Variable	N	Mean	Standard Deviation	Minimum Value	Maximum Value
Income before extraordinary items	20336	0,04	0,05	-0,04	0,12
Cash flows from operations	20336	0,08	0,06	-0,01	0,18
Total accruals	20336	0,1	0,04	-0,02	0,20

The descriptive statistics indicate that:

- Both earnings and cash flows have positive means and medians.
- The mean of cash flows is slightly higher than that of earnings possible because of depreciation and amortization.

- There is higher variability of cash flows compared to earnings as indicated by their slightly higher standard deviation.
- The descriptive statistics are consistent with previous research investigating income and cash flows on future firm performance such as Subramanyam & Venkatachalam (2007) Nallareddy Sethuraman and Venkatachalam (2018)

4. Results

4.1 Simple Regressions for earnings and cash flows

I first perform two simple regressions and one multiple regression. The first regression has earnings as the independent variable and future cash flows as the dependent variable. The second regression has cash flows as the independent variable and future cash flows as the dependent variable. The multiple regression has both earnings and cash flows as the independent variable and future cash flows as the dependent variable. The predictive ability of each model can be seen on the table below

Table 4
Simple regressions on Future cash flows

$CF_{i,t+1} = \beta_0 + \beta_1 E_{i,t} + \varepsilon_t$		$CF_{i,t+1} = \beta_0 + \beta_1 CF_{i,t} + \varepsilon_t$		$CF_{i,t+1} = \beta_0 + \beta_1 E_{i,t} + \beta_2 CF_{i,t} + \varepsilon_t$		
Adj. R ²	β_1	Adj. R ²	β_1	Adj. R ²	β_1	β_2
0,19	0,4	0,28	0,5	0,34	0,21	0,41

The predictive ability of regression 2 is higher than regression 1 (0,28% compared to 0,18%) which indicates that cash flows can better predict future cash flows. The results of the joint regression also indicate that the predictive ability of future cash flows is increased when both earnings and cash flows are put as predictors of future cash flows.

Confirmation of results with hypothesis: The results from the above regressions confirm the research hypothesis.

4.2 Separate regression for each industry

I repeat regressions 1, 2 and 3 but for each industry separately. The predictive ability of each model can be seen on the table below.

Table 5
Separate Regression for each Industry

Industry	$CF_{i,t+1} = \beta_0 + \beta_1 E_{i,t} + \varepsilon_t$		$CF_{i,t+1} = \beta_0 + \beta_1 CF_{i,t} + \varepsilon_t$		$CF_{i,t+1} = \beta_0 + \beta_1 E_{i,t} + \beta_2 CF_{i,t} + \varepsilon_t$		
	Adj. R ²	β_1	Adj. R ²	β_1	Adj. R ²	β_1	β_2
<i>Manufacturing</i>	0,21	0,1	0,28	0,08	0,33	0,1	0,12
<i>Transportation, Communications, Electric, Gas and Sanitary service</i>	0,18	0,02	0,35	0,01	0,381	0,02	0,01
<i>Retail Trade</i>	0,30	0,02	0,35	0,02	0,41	0,03	0,02
<i>Services</i>	0,17	0,01	0,27	0,02	0,31	0,01	0,02
<i>Agriculture, Forestry and Fishing</i>	0,11	0,4	0,32	0,6	0,34	0,1	0,5
<i>Construction</i>	0,02	0,2	0,05	0,3	0,07	0,1	0,3

<i>Mining</i>	0,15	0,3	0,28	0,5	0,31	0,5	0,0 4
<i>Wholesale Trade</i>	0,1	0,3	0,05	0,2	0,12	0,3	0,0 9

The results are in line with the previous regressions as in all industries except the wholesale trade industry the predictive ability of model 2 which has cash flows as the dependent variable is higher than the predictive ability of model 1 which has earnings as the dependent variable. Also, the predictive ability of model 3 which has both earnings and cash flows as dependent variables is higher than the previous two models.

Moreover we can observe that the industries which earnings have the higher predictive ability is retail trade (0,30) while for cash flows is also retail trade (0,35) but also Transportation, Communications, Electric, Gas and Sanitary service (0,35) and Agriculture, Forestry and Fishing (0,32).

Confirmation of results with hypothesis: The results from the above regressions further confirm the research hypothesis.

4.3 Additional analysis for each financial year

I repeat regressions 1, 2 and 3 but for each firm year after IFRS implementation (2005-2016). The predictive ability of each model can be seen on the table below.

Table 6
Separate regression for each financial year

Financial year	$CF_{i,t+1} = \beta_0 + \beta_1 E_{i,t} + \varepsilon_t$		$CF_{i,t+1} = \beta_0 + \beta_1 CF_{i,t} + \varepsilon_t$		$CF_{i,t+1} = \beta_0 + \beta_1 E_{i,t} + \beta_2 CF_{i,t} + \varepsilon_t$		
	Adj. R ²	β_1	Adj. R ²	β_1	Adj. R ²	β_1	β_2
2005	0,17	0,3	0,25	0,4	0,3	0,2	0,4
2006	0,18	0,4	0,26	0,5	0,27	0,2	0,4
2007	0,14	0,4	0,25	0,5	0,27	0,2	0,4
2008	0,14	0,3	0,18	0,4	0,21	0,2	0,3
2009	0,17	0,4	0,21	0,5	0,25	0,2	0,3
2010	0,20	0,4	0,3	0,5	0,34	0,2	0,5
2011	0,21	0,4	0,30	0,5	0,34	0,2	0,4
2012	0,23	0,4	0,30	0,5	0,33	0,2	0,4
2013	0,23	0,4	0,31	0,5	0,34	0,2	0,5
2014	0,22	0,5	0,34	0,6	0,37	0,1	0,5
2015	0,23	0,2	0,34	0,6	0,36	0,2	0,4
2016	0,25	0,4	0,36	0,8	0,39	0,3	0,4

The results are similar with the all the previous regressions. The predictive ability of cash flows is higher than earnings for all different firm years.

Furthermore, we can observe that the predictive ability of earnings (column 1) is increasing from 2005 to 2006 but has a sudden decrease in 2007 and remains low also on 2008. The predictive ability starts to increase again in 2009 and continues to increase or stay the same until 2016.

The predictive ability of cash flows (column 2) follows a similar pattern with an increase in 2006 but the sudden decrease does not start at 2007 but rather at 2008 compared to earnings that have a sudden decrease in 2007. After 2007 the predictive ability is either have an increase or stays the same.

When considering both earnings and cash flows (column 3) we see that the predictive ability follows a similar pattern with a sudden decrease in years 2007

and 2008. After those years the predictive ability either stays the same or is increasing.

It is interesting to note that the decrease in predictive ability for earnings and cash flows separately as well as in earnings and cash flows in combinations happened during the financial crisis in 2007- 2008 possible because current earnings and cash flows could not predict the decrease of future firm performance that the financial crisis has brought or the increase in firm performance after the financial crisis because it is related to reasons outside the scope of earnings and cash flows.

Confirmation of results with hypothesis: The results from the above regressions further confirm the research hypothesis.

4.4 Additional analysis for high and low accrual Companies

I perform additional analysis in order to investigate if the predictive ability of earnings and cash flows is increased or decreased according to the amount of accruals. To do that first I separate companies into quintiles according to their accrual ratio (Total accruals divided by total assets). Then I repeat regressions 1, 2 and 3 for each quintile. The results can be seen on table 7 below.

Table 7
Separate Regressions according to

	$CF_{i,t+1} = \beta_0 + \beta_1 E_{i,t} + \varepsilon_t$		$CF_{i,t+1} = \beta_0 + \beta_1 CF_{i,t} + \varepsilon_t$		$CF_{i,t+1} = \beta_0 + \beta_1 E_{i,t} + \beta_2 CF_{i,t} + \varepsilon_t$		
	Adj. R ²	β_1	Adj. R ²	β_1	Adj. R ²	β_1	β_2
<i>Quintile 1</i>	0,21	0,4	0,27	0,5	0,31	0,2	0,3
<i>Quintile 2</i>	0,08	0,2	0,11	0,3	0,16	0,2	0,3
<i>Quintile 3</i>	0,08	0,2	0,11	0,3	0,15	0,2	0,3
<i>Quintile 4</i>	0,07	0,2	0,11	0,1	0,14	0,1	0,2
<i>Quintile 5</i>	0,15	0,3	0,25	0,5	0,29	0,2	0,4

The results indicate:

Cash flows can better explain future cash flows on all level of accruals. When earnings and cash flows are both included in the regression the explanatory power of the model increased relatively to the other two models. Earnings and cash flows has the higher explanatory power on the lower and higher quintile of accruals. This finding is similar to dechow 1994 which finds that earnings and cash flows have higher explanatory power on the higher and lower quintile of accruals.

Confirmation of results with hypothesis: The results from the above regressions further confirm the research hypothesis.

4.3 Discussion about results of my study and relevant literature

There are three different streams of literature regarding the predictive ability of cash flows and earnings. My research agrees with the stream of literature that shows the dominance of cash flows over earnings. This is true for all the different tests I have performed and even in companies with high accruals. My study disagrees with the stream of literature that finds earnings as the superior measure. Those studies claim that earnings are a better indicator for future firm performance as manager have the discretion to show the true performance of the company through accruals. Furthermore, my study also disagrees with the stream of literature that finds mixed results since it is clear from all the regressions that earnings carry more incremental information.

Table 8 illustrates the different streams of literature associated with my study and their relationship to my hypotheses.

Table 8
Results and Relevant Literature

<i>Literature supporting earnings over cash flows (13 Articles)</i>	Disagree with the results of my thesis
<i>Literature supporting cash flows over earnings (8 Articles)</i>	Agree with the results of my thesis
<i>Literature that supports neither earnings nor cash flows (2 Articles)</i>	Disagree with the results of my thesis

Two clarifications need to be made regarding table 8

- The literature supporting earnings includes more articles than the literature supporting cash flows. The main reason for this difference is that my literature review tried to include all the past literature that has been done on this subject. So, it includes some of the earliest research on the subject which have a very old-time frame on their sample and so the results of those studies might not be relevant today. It also includes articles that test the association of earnings and cash flows in other economies such as China and Egypt. If we exclude those articles, then there is an even split between articles supporting earnings and articles supporting cash flows.
- There are 2 articles supporting both earnings and cash flows. This happens because those articles use different methodologies in order to derive their results. More specifically they use different measurement approaches variable definition and sample selection.

5. Conclusions

The main purpose of the study was to examine the explanatory power of cash flows and earnings after the IFRS implementation regarding the future performance of companies. This research was conducted because there is still an

ongoing debate about which of the two measures can most reliably capture firm performance and also because there are not many studies that have tested the effect of these measures in more recent times. This research was also conducted because research has indicated that after the IFRS implementation, there has been a decrease in earnings management and an overall increase in accounting quality, which may alter the relationship between earnings cash flows and future firm performance.

The thesis tested the predictive ability of earnings and cash flows on future cash flows (cash flows at $t+1$). The hypothesis of this study was that cash flows is the superior measure as earnings introduced can be manipulated by managers in order not to show the true performance of the company. The hypothesis was confirmed as the statistical tests imply that cash flows have superior predictive ability over earnings. Those results are consistent on all different industries and on all different years and also when separating companies according to their accrual ratio.

5.1 Limitations

My study has two limitations. The first is that it has only extracted data from European countries. This, of course, provides a more coherent dataset, but it also gives rise to the problem that several European countries have quite similar economies. These economies can be quite different from economies in other parts of the world where, for example, earnings management might be more common, and so the IFRS implementation might have engendered larger changes and, thus, might have boosted the predictive ability of earnings. The second limitation concerns the variable chosen to operationalize the future performance of firms. While future cash flows provide a sufficient operationalization of future firm performance, this research might have achieved greater validity if I had also included different dependent variables to operationalize future firm performance. Such a variable could have been, for example, future stock returns. Those two limitations can provide incentives for future research on the topic.

5.2 Practitioner Recommendation

In the business world, there is the expression “cash is king”, referring to the importance of cash flows for the performance of a company. This saying is confirmed in my research and although investors should look closely at both earnings and cash flows since they are both important for evaluating future firm performance, earnings should be looked with caution since they appear to be a more inconsistent measure that can provide misleading information compared to cash flows.

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7. Appendix

Here you can find more information regarding the articles I use in the literature review. Those are the most important articles that support my arguments regarding the research question.

Articles supporting earnings over cash flows

Author	Title	Research Question	Dependent Variable(s)	Independent Variables	Sample	Time period	Methodology	Outcomes	Comparison with Thesis results
Ball and Brown (1968)	An empirical evaluation of accounting income numbers	The association between earnings and future stock returns	Stock returns	Net income Earnings per share	261 US Firms	1946-1966	Archival research using OLS regressions	Earnings give useful information concerning future stock returns	Disagree with thesis results
Dechow (1994)	Accounting earnings and cash flows as measures of firm performance: The role of accounting accruals	Are earnings or cash flows better at explain future stock returns	Stock returns	Earnings, cash flows	New York exchange companies, 27308 firm years	1960-1989	Archival research using OLS regressions	Earnings can explain better stock returns, but it depends on time intervals and operating cycle	Disagree with thesis results
Haw, Daqing and Woody (2001)	The nature of information in accruals and cash flows in an emerging capital market: The case of china	Test if accruals or cash flows has more explanatory power over stock returns in China	Stock Prices	Net income, operating cash flows, discretionary and non-discretionary accruals	1516 firm years (Chinese firms)	1995-1998	Archival research using OLS regressions	Earnings and accruals have more explanatory power than cash flows	Disagree with thesis results
Ashiq and Pope (1995)	The incremental information content of earnings, fund flow and cash flow: The UK evidence	Tests if accruals, cash flows or fund flows have more explanatory power than future stock returns	Annual stock returns	Earnings, cash flows and fund flows	247 UK firms	1984-1990	Archival research using nonlinear regressions	Earnings have the most explanatory power followed by fund flows and cash flows	Disagree with thesis results
Bartov, Goldberg and Myung (2001)	The valuation-relevance of earnings and cash flows: An international perspective	Test the association of cash flows and earnings with equity valuation	Stock returns	Income, change in income, cash flow and change in cash flows	1791 firms from Canada, US, Germany, UK and Japan	1987-1996	Archival research using OLS regressions	In UK Canada and US earnings can explain better equity returns	Disagree with thesis results
Charitou (1997)	The role of cash flows and accruals in explaining security returns:	Tests the association of security returns over cash flows	Stock returns	Earnings and cash flow from operation	2984 firm years of UK firms	1985-1992	Archival research using OLS regressions	Earnings are associated more strongly with security	Disagree with thesis results

	evidence for the UK	and earnings						returns	
Ebaid (2011)	Accruals and the prediction of future cash flows	Tests the ability of earnings and cash flows to predict future cash flows	Future cash flows	Earnings, Cash flows, accruals components of accruals	462 firm's Egyptian capital market	1997-2007	Archival research using OLS regressions	Earnings rather than cash flows are better at explaining future cash flows	Disagree with thesis results
Charitou, Clubb and Andreou (2000)	The value relevance of earnings and cash flows: Empirical evidence for Japan	Tests the association between accruals and cash flows with security returns on Japanese firms	Security returns	Earnings and cash flows from operation	2894 firm years Japanese firms	1985-1992	Archival research using OLS regressions	Earnings are associated more strongly with security returns	Disagree with thesis results
Subramanyam and Venkatachalam (2007)	Earnings, Cash flows, and ex post intrinsic value of equity	Tests the association of earnings and cash flows with intrinsic value of equity	intrinsic value of equity	Operating cash flows, earnings	7840 US firms	1988-2000	Archival research using OLS regressions	Earnings are superior at explaining ex post intrinsic value	Disagree with thesis results
Charitou and Clubb (1999)	Earnings, cash flows and security returns over long return intervals: Analysis and UK evidence	Tests the association of security returns with accruals and current cash flows	Security returns	Earnings, cash flow from operation, equity cash flows	520 UK firms	1985-1992	Archival research using OLS regressions	1) earnings rather than cash flows are better at explaining future stock returns 2) Models which separate cash flow components or use equity cash flows have higher explanatory power than models that only use cash flows from operation	Disagree with thesis results
Klm and Kross (2005)	The ability of earnings to predict future operating cash flows has been increasing-not decreasing	Tests the association of cash flows and earnings with future cash flows	Future cash flows	Earnings per share and cash flows from operation	100,266 firm years	1972-2001	Archival research using OLS regressions	In average earnings rather than cash flows are better at explaining future cash flows	Disagree with thesis results
Greenberg, Johnson and Ramesh 1986	Earnings versus Cash Flow as a Predictor of Future cash flow Measures	Test the association of earnings and cash flows with future	Future cash flows	Net income and cash flows from operation	157 industrial firms	1964-1982	Archival research using OLS regressions	Earnings are a better predictor of future cash	Disagree with thesis results

		cash flows						flows	
Wilson 1986	The relative information content of accruals and cash flows: Combined evidence at the earnings announcement and annual report release date	Test the association of total accruals and cash flows with stock returns	Stock returns	Total accruals cash flows from operation	322 firm year observations	1981-1982	Archival research using OLS regressions	Accruals have incremental information above cash flows	Disagree with thesis results

Articles supporting cash flows over earnings

Author	Title	Research Question	Dependent Variable(s)	Independent Variables	Sample	Time period	Methodology	Outcomes	Comparison with Thesis results
Sloan (1996)	Do stock prices fully reflect information in accruals and cash flows about future earnings	Investigates the amount of information that accruals and cash flows have over future earnings	Future earnings	Current accruals and cash flows	40679 firm years US firms	1962-1991	Archival research using OLS regressions	Earnings have two components an accrual and a cash flow component. The explanatory power of earnings on future stock returns is attributed to the cash flow component and not the accrual component	Agree with thesis results
Houge and Lougran (2000)	Cash flow is king? Cognitive errors by investors	Tests the usefulness of trading strategies that are based on accruals and trading strategies that are based on earnings	Portfolio returns	Market risk, size and book to market ratio	50928 firm years US firms	1963-1993	Archival research using OLS regressions	Strategies based on cash flows give superior information compared to strategies that are based on earnings	Agree with thesis results
Chan et al. (2006)	Earnings quality and stock returns	Tests the predictive power of accruals and accrual components on stock returns	Future stock returns	Total accruals and accrual components	All firms in NYSE, AMEX and NASDAQ	1971-1995	Archival research using OLS regressions	1) High accruals lead to poor firm performance 2) Accruals are negatively associated with future stock returns	Agree with thesis results
Finger (1994)	The ability of earnings to predict future earnings	Test the predictive ability of earnings on future earnings	Earnings cash, flows	earnings at t-1 And cash flows at t-1	50 US firms	1935-1987	Archival research using OLS regressions	Cash flows are better at predicting future cash flows in short horizons	Agree with thesis results

	and cash flow	and future cash flows							
Ball et al. (2016)	Accruals cash flows, and operating profitability in the cross section of stock returns	Test the predictive ability of operating profitability and cash-based profitability on stock returns	Monthly stock returns	Cash based operating profitability, accruals	All NYSE AMEX and NASDAQ firms	1963-2004	Archival research using Fama and McBeth regressions	Cash based profitability can better explain stock returns than accruals and operating profitability	Agree with thesis results
Lorek and Willinger (2009)	New evidence pertaining to the prediction of operating cash flows	Tests the ability of past cash flows and past earnings to predict cash flows	Future cash flows	Current earnings and current cash flows	1174 firms	1989-2004	Archival research using OLS regression	Cash flows are superior at predicting future cash flows	Agree with thesis results
Pincus, Rajgopal and Venkatachalam (2006)	The Accrual Anomaly: International Evidence	Investigates if the accrual anomaly is present on various countries ¹⁴	Future net income, abnormal returns	Accruals and cash flows	62,027 firm years	1994-2002	Archival research OLS regression	Accrual anomaly exist but only on common law countries	Agree with thesis results
Nallaredy et al. (2018)	Earnings or cash flows: Which is a better predictor of future cash flows?	Test the association of earnings and cash flows with future cash flows	Future cash flows	Current cash flows current earnings	118,624 firm-years	1989-2015	Archival research using OLS regressions	Cash flows are better at predicting future cash flows	Agree with thesis results

Articles showing cash flows and earnings carry the same amount of information

Author	Title	Research Question	Dependent Variable(s)	Independent Variables	Sample	Time period	Methodology	Outcomes	Comparison with Thesis results
Hodgson and Stevens (2000)	Earnings, cashflows and returns: Functional relations and the impact of firm size	Tests if accruals or cash flows can better explain future stock returns in Australian firms	Annual stock returns	Net earnings per share, change in net earnings per share, cash earnings per share, and change in cash earnings per share	121 Australia firms	1989-1996	Archival research using OLS regressions	Accruals and cash flows follow a nonlinear relation, Cash flows are better at explaining returns on larger firms and earnings are better at explaining returns on smaller firms	Disagree with thesis results

¹⁴ The accrual anomaly refers to having abnormal returns if you go long on firms with low accruals and short on firms with high accruals

Bowen, Burgstahler and Daley (1987)	The incremental information content of accruals versus cash flows	Tests the association of earnings and cash flows over unexpected returns	Unexpected returns	Unexpected earnings Unexpected Cash flows	98 US firms	1972-1981	Archival research using OLS regressions	Earnings carry incremental information above cash flows and cash flows carry incremental information above earnings	Disagree with thesis results
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Articles showing the differences IFRS has brought to earnings quality

Author	Title	Research Question	Dependent Variable(s)	Independent Variables	Sample	Time period	Methodology	Outcomes	Comparison with Thesis results
Ho, Liao and Taylor (2015)	Real and accrual-based earnings management in the pre- and post-IFRS periods: Evidence from China	Tests if real and accrual-based earnings management is reduced in China after IFRS adaptation	Discretionary accruals, real earnings management	Indicator variable take value of one for post IFRS observations and zero otherwise	597 Chinese firms	2002-2011	Archival research using OLS regressions	There is a reduction both in real earnings management and accrual earnings management after IFRS implementation	Thesis results are not directly associated with this study
Chen et al. (2010)	The role of international financial reporting standards in accounting quality: Evidence from the European Union	Tests if the accounting quality has been improved after IFRS implementation	Earnings management variables and timely loss recognition variables	Indicator variable take value of one for post IFRS observations and zero otherwise	21707 firm years from 15 European countries	2000-2007	Archival research using OLS regressions	There is a reduction of earnings management after IFRS implementation	Thesis results are not directly associated with this study
Ahmed, Neel, and Wang (2013)	Does mandatory adoption of IFRS improve accounting quality? Preliminary evidence	Tests if accounting quality is improved after IFRS implementation	income smoothing, benchmark targeting, aggressiveness of accruals, and timely loss recognition.	Variable taking values of 1 or zero depending if the firm was a mandatory IFRS adopter or not	1631 firms from 20 countries	2000-2007	Archival research using OLS and logistic regressions	There is a reduction in time loss recognition, volatility of earnings and increase in income smoothing	Thesis results are not directly associated with this study
Ray Ball (2006)	International financial reporting standards (IFRS): pros and cons for investors	Various advantages of IFRS are discussed. The author claims IFRS have brought better financial statements quality and IFRS also enhance fair value accounting ¹⁵							
Zeghal, Chtourou and Sellami (2011)	An analysis of the effect of mandatory adoption of IAS/IFRS on earnings management	Examines if earnings management has been reduced after IFRS in French firms under certain conditions	Dichotomous variables taking values of one or zero depending if the firm has engaged the least or the most in earnings	Independence of directors', number of directors, audit committee or not, dissociation between chairman and CEO or not	353 French firms	2003-2006	Archival research using logistic regression	Earnings management is reduced after IFRS implementation	Thesis results are not directly associated with this study

¹⁵ This article elaborates on IFRS but does not use statistical tests

			management after IFRS adoption						
Barth et al. (2008)	International accounting standards and accounting quality	Tests if firms applying IFRS have less earnings management, more timely loss recognition and more value relevance	Earnings smoothing, earnings towards a target, time loss recognition, value relevance	Variable for firms adopting and not adopting IFRS	327 firms from 21 countries	1994-2003	Archival research using two step regression	Firms applying IFRS show less earnings management more timely loss recognition and more value relevance	Thesis results are not directly associated with this study
Clarkson et al. (2011)	The impact of IFRS adoption on the value relevance of book value and earnings	Tests the impact of IFRS in book value and earnings	Price per share	Book value of equity, earnings per share	3488 firms from 14 EU countries	2004-2005	Archival research using OLS regressions and nonlinear regression	IFRS adoption results in an increase in value relevance but only on strong law countries	Thesis results are not directly associated with this study
Jeanjean and Stolowy (2008)	Do accounting standards matter? An explanatory analysis of earnings management before and after IFRS adoption	Tests the effect of IFRS on earnings management	Income before extraordinary items, ratio of small reported profits to small reported losses ¹⁶		1196 firms from France UK and Australia	2004-2006	Archival research that checks distribution of variables	Earnings management increases in all sample countries but the increase is significant only on French firms	Thesis results are not directly associated with this study
Landsman, Maydew and Thornock (2012)	The information content of annual earnings announcements and mandatory adoption of IFRS	Tests if the information content of abnormal returns is improved after IFRS	Abnormal return volatility and abnormal return trading volume	variable equal to one for firm-years with years ending on or after 12/31/2005 or zero otherwise	6067 firms from 27 countries around the world	2002-2007	Archival research using Multivariate tests	Countries with IFRS have larger abnormal returns and trading volume	Thesis results are not directly associated with this study
Paanane and Lin (2008)	The development of accounting quality of IAS and IFRS over time: The case of Germany	Tests if earnings smoothing and time loss recognition has been reduced after IFRS implementation in Germany	4 measures of earnings smoothing 1 measure for timely loss recognition 1 measure of value relevance		92 industrial German listed companies	2000-2002 2003-2004 2005-2006	Archival research using OLS regressions and two tail variance F test	Earnings smoothing is increased, and timely loss recognition and value relevance have been decreased after IFRS	Thesis results are not directly associated with this study

¹⁶ This study does not use regression tests in its methodology, so the categorization of dependent and independent variables does not apply.

