The Quality of Earnings, Governance and Future Stock Returns in Europe. An Empirical Study.

submitted by

Elisabetta Basilico

from

Italy

Approved on the application of

Prof. Dr. Andreas Gruener

and

Prof. Dr. Martin Hilb

Last but not least, I dedicate this work to my parents, my fiancée and my little dog who have always been there for me, supporting me throughout all of the challenges that developed during the last four years while working at this research project.

Milano, January 2014

Elisabetta Basilico

To my parents, Michele and Tulivù

Ai miei genitori, Michele e Tulivù

Abbreviations and Notations

AP	Accounts Payble		t	Current period
AR	Accounts Receivable		t-1	Prior period
BMK	Benchmark		E ( )	Expectational (forecasted) value
CA	Current Assets		$\alpha_{i,t}$	Intercept in a regression analysis
CEO	Chief Executive Officer		$\beta_{i,t}$	Beta
CFA	Chartered Financial Analyst		Δ	Change
CFI	Investing Cash Flow		$\sum$	Summation
CFO	Operating Cash Flow		Var	Variance
CL	Current Liabilities		ε_{it}	Error term
COGS	Cost of Goods Sold		Cov	Covariance
CPA	Charter Public Accountant		T	Time
DEP	Depreciation		N	Number in sample
DI	Discretionary Inventory		þ	Correlation
DIO	Days Inventory Outstanding			
DSO	Days Sales Outstanding			
EMH	Efficient Market Hypothesis			
EPS	Earnings per Share			
EU	European Union			
GAAP	Generally Accepted Accounting Principles			
HPR	Holding Period Return			
i.e.	Id est (that is)			
IASB	International Accounting Standards Board			
IFRS	International Financial Reporting Standards			
INV	Inventory			
mo	month			
NetNCA	Net Non Current Assets			
NI	Net Income			
NOA	Net Operating Assets			
OCA	Other Current Assets			
OCL	Other Current Liabilities			
OLS	Ordinary Least Square			
p.	Page			
pp.	Pages			
Rev.Acc.	Accelariting Revenue			
RevMis	Revenue Mistatement			
RWH	Random Walk Hypothesis			
S&P	Standard & Poor's			
SEC	Securities and Exchange Commision			
SGA	Selling,General, Administrative Expenses			
TA	Total Assets			
Tot.Rev.	Total Revenue			
U.K.	United Kingdom			
U.S.	United States of America			
Un.Rev.	Unearned Revenue			

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Abstract

European Regulation n. 1606/2002 introduced the mandatory requirement that countries in the European Community report their financial statements under International Financial Reporting Standards (IFRS) starting in fiscal year 2005[1]. This has been one of the most significant regulatory changes in accounting history with the aim to improve corporate transparency and financial reporting quality, which should ultimately benefit investors. However, the debate on the merits of the new accounting system is still open and there is skepticism that a simple mandate of new accounting standards is sufficient to achieve more informative and transparent corporate reporting and more efficient capital markets.

The main objective of the dissertation is to investigate the practice of opportunistic behavior by managers in compiling financial reports and its impact on investors (*agency theory*) through the links between the quality of earnings, corporate governance and future stocks returns (*efficient market hypothesis*). The empirical setting is that of Europe, given the challenges that this datasets presented until the introduction of IFRS and a uniform set of accounting standards.

The presentation is that of three original articles which focus on three aspects of the main objective:

1. The impact of a new accounting system (IFRS) on the quality of earnings to determine in which European countries it is possible to exploit the accruals mispricing to build outperforming stocks portfolios.
2. The relationship between the accruals mispricing and industry affiliation across different European countries.
3. The importance of corporate governance characteristics (independence and competence) to add value to the quality of earnings as a stock selection methodology.

The results point to the importance for investment professionals to be careful about applying widely accepted U.S. based stock selection methodologies because Europe is a different context. In fact, the main conclusions of the dissertation are that:
1. While earnings management decreased, the accruals mispricing is still present is some European countries (those with the highest number of institutional varibales indicating a higher probability of earnings management).
2. The accruals mispricing is not present in all industries within the Euroepan dataset studied.
3. Corporate governance quality matters and is linked to higher quality and higher future stock returns in the Netherland dataset.

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[1] Prior to 2005, each European country had its' own body of local accounting standards. In fact publicly listed companies were listed on the stock exchanges of their respective countries and subject to national supervision and national accounting standards.

Abstract

Die Europäische Richtlinie Nr. 1606/2002 hat ab 2005 die Vorschrift fuer die Mitgliedsstaaten der Europäischen Union eingeführt, die Bilanzen gemäß der Internationalen Finanz-Prinzipien (IFRS) zu erklären. Dieses Ereignis kann als eine der bedeutensten Veränderungen der Geschichte im Bereich der Finanzbuchhaltung berücksichtigt werden und hat als Hauptziel die Verbesserung der Transparenz und der Qualität des Berichterstattungssystems, von dem letztendlich die Investoren profitieren.

Die Debatte über das neue System der Finanzbuchhaltung ist jedoch noch offen und es gibt Skepsis aufgrund der Tatsache, daß ein einfaches Mandat ausreicht, um mehr Informationen, mehr Transparenz und effizientere Finanzmärkte zu erhalten.

Das Hauptziel dieser These ist, die Tendenz des opportunistischen Verhaltens seitens der Unternehmensleitung bei der Erstellung der Jahresabschlussberichte zu untersuchen und die jeweilige Auswirkung dieser Praxis auf die Investoren (Theorie der Interessenskonflikte) durch die Beziehung zwischen der Qualität der Erträge, der Corporate Governance und die zukünftigen Renditen der Aktien (Theorie der effizienten Märkte).

Der empirische Analysen Kontext ist derjenige Europas, angesichts der operativen Schwierigkeiten dieser Datengruppe vor der Einführung einer einheitlichen Gruppe von Buchhaltungsprinzipien.

Die Präsentation der Thesen macht von drei Original-Artikeln gebrauch, die sich auf drei Aspekte des Hauptziels konzentrieren:

1.Die Auswirkungen des neuen Buchhaltungssystems (IFRS) auf die Ertragsqualität, um festzustellen in welchem europäischen Land es möglich ist, von der Arbitrage der *aktiven Jahresabgrenzung* zu profitieren, um einen überdurchschnittlich leistungsstarken Aktien-Wertpapierbestand zu erhalten.

2.Die Beziehung zwischen der Arbitrage der *aktiven Jahresabgrenzung* und der Zugehörigkeit der europäischen Aktien.

3.Die Wichtigkeit der Eigenschaften des Corporate Governance (Unabhängigkeit und Kompetenz) um dem Qualitäts-Indikator der genutzten Gewinne mehr Wert zu geben, um überdurchschnittlich leistungsstarke Aktien auszuwaehlen.

Die Ergebnisse machen die Wichtigkeit achtzugeben für die professionellen Investoren deutlich, wenn die Assodate Methode im Rahmen der amerikanischen Analyse angewendet wird.

In der Tat sind die wichtigsten Schlussfolgerungen der These:

1.Trotz des rückläufigen Trends der Arbitrage durch die *aktive Jahresabgrenzung* ist es in einigen europäischen Ländern immer noch möglich, einen überdurchschnittlich leistungsstarken Aktien-Wertpapierbestand zu erhalten (insbesondere diejenigen, die eine erhöhte Anzahl von instituzionellen Variablen besitzen, die auf eine "Gewinnbeeinflussung" hinweisen).

2.Die Arbitrage verbunden mit der *aktiven Jahresabgrenzung* ist nicht in allen Bereichen des untersuchten Musterbeispiels vorhanden.

3.Die Qualität des Corporate Governance ist wichtig und steht in Verbindung mit einer höheren Qualität der Gewinne und laut der Studie des Musterbeispiels Holland, mit einer höheren Rendite.

Premise

This dissertation is structured as the cumulative work of three original articles presented in a monograph form. In addition to the three articles, there is an introductory section (Chapter 1) and a conclusion (Chapter 5). Given that the articles are shown as originally submitted to journals and/or conferences and seminars, there are inevitable repetitions between the general introduction and parts of the articles (Chapters 2, 3 and 4). The first article (Chapter 2) is under review at the Journal of International Financial Management and Accounting (JIFMA), while all three articles have been presented at various international conferences including:

- Mathematical and Statistical Methods for Actuarial Sciences and Finance, Universita' Ca' Foscari, Venice, April 2012

- International Accounting Conference, Universita' Ca' Foscari, Venice, November 2011

- AFFI PhD Workshop, Montpellier, France, May 2011

- 18th Annual Conference of the Multinational Finance Society,Rome, Italy, June2011

- EIASM 8th Corporate Governance Workshop, Brussels, June 2011

- EIASM 5th Workshop on Accounting and Regulation, Siena, Italy, September 2010

- EIASM 7th Corporate Governance Workshop, Brussels, June 2010

The dissertation has been edited by a professional English mother tongue.

0 Introduction

0.1 Problem Analysis

In the investment management industry, it is common for investors, analysts and portfolio managers to focus on a firm's bottom-line reported earnings as an indicator of a firm's future performance. Their main interest is to assess a company's ability to generate future cash flows using reported financial statements.From this perspective, a high quality earnings number is a good indicator of current and future operating performance and is a useful summary measure for assessing firm value. Such earnings are referred to in the accounting literature as "permanent earnings." [2] However, it may be important to include other financial statement items in the evaluation process, because the rules of financial reporting havemanagerial discretion embedded in them. This discretion manifests itself with "numerous opportunities to make critical estimates of variables that can affect reported earnings." These types of estimates made by management can bring both unintended and neutral errors as well as intended or strategic errors in the numbers that are reported. Managers do havenumerous and varied incentives to "meet the numbers" and the discretion to manipulate earnings. This discretionary behavior can result in observable and measurable systematic biases in reported earnings, ultimately producing deterioration in earnings quality. Corporate accounting scandals of the 21st century are a clear example that such practicesare not all that uncommon and are evidence that "persistence and predictability" in earnings are not sufficient conditions of high quality. For example, in the case of Enron,

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[2]Black (1980);Beaver (1998), Ohlson and Zhang (1998).

whichhad consistently positive EPS surprises from 1998 to 2000,managers were hiding losses in special purpose entities. In hindsight, the earnings that appeared to be persistent and predictable actually were poor indicators of current performance, and failed to accurately annuitize the intrinsic value of the firm.

Given that the purpose of accounting for a company is to convey complete and decision-relevant information about the financial and earnings position of the company, it is critical for portfolio managers and analysts to identify companies that could be manipulating earnings and that could, in a worst case scenario, result in bankruptcy and financial fraud. The importance of studying the "quality" of earnings in investment practice dates back to the seminal work of Sloan (1996) in the U.S., who documented an interesting anomaly associated with accounting accruals. This study found that current earnings performance was more persistent for companies with low levels of accruals, where accruals were measured as the difference between a firm accounting earnings and its underlying cash flow.Sloan's results suggest that it would be possible to build superior portfolios by selecting stocks with low levels of accruals and higher quality of earnings. In the U.S., the accruals anomaly has been extensively studied and confirmed. In contrast to the U.S., evidence on the accrual anomaly in other developed countries is sparse and conflicting. There is disagreement in published studies about which international countries, if any, do exhibit it. A recent comprehensive literature review (Richardson et al., 2010) on accounting anomalies states that "only a few papers examine whether the accruals anomaly is globally generalizable and the findings from these studies are somewhat mixed." What makes the international dataset a challenge is the fact that for years, companies domiciled in

different countries, used different set of accounting principles in compiling their financial statements. In fact, Kaserer and Klinger (2008) criticize prior studies investigating the presence of an accruals mispricing in international countries, because these studies pool different countries with varying accounting systems. Given the cross sectional differences, mixing data under different accounting standards and rules found across countries, is not justified.

0.2 Objective and Research Questions

The focus of the dissertation is on the importance of "Earnings and Governance Quality" as a determinant of future firm existence and performance, in the context of European countries.

Specifically, this research aims at contributing to the current unresolved puzzle in the literature with regards to the accruals mispricing in Europe and it is structured around the following three research questions, which will ultimately result in three original articles.

Research Question n.1

Following the suggestion that further research on a country by country basis is needed, we intendto investigate whether there is a difference in the presence and magnitude of the accruals mispricing in a sample of European countries before and after the introduction of Regulation No. 1606/2002, whichrequired all EU listed companies to

prepare their consolidated financial statements in accordance with IFRS as of January 1, 2005.

In fact, the mandatory introduction of a uniform body of accounting standards constitutes an interesting setting for researchers because it allows investigating whether international harmonization has been accomplished. While the needs for international harmonization of financial accounting standards go back to 1973 with the creation of the International Accounting Standards Committee (IASC), researchers (prior to 2005) produced robust evidence on the number of obstacles to the creation of a uniform set of accounting standards for financial reporting purposes. Citing factors such as cultural, economic factors, differences in legal systems, capital markets, governance,Baker and Barbu, 2007, discuss the impediments to harmonization. Currently academics are still debating whether the introduction of mandatory IFRS reporting brings with it true harmonization. The research presented in this dissertation adds additional points of clarification on the question.

Research Question n.2

To investigate whether the degree of accruals mispricing is an industry specific phenomenon in a sample of European countries as represented in the S&P Euro 350 Index.[3]

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[3] Chan et al.,2006study the accruals anomaly in the U.S. and find that the predictive power of accruals should vary across industries depending on the levels of working capital.

Typically, in investment management practice, accounting indicators to screen stocks are applied consistently across industries. Recently, more work is starting to be done at the industry level to find refined indicators.

Research Question n.3

To investigate whether corporate governance quality indicators (i.e. the presence of independent directors and absence of duality of the CEO=Chairman of the Board) in combination with an accounting measure, which detects earnings management and assesses earnings quality, can constitute a stock selection/screening mechanism for portfolio managers. The Netherlands is selected as the sample because it ranks high as one of the European countries with best corporate governance practices (Heydrick and Struggles, 2011) and it is a special case of corporate governance code system (rule of "comply or explain").

0.3   Theoretical Framework

0.3.1   Earnings management

Earnings management is, according to Schipper (1989, p. 92), "*the purposeful intervention in the external financial reporting process, with the intent of obtaining some private gains (as opposed to merely facilitating the neutral operation of the process).*" It occurs, according to Healy and Whalen (1999, p.367), when "*managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic*

performance of the company or to influence contractual outcomes that depend on reported accounting numbers."Ronen (2008, p.27) reflects on the above definition and highlights two weaknesses with it. First, "*it does not set a clear boundary between earnings management and normal activities whose output is earnings*" and second, "*not all earnings management is misleading.*" Specifically, Ronen (2008) classifies earnings management definitions in three clusters: white, grey and black. The white cluster refers to beneficial earnings, which are supposed to enhance the transparency of financial reporting by signaling to investors private expectations about future cash flows (Ronen and Sadan, 1981; Demski et al., 1984; Benish, 2001; Sankar and Subramanyam, 2001). For instance, Ronen and Sadan (1981) employ a signaling framework to argue that only firms with good futureprospects smooth earnings because borrowing from the future could be disastrous to a poorly performing firm when the problem explodes in the near term.

Demski et al. (1984) study the process by which companies decide which accounting methods to use. They present an economic model where owners and managers agree on the desirability of the decentralized choice of monitoring systems by those whose behavior is to be monitored (the managers themselves). The rationale is the fact that managers' access to superior private information improves the organization's contracting and decision-making opportunities. Similarly, Sankar and Subramanyam (2001) develop a two period model to study whether there is an informational advantage from allowing reporting discretion to a manager who has relevant private information. Their results show that, by allowing reporting discretion (via GAAP rules) subject to certain restrictions, the information content of reported earnings increases. The grey cluster refers to the manipulation of reports to the detriment of

shareholders. Fields et al. (2001, p.260), in an extensive literature review from the 1990s, succinctly put forth: "*[...] Although not all accounting choices involve earnings management, and the term earnings management extends beyond accounting choice, the implications of accounting choice to achieve a goal are consistent with the idea of earnings management, which occurs when managers exercise their discretion over the accounting numbers with or without restrictions. Such discretion can be either firm value maximizing or opportunistic.*" This perspective is also consistent with Scott (2003) who states that earnings management is the choice by a manager of accounting policies so as to achieve specific objectives."Finally the third cluster (black) refers to reporting misrepresentation and ultimately fraud. Here is where, according to Ronen (2008), Schipper (1989) and Healy and Whalen (1999) belong together with Tzur and Yaari (1999). For instance, Schipper (1989), in her commentary on earnings management, uses two analytical studies to analyze the conditions giving rise to earnings management. The first study is Dye (1988) who shows that as long as accounting data are used in compensation contracts, incentives can arise to manage the data used in contracts. The second study is Trueman-Titman (1988) who explore conditions under which firms will smooth income to create an impression of lower variance income. Both studies reveal that when there are two groups of stakeholders, one benefits from the effects of earnings management at the expense of the other. This happens because of the existene of asymmetric information between the two groups. This concept will be further developed in the section 0.3.2. Additionally, Tzur and Yaari (1999) go a step further and analyze the microstructure of firms'disclosures. They recognize that the existence of imperfections in auditing technology allows firms to successfully misrepresent financial reports. Further, they develop a model where, by

making public the management's draft, it is possible to deter management from misrepresenting the financial reports.

The three articles developed in this dissertation fall within the second and third cluster and they have the aim to exploit management behavior, to build portfolios of stocks with superior performance. In fact, in a recent study, Dichev et al.(2013)survey approximately 170 chief financial officers (CFOs) of a well diverse sample of U.S. public companies on the matter of earnings management for the purpose of earnings misrepresentation,and find that:

- 100% of the CFOs surveyed believe that some companies manage earnings

- It is estimated that, in any given period, roughly 20% of companies manage earnings. Further, the typical misrepresentation for such entities is about 10% of reported earnings per share

- CFOs believe that discretionary factors account for roughly 50% of "earnings quality

- CFOs think that most of earnings misrepresentation occurs in response to influence the stock price of a company (other motives are: pressure to hit earnings benchmarks, to influence executive compensation, toavoid adverse career consequences)

These facts, in addition to the numerous accounting scandals which happened during the early 21stCentury (WorldCom, Qwest, Parmalat, Satyam etc.), make us want to research the possibility to use accounting information, which proxy the grey (and black) definition of earnings management, to study market efficiency, stock price discovery and from a practical point of view to build portfolios of stocks with superior performance.

0.3.2 Agency Theory and Asymmetric Information

This dissertation investigates the practice of opportunistic behavior by managers in compiling financial reports in European countries and its impact on the quality of earnings, corporate governance and future stock returns. In fact, one part of this research deals with Information Asymmetry and Agency Theory. Jensen and Meckling (1976, p.310) argue that where ownership and management are separated, the accounting function is affected by the agency problem. They define an agency relationship as "*a contract under which one or more persons (the principal) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent. If both parties to the relationship are utility maximizers, there is good reason to believe that the agent will not always act in the best interest of the principal*(Jensen and Meckling, 1976)." Information asymmetry occurs when one group of participants has better (or timelier) information than other groups. In the context of this study, the principal is represented by the company's management and the agent is a group of investors. The source of information asymmetry is the superior knowledge that managers have about the firm's future. Accordingly, managers may have an incentive to make decisions in their own interest when preparing financial information, to the detriment of the company's owners (Fama, 1980; Fama and Jensen, 1983). Positive Accounting Theory (Watts and Zimmerman, 1978, 1979, 1986; Christenson, 1983) contextualizes why managers have the above incentives. It explains accounting phenomena based on the neoclassical economics maximization hypothesis, which states that individuals are concerned with maximizing their personal utilities, or, indirectly – their wealth. In fact, according to

the management compensation hypothesis,managers who have accounting incentives or their remuneration that is tied up with the firm's accounting performance will tend to manipulate accounting method and figures to show the accounting performance better than it should.(Deegan, 2009)

0.3.3 Accounting Standards

The accounting function can also be affected by accounting standards. In fact, as defined by dictionaries, accounting standards are "*principles that govern current accounting practice and that are used as a reference to determine the appropriate treatment of complex transactions.*" As such, the degree of flexibility (rigidity) of such principles can facilitate (limit) the need for subjective interpretation and hence, can cause opportunistic behavior by managers in compiling financial reports (Jeanjean and Stolowy, 2008). Researchers, studying the practice of earnings management in a dataset like that of the US public companies, can focus on the issue of opportunistic accounting practices by management by studying one set of accounting standards (US GAAP). However, when the dataset is comprehensive of several European countries, researchers are dealing with an additional issue (different sets of accounting standards). In fact, until 2005, different European countries were using different sets of accounting standards (local GAAPs). Hence, the degree of flexibility (rigidity) could have impacted the degree of earnings management practices across Europe[4]. After the introduction of Regulation No. 1606/2002, which requires all EU listed companies to prepare their consolidated financial statements in accordance with IFRS as of January 1, 2005, researchers are facing the new interesting research question of whether the

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[4]See for instance La Fond (2005), Liodakis et al. (2006), Leippold and Lohre (2007), Pincus et al. (2007)

introduction of a uniform set of accounting standards across Europe (International Financial Reporting Standards) eliminates or reduces the practice of earnings management. In the literature there are arguments supporting that IFRS can contribute to improve the practice of financial reporting based on the idea that these new principles plug gaps in local accounting standards (Jennings et al.,2004; Ball, 2006; Choi and Meek, 2005; Barth et al., 2008). On the other hand, there are studies supporting the contrary. In fact, according to Ormrod and Taylor (2004), IFRS have such characteristics as greater flexibility and subjectivity, which could cause an increase in the level of discretionary accruals. Daske et. al (2008) explain that there are reasons to think that mandatory adoption of IFRS alone may not be sufficient to increase the quality of financial reporting and that different levels of enforcement may contribute to cross country variations in the level of earning management. Soderstrom and Sun (2007) argue that cross country differences in accounting quality remained following IFRS adoption as a function of a firm's overall institutional setting, including its country's legal and political system. Additionally, Nobes and Parker (2010) state that many differences still remain despite the work of internationalization and harmonization of various regulatory agencies (which has led to a lessening of international differences). Specifically, Regulation 1606/2002 determines that:

- Appropriate and strict rules are key
- Member states are required to take appropriate measures to ensure adherence to accounting standards

- The EU wanted to ensure that a mutual concept for enforcement be developed through the Committee of European Securities Regulators (CESR[5])

With the above guidelines, the European Union distinguishes itself from the United States by not having a centralized European enforcement authority (like the SEC in the U.S.). As of the current writing CESR has been replaced by ESMA (European Securities and Markets Authority). ESMA consists today of the regulatory authorities from the 27 member states of the EU plus Norway and Iceland. Among its tasks, ESMA has to work to ensure a uniform and timely implementation of the laws in the member states. ESMA performs so called 'Peer Reviews' and if it finds deviations from the directives, it discloses them with the intent to exercise pressure on the member states. Further, Standard n.2 "Coordination of Enforcement Activities[6], which specifies in four principles how enforcement activities should be coordinated", introduces a sub-committee known as European Enforcers Coordination Sessions (EECS). This sub-committee has, among other tasks, that of identifying divergent and unclear interpretation of the IFRS standards in order to forward them to the IASB. Berger (2010) comments that, despite the past five years and still current significant contribution and importance of the EECS to ensuring uniform application of IFRS, the different approaches and methods used in the 29 countries still pose threats to full harmonization and comparability and cannot be overlooked (Berger, 2010). As of this current writing, the most recent update from ESMA[7] highlights that quality of the IFRS financial statements continued to improve as a result of the significant

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[5] CESR has been replaced by ESMA (European Securities and Markets Authority) in January 2011
[6] This standard is part of a body of two, which were established to discipline and harmonize the institutional supervisory system in the member states.
[7] Activity Report of the IFRS Enforcement activities in Europe in 2012, July 2013, www.esma.europa.eu

experience gained by the preparers withIFRS application since the first time application in 2005. Nevertheless it was noted that there is still room for improvement in the quality of financial reporting in certain areas such as the application of the classification criteria for assets held for sale, the determination of the discount rate for the calculation of defined benefit obligations, the classification and measurement of financial instruments, the assessment of goodwill impairment, the distinction between a change in an accounting policy and an accounting estimate and the disclosures about the risks and uncertainties or judgments and estimates used in preparation of IFRS financial statements.

0.3.4 Efficient Market Hypothesis and the Random Walk

The level of accruals has implications not only for financial reporting theory but also for capital markets efficiency theory. The Efficient Market Hypothesis (EMH) is the second part of my research. The pillar behind capital market efficiency is the Random Walk Hypothesis (RWH), which core studies trace back to the sixteen-century game of chance theory. The first application of the RWH to financial markets is the seminal work by Paul Samuelson (1965), who states that "in an informationally efficient market, price changes must be un-forcastable if they are properly anticipated by all the market participants." Therefore Samuelson argues that in a frictionless market and costless trading scenario, prices must always fully reflect all available information and no profits can be made from information based trading. This theory was further studied by Fama (1970, 1991). He states that "a market in which prices always fully reflect available information is called efficient" and, based on Roberts (1959), proposes to divide market efficiency in the three categories of weak, semi-strong and strong

market efficiency depending on the type of information reflected by prices (historical, publicly available and private, respectively).

At the same time, there are a number of theoretical and empirical studies counteracting EMH. LeRoy (1973) and Lucas (1978) show that RWH is not necessarily directly linked to EMH. In fact they demonstrate that RWH does not need to be satisfied even if prices fully reflect all available information. Grossman (1976) and Grossman and Stiglitz (1980) argue that efficient markets are an impossibility because if so, there would be little reason to trade. A number of studies focused on demonstrating that available information is not processed correctly, which leads to inaccurate valuations and hence mispricing (market anomalies). Investors, who are able to identify these mispriced opportunities, can exploit them. Among the first, Basu (1977) documented the use of price to earnings ratios (p/e) to forecast returns and observed that "low p/e" stocks outperformed their "high p/e" counterparts. Banz (1981) focused on the size anomaly and found that the fifty smallest stocks on the New York Exchange outperformed the fifty largest ones by an average of one percentage point per month for the period of 1931 to 1975. The small firm effect was confirmed by various future studies and in different countries[8]. This dissertation investigates the accruals mispricing, which fits into the body of research on market anomalies and focuses on accounting data. In fact, one of the most widely used sources of information to evaluate an investment is the firm's published financial reports. Due to complex accounting procedures and principles (which often permit the use of alternative reporting procedures depending on the situation), the expectation is that not all market participants are able to distinguish between misleading or false reported information.

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[8] Schwert (1983), Dimson and Marsh (1989, 1999)

An example of alternative reporting procedures is the timing of revenue and expense recognition, which is the well-known accruals concept in accounting. Within this realm, Sloan (1996) first documented that companies with large positive (income increasing) accruals in a given year tend to have low returns in subsequent years. After Sloan (1996), a number of studies investigated whether the accrual mispricing could be traced to the portion of accruals that reflects opportunistic behavior (discretionary accruals)[9]. There are two theoretical reactions to these studies: the anomalous behavior is due to inefficient markets or the predictability of returns, which may be indicative of shortcomings in the underlying asset pricing model. Supporting the first reaction are studies such as the one by De Bondt and Thaler (1985), who introduce the concept of "overreaction behavior by investors" to explain a pattern of stock prices divergence from fundamental value. Supporting the second reaction are studies such as those by Fama and French (1992), where they show that variables like those proposed by Basu (1977) and Banz (1981) can capture much of the cross sectional variation in stock returns over the period. Chan et al (2006) investigate three possible economic reasons behind the accruals mispricing: earnings manipulation, extrapolative biases concerning future growth and under reaction to business conditions. They find that the bulk of the evidence is supportive of the manipulation hypothesis.

0.3.5 Corporate Governance

Corporate Governance theory as a mechanism to improve financial reporting quality is the third part of my research. According to Hermann (2003, p.43), "*Good governance*

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[9]Jones (1991), Subramanyan (1996), Xie (2001), Thomas and Zhang (2002), Chan et al. (2006)

goes in-hand with reduced risk of financial reporting problems and other bad accounting outcomes," and in fact, Cohen et al. (2002) state that one of the most important functions of corporate governance is to ensure the quality of the financial reporting process. Fama and Jensen (1983 b) regard the Board of Directors as the highest control mechanism that is accountable for monitoring the actions taken by top executives in the firm. At the same time, the exercise of this monitoring function by the board is connected to the composition of its members. In fact, a number of studies found evidence on the association between poor governance (Board of Directors level) and poor quality of financial reporting quality (Beasley, 1996; Dechow et. al., 1995; Dechow et al., 2002; Peasnell et al., 2000; Klein, 2002; Kao and Chen, 2004).

Going a step further, Hilb (2008, p.161-163) reflects on the 21st Century "*creative auditing cases*" (Enron, Tyco and WorldCom) and proposes that the "*controlling function of the board (audit committee level) needs to be clearly differentiated from its specific monitoring function and it needs to focus on a professional analysis and scrutiny of internal and external auditing reports, (interim) annual reports and risk management scenarios.*" With regards to the composition of this separate audit/risk management committee, Hilb proposes that it should consist of three board members who are independent with no executive functions in recent years and they should be equipped with sufficient knowledge and demonstrated experience in finance and accounting.

The theories presented above have been tested empirically mainly on the US dataset. In fact, the existence of the accruals mispricing in Europe is still a puzzle. Putting together the three theoretical branches reviewed above, this study intends to research the impact of the new International Financial Reporting Standards (IFRS) on the

presence and magnitude of the accruals mispricing in a sample of European countries. It will apply measures identifying the levels of accruals to single countries as well as across industries. Finally, it will test whether there is a link between various corporate governance control mechanisms and earnings quality and higher future stock returns using a special case of corporate governance code system (the Netherlands dataset).

Figure 1: Theoretical Framework
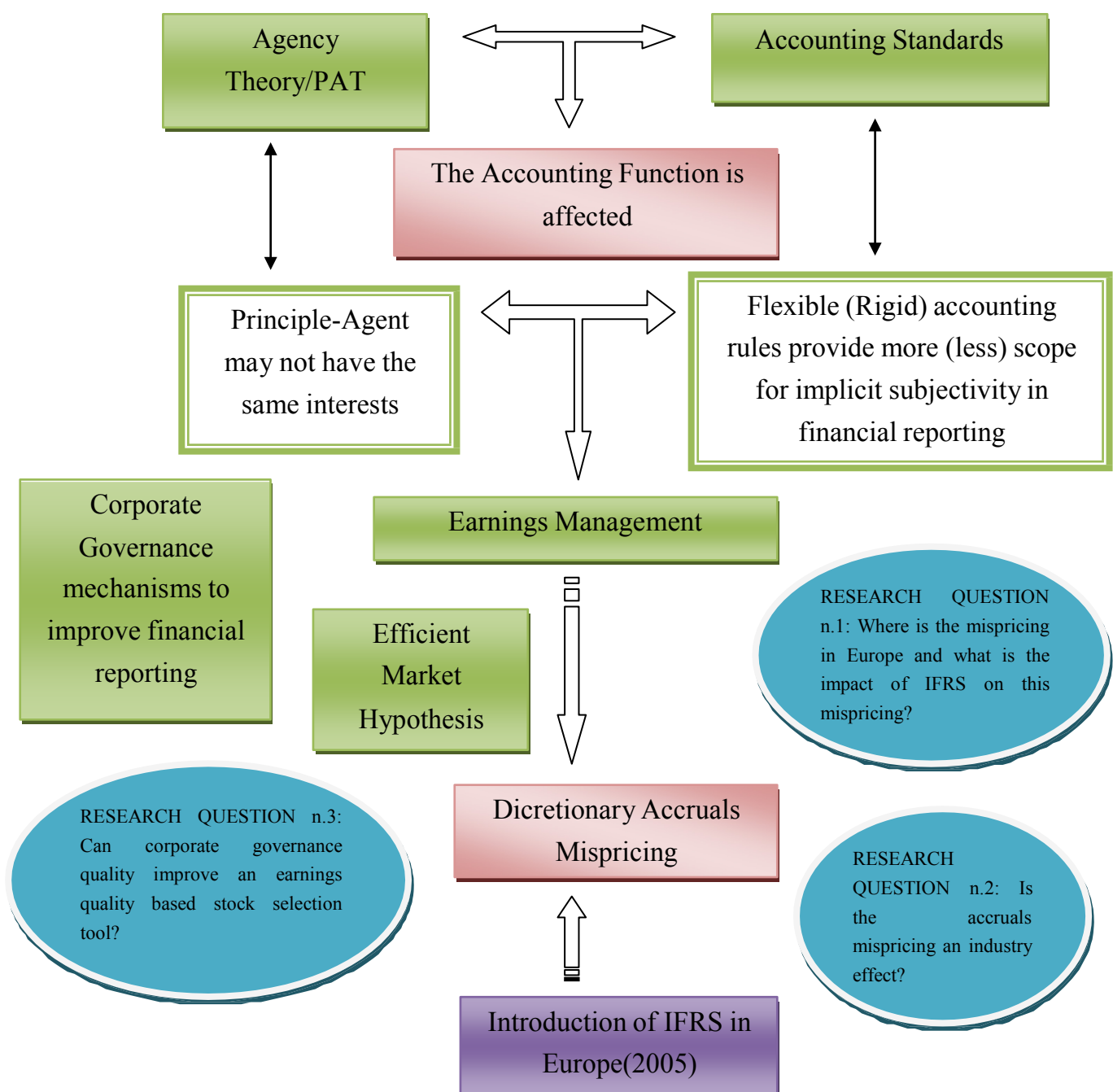
Figure 1 presents a schematic presentation of the Theoretical Framework that is at the base of this publication.

Figure 1 above is the schematic presentation of the Theoretical Framework at the base of this research. The green boxes are the five major pillars of this framework:

- Earnings Management

- Agency Theory and Positive Accounting Theory

- Accounting Standards

- Efficient Market Hypothesis

- Corporate Governance

The accounting function is affected both by the presence of an Agency relationship and by the presence of different Accounting Standards. In the first case, given that ownership and management are separated in public companies, the accounting function is affected by an agency problem. In fact, since in a "for-profit" venture both parties are utility maximizers, there is good reason to believe that the agent will not act in the best interest of the principle.In the second case, the flexibility (rigidity) of the accounting standards can cause an increase (decrease) the need of subjectivity needed to interpret these standards. As a consequence of the above situations, opportunistic behavior by management in compiling financial reports can arise. This opportunistic behavior is the so called "earnings management" practice. Such a practice, if not correctly discounted by markets' participants, originates mispricings and opportunities to trade profitably based on available accounting information. This fits into the theory on (In)Efficient Markets. Finally, Corporate Governance can act as a mechanism of control over financial reporting. Hence it is important to process board composition

characteristics to find important information to build outperforming stock portfolios. Within this framework, the blue ovals are the three research questions fitting into this framework.

0.4   Definitions and Measures of Earnings and Governance Quality

Given that accounting researchers define "earnings" quality as the presence of earnings, which reflect current performance, are useful for predicting future performance and correctly discount intrinsic firm value" (Black,1980;Beaver,1998; Ohlson and Zhang,1998), it follows that earnings management decreases earnings quality.

One way for managers to manipulate earnings is to manipulate accruals. Accruals are the difference between firms' accounting earnings and their underlying cash flows. In fact, under accrual accounting basis (and different from cash basis), revenues are recorded when a good or service has been provided to the customer (and not when cash is collected) and expenses are reductions in net assets associated with the creation of those revenues. While we cannot completely discard the usefulness of accrual accounting since it provides more timely and relevant information for decision-making, this dissertation argues that it is important to discern among earnings manipulation.

This study focuses on the concept of "accruals," which capture the opportunistic behavior of manipulation by managers. To measure accruals, I use two sets of

variables. The first set is referred to as "Level 1 Variable" while the second set is referred to as "Level 2 Variables."

 The Level 1 variable (a proxy for earnings manipulation used in Chapter 2) represents an "aggregate measure" which includes all components of current and long-term accruals. It is based on Dichev et al. (2008) and Richardson et al. (2005). This measure is considered superior to other measures of discretionary accruals (i.e. Chan et al., 2006 and Jones, 1991) for three main reasons:1) it is an actual measure rather than an estimated one (Shan, 2010), 2) it is broader since it includes non current and financial assets which present discretion and 3) un-tabulated results on the U.S. dataset, show empirically that it is a superior predictor of the accrual mispricing. The main idea behind this measure is to compare financial statements based on an accrual accounting system with those based on a pure cash basis. This way, it is possible to extrapolate discretion. In fact, every line item of an accrual basis financial statement is the result of some sort of estimation based on a subjective choice of managers. For instance, to report "net" receivables, managers need to make the determination that sales were made and that those credit sales are to customers with sufficient credit standing and capacity to pay the amount that they owe. According to Dechow et al. (2008) and Richardson et al. (2005, 2006), the "balance sheet based accruals ratio" is calculated by measuring the net change across all non-cash accounts. Therefore aggregate accruals are simply the change in net assets from the start to the end of the period. Assets are net of the cash and debt related accounts because these accounts are essentially discretion free. Finally, aggregate accruals are transformed into a ratio by making it comparable across companies of different sizes.

$$\text{Accruals Ratio BS} = \frac{NOA_t - NOA_{t-1}}{(NOA_t + NOA_{t-1})/2} \text{ Eq. 1}$$

$NO\diamond\diamond_t$ = Net Operating Assets at time t

$NO\diamond\diamond_{\diamond\diamond-1}$ = Net Operating Assets at time t minus 1

NOA = (Total Assets – Cash and Short Term Investments) – (Total Liabilities – Long Term Debt – Debt in Current Liabilities)

Richardson (2009) proposes a sister aggregate accruals ratio which is based on information from the cash flow statement. The reason why I choose to use the balance sheet ratio is because information to build the cash flow ratio is not available for all the companies in the sample. The database used in this dissertation is the Standard & Poor's Global Vantage database. After evaluating the level of data losswe would have sustained, it was decided that the bias coming fromusing this substandard sample would be more severe than the bias introduced by using data from the balance sheet to construct the accruals ratio. Infact, it has to be noted that, according to Hribar and Collins (2002), the balance sheet approach relies on the presumed articulation between changes in working capital, balance sheet accounts and accrual components of revenues and expenses on the income statement and this presumed articulation breaks down when non operating events such as reclassifications, acquisitions, divestitures, accounting changes and foreign currency translations occur. Further, Hribar and Collins study and show that the error induced by using a balance sheet estimation approach contaminates computations of so called discretionary or abnormal accruals and can lead to erroneously concluding that earnings management exists when no such opportunistic activity is present. Richardson (2009) acknowledges the above problem by stating that while the two approaches (balance sheet and statement of cash flow) are conceptually equivalent, they will not generate the exact same numbers due to a

combination of non cash acquisitions, currency translation and inconsistent classification across the two statements. Nonetheless, according to Richardson (2009), these differences are expected to be minimal. In fact, the typical correlation between a broad accrual measure based on balance sheet data with one based on the statement of cash flow is in excess of 0.80 (Richardson, 2009). We tested the correlation between the ranking based on balance sheet data (balance sheet accruals ratio) and that based on cash flow statement data (cash flow accruals ratio) on a sample of US companies and confirmed a 0.90 correlation. Although hand collecting the data was an option, the bias introduced from such a subjective approach was deemed inferior. Standard & Poors employs generally accepted methodologies that utilize standardized rules which allow comparability not only within samples, across samples and across other research studies. The Global Vantage database has been tested in the marketplace by virtue of the numerous studies that have used it. This is an advantage that far outweighs any benefits from using the cash flow ratio on a "hand-gathered" basis would provide over and above the balance sheet ratio. The decision to utilize the balance sheet ratio is optimal and dominates all alternatives given the challenges presented in conducting research using financial data obtained from European countries. Finally, it is expected that the errors introduced by the balance sheet approach are randomly distributed across countries, size etc. and would not dominate or explain the accrual effect itself. Hence, the data collection process we employed is optimal under the circumstances and we are confident of the results produced in our research.

The Level 2 variables focus on individual aspects of accruals such as the practice of revenue misstatement and that of deferring of expenses. Following the intuition that

specific earnings management practices are particularly present in specific industries[10], these second level variables will be used in Chapter 3 to investigate whether accruals are an industry effect. In addition to investigate whether earnings management is stronger in certain industries, these measures can be used to assess which accruals are used in the manipulation process. In fact, as Richardson (2009, p.750) points out, "*by focusing on components of total accruals, it is likely to generate more effective discriminatory power to identify earnings restatement.*" Figure 2 summarizes all measures in this second group. Richardson (2009) proposes other industry specific measures; however they are not analyzed in this dissertation to to data unavailability in the Standard & Poors Global Vantage database.

Figure 2: Review of Measure capturing Earnings Management

Level 2 Variables	Ratio	Interpretation
REVENUE RECOGNITION		
Revenue Misstatement	$\Delta \Diamond\Diamond SO = \dfrac{\dfrac{\Diamond^{Ne\Diamond\Diamond\,A\Diamond\Diamond_{t}}}{365\Diamond_{\Diamond\Diamond ot\,Re\Diamond\Diamond_{t}}} * 365 - \dfrac{Ne\Diamond\Diamond\,A\Diamond\Diamond_{\Diamond\Diamond-1}}{365_{\Diamond\Diamond ot\,Re\Diamond\Diamond_{\Diamond\Diamond-1}}} *}{\dfrac{Ne\Diamond\Diamond\,A\Diamond\Diamond_{t}}{*}} *$	This ratio gives a sense for how quickly the company is able to convert its credit sales into cash. Increases in this ratio are a red flag for questionable credit sales that take longer to convert into cash.

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[10] For instance, measures focusing on inventory are particularly relevant for retail and manufacturing while measures focusing on unearned revenues are relevant to the software industry. (Richardson, 2009)

EXPENSES RECOGNITION		
Understating Expenses	$$\Delta DIO = \frac{\frac{Net\ Inv_t}{COGS_t} * 365 - \frac{Net\ Inv_{t-1}}{COGS_t} * 365}{\frac{Net\ Inv_{t-1}}{COGS_t} * 365}$$	On average, an inventory buildup is a good indication that the company has problems with managing its inventory levels and/or has not been sufficiently aggressive in writing down the value of that inventory as the turnover slows. Increases in this ratio may indicate potential problems related to earnings quality.

Where,

DSO$_{it}$ = Days Sales Outstanding

DIO$_{it}$ = Days Inventory Outstanding

A/R$_{it}$ = Accounts Receivable

Net Inv$_{it}$ = Net Inventories

COGS$_{it}$ = Cost of Goods Sold

The third research question of this study focuses on the quality of corporate governance. In fact, corporate governance attributes help investors by aligning the interests of managers with those of shareholders and by enhancing the reliability of financial information and the integrity of the financial reporting process (Watts and Zimmerman, 1986). In this context, corporate governance quality is defined by the development level of the system " […] by which companies are strategically directed, […] and holistically controlled in an entrepreneurial and ethical way[…]" (Hilb, 2012, p. 7).In this context, I focus on characteristics of "independence" and "competence" of the Board of Directors and the Audit Committee. This can be a limitation of the study

because governance quality can have more dimensions. However, in order to facilitate measurability and given the availability of information, it is limited to these two dimensions, which the authors consider a good proxy for defining control mechanisms over the financial reporting system. In fact, the Board of Directors can play a major role in controlling agency problems. In particular, from an agency theory perspective, the board can be an effective monitoring mechanism if there is independence from management (Beasley, 1996; Dechow et al., 1996). According to Fama and Jensen (1983), independent members on boards make boards more effective in monitoring managers and exercising control on behalf of shareholders. The Securities and Exchange Commission's Regulation 14A, Item 6b, sets the condition under which directors' affiliation with a firm must be disclosed in proxy materials. Directors with the following relationships must be identified:

- o Employment by the corporation or an affiliate within the last five years

- o Any family relationship closer than second cousin

- o Affiliation in the last two years with a concern that has had a customer, supplier, banker or creditor relationship with the corporation

- o Affiliation with a investment banker that has performed services for the company within two years or will do so within one year

- o Holding control of corporate stock

- o Association with a law firm engaged by the corporation

Past research is however not so specific in identifying the definition of independence. In measuring "independence", I follow not only the directives in the SEC Regulation 14A, item 6B (see Hilb, 2008) but also look for more granular possible relations such as members' belonging to social or educational clubs, following recent developments

under the "social networks" theory (Cohen et al., 2008a, 2008b). In particular, I define "independence" at three levels. The first level differentiates between companies where the CEO is not the Chairman of the Board. In fact, Corporate Governance guidelines assume that a board is less able to perform a monitoring role when the CEO is also the Chairman of the Board. CEO duality indicates that less control is likely to be exercised over management's activities and behavior. The second level focuses on whether the majority of the board members are independent according to a comprehensive definition of independence (see the British PIRC report, Clarke 1998 p.122; Hilb 2008 p.59) including not having directorships in common with other directors. Finally, the third level looks at whether directors share a degree from the same school or belong to the same educational/social club (Frazzini and Cohen, 2008).[11]

I define "competence" at the Board of Directors level is defined as the presence of at least one member with a finance, accounting and (or) a graduate degree in business (i.e. an MBA). This can be another limitation of the study because competence of a director has multiple dimensions. In fact, according to Hilb (2008), these dimensions should include competency based on necessary know how for the company context. However, due to the limited information available on the database used[12] and since the study focuses on the controlling function of the Board of Directors, I limit the measurement to the educational degree.

Past research[13] has shown that it is the Audit Committee that is likely to provide shareholders with the most protection in maintaining the credibility of a firm's financial statements.

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[11]The independence dimension for the Audit Committee is measured at the second and third level.
[12]The database used to collect corporate governance information is People Reuters from Thomson One Banker.
[13] Wild (1996), Klein (2002), Krishnan (2005), Bradbury et al. (2006), Baxter and Cotter (2009)

The study focuses onthree characteristics of the audit committee: the size, the proportion of independent directors sitting on the committee and their expertise. In particular, expertise is defined as the presence of directors with a financial background obtained by holding a degree in finance, business and/or accounting, and/or with an international financial certification such as the CPA (Chartered Public Accountant) or the CFA (Chartered Financial Analyst).

0.5 Research Criteria: Relevance, Innovation and Rigor

Financial analysts are in the business of processing and interpreting companies' information with the goal to determine a firm value. An important step in the determination of a firm's value is the assessment of earnings and their quality as an indication of current and future performance. Given the recent amount of corporate frauds and scandals in the world and given that, investors and portfolio managers often rely on such analysts' evaluations to build their own portfolios of stocks, it is of great practical importance to find ways to evaluate the quality of earnings of European companies and to find a measure (or a group of measures) which can serve as a screening mechanism for portfolio managers and investors to build outperforming portfolios.

This dissertation is of particular interest to quantitative equity portfolio managers, who look for screening factors to apply to a wide range of companies at the same time (for instance the 600 companies included in the EuroStoxx600 index for a European based quantitative equity strategy) rather than visiting company managers and very closely studying the financial statements' footnotes (like fundamental managers do). In fact, in

this specific context, quantitative managers look for "proxies" (also known as factors or indicators) of aggressive accounting practices. Ultimately, they want to invest in companies with strong quality of earnings.

Proxies for aggressive accounting and earnings quality have been studied since the early '90s[14], however much of the empirical tests were done on the U.S. dataset. In addition, the available empirical evidence on the international datasets is contradicting. Some studies show that the accruals mispricing is present in many developed countries (see La Fond, 2005 and Liodakis, 2006), others say that the accruals mispricing is only present in countries characterized by a common law system. Clearly, when analyzing international dataset, it should be recognized that there exist differences in their legal, accounting, governance systems and industry concentration. These differences can have an impact on the presence and magnitude of such practices like "earnings management." Sir David Tweedy, who is the chairman of IASB, recently[15] reflected on the importance of taking into account cultural differences in accounting enforcement and commented that "*In Britain everything is permitted unless it is prohibited; in Germany it is the opposite, everything is prohibited unless it is permitted; in the Netherlands everything is prohibited even if it is permitted; and in France, of course, everything is permitted especially if it is prohibited.*" Therefore, this study hopes to contribute to the practice of quantitative portfolio management by showing where the accruals' mispricing is present in Europe, after the introduction of the IFRS. Hence, this measure can become an important factor to be used by quantitative portfolio managers in their screening portfolio construction process. At

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[14]Jones (1991), Sloan (1996)
[15]"Accounting for Financial Reform" speech, Japan Society, New York, April 2010

the same time, quantitative analysts and portfolio managers need to be careful when applying financial metrics to a wide universe of stocks because the predictive power of the accruals effect varies across countries. The varying magnitude and persistence of the predictive power can depend on the legal, accounting and governance systems as well as industry concentration of the country, which in turn has an impact on the level of permitted usage of accruals accounting. This is why it is important to study one country at a time (different from prior studies which pulled all data together).

From an academic perspective, this dissertation's theoretical context can be identified into three major academic fields: capital market efficiency, principle-agent conflicts and corporate governance as a control mechanism. Following are some of the major contributions of the dissertation:

- Usage of a broader measure of accruals, which is not based on estimation techniques that have been criticized in the literature as being poor identifiers of earnings management (Ball, 2009; Ball and Shivakumar, 2008; Shan et al., 2010)

- Analysis of the dataset into two samples: pre and post the year 2005. This is an important contribution to the literature because it considers the impact of a "major"event that is the introduction of the requirement to report financial data under IFRS (and no longer under local GAAPs). This methodology allows to distinguish between periods where European companies had different and individual reporting standards (the local GAAPs)

- Comparison of the aggregate accruals measure with other more focused measures of earnings management, which to our current knowledge is not present in the European dataset literature.

0.5.1 The sample

For research question n.1, the sample consists of all firms listed on stock exchanges of a sample of nine European countries: the United Kingdom, Ireland, Germany, France, Italy, Belgium, Spain, Sweden and the Netherlands. These nine countries are chosen because they represent different financial reporting practices and different types of institutional variables consistent with five categories as presented in Nobes, 1983 (see Figure 3). Nobes (1983) focused on classifying countries of the Western World based on financial reporting practices concerned with measurement and valuation because they are those determining the size of the figures for profit, capital, total assets and liquidity.Examples of factors for differentiation are: the type of users of the published accounts, importance of tax rules in measurement, conservatism versus prudence[16]. In the context of this dissertation, this sample is chosen because it is hypothesized that there is a link between these five groups, which have different financial reporting practices as shown by Nobes (1983), and possible differences in the presence and magnitude of accruals mispricing. To further exploit the differences between these five group, the countries in this study will be categorized based on their legal, accounting and governance structure.It is to be noted that Nobes (2008) concludes that the above classification (Figure 3 and Nobes, 1983) is still a relevant classification for several purpuses. In fact, as Nobes (2008) states, most accounting in most countries continues to be based on national rules.

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[16] For additional details, the reader should refer to Nobes (1983)

Figure 3: A Hypothetical Classification of Financial Reporting Measurement Practices in Developed Western Countries in 1980 (extract from Nobes, 1983).
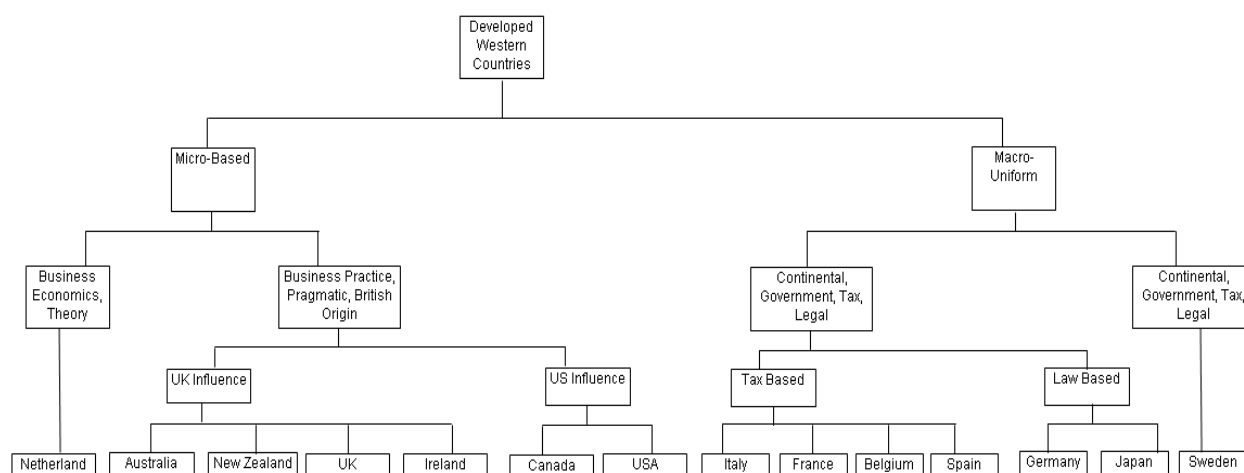
Figure 3 presents a classification of 14 Western World countries and is an extract from Nobes (1983). It focuses on the financial reporting practices of public companies related to measurement and valuation. The date of the classification is 1980. It also focuses on the international differences in reporting of such companies, which are of interest to shareholders, creditors, auditing firms, taxation authorities, managements and harmonization agencies (Nobes, 1983). See Nobes (2008) for confirmation of the validity of this classification.

Annual financial statement and monthly returns data are obtained from Standard & Poor's Global Vantage database. I consider both active and inactive companies as of July 2010, to control for survivorship biases. Financial companies are excluded from the sample given that these firms have peculiarities when it comes to the definition and calculations of accrualsand accounting ratios are calculated by assuming a six-month lag[17] after the end of the fiscal year from which I gather financial data. Specifically, accounting ratios are obtained at the end of June of each year and then correlate these measures with the subsequent 12 monthly returns from July to June. This method allows controlling for look-ahead biases.

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[17]Based on Chan et al. (2006)

For research question n.2, the sample consists of all active and inactive public companies (excluding financial companies) from a wider number of countries. In fact, I pool together data from seventeen European countries included in the S&P Euro 350[18] benchmark, aggregated by Global Industry Classification Standards (GICS)[19] sectors. A wider number of countries are selected to allow for higher robustness when testing industries with a low number of constituents per country.

For research question n.3, the sample consists of all active and inactive public companies (excluding financial companies) from the Netherlands and with data available on the Standard & Poor's Global Vantage database. The Netherlands constitutes an interesting case from a governance angle because it is ranked as one of the European countries with the best corporate governance system[20] but, differently from the Sarbanes-Oxley Act of 2002, the Dutch Corporate Governance Code (the Tabaksblat Code) contains an 'apply-or explain' principle, offering the possibility to deviate from the Corporate Governance Code as long as any such deviations are explained. To the extent that such deviations are approved by a general meeting of board members, the company is deemed to be in compliance. Therefore, it is important to study corporate governance control mechanisms since the correct mechanisms may not be fully in place, due to this exception in the Dutch code.

I obtain data on corporate governance characteristics from the Reuters People database available through Thomson One Banker as well as from individual company's proxy statements.

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[18]Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxemburg, Netherlandss, Norway, Portugal, Spain, Sweden, Switzerland and the U.K.

[19] The GICS industries are: Energy, Materials, Industrials, Consumer Discretionary, Consumer Staples, Health Care, Information Technology, Telecommunication and Utilities

[20] Heydrick and Struggles, 2011

The overall period tested changes depending on the research question. For research question n.1, where I test the impact of IFRS to the accruals mispricing, I study two subsamples: 1999-2004 and 2006-2010. For research question 2 and 3, I concentrate the analysis for the period from 2006 to 2010, to allow for a homogeneous and comparable set of data.

0.5.2 The Research Methodology

This study uses two types of analysis: quintile analysis and Fama-MacBeth regressions (Fama Macbeth,1973).

Quintile analysis consists of groupings of stocks to examine their risk and return characteristics. In addition, given that the study analyzes a panel of both cross sectional (the active and inactive set of public companies) and time series (from 1999 to 2010) data, the econometric technique which is commonly used for this type of analysis is the Fama-MacBeth (1973) regression procedure. Fama Macbeth (1973) is numerically equivalent to pooled-time-series, cross section ordinary least square (OLS) with standard errors corrected for cross-sectional correlation, and also to a single cross-sectional regression on time series averages with standard errors corrected for cross sectional correlation. This technique requires running a cross-sectional regression at each time period of interest as follows:

$$y = \alpha_{it} + \beta x_{it} + \epsilon_{it} \qquad i = 1,2,.....N \qquad t = 1,2,.....T \quad \text{Eq. 4}$$

They suggest that α and x are estimated as the average of the cross sectional regression estimates.

$$\bar{\phi} = \frac{1}{T}\Sigma^{T}_{t=1}\phi_{t} \quad Eq.5$$

$$\hat{\beta}=\frac{1}{T}\Sigma^{T}_{t}\hat{\beta} \quad Eq.\ 6$$

Most importantly, they suggest that standard deviations of the cross-sectional regression estimates are used to generate the sampling errors for these estimates[21].

$$var\left(\hat{\beta}_{FM}\right) = var\left(\frac{T\times(\phi-1)}{T^{2}}*cov\left(\hat{\beta}_t,\hat{\beta}_s\right)\right)$$

$$= \frac{1}{2}*\frac{\sigma^{2}_{\varepsilon}}{2}+\frac{T(\phi-1)}{2}*\frac{\sigma_{x}}{\rho}\frac{\varepsilon}{2}$$

$$= \frac{\sigma_{\varepsilon}}{N\sigma_{X}^{2}}*(1+(T-1)*\rho_{X}\rho_{\varepsilon}) \quad Eq.\ 7$$

In practice, for research question n.1, I will first estimate a cross sectional regression at each point in time from 1999 to 2010 to determine the relative importance of the accruals ratio variable (Richardson, 2009) in predicting future returns. Specifically, I will analyze results pre and post 2005. In fact, the year 2005 represents the point in time when Regulation No. 1606/2002 required that all EU listed companies would start to prepare their consolidated financial statements in accordance with IFRS. The dependent variable will be the total return on the stock at time period t+1. The total return will be measured on a 1, 3, 6 and 12 months holding period basis (HPR). Holding period returns represent cumulative returns for the specific period considered. I select four different time frames to calculate holding period returns because, consistent with prior academic literature; I want to test for different persistence in the signal. Following is an example of the regression equations:

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[21]Petersen, 2005

$$HPR_{it+1} = \beta_0 + \beta_1 \, BSAccr_{it,t}$$

$$+ \epsilon_{it} \quad \text{Eq. 8}$$

Where:

BSAccr$_{it}$ = BS Accruals Ratio (Dechow et al.,2008; Richardson et al., 2005, 2006)); see Eq. (2)

HPR$_{t+1}$ = Holding Period Return

The research methodology followed for research question n.2 will be the same as for research n.1 (Fama-MacBeth, 1973). The distinctive changes will be the independent variables studied. In fact, in addition tothe accruals ratio as measured by Dechow et al.,2008; Richardson et al., 2005, 2006), four additional variables will be introduced based on Richardson et. al (2009). These measures intend to capture specific earnings management techniques (i.e. revenue misstatement and deferring of expenses). The dataset will be studied on an industry basis rather than on a country-by-country basis to check whether the presence and magnitude of the accruals mispricing in Europe is an industry effect rather than a country effect. The coefficients and t-statistics of the yearly cross sectional regressions will be averaged over time. Following are examples of the regression equations:

$$HPR_{it+1} = \beta_0 + \beta_1 \, AR_{it,t}$$

$$+ \epsilon_{it} \quad \text{Eq. 9}$$

$$HPR_{it+1} = \beta_0 + \beta_1 \, INV_{it,t} +$$

$$\epsilon_{it} \quad \text{Eq. 10}$$

$$HPR_{it+1} = \beta_0 + \beta_1 \, DSR_{it,t} +$$

ϵ_{it} ~~Eq. 11~~

$$HP\lozenge\lozenge_{\lozenge\lozenge+1} \;=\; \lozenge\lozenge_0 + \lozenge\lozenge_1\, DI\lozenge\lozenge_{\lozenge\lozenge,t} +$$

ϵ_{it} Eq. 12

Where,

$\lozenge\lozenge_1$ = coefficient

$\lozenge\lozenge_0$ = intercept

$BSAccr_{i,t}$ = Balance Sheet Accruals Ratio (based on Richardson, 2009)

$AR_{i,t}$ = Accounts Receivables Ratio (based on Richardson, 2009)

$INV_{i,t}$ = Inventory Ratio (based on Richardson, 2009)

$DSR_{i,t}$ = Days Sales Ratio (based on Richardson, 2009)

$DIR_{i,t}$ = Days Inventory Ratio (based on Richardson, 2009)

$HPR_{i,t+1}$ = Holding Period Return

All returns are in local currencies.

To explore research question n.3 and to assess the link between accruals, future stocks returns and corporate governance indicators, I will use the same statistical methodology used for research questions n.1 and n.2 (Fama-MacBeth regression). What differs this time are the "independent variables." In fact, while the dependent variable will still be the total return on the stock at time period t+1, measured on a 1, 3 and 6 months holding period basis (HPR), the independent variables will be augmented with various combinations of the previously mentioned corporate governance variables. Specifically, I will test the following equations:

$AccRatioRank_{it} = \beta_0 + \beta_1 BoDIndRank + \epsilon_{it}$ Eq. 13

$AccRatioRank_{it} = \beta_0 + \beta_1 BoDIndSkilRank + \epsilon_{it}$ Eq. 14

$DiscrAccRank_{it} = \beta_0 + \beta_1 AudRank + \epsilon_{it}$ Eq. 15

$AccRatioRank_{it} = \beta_0 + \beta_1 OverallRank + \epsilon_{it}$ Eq. 16

$HPR_{t+1} = \beta_0 + \beta_1 BoDIndRank + \epsilon_{it}$ Eq. 17

$HPR_{t+1} = \beta_0 + \beta_1 BoDIndSkilRank + \epsilon_{it}$ Eq. 18

$HPR_{t+1} = \beta_0 + \beta_1 AudRank + \epsilon_{it}$ Eq. 19

$HPR_{t+1} = \beta_0 + \beta_1 OveralRank + \epsilon_{it}$ Eq. 20

Where:

AccRatio Rank = Accruals Ratio Ranking

BoDIndRank = Board of Directors Ranking based on Independence Criteria

BoDIndSkilRank = Board of Directors Ranking based on Independence and Competence Criteria

AudRank = Audit Committee Ranking based on Independence and Competence Criteria

OverallRank = Board of Directors and Audit Committee Ranking based on Independence and Competence Criteria

The remainder of this research is organized as follows: Chapters 2,3 and 4 present three original articles while Chapter 5 will conclude.

0.6   Linkages among the three papers

The three articles are linked by the main objective of finding earnings and governance indicators to derive astock-screeningmodel for European companies. In particular, the first article starts with a look at specific European countries to determine whether the introduction of a new accounting system impacted the presence of an accruals mispricing and whether this mispricing still exists today in certain countries. The second article goes a step further to investigate the accruals mispricing at the industry level. Additionally, the second article utilizes different ratios representing the accruals mispricing with the aim to understand whether certain industries have specific characteristics and are more prone to management of individual accruals components. Finally, the third article explores the possibility of augmenting the earnings quality screenings with corporate governance indicators.

The practice of investment and money management is pursued in various ways. Two of the main portfolio construction methodologies are defined as "fundamental" money management and "quantitative" money management. This dissertation explores the second option and it focuses on the European universe of investable stocks. Quantitative money management has not yet fully penetrated Europe. Hence, it is critical to investigateareas where differences in the universe of European stocks preclude the adoption of US inspired methodologies.

1   The Introduction of IFRS: Evidence from the Mispricing of Accruals in Europe

Elisabetta Basilico
USG, University of St. Gallen, St. Gallen, Switzerland
E-mail: elisabetta.basilico@yahoo.com

Tommi Johnsen

Reiman School of Finance, Daniels College of Business, University of Denver, Denver, CO, USA
E-mail: tjohnsen@du.edu

Abstract

This article examines the presence and magnitude of the accruals anomaly in nine European countries. The nine countries examined represent different groups of public companies with similar financial reporting practices and similar institutional characteristics. Therefore, we are able to study the effects of the mandatory introduction of International Financial Reporting Standards (IFRS) on the mispricing of accruals in these countries and the impact of institutional factors on a pre-introductory and post-introductory basis. We find cross-country variations in spite of the stated aim of IFRS to improve international harmonization, comparability, and financial reporting quality across countries.

Keywords: Accruals Mispricing, International Financial Reporting Standards, Stock Selection, Europe

1.1 Introduction

European Regulation n. 1606/2002 introduced the mandatory requirement that countries in the European Community report their financial statements under

International Financial Reporting Standards (IFRS) starting in fiscal year 2005[22]. We can safely say that the global introduction, and in some cases, the "mandatory" introduction of IFRS for listed companies has been one of the most significant regulatory changes in accounting history. The main aim of regulators was and still is to increase international harmonization and comparability as well as to improve corporate transparency and financial reporting quality. This should ultimately benefit investors. However, the debate on the merits of the new accounting system is still open and there is skepticism that a simple mandate of new accounting standards is sufficient to achieve more informative and transparent corporate reporting and more efficient capital markets. As various authors argue, management reporting incentives, which are shaped by a countries' institutional factors such as the tradition of law (common vs. code), monitoring mechanisms (high vs. low enforcement), and investors' protection (strong vs. weak anti-director rights) play a crucial role for reporting outcomes (Ball et al., 2003; Ball and Shivakumar, 2008; Burgstahler et al., 2006).

Our objective is to study whether the introduction of IFRS affected the efficiency of information processing as evidenced by the market reaction to the use of accruals as an indicator of the quality of reported earnings found in European capital markets. Specifically, we study the behavior of accruals mispricing over the 1999-2010 time frame in nine European countries representing different groupings based on financial reporting practices, capital market conditions and other institutional characteristics. Our results support the view that IFRS implementation and its impact on the pricing of

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[22] Prior to 2005, each European country had its' own body of local accounting standards. In fact publicly listed companies were listed on the stock exchanges of their respective countries and subject to national supervision and national accounting standards.

accruals is likely to be heterogeneous across countries (Ball, 2006; Nobes, 1983, 2006, 2010, 2011).

The abnormal price behavior surrounding the magnitude of accruals was first studied and confirmed by Sloan (1996) who found that building long/short portfolios based on rankings of stocks scored on the magnitude of accruals would generate significant abnormal returns across high and low accrual stocks. While this anomaly has been further studied and documented in the U.S. dataset, evidence on international data is scarce and conflicting. Not a surprising result, as prior to 2005, each European country had its own body of local accounting standards, as well as varying levels of enforcement and reporting quality. Studies conducted by Nobes (2006), Kvaal and Nobes (2010) and Nobes (2011), show that the institutional characteristics of a specific European country help explain the degree of convergence with IFRS internationally because they are empirically linked to various levels of earnings management. We investigate whether these differences in national IFRS practices cause differences in the existence and magnitude of accruals mispricing. The study poses two research questions. First, are there variations in the presence and magnitude of the abnormal returns associated with the level of accruals measures in nine representative European countries (Sweden, U.K., Ireland, Germany, France, Italy, Belgium, Spain and the Netherlands) before and after the introduction of IFRS? Second, which of those nine countries exhibit anomalous stock return performance post the introduction of IFRS?

Our empirical results reveal that the introduction of IFRS in 2005 did impact the level of capital market information asymmetry that existed pre and post IFRS. In fact, prior

to 2005, seven of the nine countries in the study exhibited the abnormal return behavior around the level of accruals. However, after the mandatory introduction of IFRS, five of the nine countries continue to show evidence of the mispricing. In addition, differences in institutional factors country by country help explain the variations in the mispricing in the post period. Interpretation of the results are limited in that we examine only one of the many characterizations of capital markets' asymmetries and we study a sample of European countries on a relative short time frame post the introduction of IFRS.

Despite these limitations, our study contributes to the international finance and accounting literature as well as to the business community in various ways. First, we tackle a question that is little researched using European data and offers conflicting results in the studies that have been done. Prior academic studies used pooled datasets across countries with different reporting standards, without controlling for country membership or timing of IFRS adoption. We solve this problem by studying one country at a time as suggested by Kaserer and Klinger (2008) and by dividing the sample in two sub-periods: data prior to the mandatory introduction of IFRS and data following the introduction of IFRS. Second, our study uses a broader definition of accruals (Dechow et al., 2008; Richardson et al. 2005 and 2006)) and it is among the first study to do so on a European dataset. This definition of accruals works better than those focusing on the change in "current" net operating assets because it includes "non-current" and "financial" assets. Third, we add to a still sparse literature that explores the effects of mandatory adoption of IFRS. Since we analyze one country at a time and we are able to study an exogenous shock (IFRS mandatory adoption) applied

to a sample of countries with different institutional factors, we can learn about the interactions between accounting standards and institutional factors. This can be useful to standard setters to improve the process towards accounting harmonization. This is also important for investors, portfolio managers, analysts and accountants who invest and analyze European stocks. In fact, simply applying the academic findings that focus on U.S. to the European context would be erroneous. For instance, quantitative portfolio managers, who try to determine proxies for aggressive accounting practices and hence look for measures of earnings quality to rank stocks, need to be careful applying these financial metrics to a European universe of stocks.

The remainder of our study proceeds as follows: Section 2 summarizes the related literature. Section 3 develops the hypothesis and the research questions. Section 4 describes the data and sample. Section 5 presents the research design while section 6 reviews the empirical results. Finally, section 7 concludes.

1.2 Theory and Literature Review

In terms of theoretical framework, this paper fits within four of the five theoretical pillars highlighted in Chapter 0.3 and Figure 1 in this document. Specifically, I am referring to:

- Earnings Management

- Agency and Positive Accounting Theory

- Efficient Market Hypothesis

- Accounting Standards

Following are the details of the Literature Review:

1.2.1   The Accruals Mispricing in Europe

Sloan (1996) was the first to provide evidence that companies with large positive and income increasing accruals in a given year, tend to have low returns in subsequent years. Subsequent to Sloan (1996), various authors dissected and confirmed the existence of the anomaly in the U.S. In contrast to U.S. research, evidence on the accruals anomaly in other developed countries is sparse and conflicting. Pincus et al. (2007) looked at 20 developed countries over 1994-2003 using the Global Vantage database. They find the anomaly to be present in the U.K, Canada, Australia, and also the U.S. They conclude that the accrual anomaly regularly exists in common law countries but find no evidence for code law countries. On the other hand, La Fond (2005) looked at 17 developed countries over 1989-2003, using data from Datastream/Worldscope. He finds the accruals anomaly in 15 of these countries. He concludes that the anomaly is a global phenomenon albeit with varying degrees of stock mispricing among those countries. Similar results were found by Liodakis, et al. (2004).

In contrast, Kaserer and Klinger (2008) criticize these prior studies, because they investigate the presence of accruals mispricing in international datasets by pooling

data from different countries with different accounting systems in a cross-sectional analysis. These systems include local generally accepted accounting principles or GAAP prior to 2005 with the subsequent adoption of international financial reporting standards or IFRS in the European Union. Kaserer and Klinger (2008) provide convincing evidence that the overreaction to accrual based information is most likely related to firms complying with international accounting standards and suggest further research by looking at one country at a time. We follow their suggestion and study the presence and magnitude of the accruals mispricing in a sample of nine European countries: the U.K., Ireland, Germany, France, Italy, Spain, Belgium, Sweden and the Netherlands. We study the accruals mispricing one country at a time over two sub-samples: 1999-2004 (representing the pre-IFRS period) and 2006-2010 (representing the post IFRS period). We chose these nine European countries because they represent different financial reporting practices and different categories of institutional variables consistent with Nobes, 1983 (see Figure 1 in the introduction chapter).

1.2.2 The Effects of Mandatory IFRS Adoption on the Accruals Mispricing

In the literature there are a number of studies that analyze the effects of mandatory IFRS adoption on financial statements. These effects span from characteristics strictly related to accounting and reporting quality to capital market characteristics such as liquidity, information asymmetry and corporate governance. Some of these studies

argue that the new standards should increase comparability, corporate transparency and quality of financial reporting and favorable capital market conditions (Ashbaugh and Pincus, 2001; Ewert and Wagenhofer, 2005; Daske and Gebhardt, 2006; Barth et al., 2008).

However, we cannot ignore the fact that Europe is made up of countries with significant differences in their legal, accounting and governance systems. Some studies suggest that these differences may determine how successful the adoption of IFRS may be in improving the quality of financial reporting. Ball et al. (2000) published the first empirical paper to show that institutional differences in the demand for accounting income cause its properties to vary internationally. For instance, such differences include the level of "enforcement mechanisms" (Dao, 2005; Ball et al., 2003; Ball, 2006; Barth et al., 2008; Daske et al., 2008) and "firms' reporting incentives" (Jeanjean and Stolowi, 2008).Further, there are cultural differences as well as varying translations from IFRS in English into local languages. A branch of research suggests that cultural differences cause accountants in different countries to interpret and apply accounting standards differently (Doupnik and Richter, 2003; Tsakumis, 2007; Doupnik and Riccio, 2006; Schulz and Lopez, 2001).Another branch of literature shows that, despite the fact that the International Accounting Standards Committee Foundation (IASCF) created an official process for translation in 1997, there are various translations of certain English words like "probable" and "remote" (Davidson and Chrisman, 1993; Doupnik and Richter, 2003).

1.3 Hypothesis Development

Nobes (1983) classifies a sample of countries based on the international differences in reporting among the public companies analyzed. We hypothesize that there is a link between these five groups and possible differences in the presence and magnitude of accruals mispricing. Figure 1 presents the five groups: 1) the UK influence group, which contains UK, Australia, New Zealand and Ireland; 2) the U.S. influence group with Canada and the U.S.; 3) the Continental-Tax Based group with Italy, France, Belgium and Spain; 4) the Continental-Law Based group with Germany and Japan; 4) the Continental group represented by Sweden and 5) the Continental group represented by the Netherlands. Our study focuses on countries, which are members of the European Union and had also adopted IFRS. We posit the following first hypothesis:

Hypothesis 1: There exist differences among the nine countries, in the presence and magnitude of the accruals mispricing before and after the mandatory introduction of the IFRS in 2005.

More recent literature (Nobes, 2006; Nobes, 2010; Daske et al., 2008; Burgstahler et al. 2006; Berger, 2010), postulates that legal, accounting, governance and firm level incentives differences among European countries may continue to hinder the process of international harmonization introduced by IFRS. In fact, the application of accounting standards involves judgment. How the preparer of a financial statement uses this discretion depends on reporting incentives, which in turn are shaped by factors such as legal, accounting and governance at the country level. Thus, it is not clear that simply mandating new accounting standards is a sufficient condition to more

informative and transparent corporate reporting and as a consequence, more efficient capital markets. For instance, Ball et al. (2003) show that high quality accounting standards alone do not lead to higher earnings quality if they are not backed by strong institutions. Since our study focuses on one capital market asymmetry: the accruals mispricing, we posit the following second hypothesis:

Hypothesis 2: There is heterogeneity in the accruals mispricing after the introduction of IFRS.

To capture differences in the legal, accounting and governance structure of the nine countries in our study, we look at seven institutional categories. These categories are: 1) the institutional framework of a country (La Porta et al., 1998; La Porta et al., 1999); 2) the rule of law of a country and 3) the quality of legal enforcement, both based on Kaufmann et al. (2007) and on La Porta et al. (1998); 4) the level of financial and tax accounting alignment (Alford et al., 1993 and Hung, 2001); 5) the differences in securities regulation (La Porta et al., 2006); 6) the level of minority shareholder protection and the anti-director rights index (La Porta et al.,1998); and 7) the level of development of the capital markets (Beck and Levine, 2002). Although, there could be other characteristics taken into account, the above seven variables adequately capture the three dimensions of legal (institutional framework, rule of law and quality of legal enforcement), accounting (level of financial and tax accounting alignment) and governance (differences in security regulation and the anti-director rights).In this study, we compiled a country-based list of raw and dichotomized statistics of the above seven institutional variables which are presented in Table 1 for our nine

representative countries. A value of one indicates higher earnings management and the expected presence of accruals mispricing. A value of zero indicates less earnings management and the absence of accruals mispricing. We use these seven categories to form expectations on whether a country will likely present the abnormal stock return performance for the period after the introduction of IFRS (2006-2010). Country by country expectations are presented in Table 1.

In the following four sub-sections we cover the literature supporting the links between institutional variables and likelihood of higher earnings management.

1.3.1 Institutional Variables

Studies by La Porta et al., 1998; La Porta et al., 1999 show that specific institutional structures such as civil law versus common law influence the reporting behavior of public firms. Civil law countries are characterized by a more diversified set of participants including shareholders, creditors, customers, and suppliers who are all represented by the board. In contrast, under common law the board is selected only by shareholders. This implies that in civil law countries, a wider range of parties can access firm information, and so informational asymmetries can be more easily resolved than those in common law countries. Given that the accruals anomaly is linked to investors overreacting to the information contained in accruals, less information asymmetry may mitigate the mispricing of accruals (Ball et al., 2000). The general theme is then that common law is more prone to earnings management than code law. Further, among code law countries, it is possible to discern three different

levels of codes: French, Scandinavian and German codes. Given the structures of the different stakeholders in these countries it is expected that French and Scandinavian countries as common law codes are more prone to earnings management and the accruals anomaly.

1.3.2 Legal Enforcement

Recently, studies by Daske et al., 2008; and Berger, 2010, have begun to advocate the argument that without proper enforcement, legal rules and accounting standards may remain ineffective. In table 1, we present two variables classifying countries on the quality of enforcement. One is the rule of law, based on Kaufmann et al. (2007) and the second is based on La Porta et al. (1998)[23]. The idea is that countries with weaker levels of enforcement may be more prone to abuse the discretion available in accounting standards. We define accruals as the difference between a firm's accounting earnings and its underlying cash flows. Under accrual based accounting, revenues are recorded when goods or services have been provided to a customer and not when cash is collected. Expenses are reductions in net assets associated with the creation of those revenues. This method allows "discretion" embedded in the recording of various revenues and expenses. Countries (and hence companies) exercising less versus more discretion can usually be classified as having stronger rather than weaker financial reporting quality. Those countries with more discretion will be more prone to earnings management and more likely to exhibit abnormal return performance. We

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[23]This measure is an average of three dimensions capturing the efficiency of the judicial system, the rule of law and the level of corruption.

also expect that countries with relatively weaker legal enforcement to exhibit similar abnormal returns associated with the level of accruals.

1.3.3 Regulation and Taxation

To capture differences in the level of regulation for the countries in the sample, we look at two variables: securities regulation and anti-director rights. Under Securities Regulation, we average three indices provided by La Porta et al. (2006). They classify countries based on disclosure requirements, the procedural difficulties in recovering losses from the issuer's directors and the level of general market supervision by a regulator. First, the disclosure requirements index measures the direct reduction in the costs of private contracting by mandating standardized contracts. Second, the burden director index quantifies the procedural difficulty in recovering losses from the issuer's directors in a civil liability case for losses due to misleading statements in the prospectus. Third, the level of general market supervision by a regulator is represented by an index of the power of the supervisor to command documents when investigating a violation of securities laws.

Under the level of minority shareholder protection, we look at the anti-director rights index provided by La Porta et al. (1998). We hypothesize that higher regulation and higher protection is negatively related with earnings management. Hence, the expectation is that countries with lower values in the above two variables will exhibit

the accruals mispricing and those with higher values will fail to exhibit it. We also look at the level of financial accounting and tax alignment, which is based on a classification by Alford et al. (1993) and Hung (2001). The variable takes a value of 1 where the alignment is high and a value of 0 where the alignment is low. The literature postulates that higher alignment implies higher earnings management and possibly presence of the accruals mispricing. For instance, Ball (2001) argues that IFRS provides high quality accounting information in a public reporting system when there is separation, as far as possible, of public financial reporting and corporate income taxation, so that the tax objectives do not distort financial information. This is consistent with the idea that high book-tax conformity causes earnings to be less value relevant or that high book-tax conformity is related to an information and regulation environment that results in limited association between accounting information and stock price.

1.3.4 Capital Markets

Finally, we look at the level of development of the capital markets in each country based on a variable which measures whether the financial system is more equity-based versus bank-based. Beck and Levine (2002) developed a measure of "Structure-Aggregate", which is a combination of three elements: i) the comparative size and activity of stock markets and banks, (ii) the regulatory restrictions on banks, and (iii) the extent of state ownership of banks. Higher values of this variable indicate that a country is equity-based. Countries with strong shareholder rights and high accounting standards tend to have higher values of Structure-Aggregate (Demirguc et al., 2001).

The idea being that higher levels, indicating equity-based markets, are associated with less earnings management. Therefore, the expectation is that countries which are bank-based will exhibit accruals mispricing and those that are equity-based, will not.

Summary statistics of seven institutional variables for the five countries in this study are presented in Table 1. We further present dichotomized indicator variables (in parenthesis), which are based (where represented by index values) on median values over a broader sample of international countries and are assigned a value of 1 to indicate more earnings management and possible presence of mispricing and a value of 0 indicating less earnings management and lack of accruals mispricing.

Table 1: Descriptive Statistics for the Institutional Variables by Country

	Origin	Rule of Law	Legal	Tax Alignment	Securities Regulation	Anti Director Rights	Capital Market Structure	Accruals Mispricing Expectation
Belgium	Code/French (1)	1.4 (1)	9.44 (0)	1	0.34 (1)	0 (1)	-2.27 (0)	YES
France	Code/French (1)	1.3 (1)	8.68 (1)	1	0.58 (0)	3 (1)	-2.83 (1)	YES
Germany	Code/German (0)	1.7 (0)	9.05 (1)	1	0.21 (1)	1 (1)	-1.64 (0)	YES
Ireland	Common/English (1)	1.7 (0)	na	0	0,49 (1)	4 (0)	na	?
Italy	Code/French (1)	0.5 (1)	7.07 (1)	1	0.46 (1)	1 (1)	-2.79 (0)	YES
Spain	Code/French (1)	1.1 (1)	7.14 (1)	1	0.50 (0)	4 (0)	-2.71 (0)	YES
Sweden	Code/Scandinavian (1)	1.8 (0)	10.0 (1)	1	0.45 (1)	3 (1)	1.60 (0)	YES
The Netherlands	Code/French (1)	1.8 (0)	10.0 (0)	0	0.62 (0)	2 (1)	-1.65 (0)	NO
United Kingdom	Common/English (1)	1.7 (0)	9.22 (0)	0	0.72 (0)	5 (0)	-0.76 (0)	NO

Table 1 presents raw and dichotomized indicator values (in parenthesis) of the institutional proxies used in formulating hypothesis for the presence and magnitude of the accruals mispricing in a sample of nine European countries. These institutional factors attempt to capture countries' legal tradition and enforcement, the role of corporate taxes, the discretion in accounting for accruals, the strength in securities regulation and shareholder protection and finally, the development of capital markets. In particular, three are the measures considered under the legal framework: 1) Origin, based on La Porta et al. (1998); 2) Rule of Law, based on Kaufmann et al. (2007) where higher values represent countries with higher levels of quality enforcements; 3) Legal, based on La Porta et al. (1998) and measured as the mean of three institutional variables (efficiency of the judicial system, rule of law and corruption index) where higher levels represent countries with higher levels of quality enforcements. In addition, we look at the level of alignment between tax based and financial based reporting in 4) Tax alignment, based on Alford et al. 1993 and Hung, 2001; 5) Securities Regulation based on La Porta, 2006 measures the strength of securities regulation in mandating and enforcing disclosures for publicly listed firms with higher values representing higher regulation; 6) Anti director rights based on La Porta et al., 1998 measuring the legal protection of minority shareholders; finally 7) Capital market structure based on Beck and Levine (2002) measures whether a country's financial market is more market based or bank based. The dichotomized indicator

variables are based (where represented by index values) on median values and are associated so that a value of 1 indicates less earnings management and vice versa, a value of 0 indicates higher earnings management.

The last column presents our expectations on the presence of accruals mispricing after the introduction of IFRS. For instance, in the case of the U.K. we do not expect to observe the anomaly after the introduction of IFRS because all but one variable (legal origin) point to less earnings management. Opposite from the U.K., in the case of France, we do expect to observe it because all of the variables,exceptsecurity regulation, point to higher earnings management. We also expect the presence of an accruals mispricing for France, Belgium, Italy, Spain, Germany and Sweden because the majority of the variables point to higher levels of earnings management. In contrast, we don't expect to observe mispricing in the Netherlands because the majority of the variables points to lower levels of earnings management.

1.4 Sample and Descriptive Statistics

We begin with a description of the sample by country in terms of two financial variables: firm size and level of the "accruals ratio" (Richardson, 2009). These variables are calculated for the full time frame (1999-2010), as well as for the pre-IFRS period (1999-2004) and for the post-IFRS period (2006-2010). Average values are presented in Table 2. First of all, the sample consists of 34,507 firm-year observations for public companies incorporated in the nine countries[24] of analysis and with data available on the Standard and Poor's Global Vantage database. We consider

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[24] Detailed firm year observations by country are shown in Table 2

both active and inactive companies[25] as of July 2010 and, similar to prior research studies, we exclude financial firms (those with GICS sector 40) such as banks and insurance companies because of peculiarities in the accruals of such firms. Financial data were collected for the years 1999-2010. We measure the variables at the end of each June from 1999 to 2010. The month end of June is chosen because of the "filing deadline" (that is the maximum number of months after fiscal year end allowed for firms to file financial reports). This practice allows controlling for look-ahead biases in the analysis, which can distort the results. This study utilizes an accrual ratio, which captures the opportunistic behavior of manipulation of earnings by managers. We use an "aggregate measure" of accruals that includes all components of current and long-term accruals and is based on Dechow et al., 2008; Richardson et al. 2005 and 2006Descriptive statistics are presented in Table 2.

Table 2: Descriptive Statistics

Country	Sample Range	Firm Years Observations	Size- Full Sample	Size- Pre IFRS	Size- Post IFRS	Discretionary Accruals Ratio-Full Sample	Discretionary Accruals Ratio-Pre IFRS	Discretionary Accruals Ratio-Post IFRS
Belgium	63-97	959	39558,3482	31011,997	48104,6998	0,11	0,06	0,15
France	414-600	5976	12370,2497	11552,764	13187,7355	0,08	0,09	0,08
Germany	420-661	6220	2792,06957	2706,4269	2877,71228	0,14	0,17	0,11
Ireland	49-69	646	1047,34662	961,7448	1132,94843	0,09	0,11	0,06
Italy	124-226	2069	3410735,19	4021975,4	2799494,93	0,12	0,14	0,09
Spain	99-107	1138	494741,9	371682,91	617800,892	0,11	0,09	0,14
Sweden	157-306	2748	8198,82304	8284,3928	8113,25332	0,07	0,06	0,08
The Netherlands	104-161	1542	5200,85413	6147,0738	4254,63451	0,08	0,11	0,05
United Kingdom	1165-1475	12580	1023,97689	1094,5667	953,38705	0,13	0,12	0,14

Table 2 provides descriptive statistics for all listed companies (excluding financials) in the nine countries in the study: Belgium, France, Germany, Ireland, Italy, Spain, Sweden, the Netherlands, and the UK; and with available data in the S&P Global Vantage Database. The first column reports the minimum and maximum number of observations in the ten years of analysis (1999-2010). The second column shows the total number of firm year observations by country. Columns 3 to 5 present average values for company size (identified by market capitalization in millions by local currency) for the full sample (1999-2010), the pre-period (1999-2004) and the post-period (2006-2010) respectively and organized by country. Columns 6 to 8 present average values for the accruals ratio (Richardson, 2009) for the full sample (1999-2010), the pre-period (1999-2004) and the post-period (2006-2010) respectively and organized by country. The accruals ratio is measured by the net change

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[25] We look at both active and inactive companies to control for survivorship bias.

across all noncash accounts, deflated by the average value of Net Operating Assets (NOA). Results are reported in local currency.

Since we are examining the behavior of the accruals anomaly both pre and post IFRS adoption, we adopt the accruals ratio introduced by Dechow et al., 2008; Richardson et al. 2005 and 2006.We chose this ratio for three reasons. First, in contrast to other measures (Dechow et al., 1995; Dechow and Dichev, 2002; Kothari et al. 2005; Chan et al. 2006), it is based on actual and not estimates of unexpected accruals. Methods that use estimates of unexpected accruals have been criticized in the literature as being poor identifiers of earnings management (Ball, 2009; Ball and Shivakumar, 2008; Shan et al., 2010). Second, the aggregate measure we employ does not omit accruals such as deferrals relating to non-current operating assets, non-current operating liabilities, non-cash financial assets and liabilities. Third, our tests of various accruals measures using U.S. data show a greater linearity in the abnormal holding period return among the deciles in which the sample is partitioned with the aggregate ratio, which likely makes it   a better identifier of the effect.

The sample period in our study, covers two economic cycles: GDP growth (from 1999 to 2004) and recession (2006-2010). One could argue that macroeconomic conditions may have had an impact on the level of accruals. However, Table 2 shows mixed results in terms of the pre and post accruals levels. In fact, we observe four countries where the level of accruals increases over the economic cycles (Belgium, Spain, Sweden and the U.K.) and five countries where it decreases (France, Germany, Ireland, Italy and the Netherlands).

The impetus behind the Richardson (2009) measure is to compare financial statements based on an accrual accounting system with those based on a pure cash basis. This way, it is possible to extrapolate "discretion." In fact, every line item of an accrual basis financial statement is the result of some sort of estimation based on a subjective choice of managers. According to Richardson et al. (2009), the "balance sheet based accruals ratio" is calculated by measuring the net change across all noncash accounts. Therefore, aggregate accruals are simply the change in net assets (net of cash and debt related accounts) from the start to the end of the period. Further, this measure needs to be made comparable across companies by adjusting for differences in company size. This is done by deflating the aggregate accrual measure by the average value of Net Operating Assets (NOA).The ratio is calculated as follows:

$$\text{Accruals Ratio BS} = \frac{NOA_t - NOA_{t-1}}{(NOA_t + NOA_{t-1})/2} \quad \text{Eq. 1}$$

NOA_t= Net Operating Assets at time

t

NOA_{t-1}= Net Operating Assets at time t

minus 1

NOA = (Total Assets – Cash and Short Term Investments) – (Total Liabilities – Long Term Debt – Debt in Current Liabilities)

1.5 Research Design

In order to determine whether a country exhibits the accruals anomaly we perform two analyses. First, a test designed to determine whether or not the accruals anomaly

exhibited in European stocks on a country-by-country basis is conducted. We build

portfolios of stocks characterized by different levels of accruals and then examine the risk and return performance of each equally weighted quintile or portfolio. Quintile 1 consists of portfolios with high levels of the accruals ratio (lowest earnings quality) and Quintile 5 consists of stocks with low levels of the accruals ratio (highest earnings quality). This analysis intends to verify the feasibility of an investment strategy by looking to minimize the look-ahead biases given the different fiscal years in financial reporting by individual companies.

Second, we analyze a panel of both cross sectional and time series (from 1999 to 2010) data. Fama-MacBeth (1973) cross-sectional regressions are estimated each year from 1999 to 2010 to determine the relative importance of the accruals variable (Richardson, 2009) in predicting future returns. Results are split into pre and post 2005 periods to test the impact of the introduction of IFRS. The year 2005, which is not included in the analysis, represents the point in time when Regulation No. 1606/2002 required all EU listed companies to begin to prepare consolidated financial statements in accordance with IFRS. In addition, the Fama-Macbeth regressions are estimated one country at a time. This is a distinguishing feature of the research design as it addresses the problems presented by pooling data across countries with fundamentally different accounting systems (Kaserer and Klinger, 2008; Pincus et al., 2007; La Fond, 2005; Liodakis et al., 2004).

The dependent variable in the Fama-MacBeth (1973) regressions is the total return on the stock at time period t+1. It is measured on a 1, 3, 6 and 12 month holding period basis (HPR). Holding period returns represent cumulative returns for the specific period considered. In particular, they are calculated as follows:

HPR t = (Income + End of Period Value - Initial Value)/ Initial Value

We select four different time frames to calculate holding period returns in order to testvarying levels of persistence in the accruals 'signal'. Following is an example of the regression equations:

$$HP\beta_{it+1} \quad = \quad \beta_0 \quad + \quad \beta_1 \quad BSAccr_{it,t} \quad + \quad \epsilon_{it}$$

Eq. 2

Where,

β_1 = coefficient

β_0 = intercept

$BSAccr_{it,t}$= Balance Sheet Accruals Ratio (based on Richardson, 2009)

$HP\beta_{it+1}$= Holding Period Return

All returns are in local currencies.

1.6 Empirical Results

As mentioned previously, we test our hypothesis by analyzing the data in two separate samples: the pre 2005 and post 2005 periods. This approach allows an examination of the presence and magnitude of the accruals mispricing across countries but also between the pre and post IFRS periods. We begin by assuming a long/short framework and independently assign stocks into quintile groups based on the level of the accruals ratio (Dechow et al., 2008; Richardson et al. 2005 and 2006). We present the annualized spread between the high quality quintile (or low level of accruals) and the low quality quintile (or high level of accruals) in Table 3. The annualized spreads are based on a strategy, which builds portfolios at the end of each June with a yearly

rebalance. The spread is notably positive in seven[26] of the nine countries for the period prior to IFRS (1999-2004; left table). For instance, building portfolios that are long stocks with the lowest levels of accruals and short portfolios of stocks characterized by the highest level of accruals in the United Kingdom would have produced an annualized return spread of 11% for the years from 1999 to 2004.Similarly the spread would have been 4.6% in France, 12.3% in Italy, 12% in Spain, 1.5% in Belgium, 24% in Germany, 43.6% in the Netherlands, and 13.6% in Sweden.

The right side of Table 3 shows the return spreads for quintile portfolios sorted by the level of accruals for the period post IFRS (2006-2010). The spreads are notably positive in six countries: Ireland, France, Italy, Spain, Belgium and the Netherlands[27]. In fact, our long/short portfolios would have produced an annualized return spread of 8% in France, 12% in Italy, 3% in Spain, 8% in Belgium and 5% in the Netherlands. The remaining country in the set, the U.K., has negative annualized return spreads. Further, looking at the last column of Table 3, we report results from a test of differences between the pre and post spread levels. We observe that differences between the pre and post spreads are significant in three countries: Germany, the U.K. and Sweden.

Table 3: Summary Returns Statistics for Portfolios sorted by Accrual Ratios

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[26] The spread is positive but small in Belgium. Considering transaction costs it would become negligible.
[27] In the case of Germany and Sweden the spread is positive but quite small.

PRE IFRS (1999-2004)	Annualized Return Spread	Annualized St. Dev. Spread
France	4.66%	-10.55%
Germany	23.97%	-14.29%
U.K.	10.90%	-4.81%
Sweden	13.59%	-3.12%
the Netherlands	43.68%	19.94%
Italy	12.27%	-0.22%
Belgium	1.50%	-1.77%
Spain	11.97%	1.07%
Ireland	-0.27%	-0.25%

POST IFRS (2006-2010)	Annualized Return Spread	Annualized St. Dev. Spread	Test of Differences
France	7.84%	1.01%	-0.55
Germany	1.05%	-3.41%	2.18
U.K.	-1.94%	-4.13%	1.90
Sweden	0.62%	-0.13%	1.90
the Netherlands	4.95%	-2.82%	1.43
Italy	12.04%	1.86%	0.17
Belgium	8.32%	0.83%	-1.40
Spain	3.15%	-0.40%	0.73
Ireland	15.52%	-0.98%	-0.14

Table 3 provides summary returns statistics: annualized return spreads and annualized standard deviation spreads for all listed companies (excluding financials) in the nine countries in the study: the U.K., Ireland, Germany, France, Italy, Spain and Belgium, the Netherlands and Sweden; and with available data in the S&P Global Vantage Database. Stocks are ranked into quintiles at the end of June each year based on the level of the accruals ratio (Richardson, 2009) for the two sample periods: the left table from 1999-2004 and the right table from 2006-2010. Returns are in local currencies. The annualized return spreads are the difference in returns between the lower accruals ratio quintile and the higher accruals ratio quintiles on an annualized basis. The annualized standard deviation spread is the difference between the standard deviations of the lower accruals ratio quintile and the higher accruals ratio quintiles on an annualized basis.

The results of estimating equation 2 for the nine countries in the analysis during the years prior to the mandatory introduction of IFRS (1999-2004) are presented in Table 4. Specifically, in Equation 2, the cumulative total returns over four different periods (1, 3, 6 and 12 months) are regressed on a variable capturing the level of accruals. A negative coefficient indicates that companies with high levels of the accruals ratio and poor earnings quality produce lower future stock returns. As expected, the coefficients are negative in seven countries: the U.K. (6 and 12 months), Germany, France (12 months), Italy, Spain, Belgium (1 and 12 months), Sweden (1 month). The results of estimating equation 2 for the nine countries during the years after the mandatory introduction of IFRS (2006-2010) are presented in Table 5. In this case, even if the coefficients remain negative in most countries, they are only statistically significant in Ireland, France, Italy, Spain, Belgium (3, 6 and 12 months) and Sweden (6 months).

Table 4: Fama-MacBeth Cross-Sectional Regressions of Holding Period Returns on Accruals (1999-2004).

	Constant	Coefficient	T-stat	R squared
Panel A: United Kingdom				
1 month	0.6098	-0,0006	0.7033	0.0003
3 months	0.1895	-0,0009	1.0233	0.0006
6 months	0.4092	-0,0014*	1.4900	0.0019
12 months	0.0442	-0,0025*	1.5350	0.0062
Panel B: Ireland				
1 month	0.1181	-0,5180	0.8966	0.0225
3 months	0.1209	-0,2527	0.8608	0.0254
6 months	0.1375	-0,1072	0.6601	0.0140
12 months	0.1275	-0,1295	0.8036	0.0276
Panel C: Germany				
1 month	0.0737	-0,0145	1.0867	0.0035
3 months	(0.0457)	-0,0207***	2.2717	0.0158
6 months	(0.0278)	-0,0203*	1.5150	0.0143
12 months	0.1062	-0,0384***	2.8617	0.0239
Panel D: France				
1 month	0.0292	-0,0368	0.6400	0.0011
3 months	0.0033	-0,0370	1.0005	0.0080
6 months	0.0808	-0,0355	1.1667	0.0022
12 months	0.2402	-0,0438*	1.2717	0.0020
Panel E: Italy				
1 month	0.1266	-0,0016***	2.3543	0.0377
3 months	0.1023	-0,1195**	1.9887	0.0173
6 months	0.1401	-0,0365	0.8466	0.0068
12 months	0.1288	-0,0831*	1.6036	0.0157
Panel F: Spain				
1 month	0.0928	-0,1850*	1.6707	0.0354
3 months	0.1035	-0,1549*	1.6331	0.0288
6 months	0.1070	-0,1367*	1.6190	0.0200
12 months	0.1053	-0,0523*	1.5181	0.0210
Panel G: Belgium				
1 month	0.0084	-1,5589*	1.5125	0.0291
3 months	0.0138	-0,5395	0.9155	0.0080
6 months	0.0557	-0,3235	1.2031	0.0210
12 months	0.0433	-0,1017*	1.7140	0.0082
Panel H: Sweden				
1 month	(0.0216)	-0,0020*	1.3883	0.0117
3 months	(0.0490)	-0,0088	0.7617	0.0029
6 months	0.2402	-0,0438	0.9050	0.0020
12 months	0.1867	-0,0061	0.9150	0.0071
Panel I: the Netherland				
1 month	(0.0710)	0,2142	0.6367	0.0040
3 months	(0.0794)	0,0037	0.6500	0.0036
6 months	0.0481	-0,0515	0.9950	0.0075
12 months	0.2342	-0,1070	1.1233	0.0091

* sign at 10%,** sign at 5%,*** sign at 1%

Table 4 provides regressions results for all listed companies (excluding financials) in the nine countries in the study the U.K., Ireland, Germany, France, Italy, Spain and Belgium, the Netherlands and Sweden; and with available data in the S&P Global Vantage Database. At the end of June each year from 1999 to 2004, cross-sectional regressions are estimated of individual stocks' holding period returns on the independent variable represented by the accruals ratio (Richardson, 2009). The accruals ratio is measured by the net change across all noncash accounts, deflated by the average value of Net Operating Assets (NOA). Holding period returns are total returns calculated over four different time frames: 1, 3, 6 and 12 months. The reported statistics are the time-series average of monthly regression coefficients together with their t-statistics. * indicates significance at the 10% level; ** indicates significance at the 5% level; *** indicates significance at the 1% level

Table 5: Fama-MacBeth Cross-Sectional Regressions of Holding Period Returns on

Accruals (2006-2010).

	Constant	Coefficient	T-stat	R squared
Panel A: United Kingdom				
1 month	(0.0182)	0,0007	0.5850	0.0005
3 months	(0.0007)	0,0013	0.6650	0.0005
6 months	(0.0209)	0,0014	0.7650	0.0006
12 months	0.0290	0,0009	0.8525	0.0011
Panel B: Ireland				
1 month	(0.0298)	-3,0464*	1.4297	0.0480
3 months	0.2876	-2,6996***	2.1169	0.0923
6 months	(0.1090)	-2,3082***	2.4620	0.1037
12 months	(0.1088)	-0,9876**	1.8789	0.0628
Panel C: Germany				
1 month	0.0101	-0,0001*	1.5000	0.0027
3 months	0.0149	-0,0031	1.0940	0.0026
6 months	0.0224	-0,0016	0.6320	0.0009
12 months	0.1252	-0,0103	0.6000	0.0007
Panel D: France				
1 month	(0.0031)	0,0007	0.5575	0.0008
3 months	0.0376	-0,0035	0.7640	0.0015
6 months	0.0312	-0,0053*	1.3880	0.0022
12 months	0.1731	-0,0233**	1.7900	0.0074
Panel E: Italy				
1 month	0.1150	-0,7801*	1.5638	0.0124
3 months	(0.0320)	-0,9879*	1.4542	0.0056
6 months	0.1137	-0,4865*	1.5364	0.0156
12 months	(0.1828)	-0,5729*	1.6553	0.0143
Panel F: Spain				
1 month	0.1598	0,3179	0.7232	0.0073
3 months	0.1844	-0,5137*	1.5970	0.0146
6 months	0.1737	-0,0025*	1.6455	0.0268
12 months	0.1553	-0,2662*	1.7040	0.0185
Panel G: Belgium				
1 month	0.1804	-0,2818	1.0352	0.0149
3 months	0.1937	-0,3734*	1.7158	0.0196
6 months	0.1908	-0,1968*	1.7368	0.0352
12 months	0.1856	-0,1558	1.7474	0.0340
Panel H: Sweden				
1 month	(0.0064)	-0,0044	0.9200	0.0031
3 months	(0.0063)	0,0002	1.2000	0.0134
6 months	0.1258	-0,0204*	1.6620	0.0071
12 months	0.0739	0,0213	1.0450	0.0059
Panel I: the Netherland				
1 month	(0.0041)	-0,0060	1.2820	0.0253
3 months	0.0044	-0,0239	1.2700	0.0307
6 months	0.0766	-0,0803	1.1160	0.0197
12 months	0.3966	-0,1444	0.9260	0.0128

* sign at 10%,** sign at 5%,*** sign at 1%

Table 5 provides regressions results for all listed companies (excluding financials) in the nine countries in the study: the U.K., Ireland, Germany, France, Italy, Spain and Belgium, the Netherlands and Sweden; and with available data in the S&P Global Vantage Database. At the end of June each year from 2006 to 2010, cross-sectional regressions are estimated of individual stocks' holding period returns on the independent variable represented by the accruals ratio (Richardson, 2009). The accruals ratio is measured by the net change across all noncash accounts, deflated by the average value of Net Operating Assets (NOA). Holding period returns are total returns calculated over four different time frames: 1, 3, 6 and 12 months. The reported statistics are the time-series average of monthly regression coefficients together with their t-statistics. * indicates significance at the 10% level; ** indicates significance at the 5% level; *** indicates significance at the 1% level.

Comparing these results with those of Table 3 (which represent 12 month holding period returns) we find consistent results for Ireland, France, Italy, Spain and Belgium.

Additionally, four of the five countries with positive spreads have consistent results with the expectations presented in Table 1. In fact, France, Italy, Spain and Belgium exhibit the highest number of institutional variables indicating a higher probability of earnings management practices. Moreover, it is interesting to notice that these four countries are all members of the "Continental, Tax Based" group of Nobes (1983) classification.

Germany deserves a special note because "early" IFRS adoption was possible prior to 2005. Hence it is possible that some German firms might have decided to voluntarily adopt IFRS before the official transition year. We decide to keep it in our sample because it is the only European country representing the "Continental, Law Based" group according to the Nobes (1983) classification.

1.7 Robustness Tests

Finally, we perform a robustness check to control for country membership. Results from two pooled regressions using dummy variables to control for country membership are presented in Tables 6 and 7. The regression is represented by Equation 3 and is applied to the split samples (1999-2004 and 2006-2010).

$$HP\diamond\diamond_{\diamond\diamond+1} = \alpha + \beta \ \diamond\diamond S\diamond\diamond ccr_{\diamond\diamond,t} + \diamond\diamond_i$$

$$+ \in_{it} \text{Eq.3}$$

Where,

$\diamond\diamond S\diamond\diamond ccr_{\diamond\diamond,t}$= Balance Sheet Accruals Ratio (refer to Richardson, 2009)

HP$\diamond\diamond_{\diamond\diamond+1}$= Holding Period Return

$\Diamond\Diamond_i$ = Country Dummy Variable

Table 6: Fama-MacBeth Cross-Sectional Regressions of Holding Period returns on Accruals, Controlling by Country (1999-2004).

	1 month	3 months	6 months	12 months
AR	(0.1585)	0.0347	-0.0069*	-0.1471*
T-stat	0.7617	0.2533	1.8917	1.8500
D1 (France)	0.1971	0.1854	0.0883	0.2397
T-stat	1.1067	1.0633	1.2183	1.1600
D2 (Germany)	0.2200	0.1997	0.2344	0.2594
T-stat	1.0150	0.9950	1.1067	1.1580
D3 (U.K.)	0.3382	0.1822	0.4163	0.3668
T-stat	0.7333	0.7383	0.8183	0.6760
D4 (Sweden)	0.2104	0.1880	0.1322	0.2853
T-stat	0.5467	0.5517	0.6667	0.4980
D5 (the Netherland)	0.1566	0.1517	0.1381	0.1888
T-stat	0.3333	0.3283	0.3833	0.3640
D6 (Italy)	0.1429	0.1481	0.1549	0.1553
T-stat	0.3667	0.3883	0.3950	0.4440
D7 (Belgium)	(0.3804)	(0.4442)	(0.4582)	(0.3377)
T-stat	0.2850	0.2833	0.2783	0.2760
D8 (Spain)	0.0578	0.0483	0.0070	0.1067
T-stat	0.2600	0.2437	0.2450	0.2760
D9 (Ireland)	(0.5040)	(0.5232)	(0.6158)	(0.5390)
T-stat	1.1217	1.1350	1.1833	1.4260
R squared	0.0255	0.0032	0.0069	0.0020

Table 6 provides results from 9 regression models for all listed companies (excluding financials) in the nine countries in the study: France (D1), Germany (D2), the U.K. (D3), Sweden (D4) the Netherlands (D5), Italy (D6), Belgium (D7), Spain (D8) and Ireland (D9); and with available data in the S&P Global Vantage Database. At the end of June each year from 1999 to 2004, cross-sectional regressions are estimated of individual stocks' holding period returns on the independent variable represented by the accruals ratio (Richardson, 2009) and one respective dummy variable. The accruals ratio is measured by the net change across all noncash accounts, deflated by the average value of Net Operating Assets (NOA). Holding period returns are total returns calculated over four different time frames: 1, 3, 6 and 12 months. The reported statistics are the time-series average of monthly regression coefficients together with their t-statistics. * indicates significance at the 10% level; ** indicates significance at the 5% level; *** indicates significance at the 1% level.

Table 7: Fama-MacBeth Cross-Sectional Regressions of Holding Period returns on Accruals, Controlling by country (2006-2010).

	1 month	3 months	6 months	12 months
AR	(0.0544)	0.0519	0.0097	(0.0421)
T-stat	1.2820	0.8100	0.6760	0.7580
D1 (France)	0.0139	(0.0134)	0.1067	0.0964
T-stat	1.4040	5.7320	1.0840	1.0820
D2 (Germany)	(0.0158)	0.0170	0.1236	0.1218
T-stat	1.2600	6.7400	1.3060	1.1220
D3 (U.K.)	(0.9018)	(1.3450)	(1.3707)	(1.4241)
T-stat	1.1240	11.1440	0.9840	0.9280
D4 (Sweden)	(0.0952)	(0.1954)	(0.0821)	(0.0730)
T-stat	1.3280	5.2020	0.8940	0.9080
D5 (the Netherland)	0.0899	0.1159	(0.1476)	(0.1804)
T-stat	1.0840	3.0500	1.0560	1.0700
D6 (Italy)	(0.1456)	(0.1358)	(0.0922)	(0.0693)
T-stat	0.8740	0.9980	0.9980	1.0420
D7 (Belgium)	0.0513	0.0140	0.1162	0.1459
T-stat	0.3100	0.4720	0.5120	0.5280
D8 (Spain)	(0.1153)	(0.0260)	0.1249	0.0968
T-stat	0.2980	0.3460	0.4360	0.4300
D9 (Ireland)	(0.3394)	(0.2022)	(0.1171)	(0.1596)
T-stat	0.7920	0.8140	0.8780	0.7380
R squared	0.0065	0.0053	0.0100	0.0056

Table 7 provides results from 9 regression models for all listed companies (excluding financials) in the five countries in the study:France (D1), Germany (D2), the U.K. (D3), Sweden (D4) the Netherlands (D5), Italy (D6), Belgium (D7), Spain (D8) and Ireland (D9); and with available data in the S&P Global Vantage Database. At the end of June each year from 2006 to 2010, cross-sectional regressions are estimated of individual stocks' holding period returns on the independent variable represented by the accruals ratio (Richardson, 2009) and one respective dummy variable. The accruals ratio is measured by the net change across all noncash accounts, deflated by the average value of Net Operating Assets (NOA). Holding period returns are total returns calculated over four different time frames: 1, 3, 6 and 12 months. The reported statistics are the time-series average of monthly regression coefficients together with their t-statistics. * indicates significance at the 10% level; ** indicates significance at the 5% level; *** indicates significance at the 1% level.

Consistent with our findings, the results presented in Table 6 highlight that, for the period prior to the introduction of IFRS, the coefficient on the accruals is negative and significant in all seven of the nine countries for the 6 and 12 month holding period return. To the contrary, Table 7 shows that, following the IFRS introduction, the accruals coefficient is not significant. Remember, that in both Table 6 and 7, we are pooling nine countries, which had nine different accounting systems. In fact, prior to 2005, each of them was following its own local country GAAP. After 2005, the

individual country regression results presented in Table 7 point to the fact that only five countries exhibit the anomaly.

1.8 Conclusions

While the U.S. dataset has been extensively studied and found robust to the existence of an accruals anomaly, whether or not the same mispricing is present in various European countries remains an open question. This study analyzes nine European countries on a stand-alone basis. This approach eliminates the issues and problems associated with pooling data across structurally different countries. We find evidence that the introduction of IFRS has an impact on the presence and magnitude of the market reaction to various levels of accruals that varies across countries. Whereas prior to 2005, it would have been possible to build long/short portfolios which would consistently produce positive spreads in seven countries, after 2005 that number dropped to five. According to Regulation n. 1606/2002, IFRS was introduced to improve corporate transparency and financial reporting quality.The expectation would be that earnings management would decrease, offering fewer opportunities for managers to manipulate accounting numbers. As a result, we expected the accruals effect to disappear as a possible anomaly and exploitable trading strategy. To some extent, we confirm this expectation since we don't find evidence of a statistically significant mispricing in all of the nine countries analyzed.Based on the legal, accounting and governance variables considered in Table 1, our expectations were to find evidence of the accruals effect in France, Germany, Belgium, Italy, Spain and Sweden. We find evidence consistent this expectation with all but Germany. Four of these five countries exhibit the highest number of institutional variables indicating a

higher probability of earnings management practices. This finding is consistent with recent literature (Daske et al., 2008; Berger, 2010), which advocates that without proper enforcement, legal rules and accounting standards may remain ineffective.

Finally, we provide evidence that Europe, despite the effort of accounting harmonization done by the IFRS, retains some levels of localisms that may hinder true accounting comparability.In a recent speech, Sir David Tweedy[28] stated that "*In Britain everything is permitted unless it is prohibited; in Germany it is the opposite, everything is prohibited unless it is permitted; in the Netherlands everything is prohibited even if it is permitted; and in France, of course, everything is permitted especially if it is prohibited.*"

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[28]Sir David Tweedy, Chairman of IASB, Speech at the Japan Society, New York, April 2010

2   Disentangling the Accruals Mispricing in Europe: Is It an Industry Effect?

Elisabetta Basilico
USG, University of St. Gallen, St. Gallen, Switzerland
E-mail: elisabetta.basilico@yahoo.com

Abstract

This article examines the pervasiveness of the accruals mispricings in nine industries within a benchmark of seventeen European countries.   I find that the accruals mispricing post the introduction of International Financial Reporting Standards is present in an average of two to six of the nine industries analyzed, depending on the type of ratio used as a proxy of the accruals mispricing.

Keywords: Accruals Mispricing, Industry, International Financial Reporting Standards, Stock Selection, Europe.

2.1 Introduction

A recent article (Basilico and Johnsen, 2012), investigated whether certain institutional variables help explain differences in the presence of the accruals mispricing in Europe. Our preliminary findings point to the presence of this mispricing only in certain countries with characteristics of low levels of law enforcement. In this article, I continue the investigation on the accruals mispricing in Europe with a specific look at industry level data. In fact, I follow Richardson et al.'s (2009) suggestion that "*it is important to dedicate more research to more detailed analysis on components of total accruals that are particularly germane to a given sector.*" In this article, I ask the following general question: "Is the degree of accruals mispricing an industry specific phenomenon in a sample of European countries?" Specifically, I examine the relationship between the accruals mispricing (as measured by different proxies) and industry affiliation (based on the Global Industry Classification Standards-GICS) in the context of seventeen European countries[29]. These countries are those in the S&P's Euro350 benchmark[30]. Similarly to the country level data, the US data set has been investigated at the industry level (Chan et al. 2006). However, to my knowledge, there are no published studies on the relationship between industry and the accruals mispricing in Europe. Hence, in this study I posit two research questions. First, are there variations in the presence and magnitude of the abnormal returns associated with

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[29] I extend the number of countries compared to our prior study (Basilico and Johnsen, 2012) to allow for a bigger "industry level" sample size.

[30] These countries are: Austria, Belgium, Denmark, Finland, France, Germany, Italy, Spain, Portugal, Switzerland, the U.K., Ireland, Luxemburg, the Netherlands, Sweden, Norway, Greece.

the level of accruals measures in nine industries[31]? I study this relationship in two different samples, before and after the introduction of International Financial Reporting Standards (IFRS). However, I concentrate the analysis of the results for the post IFRS sample, since prior to 2005 stocks in the same industry but in different countries were reporting under different accounting standards. Second, are there differences in the presence and magnitude of the accruals mispricing as captured by different accounting ratios? Our empirical results support the view that there are differences in the presence and magnitute of the accruals mispricing within industries. Our study contributes to the international finance and accounting literature as well as to the business community. In fact, I study a question which is very little researched and especially in the international context and use several measures to capture the concept of "accruals mispricing." This is particularly useful to the investment community such as portfolio managers and analysts focusing on building industry specific investment portfolios.

The remainder of the article proceeds as follows. Section 2 summarizes the related literature. Section 3 covers data and sample statistics, while section 4 describes the research design. Section 5 shows the empirical results and finally section 6 concludes.

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[31] The GICS industries are: Energy, Materials, Industrials, Consumer Discretionary, Consumer Staples, Health Care, Information Technology, Telecommunication and Utilities.

2.2 Theory and Literature Review

In terms of theoretical framework, this paper fits within four of the five theoretical pillars highlighted in Chapter 0.3 and Figure 1 in this document. Specifically, I am referring to:

- Earnings Management

- Agency and Positive Accounting Theory

- Efficient Market Hypothesis

- Accounting Standards

Following are the details of the Literature Review:

Roll (1992) is a seminal work in the industry specific strand of the equity academic literature. His work focuses on explaining differences in the level of volatility in different country indices. He found that return volatility is related to industry concentration in a country index. He found that industries explain 40% of the volatility. This makes sense because some countries are industry specialists and their stock market behavior could reflect international volatilities of the industry in question. Specifically, a country index is more volatile when it is less diversified. Although, from a portfolio theory view, it is not a new finding, the novelty in this article is that industry diversification (or lack of it) can be empirically important when comparing countries. I follow this intuition and investigate whether the differences in the accruals mispricing in European countries (Basilico and Johnsen, 2012; Pincus et al., 2007; La Fond, 2005) are an industry effect. In fact, this first strand of literature makes us hypothesize that Europe, which is made up of different countries with

different histories of industrial developments, may present differences in the accruals mispricing as well. Our second intuition for this article is linked to literature related to the impact of the mandatory introduction of International Financial Reporting Standards (IFRS) in Europe (European Regulation n. 1606/2002)[32]. This strand of literature (Ding et al.,2005; Ball et al., 2003; Ball, 2006; Barth et al., 2008; Daske et al., 2008; Nobes, 2010; Basilico and Johnsen, 2012) questions the expectation that the new standards should increase comparability, corporate transparency, quality of financial reporting and hence, favorable capital market effects. The main hypothesizes behind the above literature stem from the fact that Europe is made up of countries with significant differences in their legal, accounting and governance systems. These differences can affect the way the new accounting standards (IFRS) are applied at the country level. Similarly, I hypothesize that differences in accounting practices at the industry level could affect the presence and magnitude of the accruals mispricing in the different industry groupings.In choosing which industry grouping to use, I follow Bhojraj et al. (2003). They investigated the use of each of the four systems (SIC, NAICS, FF, and GICS) in assigning companies to industries. Their results show that GICS classifications are significantly better in capturing the cross-sectional dispersion in stock returns based on various financial ratios because of stronger intra-industry homogeneity. They suggested that GICS codes provide better industry identification than SIC codes and should be preferred in grouping firms by industry for research, especially when the research objective involves identifying unusual or abnormal operating activities. Earnings management and the accruals mispricing fall into this

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[32] European Regulation n. 1606/2002introduced the mandatory requirement that countries in the European Community report their financial statements under International Financial Reporting Standards (IFRS) starting in fiscal year 2005

category. As the GICS system results in the most homogeneous industry groupings compared with the other three industry classification systems, the corresponding accruals measures derived using the GICS system should more precisely capture those firms that are managing earnings.

Finally, within the accruals mispricing strand of literature, Chan et al. (2006) investigated the U.S. data set. They pointed out that working capital requirements vary across lines of business. What they mean is that, in certain industries, where account receivables and inventories are a small portion of total assets, accruals are likely to be relatively low and viceversa.In fact, in their work, they analyze the accruals mispricing effect across industry and confirm the above hypothesis. As pointed out earlier, to our knowledge there is not a published study, which investigates the accruals mispricing in Europe. I follow the suggestions of Richardson et al. (2009) to perform more detailed analysis focusing on components of total accruals that are more relevant in specific sectors with the intuition of finding more significance in the accruals mispricing.

2.3 Data and Sample Statistics

The sample consists of 40,474 firm-year observations for public companies incorporated in the seventeen countries of analysis and with data available on the Standard and Poor's Global Vantage database. I consider both active and inactive companies[33]as of July 2010 and, similar to prior research studies, we exclude financial firms (those with GICS sector 40) such as banks and insurance companies, because of peculiarities in the accruals of such firms. Financial data were collected for the years

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[33]I look at both active and inactive companies to control for survivorship bias.

1999-2010. I measure the variables at the end of each June from 1999 to 2010. The month end of June is chosen because of the "filing deadline" (that is the maximum number of months after fiscal year end allowed for firms to file financial reports). This practice allows controlling for look-ahead biases in the analysis, which can distort the true results. This study focuses on the concept of accruals, which capture the opportunistic behavior of manipulation of earnings by managers. There are two novelties in this study. First, it analyzes the accruals mispricing within industries. Second, to measure accruals, it uses different proxies. Infact, I first use an "aggregate measures" of accruals, which includes all components of current and long term accruals (Dechow et al., 2008; Richardson et al. 2005 and 2006).

$$Accruals\ based\ in\ BS = \frac{NOA_t - NOA_{t-1}}{(NOA_t + NOA_{t-1})/2} \qquad Eq.\ 1$$

NOA_t = Net Operating Assets at time t

NOA_{t-1} = Net Operating Assets at time t minus 1

NOA = (Total Assets − Cash and Short Term Investments) − (Total Liabilities − Long Term Debt − Debt in Current Liabilities)

Descriptive statistics are reported in Table 1.

Table 1: Descriptive Statistics for the sample by Industry

Industry	Sample Range	Firm Years Observations	Size Full Sample	Size-Pre IFRS	Size-Post IFRS	Accruals Ratio-Full Sample	Accruals Ratio-Pre IFRS	Accruals Ratio-Post IFRS
Energy	101-250	1350	5,795.00	6,261.00	5,328.00	0.28	0.32	0.23
Materials	313-429	3994	1,802.78	1,147.16	2,458.40	0.11	0.06	0.16
Industrials	896-1026	9440	1,130.53	796.40	1,464.66	0.00	0.08	(0.07)
Consumer Discretionary	749-901	9366	1,035.26	855.52	1,215.00	0.09	0.07	0.10
Consumer Staples	257-309	3096	3,003.83	1,971.24	4,036.41	0.08	0.01	0.15
Health Care	155-379	3395	2,499.21	2,727.85	2,270.58	0.18	0.49	(0.12)
Informational Technology	349-832	8006	624.80	704.39	545.20	0.36	0.51	0.20
Telecommunication	38-75	682	12,352.35	14,753.75	9,950.95	0.43	0.35	0.50
Utilities	98-114	1145	6,157.47	3,694.93	8,620.01	(0.05)	0.10	(0.21)

Table 1 provides descriptive statistics for all listed companies (excluding financials) in the nine industries in the study: Energy, Materials, Industrials, Consumer Discretionary, Consumer Staples, Health Care, Information Technology, Telecommunication and Utilities as represented in the S&P's Euro 350; and with available data in the S&P Global Vantage Database. The first column reports the minimum and maximum number of observations in the ten years of analysis (1999-2010). The second column shows the total number of firm year observations by country. Columns 3 to 5 present average values for company size (identified by market capitalization in millions by local currency) for the full sample (1999-2010), the pre-period (1999-2004) and the post-period (2006-2010) respectively and organized by country. Columns 6 to 8 present average values for the accruals ratio (Richardson, 2009) for the full sample (1999-2010), the pre-period (1999-2004) and the post-period (2006-2010) respectively and organized by country. The accruals ratio is measured by the net change across all noncash accounts, deflated by the average value of Net Operating Assets (NOA). Results are reported in local currency.

From Table 1, we observe that, prior to the introduction of IFRS, the industries with the highest levels of accruals are: Information Technology, Health Care, Telecommunication and Energy. Further, for the period post IFRS, the industries with the highest levels of accruals are: Telecommunication, Energy and Information Technology.

In addition and following the suggestion in Richardson (2009), we decompose the aggregate measure of accruals into its two main components (Account Receivables and Inventory) to study whether certain industry/sectors are more prone to manipulation within the account receivables component or the inventory component.

$$\diamond\diamond\diamond\diamond\diamond\diamond\diamond un\diamond\diamond s \ \diamond\diamond\diamond\diamond\diamond\diamond i\diamond\diamond ab\diamond\diamond e \text{ —— Eq. 2}$$
$$\diamond\diamond a\diamond\diamond i\diamond\diamond = \frac{A\diamond\diamond_{\diamond\diamond} - A\diamond\diamond_{t-1}}{(\diamond\diamond\diamond\diamond\diamond\diamond_{\diamond\diamond} + \diamond\diamond\diamond\diamond\diamond\diamond_{t-1})/2}$$

$$In\diamond\diamond e\diamond\diamond \diamond o\diamond\diamond y \diamond\diamond a\diamond\diamond i\diamond\diamond_{\diamond\diamond\diamond_{t-1}} = \frac{I\diamond\diamond\diamond\diamond_{\diamond\diamond}-I\diamond}{(\diamond\diamond\diamond\diamond\diamond\diamond_{\diamond\diamond}+\diamond\diamond\diamond\diamond\diamond\diamond_{\diamond\diamond-1})/2} \quad \text{Eq. 3}$$

Finally we look at two measures, which focus on "revenue and expense misstatements." This is an interesting addition to our analysis, because we can investigate both revenue and expense recognition issues.

First, we use the Days Sales Outstanding (DSO) as a measure of revenue quality. This ratio (Eq.4), which is simply the ratio of net accounts receivable divided by total revenue and multiplied by 365, gives a sense for how quickly the company is able to convert its credit sales into cash. Increases in this ratio are a red flag for questionable credit sales to take longer to convert into cash.

$$D\diamond\diamond ys\ S\diamond\diamond le\diamond\diamond \diamond\diamond uts\diamond\diamond\diamond\diamond n\diamond\diamond\diamond\diamond n\diamond\diamond = \frac{[\frac{\diamond}{Sal\diamond\diamond s_{\diamond\diamond}}*365-\diamond\frac{A\diamond\diamond_{\diamond\diamond}}{Sal\diamond\diamond s_{\diamond\diamond}}_{-1}*365]}{\diamond\frac{A\diamond\diamond_{\diamond\diamond}-1}{Sal\diamond\diamond s_{\diamond\diamond}}_{-1}\diamond} \quad \text{Eq. 4}$$

Then, we study the Days Inventory Outstanding as a measure of inventory quality. The ratio (Eq.5) is equal to net inventory divided by cost of goods sold multiplied by 365 and it gives a sense for how quickly a company is able to convert inventory into revenue. Increases in this ratio can indicate potential problems related to earnings quality.

$$D\diamond\diamond ys\ Iv\diamond\diamond nt\diamond\diamond\diamond\diamond y \diamond\diamond uts\diamond\diamond\diamond\diamond n\diamond\diamond\diamond\diamond n\diamond\diamond = \frac{[\frac{\diamond}{C\diamond\diamond G\diamond\diamond_{\diamond}}*365-\diamond\frac{I\diamond\diamond V\diamond\diamond}{C\diamond\diamond G\diamond\diamond_{\diamond}}_{-1}*365]}{\diamond\frac{I\diamond\diamond V\diamond\diamond-1}{}_{-1}\diamond} \quad \text{Eq. 5}$$

$C\lozenge\lozenge G\lozenge\lozenge\lozenge$

$\lozenge-1$

2.4 Research Design

In order to determine whether an industry exhibits the accruals anomaly we perform two analyses. First, we conduct a test designed to determine whether or not the accruals anomaly is exhibited in the nine industries under analysis. We build portfolios of stocks characterized by different levels of accruals and then examine the risk and return performance of each equally weighted quintile or portfolio. Quintile 1 consists of portfolios with high levels of the ratio under analysis (lowest earnings quality) and Quintile 5 consists of stocks with low levels of the same ratio (highest earnings quality). This analysis intends to verify the feasibility of an investment strategy by looking to minimize the look-ahead biases given the different fiscal years in financial reporting by individual companies. This analysis is performed for two separate samples: the pre and post 2005 periods. This approach allows an examination of the presence and magnitude of the accruals mispricing across industries but also between the pre and post periods. For completeness we will present results for both subsamples but it is important to keep in mind the limitation that, prior to 2005, public companies in each industry were subject to different sets of accounting standards depending on the country of incorporation. Hence, we regard as robust the results for the years 2006-2010 when all European companies have been subject to report mandatorily under IFRS.

Second, we analyze a panel of both cross sectional and time series data. Fama-MacBeth (1973) cross-sectional regressions are estimated each year from 2006 to 2010 to determine the relative importance of the five variables in the analysis in predicting

future returns. The reasons why we perform this analysis for the period after the IFRS introduction only, is to use accounting information under the same reporting system.

The dependent variable in the Fama-MacBeth (1973) regressions is the total return on the stock at time period t+1. It is measured on a 1, 3, 6 and 12 month holding period basis (HPR). Holding period returns represent cumulative returns for the specific period considered. The analysis is pursued on five independent variables (Richardson, 2009), analyzed one at a time. Following are examples of the regression equations:

$$HP\Diamond\Diamond_{\Diamond\Diamond+1} = \Diamond\Diamond_0 + \Diamond\Diamond_1 \, A\Diamond\Diamond_{\Diamond\Diamond,t}$$

$$+ \in_{it} \quad \text{Eq. 9}$$

$$HP\Diamond\Diamond_{\Diamond\Diamond+1} = \Diamond\Diamond_0 + \Diamond\Diamond_1 \, INV_{\Diamond\Diamond,t} +$$

$$\in_{it} \quad \text{Eq. 10}$$

$$HP\Diamond\Diamond_{\Diamond\Diamond+1} = \Diamond\Diamond_0 + \Diamond\Diamond_1 \, DS\Diamond\Diamond_{\Diamond\Diamond,t} + \in_{it}$$

Eq. 11

$$HP\Diamond\Diamond_{\Diamond\Diamond+1} = \Diamond\Diamond_0 + \Diamond\Diamond_1 \, DI\Diamond\Diamond_{\Diamond\Diamond,t} +$$

$$\in_{it} \quad \text{Eq. 12}$$

Where,

$\Diamond\Diamond_1$ = coefficient

$\Diamond\Diamond_0$ = intercept

$\Diamond\Diamond S\Diamond\Diamond ccr_{\Diamond\Diamond,t}$ = Balance Sheet Accruals Ratio (based on Dechow et al., 2008;

Richardson et

al. 2005 and 2006)

$A\Diamond\Diamond_{\Diamond\Diamond,t}$ = Accounts Receivables Ratio (based on Richardson, 2009)

~~$INV_{\diamond\diamond,t}$= Inventory Ratio (based on Richardson, 2009)~~

$DS\diamond\diamond_{\diamond\diamond,t}$= Days Sales Ratio (based on Richardson, 2009)

$DI\diamond\diamond_{\diamond\diamond,t}$= Days Inventory Ratio (based on Richardson, 2009)

$HP\diamond\diamond_{\diamond\diamond+1}$= Holding Period Return

All returns are in local currencies.

2.5 Empirical Results

We test our hypothesis by analyzing the data in two separate samples: the pre 2005 and post 2005 periods. We begin by assuming a long/short framework and independently assign stocks into quintile groups based on the level of the accruals ratio (Dechow et al., 2008; Richardson et al. 2005 and 2006). We present the annualized spread between the high quality quintile (or low level of accruals) and the low quality quintile (or high level of accruals) for two separate samples in Table 2.

Table 2: Summary Returns Statistics for Portfolios sorted by Industry and Accrual Ratio

PRE IFRS (1999-2004)	Ann. Return Spread	Ann.Std. Dev. Spread	POST IFRS (2006-2010)	Ann. Return Spread	Ann. Std. Dev. Spread	Test of Differences
Energy	-5.36%	-1.67%	Energy	8.79%	-2.43%	(1.84)
Materials	7.17%	-2.53%	Materials	3.43%	-3.48%	0.44
Industrials	6.82%	-1.86%	Industrials	8.01%	-1.42%	(0.32)
Consumer Discretionary	12.16%	-5.47%	Consumer Discretionary	1.37%	-2.18%	1.68
Consumer Staples	4.12%	-0.41%	Consumer Staples	4.09%	-4.29%	(0.02)
Health Care	9.62%	-11.74%	Health Care	-7.62%	-0.80%	1.72
Informational Technology	321.57%	242.38%	Informational Technology	28.41%	27.69%	1.02
Telecommunication	10.37%	8.90%	Telecommunication	11.93%	2.82%	0.47
Utilities	6.16%	-2.01%	Utilities	0.30%	-8.58%	0.52

Table 2 provides summary returns statistics: annualized return spreads and annualized standard deviation spreads for all listed companies (excluding financials) in the nine industries in the study: Energy, Materials, Industrials, Consumer Discretionary, Consumer Staples, Health Care, Information Technology, Telecommunications and Utilities; and with available data in the S&P Global Vantage Database. Stocks are ranked into quintiles at the end of June each year based on the level of the accruals ratio (Richardson, 2009) for the two sample periods: the left table from 1999-2004 and the right table from 2006-2010. Returns are in local currencies. The annualized return spreads are the difference in returns between the lower accruals ratio quintile and the higher accruals ratio quintiles on an annualized basis. The annualized standard deviation spread is the difference between the standard deviations of the lower accruals ratio quintile and the higher accruals ratio quintiles on an annualized basis.

The annualized spreads are based on a strategy, which builds portfolios at the end of each June with a yearly rebalance. The spread is notably positive in eight of the nine sectors for the period prior to IFRS (1999-2004; left table). For instance, building

portfolios that are long stocks with the lowest levels of accruals and short portfolios of stocks characterized by the highest level of accruals in the Materials sector would have produced an annualized return spread of 7% for the years from 1999 to 2004. Of note is the fact that the spread is extremely high in the Information Technology sector (+321.5%). This is consistent with the results presented in Table 1 where we observed that the Information Technology sector had the highest level of accruals.

The right side of Table 3 shows the return spreads for quintile portfolios sorted by the level of accruals for the period post IFRS (2006-2010). The spreads are notably positive in six[34] of the nine sectors: Energy, Materials, Industrials, Consumer Staples, Information Technology and Telecommunications. As confirmed by the Test of Differences, spreads are significantly different in the two sub samples for: Energy, Consumer Discretionary and Health Care.

The results from the Fama-MacBeth cross sectional regressions for the nine sectors are presented in Table 3 but in this case they are conducted only on the subsample from 2006 to 2010 since we are using a predictive econometric technique. A negative coefficient indicates that companies with high levels of the accruals ratio and poor earnings quality produce lower future stock returns. As we can see from Table 3, coefficients are negative and significant in five sectors: Energy, Industrials, Consumer Staples, Information Technology and Telecommunications. Different from the decile analyses, the Materials sector has negative but not significant coefficients.

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[34]The consumer discretionary and utilities sectors have a positive but small spread which is negligible once transaction costs are incorporated.

Table 3: Fama-MacBeth Cross-Sectional Regressions of Holding Period Returns on Accruals (2006-2010).

	Constant	Coefficient	T-stat	R squared
Panel A: Energy				
1m HPR	0.0111	-0.0062	1.2600	0.0102
3m HPR	0.0112	-0.0233*	1.6987	0.0315
6m HPR	0.0445	-0.0387*	1.5180	0.0222
12m HPR	0.1120	-0.0463*	1.6050	0.0136
Panel B: Materials				
1m HPR	0.0146	0.0000	1.2125	0.0030
3m HPR	0.0563	-0.0052	0.9580	0.0026
6m HPR	0.0957	-0.0032	0.5720	0.0012
12m HPR	0.1465	-0.0013	0.5200	0.0009
Panel C: Industrials				
1m HPR	0.0232	-0.0002	0.9650	0.0128
3m HPR	0.0387	-0.0021	0.7800	0.0008
6m HPR	0.0434	-0.0016*	1.6060	0.0006
12m HPR	0.1358	-0.0049	1.0620	0.0017
Panel D: Consumer Discretionary				
1m HPR	0.0190	-0.0019	1.3325	0.0020
3m HPR	0.0564	-0.0038	1.0560	0.0013
6m HPR	0.0137	-0.0034*	1.6000	0.0038
12m HPR	0.1358	-0.0049*	1.7620	0.0017
Panel E: Consumer Staples				
1m HPR	0.0688	0.1397	0.8763	0.0061
3m HPR	0.0552	-0.1405**	2.2941	0.0262
6m HPR	0.0541	-0.1104*	1.7269	0.0141
12m HPR	0.0649	-0.0888**	1.8265	0.0156
Panel F: Health Care				
1m HPR	-0.0298	0.0142	0.9377	0.0480
3m HPR	0.2876	0.4442	0.9879	0.0923
6m HPR	-0.1090	0.0141	0.9617	0.1037
12m HPR	-0.1088	0.1262	0.5732	0.0628
Panel G: Information Technology				
1m HPR	0.2005	-3.0464*	1.6297	0.0018
3m HPR	0.1943	-2.6996**	2.1169	0.0019
6m HPR	0.2121	-2.3082***	2.4620	0.0016
12m HPR	0.2419	-0.9875**	1.8789	0.0008
Panel H: Telecommunications				
1m HPR	0.6137	-5.4349*	1.7574	0.0484
3m HPR	0.5796	-2.4547	1.0971	0.0246
6m HPR	0.8475	-1.5581**	1.8649	0.0220
12m HPR	0.7904	-1.0814*	1.7745	0.0438
Panel I: Utilities				
1m HPR	-0.1100	-1.1790	0.5932	0.0042
3m HPR	-0.3270	-1.9027	1.2570	0.0176
6m HPR	-0.5800	-1.4735	0.9754	0.0105
12m HPR	-0.1918	-0.7874	0.9858	0.0111

Table 3 provides regressions results for all listed companies (excluding financials) in the nine sectors in the study: Energy, Materials, Industrials, Consumer Discretionary, Consumer Staples, Health Care, Information Technology, Telecommunications and Utilities; and with available data in the S&P Global Vantage Database. At the end of June each year from 2006 to 2010, cross-sectional regressions are estimated of individual stocks' holding period returns on the independent variable represented by the accruals ratio (Richardson, 2009). The accruals ratio is measured by the net change across all noncash accounts, deflated by the average value of Net Operating Assets (NOA). Holding period returns are total returns calculated over four different time frames: 1, 3, 6 and 12 months. The reported statistics are the time-series average of monthly regression coefficients together with their t-statistics. * indicates significance at the 10% level; ** indicates significance at the 5% level; *** indicates significance at the 1% level.

Next, we analyze two components of the aggregate accruals ratio (Richardson, 2009), that is the Accounts Receivable ratio (Equation 2) and the Inventory ratio (Equation 3). We start with the Accounts Receivable ratio shown in Table 4, which presents the annualized spread between the high quality quintile (or low level of accounts receivable ratio) and the low quality quintile (or high level of accounts receivable ratio).

Table 4: Summary Returns Statistics for Portfolios sorted by Industry and Accounts Receivable Ratio

PRE IFRS (1999-2004)	Ann. Return Spread	Ann.Std. Dev. Spread	POST IFRS (2006-2010)	Ann. Return Spread	Ann. Std. Dev. Spread	Test of Differences
Energy	12.16%	7.75%	Energy	9.29%	2.32%	0.07
Materials	-6.99%	-11.52%	Materials	-10.03%	-3.55%	0.31
Industrials	5.36%	-0.15%	Industrials	0.24%	-1.87%	1.65
Consumer Discretionary	1.79%	-0.42%	Consumer Discretionary	2.83%	-3.90%	0.14
Consumer Staples	7.82%	-0.61%	Consumer Staples	-2.01%	-0.43%	(1.75)
Health Care	-4.27%	1.46%	Health Care	7.06%	-3.49%	1.68
Informational Technology	-0.20%	0.00%	Informational Technology	33.82%	8.85%	1.74
Telecommunication	13.03%	1.56%	Telecommunication	1.37%	-9.24%	(0.57)
Utilities	6.47%	-5.18%	Utilities	7.53%	-1.80%	0.06

Table 4 provides summary returns statistics: annualized return spreads and annualized standard deviation spreads for all listed companies (excluding financials) in the nine industries in the study: Energy, Materials, Industrials, Consumer Discretionary, Consumer Staples, Health Care, Information Technology, Telecommunications and Utilities; and with available data in the S&P Global Vantage Database. Stocks are ranked into quintiles at the end of June each year based on the level of the accounts receivabl ratio (Richardson, 2009) for the two sample periods: the left table from 1999-2004 and the right table from 2006-2010. Returns are in local currencies. The annualized return spreads are the difference in returns between the lower accruals ratio quintile and the higher accruals ratio quintiles on an annualized basis. The annualized standard deviation spread is the difference between the standard deviations of the lower accruals ratio quintile and the higher accruals ratio quintiles on an annualized basis.

The annualized spreads are based on a strategy, which builds portfolios at the end of each June with a yearly rebalance. The spread is notably positive in five[35] of the nine sectors (Energy, Industrials, Consumer Staples, Telecommunication and Utilities) for the period prior to IFRS (1999-2004; left table). For instance, building portfolios that

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[35] The consumer staples sector has a positive but small spread which is negligble once transaction costs are incorporated.

are long stocks with the lowest levels of accounts receivable and short portfolios of stocks characterized by the highest level of accruals in the Energy sector would have produced an annualized return spread of 12% for the years from 1999 to 2004.

The right side of Table 4 shows the return spreads for quintile portfolios sorted by the level of accounts receivable for the period post IFRS (2006-2010). The spreads are notably positive in five[36] (Energy, Consumer Discretionary, Health Care, Information Technology and Utilities) of the nine sectors. As confirmed by the Test of Differences, spreads are significantly different in the two sub samples for: Industrials, Consumer Staples, Health Care and Information Technology.

The results from the Fama-MacBeth cross sectional regressions for the nine sectors are presented in Table 5 and in this case are conducted only on the subsample from 2006 to 2010. As we can see from Table 5, coefficients are negative and significant in six sectors: Energy, Consumer Discretionary, Health Care, Information Technology, Telecommunication and Utilities; confirming the results from the decile analysis.

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[36] The industrials and telecommunication sectors have a positive but small spread which is negligible once transaction costs are incorporated.

Table 5: Fama-MacBeth Cross-Sectional Regressions of Holding Period Returns on the Accounts Receivable ratio (2006-2010).

	Constant	Coefficient	T-stat	R squared
Panel A: Energy				
1m HPR	-0.1100	-1.1790	0.5932	0.0042
3m HPR	-0.3270	-1.9027	1.2570	0.0176
6m HPR	0.0451	-0.0174*	1.6286	0.0015
12m HPR	0.0602	-0.0320*	1.7471	0.0052
Panel B: Materials				
1m HPR	-0.0150	0.0364	1.2654	0.0083
3m HPR	-0.0025	-0.2494	1.2420	0.0061
6m HPR	0.0134	-0.0888**	1.8289	0.0162
12m HPR	0.0116	-0.0397*	1.5263	0.0118
Panel C: Industrials				
1m HPR	-0.2012	-0.7176	1.4417	0.0025
3m HPR	-0.2121	0.2407	0.8862	0.0016
6m HPR	-0.2197	-0.0184	0.6644	0.0008
12m HPR	-0.2592	-0.0845	0.9439	0.0018
Panel D: Consumer Discretionary				
1m HPR	0.0212	-0.1275	1.2680	0.0036
3m HPR	0.0299	-0.0479	0.6758	0.0011
6m HPR	-0.0080	-0.2194*	1.7660	0.0112
12m HPR	0.0372	-0.0432*	1.5888	0.0106
Panel E: Consumer Staples				
1m HPR	0.0099	0.0466	1.1285	0.0076
3m HPR	0.0267	-0.0695	1.2615	0.0087
6m HPR	0.0186	0.0055	0.8945	0.0053
12m HPR	0.0158	-0.0075	0.7664	0.0030
Panel F: Health Care				
1m HPR	0.0206	-0.0422	0.4926	0.0011
3m HPR	0.0439	0.1843	0.8290	0.0029
6m HPR	0.0140	0.0032	0.3735	0.0007
12m HPR	0.0295	-0.0285*	1.6403	0.0125
Panel G: Information Technology				
1m HPR	-0.0352	-0.0358	0.5607	0.0009
3m HPR	-0.0757	-0.1591	0.5236	0.0006
6m HPR	-0.1101	-0.2797*	1.6773	0.0111
12m HPR	-0.0464	-0.0252*	1.5901	0.0004
Panel H: Telecommunications				
1m HPR	0.3020	-1.6893	0.5094	0.0049
3m HPR	0.2215	-1.1223	1.1376	0.0258
6m HPR	0.2712	-1.1255**	1.9346	0.0303
12m HPR	0.2747	-0.6618**	1.8178	0.0258
Panel I: Utilities				
1m HPR	0.1742	-5.104***	2.7748	0.1099
3m HPR	0.0721	-1.864***	2.2085	0.0585
6m HPR	0.1771	-0.8549	1.4284	0.0307
12m HPR	0.2289	-0.6595	1.3644	0.0300

Table 5 provides regressions results for all listed companies (excluding financials) in the nine sectors in the study: Energy, Materials, Industrials, Consumer Discretionary, Consumer Staples, Health Care, Information Technology, Telecommunications and Utilities; and with available data in the S&P Global Vantage Database. At the end of June each year from 2006 to 2010, cross-sectional regressions are estimated of individual stocks' holding period returns on the independent variable represented by the accruals ratio (Richardson, 2009). The accruals ratio is measured by the net change across all noncash accounts, deflated by the average value of Net Operating Assets (NOA). Holding period returns are total returns calculated over four different time frames: 1, 3, 6 and 12 months. The reported statistics are the time-series average of monthly regression coefficients together with their t-statistics. * indicates significance at the 10% level; ** indicates significance at the 5% level; *** indicates significance at the 1% level.

Following, we analyze the results for the inventory component as shown in Table 6 below.

Table 6: Summary Returns Statistics for Portfolios sorted by Industry and Inventory Ratio

PRE IFRS (1999-2004)	Ann. Return Spread	Ann.Std. Dev. Spread	POST IFRS (2006-2010)	Ann. Return Spread	Ann. Std. Dev. Spread	Test of Differences
Energy	-1.97%	2.77%	Energy	5.10%	1.06%	(0.67)
Materials	-0.14%	-12.77%	Materials	-5.51%	-2.11%	0.46
Industrials	3.53%	-0.71%	Industrials	2.92%	-1.20%	0.09
Consumer Discretionary	3.96%	-0.89%	Consumer Discretionary	0.87%	-1.24%	0.59
Consumer Staples	0.99%	-0.48%	Consumer Staples	3.56%	-1.79%	(0.48)
Health Care	9.44%	-2.50%	Health Care	4.68%	-2.94%	0.44
Informational Technology	10.44%	4.59%	Informational Technology	5.65%	-1.45%	0.66
Telecommunication	-7.01%	-14.24%	Telecommunication	3.87%	0.72%	(1.58)
Utilities	10.39%	0.62%	Utilities	1.37%	-2.19%	1.67

Table 6 provides summary returns statistics: annualized return spreads and annualized standard deviation spreads for all listed companies (excluding financials) in the nine industries in the study: Energy, Materials, Industrials, Consumer Discretionary, Consumer Staples, Health Care, Information Technology, Telecommunications and Utilities; and with available data in the S&P Global Vantage Database. Stocks are ranked into quintiles at the end of June each year based on the level of the inventory ratio (Richardson, 2009) for the two sample periods: the left table from 1999-2004 and the right table from 2006-2010. Returns are in local currencies. The annualized return spreads are the difference in returns between the lower accruals ratio quintile and the higher accruals ratio quintiles on an annualized basis. The annualized standard deviation spread is the difference between the standard deviations of the lower accruals ratio quintile and the higher accruals ratio quintiles on an annualized basis.

Based on the inventory ratio, the spread is positive in five[37] of the nine sectors (Industrials, Consumer Discretionary, Health Care, Information Technology and Utilities) for the period prior to IFRS (1999-2004; left table). For instance, building portfolios that are long stocks with the lowest levels of inventory ratio and short portfolios of stocks characterized by the highest level of accruals in the Health Care sector would have produced an annualized return spread of 9.4 % for the years from 1999 to 2004.

[37] The consumer staples sector has a positive but small spread which is negligible once transaction costs are incorporated.

The right side of Table 6 shows the return spreads for quintile portfolios sorted by the level of inventory ratio for the period post IFRS (2006-2010). The spreads are notably positive in six[38] (Energy, Industrials, Consumer Staples, Health Care, Information Technology and Telecommunication) of the nine sectors. The Test of Differences confirms that spreads are significantly different in the two sub samples only for the Telecommunication and Utilities sectors.

The results from the Fama-MacBeth cross sectional regressions for the nine sectors are presented in Table 7 and in this case are conducted only on the subsample from 2006 to 2010. As we can see from Table 7, coefficients are negative and significant in three sectors: Materials, Consumer Staples and Utilities. Thus, this analysis done on the inventory ratio is not as robust as in the prior two cases (Accruals ratio and Accounts Receivable ratio).

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[38] The consumer discretionary and utilities sectors have a positive but small spread which is negligible once transaction costs are incorporated.

Table 7: Fama-MacBeth Cross-Sectional Regressions of Holding Period Returns on the Inventory ratio (2006-2010).

	Constant	Coefficient	T-stat	R squared
Panel A: Energy				
1m HPR	0.1001	0.1193	0.3311	0.0008
3m HPR	0.1127	0.0722	0.4598	0.0017
6m HPR	0.1171	0.1762	0.5011	0.0019
12m HPR	0.1199	0.1825	0.7031	0.0034
Panel B: Materials				
1m HPR	-0.0069	0.2695	1.5632	0.0107
3m HPR	0.0229	0.0131	1.3968	0.0068
6m HPR	0.0218	0.0161*	1.7182	0.0156
12m HPR	0.0192	0.0068	1.4947	0.0108
Panel C: Industrials				
1m HPR	0.0044	-0.0639*	1.9896	0.0086
3m HPR	0.0198	0.1368	1.3677	0.0038
6m HPR	0.0297	0.1180	1.0466	0.0070
12m HPR	0.0116	0.0379	0.8343	0.0013
Panel D: Consumer Discretionary				
1m HPR	-0.0013	0.1046	1.1194	0.0027
3m HPR	-0.0053	0.0384	0.9436	0.0019
6m HPR	-0.0028	0.0140	1.3489	0.0036
12m HPR	-0.0047	0.0115	1.3208	0.0054
Panel E: Consumer Staples				
1m HPR	0.0072	0.1435	2.2499	0.0234
3m HPR	0.0146	0.0392	1.2197	0.0088
6m HPR	0.0088	-0.0357**	1.7316	0.0138
12m HPR	0.0080	-0.0001	1.1289	0.0051
Panel F: Health Care				
1m HPR	0.0086	0.0691	1.1618	0.0062
3m HPR	0.0112	0.0365	1.1184	0.0051
6m HPR	0.0127	0.0195	1.0025	0.0041
12m HPR	0.0100	0.0039	0.9231	0.0031
Panel G: Information Technology				
1m HPR	0.5544	2.0854	0.7192	0.0013
3m HPR	0.6875	0.0450	0.5057	0.0006
6m HPR	0.5577	1.9630	0.6377	0.0008
12m HPR	0.5999	0.2250	0.9237	0.0019
Panel H: Telecommunications				
1m HPR	-0.0264	0.1734	1.0395	0.0185
3m HPR	-0.0157	0.1038	0.4165	0.0029
6m HPR	-0.0119	0.0862	0.3120	0.0024
12m HPR	-0.0250	0.0543	0.5496	0.0059
Panel I: Utilities				
1m HPR	0.1742	-5.1047***	2.7748	0.1099
3m HPR	0.0865	-1.8646***	2.2085	0.0585
6m HPR	0.1771	-0.8549	1.4284	0.0307
12m HPR	0.2289	-0.6595	1.3644	0.0300

Table 7 provides regressions results for all listed companies (excluding financials) in the nine sectors in the study: Energy, Materials, Industrials, Consumer Discretionary, Consumer Staples, Health Care, Information Technology, Telecommunications and Utilities; and with available data in the S&P Global Vantage Database. At the end of June each year from 2006 to 2010, cross-sectional regressions are estimated of individual stocks' holding period returns on the independent variable represented by the accruals ratio (Richardson, 2009). The accruals ratio is measured by the net change across all noncash accounts, deflated by the average value of Net Operating Assets (NOA). Holding period returns are total returns calculated over four different time frames: 1, 3, 6 and 12 months. The reported statistics are the time-series average of monthly regression coefficients together with their t-statistics. * indicates significance at the 10% level; ** indicates significance at the 5% level; *** indicates significance at the 1% level.

Following, we analyze the results for the Days Sales Outstanding (DSO) component as shown in Table 8 below.

Based on the DSO ratio, the spread is positive in six[39] of the nine sectors (Energy, Materials, Health Care, Information Technology, Telecom and Utilities) for the period prior to IFRS (1999-2004; left table). For instance, building portfolios that are long stocks with the lowest levels of inventory ratio and short portfolios of stocks characterized by the highest level of accruals in Energy sector would have produced an annualized return spread of 22 % for the years from 1999 to 2004.

The right side of Table 8 shows the return spreads for quintile portfolios sorted by the level of inventory ratio for the period post IFRS (2006-2010). The spreads are notably positive in three[40] (Industrials, Consumer Staples and Utilities) of the nine sectors. Based on the Test of Differences, spreads are significantly different in the sub samples for the Energy, Health Care and the Information Technology sectors.

Table 8: Summary Returns Statistics for Portfolios sorted by Industry and DSO

PRE IFRS (1999-2004)	Ann. Return Spread	Ann.Std. Dev. Spread	POST IFRS (2006-2010)	Ann. Return Spread	Ann. Std. Dev. Spread	Test of Differences
Energy	22.10%	5.35%	Energy	0.26%	-1.94%	1.49
Materials	5.95%	9.69%	Materials	0.69%	2.28%	0.38
Industrials	1.43%	1.64%	Industrials	2.60%	0.64%	(0.31)
Consumer Discretionary	0.16%	1.18%	Consumer Discretionary	-1.64%	-0.20%	0.33
Consumer Staples	0.87%	0.84%	Consumer Staples	4.26%	-3.11%	0.50
Health Care	8.23%	2.42%	Health Care	-0.77%	-0.21%	1.97
Informational Technology	372.52%	280.51%	Informational Technology	-25.22%	-28.44%	1.98
Telecommunication	59.60%	98.51%	Telecommunication	0.86%	-0.43%	0.77
Utilities	6.83%	0.90%	Utilities	3.66%	-2.33%	0.27

Table 8 provides summary returns statistics: annualized return spreads and annualized standard deviation spreads for all listed companies (excluding financials) in the nine industries in the study: Energy, Materials, Industrials, Consumer Discretionary, Consumer Staples, Health Care, Information Technology, Telecommunications and

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[39] The industrials, consumer and consumer staples sectors have a positive but small spread which is negligible once transaction costs are incorporated.

[40] The energy, materials and telecommunication sectors have a positive but small spread which is negligible once transaction costs are incorporated.

Utilities; and with available data in the S&P Global Vantage Database. Stocks are ranked into quintiles at the end of June each year based on the level of DSO (Richardson, 2009) for the two sample periods: the left table from 1999-2004 and the right table from 2006-2010. Returns are in local currencies. The annualized return spreads are the difference in returns between the lower accruals ratio quintile and the higher accruals ratio quintiles on an annualized basis. The annualized standard deviation spread is the difference between the standard deviations of the lower accruals ratio quintile and the higher accruals ratio quintiles on an annualized basis.

The results from the Fama-MacBeth cross sectional regressions for the nine sectors are presented in Table 9 and in this case are conducted only on the subsample from 2006 to 2010. As we can see from Table 9, coefficients are negative and significant in only one sector: Consumer Staples not confirming the decile analysis. Again, the DSO ratio is not as robust as in the prior two cases (Accruals ratio and Accounts Receivable ratio).

Table 9: Fama-MacBeth Cross-Sectional Regressions of Holding Period Returns on the DSO ratio (2006-2010).

	Constant	Coefficient	T-stat	R squared
Panel A: Energy				
1m HPR	91.5777	-102.3601	0.5469	0.0025
3m HPR	42.3835	-77.8620	0.7664	0.0054
6m HPR	-12.5507	-25.9184	0.9656	0.0082
12m HPR	-15.6839	-14.0998	-0.2858	0.0005
Panel B: Materials				
1m HPR	59.1819	-337.3466	0.9977	0.0053
3m HPR	323.7108	134.1651	1.3381	0.0085
6m HPR	1802.4581	5120.22*	1.7806	0.0280
12m HPR	3284.9384	874.43*	1.5025	0.0216
Panel C: Industrials				
1m HPR	35.8797	375.66*	1.5070	0.0034
3m HPR	38.9426	23.4727	0.6773	0.0008
6m HPR	40.2042	13.9222	0.9057	0.0011
12m HPR	37.8989	24.1965	1.4677	0.0054
Panel D: Consumer Discretionary				
1m HPR	132.1106	296.2024	0.6873	0.0007
3m HPR	108.0037	39.0044	0.5149	0.0006
6m HPR	106.9262	-162.2571	0.9390	0.0017
12m HPR	96.4951	-188.4223	1.0586	0.0019
Panel E: Consumer Staples				
1m HPR	30.5990	-56.6329	1.2402	0.0093
3m HPR	27.1335	-54.965*	1.5938	0.0083
6m HPR	26.7442	-16.708*	1.5721	0.0028
12m HPR	32.0911	-17.887*	1.6229	0.0049
Panel F: Health Care				
1m HPR	432.4713	-1137.2568	0.4771	0.0010
3m HPR	258.3254	-302.7628	0.9756	0.0048
6m HPR	277.1543	77.2407	0.9339	0.0063
12m HPR	328.3425	-176.6065	0.8423	0.0033
Panel G: Information Technology				
1m HPR	87.6962	-84.2490	0.4795	0.0005
3m HPR	103.2566	-95.4229	0.5726	0.0008
6m HPR	104.9628	-77.2221	0.9859	0.0024
12m HPR	105.2222	-45.2487	0.9775	0.0023
Panel H: Telecommunications				
1m HPR	327.0810	-1448.0555	1.0182	0.0250
3m HPR	311.5229	-1000.8590	1.2808	0.0351
6m HPR	180.2498	-135.0814	1.0172	0.0228
12m HPR	202.9844	-134.9113	1.1910	0.0275
Panel I: Utilities				
1m HPR	102.6560	65.6160	1.1660	0.0167
3m HPR	16.6120	-214.563*	1.6222	0.0346
6m HPR	61.3310	-210.3275	1.0017	0.0143
12m HPR	84.0424	-86.4332	0.8969	0.0120

Table 9 provides regressions results for all listed companies (excluding financials) in the nine sectors in the study: Energy, Materials, Industrials, Consumer Discretionary, Consumer Staples, Health Care, Information Technology, Telecommunications and Utilities; and with available data in the S&P Global Vantage Database. At the end of June each year from 2006 to 2010, cross-sectional regressions are estimated of individual stocks' holding period returns on the independent variable represented by the accruals ratio (Richardson, 2009). The accruals ratio is measured by the net change across all noncash accounts, deflated by the average value of Net Operating Assets (NOA). Holding period returns are total returns calculated over four different time frames: 1, 3, 6 and 12 months. The reported statistics are the time-series average of monthly regression coefficients together with their t-statistics. * indicates significance at the 10% level; ** indicates significance at the 5% level; *** indicates significance at the 1% level.

Finally, we analyze the results for the Days Inventory Outstanding (DIO) component as shown in Table 10 below.

Based on the DIO ratio, the spread is positive in five of the nine sectors (Energy and Materials, Industrials, Health Care and Utilities) for the period prior to IFRS (1999-2004; left table). For instance, building portfolios that are long stocks with the lowest levels of inventory ratio and short portfolios of stocks characterized by the highest level of accruals in Energy sector would have produced an annualized return spread of 16.5 % for the years from 1999 to 2004.

The right side of Table 10 shows the return spreads for quintile portfolios sorted by the level of inventory ratio for the period post IFRS (2006-2010). The spreads are notably positive in two (Energy and Materials) of the nine sectors. Based on the Test of Differences, spreads are significantly different in the sub samples only for Industrials.

Table 10: Summary Returns Statistics for Portfolios sorted by Industry and DIO

PRE IFRS (1999-2004)	Ann. Return Spread	Ann.Std. Dev. Spread	POST IFRS (2006-2010)	Ann. Return Spread	Ann. Std. Dev. Spread	Test of Differences
Energy	16.51%	0.48%	Energy	4.11%	-1.35%	(0.28)
Materials	12.26%	3.39%	Materials	5.49%	-0.31%	0.65
Industrials	20.74%	13.83%	Industrials	-2.04%	-0.42%	1.54
Consumer Discretionary	-0.39%	1.58%	Consumer Discretionary	-2.16%	-1.26%	0.20
Consumer Staples	-3.15%	2.14%	Consumer Staples	-2.16%	4.58%	0.46
Health Care	18.46%	-2.85%	Health Care	0.80%	-1.29%	1.39
Informational Technology	-74.00%	-53.00%	Informational Technology	-16.48%	-39.81%	(0.93)
Telecommunication	-8.46%	-2.87%	Telecommunication	0.47%	-2.05%	0.35
Utilities	5.44%	7.01%	Utilities	-4.70%	0.27%	0.23

Table 10 provides summary returns statistics: annualized return spreads and annualized standard deviation spreads for all listed companies (excluding financials) in the nine industries in the study: Energy, Materials, Industrials, Consumer Discretionary, Consumer Staples, Health Care, Information Technology, Telecommunications and Utilities; and with available data in the S&P Global Vantage Database. Stocks are ranked into quintiles at the end of June each year based on the level of DIO (Richardson, 2009) for the two sample periods: the left table from 1999-2004 and the right table from 2006-2010. Returns are in local currencies. The annualized return spreads are the difference in returns between the lower accruals ratio quintile and the higher accruals ratio quintiles on an annualized basis. The annualized standard deviation spread is the difference between the standard deviations of the lower accruals ratio quintile and the higher accruals ratio quintiles on an annualized basis.

The results from the Fama-MacBeth cross sectional regressions for the nine sectors are presented in Table 11 and in this case are conducted only on the subsample from 2006 to 2010. As we can see from Table 11, coefficients are negative and significant in only one sector: Materials not confirming the results of the decile analysis. Even in this case results are not robust for the DIO ratio.

Table 11: Fama-MacBeth Cross-Sectional Regressions of Holding Period Returns on the DIO ratio (2006-2010)

	Constant	Coefficient	T-stat	R squared
Panel A: Energy				
1m HPR	75.5406	87.1890	0.3341	0.0011
3m HPR	75.1789	51.8827	1.0030	0.0361
6m HPR	71.5058	23.3683	1.0106	0.0124
12m HPR	66.9331	10.4669	0.8603	0.0092
Panel B: Materials				
1m HPR	208.6327	-741.0267	1.1629	0.0079
3m HPR	226.4757	-601.21*	1.6792	0.0147
6m HPR	158.7686	-135.02*	1.5641	0.0034
12m HPR	205.3669	-157.79*	1.6296	0.0077
Panel C: Industrials				
1m HPR	829.3088	2904.09**	2.2149	0.0150
3m HPR	916.2063	859.4856	1.4031	0.0082
6m HPR	640.5980	-631.4690	0.4000	0.0006
12m HPR	254.5558	-1237.6162	0.7362	0.0009
Panel D: Consumer Discretionary				
1m HPR	3324.4166	-20680.1869	1.1941	0.0030
3m HPR	3826.5008	-10990.5795	1.1920	0.0035
6m HPR	3937.0703	-5253.6811	1.0098	0.0022
12m HPR	2360.6750	-1712.5320	0.9895	0.0018
Panel E: Consumer Staples				
1m HPR	474.4865	745.1087	1.0359	0.0056
3m HPR	657.9363	-457.8253	0.4887	0.0016
6m HPR	574.0429	-332.1445	0.8465	0.0045
12m HPR	333.1313	393.3574	0.6714	0.0032
Panel F: Health Care				
1m HPR	1749.9480	1688.22*	1.6981	0.0267
3m HPR	107.8602	-12566.4873	0.6560	0.0025
6m HPR	279.8763	-3450.8995	0.8403	0.0056
12m HPR	141.4378	-4362.8753	0.7448	0.0025
Panel G: Information Technology				
1m HPR	219.4590	-4695.98*	1.7250	0.0092
3m HPR	96.8789	-2003.9172	1.2082	0.0042
6m HPR	457.3759	294.2374	1.0958	0.0038
12m HPR	322.0111	290.0915	1.1227	0.0118
Panel H: Telecommunications				
1m HPR	137.8620	1683.7929	0.6977	0.0229
3m HPR	284.5963	938.9422	0.7979	0.0244
6m HPR	298.5664	849.7018	1.0743	0.0304
12m HPR	124.9797	-202.4111	0.4538	0.0094
Panel I: Utilities				
1m HPR	73.6110	-138.6314	0.8689	0.0123
3m HPR	102.4578	-238.6033	0.8946	0.0141
6m HPR	112.7988	-89.3086	1.2253	0.0373
12m HPR	78.3991	-61.6308	1.0518	0.0288

Table 11 provides regressions results for all listed companies (excluding financials) in the nine sectors in the study: Energy, Materials, Industrials, Consumer Discretionary, Consumer Staples, Health Care, Information Technology, Telecommunications and Utilities; and with available data in the S&P Global Vantage Database. At the end of June each year from 2006 to 2010, cross-sectional regressions are estimated of individual stocks' holding period returns on the independent variable represented by the accruals ratio (Richardson, 2009). The accruals ratio is measured by the net change across all noncash accounts, deflated by the average value of Net Operating Assets (NOA). Holding period returns are total returns calculated over four different time frames: 1, 3, 6 and 12 months. The reported statistics are the time-series average of monthly regression coefficients together with their t-statistics. * indicates significance at the 10% level; ** indicates significance at the 5% level; *** indicates significance at the 1% level.

In addition, we report the spreads of long and short portfolios on GICS Sub-Industry (GICS group) based on the Accruals ratio (Richardson, 2009). Table 12 reports the results for the period prior to IFRS while Table 13 shows the results for the post period. This analysis shows more granularities at the sub-industry level and allows us to see where the industry spreads are coming from. For instance, as Table 12 and 13 show, we observe that within the Information Technology sector, the highest spreads are coming from "software and services" for both samples. Similarly, within the Consumer Staples sector, the highest spreads are coming from the "household and personal products" sub-industry. Differently, within the Industrials sector, "transportation" turns from a slightly negative spread pre IFRS to a positive spread post IFRS. Finally, within the Consumer Discretionary sector, "consumer durables and apparel" turns from a positive spread pre IFRS to a negative spread post IFRS.

Table 12: Summary Returns Statistics for Portfolios sorted by Sub-Industry and Accruals Ratio (1999-2004)

PRE IFRS (1999-2004)	Annualized Return Spread	Annualized Std. Dev. Spread
Energy	**-5,36%**	**-1,67%**
Materials	**7,17%**	**-2,53%**
Industrials	**6,82%**	**-1,86%**
Capital Goods	6,69%	-1,80%
Commercial Services & Supplies	36,27%	12,53%
Transportation	-1,23%	-2,58%
Consumer Discretionary	**12,16%**	**-5,47%**
Automobiles & Components	1,37%	-4,59%
Consumer Durables & Apparel	8,88%	0,47%
Consumer Services	1,66%	-14,34%
Media	28,55%	-5,96%
Retailing	5,07%	-0,65%
Consumer Staples	**4,12%**	**-0,41%**
Food & Staples Retailing	3,00%	-5,13%
Food Beverage & Tobacco	2,58%	0,07%
Household & Personal Products	23,51%	1,45%
Health Care	**9,62%**	**-11,74%**
Health Care Equipment & Services	29,66%	-2,05%
Pharmaceuticals, Biotechnology & Life Sciences	-7,81%	-16,32%
Informational Technology	**321,57%**	**242,38%**
Software & Services	518,87%	374,66%
Technology Hardware & Equipment	72,74%	70,33%
Semiconductors & Semiconductor Equipment	7,17%	3,32%
Telecommunication	**10,37%**	**8,90%**
Utilities	**6,16%**	**-2,01%**

Table 12 provides summary returns statistics for all listed companies (excluding financials) in the seventeen countries in the study, which are the countries representative of the S&P Euro 350 benchmark: the U.K., France, Germany, the Netherlands and Sweden; and with available data in the S&P Global Vantage Database. Stocks are ranked into quintiles at the end of June each year for the sample period from 1999-2004 based on the level of the accruals ratio (Richardson, 2009). The Annualized Return Spread is the difference between the average annualized return for Quintile 5 (Low Accruals Ratio-High Quality of Earnings) and the average annualized return for Quintile 1 (High Accruals Ratio-Low Quality of Earnings). The Annualized Standard Deviation is the difference between the average annualized standard deviation for Quintile 5 (Low Accruals Ratio-High Quality of Earnings) and the average annualized standard deviation for Quintile 1 (High Accruals Ratio-Low Quality of Earnings). The table provides the average sample size for each GICS sector and GICS group.

Table 13: Return Statistics for the Post IFRS period (2006-2010)

POST IFRS (2006-2010)	Annualized Return Spread	Annualized Std. Dev. Spread
Energy	**8.79%**	**-2.43%**
Materials	**3.43%**	**-3.48%**
Industrials	**8.01%**	**-1.42%**
Capital Goods	11.07%	-0.79%
Commercial Services & Supplies	3.00%	-3.46%
Transportation	4.50%	-1.75%
Consumer Discretionary	**1.37%**	**-2.18%**
Automobiles & Components	13.91%	-4.84%
Consumer Durables & Apparel	-7.36%	-1.70%
Consumer Services	3.84%	-4.86%
Media	3.07%	-3.77%
Retailing	3.83%	-1.26%
Consumer Staples	**4.09%**	**-4.29%**
Food & Staples Retailing Food	0.76%	-2.58%
Beverage & Tobacco Household	5.10%	-5.66%
& Personal Products	12.93%	-2.03%
Health Care	**-7.62%**	**-0.80%**
Health Care Equipment & Services	-5.20%	-1.19%
Pharmaceuticals, Biotechnology & Life Sciences	-11.88%	-1.18%
Informational Technology	**28.41%**	**27.69%**
Software & Services	35.55%	42.57%
Technology Hardware & Equipment	10.66%	0.61%
Semiconductors & Semiconductor Equipment	15.53%	4.12%
Telecommunication	**11.93%**	**2.82%**
Utiities	**0.30%**	**-8.58%**

Table 13 provides summary returns statistics for all listed companies (excluding financials) in the seventeen countries in the study, which are the countries representative of the S&P Euro 350 benchmark: the U.K., France, Germany, the Netherlands and Sweden; and with available data in the S&P Global Vantage Database. Stocks are ranked into quintiles at the end of June each year for the sample period from 2006-2010 based on the level of the accruals ratio (Richardson, 2009). The Annualized Return Spread is the difference between the average annualized return for Quintile 5 (Low Accruals Ratio-High Quality of Earnings) and the average annualized return for Quintile 1 (High Accruals Ratio-Low Quality of Earnings). The Annualized Standard Deviation is the difference between the average annualized standard deviation for Quintile 5 (Low Accruals Ratio-High Quality of Earnings) and the average annualized standard deviation for Quintile 1 (High Accruals Ratio-Low Quality of Earnings). The table provides the average sample size for each GICS sector and GICS group.

2.6 Conclusion

Following the suggestion by Richardson (2009), we analyzed the pervasiveness of the accruals mispricing within industries in a sample of seventeen European countries. Contrary to Chan et al. (2006), who studied the U.S. dataset, we find that the accruals mispricing is not present in all industries within the European dataset. In fact, based on our results, we find that the accruals mispricing post the introduction of IFRS is present in an average of two to six out of the nine industries analyzed. These differences are due to the type of ratio used as a proxy of the accruals mispricing. One key finding is that three industries: Energy, Information Technology and Telecommunication present a positive spread based on screenings of three of the five ratios used (Accruals Ratio, Accounts Receivables and Inventory). This is consistent with the findings in table 1 which identifies these three sectors as those with the highest levels of accruals. Another key finding is that the Total Accruals ratio and the Accounts Receivable Ratio seem to be the two most robust proxies to screen for earnings quality since we find consistency between the decile and the Fama-MacBeth regression analysis. We note that, while the Days Sales Outstanding and the Days Inventory Outstanding ratios are not robust, it is important to point some limitations to our analysis. For the DSO, it should be checked whether a company's credit policy or product mix has changed substantially or whether the company has securitized its receivables. Similarly for DIO, it should be screened whether inventory built up is due to cyclicality. We leave both of these issues for further investigation for future research.

3 The Relationship between Earnings Quality, Control Mechanisms of Corporate Governance, and Future Stock Returns. The case of the Netherlands.

Elisabetta Basilico
USG, University of St. Gallen, St. Gallen, Switzerland
E-mail: elisabetta.basilico@yahoo.com

Hugh Grove
School of accountancy, Daniels College of Business, University of Denver, Denver, CO, USA
E-mail: hgrove@du.edu

Abstract

This article extends prior research on the relation between earnings quality (assessed by accruals) and future stock returns and adds new research on the relationships between direct and indirect corporate governance mechanisms of control with accruals and future stock returns. We study public companies of the Netherlands and find the presence of mispricing associated with very high and very low accruals. We also find evidence that direct corporate governance control mechanisms, such as the existence of separate, independent, and skilled audit committees, are related to higher earnings quality and higher future stock returns.

3.1 Introduction

In this article, we investigate whether relationships or links exist between a measure of aggregate accruals (Dechow et al., 2008; Richardson et al. 2005 and 2006), a set of corporate governance mechanisms, which capture both direct (Audit Committee level) and indirect (Board of Directors level) control over the financial reporting process, and future stock returns. We examine public companies of the Netherlands for two reasons. First, we build on prior research showing that differences in accruals indicate mispricing in the Dutch stock market. Second and more importantly, while the Netherlands is ranked as one European country with among the best corporate governance systems[41], it also presents an interesting featurein the Dutch corporate governance code for public companies (apply or explain clause).Specifically, we ask the general research question of whether, given differences in terms of direct and indirect corporate governance control mechanisms among extreme deciles of accruals accounting for dutch companies, it is possible to improve a pure "earnings quality" stock selection tool. Our study contributes to the international finance and corporate governance literature as well as to the investment community.The remainder of the article proceeds as follows: Section 2 summarizes the related literature. Section 3 develops the hypothesis and the research questions. Section 4 describes the research methodology. Section 5 provides the empirical results for Dutch public companies and Section 6 concludes.

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[41] Heydrick and Struggles, 2011

3.2 Theory and Literature Review

In terms of theoretical framework, this paper fits within four of the five theoretical pillars highlighted in Chapter 0.3 and Figure 1 in this document. Specifically, I am referring to:

- Earnings Management

- Agency and Positive Accounting Theory

- Efficient Market Hypothesis

- Corporate Governance

Following are the details of the Literature Review:

3.2.1 Accruals Mispricing

Basilico and Johnsen (2012) study the presence and magnitude of the accruals anomaly in nine European countries, with particular interest in finding which countries maintain the mispricing after the introduction of International Financial Reporting Standards (IFRS) in 2005. The Netherlands is one of the countries analyzed and the authors find that the country maintains the mispricing for the period from 2006 till 2010.

3.2.2 Corporate Governance

A vast body of literature acknowledges the importance of corporate governance mechanisms to improve financial reporting quality and past literature has demonstrated that good governance helps to reduce the risk of financial reporting problems. According to Hermann (2003, p.44), "*Good governance goes in-hand with reduced*

risk of financial reporting problems and other bad accounting outcomes." Researchers found evidence on the association between poor governance and poor quality of financial reporting, including earnings manipulation, financial restatements and frauds. For instance, Beasley(1996) finds that no-fraud firms have boards with significantly higher percentages of outside members compared to fraud firm. Peasnell et al.(2000) finds evidence of an association between the degree of accrual management and the composition of the board of directors in the post Cadbury Report period. Klein(2002) find that earnings management is positively related to whether the CEO sits on the board compensation committee and negatively related to whether a large outsider shareholder sits on the board's audit committee. Finally, Kao and Chen (2004) find different relationships between income-increasing and income-decreasing discretionary accruals and corporate governance characteristics. Consequently, monitoring associated with sound governance restricts opportunities for the manipulation of earnings. These early studies focus mainly on the role of the entire Board of Directors as a monitoring tool and the role of non-executive directors in enhancing the quality and integrity of financial reporting information.

According to agency theory (Fama and Jensen, 1983; Shleifer and Vishny, 1997), boards with a majority of non-executive directors reduce agency conflicts because non-executives provide an effective monitoring tool for the board. The inclusion of outside directors (typically expert managers from other large organizations who are also independent) increases the boards' ability to be more efficient in monitoring top management and any related collusion practice. Hence, independent directors become a potentially powerful governance mechanism to mitigate agency costs and protect shareholders wealth (Li, 1994).

Other studies, like Davidson et al. (2005), add variables such as the presence of an audit committee and the external audit function and provide evidence of the association of such variables with the reliability of reported earnings. Additionally, the literature investigates observable characteristics of these mechanisms. As studied in the past, key characteristics of the Board of Directors are the inclusion of "independent" directors and the separation of the roles of Chief Executive Officer (CEO) and the Chairman of the Board (Koh et al., 2007; Basilico and Grove, 2008). An interesting characterization of independence comes from the finance literature and relates to school ties (Frazzini and Cohen, 2008), which can occur among directors. The idea here is to study whether social networks affect governance matters.On the other hand, key characteristics for the audit committee are size, independence, expertise and diligence (De Zoort et al., 2002; Klein 2002; Krishnan, 2005). Finally, an indication of good governance for the external audit function is the engagement of a top tier audit firm (Cohen et al., 2002). Thus, independence is an important factor at the audit committee level too.Consequently, the expectation is that an independent audit committee should decrease the level of earnings management.

A recent article by Kent et al. (2010) studies the association between corporate governance mechanisms and accruals quality. Specifically, the authors derive measures of discretionary and innate (nondiscretionary) components of accruals and regress them against corporate governance characteristics. Their sample is made up of listed Australian companies in 2004. They find a relationship between the use of a Big 4 audit firm and a larger audit committee and discretionary accruals while innate accruals are related to an independent Board of Directors and to a larger and more independent audit committee as well as the use of a Big 4 audit firm.

3.3 Hypothesis Development

We extend the work by Kent et.al (2010) by not only studying the relationship between corporate governance quality indicators and accruals (a proxy for earnings quality) but also by investigating the relationships between these corporate governance indicators and future stock returns. From a theoretical standpoint, this article contributes to both agency theory and capital markets efficiency theory. From a practical point of view, this article attempts to verify whether it is possible to improve earnings quality ratings with corporate governance ratings to form a better stock selection screening tool.

One way for managers to manipulate earnings is to manipulate accruals. Accruals are the difference betweenfirms's accounting earnings and its underlying cash flow. Under accrual accounting basis (as opposed to cash accounting), revenues are recorded when a good or service has been provided to the customer (not when cash is collected) and expenses are reductions in net assets associated with the creation of those revenues (not when cash is paid). While wecannot completely discard the usefulness of accrual accounting since it provides more timely and relevant information for decision making than cash accounting, this article argues that it is important to discern earnings manipulation in the company performance evaluation process.Building on prior research which investigated the impact of legal, governance and accounting differences among European countries (Basilico and Johnsen, 2012), we use Dutch public companies since the Netherlands represents an interesting corporate governance framework.

Concerning corporate governance, board members and board committeesshould provide controls that ensure compliance with reporting requirements (Dechow et al., 1995; Davidson et al., 2005). Prior research suggests that monitoring associated with sound governance lowers the instances of earnings manipulation (Klein, 2002; Davidson et al., 2005; Koh et al., 2007). Following Koh et al. (2007), I distinguish between governance structures that have a direct role in the financial reporting process (audit related governance) and those, which have an indirect role (board related governance). This distinction is also highlighted as an important one in the OECD Principle VI.D.7[42]. The Netherlands constitutes an interesting case from a governance angle because it is a European country with a stellar corporate governance system[43], but at the same time, and similarly to other countries, the Dutch corporate governance code (the Tabaksblat Code) contains an "apply-or explain" principle, offering public companies the possibility to deviate from the corporate governance code as long as any such deviations are explained. To the extent that such deviations are approved by a general meeting of board members, the company is deemed to be in compliance. Therefore, it is important to study corporate governance control mechanisms since the correct mechanisms may not be fully in place, due to this exception in the Dutch code. As such, the main research objectives of this article are:

1. To investigate whether there are significant differences in terms of direct and indirect corporate governance control mechanisms within the extreme groups of high and low accruals.

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42 OECD stands for "Organization for Economic Co-operation and Development"
43 Heydrick and Struggles, 2011

2. To investigate whether there is a relationship between levels of accruals and direct (Audit Committee) and indirect (Board of Directors) corporate governance mechanisms of control.

3. To investigate whether there is a relationship between direct (Audit Committee) and indirect (Board of Directors) corporate governance mechanisms of control and future stock returns.

3.4 Data and Sample Statistics

The sample consists of public companies whose country code is the Netherlands as established by the International Standards Organization and with data available on the Standard and Poor's Global Vantage database. We consider both active and inactive companies[44] as of December 2009 and, similar to prior research studies, we exclude financial firms (those with GICS[45] sector 40) from the final sample because of peculiarities in the accruals of such firms. Financial data were collected for the years using the Standard and Poor's Global Vantage Database while corporate governance variables were hand collected using the Reuters' People database as well as individual company's proxy statements.

To measure the accruals mispricing we use a measure introduced by Dechow et al., 2008; Richardson et al. 2005 and 2006: the "balance sheet based accruals ratio." It is calculated by measuring the net change across all noncash accounts. Therefore, aggregate accruals are simply the change in net assets (net of cash and debt related

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[44] I look at both active and inactive companies to control for survivorship bias.
[45] The Global Industry Classification Standards (GICS) is collaboration between Standard & Poor's and Morgan Stanley Capital International.

accounts) from the start to the end of the period. Further, this measure needs to be made comparable across companies by adjusting for differences in company size. This is done by deflating the aggregate accrual measure by the average value of Net Operating Assets (NOA).The ratio is calculated as follows:

$$Accruals\ Ratio\ BS = \frac{NOA_t - NOA_{t-1}}{(NOA_{t-1})/2 \cdot NOA + NOA} \qquad \text{Eq. 1}$$

Where:

NOA_t = Net Operating Assets at time t

NOA_{t-1} = Net Operating Assets at time t minus 1

NOA = (Total Assets – Cash and Short Term Investments) – (Total Liabilities – Long Term Debt – Debt in Current Liabilities)

In addition to these balance sheet items, we calculate 1, 3 and 6 months future holding period returns (1MHPR, 3MHPR, 6MHPR) by compounding monthly returns.

According to Hilb (2008), all members of the board (excluding the CEO and possibly one other member of top management) should be independent in order to properly fulfill their fiduciary functions. As Hilb further points out, there is an important distinction between nonexecutive board members and independent board members, e.g., all independent directors are nonexecutive, but not all nonexecutives are independent. Accordingly, we use the following corporate governance variables.

In particular, board independence is measured with four variables:

CEO Duality: a dummy variable, coded 1 when the CEO is not the Chairman of the Board and coded 0 otherwise,

First Level of Board Independence: a dummy coded 1 when there are no more than two executives sitting on the Board and coded 0 otherwise,

Second Level of Board Independence: a dummy coded 1 when the majority of the board members are independent according to comprehensive definition of independence (see the British PIRC[46] report, Clarke 1998:122; Hilb 2008:59) including not having directorships in common with other directors,

Third Level of Board Independence: a dummy coded 1 when no directors share a school tie (see Cohen and Frazzini, 2008) and coded 0 otherwise.

The Audit Committee independence is instead measured by one variable:

Audit Committee Independence: a dummy coded 1 if all members of the audit committee are independent according to the definition previously mentioned.

Further, we collect and measure whether both the Board and the Audit Committee are skilled in the field of accounting and finance with two variables:

Skilled Board: a dummy coded 1 if at least one of the members of the board has a degree in finance, accounting and (or) a graduate degree in business (i.e. an MBA) and coded 0 otherwise.

Skilled Audit Committee: a dummy coded 1 if at least one of the members of the committee has a degree in finance, accounting and (or) a graduate degree in business (i.e. an MBA) and coded 0 otherwise.

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[46]PIRC is the U.K.'s leading independent research and advisory consultancy providing services to institutional investors on corporate governance and corporate social responsibility.

We also tabulate whether a company in the sample does have a **Separate Audit Committee**. Different from Kent et al. (2010), we don't exclude companies, which don't have an audit committee from the sample. In fact, different from the Sarbanes-Oxley Act of 2002, the Dutch Corporate Governance Code (the Tabaksblat Code) contains an "apply-or-explain" principle, offering the possibility to deviate from the Corporate Governance Code as long as any such deviations are explained. To the extent that such deviations are approved by a general Board meeting, the company is deemed to be in full compliance with the Corporate Governance Code. Accordingly, we think it is important to distinguish between companies that do have an established audit committee and those who don't, due to the possible significant control mechanisms that an audit committee exerts on financial reporting quality.

Finally we tabulate both the size of the Board of Directors (**BoD Size**) and of the Audit Committee (**Audit Size**).

3.5 Research Design

In order to test whether there are significant differences in terms of direct and indirect corporate governance control mechanisms within the extreme groups of high and low total accruals, we perform a test of differences for independent variables.

Further, to assess the link between accruals, future stocks returns and corporate governance indicators in the Netherlands (research questions 2 and 3), we regress both the accruals ratio and three holding period returns (1, 3, and 6 months) against various combinations of the above mentioned corporate governance variables for the year 2010. Specifically, we test the following equations:

AccRatio Rank$_{it}$ = β$_0$ + β$_1$ BoDIndRank + €$_{it}$Eq.2

AccRatio Rank$_{it}$ = β$_0$ + β$_1$ BoDIndSkilRank + €$_{it}$Eq.3

AccRatio Rank$_{it}$ = β$_0$ + β$_1$ AudRank + $\in_{it}$Eq.4

AccRatio Rank$_{it}$ = β$_0$ + β$_1$ OverallRank + $\in_{it}$Eq.5

1mHPR t+1 = β$_0$ + β$_1$ BoDIndRank + $\in_{it}$Eq.6

1mHPR t+1 = β$_0$ + β$_1$ BoDIndSkilRank + $\in_{it}$Eq.7

1mHPR t+1 = β$_0$ + β$_1$ AudRank + $\in_{it}$Eq. 8

1mHPR t+1 = β$_0$ + β$_1$ OveralRank + $\in_{it}$Eq. 9

Equations 6,7,8 and 9 will also be tested with the dependent variables of 3 and 6 month holding periods for future stock returns. Concerning the relationship between accruals and future stock returns, we also supplement the above technique with a group or decile analysis.

3.6 Empirical Results

Table 1 provides an overview of the sample data set. The total sample size is comprised of 90 active stocks as of the end of 2009. As Table 1 shows the sample size varies from 85 to 89 observations when looking at the different corporate governance variables analyzed in this article[47]. Looking at the second column in Table 1, it can be noticed that three variables present an equal representation in the sample. In fact, CEO Duality, Second Level of Board Independence and Skill of the Audit Committee are equally represented in the overall sample with roughly 50% of companies with and

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[47] In Table 1, the variable BoardIndLev3 presents only 28 observations. Hence, it was dropped from the overall analysis. Future research may look into additional sources to try to increase the coverage of this variable.

without the above mentioned corporate governance characteristics. Further, the majority of the companies in the sample do present a 'First Level of Board Independence' and at the same time the majority has a 'Skilled Board of Directors'. On the contrary, the majority of the sample does not have an Audit Committee and of the 28 companies with information on school ties among the directors, the majority does not satisfy this level of independence. Table 2 presents descriptive statistics for the independent variables sorted in ten different deciles where decile 1 contains companies with the highest level of accruals (lowest quality of earnings) and decile 10 contains companies with the lowest level of accruals (highest quality of earnings). The higher quality of earnings companies or deciles have more separate, independent, and skilled audit committees than the lower quality of earnings companies or deciles.

Table 1: Sample Sizes and Corporate Governance Mechanism Characteristics

	Sample	%
Presence of CEO Dual	45	51%
Absence of CEO Dual	44	49%
Total	89	
Presence of BoardIndLev1	60	68%
Absence of BoardIndLev1	28	32%
Total	88	
Presence of BoardIndLev2	42	48%
Absence of BoardIndLev2	45	52%
Total	87	
Presence of BoardIndLev3	6	21%
Absence of BoardIndLev3	22	79%
Total	28	
Presence of BoardSkill	58	65%
Absence of BoardSkill	31	35%
Total	89	
Presence of AudComInd	32	36%
Absence of AuditComInd	57	64%
Total	89	
Presence of AudComSkill	41	48%
Absence of AuditComSkill	44	52%
Total	85	

Table 1provides descriptive statistics for the group as a whole of public companies in the Dutch sample. It presents a series of dummy variables. Dual is a dummy variable, coded 0 if the CEO is also the Chairman of the Board of Directors(BoD) and coded 1 otherwise; Ind Lev 1 is a dummy coded 0 if there are more than two executives sitting on the BoD and coded 1 otherwise; Ind Lev 2 is a dummy coded 1 if the majority of the members of the BoD are independent and coded 0 otherwise; Ind Lev 3 is a dummy coded 1 if there no members sitting on the BoD with school ties and 0 otherwise; Skilled BoD is a dummy coded 1 if there is at least one member of the BoD with an accounting and (or) finance background and coded 0 otherwise; BoD Size is the number of directors comprising the BoD; Sep Audit Com is a dummy coded 1 if there is an audit committee and coded 0 otherwise; Audit Com Ind is a dummy coded 1 if the all of the members of the audit committee are independent and coded 0 otherwise; Skilled Audit Com is a dummy coded 1 if there is at least one member of committee with an accounting and (or) finance background and coded 0 otherwise; Audit Com Size is the number of directors comprising the committee

Table 2: Descriptive Statistics: Mean Values for Independent Corporate Governance Variables Sorted by Accruals in 10 Deciles

		Dual	Ind Lev 1	Ind Lev 2	Ind Lev 3	Skilled BoD	BoD Size	Sep Aud	Aud Com Ind	Skilled Audit Com	Audit Com Size
Low Accr	Decile 10	0.66	0.88	0.68	0.39	0.87	6.50	0.75	0.65	0.65	2.59
	Decile 9	0.54	0.43	0.43	na	1.00	7.21	0.36	0.32	0.35	2.45
	Decile 8	0.11	0.33	0.3	na	0.95	9.63	0.44	0.42	1.00	2.44
	Decile 7	0.44	0.67	0.56	0.65	0.98	8.67	0.33	0.31	0.65	2.65
	Decile 6	0.33	0.67	0.55	na	0.62	8.89	0.67	0.66	0.22	2.65
	Decile 5	0.56	0.66	0.54	na	0.87	7.25	0.42	0.44	0.38	2.21
	Decile 4	0.24	1.00	0.26	na	1.00	8.25	0.38	0.38	0.63	2.71
	Decile 3	0.88	0.87	0.71	na	1.00	6.22	0.33	0.33	0.22	2.25
	Decile 2	0.55	0.68	0.55	na	0.42	7.36	0.21	0.2	0.21	2.36
High Accr	Decile 1	0.66	0.67	0.23	na	0.54	6.20	0.35	0.31	0.45	2.41

Table 2provides descriptive statistics for the group of public companies in the Dutch sample sorted by levels of accruals. Table 2 presents a series of dummy variables. Dual is a dummy variable, coded 0 if the CEO is also the Chairman of the Board of Directors(BoD) and coded 1 otherwise; Ind Lev 1 is a dummy coded 0 if there are more than two executives sitting on the BoD and coded 1 otherwise; Ind Lev 2 is a dummy coded 1 if the majority of the members of the BoD are independent and coded 0 otherwise; Ind Lev 3 is a dummy coded 1 if there are no members sitting on the BoD with school ties and 0 otherwise; Skilled BoD is a dummy coded 1 if there is at least one member of the BoD with an accounting and (or) finance background and coded 0 otherwise; BoD Size is the number of directors comprising the BoD; Sep Audit Com is a dummy coded 1 if there is an audit committee and coded 0 otherwise; Audit Com Ind is a dummy coded 1 if the all of the members of the audit committee are independent and coded 0 otherwise; Skilled Audit Com is a dummy coded 1 if there is at least one member of committee with an accounting and (or) finance background and coded 0 otherwise; Audit Com Size is the number of directors comprising the committee.

Research Question 1 attempts to investigate whether there are significant differences in terms of direct and indirect corporate governance control mechanisms within the extreme groups of high and low accruals (deciles 1 and 10, respectively). As Table 3 shows, we find that significant differences exist for three corporate governance variables: Second Level of Independence, presence of a Separate Audit Committee and presence of an Independent Audit Committee. In fact, except for one variable (CEO Duality which has the same mean score among both the low and high accruals groups), all the corporate governance variables show a higher mean score associated with the 'low level of accruals' (the decile 10 group). These results indicate that corporate governance quality is linked to higher earnings quality in financial reporting.

Table 3: Test of Differences for Independent Variables in Decile 1 (high accruals) and Decile 10 (low accruals)

	Dual	Ind Lev 1	Ind Lev 2	Ind Lev 3	Skilled BoD	BoD Size	Sep Aud	Aud Com Ind	Skilled Audit Com	Audit Com Size
Decile 10 μ	0.66	0.88	0.68	0.39	0.87	6.50	0.75	0.65	0.65	2.59
Decile 1 μ	0.66	0.67	0.23	na	0.54	6.20	0.35	0.31	0.45	2.41
p-value	1	0.24	0.05	na	0.22	1.00	0.05	0.05	0.25	1.00

Table 3 is a test of differences for independent variables between the two extreme deciles of the sample under analysis. The variables tested are: Dual is a dummy variable, coded 0 if the CEO is also the Chairman of the Board of Directors(BoD) and coded 1 otherwise; Ind Lev 1 is a dummy coded 0 if there are more than two executives sitting on the BoD and coded 1 otherwise; Ind Lev 2 is a dummy coded 1 if the majority of the members of the BoD are independent and coded 0 otherwise; Ind Lev 3 is a dummy coded 1 if there are no members sitting on the BoD with school ties and 0 otherwise; Skilled BoD is a dummy coded 1 if there is at least one member of the BoD with an accounting and (or) finance background and coded 0 otherwise; BoD Size is the number of directors comprising the BoD; Sep Audit Com is a dummy coded 1 if there is an audit committee and coded 0 otherwise; Audit Com Ind is a dummy coded 1 if the all of the members of the audit committee are independent and coded 0 otherwise; Skilled Audit Com is a dummy coded 1 if there is at least one member of

committee with an accounting and (or) finance background and coded 0 otherwise; Audit Com Size is the number of directors comprising the committee.

In order to further explore whether there is a relationship between different levels of accruals and direct and indirect corporate governance mechanisms of control (Research Question 2), we regress the dependent variable of aggregate accruals against four different composite rankings formed with different combination of the corporate governance dummies using equations 2, 3, 4 and 5. As Table 4 shows, we find a significant inverse relation with the Audit Ranking (which combines the three direct corporate governance mechanisms: presence of a separate, independent, and skilled audit committee), meaning that companies with low (high) levels of accruals are associated with high (low) direct corporate governance mechanisms of controls. Similarly, the Board of Directors Independence Ranking (which combines CEO duality and two levels of independence) and the Overall Ranking (which averages all seven corporate governance variables in Table 6) both show negative coefficients, indicating inverse relations but they are not statistically significant.

Table 4: Cross-Sectional Regressions of Corporate Governance Rankings on Accruals Rankings for the Netherlands (for the year 2009)

Regression	Coefficient	T-test	Rsquared
BoDindRank	-2.01	-0.25	0.000
BoDIndSkilRank	0.25	0.025	0.010
AudRank	-7.95	1.870	0.037
OverallRank	-2.18	-0.265	0.000

Table 4 provides regression results for all companies in the sample. The dependent variable is the Accruals rank while the independent varibles are four different composite rankings formed with different combination of the corporate governance dummies. Specifically, BodIndRank is a composite percentile ranking score calculated by averaging three variables measuring different levels of Independence of the Board of Directors (CEO Duality, Ind Lev 1 Ind Lev 2); BodIndSkillRank is a composite percentile ranking score calculated by averaging four variables measuring different levels of Independence and Skills of the Board of Directors (CEO Duality, Ind Lev 1 Ind Lev 2 and Skilled BoD); AudRank is a composite percentile ranking score calculated by averaging three variables related to the Audit Committee (presence of a Separate, Independent and Skilled Audit Committee; Overall Rank is a composite percentile ranking score calculated by averaging all the seven above mentioned variables.

Finally, Research Question 3 investigates whether there is a relationship between direct and indirect corporate governance mechanisms of control and future stock returns. We regress three different dependent variables of holding period returns for the year 2010 (1, 3 and 6 months) against four different composite rankings formed with different combinations of the corporate governance variables, using equations 6 through 9. Table 5 summarizes the results in three panels. Panel A presents regression results related to the dependent variable of the 1 month, future holding period returns. We find that the Overall Ranking or composite score has a positive and statistically significant coefficient, indicating that companies with an independent and skilled board of directors as well as a separate, independent and skilled audit committee exhibit higher 1 month, future holding period returns. Panel B presents regression results related to the dependent variable of the 3 month, future holding period returns. Similarly, we find that the Board of Directors Independence Ranking, the Audit Ranking, and the Overall Ranking all have positive and statistically significant coefficients, indicating that companies with an independent and skilled board of directors as well as a separate, independent and skilled audit committee exhibit higher 3 month, future holding period returns. Finally, Panel C presents regression results related to the dependent variable of 6 month, future holding period returns. Similarly, we find that both the Audit Ranking and the Overall Ranking have positive and statistically significant coefficients, indicating that companies with an independent and skilled board of directors as well as a separate, independent and skilled audit committee exhibit higher 6 month, future holding period returns. Thus, more corporate governance rankings are significant for future stock returns in longer holding periods.

Table 5: Cross-Sectional Regressions of Corporate Governance Rankings on Holding Period Returns for the Netherlands (for the period 2009-2010)

Regression	Coefficien	T-Test	Rsquared
Panel A: 1 m HPR			
BoDIndRank	0.00	0.029	0.0000
BoDIndSkilRank	0.00	0.205	0.0000
AudRank	0.13	0.389	0.0170
OverallRank	0.06*	1.884	0.0180
Panel B: 3 m HPR			
BoDIndRank	0.11*	1.500	0.015
BoDIndSkilRank	-0.08	-0.830	0.007
AudRank	0.09*	1.990	0.012
OverallRank	0.04*	1.990	0.034
Panel C: 6 m HPR			
BoDIndRank	-0.07	1.113	0.014
BoDIndSkilRank	-0.05	-0.713	0.005
AudRank	0.03*	1.507	0.002
OverallRank	0.01*	1.825	0.004

Table 5 provides regression results for all companies in the sample.The dependent variable is respectively the 1 (Panel A), 3 (Panel B) and 6 (Panel C) Holding Period Return while the independent varibles are four different composite rankings formed with different combination of the corporate governance dummies. BodIndRank is a composite percentile ranking score calculated by averaging three variables measuring different levels of Independence of the Board of Directors (CEO Duality, Ind Lev 1 Ind Lev 2); BodIndSkillRank is a composite percentile ranking score calculated by averaging four variables measuring different levels of Independence and Skills of the Board of Directors (CEO Duality, Ind Lev 1 Ind Lev 2 and Skilled BoD);AudRank is a composite percentile ranking score calculated by averaging three variables related to the Audit Committee (presence of a Separate, Independent and Skilled Audit Committee; Overall Rank is a composite percentile ranking score calculated by averaging all the seven above mentioned variables.

We supplement the above regression stock returns analysis with an analysis of stock returns across deciles. Table 6 presents the 1, 3 and 6 month holding period, stock returns for portfolios sorted into seven variables which describe different direct and indirect corporate governance mechanisms of control. Specifically, we present evidence of whether by sorting and building portfolios into 'long' companies with these seven corporate governance characteristics and 'short' companies without these same characteristics, it is possible to have a positive return spread. Table 6 shows that

in six of the seven different sorts or groups, there is a positive spread. The only exception is the 'Second Level of Board of Directors Independence', which has a negative spread in all three time frames. Thus, these results reinforce the importance of key corporate governance characteristics for positive future stock returns.

Table 6: Returns for Portfolios Sorted by Individual Corporate Governance Characteristics

	1 MHPR Return (Arithmetic)	3 MHPR Return (Arithmetic)	6 MHPR Return (Arithmetic)	Sample Size	%
Panel A: Dual CEO					
Presence of CEO Dual	0,27%	-1,12%	-14,72%	45	50,56%
Absence of CEO Dual	-1,16%	3,48%	-11,88%	44	49,44%
Delta	1,19%	7,70%	3,97%		
Panel B: BoardIndLev1					
Presence of BoardIndLev1	-0,05%	1,25%	-12,86%	60	68,18%
Absence of BoardIndLev1	-1,25%	0,94%	-14,29%	28	31,82%
Delta	1,20%	0,32%	1,43%		
Panel C: BoardIndLev2					
Presence of BoardIndLev2	-1,01%	-5,42%	-18,41%	42	48,28%
Absence of BoardIndLev2	-0,14%	7,41%	-8,62%	45	51,72%
Delta	-0,87%	-12,83%	-9,80%		
Panel D: BoardSkill					
Presence of BoardSkill	0,31%	3,97%	-11,08%	67	88,16%
Absence of BoardSkill	-2,88%	-6,44%	-21,00%	9	11,84%
Delta	3,18%	10,41%	9,92%		
Panel E: Audit Committee					
Presence of an Audit Comm	-0,03%	3,81%	-11,95%	58	65,17%
Absence of an Audit Comm	-1,22%	-3,89%	-15,92%	31	34,83%
Delta	1,19%	7,70%	3,97%		
Panel F: Audit Committee Independence					
Presence of AudComInd	0,31%	5,26%	-13,21%	32	35,96%
Absence of AuditComInd	-0,97%	-1,75%	-13,40%	57	64,04%
Delta	1,28%	7,01%	0,19%		
Panel G: Audit Committee Skill					
Presence of AudComSkill	0,33%	1,32%	-13,24%	41	48,24%
Absence of AuditComSkill	-1,31%	0,69%	-14,85%	44	51,76%
Delta	1,64%	0,63%	1,61%		

Table 6 provides summary return statistics, that is annualized returns and return spreads for all companies in the sample. Stocks are ranked based on the presence or absence of seven variables, which describe different direct and indirect corporate governance mechanisms of control. Dual is a dummy variable, coded 0 if the CEO is also the Chairman of the Board of Directors(BoD) and coded 1 otherwise; Ind Lev 1 is a dummy coded 0 if there are more than two executives sitting on the BoD and coded 1 otherwise; Ind Lev 2 is a dummy coded 1 if the majority of the members of the BoD are independent and coded 0 otherwise; Ind Lev 3 is a dummy coded 1 if there are no members sitting on the BoD with school ties and 0 otherwise; Skilled BoD is a dummy coded 1 if there is at least one member of the BoD with an accounting and (or) finance background and coded 0 otherwise; BoD Size is the number of directors comprising the BoD; Sep Audit Com is a dummy coded 1 if there is an audit committee and coded 0 otherwise; Audit Com Ind is a dummy coded 1 if the all of the members of the audit committee are independent and coded 0 otherwise; Skilled Audit Com is a dummy coded 1 if there is at least one member of committee with an accounting and (or) finance background and coded 0 otherwise; Audit Com Size is the number of directors comprising the committee.

Tables 7a through 7d show results of a decile analysis on four different composite rankings: Board Independence Ranking, Board Independence and Skill Ranking, Audit Committee Ranking, and Overall Rankingrespectively. At this level of aggregation or rankings, we find positive spreads for the composite score measuring Board of Directors Independence (1 and 6 months HPR), Board of Directors Independence plus Skills (6 months HPR) and the Overall Ranking (1 month HPR). These more granular groups or sorts may be influenced by interactions with different levels of accruals characteristics. Future research may investigate results of a double sorting within the individual accruals group of the above four composite rankings. Again, these results reinforce the importance of key corporate governance characteristics for positive future stock returns.

Table 7a: Returns for Portfolios Sorted by Accruals and Composite Board of Directors Independence Ranking

		1MHP Return	3MHP Return	6MHP Return
High Level of Independence	Decile 10	-1.62%	2.25%	-7.78%
	Decile 9	2.78%	-1.78%	-25.15%
	Decile 8	-5.20%	-14.32%	-21.39%
	Decile 7	-0.77%	-2.98%	-11.01%
	Decile 6	0.17%	-3.77%	-20.93%
	Decile 5	-1.71%	3.30%	-3.18%
	Decile 4	0.70%	5.25%	-4.56%
	Decile 3	5.96%	24.56%	-9.16%
	Decile 2	-2.88%	-3.54%	-16.92%
Low Level of Independence	Decile 1	-3.25%	2.70%	-12.65%
	Decile 10-Decile 1	1.63%	-0.45%	4.87%

Table 7b: Returns for Portfolios Sorted by Accruals and Composite Board of Directors Independence and Skilled Ranking

		1MHP Return	3MHP Return	6MHP Return
High Level of Independence Skill	Decile 10	-5.15%	-2.69%	-15.02%
	Decile 9	4.25%	-3.45%	-28.64%
	Decile 8	-3.75%	-6.81%	-12.71%
	Decile 7	-0.81%	4.30%	-7.18%
	Decile 6	3.07%	-0.35%	-9.07%
	Decile 5	-0.03%	-1.19%	-11.06%
	Decile 4	0.66%	17.17%	-11.39%
	Decile 3	1.65%	4.21%	-9.57%
	Decile 2	-3.85%	-1.50%	-16.52%
Low Level of Independence/ Skill	Decile 1	-4.75%	-1.98%	-18.25%
	Decile 10-Decile 1	-0.40%	-0.71%	3.23%

Table 7c: Returns for Portfolios Sorted by Accruals and Composite Audit Committee Independence and Skilled Ranking

		1MHP Return	3MHP Return	6MHP Return
High Level of Independence Skill Audit	Decile 10	-3.25%	1.26%	-16.87%
	Decile 9	-1.03%	-4.98%	-14.54%
	Decile 8	4.56%	7.44%	-13.80%
	Decile 7	3.75%	25.76%	-5.24%
	Decile 6	-2.42%	-0.24%	-12.34%
	Decile 5	-2.78%	-1.54%	-12.69%
	Decile 4	-2.83%	-2.75%	-10.93%
	Decile 3	-2.56%	-6.50%	-22.25%
	Decile 2	-2.98%	-13.25%	-25.65%
Low Level of Independence/ Skill Audit	Decile 1	1.50%	3.54%	-6.25%
	Decile 10-Decile 1	-4.75%	-2.28%	-10.62%

Table 7d: Returns for Portfolios Sorted by Accruals and Composite Overall Ranking

		1MHP Return	3MHP Return	6MHP Return
High Level of Independence	Decile 10	5.02%	0.85%	-16.25%
	Decile 9	-1.78%	3.99%	-8.24%
	Decile 8	2.06%	21.12%	-14.54%
	Decile 7	-5.01%	-2.98%	-15.99%
	Decile 6	-4.54%	-6.37%	-14.69%
	Decile 5	-3.16%	-11.07%	-19.80%
	Decile 4	-0.55%	1.22%	-15.64%
	Decile 3	-0.08%	0.85%	-6.35%
	Decile 2	1.45%	-5.85%	-22.24%
Low Level of Independence	Decile 1	-1.85%	3.82%	-8.63%
	Decile 10-Decile 1	6.87%	-2.97%	-7.62%

Table 7 provides summary return statistics, that is annualized returns and return spreads for all companies in the sample. Stocks are ranked based on four different composite rankings.7a:BodIndRank is a composite percentile ranking score calculated by averaging three variables measuring different levels of Independence of the Board of Directors (CEO Duality, Ind Lev 1 Ind Lev 2); 7b: BodIndSkillRank is a composite percentile ranking score calculated by averaging four variables measuring different levels of Independence and Skills of the Board of Directors (CEO Duality, Ind Lev 1 Ind Lev 2 and Skilled BoD); 7c: AudRank is a composite percentile ranking score calculated by averaging three variables related to the Audit Committee (presence of a   Separate, Independent and Skilled Audit Committee; 7d: Overall Rank is a composite percentile ranking score calculated by averaging all the seven above mentioned variables.

3.7 Conclusions

This article provides useful insights into important issues related to both capital markets efficiency and agency theory. We provide some initial evidence that direct corporate governance characteristics are related to the level of accruals and to future stoc returns. In fact first, we find that companies with higher quality of earnings are characterized by an indenpendent board, as well as the existence of a separate, independent, and skilled audit committee. Second, we find a positive return spread in the majority of the corporate governance variables identified in this study. Such results are relevant for portfolio managers and investors, who may want to screen companies based on direct corporate governance control variables in order to earn higher stock returns. Also, Dutch regulators may want to reconsider the principle of "apply

orexplain" and make it stricter since we find lower stock returns for companies that do not have separate, independent, and skilled audit committees.

Future research may investigate whether a double sorting process, screening companies by both decile sorting of accruals and by corporate governance rankings, consistently outperforms just accruals decile sorting. Contrary to Kent et al. (2010), we do find initial evidence that there is a relationship between audit committee characteristics and level of aggregate accruals. This result may relate to the fact that we did not exclude companies without an audit committee, thereby possibly explaining the Kent et al. (2010) limitation of sample self-selection biases. Finally, a limitation of this study may be the data availability of corporate governance variables.

4 Conclusion

4.1 Summary of Findings

The main focus of the dissertation was on the importance of "Earnings and Governance Quality" as a determinant of future firm performance, in the context of various European countries. Specifically, the objective of this research project was to investigate the relationship between accruals and corporate governance characteristics in the cross section of a sample of European companies. European companies are a challenging dataset because until 2005 they used different sets of accounting standards to compile their financial statements.However, as of January 1, 2005, Regulation No. 1606/2002 required all EU listed companies to prepare their consolidated financial statements in accordance with International Financial Reporting Standards. Hence, thisis an interesting research opportunity todivide the total sample of this study into two sub-samples: the period prior to 2005 and the period posterior to 2005. This allows contextualizingthe research questions in the correct accounting standard regime.Specifically, the dissertation posed three research questions thatlink the empirical tests, which were designed to achieve the main objective:

1. Are there differences in the presence and magnitude of the accruals mispricing in a sample of European countries before and after the introduction of Regulation No. 1606/2002?

2. Is the degree of the accruals mispricing an industry specific phenomenon in a sample of European countries?

3. Can corporate governance direct and indirect indicators improve a stock selection tool based on the accruals mispricing?

To analyze the quality of earnings, various measures were used to quantify the concept of accruals.In particular, the accrual measures used were heavily influenced bythe work of Richardson (2009), recently published by a practitioner focused academic network: the US-based CFA Institute.This is an important point because our study aspires to make both an academic as well as a practitioners'contribution.To address the quality of corporate governance, different proxies were merged addressing both "independence" and "competence" of the Board of Directors and the Audit Committee.Clearly there are other dimensions that could be considered but, given the availability of information, it was limited it to these dimensions.They aregood proxies for defining control mechanisms over the financial reporting system.

Following is a brief summary of each of the three articles included in this study.

In article 1,two research questions were posed: 1) Are there variations in the presence and magnitude of the accruals in nine representative European countries (France, Germany, Italy, Spain, Belgium, Ireland, the U.K., the Netherlands and Sweden) before and after the introduction of the International Financial Reporting Standards (IFRS)?; and 2) Which of those five countries exhibit anomalous stock return performance post the introduction of IFRS? To perform this analysis, a panel dataset of 34,507 firm-year observations was used for public companies incorporated in nine European countries over two sub-samples from 1999 to 2010. To measure accruals the study refers to an aggregate total accruals ratio as proposed by Richardson (2009). The empirical results revealed that the introduction of IFRS in 2005 did impact the level of

capital market information asymmetry that existed pre and post IFRS. In fact, it was found that, while prior to IFRS it was possible to build long/short portfolios which would consistently produce positive spreads in seven countries (France, Germany, U.K., Sweden, the Netherlands, Italy and Spain), posterior the introduction of IFRS that number dopped to five (Ireland, France, Italy, Spain and Belgium). These results are consistent with the expectation by some academics that earnings management would decrease with the introduction of IFRS.Further, it was confirmed the expectation to find evidence of the accruals mispricing in France, Belgium, Italy, Spain and Sweden, which have among the highest number of institutional variables indicating a higher probability of earnings management. This finding is also consistent with recent literature advocating that without proper enforcement, legal rules and accounting standards may remain ineffective.

In article2 the study posed the general research question of whether the degree of the accruals mispricing is an industry specific phenomenon in a sample of European countries.To perform this analysis, it was used a panel dataset of 40,474 firm-year observations for public companies incorporated in seventeen European countries over two sub-samples from 1999 to 2010.Compared to the first article, the number of countries under analysis was increasedto allow for a bigger "industry level" sample size and, to measure accruals, different proxies were used, in addition to the aggregate total accruals ratio.This was done to study whether certain industry/sectors are more prone to manipulation within the components of the total accruals ratio that is the accounts receivable ratio, the inventory ratio or both revenue and expense recognition issues. All these ratios are proposed by Richardson (2009). Contrary to the findings of

Chan et al. (2006), who studied the U.S. dataset, our empirical results revealed that the accruals mispricing is not present in all industries within the European dataset. In fact, it is only present in an average of two to six out of the nine industries analyzed, based on which ratio it is used as a proxy of earnings quality. The interesting finding is that three industries: Energy, Information Technology and Telecommunication present a positive spread based on screenings of three of the five ratios used (Accruals ratio, Accounts Receivable and Inventory). Is it a coincidence that several of the 21st century accounting scandals relate to companies within these industries (Enron, Worldcom, Satyam, Qwest and last but not least Hewlett-Packard)? This question is left for future research.

Finally, in article 3, the studyinvestigated whether corporate governance direct and indirect indicators can improve a stock selection-screening tool based on earnings quality. To perform this analysis, the studyfocused on one country (the Netherlands) because the Dutch corporate governance system presents an interesting research setting. In fact, it is among the best systems in Europe according to Heydrick and Struggles and at the same time, the Dutch corporate governance code (the Tabaksblat) contains an "apply or explain" principle by which, companies are allowed to deviate from the corporate governance code as long as any such deviation is explained and approved by a general meeting of the board.Corporate governance quality was measured by using proxies, which would capture the independence and competence of both the board memebers and the audit committee members.The empirical results revealed that corporate governance quality in the dutch sample studied for the year 2009 is linked to higher earnings quality (ow levels of accruals) and most interestingly

that direct and indirect corporate governance characteristics such as an independent Board of Directors as well as and independent and skilled Audit Committee are linked with higher future stock returns for the companies in the sample.This is an important finding and is consistent with recent development in the investment management practices to give more importance and attention to corporate governance, when selecting companies as investments for clients.This can significantly reduce their exposure to unanticipated and often mispriced risks.

4.2 Implications for AcademicResearch and Business Practice

Concluding, this research makes a practical contribution to both the international finance, accounting and corporate governance academicresearch as well as the business community from various angles. First, this dissertation tacklesthree questions, which are under-researched.In fact, while the accruals mispricing is well researched and documented in the U.S. dataset (going back to Graham and Dodd, 1934 and Sloan, 1996), the same research on the European data is scarce and conflicting. The conflicting results arise from the fact that until 2005, European countries each had their own accounting standards (local GAAPs). Prior academic studies focusing on Europe where data was pooled across countries mixed structurally different datasets and in doing so, mixed different financial reporting practices.To the contrary, the first article focuses on one country at a time and distinguishes two samples: data prior to the introduction of IFRS and data post the introduction of IFRS.The dissertation argues the point that it is also important for investors, portfolio managers, analysts and accountants to focus on European countries for daily practices because simply

applying the academic U.S. focused findings to the European context would be erroneous.For instance, quantitative portfolio managers, who try to determine proxies for aggressive accounting practices and hence look for measures of earnings quality to rank stocks, should use care in applying the same financial metrics to a European universe of stocks. In fact, academic evidence is pointing to the still wide presence of localisms even after the introduction of one set of accounting standards like IFRS (Dao, 2005; Daske et al., 2008). Second, this study uses several definitions of accruals (Richardson, 2009) and it is the first article to do such on the European dataset. This is important because it gives investors and portfolio managers a tool to screen companies and rank them according to their "earnings quality." In particular, the definition of aggregate accruals utilized is superior to those focusing on the change in "current" net operating assets because it includes the "non current" and "financial" assets.Additionally, this dissertation contributes to the debate on whether accounting harmonization has occurred, at least in the sample studied. Hence the first articleis of interest to standard setters to improve the process towards full harmonization.Addionally, the third article can be useful for Dutch regulators who may want to reconsider the principle of "apply or explain" and make it stricter since the article provides evidence that companies without a separate, independent and skilled audit committee have lower future stock returns.

Finally, future research may benefit from an analysis on a broader sample of European and international countries and the usage of additional earnings and corporate governance proxies.In particular we are interested in exploring the concept of earnings surprises (Rendleman et al., 1982) in combination with earnings and corporate

governance quality measures like those described in this study to develop an "intelligent" earnings surprises screening tool

APPENDIX

SYNOPSIS OF MOST RELEVANT ARTICLES (alphabetical order)

Hilb, M., New Corporate Governance: Successful Board Management Tools, Third Edition, Springer, 2008

KEY POINTS: The book introduces a new, integrated approach to corporate governance that attempts to overcome weaknesses in current research, teaching and practice. It analyzes four dimensions: Situational, Strategic, Integrated and Keep it controlled. This dissertation specifically looks at the last dimension.

ABSTRACT: In research as well as in practice, the common assumption is that there are just two basic models of corporate governance systems: the Anglo-American market based model, which emphasizes the maximization of shareholder value, and the relationship based model, which emphasizes the interests of a broader group of stakeholders. This book introduces a third way (New Corporate Governance) which integrates the strengths of both approaches. The author proposes a glocal approach (both-and). In fact, companies only generate enduring success if they add value in all their activities for shareholders, customers, employees and society. The " New Corporate Governance" framework integrates the interests of the shareholders, customers, employees and public.

Kaserer C., and C. Klinger.2008. The Accrual Anomaly under Different Accounting Standards. Lessons learned from the German Expiriment, *Journal of Business, Finance and Accounting*, 8: 837-859

KEY POINTS: The article shows empirically that the discretionary accruals mispricing is present in Gemany for companies reporting under IFRS. The period analyzed is from 1995 to 2002) In Germany companies could report under IFRS prior to 2005).

ABSTRACT: Several studies document that investors systematically overreact to accrual-based accounting information. We address the question to what extent this accrual anomaly is related to different accounting standards. We provide empirical evidence that the accrual anomaly is also present in Germany. However, this anomaly seems mainly to be driven by firms presenting their financial statements under IFRS or US-GAAP, while the anomaly is unlikely to exist for those firms complying with German GAAP. It is argued that introducing true and fair view accounting, like IFRS, that relies on difficult-to-verify information, may not be suitable to improve accounting information quality in the context of a weak corporate governance system.

Kent, P., Routledge, J. and J. Stewart. 2010. Innate and Discretionary Accruals Quality and Corporate Governance. *Accounting and Finance*, 50: 171-195

KEY POINTS: The article investigates the relation between discretionary and non-discretionary accruals with the potential of corporate governance to improve financial reporting. They test the hypothesis on the Australian dataset.

ABSTRACT: This article extends previous research on the association between corporate governance mechanisms and accruals quality. We derive measures of the discretionary and innate components of accruals quality and regress them against corporate governance characteristics. For discretionary accruals, we find use of a Big 4 audit firm and a larger audit committee as the primary governance mechanisms associated with higher accruals quality. For innate accruals quality, we find that higher quality is associated with an independent board of directors, a larger, more independent and more active audit committee, and use of a Big 4 audit firm. Our

findings suggest a stronger relation between sound governance mechanisms and innate accruals quality than discretionary accruals quality.

La Fond. 2005. Is the Accrual Anomaly a Global Anomaly? MIT Sloan Research Paper No. 4555-05

KEY POINTS: Using Total Accruals, this study investigates the presence of an accruals mispricing in a sample of 17 countries and finds that the presence of this anomaly is widespread. The study pools the different countries together and tests the data prior to the introduction of the IFRS.

ABSTRACT: This article investigates the subsequent return implications of accruals within a sample of large, developed, international equity markets and assesses whether similar institutional features account for the accrual anomaly across countries. I investigate the returns implications of accruals in 17 countries over the 1989 to 2003 time period. In general, the results of country-specific analysis indicate that the accrual anomaly is a global phenomenon. After decomposing total accruals, I find, in general, that accrual mispricing is largest for working capital accruals, specifically current asset accruals. However, the results of further analysis suggest that there is no dominant factor that explains the accrual anomaly internationally. Overall, the results indicate that the accrual anomaly is present in international markets yet the factor(s) driving the accrual anomaly appear to vary across markets.

Pincus, Rajgopal and Venkatachalam.2007. The Accrual Anomaly: International Evidence, *The Accounting Review*, 82: 169–203

KEY POINTS: Using Total Accruals, this study investigates the presence of an accruals mispricing in a sample of 20 countries and finds that the anomaly is present only in four common law countries. The study pools the different countries together and tests the data prior to the introduction of the IFRS.

ABSTRACT: We consider stock markets in 20 countries to investigate whether the accrual anomaly (Sloan 1996), characterized by U.S. stock prices overweighting the role of accrual persistence, is a local manifestation of a global phenomenon. We explore whether the occurrence of the anomaly is related to country differences in accounting and institutional structures, and examine alternative explanations for its occurrence. We find stock prices overweight accruals in general, with accruals overweighting occurring in countries with a common law relative to a code law tradition. Using firmlevel data on a country-by-country basis, we document the occurrence of the anomaly in four countries, Australia, Canada, the U.K., and the U.S., and also in a sample of American Depository Receipts (ADRs) of firms domiciled in countries where we do not detect the anomaly.Using country-level data, we confirm the anomaly is more likely to occur in countries having a common law tradition, and also in countries allowing extensive use of accrual accounting and having a lower concentration of share ownership. Additional analyses reveal that earnings management and barriers to arbitrage best explain the anomaly.

Richardson S., and I. Tuna. 2009. Evaluating Financial Reporting Quality. International Financial Statement Analysis, Chapter 17. CFA Institute Publications

KEY POINTS: This article introduces a framework to evaluate financial reporting quality using aggregate measures of accruals as well as measures focusing on specific manipulation techniques.

ABSTRACT: Financial statement analysis involves taking a systematic approach to using information contained in the financial statements to assist in decision-making. The set of decision makers using financial statements is varied. However one thing they have in common is an interest in assessing a company's future cash flows generating capability. Equity investors and analysts, rating agencies, customers, employees, tax authorities and

others all have a need to estimate a company's future cash flows. Although there are many sources of information relevant to such forecasting, one of the principal sources, and our focus in this chapter is the company's financial statements.

Sloan, R. 1996. Do Stock Prices Fully Reflect Information in Accruals and Cash Flows About Future Earnings?" *Accounting Review*, **Volume 71, pp. 289-315**

KEY POINTS: This article demonstrates that the accrual component of earnings is less predictive and persistent than the cash component. It focuses on the U.S. dataset.

ABSTRACT: This article investigates whether stock prices reflect information about future earnings contained in the accrual and cash flow components of current earnings. The extent to which current earnings performance persists into the future is shown to depend on the relative magnitudes of the cash and accrual components of current earnings. However, stock prices are found to act as if investors "fixate" on earnings, failing to fully reflect information in the accrual and cash flow components of current earnings until it impacts future earnings.

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Curriculum Vitae

Elisabetta Basilico

Education

Sep 2009- 2013	**University of St. Gallen** (HSG), Switzerland Candidate for Doctor of Philosophy in Management
Sep 2007	Chartered Financial Analyst (CFA)
Sep 2000- Apr 2002	**University of Denver,** USA Dual Degree Master of Science in Finance and MBA
Sep 1994- Mar 1999	**Bocconi University,** Italy Bachelor in Business Administration-Finance

Professional Experience

From Sep 2009	**Nextam Partners SIM,** Italy Head of Asset Allocation and Quantitative Strategies
Oct 2004- Aug 2009	**Qwest Asset Mangement,** USA Quantitative Analyst and Assistant Portfolio Manager
Sep 2003- Dec 2004	**University of Denver,** USA Lecturer in Statistics and Financial Accounting
Sep 2000- Jun 2002	**University of Denver,** USA Teaching Assistant in Statistics

Publications

"Asia's Enron: Satyam (Sanskrit Word for Truth)," with Hugh Grove and Lorenzo Patelli *Journal of Forensic & Investigative Accounting*, Vol. 4, Issue 2, 2012

"Major Financial Reporting Frauds of the 21st Century: Corporate Governance and Risk Lessons Learned" with Hugh Grove, *Journal of Forensic & Investigative Accounting*, Vol. 3, Issue 2, Special Issue, 2011

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