Three Essays on the Enforcement of Accounting Standards in Germany

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Danksagung

Die vorliegende Dissertation habe ich als wissenschaftlicher Mitarbeiter des Lehrstuhls für Betriebswirtschaftslehre, Wirtschaftsprüfungs- und Beratungswesen der Universität Würzburg von Prof. Dr. Hansrudi Lenz sowie als Doktorand an der Graduate School of Law, Economics and Society der Universität Würzburg angefertigt. Ich möchte mich an dieser Stelle bei allen Personen bedanken, die zum Gelingen dieser Arbeit beigetragen haben.

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Würzburg im September 2013 und München im Mai 2014

Manuel Strohmenger

Affidavit

I hereby declare that the following thesis entitled 'Three Essays on the Enforcement of Accounting Standards in Germany' is the result of my own work. I did not receive help or support from commercial consultants. All sources and/ or materials applied are listed and specified in the thesis.

Furthermore, I confirm that this thesis has not yet been submitted as part of another examination process neither in identical nor in similar form.

Würzburg, May 14, 2014

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Eidesstattliche Erklärung

Hiermit erkläre ich an Eides statt, die Dissertation "Three Essays on the Enforcement of Accounting Standards in Germany" eigenständig, d.h. insbesondere selbständig und ohne Hilfe eines kommerziellen Promotionsberaters, angefertigt und keine anderen als die von mir angegebenen Quellen und Hilfsmittel verwendet zu haben.

Ich erkläre außerdem, dass die Dissertation weder in gleicher noch in ähnlicher Form bereits in einem anderen Prüfungsverfahren vorgelegen hat.

Würzburg, 14. Mai 2014

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Publications

The Dissertation at hand is a cumulative work that consists of three individual papers in the context of the enforcement of financial reporting standards in Germany.

Earlier, respectively altered versions of the essays were presented at academic conferences and are submitted for publication to journals. In this section the individual papers are identified, co-authors are named, presentation and publication details are given.

'Enforcement of Accounting Standards in Germany: The Pre- and Post-Misstatement Development of censured Firms'

Strohmenger, Manuel. 2013.

First Version: May, 2013.

Available at SSRN: http://ssrn.com/abstract=2288622

'Enforcement Releases, Firm Characteristics and Earnings Quality: Insights from Germany's two-tiered Enforcement System'

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'The Effects of Earnings Management on Enforcement Releases and their Recognition in Audit Fees'

Hoehn, Balthasar and Strohmenger, Manuel (authors contributed equally). 2013.

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Abstract

The dissertation at hand focuses on the enforcement of accounting standards in Germany. The legal basis of the external enforcement of accounting standards in Germany was created by the *'Bilanzkontrollgesetz'* (Financial Reporting Enforcement Act) at the end of 2004. An enforcement mechanism was installed to enforce accounting standard compliance by regular reviews of disclosed financial statements. The system was established as implementation of EU guidelines. Since 2005, International Financial Reporting Standards (IFRS) shall be applied for consolidated financial statement of firms listed on a regulated market segment within the European Union (EU) (*Regulation EC No. 1606/2002*). Simultaneously to the harmonization of accounting standards, the EU fostered the standardization of enforcement systems to ensure compliance with international accounting standards. Par. 16 of the so-called 'IAS Regulation' mandates the 'Committee of European Securities Regulators' (CESR) to "develop a common approach to enforcement". Germany's unique two-tiered system operates since July 2005; it involves the '*Deutsche Pruefstelle fuer Rechnungslegung*' (Financial Reporting Enforcement Panel), a newly established private organization primarily assigned to conduct the reviews. As the second tier, the *'Bundesanstalt fuer Finanzdienstleistungsaufsicht'* (Federal Financial Supervisory Authority) has the sovereign authority to order the publication of errors ('error announcements') and if necessary, to force the cooperation of firms in the review process.

The dissertation is structured as follows. A general introduction focuses on the theoretical background and the reasoning for the need of external enforcement mechanisms. The common approach to enforcement in the European Union is described. Building on this, the thesis consists of three individual essays that analyze

three specific questions in the context of the enforcement of financial reporting standards in Germany.

The first paper focuses on the systematical evaluation of the information contained in 100 selected error announcements (from a total population of 151 evaluable announcements). The study finds that error announcements on average contain 3.64 single errors and 77% affect the reported profit. Relatively small as well as big, highly levered and rather unprofitable firms are overrepresented in the sample of misstatement firms. In a second step, the essay investigates the development of censured firms over time; the pre- and post-misstatement development of the firms in terms of balance sheet data, financial ratios and (real) earnings management are tracked. The analysis detects increasing leverage ratios and a decline in profitability over time. In the year of misstatement firms report large total and discretionary accruals, indicating earnings management. Compared to matched control firms, significant differences in profitability, market valuation, earnings management and real activities manipulations are observable. A major contribution of this first study is the examination of trends in financial data and (real) earnings management over a number of years surrounding misstatements as well as the elaboration of the distinction to non-misstating firms. The results show the meaning of the enforcement of IFRS for the quality of financial reporting to standard setters, policy makers, and investors in Germany.

The second paper examines the interrelation of enforcement releases, firm characteristics and earnings quality. Prior literature documents the correlation between underperformance in financial ratios and the probability of erroneous disclosure of financial statements; this study provides evidence for differences in characteristics between firms with enforcement releases and control firms as well as a broad sample of German publicly traded firms (4,730 firm-year observations). Furthermore, research affirms the connection of financial ratios to earnings quality metrics. The accuracy of financial information is considered to be correlated with its quality and therefore the differences in earnings quality between various sub-samples is examined. Overall, the results document the underperformance in important financial ratios as well as indicate an inferior earnings quality of firms subject to enforcement releases vis-a-vis the control groups. These results hold with regard to both different earnings quality specifications and different periods observed. This study appends the earnings quality discussion and contributes to develop a comprehensive picture of accounting quality for the unique institutional settings of Germany. The paper shows that a conjoint two-tier public and private enforcement system is effective and might be an adequate model for other countries. Implications for the regulation of corporate governance, the enforcement panel and the auditor are identified.

The third essay additionally considers the role of the auditor. The firms subject to error announcements are used to evaluate the consequences of increasing earnings management over time on enforcement releases and their recognition in audit fees. Prior literature provides evidence on a phenomenon called 'balance sheet bloat' that is due to income increasing earnings management and later influences the disclosure of misstated financial statements. The evidence of earnings management recognition in audit fees and findings on the content of future information in audit fees leads to the hypothesis that auditors recognize increasing audit risk in fees before the enforcement process starts. The study extends related earnings management and audit fee literature by modeling the development of earnings management within the misstatement firms and systematically link it to auditor reactions. Significant predictive power of different commonly used accrual measures for enforcement releases in the period prior and up to the misstatement period are found by the study. In the same period of time an increase in audit fees, e.g. the recognition of increased audit risk, can be observed. A possible audit fee effect after the misstatement period is investigated, but no significant relation is obtained.

The dissertation closes with a summary of the main findings, a conclusion to the connection of the three essays as well as subsumption of findings in the accounting literature.

Zusammenfassung

Die vorliegende Dissertation befasst sich mit der Prüfung der Rechnungslegung von deutschen Unternehmen (Enforcement). Die gesetzliche Grundlage des Enforcement-Verfahrens wurde durch das *Bilanzkontrollgesetz* von 2004 geschaffen; es soll die Einhaltung der Rechnungslegungsstandards (insbesondere der *International Financial Reporting Standards* (IFRS)) durch regelmäßige Durchsicht und Prüfung der offengelegten Rechnungslegung durchsetzen. Das System wurde als Umsetzung einer EU-Verordnung eingeführt: Seit 2005 müssen kapitalmarktorientierte Unternehmen mit Sitz in der EU die IFRS bei der Erstellung ihrer Konzernabschlüsse anwenden. (Verordnung EG Nr. 1606/2002). Zeitgleich zur Harmonisierung der anzuwendenden Rechnungslegungsstandards strengte die EU eine Standardisierung der Durchsetzung (Enforcement) dieser Normen an, um deren Einhaltung zu garantieren. Absatz 16 der oben genannten "IAS-Verordnung" beauftragt die europäische Wertpapierregulierungsbehörde (CESR) "ein gemeinsames Konzept für die Durchsetzung zu entwickeln". Das einzigartig ausgestaltete deutsche Enforcement-System ist seit Juli 2005 in Kraft gesetzt. Die neue gegründete, privatrechtlich organisierte *Deutsche Prüfstelle für Rechnungslegung* (DPR) prüft in erster Instanz die Rechnungslegung der Unternehmen. Auf einer zweiten Stufe ist die, mit hoheitlichen Mitteln ausgestattete, *Bundesanstalt für Finanzdienstleistungsaufsicht* (BaFin) beteiligt. Sie kann die Kooperation der Unternehmen verfügen und die Veröffentlichung von aufgedeckten Verstößen verbindlich anordnen.

Die vorliegende Dissertation ist wie folgt strukturiert: Eine allgemeine Einführung zeigt theoretischen Hintergründe auf und legt die Begründung für die

Notwendigkeit einer strikten Durchsetzung von Rechnungslegungsstandards dar. Des Weiteren werden die gesetzlichen Grundlagen des Enforcements aus einer europäischen Perspektive aufgezeigt. Hierauf aufbauend werden in drei Studien spezielle Fragestellungen im Kontext des deutschen Enforcement-Verfahrens analysiert.

Die erste Studie konzentriert sich zunächst auf die systematische Auswertung der Information, die in den 100 veröffentlichten Fehlermitteilungen aus dem Enforcement-Verfahren (151 Fehlermitteilungen wurden zur Evaluierung herangezogen) enthalten ist. Diese Mitteilungen beinhalten im Durchschnitt 3,64 einzelne Fehler; sowohl relativ kleine als auch sehr große, hoch verschuldete und relativ unprofitable Unternehmen sind in dieser Stichprobe überrepräsentiert. In einem zweiten Schritt wird die zeitliche Entwicklung dieser Unternehmen näher betrachtet. Bilanzielle Daten und Kennzahlen sowie das Ausmaß an realer und buchmäßiger Bilanzpolitik werden von den Jahren vor einer Fehlerveröffentlichung, bis in die Zeit nach der Veröffentlichung ausgewertet. Diese Analyse zeigt ein ansteigendes Maß an Verschuldung und eine Abnahme der Profitabilität der Unternehmen. Im Jahr der fehlerhaften Rechnungslegung zeigt sich ein hohes Maß an totalen sowie diskretionären Periodenabgrenzungen, ein Hinweis auf ausgeprägte Bilanzpolitik. Verglichen mit Kontrollunternehmen werden signifikante Unterschiede bezüglich der Profitabilität, der Bewertung am Kapitalmarkt und der Bilanzpolitik deutlich. Die Studie leistet eine Beitrag zur vorhanden Literatur, da sie erstmals die bilanziellen Daten und das Ausmaß an Bilanzpolitik der zur Veröffentlichung von Fehlern gezwungenen Unternehmen im Zeitablauf betrachtet und systematisch auswertet. Auch werden Unterschiede zu nicht fehlerhaft berichtenden Unternehmen aufgezeigt. Die Ergebnisse zeigen die hohe Bedeutung der konsequenten Durchsetzung der Rechnungslegungsnormen für die Qualität der Finanzberichte. Die Erkenntnisse sind von Interesse für die internationalen Regulierungsbehörden, die national Politik und für Investoren am Kapitalmarkt.

Die zweite Studie untersucht das Zusammenspiel des Enforcements, bzw. der Fehlerveröffentlichungen, mit finanziellen Kennzahlen und der Ergebnisqualität (Earnings Quality) der Unternehmen. Die wissenschaftliche Literatur liefert empirische Ergebnisse, dass die Offenlegung von fehlerhafter Rechnungslegung stark mit schlechten Finanzkennzahlen korreliert ist. Dieses zweite Papier liefert dazu Erkenntnisse im deutschen Kontext: Die Kennzahlen der von der DPR beanstandeten Unternehmen werden mit denen von Kontrollfirmen sowie allen am

geregelten Markt gehandelten Unternehmen (4.730 Firmenjahre) verglichen und Unterschiede herausgearbeitet. Des Weiteren zeigen vorausgegangene Studien den Zusammenhang zwischen Finanzkennzahlen und der Ergebnisqualität. Folglich wird in dieser Studie der Zusammenhang zwischen Richtigkeit der veröffentlichten Informationen und den akademischen Maßgrößen zu deren Qualität betrachtet. Die Ergebnisse zeigen sowohl das schlechtere Abschneiden der "DPR-Unternehmen" im Sinne der finanziellen Kennzahlen, als auch eine schlechtere Ergebnisqualität der Rechnungslegung im Verglich zu Kontrollunternehmen. Diese Erkenntnisse sind stabil gegenüber Variationen der Messgrößen der Ergebnisqualität sowie gegenüber Veränderungen des Beobachtungszeitraums. Die Resultate tragen zur Diskussion um die Ergebnisqualität bei und ergänzen die wissenschaftliche Forschung hin zu einem umfassenden Bild der Qualität der Rechnungslegung in Deutschland. Die Studie zeigt, dass sich das deutsche Enforcement-Modell, mit privatrechtlich gestalteter DPR und staatlich organisierter BaFin, auch für eine Übertragung auf andere Länder eignen könnte.

Die dritte Studie befasst sich mit der Effektivität des deutschen Enforcement-Systems, dem Einfluss von Bilanzpolitik und dessen Antizipation in den Prüfungskosten der Wirtschaftsprüfer. Die Untersuchung analysiert den zeitlichen Aspekt von Bilanzpolitik auf Fehlerveröffentlichungen in späteren Perioden. Es besteht die Möglichkeit die Verschlechterung der wirtschaftlichen Situation eines Unternehmens durch Bilanzpolitik zu verdecken. Ohne Verbesserung der wirtschaftlichen Lage des Unternehmens führt dieses Verhalten zu einem Bilanzpolitikausmaß außerhalb des gesetzlichen Rahmens und folglich zu einer hohen Wahrscheinlichkeit der Fehlerentdeckung bei DPR Untersuchungen. Die Entwicklung der Bilanzpolitik eines solchen Unternehmens müsste im zweiten Schritt mit der Risikokomponente in den Prüfungskosten des Wirtschaftsprüfers in Verbindung stehen. Der risikoorientierte Prüfungsansatz und die Antizipation von Bilanzpolitik in den Prüfungskosten sollte demnach vor Fehlerbekanntmachung zu einem Anstieg der Prüfungskosten führen. Zusätzlich ist nach offizieller Fehlerveröffentlichung und somit durch eine objektiv beobachtbare Schwäche im Rechnungslegungssystem oder einem hohen Ausmaß an Bilanzpolitik ein Risikoaufschlag zu vermuten.

Im letzten Kapitel werden die wichtigsten Aussagen und Erkenntnisse der Dissertation zusammengefasst sowie in abschließenden Bemerkungen der Zusammenhang der Ergebnisse erläutert.

Content Overview

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List of Abbreviations

AAER	Accounting and Auditing Enforcement Releases
AktG	Aktiengesetz; Public Companies Act
Ann.	Announcement
Bafin	Bundesanstalt für Finanzdienstleistungsaufsicht; Federal Financial Supervisory Authority
BilKog	Bilanzkontrollgesetz; Financial Reporting Enforcement Act
CESR	Committee of European Securities Regulators
DAX	Deutscher Aktien Index; German Share Index
DRS	Deutscher Rechnungslegungs Standard; German Accounting Standard
eBundesanzeiger	elektronischer Bundesanzeiger; Electronic Federal Gazette of Germany
EC	European Commission
ER	Enforcement Release
Err. Ann.	Error Announcement
ESMA	European Securities and Markets Authority
EU	European Union
Fin. Stmt.	Financial Statement
FRRP	Financial Reporting Review Panel
GAAP	Generally Accepted Accounting Principles

GCGC	German Corporate Governance Code
HGB	Handelsgesetzbuch; German Commercial Code
IAS	International Accounting Standard
IASB	International Accounting Standard Board
IFRS	International Financial Reporting Standards
Mgmt. Rep.	Management Report
Misstmt.	Misstatement
NER	Non-Enforcement-Release
OLS	Ordinary Least Square
pct.p.	percentage point
SEC	Securities and Exchange Commission
SIC	Standing Interpretation Committee
SIC-code	Standard Industrial Classification-code
UK	United Kingdom
US	United States
WpHG	Wertpapierhandelsgesetz; Securities Trading Act

Chapter 1
Introduction

Accounting is mainly about describing the past [...]. This should be dull business, better left to 'bean counters'. Surely counting beans cannot cause too many problems?

Hans Hoogervorst, Chairman of IASB

Agency theory provides a theoretical background for the enforcement of accounting standards. The theory is used to describe the difficulties, and to explain the possible cooperation in the relationship between a decision maker (agent) and a principal who authorizes the agent and in whose interest he acts. The crucial issue in the agency framework is the asymmetry of information between the parties that results in adverse selection and suboptimal 'third best' market outcomes (Eisenhardt (1989)). One solution of the agency dilemma is the reduction of the asymmetry in information between principal and agent, and hence the provision of information.

In the constellation of the shareholder-management-relationship this aspirated reduction of information asymmetry is the fundamental nucleus for financial reporting. The disclosure of corporate information can moderate the basic agency conflict in a company with separated management and ownership. However, the information provided by the information system needs to be trustworthy. An auditor, as a third independent actor, can certify its reliability and help to supervise the management (in addition to the supervisory board). Besides this internal function, the auditor also serves to the public as warrantor of the accuracy of the

accounting system, and by ensuring the compliance with the legal requirements; the auditor's report is an important piece of information for external investors and shareholders at capital markets. However, in this theoretical framework, the auditor finds herself in an agency conflict, as she is a servant of two masters - internally to her ordering client and externally to the public (Bockmann (2012)). An impartial and independent Enforcement System can solve this second stage agency conflict and is needed to assure that financial reporting can fulfil its tasks.

The convergence of accounting standards was fostered by the European Union (EU) by the adoption of the International Financial Reporting Standards (IFRS). The intention of *Regulation (EC) No. 1606/2002* of the European Parliament and of the Council of 19 July 2002 was the application of "a single set of high quality international accounting standards for the preparation of [...] consolidated financial statements" (Par. 2) throughout the community. The harmonization of accounting principles would "ensure a high degree of transparency and comparability of financial statements and hence an efficient functioning of the Community capital market [...]" (Article 1). The former chairman of the US Securities and Exchange Commission (SEC) Arthur Levitt sees benefits as "high quality accounting standards result in greater investor confidence, which improves liquidity, reduces capital costs, and makes fair market prices possible" (Levitt (1998a, p. 81)). The persistent actuality of the topic, even 14 years later, is outlined by Hans Hoogervorst, current chairman of the International Accounting Standards Board (IASB): "I am deeply convinced that our accounting standards are an essential ingredient of trust in our market economy. In an economic system in which so many parties are working with other people's money, high quality accounting standards that provide transparency to the market are of paramount importance. IFRS as a global standard has had a tremendously beneficial impact for global investors, who lacked all comparability in the pre-IFRS days" (Hoogervorst (2012, p.3)). Furthermore, academic studies have found evidence for positive contributions of standardized accounting rules (e.g. Li (2010)).

However, as outlined above, the benefits of high quality financial reports depend on the reliability of the information. The chairman of the European Securities and Markets Authority (ESMA) Steven Maijoor argues that "the worldwide adoption of IFRS is a necessary but, on its own, an insufficient condition for global comparability. In order to achieve true global comparability the standards have to be enforced" (Maijoor (2012, p.4)). Academic research also favors a strict enforcement of accounting standards. Hope (2003, p. 238) even argues that "the extent to which standards are enforced and violations prosecuted is as important

as the standards themselves" and continues that "absent adequate enforcement, even the best accounting standards will be inconsequential. If nobody takes action when rules are breached, the rules remain requirements only on paper" (ibid.).

The EU acknowledged the necessity of enforcing the adopted financial standards as a mandatory requirement for their acceptance throughout the community. The harmonization of accounting standards was accompanied by a standardization of their enforcement: "A proper and rigorous enforcement regime is key to underpinning investors' confidence in financial markets. Member States [...] are required to take appropriate measures to ensure compliance with international accounting standards. The Commission intends to liaise with Member States, notably through the Committee of European Securities Regulators (CESR), to develop a common approach to enforcement" (Regulation (EC) No. 1606/2002, Par. 16)

1.1 A common Approach to Enforcement

A definition of 'Enforcement' can be found in Naumann (2000, p. 657): "Financial reporting enforcement mechanisms are provisions and actions designed to ensure that applicable financial reporting requirements are satisfied." The Committee of European Securities Regulators (CESR) defines as follows, "monitoring compliance of the financial information with the applicable reporting framework; taking appropriate measures in case of infringements discovered in the course of enforcement" (CESR (2003, Principle 2)).

With the 2002 decision for the development of a common approach to enforcement and the choice for consultations through the CESR, the EU at the same time opted against a central European enforcement authority. In the years prior, the creation of a central IAS enforcement authority was discussed as it seemed necessary to ensure a uniform application of IAS/ IFRS which would have been a condition for the SEC to accept IAS/ IFRS as a registration requirement for the cross-listing of European companies (Lohwasser (2006)). However, the creation of a central institution would raise legal issues and such a regulation would very likely have been continuously deferred (Berger (2010)). The EU instead decided that the authority should remain at the Member States and found a consensus in providing a platform for coordination and cooperation through the already (since 2001) existing European securities authority CESR (Lamfalussy Report (2001)).

The CESR (since 2011 its successor institution ESMA) has neither the sovereign power to ensure the compliance of accounting standards, nor does it perform investigations to uncover infringements. The task of the coordinating activities of the CESR is the creation of a level playing field throughout the Union, by the harmonization of enforcement activities and the institutional supervisory environment. In order to create a common framework for the enforcement activities the CESR developed two 'Standards of Financial Information'. Standard No. 1 'Enforcement of Standards on Financial Information in Europe' (published in March 2003) consists of principles "on which [...] harmonization on the institutional oversight systems in Europe may be achieved" (CESR (2003, p.4)). The 21 principles are subsumed into 7 main categories: The definition of enforcement, enforcement authorities in the Member States, addresses of enforcement activities (issuers of securities and financial reporting documents), common methods of enforcement, intended actions by enforcers, the coordination of enforcement, and the periodically reporting to the public (CESR (2003)). The coordination of enforcement (Principle 20) is specified in Standard No. 2 'Coordination of Enforcement Activities' (published in April 2004). Mutual consultation and the exchange of experiences of all EU National Enforcers should be ensured by the organization of 'European Enforcers Coordination Sessions' (Principle 4, CESR (2004a)). These session and their scope are accompanied by a 'Guidance for Implementation of Coordination of Enforcement of Financial Information'. Main topics of the coordinating exchange should be the analysis and discussion of decisions of EU National Enforcers, the identification of issues that might be affected by conflicting interpretations of IAS/ IFRS, the discussion about practical experiences and the exchange of opinions regarding risk assessment and the selection of issuers, and the provision of advice towards the CESR on enforcement issues and the further development of enforcement standards, guidelines and methods (CESR (2004b)). The sessions of the enforcers take place about 8 times a year.

For the assessment of the 2012 financial statement, for the first time, the EU enforcers have agreed on a set of priority issues to be investigated. These common priorities are considered important issues in accounting and financial reporting in the current economic situation. The areas are: financial assets, impairment of non-financial assets, defined benefit obligations, as well as provisions, contingent liabilities and contingent assets (Maijoor (2012)).

An overview of the enforcement activities is provided by the Activity Reports by the ESMA. The most recent 2011 report states that in 2011 some 1,950 financial statements were reviewed, covering round 14% of the listed entities subject to enforcement in Europe. The investigation lead to 588 public corrective notes or

other public announcements; in 18 cases the firms were demanded to reissue revised statements (ESMA (2011)).

The implementation of the 'Common Approach' differs throughout the Member States. Standard 1 on Financial Information leaves the organization of the enforcement to the states; they assure that the "competent independent administrative authorities [...] have the ultimate responsibility for enforcement of compliance of the financial information [...] with the reporting framework" (Principle 3, CESR (2003)). Berger (2010) analyzes the differences in the implementations for various categories; he examines the procedures and the results of the national enforcers, the organizational forms, the scope of assignment of tasks as well as the different examination approaches. The enforcement authorities may delegate the execution of enforcement on their behalf to other bodies (Principle 4, CESR (2003)). The UK, Ireland and Switzerland assigned privately organized organizations to carry out the examinations. Germany and Sweden implemented two-tiered systems with privately and public organizations enforcing the standards conjointly. Austria was the last state to set up an enforcement system. Its two-tiered system is set in operation only since July 2013; its structure is a reproduction of the German mechanism - a tribute to the effective and efficient enforcement in Germany (IWP (2010)). In all other European countries the enforcement is state-run. The scope of the assignment of task differs; in some countries the examination of offering prospectuses, the supervision of auditors or the clarification of pre-clearance inquiries are tasks assigned to the enforcers. The examinations differ throughout the countries in the assessment of materiality, the examination process and the frequency of investigations (Berger (2010)).

Nevertheless, in despite of all differences, the national enforcement systems, in cooperation with the ESMA, contribute to the uniform and correct application of IAS/ IFRS accounting standards; positive effects on capital markets with respect to liquidity and valuation are observed by academic research studies (e.g. Daske et al. (2008), Ernstberger et al. (2012b), Hitz et al. (2012)).

1.2 Research Question

The dissertation at hand pursues research questions in the context of the enforcement of financial reporting standards. The 2004 established German enforcement system is investigated, hence the examination provides research on the two-tiered system with the privately organized *'Deutsche Pruefstelle fuer*

Rechnungslegung' (Financial Reporting Enforcement Panel, FREP)) at the first tier and the public regulatory authority *'Bundesanstalt fuer Finanzdienstleistungsaufsicht'* (BaFin, Federal Financial Supervisory Authority) at the second. The thesis is structured in three main chapters, all containing an independent study analyzing different aspects of the main topic.

Chapter 2 - Enforcement of Accounting Standards in Germany: The Pre- and Post-Misstatement Development of censured Firms - at first describes the German implementation of the European approach to enforcement, hence the German two-tiered system. Furthermore, the study focuses on the systematical evaluation of the information contained in 100 selected error announcements (from a total population of 151 evaluable announcements). In another step, the development of censured firms is tracked over time; the pre- and post-misstatement of balance sheet data, financial ratios and (real) earnings management are investigated. The censured firms report large total and discretionary accruals in the year of misstatement, relative to other years and relative to comparable firms. This is an indication for earnings management; the analysis furthermore detects increasing leverage ratios and a decline in profitability over time. The results show the importance of strict enforcement of IFRS for the quality of financial reporting. The findings should be of interest for enforcers throughout Europe, standard setters, policy makers, and investors.

Chapter 3 - Enforcement Releases, Firm Characteristics and Earnings Quality: Insights from Germany's two-tiered Enforcement System - examines the interrelation of enforcement releases, firm characteristics and earnings quality. The correlation between underperformance in financial ratios and the probability of misstatements is evident from prior studies. The study provides evidence from the German enforcement system; firms with publicly announced enforcement releases differ from control firms as well as the whole German publicly traded firms. The research affirms the connection of key financial ratios and academic earnings quality metrics; the accuracy of financial information is correlated with its quality. The results of this study document the underperformance of misstating firms in financial ratios as well as indicate their inferiority in terms of earnings quality. This study contributes to a comprehensive picture of accounting quality for the institutional settings of Germany. The paper shows that a unique conjoint two-tier public and private enforcement system in Germany is effective. Consequences for the regulation of corporate governance, and implications for the German enforcement panel and auditors are discussed.

Chapter 4 - The Effects of Earnings Management on Enforcement Releases and their Recognition in Audit Fees - additionally considers the role of, and

consequences for the auditor in the enforcement process. The German firms subject to error announcements are used to evaluate the effect of increasing earnings management over time on the enforcement releases, as well as how auditor account for earnings management and misstatement probabilities through the adjustment of audit fees. Prior literature provides evidence that steadily applied income increasing earnings management later influences the disclosure of misstated financial statements. Evidence of prior studies on earnings management recognition in audit fees and findings on the content of future information in audit fees lead to the examination, if auditors recognize increasing audit risk in fees even before the investigations by enforcement authorities start. This third study extends literature on earnings management and audit fees by modeling the development of earnings management within the misstatement firms and systematically link it to auditor reactions. The study provides evidence for significant predictive power of different commonly applied (discretionary) accrual measures for subsequent enforcement releases. An audit fee increase, e.g. the recognition of increased audit risk can be observed in the period prior and up to the misstatement period.

Chapter 5 closes the thesis with a summary of the main findings, concluding remarks on the connection of the three essays as well as subsumption of findings in the accounting literature.

Chapter 2

Enforcement of Accounting Standards in Germany: The Pre- and Post-Misstatement Development of censured Firms

Abstract

This paper focuses on the implementation of a two-tiered external financial reporting enforcement mechanism in Germany 2004. The first objective of the study is the systematical evaluation of the information contained in 100 disclosed error announcements. I find that error announcements on average contain 3.64 single errors and that 77% affect the reported profit. Relatively small as well as big, highly levered and rather unprofitable firms are overrepresented by the sample of misstatement firms. In a second step, I investigate the development of censured firms over time; I track the pre- and post-misstatement development of the firms in terms of balance sheet data, financial ratios and (real) earnings management. The analysis detects increasing leverage ratios and a decline in profitability over time. In the year of misstatement firms report large total and discretionary accruals, indicating earnings management. Compared to matched control firms, significant differences in profitability, market valuation, earnings management and real activities manipulations are observable. A major contribution of this study is the examination of trends in financial data and (real) earnings management over a number of years surrounding the misstatements as well as the elaboration of the distinction to non-misstating firms. My results show the importance of the enforcement of IFRS for the quality of financial reporting to standard setters, policy makers, and investors in Germany.

JEL Classification: M 40, 41, 42

Keywords: enforcement, earnings management, real activities manipulation

2.1 Introduction

Since 2005, International Financial Reporting Standards (IFRS) shall be applied for consolidated financial statement of firms listed on a regulated market segment within the European Union (EU) (*Regulation EC No. 1606/2002*). Simultaneously to the harmonization of accounting standards, the EU fostered the standardization of enforcement systems to ensure compliance with international accounting standards. Par. 16 of the so-called 'IAS Regulation' mandates the 'Committee of European Securities Regulators' (CESR; since 2011 the 'European Securities and Markets Authority' (ESMA)) to "develop a common approach to enforcement".

This paper focuses on the German implementation of these guidelines in 2004. By the Financial Reporting Enforcement Act, German legislation set up a two-tiered external financial reporting enforcement mechanism. The privately organized body 'Financial Reporting Enforcement Panel' (FREP) was founded and endorsed to supervise the compliance with the accounting and reporting standards in cooperation with the 'Federal Financial Supervisory Authority' (BaFin). The FREP's primary responsibility is to carry out examinations of prior audited financial reports. If material infringements are revealed, the BaFin mandatory orders the disclosure of the error findings.

The purpose of this paper is the investigation of the 'information output' of the enforcement system - the error findings *per se* and the named misstating firms. The first part of my study focuses on the systematic evaluation of the information contained in the disclosed error announcements. I describe the characteristics of misstating firms and analyze the single error findings contained in the announcements. In a second step of examination, I take the opportunity to investigate the development of censured firms over time. Since the German enforcement mechanism conducts examinations for about eight years now (since July 2005), I have the possibility to track the pre- and post-misstatement development of the firms in terms of balance sheet data, financial ratios and (real) earnings management. Additionally, the paper compares the development of a matched control sample. Previous studies were unable to examine trends over time due to the short history of financial reporting enforcement in Germany.

Prior literature shows the effects of an overall increase in the level of enforcement in Germany on earnings quality, liquidity and valuation of affected firms (Ernstberger et al. (2012b), Holthausen (2009)); however, the study does not directly address the FREP-error findings. Hitz et al. (2012) use such a sample of error announcements to investigate short- and long-term market reactions thereto (cf. also Christensen et al. (2011)). Apart from that, studies on the US-market and the Securities and Exchange Commission's (SEC) 'Accounting and Auditing

Enforcement Releases' (AAERs) examine trends of firms' accounting behavior and performance over a number of years round a misstatement (Dechow et al. (1996)). Ettredge et al. (2010) evaluate how restatements begin and document a 'balance sheet bloat' in the prior years. Leng et al. (2011) investigate the long-term performance and failure risk of AAER-firms and find lasting underperformance in the subsequent year.

Using a sample of 100 FREP-error announcements (derived from a total of 151 error publications) dating from 2004 to 2011 I observe that the misstatements are not isolated in particular industries, but distributed throughout the whole German economy. I find that, compared to the whole market, especially very small and very large firms are overrepresented in the misstatement sample; the same states for firms with high leverage ratios and low profitability. The error announcements typically consist of several single error findings. On average 3.64 errors are detected by the FREP, 29% of the announcements enclose five or more single findings, and 77% of all announcements contain errors that affect the reported profit of the period. The analysis of the pre- and post-misstatement development of misstating firms detects increasing leverage ratios over time and a decline in profitability. In the year of misstatement, firms report large total and discretionary accruals - an indication for earnings management. Compared to matched control firms, significant differences in profitability, market valuation, earnings management and real activities manipulations are observable in the year of misstatement.

A major contribution of this study is the examination of trends in balance sheet data, financial ratios and (real) earnings management over a number of years round misstatement as well as the elaboration of the distinction to non-misstating firms. So far, no other study provides such evaluations for the German enforcement regime. My results show the importance of the enforcement of IFRS for the quality of financial reporting to standard setters, policy makers, and investors in Germany. The findings can also serve as feedback to the enforcement-coordinating EU-authorities.

The remainder of the paper is organized as follows. The next section begins with a description of the German enforcement system, then presents the characteristics of misstating firms and evaluates the error announcements. Section 2.3 outlines the research design of the paper. Section 2.4 presents the descriptive statistics and empirical analysis. The last section draws conclusions.

2.2 The Enforcement System, Misstating Firms and Error Announcements

2.2.1 The German Enforcement System

The legal basis for the enforcement of accounting standards in Germany was created by the '*Bilanzkontrollgesetz*' (Financial Reporting Enforcement Act) at the end of 2004. The enforcement mechanism was installed to enforce accounting standard compliance (especially IFRS) by regular reviews of disclosed financial statements; the system operates since July 2005. Germany's unique two-tiered system involves the '*Deutsche Pruefstelle fuer Rechnungslegung*' (FREP), a newly established private organization primary assigned to conduct the reviews. As the second tier the '*Bundesanstalt fuer Finanzdienstleistungsaufsicht*' (BaFin) has the sovereign authority to order the publication of errors ('error announcements') and if necessary, to force the cooperation of firms in the review process.

Addressees of the enforcement process are all firms whose financial instruments are admitted to trading on regulated segment of a German stock exchange (par. 342b HGB), hence capital market oriented companies. Those firms are periodically reviewed every 8 to 10 years, index-listed firms regularly every 4 to 5 years. There are two main reasons for the initiation of an examination: One, an 'examination with cause' is ordered if there are concrete indications of violations of financial reporting standards. Two, the majority of investigations is conducted as 'random sampling examinations' without any concrete cause. Random sampling is only applied to year-end statements; interim statements are just investigated on indication.

The primary objective of enforcement and hence the goal of both kinds of examinations is to ensure the compliance of the most recently adopted (individual or consolidated) financial statements (and related management reports) with the applicable reporting framework and accounting standards. However, the scope of the examination is limited and depends on the reason of initiation: 'Examination with cause' review the accounting treatments of the questionable areas. For the 'random sampling examinations' the FREP publishes 'main focus areas' on an annual basis. These critical areas are mainly based on prior deteriorations (frequently recurring errors) and the anticipated challenging application and interpretation of certain IFRS. In both review-cases the Panel might extent the scope of investigations if it deems necessary (FREP (2009)).

The FREP's examination result is reported to the reviewed firm and the BaFin (par. 342b (VI) HGB). If the firm agrees with the findings, BaFin will order the publication of the errors. In case the firm objects to the error assertions, BaFin

will start its own (second-tier) examination process and confirm or refute the FREP's findings afterwards (as well as order the publication of confirmed errors; cf. par. 37p and par. 37o WpHG). The publication of errors is proceeded via the '*eBundesanzeiger*' (Electronic Federal Gazette of Germany) and at least one financial newspaper. This adverse disclosure is the main instrument of the intended 'name and shame' sanctioning. In the following, I refer to the mandatory ordered publication of error findings as 'error announcement' (Hitz et al. (2012)) or, in accordance to international research, I synonymously use the terms 'enforcement release' (e.g. the SEC's 'Accounting and Auditing Enforcement Releases') and 'misstatement' (Dechow et al. (2010)).

2.2.2 Sample Selection: Total Sample and Misstating Firms

The FREP examines financial statements of firms listed in the regulated segment of a German stock exchange (cf. par. 342b HGB). As the Panel took up its task in 2005, the earliest statements under investigation are year-end accounts from 2004. I examine the development within the firms that lead to FREP error announcements later on. Therefore, I analyze accounts and data up to three years prior to the erroneous disclosure of a financial statement. The latest error announcements analyzed in this study relate to financial statements from 2011. For the calculation of some metrics, data from the previous year is needed, in this respect data is collected for the years 2000 to 2011. All firm information and financial data used in the calculations is obtained from Worldscope database. The whole German population in Worldscope consists of 13,993 firm years of 1,164 distinct firms for those years. I delete banks, insurance companies and other financial service providers (3,288 firm years). To ensure comparability over time, only financial statements according to international accounting standards (IAS/IFRS) are regarded; 6,234 firm year observations are removed. After erasing 62 more firm years due to missing basic financial data, the final sample consists of 4,409 firm years of 633 distinct firms. This sample is refered to as 'Total Sample' in the following (cf. Table 2.1, Panel A).

All information on the error announcements is hand collected. The FREP neither publishes a list of prior error findings, nor a list of 'investigated and error-free' financial statements, nor an overview of total investigated financial statements. The suggested way of accessing the data is searching the website of the Electronic Federal Gazette of Germany for the term '*Fehlerbekanntmachungen*'

(error announcement) (FREP (2013a)). By the fixed cut-off date (05/31/2012) the search returns 175 documents that are declared as 'error announcements'. 24 of them contain amendments, corrections or the rephrasing of former announcements, or are duplicates. The number of utilizable announcements hence equals 151, each concerning one specific firm - year combination. Consistently applying selection criterions (with the derivation of the total sample) leads to the deletion of 28 announcements of financial service providers, 15 error disclosures refer to non-IAS/IFRS statements and 8 observations have to be deleted due to Worldscope data availability. Thus the final sample ('Misstatement Sample') consists of 100 error announcements concerning the fiscal years 2004 to 2011 (cf. Table 2.1, Panel B). Table 2.1, Panel C presents the name of each of these misstatement firms and the year of misstatement. As the list shows, the sample captures rather small and publicly unknown firms as well as some of Germany's biggest companies that are all listed in the *DAX30* index, like *Adidas AG, Continental AG, Deutsche Post AG, Merck KGaA* or *Metro AG*.

Matching the misstatement sample and the total sample of German firms results in the following distribution: The corresponding firm-year observation of the error announcement is available in the total sample in 94 of 100 cases. For 6 error observations Worldscope does not provide sufficient data for the misstating firm-year to be considered in this study. The misstating firms represent 740 firm-year observations of the total sample, dating from 2000 to 2011. This equals a share of 16.8% of all firm-years and an average amount of 7.9 firm-years per misstatement firm.

Table 2.1. Sample Selection

Panel A: Total Sample

	Firm-years	Firms
German population in Worldscope (2000 - 2011)	13,993	1,164
less: Financial services providers	(3,288)	(274)
less: Non-IAS/IFRS financial statements	(6,234)	(247)
less: Missing basic financial data	(62)	(10)
Total Sample	**4,409**	**633**
thereof: Non-Misstatement Sample	3,669	539
thereof: Misstatement Sample	740	94
Proportion of Misstatement Sample	16.78%	14.85%

Panel B: Misstatement Sample

	Firms
Published error announcements	
(Source: eBundesanzeiger till 05/31/2012)	175
thereof: amendments, corrections, rephrasing and duplicates	(24)
Utilizable error announcement	**151**
less: Financial services providers	(28)
less: Non-IAS/IFRS financial statements	(15)
less: Missing basic financial data (in misstatement year)	(8)
Misstatement Sample (number of err. ann.)	**100**
Firms with more than one error announcement	12
Number of distinct firms (in misstatement year)	88
Firm-years from 2000-2011	740
IAS/IFRS Financial Statements	100%
Unqualified audit opinion	100%
Investigations conducted by BaFin	18%
Error findings have effect on reported earnings	77%
Average amount of errors per error announcement	3.6

(Continued)

Table 2.1. Continued

Panel C: Misstatement Sample (List of Firms)

Number	Company Name	Year	Number	Company Name	Year
			continued:		
1	313music JWP AG	2007	51	Interseroh SE	2006
2	3U Holding AG	2006	52	Interseroh SE	2009
3	Action Press Holding AG	2005	53	Intertainment AG	2004
4	Adidas AG	2009	54	Intertainment AG	2005
5	Air Berlin PLC*	2006	55	Isra Vision AG	2005
6	Allgeier Holding AG	2004	56	Kampa AG	2005
7	ARBOmedia AG	2008	57	KPS AG	2005
8	Arquana International Print & Media AG	2006	58	Lintec Information Technologies AG	2006
9	Arques Industries AG	2004	59	LS Telcom AG	2006
10	Asian Bamboo AG**	2010	60	Marbert Holding AG	2009
11	B+S Banksysteme AG	2009	61	Maternus Kliniken AG	2009
12	Basler AG	2008	62	Mensch und Maschine Software AG	2005
13	Beate Uhse AG	2009	63	Merck KGaA	2008
14	Biofrontera AG	2006	64	Metro AG**	2011
15	Biolitec AG	2007	65	Mistral Media AG	2008
16	Borussia Dortmund GmbH & Co. KGaA	2008	66	Mood and Motion AG	2005
17	C.A.T. oil AG*	2005	67	MTU Aero Engines Holding AG	2005
18	Caatoosee AG	2008	68	MWG Biotech AG	2005
19	Cash.medien AG	2005	69	MyHammer Holding AG	2009
20	Catalis SE*	2006	70	MyHammer Holding AG	2011
21	CDV Software Entertainment AG	2007	71	Neschen AG	2007
22	Celesio AG**	2007	72	OHB Technology AG	2005
23	Colexon Energy AG	2007	73	PC-Ware Information Technologies AG	2005
24	Conergy AG	2006	74	Petrotech AG**	2010
25	Conergy AG	2007	75	Piper Generalvertretung Dtl. AG	2006
26	Continental AG	2008	76	Pixelpark AG	2006
27	Curanum AG	2005	77	Pixelpark AG	2007
28	Curasan AG	2005	78	Plaut AG*	2006
29	D+S Europe AG	2007	79	Plaut AG*	2007
30	DEAG Deutsche Entertainment AG	2005	80	Praktiker AG	2007
31	Deutsche Post AG	2005	81	Puma AG	2009
32	DocCheck AG	2009	82	Puma AG	2010
33	Dom-Brauerei AG	2005	83	Q-Cells SE	2008
34	Ecotel Communication AG	2006	84	Q-Cells SE	2009
35	Elmos Semiconductor AG	2008	85	Sanochemia Pharmazeutika AG*	2009
36	Energiekontor AG	2006	86	Schoen & Cie AG	2005
37	Enerxy AG	2009	87	Schwaelbchen Molkerei AG**	2010
38	Enerxy AG	2010	88	Schwarz Pharma AG	2005
39	Escada AG	2007	89	Sky Deutschland AG	2007
40	Euromicron AG	2008	90	Sky Deutschland AG	2008
41	Fielmann AG	2009	91	Smartrac N.V.*	2006
42	Frosta AG	2007	92	Solarworld AG	2006
43	GfK SE	2008	93	STADA Arzneimittel AG	2007
44	Girindus AG	2007	94	STRABAG AG	2006
45	GK Software AG	2008	95	Sued-Chemie AG	2005
46	H&R WASAG AG	2008	96	TUI AG	2009
47	Indus Holding AG	2005	97	VWD AG	2009
48	Indus Holding AG	2007	98	W.E.T. Automotive Systems AG	2008
49	Intelis AG	2006	99	Wirecard AG	2005
50	Intelis AG	2007	100	Zooplus AG	2009

Notes: This table provides information on the sample selection process of the Total Sample (Panel A) and the Misstatement Sample (Panel B). Panel C contains a complete list of firms of the Misstatement Sample together with year of disclosure of an erroneous IFRS financial statement as announced referring to the FREP/BaFin enforcement. (Selection period: July 2005 - 05/31/2012). *Firm with head office out of Germany. **Error announcement refers to interim financial statement.

2.2.3 Characteristics of Misstating Firms

This section's purpose is the description of the characteristics of the firms selected to the misstatement sample, hence the firms subject to FREP error announcements. Building on that, the subsequent section analyzes the information contained in the announcements *per se*.

Table 2.1, Panel B gives some basic information on the characteristics of the misstating firms. 12 firms are obliged to disclose error announcements in more than one period. In most cases the publications refer to two consecutive years and detailed evaluations show that in those cases an incorrect application of accounting standards is regularly maintained over time. However, in the cases of independent errors or independent announcements for different periods, the repeated censuring of the same firm could be interpreted as signal for a weak accounting environment and poor corporate governance structures. Please note, that in case of multiple error announcements I keep the first release and disregard all the subsequent ones in the empirical evaluations (Dechow et al. (2011), Leng et al. (2011)); this is especially relevant for the time series considerations in the following.

All misstated statements are IAS/IFRS statements and the statutory audits in the misstated years did not result in any severe objections; the auditors issued unqualified year-end audit opinions in every case (Source: Worldscope Database). In 18% of the cases the error findings are detected by the BaFin instead of the FREP. Although the BaFin may decide to take over the examination in some cases (par. 37p WpHG), the common reasons for BaFin examinations are that firms refused their cooperation to the FREP investigations or did not agree with the results of the FREP examination.

Panel A of Table 2.2 provides the distribution of the different subsamples by years. Column (1) shows that the error announcements cover misstatements of financial statements in the fiscal years from 2004 to 2011. The trend shows a high number of announcements in the first complete year of FREP investigations (2005: 23 obs.), followed by a relatively stable number of evaluable observations in the years 2006 - 2009 (around 17 per year). For the last two considered years, the number of error findings drops. I attribute this reduction to two circumstances: Firstly, the error announcements are not timely. It might be that there are releases of 2010 and 2011 findings after the cut-off date for sample selection (for further discussions on the timing of the releases see Section 2.2.4). Secondly, the FREP also describes a decline in error findings over time in its 2012 annual report (FREP (2012)). While keeping the number of investigations relatively constant since 2009,

the error rate dropped significantly for the 2010 and 2011 statements. The Panel alleges several reasons, e.g. that firms are examined the second time, a higher attention by audit committees and supervisory boards, general improvements of the economic situation of firms and discussions with the auditors are mentioned (FREP (2012), p.4).

The distribution of the firm-years regarded in the three sub-samples (Columns (2) - (4); misstatement, non-misstatement and total sample) is nearly the same. The earlier five years of the considered period are characterized by a smaller number of observations, whereas the later years, since 2005, show a relatively stable allocation of firm-years. Each of the later years is represented by around 11% of the total observations of the regarded subsample. The reason for the increase in firm-year observations in 2005 is the obligation to apply international accounting standards for consolidated financial statements since 2005 in Germany. The deletion of Non-IAS/IFRS statements biases the distribution of the total sample towards the later years. This bias is accepted as financial ratios and their development over time cannot be compared, when derived from statements with different underlying accounting standards (Cai et al. (2008), Paananen and Henghsiu (2009)).

Despite the overrepresentation of the later years, the subsamples are not timely biased against each other and the observations are not clustered in any given year. The average number of firm-years is around 82 in the years since 2005 and 62 per year of the total period for the misstatement firms, accounting for around 17% of the total sample in each year (Column (5)). The non-misstatement sample shows an average amount of 306 firm-year observations per year.

Panel B of Table 2.2 reports information on the industry distribution of the subsamples according to the Fama and French (2008) 12-industry classification scheme. I regard this SIC-based grouping as suitable for this study, as a break down into e.g. 2-digit SIC codes would result in too few observations per industry in the case of Germany.

A comparison of Columns (1) and (2) shows that the distribution of error announcements and the corresponding firm years is very similar, indicating no biasing effects of time on the industry composition of the sample. As the findings show, nearly one quarter of the misstatement firms is from the 'business equipment' industry. This sector aggregates producers and service providers of hard- and software as well as other electronic equipment; it is a relatively new and steadily growing industry that makes substantial use of intangible assets (Dechow et al. (2011)). Yet, the branch is not overrepresented in the misstatements, compared to the total sample.

Almost one third of the misstatement sample is pooled in the 'others' category. Fama and French (2008) label industries like mining, construction and construction materials as well as the transportation and the entertainment sector as 'others'. This category is overrepresented compared to the total sample, where only 19% of firms are in the miscellaneous category. Other overrepresented sectors are 'retail- and wholesale-shops' and 'healthcare' (both 9 obs. / 9 percent), in the general population in both cases 7.3% of firms do business in these branches. The in Germany economically important sector 'manufacturing' (e.g. machinery and parts of the automobile industry) is underrepresented by FREP-alleged firms. It accounts for 17% of the total sample but only for 8.0% of the misstatement firms. This might indicate that this more 'traditional' sector might also be more conservative in accounting and thereby be less prone to errors. All other sectors are fairly represented. Please note as well that the excluded industry 'financial services providers' would account for 28 error announcements. Their share of around 19% would roughly correspond to their share of the total sample.

I state that accounting errors detected by FREP investigations are largely distributed over various sectors of the German economy and are not isolated in any particular branch. Nevertheless, some deviations are observable.

Table 2.2, Panel C presents information on size, leverage and profitability for misstating firms in comparison to the total sample. I calculate deciles by ranking the total sample for the variables total assets (*TA*), sales (*SALES*), debt-to-assets (*LEV*) and return-on-assets (*ROA*) in each fiscal year. The decile rankings of the alleged firms are the ones from their (first) misstatement year (Dechow et al. (2011)).

The rankings at the same time show a distinct overrepresentation of both, quite small and relatively large firms. According to the total assets ranking, 22% (*SALES*: 17%) of misstating firms belong to the '2nd smallest' decile no. 2 and 16% (*SALES*: 14%) are from the '2nd largest' decile no. 9. The FREP regularly states that in many cases error findings are driven by the wide range of disclosure and challenging application of certain IFRS, hence are due to their complexity (FREP (2011 and 2012)). This should especially apply to smaller firms with fewer and possibly less educated and experienced staff in the accounting department. The clustering in decile 2 could thereby be explained. However, the argumentation of expertise and experience cannot convince for the observations of firms in size-decile no. 9. Those firms should have enough internal capabilities as well as good access to external consultants and/or auditors to guarantee an IFRS-conform application of rules. Instead, large firms might have stronger incentives to intentionally violate

Generally Accepted Accounting Principles (GAAP) due to earnings management. They are followed more closely and frequently by analysts and could be more pending on the capital market (Watts and Zimmerman (1986), Dechow et al. (1996), Graham et al. (2005)). Another explanation of the high share of large firms is that the FREP investigates larger firms more often than smaller ones. However, the panel states that the error rate usually is higher for small firms (FREP (2012)).

Table 2.2. Sample Distribution

Panel A: Distribution of Samples by year

	(1)		(2)		(3)		(4)		(5)
	Misstatement Sample		Misstatement Sample		Non-Misstatement Sample		Total Sample		Misstatement Sample
Fiscal Year	Err. Ann.	Proportion	Firm-years	Proportion	Firm-years	Proportion	Firm-years	Proportion	% of Total Sample
2000	---	---	19	2.6%	107	2.9%	126	2.9%	15.08%
2001	---	---	26	3.5%	115	3.1%	141	3.2%	18.44%
2002	---	---	35	4.7%	167	4.6%	202	4.6%	17.33%
2003	---	---	40	5.4%	194	5.3%	234	5.3%	17.09%
2004	3	3.0%	49	6.6%	246	6.7%	295	6.7%	16.61%
2005	23	23.0%	81	11.0%	399	10.9%	480	10.9%	16.88%
2006	18	18.0%	86	11.6%	431	11.8%	517	11.7%	16.63%
2007	18	18.0%	87	11.8%	433	11.8%	520	11.8%	16.73%
2008	15	15.0%	86	11.6%	422	11.5%	508	11.5%	16.93%
2009	16	16.0%	81	11.0%	400	10.9%	481	10.9%	16.84%
2010	5	5.0%	77	10.4%	384	10.5%	461	10.5%	16.70%
2011	2	2.0%	73	9.9%	371	10.1%	444	10.1%	16.44%
Total	100	100.0%	740	100.0%	3,669	100.0%	4,409	100.0%	
Distinct Firms	88		94		539		633		

Panel B: Distribution of Samples by industry

	(1)		(2)		(3)		(4)		(5)	
	Misstatement Sample		Misstatement Sample		Non-Misstatement Sample		Total Sample		Total Sample	
Industry	Err. Ann.	Proportion	Firm-years	Proportion	Firm-years	Proportion	Firms	Proportion	Firm-years	Proportion
1 - Consumer Non-Durables	6	6.0%	49	6.6%	232	6.3%	44	7.0%	281	6.4%
2 - Consumer Durables	4	4.0%	20	2.7%	181	4.9%	27	4.3%	201	4.6%
3 - Manufacturing	8	8.0%	60	8.1%	743	20.3%	110	17.4%	803	18.2%
4 - Energy	1	1.0%	10	1.4%	24	0.7%	5	0.8%	34	0.8%
5 - Chemicals	4	4.0%	28	3.8%	143	3.9%	25	3.9%	171	3.9%
6 - Business Equipment	23	23.0%	182	24.6%	975	26.6%	169	26.7%	1,157	26.2%
7 - Telecommunication	4	4.0%	24	3.2%	124	3.4%	20	3.2%	148	3.4%
8 - Utilities	1	1.0%	12	1.6%	102	2.8%	17	2.7%	114	2.6%
9 - Retail	9	9.0%	63	8.5%	238	6.5%	46	7.3%	301	6.8%
10 - Healthcare	9	9.0%	76	10.3%	260	7.1%	46	7.3%	336	7.6%
12 - Others	31	31.0%	216	29.2%	647	17.6%	124	19.6%	863	19.6%
Total	100	100.0%	740	100.0%	3,669	100.0%	633	100.0%	4,409	100.0%

Panel C: Frequency of Misstatement Firms by decile rank of different variables

Decile Rank	TOTAL ASSETS	SALES	LEVERAGE	ROA
1	10	11	5	19
2	22	17	5	11
3	5	8	16	8
4	4	10	9	11
5	9	6	7	10
6	11	9	11	9
7	7	7	11	10
8	7	9	11	3
9	16	14	7	7
10	9	9	18	8
Total	100	100	100	96

Notes: Panel A of this table provides the number (error announcements and firm years) as well as the proportion of observations by fiscal year for the (Non-) Misstatement Sample and the Total Sample. Panel B provides this information by industry (Fama and French (2008) 12-industry classification). Panel C shows the frequency of the misstatement firms by the decile ranks based on TA, SALES, LEVERAGE and ROA. Deciles are calculated by ranking the Total Sample for the concerned variable in each fiscal year. The reported decile rankings of the misstatement firms refer to the respective (first) misstatement year (Dechow et al. (2011)). Variables as defined in Table 2.5.

The impression that error findings cannot entirely be attributed to the complexity of IFRS, and thereby largely to firm size, is strengthened by the rankings according to *LEV* and *ROA*. The evaluation of the debt-to-assets ratio shows a clear overrepresentation of highly levered firms (18% in the 'highest' decile 10), accompanied by an underrepresentation of the two 'lowest' deciles 1 and 2 (both 5%; this is somewhat balanced by 16% of observations in decile 3, but an underrepresentation of very small firms lasts). 'The higher the leverage of a firm, the higher, *ceteris paribus,* the incentives to manage earnings'. This could be the abbreviation of a wide range of literature presenting evidence on the influence of leverage on earnings management. Misstatements and error findings can be interpreted as external indicators of earnings management and are connected to the leverage ratios of firms (Jones et al. (2008), Dechow et al. (2010), Ettredge et al. (2010)). The most prominent incentives connected to level of debt are the avoidance of violating debt covenant restrictions and potential savings, when raising new funds (Watts and Zimmerman (1986), Dechow et al. (1996), Dechow et al. (2011), Zimmermann et al. (2012)).

The profitability ranking shows a clear clustering of errors in firms with a very low *ROA* (19 of 96 observations in the first decile) and an underrepresentation of error firms in the three 'most profitable' deciles. A deteriorating firm situation with low profitability could cause managers to boost earnings and manipulate financial statements (Beneish (1999)). On the one hand, managerial compensation could be linked to profitability (Healy (1985), Erickson et al. (2006), Dechow et al. (2011)); on the other hand, meeting capital market target provides incentives to do so (Graham et al. (2005)). Again, the findings could indicate earnings management within misstatement firms.

In the second part of this study (Section 2.4) I further analyze the origins of accounting errors by analyzing the development of denounced firms over time. I provide further insights to the influence of leverage and profitability and identify other drivers of misstatements.

2.2.4 Evaluation of Error Announcements

This section analyzes the error announcements the firms were obliged to disclose in the 'Electronic Federal Gazette of Germany' since 2005. I focus on the contained information regarding the timing of publication and the erroneous part of the financial statements as well as the number and severity of single error findings and infringed accounting standards.

Table 2.3, Panel A provides information on the time sequence of error publications. The main finding is that error announcements are not timely; they are often released months, sometimes years, after the disclosure of the erroneous financial statement. The average time elapsed between the 'fiscal year end date' of a misstated firm-year and the 'error announcement date' is 1.73 years, meaning 632 days. It is questionable whether, and to which extent, such delayed information is processed by capital market participants. However, the mission of the FREP, "[...] to contribute to truthful and transparent accounting of capital market oriented companies" (FREP (2013b)), can be supported. It should be noted that announcement lags have continuously been reduced by the FREP. The errors of the first three years under investigation were disclosed on average after 2.17 years (round 800 days), the ones of the years 2007 - 2009 after 1.6 years (580 days) and the findings of 2010 and 2011 after 0.85 years (312 days). These mean values are affected by outliers; median values are somewhat lower, especially in the early years. Furthermore, it has to be mentioned that the FREP does not bear full responsibility for the (timely) publication of errors. If the Panel finds the accounting to be deficient, the affected firm is asked to agree with the findings. If it does, BaFin orders the publication of errors. However, if it objects to the results, BaFin will initiate own examinations and confirm or refute the FREP's conclusions (FREP (2009)). Hence, delays can be due to protracted decision-making procedures by the firms and the enforcement authorities. An evaluation of time lags by industries shows no severe irregularities in the distribution (not tabulated).

The FREP does not standardize the wording of the announcements (they are formulated by the firms), but every publication contains information on the part of the financial statement that is found to be deficient. Panel B (and C) of Table 2.3 contains this information classified to the types 'Consolidated (Individual) Financial Statement', 'Group (Individual) Management Report' as well as 'Interim Statement'. As I only select IFRS statements and IFRS-related announcements to this study, it comes as no surprise that 97% of the announcements relate to consolidated statements, for which IAS/IFRS application is mandatory since 2005. The three other observations are selected, as in this cases the group management report is found to be deficient; hence a connection to the IFRS reporting is given. Individual statements are typically released according to local GAAP; the reported cases of erroneous individual statements (15) or individual management reports (8) are observations with *additional* mistakes in consolidated group reports. Since mid-2007 the FREP also examines semi-annual statements; the majority of errors in interim financial statements are instances of enduring misapplication of standards since the last year-end report (8 cases).

Neither the breakdown into years (Panel B), nor into industries (Panel C) shows any prominent clustering.

Table 2.3. Error Announcements: Announcement Date and Part of Fin. Stmt.

Panel A: Time elapsed between fiscal year end date and error announcement date

Fiscal year	Misstmt. Sample (Err. Ann.)	Elapsed Time (Years, mean)	Elapsed Time (Days, mean)	Minimum (Days)	Median (Days)	Maximum (Days)
2004	3	2.55	932	399	581	1816
2005	23	1.96	715	355	619	1451
2006	18	2.01	735	384	653	1446
2007	18	1.58	575	295	534	1173
2008	15	1.66	606	342	546	900
2009	16	1.57	572	350	465	1698
2010	5	0.77	281	203	281	371
2011	2	0.94	342	285	342	399
Total	100	1.73	632		554	

Panel B: Distribution by year and part of financial statement

Fiscal year	Misstmt. Sample (Err. Ann.)	Consolidated Fin. Stmt.	Group Mgmt. Rep.	Individual Fin. Stmt.	Individual Mgmt. Rep.	Interim Fin. Stmt.
2004	3	3	1	0	0	0
2005	23	23	6	8	3	0
2006	18	18	2	0	1	0
2007	18	18	4	2	1	4
2008	15	14	3	2	1	1
2009	16	15	5	2	2	1
2010	5	5	2	1	0	5
2011	2	1	1	0	0	2
Total	100	97	24	15	8	13

Panel C: Distribution by industry and part of financial statement

Industry	Misstmt. Sample (Err. Ann.)	Consolidated Fin. Stmt.	Group Mgmt. Rep.	Individual Fin. Stmt.	Individual Mgmt. Rep.	Interim Fin. Stmt.
1 - Consumer Non-Durables	6	5	2	1	1	2
2 - Consumer Durables	4	4	0	2	0	0
3 - Manufacturing	8	8	2	2	0	1
4 - Energy	1	1	0	0	0	0
5 - Chemicals	4	4	2	0	0	1
6 - Business Equipment	23	23	3	3	1	3
7 - Telecommunication	4	4	3	0	1	1
8 - Utilities	1	1	1	0	0	0
9 - Retail	9	8	2	2	1	2
10 - Healthcare	9	8	2	1	1	0
12 - Others	31	31	7	4	3	3
Total	100	97	24	15	8	13

Notes: Panel A of this table provides information on the time elapsed between the fiscal year end date of the erroneous disclosed financial statement and the publication day of the error announcement in the Electronic Federal Gazette of Germany. Panel B (Panel C) gives information on the erroneous part of the financial statement and the distribution by fiscal year (by industry (Fama and French (2008) 12-industry classification)).

Table 2.4 is dedicated to the evaluation of single error findings within the error announcements. I evaluate the announcements manually; in most cases the different areas that lead to accounting errors are consecutively numbered and information on infringed accounting standards and profit effects is provided, making the evaluation simple and clear. In other cases (typically in earlier years) some judgment might be needed and information on infringed standards might be missing.

The 100 error publications under investigations contain 326 single IAS/IFRS errors. Additionally, I find 38 single errors that infringe local GAAP standards (the German commercial laws HGB, WpHG, AktG and DRS are affected). To be selected to this study, the local GAAP infringements need to be assignable to IFRS statements and thereby are additional findings to other IFRS errors (Table 2.4, Panel A). Most cases of local GAAP errors (24 of 38) are associated to the management reports (par. 315 and par. 315a HGB) that are still disclosed under local standards. A total number of 364 single errors, leading to an average of 3.64 errors per error announcement, can be observed. As Figure 2.1 (Chart 1) depicts, only in one quarter of the cases the announcement reports just one single error. In all other cases several areas are deficient; 29% of announcements contain five or more single findings; up to the maximum amount of eleven errors (in four cases). 77% of the announcements enclose errors that affect the reported profit of the period and thereby are regarded as more severe (Ernstberger et al. (2012a)).

Panel A (Table 2.4) additionally reports the distribution by year: On general the early years' announcements (2004 - 2007) contain more error findings; hence the average number of errors per publication is higher (mean 4.8). The results for the years 2005 and 2007 are especially pronounced: 2005 (2007) accounts for 23% (18%) of the firms, but for 28% (21%) of errors. These two years also contain the highest absolute number of error findings (2005: 103, 2007: 77). The 4 later years, since 2008, are all underrepresented in terms of single error occurrences (e.g. proportion of firms in 2008 equals 15%, whereas the proportion of errors is 11%). The average number of findings drops to 2.4 in the later years. However, effects on profit are found more often in the later years. Figure 2.1 (Chart 2) depicts the distribution of error announcements and single findings over the observation period.

Table 2.4. Error Announcements: Number of Single Error Findings and IFRS-Infringements

Panel A: Distribution by year

Fiscal Year	Misstmt. Sample (Err. announcements)	Number of Single IFRS Errors	related Local GAAP Errors	Impact on Profit	Average Number of Errors	Proportion of Firms	Proportion of Errors
2004	3	20	1	3	7.00	3.0%	5.8%
2005	23	93	10	18	4.48	23.0%	28.3%
2006	18	57	4	14	3.39	18.0%	16.8%
2007	18	70	7	14	4.28	18.0%	21.2%
2008	15	35	4	12	2.60	15.0%	10.7%
2009	16	38	8	11	2.88	16.0%	12.6%
2010	5	11	3	4	2.80	5.0%	3.8%
2011	2	2	1	1	1.50	2.0%	0.8%
Total	100	326	38	77	3.64	100.0%	100.0%

Panel B: Distribution by industry

Industry	Misstmt. Sample (Err. announcements)	Number of Single IFRS Errors	related Local GAAP Errors	Impact on Profit	Average Number of Errors	Proportion of Firms	Proportion of Errors
1 - Consumer Non-Durables	6	15	3	3	3.00	6.0%	4.9%
2 - Consumer Durables	4	8	3	3	2.75	4.0%	3.0%
3 - Manufacturing	8	29	2	4	3.88	8.0%	8.5%
4 - Energy	1	1	0	0	1.00	1.0%	0.3%
5 - Chemicals	4	7	2	4	2.25	4.0%	2.5%
6 - Business Equipment	23	79	10	20	3.87	23.0%	24.5%
7 - Telecommunication	4	16	3	4	4.75	4.0%	5.2%
8 - Utilities	1	10	1	1	11.00	1.0%	3.0%
9 - Retail	9	34	2	7	4.00	9.0%	9.9%
10 - Healthcare	9	29	3	7	3.56	9.0%	8.8%
12 - Others	31	98	9	24	3.45	31.0%	29.4%
Total	100	326	38	77	3.64	100.0%	100.0%

(Continued)

Table 2.4. Continued

Panel C: Single error findings and accounting standards: Distribution by year

	2004	2005	2006	2007	2008	2009	2010	2011	Total	Proportion
IFRS1 - First-time Adoption of IFRS	0	2	1	0	0	0	0	0	3	1.0%
IFRS2 - Share-based Payment	0	1	0	0	0	0	0	0	1	0.3%
IFRS3 - Business Combinations (in 2004: IAS 22)	2	8	6	8	2	2	1	0	29	9.5%
IFRS5 - Non-current Assets Held for Sale and Discontinued Op.	0	3	1	0	1	0	0	0	5	1.6%
IFRS7 - Financial Instruments: Disclosures	0	0	0	3	2	0	0	0	5	1.6%
IFRS8 - Operating Segments (till 2009: IAS 14)	1	4	2	1	2	0	0	0	10	3.3%
IAS1 - Presentation of Financial Statements	0	7	4	6	3	4	1	1	26	8.6%
IAS2 - Inventories	1	1	0	0	0	2	0	0	4	1.3%
IAS7 - Statement of Cash Flows	2	5	3	3	1	1	0	1	16	5.3%
IAS8 - Accounting Policies, Changes in Accounting Estimates	1	3	1	2	3	3	0	0	13	4.3%
IAS10 - Events after the Reporting Period	0	0	0	0	0	1	0	0	1	0.3%
IAS11 - Construction Contracts	0	2	0	0	2	1	0	0	5	1.6%
IAS12 - Income Taxes	1	8	4	5	2	1	0	0	21	6.9%
IAS16 - Property, Plant and Equipment	0	1	1	0	1	0	0	0	3	1.0%
IAS17 - Leases	0	2	3	1	3	1	0	0	10	3.3%
IAS18 - Revenue	1	0	1	0	1	2	1	0	6	2.0%
IAS19 - Employee Benefits	0	2	0	0	2	0	0	0	4	1.3%
IAS20 - Accounting for Gov. Grants and Discl. of Gov. Ass.	0	0	0	1	0	0	0	0	1	0.3%
IAS21 - The Effects of Changes in Foreign Exchange Rates	0	0	1	0	0	0	0	0	1	0.3%
IAS23 - Borrowing Costs	0	1	0	0	0	0	0	0	1	0.3%
IAS24 - Related Party Disclosures	1	4	3	3	0	1	0	0	12	3.9%
IAS27 - Consolidated and Separate Financial Statements	0	3	1	1	0	1	0	0	6	2.0%
IAS28 - Investments in Associates	0	0	0	2	1	1	0	0	4	1.3%
IAS31 - Interests in Joint Ventures	0	1	0	1	0	0	0	0	2	0.7%
IAS32 - Financial Instruments: Presentation (till 2005: SIC 17)	1	8	5	2	3	0	0	0	19	6.3%
IAS33 - Earnings per Share	0	0	0	1	0	0	0	0	1	0.3%
IAS34 - Interim Financial Reporting	0	0	0	2	0	0	2	0	4	1.3%
IAS36 - Impairment of Assets	1	6	4	3	5	6	2	0	27	8.9%
IAS37 - Provisions, Contingent Liabilities and Cont. Assets	1	2	3	3	0	3	2	0	14	4.6%
IAS38 - Intangible Assets	1	4	1	2	1	0	0	0	9	3.0%
IAS39 - Financial Instruments: Recognition and Measurement	0	6	2	1	0	1	1	0	11	3.6%
IAS40 - Investment Property	0	1	0	0	0	0	0	0	1	0.3%
IAS41 - Agriculture	0	0	0	0	0	0	1	0	1	0.3%
SIC12 - Consolidation-Special Purpose Entities	0	0	1	1	0	0	0	0	2	0.7%
SIC15 - Operating Leases-Incentives	0	0	1	1	0	0	0	0	2	0.7%
Mgmt. Rep. - Local GAAP (par. 315 HGB)	1	6	2	4	3	5	2	1	24	7.9%
Total	15	91	51	57	38	36	13	3	304	100.0%

(Continued)

Panel D: Single error findings and accounting standards: Distribution by industry

	NoDurbl	Durbl	Manuf	Enrgy	Chems	BusEq	Telcm	Utils	Retail	Hlth	Other	Total	Proportion
IFRS1	0	0	0	0	0	0	0	0	1	0	2	3	1.0%
IFRS2	0	0	0	0	0	1	0	0	0	0	0	1	0.3%
IFRS3	0	2	5	0	0	8	3	0	3	2	6	29	9.5%
IFRS5	0	0	0	0	0	0	0	0	1	0	4	5	1.6%
IFRS7	0	0	1	0	0	1	0	0	1	1	1	5	1.6%
IFRS8	2	0	1	0	0	2	1	1	0	0	3	10	3.3%
IAS1	1	0	2	0	2	4	2	1	1	2	11	26	8.6%
IAS2	0	0	0	0	0	1	0	0	1	0	2	4	1.3%
IAS7	0	0	2	0	0	6	0	0	0	1	7	16	5.3%
IAS8	0	0	0	0	0	6	2	0	0	0	5	13	4.3%
IAS10	0	0	0	0	1	0	0	0	0	0	0	1	0.3%
IAS11	0	0	1	0	0	3	0	0	0	0	1	5	1.6%
IAS12	1	0	0	0	0	4	0	1	2	2	11	21	6.9%
IAS16	0	0	0	0	0	0	0	1	0	0	2	3	1.0%
IAS17	0	1	0	0	0	5	0	0	1	1	2	10	3.3%
IAS18	0	0	2	0	0	0	0	1	1	0	2	6	2.0%
IAS19	0	0	0	0	0	1	0	0	1	0	2	4	1.3%
IAS20	0	0	0	0	0	0	0	0	0	1	0	1	0.3%
IAS21	0	0	0	0	0	0	0	1	0	0	0	1	0.3%
IAS23	0	0	0	0	0	0	0	0	0	0	1	1	0.3%
IAS24	1	0	1	1	0	1	0	0	1	2	5	12	3.9%
IAS27	2	0	0	0	0	2	0	0	1	0	1	6	2.0%
IAS28	1	0	0	0	0	1	0	0	1	1	0	4	1.3%
IAS31	0	0	1	0	0	0	0	0	0	0	1	2	0.7%
IAS32	1	1	1	0	1	5	1	1	1	2	5	19	6.3%
IAS33	0	0	0	0	0	0	0	0	1	0	0	1	0.3%
IAS34	2	0	0	0	0	1	0	0	1	0	0	4	1.3%
IAS36	1	2	5	0	1	8	0	1	1	2	6	27	8.9%
IAS37	0	0	2	0	0	1	0	1	2	2	6	14	4.6%
IAS38	0	0	0	0	0	2	0	0	0	1	6	9	3.0%
IAS39	0	1	2	0	0	4	0	0	1	2	1	11	3.6%
IAS40	0	0	0	0	0	0	0	0	0	0	1	1	0.3%
IAS41	1	0	0	0	0	0	0	0	0	0	0	1	0.3%
SIC12	0	0	0	0	0	2	0	0	0	0	0	2	0.7%
SIC15	0	0	0	0	0	0	0	0	0	0	2	2	0.7%
315HGB	2	0	2	0	2	3	3	1	2	2	7	24	7.9%
Total	15	7	28	1	7	72	12	10	25	24	103	304	100.0%

Notes: This table provides information on the single error findings contained in the published error announcements. Panel A (Panel B) gives the distribution by fiscal year (by industry (Fama and French (2008) 12-industry classification)) of IAS/IFRS and local GAAP errors, profit effect of errors, average number of error findings by announcement as well as the proportion of firms and single error findings. Local GAAP errors are analyzed if they relate to an IFRS statement (e.g. management reports are disclosed according to German GAAP). Impact on profit is given if at least one single error contained in an error announcement affects reported earnings. Panel C (Panel D) provides information on the infringed IFRS standards by fiscal year (by industry (Fama and French (2008) 12-industry classification)). The total number of single error findings in Panels A and B (364) differs from the number in Panels C and D (304) as one single error may infringe more than one IFRS standard at a time; as in some cases infringed IFRS standards are not published; and as multiple infringements of the same IFRS standard within one announcement is only counted once.

Panel C (and D) of Table 2.4 presents an evaluation of affected accounting standards by year (by industry). The number of infringed IAS/IFRS standards (304) differs from the number of single error findings (364). This is due to the fact that one single error may infringe more than one accounting standard at a time (e.g. regarding the accounting and assessment of the same subject); however, in other cases relevant accounting standards are not cited at all. Furthermore, multiple infringements of the same standard within one announcement are counted only once. In all evaluations and assessments regarding the error-affected accounting standards, it has to be considered that these findings are strongly dependent on the 'main focus areas' of the FREP. As described above, the Panel annually discloses critical areas based on prior deteriorations and the challenging application and interpretation of certain IFRS. The scope of the reviews is focused and limited to these areas of emphasis, as long as no other indications for infringements are present.

The distribution by year does not show any clustering of violations of a specific standard in any year. Rather, it confirms an observation the FREP reported in its latest annual reports: There are different standards that are especially prone to errors over the whole period. IFRS 3 (Business Combinations) accounts for 29 single errors; this equals 9.5% of all findings and is the maximum proportion of one standard. The listing is continued by IAS 36 (Impairment of Assets, 27 err.), IAS 1 (Presentation of Financial Statements, 26 err.) and the errors in the management reports (par. 315 HGB, 24 err.). Worth mentioning are the findings on IAS 32 (Financial Instruments: Presentation), IAS 39 (Financial Instruments: Recognition and Measurement) and IFRS 7 (Financial Instruments: Disclosures) that together account for 35 errors or round 11.5% of findings. Other fault-prone standards are IAS 12 (Income Taxes) and IAS 7 (Statement of Cash Flows). The FREP regularly reports that errors frequently arise due to the complexity of individual standards and regulations. The goodwill impairment test and the purchase price allocation are named as well as the accounting for financial instruments and income taxes and in general the application of fair value measurements. Insufficient reporting in the management reports and notes are other error-causes (FREP (2010), (2011), (2012)). Figure 2.2 depicts the distribution of single error findings regarding the infringements of accounting standards.

Figure 2.1. Errors and Error Announcements

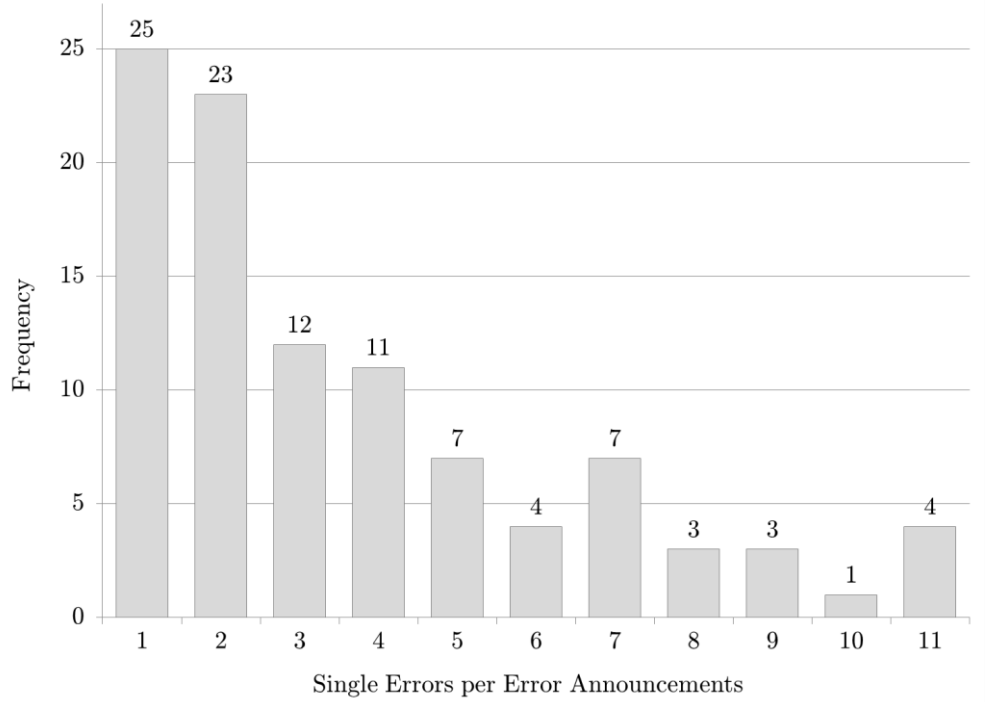


Chart 1. Single Errors per Error Announcements

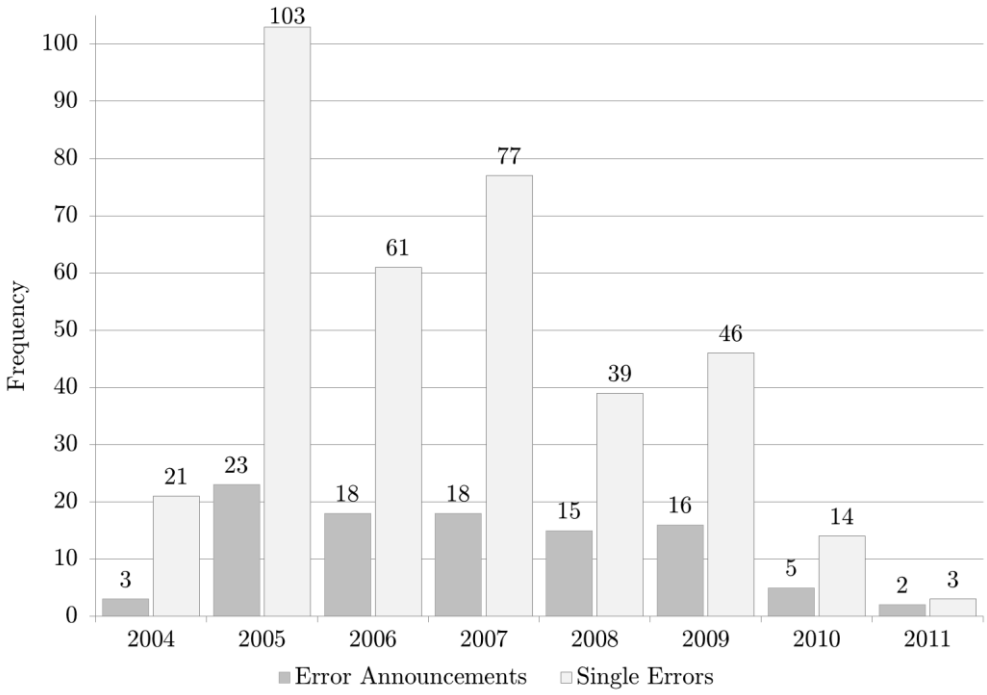
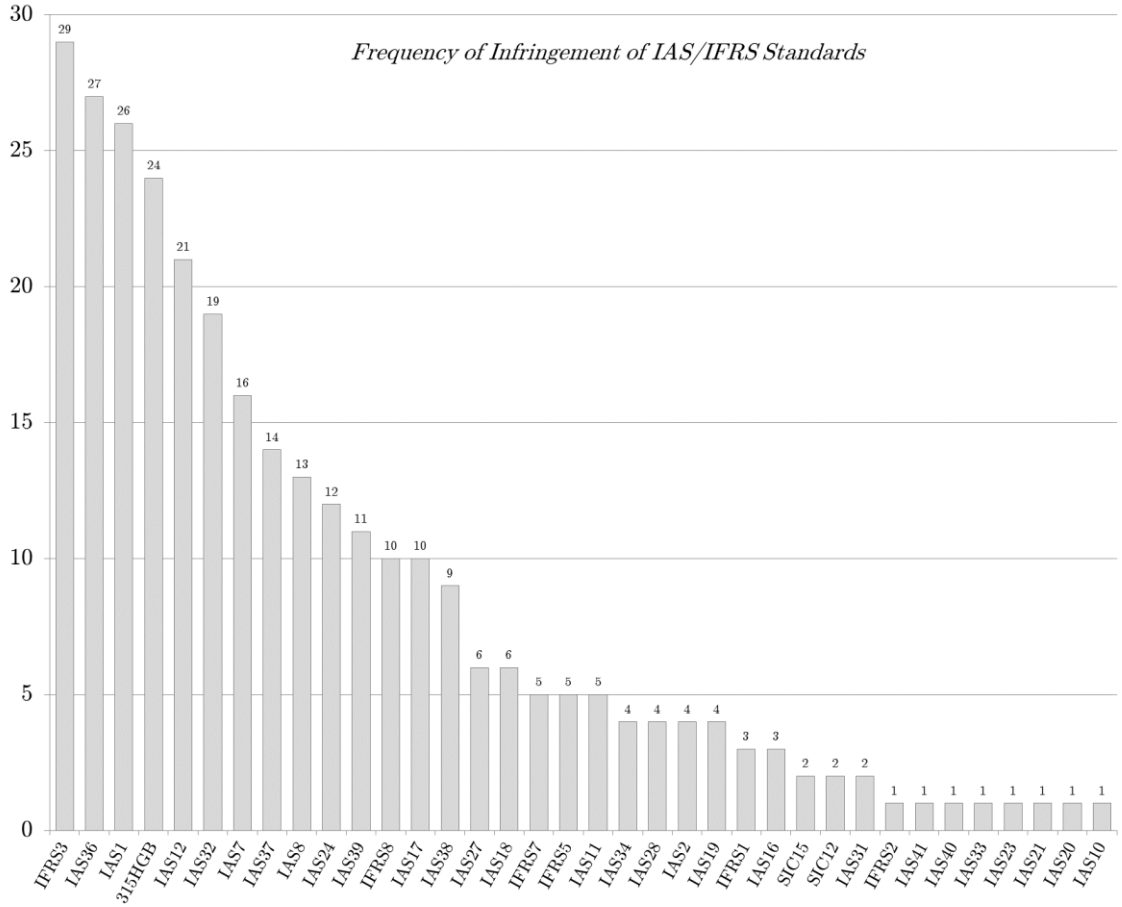


Chart 2. Error Announcements and Single Errors by year

Notes: Chart 1 depicts the number of single error findings per error announcement together with the frequency of observation. Chart 2 depicts the distribution of error announcements and single findings with respect to the fiscal years of erroneous disclosure of IFRS financial statements. Both figures are based on the evaluation of 100 error announcements referring to the FREP/BaFin enforcement (Selection period: July 2005 - 05/31/2012; selection process as described in Table 2.1).

Figure 2.2. Infringements of IAS/IFRS Standards



Notes: Figure 2.2 depicts the frequency of infringements of single IAS/IFRS standards The figure is based on the evaluation of 100 error announcements referring to the FREP/BaFin enforcement (Selection period: July 2005 - 05/31/2012; selection process as described in Table 2.1).

Table 2.4, Panel B shows how different industries are affected by error findings. The highest amount of single error findings are within the 'business equipment' industry (98) and the 'others' category (107). This is no surprising fact, as these sectors also have the highest proportions of error announcements. A high average number of single errors within the publications can be found within the 'telecommunication' sector (mean 4.8) and the 'retail- and wholesale-shops' (mean 4.0). As the comparison of proportions of firms and single errors shows, these are the industries with disproportionately many error findings (5.2% and 9.9%). 'Business Equipment' firms also report many errors (23% of firms / 25% of errors). Firms that are underrepresented by their proportion of errors are in the 'non-durable consumer goods', 'chemicals' or 'others' category. The lowest average number of errors can be observed within the 'chemicals' sector (mean 2.3); but these announcements all have an impact on profit. The findings of the 'energy' and the 'utilities' sector are regarded as outliners, as they are based on error announcements by one individual firm each.

The breakdown of error findings and industries to the infringed standards reveals that some clustering of industry and accounting standards can be observed (Table 2.4, Panel D). Always 18% of errors within the 'manufacturing' firms are due to IFRS 3 and IAS 36 violations, the firms in the 'business equipment' sector seem to have difficulties with the application of the same standards (each 11% of errors). Furthermore, the latter branch disregards standards on the accounting for financial instruments, 14% of errors are attributed to IAS 32, IAS 39 or IFRS 7. The sector 'healthcare' also infringes the financial-instruments-standards; they account for 21% of their errors. Always one quarter of errors of the 'telecommunication' firms occur with respect to IFRS 3 or in the management report (par. 315 HGB).

2.3 Research Design

2.3.1 Research Method

To conduct a comprehensive analysis of the pre- and post-misstatement development of firms subject to FREP error announcements, I evaluate financial data, therefrom derived financial ratios and several measures of earnings management as well as real activities manipulations. The study shows the development of the metrics over the time round the misstatements and examines differences towards a control group of firms.

Thereby, the time series considerations use a maximum of seven years per misstating firm (if available). With the misstatement year as origin, all ratios and metrics described in the following are calculated for the three years prior (*[t-3; t-1]*; pre-years/ -period) as well as the three years subsequent to the misstatement period (*[t+1; t+3]*; post-years/ -period). As I maintain the same criterions as applied when selecting the misstatement sample (industry membership, data availability and IAS/IFRS application), there are different amounts of firms-year observations per firm selected to the study and there are different numbers of observations for calculating single metrics. Especially for firms with error announcements in the early years, no IFRS financial statement might be available for the entire pre-period. This selection (survivor) bias might to some extent affect the results. However, the usage of a balanced panel, with only little observations (per year, per metric and in total), would not be superior.

In a second stage of analyses, the development of the misstatement firms is contrasted with a sample of control firms. To be considered as control firm a firm must be part of the Total Sample (as defined above), hence it has to fulfill the same selections criterions with respect to industry membership, data availability and IAS/IFRS application. Control firms are selected according to the same industry membership (Fama and French (2008) 12-industy-classification) and the minimum absolute difference in size (*TA*). Furthermore, control firms must not be subject to FREP error-announcements in any year considered in this study. I match the firms in the earliest available year for the misstating firm. That means, if the firm-year observation in *year t-3* (first year of the pre-period) is available for a firm that will disclose an erroneous financial statement in *year t* (61% of cases), a control firm is matched according to closeness in size in *t-3*. If the first available year for the misstating firm is *t-2* (13% of cases; respectively *t-1* (12%) and *t* (14%)), then in this year the control firm is matched. (I label the years as follows. The calendar year represented by *year t* of a misstating firm equals the one of a control firm's *year t*, although the matching was conducted in *year t-3*). This 'early matching' allows to trace the development of two groups of comparison over time. The divergence (or convergence) of former similar firms can be pursued from the years prior a misstated disclosure through the misstatement period to the subsequent year. This new approach of long term surveillance of the FREP-denounced firms allows a so far unique observation of the development of financial ratios, metrics of earnings management as well as real activities manipulations.

2.3.2 Ratio Analysis

In a first step, the situation of a misstating firm in the time round the erroneous disclosure is regarded by a set of basic financial data. The development of total assets and sales serve as proxies for the general business situation of the firms; net income (*NI*) and the cash flow from operations (*CFO*) capture their financial position, whereas the market capitalization *(MARKET CAP)* gives some insight in the public opinion the firms' net worth. Asset-scaled receivables (*Rec/TA*) are reported as one major component of accruals. (Table 2.5 provides detailed definitions of all variables).

The second step of the analysis focuses on financial ratios that can be deducted from the reported numbers. Many of the existing literature contributions dealing with the error findings of the German enforcement system or the SEC's AAER-publications at least provide some insight into key financial data of

denounced firms. The studies by Ernstberger et al. (2012a, 2012b) and Hitz et al. (2012) analyze different topics related to the BaFin / FREP enforcement system, but do not provide time-line data.

Numbers on AAERs can be found e.g. in Dechow et al. (1996), Beneish (1999), Jones et al. (2008) and Dechow et al. (2011). The comprehensive study of Dechow et al. (2010) gives some overview of prior studies. Feroz et al. (1991) and Ettredge et al. (2010) address the pre-misstatement development of firms, but do not directly report numbers on the development of firms over time, neither do Leng et al. (2011) who focus on the long-term post AAER performance. Peasnell et al. (2001) additionally provide data in relation to the enforcement system in the UK.

The current ratio (*CUR*) is regarded as a measure of liquidity; the debt-to-assets ratio gives information on the leverage (*LEV*) of the firms; profitability is represented by the *ROA*. The *Book-to-Market* ratio and the *Earnings-to-Price* ratio report the market's view of firm valuation and future growth opportunities. *Sales Growth* depicts the potential for development of the firms.

To my best knowledge Dechow et al. (1996) is the only study that provides information on the development of financial ratios over time; but still this contribution only evaluates the pre-misstatement years and deals with AAERs. No study I am aware of systematically pursues the trend of the ratios in both, the pre- and the post-period, and reveals differences to an adequately chosen control group of firms. In this sense, this paper closes a very basic gap in the description of the development of misstating firms - not only for the German system.

Table 2.5. Definition of Variables

TOTAL ASSETS$_{i,t}$	Total assets (TA) of firm i in period t. I winsorize TA at the top and bottom 1 percent.
SALES$_{i,t}$	Revenues of firm i in period t. I winsorize SALES at the top and bottom 1 percent.
ΔSALES$_{i,t}$	Change of SALES of firm i in period t calculated as the difference between revenues in period t and revenues of period t-1.
SALES GROWTH$_{i,t}$	Growth rate of SALES of firm i in period t calculated as the difference between revenues in period t and revenues of period t-1 divided by revenues of period t-1. I winsorize SALES GROWTH at the top and bottom 1 percent.
NET INCOME$_{i,t}$	Net income available to common equity (NI) of firm i in period t. I winsorize NET INCOME at the top and bottom 1 percent.
CFO$_{i,t}$	Cash flow from operating activities of firm i in period t. I winsorize CFO at the top and bottom 1 percent.
RECEIVABLES$_{i,t}$	Accounts receivables scaled by Total Assets (REC/TA) of firm i in period t. I winsorize REC/TA at the top and bottom 1 percent.
ΔREC$_{i,t}$	Change of accounts receivables of firm i in period t calculated as the difference between accounts receivables in period t and accounts receivables of period t-1, scaled by lagged Total Assets. I winsorize ΔREC at the top and bottom 1 percent.
PPE$_{i,t}$	Gross property, plant and equipment of firm i in period t scaled by lagged Total Assets.
CURRENT$_{i,t}$	Current ratio (CUR) of firm i in period t calculated as current assets divided by current liabilities. I winsorize CUR at the top and bottom 1 percent.
LEV$_{i,t}$	Leverage ratio of firm i in period t calculated as total debt divided by Total Assets. I winsorize LEV at the top and bottom 1 percent.
ROA$_{i,t}$	Return-on-Assets of firm i in period t. I winsorize ROA at the top and bottom 1 percent.
MARKET CAP$_{i,t}$	Year-end Market Capitalization of firm i in period t. I winsorize MARKET CAP at the top and bottom 1 percent.
BOOK/MARKET$_{i,t}$	Year-end Book-to-Market ratio of firm i in period t calculated as total common equity divided by year-end Market Capitalization. I winsorize BOOK/MARKET at the top and bottom 1 percent.
EARNINGS/PRICE$_{i,t}$	Year-end Earnings-to-Price ratio of firm i in period t calculated as net income per share divided by year-end closing price of the firms shares. I winsorize EARNINGS/PRICE at the top and bottom 1 percent.
TACC$_{i,t}$	Total accruals (TOT. ACCRUALS) of firm i in period t calculated as the difference between net income available to common equity and cash flow from operating activities. I winsorize TACC at the top and bottom 1 percent.

(Continued)

Table 2.5. Continued

$WCACC_{i,t}$	Working capital accruals i in period t calculated as the difference between net income available to common equity plus depreciation and cash flow from operating activities. I winsorize WCACC at the top and bottom 1 percent.
$MJM_{i,t}$	Total discretionary accruals for firm i in period t measured as the residual from a Modified-Jones-Model with performance adjustment (Kothari et al. (2005)), estimated for each year and industry combination (12-industry classification by Fama and French (2008)) with at least 5 observations, scaled by lagged Total Assets. I winsorize MJM at the top and bottom 1 percent.
$DDM_{i,t}$	Working capital discretionary accruals for firm i in period t measured as the residual from the Dechow-Dichev-Model (Dechow and Dichev (2002)), estimated for each year and industry combination (12-industry classification by Fama and French (2008)) with at least 5 observations, scaled lagged by Total Assets. I winsorize DDM at the top and bottom 1 percent.
$ACFO_{i,t}$	Abnormal cash flow from operating activities for firm i in period t measured as the residual from the Roychowdhury (2006) model for abnormal cash flows, estimated for each year and industry combination (12-industry classification by Fama and French (2008)) with at least 5 observations, scaled by lagged Total Assets and multiplied by negative one. I winsorize ACFO at the top and bottom 1 percent.
$PROD_{i,t}$	Production costs of firm i in period t calculated as costs of goods sold (COGS) plus change in inventory, scaled by lagged Total Assets.
$APROD_{i,t}$	Abnormal productions costs for firm i in period t measured as the residual from the Roychowdhury (2006) model for abnormal production costs, estimated for each year and industry combination (12-industry classification by Fama and French (2008)) with at least 5 observations, scaled by lagged Total Assets. I winsorize APROD at the top and bottom 1 percent.
$DISEXP_{i,t}$	Discretionary expenses for firm i in period t calculated as selling, general and administrative expenses (SG&A) plus research and development expenses (R&D), scaled by lagged Total Assets.
$ADISEXP_{i,t}$	Abnormal discretionary expenses for firm i in period t measured as the residual from the Roychowdhury (2006) model for abnormal discretionary expenses, estimated for each year and industry combination (12-industry classification by Fama and French (2008)) with at least 5 observations, scaled by lagged Total Assets and multiplied by negative one. I winsorize ADISEXP at the top and bottom 1 percent.

Notes: All financial data is collected from Worldscope database. All amounts of TA, SALES, MARKET CAP, NET INCOME and CFO contained in descriptive tables (Tables 2.6 - 2.9) are given in thousands of euro (TEUR).

2.3.3 Earnings Management Models

I analyze several proxies for earnings management in this study. Commonly applied measures of discretionary accruals are all (at least to some extent) dependent on the total amount of accruals (Dechow et al. (2010)), some evidence indicates that the total amount of accruals is a good (i.e. 'low cost'; cf. Jones et al. (2008, p. 529)) proxy for misstatements (Bayley and Taylor (2007)). I calculate total accruals (*TACC*) as differences between income before extraordinary items and operating cash flow.

As second measure of earnings management I employ a discretionary accruals model. Widely used metrics are derived from the several modifications of the 'Jones model' (Jones (1991)). Jones et al. (2008) test the ability of alternative specifications to detect fraudulent and/or misstating events and evaluate the settings by Jones (1991), Dechow et al. (1995), Larcker and Richardson (2004), and Kothari et al. (2005). I opt in favor for the performance-adjusted model by Kothari et al. (2005) as proxy for discretionary accruals. I do so, because an additional independent variable controlling for the correlation of performance and accruals within the estimations enhances the power and the precision of the metric (Kothari et al. (2005), Jones et al. (2008), Sattler (2010)). Hence, the measure of discretionary accruals is derived from the following performance-adjusted Modified-Jones-Model (*MJM*; Kothari et al. (2005)):

$$TACC_{i,t} = \beta_0 + \beta_1 \left(1/TA_{i,t-1}\right) + \beta_2\left(\Delta Sales_{i,t} - \Delta REC_{i,t}\right) + \beta_3 PPE_{i,t} + \beta_4 ROA_{i,t} + \varepsilon_{i,t} \quad (2.1)$$

Finally, I report findings on accrual quality. Working capital accruals (*WCACC*) equal net income before extraordinary items plus depreciation minus operating cash flows for year t. I use the popular Dechow-Dichev-Model (*DDM*; Dechow and Dichev (2002)) as accrual quality model:

$$WCACC_{i,t} = \beta_0 + \beta_1 CFO_{i,t-1} + \beta_2 CFO_{i,t} + \beta_3 CFO_{i,t+1} + \varepsilon_{i,t} \quad (2.2)$$

All variables in Model (2.1) and (2.2) are scaled by lagged total assets; detailed definitions are provided in Table 2.5. I run the models cross-sectional for at least 5 observations of each year and industry combination (12-industry

classification by Fama and French (2008)). In this calculations I include all available companies of the German Stock market, hence the Total Sample described in Section 2.2.2. The (singed) residuals are used as measure for the discretionary accruals (*MJM*; Model (2.1)), respectively accruals quality (*DDM*; Model (2.2)).

2.3.4 Real Activities Manipulation Metrics

Manipulations of accounts in order to achieve advantages cannot only be obtained by accruals and earnings management, but also by manipulations of real activities. The current state of the art in measuring real earnings management is the approach by Roychowdhury (2006) who considers three metrics for the manipulations: abnormal operating cash flow (*ACFO*), abnormal production costs (*AProd*) and abnormal discretionary expenses (*ADisExp*).

The rationale behind measuring real activities manipulations by these three metrics is explained by Cohen et al. (2008, p. 765):

"1. Acceleration of the timing of sales through increased price discounts or more lenient credit terms. Such discounts and lenient credit terms will temporarily increase sales volumes, but these are likely to disappear once the firm reverts to old prices. The additional sales will boost current period earnings, assuming the margins are positive. However, both price discounts and more lenient credit terms will result in lower cash flows in the current period.

2. Reporting of lower cost of goods sold through increased production. Managers can increase production more than necessary in order to increase earnings. When managers produce more units, they can spread the fixed overhead costs over a larger number of units, thus lowering fixed costs per unit. As long as the reduction in fixed costs per unit is not offset by any increase in marginal cost per unit, total cost per unit declines. This decreases reported cost of goods sold (*COGS*) and the firm can report higher operating margins. However, the firm will still incur other production and holding costs that will lead to higher annual production costs relative to sales, and lower cash flows from operations given sales levels.

3. Decreases in discretionary expenses that include advertising expense, research and development, and *SG&A* expenses. Reducing such expenses will boost current period earnings. It could also lead to higher current period cash flows (at the risk of lower future cash flows) if the firm generally paid for such expenses in cash."

The same argumentation (literally) can be found in Cohen and Zarowin (2010, p. 8).

Studies subsequent to Roychowdhury (2006), in some cases have refined the metrics (Gunny (2010)), in other cases developed aggregated measures of real manipulations by combining two (Cohen and Zarowin (2010)) or all three (Ernstberger et al. (2011)) metrics. However, all the later papers confirm the validity and the appropriateness of the basic models (Cohen et al. (2008), Ettredge et al. (2010) and Zang (2010)). In this study, I apply the basic specifications of the models.

In line with Dechow et al. (1998) and Roychowdhury (2006), I measure normal (expected) levels of *CFO* by the following model:

$$CFO_{i,t} = \beta_0 + \beta_1\left(1/TA_{i,t-1}\right) + \beta_2 Sales_{i,t} + \beta_3 \Delta Sales_{i,t} + \varepsilon_{i,t} \quad (2.3)$$

In the analyzed context production costs (*Prod*) are defined as cost of goods sold (*COGS*) plus changes in inventory during the respective year; their normal level is obtained by the following regression (Roychowdhury (2006), Cohen et al. (2008)):

$$Prod_{i,t} = \beta_0 + \beta_1\left(1/TA_{i,t-1}\right) + \beta_2 Sales_{i,t} + \beta_3 \Delta Sales_{i,t} + \beta_4 \Delta Sales_{i,t-1} + \varepsilon_{i,t} \quad (2.4)$$

In the basic model specification by Roychowdhury (2006) discretionary expenses (*DisExp*) are defined as selling, general and administrative (*SG&A*), research and development (*R&D*) and advertising expenses. It is due to data availability in the Wordscope Database that I stick to the proceeding of Ernstberger et al. (2011). As advertising expenses cannot be obtained for German (European) countries, I calculate the abnormal-*DisExp* metric with *SG&A* and *R&D* numbers only. I consider discretionary expenses whenever data on *SG&A* is available. If *R&D* is unavailable, the value is set to zero. This is in line with Roychowdhury (2006) and Ernstberger et al. (2011). The normal levels are then obtained by regression (2.5):

$$DisExp_{i,t} = \beta_0 + \beta_1\left(1/TA_{i,t-1}\right) + \beta_2 Sales_{i,t-1} + \varepsilon_{i,t} \quad (2.5)$$

All variables in Models (2.3) to (2.5) are scaled by lagged *Total Assets*; detailed definitions are provided in Table 2.5. I run the models for estimating the normal levels of *CFO, Prod* and *DisExp* cross-sectional for at least 5 observations of each year and industry combination (12-industry classification by Fama and French (2008)). In this calculations I include all available companies of the German Stock market, hence the Total Sample described in Section 2.2.2. The abnormal operating cash flow due to sales manipulations (*ACFO*), abnormal production costs (*AProd*) and abnormal discretionary expenses (*ADisExp*) are computed as the difference between the actual values and the normal levels predicted from equations (2.3) to (2.5). I use these three variables as proxies for real earnings management (in case of *ACFO* and *ADisExp* after multiplying by negative one, in order to obtain a higher level of manipulations for higher values of the metric).

2.4 Results

The results of this study are presented in four sub-sections. First, I give a detailed overview of descriptive information on the different samples. The complete time-series development of the misstating is analyzed in Section 2.4.2. The differences to the control group are discussed in detail in Section 2.4.3. Section 2.4.4 presents alternative measures, metrics and specifications.

2.4.1 Descriptive Statistics

Table 2.6 provides detailed descriptive statistics for the FREP-denounced firms in the year of misstatement (*year t*; Panel A) and the control firms in their corresponding year (*year t*; Panel B). Panel C gives data on the whole sample of non-misstating firms over the total observation period from 2000 to 2011, this information captures the entirety of German publicly listed firms.

I limit the commentary to the description of the misstatement sample for a quick overview. The sample size of misstatement firms reduces from 88 (cf. Table 2.1) to 77 observations. For reasons of comparability I do not include six firms with

head office out of Germany and five error announcements that affect interim financial reports in the evaluations (I did consider these announcements in the evaluations so far, as the information directly contained in the error announcements might be of interest and matters of comparability might not be severe in the direct assessment of error findings). On average, the firms report *TA* of 2,660 million in the year of misstatement. Still, the size of the firms is quite heterogeneous as standard deviation is high (13,700 million) and the median value is significantly lower (107 million). The findings on *SALES* (mean 1,710 million / med. 113 million) and on *MARKET CAP* (mean 921 million / med. 53 million) confirm this picture. On average the firms report a positive *NI* in the year of misstatement (41 million), but again the distribution is skew as the median is only slightly positive (1.2 million). The findings on *ROA* and the *Earnings-to-Price* ratio confirm this, as in both cases mean values are negative (-0.031 and -0.103). The *CUR* ratio in the *year t* (mean 1.74 / med. 1.38) is greater than 'one', considered as the minimum requirement for financial soundness (current asset cover current liabilities). However, the threshold of 'two' is not reached (known as 'Banker's rule', e.g. Mensch (2008)). *LEV* equals 24% and the *Book-to-Market* ratio is low with 0.69.

The Misstatement Sample shows relatively high total accruals (*TACC* -0.009), high discretionary accruals (*MJM* 0.029) as well as high accrual estimation errors (*DDM* 0.021) in the year of misstatement. All three measures of real activities manipulation are positive, indicating high management via real transactions (*ACFO* 0.041, *AProd* 0.051, *ADisExp* 0.029).

Panel D of Table 6 contains Pearson/Spearman correlation matrix between the analyzed variables for the Misstatement Sample in the year of misstatement. The strongest correlations are the following: Not surprisingly, the size proxies (*TA, SALES* and *MARKET CAP*) are strongly correlated among themselves and show a high association to the other non-scaled variables *NI* and *CFO*. The three accrual metrics show large and significant correlations (Pearson correlation coefficients all around 0.84). This is a typical finding, e.g. Jones et al. (2008) report similar numbers. The measure of abnormal *CFO* shows low correlation to the other real activities manipulation metrics. However, *AProd* and *ADisExp* seem to be connected (0.65). Other remarkable associations exist between *ROA* and the metrics *DDM* and *ACFO* (0.51 and -0.46).

Table 2.6. Descriptive Statistics

Panel A: Misstatement Sample

Year t	n	Mean	s.d.	Lower Quartile	Median	Upper Quartile
TOTAL ASSETS	77	2,660,000	13,700,000	24,200	107,000	442,000
SALES	77	1,710,000	6,140,000	18,200	113,000	735,000
MARKET CAP.	76	921,000	3,020,000	15,700	52,800	474,000
NET INCOME	77	41,300	265,000	-1,865	1,219	10,700
CFO	76	131,000	486,000	-2,113	2,929	27,200
REC/TA	77	0.216	0.127	0.124	0.210	0.275
CURRENT RATIO	77	1.738	1.324	0.984	1.376	2.169
LEVERAGE	77	0.242	0.217	0.060	0.209	0.329
ROA	65	-0.031	0.168	-0.043	0.020	0.059
BOOK/MARKET	76	0.693	0.815	0.269	0.492	0.888
EARNINGS/PRICE	76	-0.103	0.515	-0.083	0.033	0.055
SALES GROWTH	65	0.296	0.838	-0.025	0.087	0.341
TOT. ACCRUALS	76	-0.009	0.164	-0.098	-0.038	0.044
MJM	76	0.029	0.121	-0.040	-0.001	0.066
DDM	58	0.021	0.114	-0.023	0.014	0.052
ACFO	76	0.041	0.657	-0.062	0.013	0.125
APROD	63	0.051	0.207	-0.044	0.060	0.195
ADISEXP	58	0.029	0.233	-0.042	0.049	0.197

Panel B: Control Sample

Year t	n	Mean	s.d.	Lower Quartile	Median	Upper Quartile
TOTAL ASSETS	70	1,170,000	3,410,000	32,000	73,600	294,000
SALES	70	1,270,000	3,650,000	26,900	51,100	374,000
MARKET CAP.	67	536,000	1,200,000	22,000	62,700	352,000
NET INCOME	70	28,900	163,000	-2,205	1,294	7,837
CFO	70	90,000	294,000	411	6,592	32,100
REC/TA	70	0.216	0.127	0.129	0.216	0.312
CURRENT RATIO	70	2.325	2.471	1.141	1.646	2.453
LEVERAGE	70	0.205	0.198	0.007	0.173	0.328
ROA	69	0.003	0.106	-0.026	0.020	0.063
BOOK/MARKET	67	0.894	0.802	0.434	0.677	1.029
EARNINGS/PRICE	67	-0.041	0.281	-0.063	0.039	0.072
SALES GROWTH	66	0.061	0.293	-0.070	0.037	0.159
TOT. ACCRUALS	70	-0.042	0.171	-0.107	-0.048	0.035
MJM	68	-0.004	0.093	-0.055	-0.006	0.047
DDM	63	-0.011	0.087	-0.057	-0.006	0.041
ACFO	70	-0.098	0.561	-0.092	-0.007	0.055
APROD	66	-0.019	0.254	-0.095	0.016	0.145
ADISEXP	67	-0.003	0.303	-0.166	0.055	0.171

Panel C: Non-Misstatement Sample

All Years	n	Mean	s.d.	Lower Quartile	Median	Upper Quartile
TOTAL ASSETS	3652	3,210,000	14,400,000	38,200	110,000	532,000
SALES	3657	2,370,000	8,800,000	34,900	119,000	584,000
MARKET CAP.	3358	1,320,000	4,700,000	26,000	77,600	368,000
NET INCOME	3657	81,700	350,000	-840	2,679	17,900
CFO	3616	240,000	1,010,000	412	6,584	41,300
REC/TA	3647	0.222	0.132	0.128	0.202	0.292
CURRENT RATIO	3596	2.223	2.130	1.165	1.633	2.397
LEVERAGE	3643	0.197	0.193	0.025	0.165	0.305
ROA	3074	0.003	0.166	-0.013	0.033	0.073
BOOK/MARKET	3342	0.896	0.882	0.396	0.675	1.084
EARNINGS/PRICE	3307	-0.076	0.531	-0.024	0.047	0.088
SALES GROWTH	3052	0.134	0.492	-0.042	0.065	0.183
TOT. ACCRUALS	3435	-0.050	0.150	-0.103	-0.045	0.003
MJM	3294	-0.003	0.094	-0.047	-0.003	0.042
DDM	2346	0.000	0.089	-0.037	0.000	0.037
ACFO	3393	0.002	0.613	-0.073	-0.006	0.059
APROD	2790	-0.008	0.214	-0.092	0.013	0.107
ADISEXP	2849	0.000	0.245	-0.083	0.034	0.138

Table 2.6. Continued

Panel D: Correlations

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
TOTAL ASSETS	(1)		**0.96**	**0.91**	**0.52**	**0.64**	-0.06	-0.10	0.12	0.28	**0.09**	**0.20**	0.28	0.02	0.13	-0.09	-0.16	-0.24	-0.11
SALES	(2)	**0.93**		**0.90**	**0.50**	**0.66**	**0.07**	-0.09	0.10	**0.26**	0.03	**0.20**	0.28	**0.01**	0.12	**-0.11**	**-0.17**	-0.23	-0.13
MARKET CAP.	(3)	**0.95**	**0.90**		**0.51**	**0.50**	0.00	**0.03**	0.00	**0.31**	**-0.09**	0.14	**0.34**	0.16	0.20	-0.03	**-0.09**	**-0.24**	**-0.13**
NET INCOME	(4)	**0.91**	**0.73**	**0.91**		**0.32**	**0.19**	**0.15**	-0.16	**0.76**	-0.05	**0.70**	**0.36**	**0.39**	0.26	**0.29**	**-0.27**	**-0.17**	**0.09**
CFO	(5)	**0.92**	**0.98**	**0.91**	**0.74**		0.07	-0.11	0.07	0.11	0.21	0.16	**0.07**	**-0.46**	**-0.42**	**-0.47**	**-0.63**	**-0.39**	-0.22
REC/TA	(6)	-0.09	-0.13	-0.10	**-0.06**	-0.13		**0.12**	0.02	**0.31**	-0.25	0.26	0.15	**0.00**	-0.08	-0.02	**-0.29**	**0.04**	**-0.02**
CURRENT RATIO	(7)	-0.14	-0.16	-0.11	**-0.09**	-0.16	**-0.08**		**-0.35**	0.20	0.13	0.06	-0.05	**0.00**	-0.15	**0.10**	**-0.03**	**-0.19**	-0.13
LEVERAGE	(8)	0.06	0.08	0.01	-0.01	0.06	-0.21	-0.11		-0.23	**-0.32**	-0.03	0.01	-0.11	0.06	-0.15	0.12	0.09	0.07
ROA	(9)	0.05	**0.05**	**0.11**	0.10	0.06	-0.04	-0.07	**-0.24**		**-0.03**	**0.85**	**0.45**	**0.48**	**0.30**	**0.41**	**-0.30**	-0.03	0.08
BOOK/MARKET	(10)	**0.01**	0.03	**-0.03**	**-0.02**	0.05	**-0.13**	0.16	**-0.28**	**0.15**		**0.01**	0.03	**-0.12**	-0.09	**0.04**	**-0.12**	-0.03	-0.04
EARNINGS/PRICE	(11)	**0.04**	**0.02**	0.07	0.09	0.03	-0.20	**0.11**	-0.19	**0.58**	**0.12**		**0.33**	**0.45**	**0.30**	**0.38**	**-0.30**	**-0.04**	**0.04**
SALES GROWTH	(12)	-0.05	-0.06	-0.07	-0.05	**-0.06**	0.14	-0.17	-0.01	0.14	-0.11	0.15		**0.34**	**0.38**	**0.29**	-0.14	-0.11	0.00
TOT. ACCRUALS	(13)	-0.03	-0.08	0.00	0.05	-0.12	**0.11**	**0.09**	-0.03	0.20	-0.14	**0.31**	**0.02**		**0.88**	**0.73**	**0.42**	**0.22**	**0.20**
MJM	(14)	-0.02	-0.06	0.00	0.03	-0.10	0.07	-0.07	0.03	0.00	-0.22	0.18	**0.20**	**0.85**		**0.76**	**0.51**	0.19	0.19
DDM	(15)	-0.03	-0.09	0.02	**0.07**	-0.12	-0.03	**0.01**	-0.15	**0.51**	-0.08	**0.37**	0.10	**0.86**	**0.82**		**0.38**	**0.07**	**0.23**
ACFO	(16)	-0.03	-0.04	-0.03	-0.04	-0.05	**-0.03**	**0.05**	0.12	**-0.46**	-0.09	-0.04	0.09	0.18	**0.32**	**0.14**		**0.28**	**0.05**
APROD	(17)	-0.02	-0.03	-0.09	-0.06	-0.08	0.18	**-0.05**	-0.01	-0.19	-0.03	-0.18	0.16	0.16	0.22	0.12	**0.20**		**0.66**
ADISEXP	(18)	0.21	0.16	0.16	**0.19**	0.12	**0.07**	0.02	0.02	0.00	0.02	-0.17	-0.10	**0.06**	0.03	**0.12**	**-0.06**	**0.65**	

Notes: This table provides descriptive statistics and correlations of all investigated variables. Data in Panel A (Panel B) refers to the Misstatement Sample in the year of misstatement (Control Sample in the year of matching); Data in Panel C refers to the Total Sample of Non-Misstating firms over the total observation period 2000 - 2011. Control firms are matched by size and industry in the earliest available year of the respective misstating firm (beginning three years prior to the misstating year). Panel D contains pair-wise Spearman (below the diagonal) and Pearson correlations coefficients (above the diagonal) for the Misstatement Sample in the year of misstatement (77 obs.). Bold numbers indicate two-tailed significance at the 0.05 level. Variables as defined in Table 2.5.

2.4.2 Development of Misstating Firms over Time

I provide information on the development of the Misstatement Sample over time in three different ways: Table 2.7 gives mean and median values of the analyzed variables for the whole observation period of seven years. To evaluate the pre- and post-misstatement development, I conduct pairwise mean comparisons and contrast the year of erroneous disclosure (*year t*) to the pre- (*years [t-3; t-1]*) as well as the post-period (*years [t+1; t+3]*). Additionally, the pre-years (including year t in this considerations) are compared to the post-years to investigate the performance and the accounting over time and separated by the error announcement (Table 2.8). Furthermore, Figure 2.3 allows a graphical examination of the development of the misstating firms, the matched control firms and the total non-misstatement sample.

Looking at the graphical illustrations of the size proxies (*TA, SALES* and *MARKET CAP*) shows a decrease during the pre-period, with an absolute minimum in the year of misstatement, followed by a gradual increase in the years afterwards (Figure 2.3 (Chart 1)). The mean of all the three metrics drops at about one fourth when comparing *year t-3* to *year t* (Table 2.7). Although the pairwise mean comparisons show no statistically significant distinction neither between *year t* and the early years nor between *year t* and the later years (Table 2.8), economically significant impact cannot be excluded. Especially the enduring reduction of *SALES* can put pressure on the management. The findings for *NI* seem comparable: A decrease in the pre-years lead to relative low earnings in the year of misstatement. The development of cash flows is more stable, the mean values do not differ much and cannot be statistically distinguished.

Conclusive results for the financial ratios are obtained: As expected, and as documented in literature (Dechow et al. (2010)), the increasing use of external financing and hence an increasing leverage ratio can incentive and motivate the misstatement of financial statements. The data documents a steady and significant increase in *LEV* ratio over time. The mean value of the ratio is 5.7 percentage points (pct.p.) higher in the later years than in the period before the misstatement (Table 2.8, median values support the view (Table 2.7)). *ROA* is quite volatile in the pre-period. The expected downturn (simultaneously to the decline in *SALES* and *NI*) cannot be observed on average. However, the deteriorating situation of the firms can be seen in the post-period. Profitability steadily decreases and the decline is statistically significant between the earlier and the later years (diff. -2.6 pct.p.; Table 2.8).

Interpretations of the ratios connected to market valuation (*Earnings-to-Price* and *Book-to-Market*) depend on the presumption whether or not the market

realizes and accounts for earnings management. As Dechow et al. (2011) point out, management can have incentives to manage expectations and earnings (instead of the business), *inter alia* in order to achieve gains from compensation contracts. Maintaining a high stock price -despite a deteriorating situation of the firm - might be opportune. On the other hand, if the market realized the manipulations, the two market-based ratios still would give proper estimations of anticipated future earnings (Penman (2010)). One could expect lower values (positive future outlook) of the metrics in the post-misstatement period; after errors are discovered, manipulations should decline, while the firm situation in general is improving (cf. e.g. *SALES*). I find significant results supporting this argumentation for the *Earnings-to-Price* ratio (although analysts often abstain from interpreting negative *Earnings-to-Price* ratios, the sign of changes, hence the development of the ratio is clear in my calculations). The considerations for the pre-misstatement period are insignificant and mean as well as median values are volatile. The analysis of the *Book-to-Market* ratio would suggest (by looking at the signs of the differences) to follow the earnings management argumentation, but results are insignificant.

Sales Growth shows a pronounced kink in the *year t*. Declining growth rates in the years prior to the misstatement, and a recovery afterwards, could have been expected. However, the statistically significant deviations from this expectation could indicate real activities management.

The findings on the asset-scaled receivables and liquidity (current ratio) are not significant. However, the values seem plausible in regard of all evidence; liquidity of firms is relatively low and receivables (as part of accruals) are high round the year of misstatement.

Turning to the accruals metrics, ahead of the misstating year an increasing use of (discretionary) accruals and high accrual estimation errors is expected, indicating the well documented effect of earnings management leading to misstatements (Ettredge et al. (2008), Jones et al. (2008), Dechow et al. (2010)). However, with respect to the later years, three possible empirical presumptions can be investigated: On the one hand, if the enforcement system unfolds a disciplinary effect on the firms, one would expect a decline in earnings management in the post-period. Regaining trust and credibility after the error findings and the managements' fear of further consequence could be supportive. On the other hand, an opportunistic management could 'feel safe' and use the recently completed examination and the low probability of being randomly selected again in the subsequent years as a kind of 'wild card' for ongoing earnings manipulations (Boecking et al. (2012)). Finally, both effects could be present and counteract each

other, or no effect at all could be observable. I expect the former, hence an effective adverse disclosure mechanism with a disciplinary effect.

A coherent picture of earnings management can be obtained by the three (discretionary) accruals metrics, supporting the view of accounting behavior (*TACC*, *MJM, DDM*; Table 2.8): All three show extreme mean values in the *year t*. The hypothesized increase in this year compared to the prior years is significant for all measures; alike is the decrease in the years after the misstatement. All accrual metrics are several times higher in the *year t* than in the subsequent and following periods. Comparing directly the earnings management conducted until the erroneous year to the years after, also supports the view that the enforcement system contributes to constrain the opportunistic application of accounting choices (significantly lower values of earnings management in the post-years). Median values of the metric on general support the above described findings (exception: *MJM*).

The presumption for the real activities manipulation goes along with the expectations (and findings) for the accruals management: I assume increasing manipulative activities lead to the error finding and a decrease in the levels of real earnings management afterwards. The results are not as clear-cut as the earnings management metrics' (Table 2.8). High measurement of abnormal *CFO* can be observed in the pre-misstatement period. The difference between the year before and after the erroneous period is significant; sales manipulations are occurring more in the early years. The value of the metric in the year of misstatement is not especially pronounced. The findings on manipulations via overproduction of goods (*AProd*) are quite distinctive when regarding the increase in the years leading to the misstatement. Abnormal production cost successively rise and come to a peak in year t (difference is statistically and economically significant; median values are coherent (Table 7)). However, the expected downturn in the subsequent years cannot be observed. The metric for the discretionary spending on *SG&A* and *R&D* (*ADisExp*) shows the expected behavior round the year t, signs are as expected, but the distinctions are not significant.

Table 2.7. Development of Variables over Time

Panel A: Misstatement Sample

	Year t-3			Year t-2			Year t-1			Year t		
	n	Mean	Median	n	Mean	Median	n	Mean	Median	n	Mean	Median
TOTAL ASSETS	47	3,550,000	98,800	57	3,040,000	103,000	65	3,170,000	97,200	77	2,660,000	107,000
SALES	47	2,210,000	98,500	57	1,930,000	96,300	65	1,800,000	97,100	77	1,710,000	113,000
MARKET CAP.	41	1,220,000	40,100	52	1,300,000	65,100	61	1,160,000	43,700	76	921,000	52,800
NET INCOME	47	77,300	718	57	81,500	2,563	65	59,200	1,081	77	41,300	1,219
CFO	47	138,000	1,682	57	116,000	1,512	64	117,000	2,387	76	131,000	2,929
REC/TA	47	0.210	0.194	57	0.204	0.193	65	0.209	0.189	77	0.216	0.210
CURRENT RATIO	47	2.108	1.503	57	1.701	1.438	65	1.980	1.341	77	1.738	1.376
LEVERAGE	46	0.228	0.167	57	0.214	0.142	65	0.233	0.198	77	0.242	0.209
ROA	38	-0.057	0.010	47	-0.003	0.038	56	-0.065	0.013	65	-0.031	0.020
BOOK/MARKET	41	0.916	0.602	52	0.699	0.463	61	0.658	0.522	76	0.693	0.492
EARNINGS/PRICE	40	-0.359	0.016	51	-0.072	0.036	61	-0.195	0.028	76	-0.103	0.033
SALES GROWTH	38	0.290	0.104	46	0.175	0.066	56	0.095	0.050	65	0.296	0.087
TOT. ACCRUALS	46	-0.066	-0.045	56	-0.043	-0.057	64	-0.029	-0.039	76	-0.009	-0.038
MJM	44	0.011	0.006	55	0.005	0.013	61	-0.002	-0.002	76	0.029	-0.001
DDM	34	0.042	0.039	45	0.001	-0.004	54	-0.017	-0.011	58	0.021	0.014
ACFO	45	-0.047	0.018	56	0.179	0.005	64	0.046	0.022	76	0.041	0.013
APROD	34	-0.030	-0.008	44	0.001	0.019	54	0.006	0.033	63	0.051	0.060
ADISEXP	32	-0.091	-0.056	41	-0.008	0.039	51	0.024	0.061	58	0.029	0.049

	Year t			Year t+1			Year t+2			Year t+3		
	n	Mean	Median	n	Mean	Median	n	Mean	Median	n	Mean	Median
TOTAL ASSETS	77	2,660,000	107,000	70	2,980,000	124,000	70	3,100,000	133,000	54	3,510,000	214,000
SALES	77	1,710,000	113,000	70	2,080,000	122,000	70	2,280,000	142,000	54	2,250,000	195,000
MARKET CAP.	76	921,000	52,800	68	1,160,000	68,800	69	1,210,000	62,900	53	890,000	76,200
NET INCOME	77	41,300	1,219	70	38,000	1,945	70	66,500	1,792	54	29,500	439
CFO	76	131,000	2,929	69	148,000	2,128	70	176,000	5,681	54	131,000	6,202
REC/TA	77	0.216	0.210	70	0.210	0.201	70	0.201	0.191	54	0.227	0.196
CURRENT RATIO	77	1.738	1.376	70	1.755	1.416	70	1.584	1.115	54	1.879	1.264
LEVERAGE	77	0.242	0.209	70	0.271	0.221	70	0.284	0.239	54	0.309	0.257
ROA	65	-0.031	0.020	70	-0.052	0.022	67	-0.059	0.022	54	-0.068	0.019
BOOK/MARKET	76	0.693	0.492	68	0.754	0.612	69	0.639	0.507	53	0.727	0.606
EARNINGS/PRICE	76	-0.103	0.033	68	-0.249	0.025	69	-0.207	0.039	53	-0.219	0.034
SALES GROWTH	65	0.296	0.087	70	0.097	0.058	67	0.196	0.095	54	0.033	0.042
TOT. ACCRUALS	76	-0.009	-0.038	69	-0.048	-0.039	70	-0.060	-0.052	54	-0.070	-0.057
MJM	76	0.029	-0.001	69	0.009	0.006	66	0.002	-0.004	52	-0.007	-0.009
DDM	58	0.021	0.014	65	-0.014	0.008	50	-0.007	-0.007	36	-0.048	-0.023
ACFO	76	0.041	0.013	69	-0.007	0.014	70	0.009	0.007	54	0.013	-0.013
APROD	63	0.051	0.060	67	0.035	0.030	64	0.058	0.092	53	0.098	0.081
ADISEXP	58	0.029	0.049	61	-0.027	0.031	61	0.001	0.070	49	0.035	0.055

(Continued)

Table 2.7. Continued

Panel B: Control Sample

	Year t-3			Year t-2			Year t-1			Year t		
	n	Mean	Median	n	Mean	Median	n	Mean	Median	n	Mean	Median
TOTAL ASSETS	62	1,210,000	87,900	70	1,140,000	60,000	73	1,210,000	69,300	70	1,170,000	73,600
SALES	62	1,390,000	62,400	70	1,270,000	50,100	73	1,330,000	59,700	70	1,270,000	51,100
MARKET CAP.	54	741,000	53,800	62	954,000	68,700	65	929,000	58,500	67	536,000	62,700
NET INCOME	62	64,500	807	70	60,400	1,368	73	60,900	1,734	70	28,900	1,294
CFO	62	117,000	5,867	70	89,700	4,623	72	106,000	3,870	70	90,000	6,592
REC/TA	62	0.226	0.212	70	0.253	0.228	73	0.229	0.228	70	0.216	0.216
CURRENT RATIO	62	2.467	1.603	70	2.157	1.561	73	2.247	1.655	70	2.325	1.646
LEVERAGE	62	0.203	0.159	70	0.197	0.183	73	0.206	0.170	70	0.205	0.173
ROA	42	-0.040	0.036	62	-0.028	0.021	67	0.029	0.031	69	0.003	0.020
BOOK/MARKET	54	1.107	0.808	62	0.766	0.648	65	0.995	0.784	67	0.894	0.677
EARNINGS/PRICE	54	-0.290	0.020	62	-0.093	0.025	65	-0.036	0.050	67	-0.041	0.039
SALES GROWTH	42	0.117	0.040	62	0.160	0.079	65	0.195	0.085	66	0.061	0.037
TOT. ACCRUALS	57	-0.099	-0.073	68	-0.066	-0.057	72	-0.064	-0.059	70	-0.042	-0.048
MJM	55	-0.017	-0.006	68	-0.002	-0.001	71	-0.008	-0.006	68	-0.004	-0.006
DDM	39	-0.014	-0.002	54	-0.001	0.006	62	-0.006	0.002	63	-0.011	-0.006
ACFO	56	-0.148	-0.025	68	0.224	0.008	72	0.028	-0.023	70	-0.098	-0.007
APROD	37	0.043	0.003	53	0.022	0.057	63	-0.039	0.000	66	-0.019	0.016
ADISEXP	37	0.063	0.084	56	0.030	0.085	62	-0.047	0.015	67	-0.003	0.055

	Year t			Year t+1			Year t+2			Year t+3		
	n	Mean	Median	n	Mean	Median	n	Mean	Median	n	Mean	Median
TOTAL ASSETS	70	1,170,000	73,600	65	1,330,000	86,200	62	1,500,000	82,000	47	1,410,000	64,600
SALES	70	1,270,000	51,100	65	1,430,000	68,400	62	1,700,000	73,800	47	1,510,000	71,300
MARKET CAP.	67	536,000	62,700	64	631,000	57,000	62	689,000	54,600	47	577,000	35,600
NET INCOME	70	28,900	1,294	65	24,600	2,673	62	47,800	3,757	47	29,400	3,068
CFO	70	90,000	6,592	65	98,500	6,700	62	117,000	5,867	47	98,100	4,006
REC/TA	70	0.216	0.216	65	0.221	0.222	62	0.211	0.195	47	0.207	0.190
CURRENT RATIO	70	2.325	1.646	65	2.301	1.596	62	2.486	1.575	47	2.353	1.714
LEVERAGE	70	0.205	0.173	65	0.198	0.149	62	0.196	0.163	47	0.181	0.166
ROA	69	0.003	0.020	65	0.020	0.041	62	0.001	0.039	47	-0.003	0.027
BOOK/MARKET	67	0.894	0.677	64	0.839	0.674	62	0.882	0.696	47	1.011	0.797
EARNINGS/PRICE	67	-0.041	0.039	64	0.014	0.066	62	-0.127	0.057	47	-0.149	0.059
SALES GROWTH	66	0.061	0.037	63	0.188	0.083	62	0.090	0.061	47	0.079	0.033
TOT. ACCRUALS	70	-0.042	-0.048	65	-0.062	-0.038	62	-0.047	-0.037	47	-0.041	-0.049
MJM	68	-0.004	-0.006	65	-0.019	-0.007	61	0.000	-0.004	46	0.011	0.014
DDM	63	-0.011	-0.006	62	-0.002	-0.002	47	-0.004	-0.008	36	-0.023	-0.009
ACFO	70	-0.098	-0.007	65	-0.021	-0.012	62	0.008	0.018	47	0.024	-0.011
APROD	66	-0.019	0.016	64	-0.020	0.037	60	-0.020	0.031	47	0.004	0.058
ADISEXP	67	-0.003	0.055	62	0.008	0.081	59	-0.017	0.051	45	0.036	0.082

Notes: This table provides the development of all investigated variables for the Misstatement Sample (Panel A) and the Control Sample (Panel B) over time. Panel A: Year t refers to the year of misstatement. Data is provided for three years prior ([t-3; t-1]; pre-years) and three years subsequent ([t+1; t+3]; post-years) to the year of misstatement. Panel B: Control firms are matched by size and industry in the earliest available year of the respective misstating firm (beginning in year t-3). Year t refers to the respective misstating firm's year of misstatement. Data is provided for three years prior ([t-3; t-1]; pre-years) and three years subsequent ([t+1; t+3]; post-years) to the respective misstating firm's year of misstatement. Variables as defined in Table 2.5.

Table 2.8. Development of Misstatement Firms over Time

	Pre-Misstmt Years		Year t		Post-Misstmt Years		Pairwise Mean Diff. Pre vs. Year t		Pairwise Mean Diff. Year t vs. Post		Pairwise Mean Diff. Pre (and t) vs. Post	
	n	Mean	n	Mean	n	Mean	Exp. Sign	Diff. (t-Stat.)	Exp. Sign	Diff. (t-Stat.)	Exp. Sign	Diff. (t-Stat.)
TOTAL ASSETS	169	3,230,000	77	2,660,000	194	3,170,000		-570,225		506,698		114,959
								(-0.275)		(0.259)		(0.080)
SALES	169	1,960,000	77	1,710,000	194	2,200,000		-246,722		484,317		314,821
								(-0.285)		(0.471)		(0.459)
MARKET CAP.	154	1,220,000	76	921,000	190	1,100,000		-280,635		181,596		9,087
								(-0.669)		(0.412)		(0.030)
NET INCOME	169	71,800	77	41,300	194	45,900		-30,454		4,580		-16,342
								(-0.861)		(0.165)		(-0.786)
CFO	168	123,000	76	131,000	193	153,000		8,009		22,058		28,533
								(0.133)		(0.306)		(0.612)
REC/TA	169	0.208	77	0.216	194	0.211	+	0.009	-	-0.005	-	0.001
								(0.522)		(-0.304)		(0.104)
CURRENT RATIO	169	1.921	77	1.738	194	1.728	-	-0.184	-	-0.010	-	-0.136
								(-1.030)		(-0.048)		(-1.014)
LEVERAGE	168	0.225	77	0.242	194	0.286	+	0.018	+	0.045 *	+	0.057 ***
								(0.632)		(1.427)		(2.740)
ROA	141	-0.042	65	-0.031	191	-0.059	-	0.014	-	-0.031	-	-0.026 *
								(0.547)		(-1.106)		(-1.461)
BOOK/MARKET	154	0.741	76	0.693	190	0.705	+	-0.033	-	0.012	-	0.002
								(-0.345)		(0.123)		(0.035)
EARNINGS/PRICE	152	-0.197	76	-0.103	190	-0.225	+	0.080	-	-0.122 **	-	-0.069 *
								(1.193)		(-1.695)		(-1.533)
SALES GROWTH	140	0.174	65	0.296	191	0.114	-	0.121 *	+	-0.180 ***	-	-0.134 ***
								(1.352)		(-2.543)		(-2.705)
TOT. ACCRUALS	166	-0.044	76	-0.009	193	-0.059	+	0.032 *	-	-0.050 ***	-	-0.027 ***
								(1.549)		(-2.870)		(-2.556)
MJM	160	0.004	76	0.029	187	0.002	+	0.026 **	-	-0.026 **	-	-0.010 *
								(1.990)		(-2.263)		(-1.473)
DDM	133	0.004	58	0.021	151	-0.020	+	0.021 *	-	-0.037 ***	-	-0.023 ***
								(1.546)		(-2.349)		(-2.702)
ACFO	165	0.066	76	0.041	193	0.004	+	-0.022	-	-0.037	-	-0.062 **
								(-0.309)		(-0.729)		(-1.830)
APROD	132	-0.005	63	0.051	184	0.061	+	0.046 *	-	0.009	-	0.036 **
								(1.578)		(0.322)		(1.979)
ADISEXP	124	-0.016	58	0.029	171	0.000	+	0.037	-	-0.011	-	0.017
								(1.015)		(-0.301)		(0.712)

Notes: This table provides findings on the development of Misstating Firms over time. Year t refers to the year of misstatement. Pre- (Post-) Misstatement years refer to three years prior (subsequent) to the year of misstatement ([t-3; t-1] respectively [t+1; t+3]). Pairwise comparisons of means contrasting the pre-years and year t, the post-years and year t as well as the pre-years (including year t) and the post-years are conducted. All firm-year observations with sufficient data for the variables and metrics in the respective periods of comparison are included. *, **, and *** indicate one-tailed significance at least at the 0.1, 0.05, and 0.01 level, respectively. t-statistics in parentheses. Variables as defined in Table 2.5.

Figure 2.3. Development of variables over time

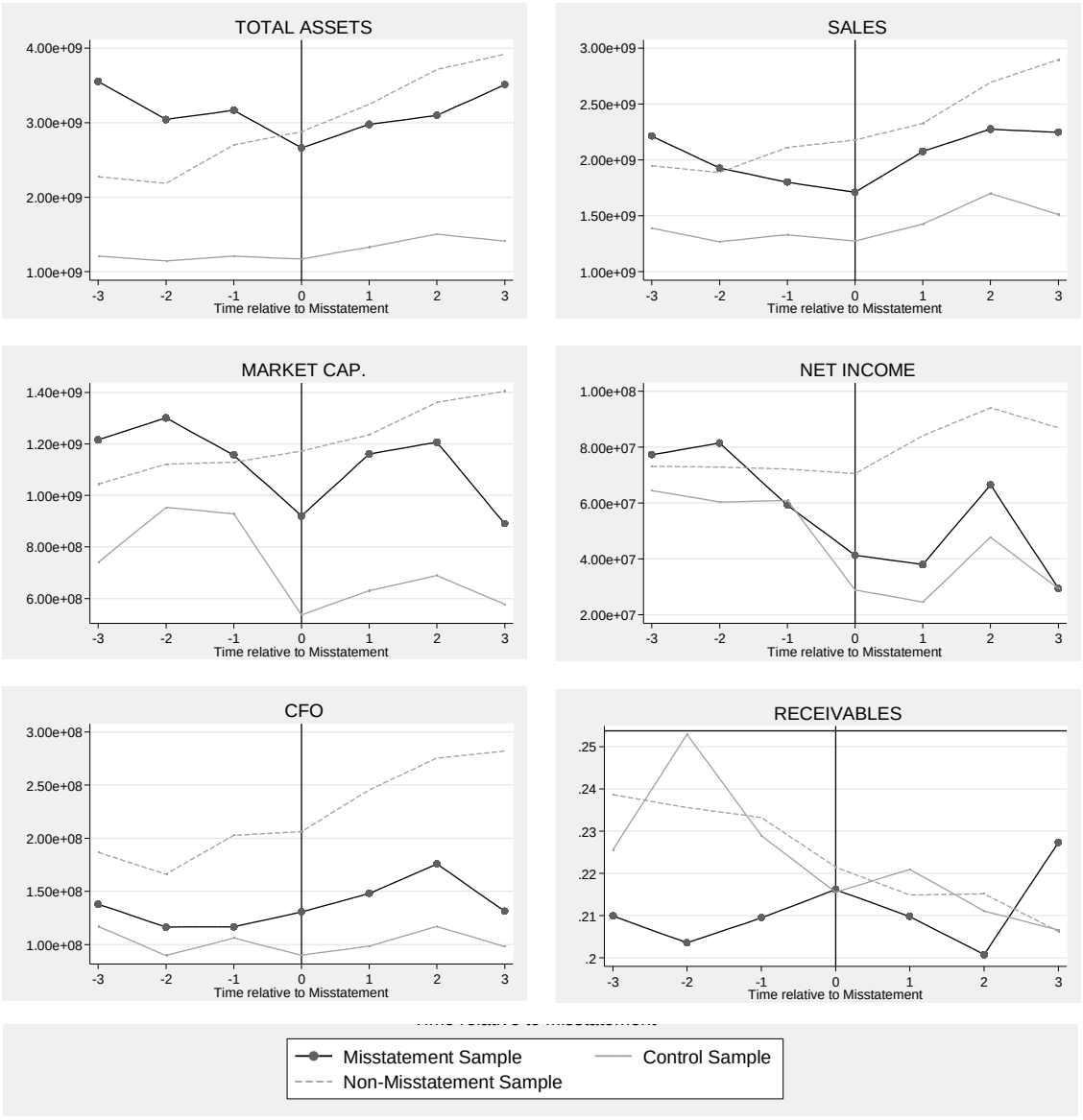


Chart 1. Basic financial variables

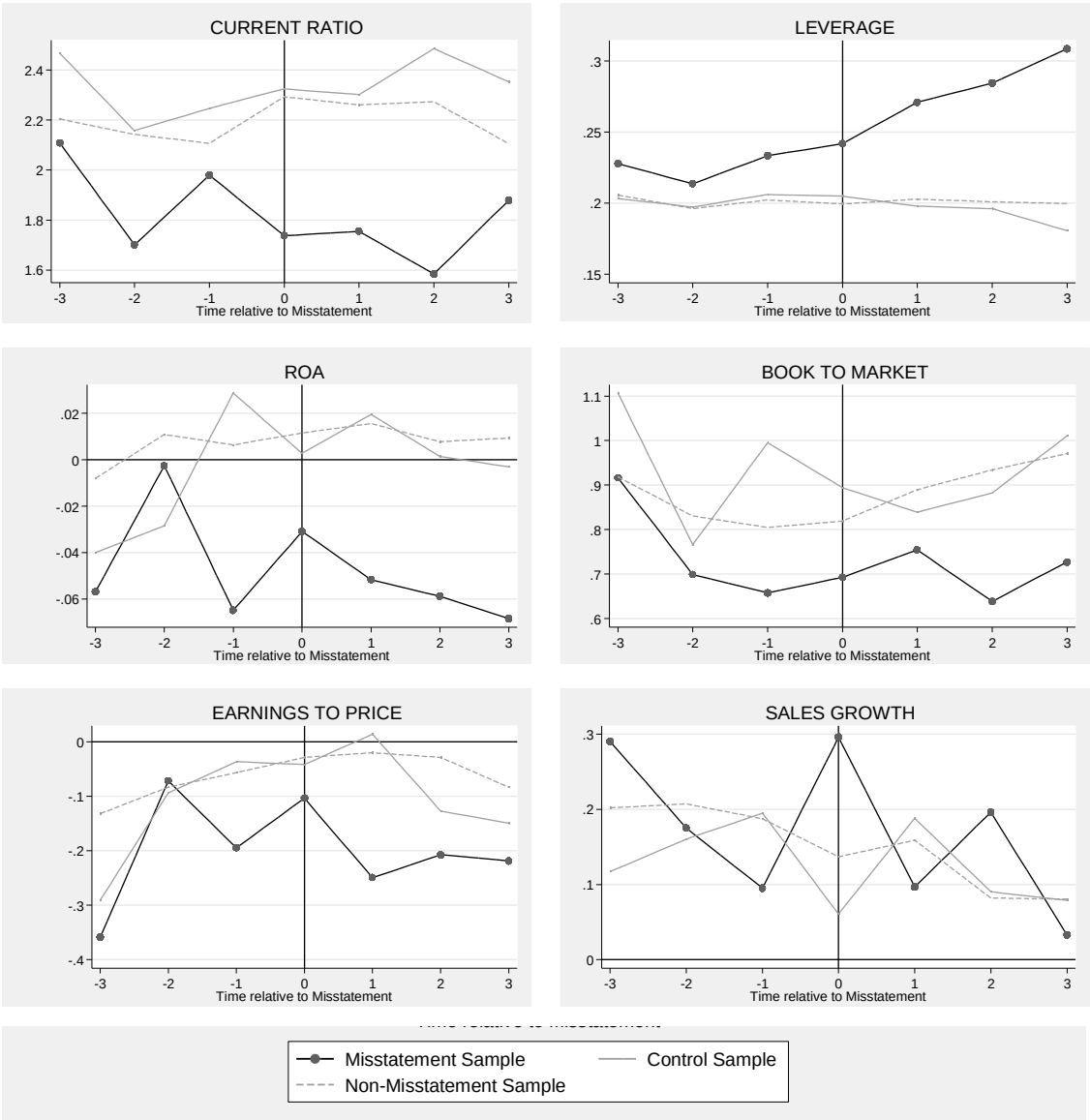


Chart 2. Financial ratios

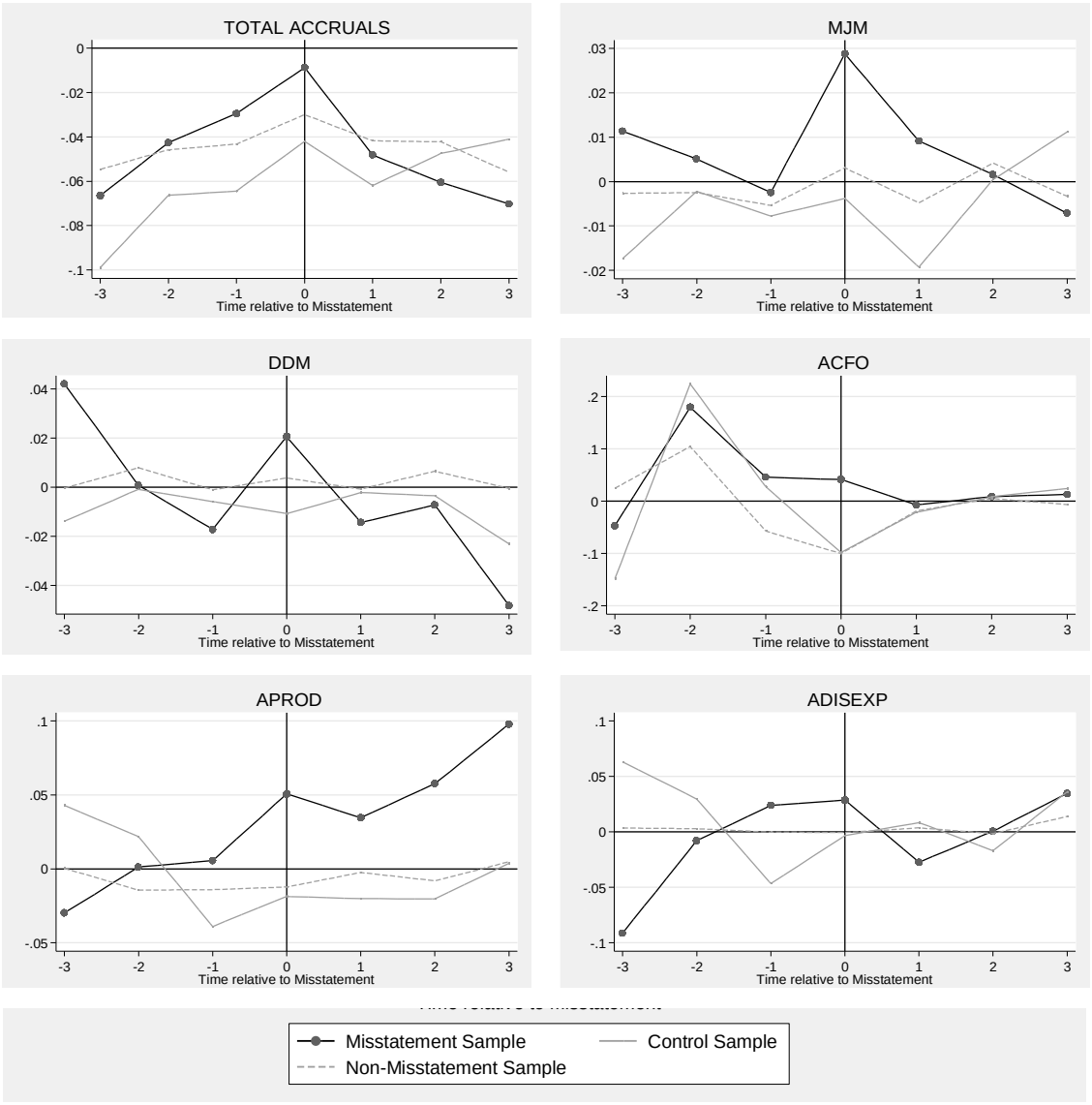


Chart 3. (Real) Earnings management metrics

Notes: Charts 1 - 3 depict the development of selected variables over time. The development is illustrated for the Misstatement Sample, the Control Sample and the Total Sample of non-misstating firms for the years surrounding a misstatement ([t-3; t+3]). For the Misstatement Sample Year 0 refers to the year of erroneous disclosure of an erroneous IFRS financial statement as announced referring to the FREP/BaFin enforcement. Control firms are matched by size and industry in the earliest available year of the respective misstating firm (beginning in year t-3); year 0 refers to the respective misstating firm's year of misstatement. Each of the firms in the Non-Misstatement Sample get randomly allocated a year of the 2004-2011 period as event year 0. The allocation is performed with respect to the proportion of misstatements in the years 2004-2011 (cf. Section 2.4.4 for details). Variables as defined in Table 2.5.

2.4.3 Comparison to Non-Misstating Firms

I provide data for the control group of non-misstating firms and compare then with the misstating firms in three tables: Table 2.6, Panel B gives detailed descriptive information on the control firms' *year t*, hence the corresponding year to the misstatement firms' erroneous year. Furthermore, information on the time series development of all analyzed variables of the control group is contained in Table 2.7, Panel B. Additionally to the tabulation of the values, I contrast and illustrate the development over time by adding the control firm' data to the graphs in Figure 2.3. Finally, Table 2.9 exhibits tests of differences in the regarded variables and metrics, between the misstatement- and the control firms in the *years t-3, t* and *t+3,* thus three years prior to, in the year of and three years subsequent to the erroneous disclosure of a financial statement.

As described above, the matching of misstatement firms with control firms is performed in the earliest available year of the pre-period, hence with the earliest firm-year observation of the misstatement firm. This proceeding allows a long term surveillance and tracing of different developments within the groups. The misstatement firms are on average larger (*TA, SALES* and *MARKET CAP*) than the control firms over the whole observation period. However, as the t-tests of mean differences show, the two groups are statistically not distinguishable (Table 2.9). Additionally, as the t-test performed for the *period t-3* reveal, the groups are neither distinguishable regarding the variables *NI*, *CFO*, *LEV* and *ROA* nor regarding the *Book-to-Market* and the *Earnings-to-Price* ratio in this year. These findings demonstrate the success of the matching procedure; the obtained control group of firms is very similar to the investigated firms three year prior to the misstatement. In order to address concerns regarding the matching in the always earliest year available, results of t-tests show that the groups do not significantly differ in terms of size, profitability and leverage, when the directly matched firm-year observations are employed for the t-tests (not tabulated).

Regarding the financial ratios, a divergent development of investigated and control firms over time is observable. While not being distinguishable in *t-3*, the situation of misstatement firms has worsened until the *year t* in terms of liquidity (*CUR* ratio (diff. -0.587)) and profitability. The *ROA* of misstatement firms is negative in *t*, the difference towards the control firms is -3.4 pct.p. (Table 2.9). The difference in *LEV* is not significant, but the expected positive sign and the median values show the increased use of external financing. Another three years later, the divergence of the groups has increased even more (in the postulated direction): Both, *ROA* and *LEV*, differ significantly (statistically and economically); *ROA* is

6.5 pct.p. lower for the misstatement firms and their leverage ratio is almost twice as high (diff. +12.8 pct.p.).

The interpretations of the market related ratios are again ambiguous, depending on the presumptions on market ability to 'see through' the numbers. If it does, one could expect lower ratios (e.g. higher market valuations) for the control group; however, I observe the opposite. The *Book-to-Market* ratio of the control sample is steadily higher than the misstatement groups', indicating a relative low market valuation of the firms. The difference in the *years t* and *t+3* is significant. Measures of *Earnings-to-Price* also show the lower valuation of control firms. Hence, the market participants might not fully account for the development within the misstatement firms. (Market valuation of the misstatement sample and control firms is also discussed in Chapter 3. Although the presumption comparable, the findings are in some cases contradicting (weak significance); see pp. 66 and 80).

The results regarding the (discretionary) accruals measures are clear-cut: I find strong evidence that misstatement firms make extensive use of accrual accounting and thus earnings management in the year of misstatement. Discretionary accruals, measured by the performance-adjusted modified Jones model (*MJM*) are by far higher in this year, and the accrual estimation errors measured by the Dechow and Dichev model (*DDM*) also show significant differences between the groups of comparison. The (although insignificant) results of *TACC* and the regard of median values support the findings. The measurement of *total-* as well as discretionary *MJM-accruals* are higher for the misstatement firms in almost every year of comparison. The decline of accrual-values together with the progressive rapprochement of groups in the post-years show the distinctiveness of the event year of erroneous disclosure (Tables 2.7 and 2.9).

Strong results indicating the use of earnings management through real activities can also be observed. Signals for sales manipulations and the accelerated timing of sales are documented by significantly higher abnormal cash flows (*ACFO*) in the year of misstatement. The manipulation of production costs (*AProd*) can be recognized by the high mean and median values of abnormal production costs relative to the control group (significant distinction in the manipulation year). The metric for abnormal discretionary expenses (*ADisExp*) shows a distinction in the *year t-3*, but the groups approach each other in the following years.

Table 2.9. Comparison of Misstatement- and Control Firms

	Misstatement Sample Year t			Control Sample Year t			Mean Diff. Year t-3	Mean Diff. Year t		Mean Diff. Year t+3
	n	Mean	Median	n	Mean	Median	Diff. (t-Stat.)	Exp. Sign	Diff. (t-Stat.)	Diff. (t-Stat.)
TOTAL ASSETS	77	2,660,000	107,000	70	1,170,000	73,600	2,341,010		1,491,660	2,098,740
							(1.054)		(0.887)	(0.856)
SALES	77	1,710,000	113,000	70	1,270,000	51,100	822,113		437,014	734,302
							(0.821)		(0.518)	(0.534)
MARKET CAP.	76	921,000	52,800	67	536,000	62,700	475,650		384,282	312,946
							(0.984)		(0.976)	(0.730)
NET INCOME	77	41,300	1,219	70	28,900	1,294	12,782		12,409	63
							(0.256)		(0.338)	(0.002)
CFO	76	131,000	2,929	70	90,000	6,592	20,872		40,613	33,097
							(0.263)		(0.605)	(0.395)
REC/TA	77	0.216	0.210	70	0.216	0.216	-0.016	+	0.001	0.021
							(-0.629)		(0.030)	(0.765)
CURRENT RATIO	77	1.738	1.376	70	2.325	1.646	-0.359	-	-0.587 **	-0.474
							(-0.793)		(-1.818)	(-1.099)
LEVERAGE	77	0.242	0.209	70	0.205	0.173	0.025	+	0.037	0.128 ***
							(0.572)		(1.073)	(2.861)
ROA	65	-0.031	0.020	69	0.003	0.020	-0.017	-	-0.034 *	-0.065 **
							(-0.387)		(-1.391)	(-1.707)
BOOK/MARKET	76	0.693	0.492	67	0.894	0.677	-0.190	+	-0.201 *	-0.284 **
							(-0.915)		(-1.487)	(-2.048)
EARNINGS/PRICE	76	-0.103	0.033	67	-0.041	0.039	-0.068	+	-0.062	-0.069
							(-0.397)		(-0.878)	(-0.502)
SALES GROWTH	65	0.296	0.087	66	0.061	0.037	0.173	-	0.235 **	-0.046
							(1.142)		(2.151)	(-0.609)
TOT. ACCRUALS	76	-0.009	-0.038	70	-0.042	-0.048	0.033	+	0.033	-0.029
							(1.071)		(1.199)	(-0.935)
MJM	76	0.029	-0.001	68	-0.004	-0.006	0.029 *	+	0.033 **	-0.018
							(1.493)		(1.793)	(-0.960)
DDM	58	0.021	0.014	63	-0.011	-0.006	0.056 **	+	0.031 **	-0.025
							(2.149)		(1.712)	(-1.155)
ACFO	76	0.041	0.013	70	-0.098	-0.007	0.102	+	0.140 *	-0.011
							(0.575)		(1.376)	(-0.337)
APROD	63	0.051	0.060	66	-0.019	0.016	-0.073 *	+	0.069 **	0.094 **
							(-1.473)		(1.699)	(2.055)
ADISEXP	58	0.029	0.049	67	-0.003	0.055	-0.155 ***	+	0.032	-0.001
							(-2.762)		(0.658)	(-0.025)

Notes: This table provides findings on contrasting Misstatement- and Control Firms. Year t refers to the year of misstatement for misstating firms. Control firms are matched by size and industry in the earliest available year of the respective misstating firm (beginning in year t-3); year t refers to the respective misstating firm's year of misstatement. t-tests of means contrasting the Misstatement- and the Control Firms in the years t-3, t and t+3 are conducted. All firm-year observations with sufficient data for the variables and metrics in the respective periods of comparison are included. *, **, and *** indicate one-tailed significance at least at the 0.1, 0.05, and 0.01 level, respectively. t-statistics in parentheses. Variables as defined in Table 2.5.

2.4.4 Additional Analyses and Sensitivity Checks

I conduct several analyses additional to the main considerations. All the findings described in this section are not tabulated, nevertheless I consider them relevant for an overall assessment. The results of three different alterations of the main proceeding are described: Firstly, I modify the matching procedure for the control group and compare the total sample of non-misstating firms to the FREP-denounced firms. Secondly, I report results for substitutive variables and alternative specifications of the models as sensitivity analysis. Finally, I consider differences in error severity and reasons for misstatements by investigating different sub-samples.

Relating to the different matching of control firms, I conduct sensitivity checks for alternative proceedings. In order to address concerns regarding the matching in the always earliest year available, control firms are matched, only if the firm year observation in *t-3* is available for the misstating firm. This reduces the number of matched pairs to 47, but avoids a possible bias due to matching the control group in different prior years relative to the misstatement year. The descriptive data on this control group and the t-tests on mean differences in the years *t-3, t* and *t+3* show almost no distinction in the main results to the original proceeding. The two groups of comparison significantly differ in the year of misstatement in terms of *LEV, ROA*, total as well as discretionary accruals (*TACC*, *MJM* and *DDM*) and abnormal *CFO*. The signs of the differences are as predicted; in some cases the distinction is even more pronounced. The development of the main variables in the pre- and post-period is highly comparable to the development of the original control group.

Moreover, as matching a control group is seen critical by some researches *per se*. The use of Fama and French (2008) 12-industry classifications results in more observations per industry and more robust results (Ernstberger et al. (2012a)). The findings on the matched firm-years show that the control group is comparable (at least not distinguishable) not only in firm size, but also regarding profitability, leverage and liquidity as well as market valuation in the year of matching.

Nonetheless, I also compare the findings of the misstatement firms to the whole sample of non-misstating firms - the population, of which the control group was matched. A summary of descriptive data on all firm-years of this sample is contained in Table 2.6, Panel C. The sample of FREP-denounced firms consists of firm-year observations from the years 2004 - 2011. The firm-year observation of misstatement is selected to the sample as event year *t*. I also need to assign an '*event-year t*' to non-misstating firms, in order to make them and their development over time comparable to the sample of misstating firms. I use the same procedure as Ettredge et al. (2010). Each of the eight possible event years for a misstatement

(2004 - 2011) is randomly allocated to the non-misstating firms as their *event-year t*. This randomly allocation is performed with respect to the proportion of years in the misstating sample. For example: 18% of the misstatements are related to the year 2006; hence for 18% of all non-misstating firms, I assign 2006 as their *event-year t*.

The descriptive data for the single years and t-test findings on comparisons of the groups are not tabulated in detail, but the development of the non-misstating firms over time is illustrated by adding their data to the graphs in Figure 2.3. For many of the variables analyzed, the originally selected control group behaves just like the total sample of non-misstating firms in their development over time, but the FREP-denounced firms differ. The tests on mean differences show many significant results in the year of erroneous disclosure. The misstatement firms have higher *LEV* ratios (+4.9 pct.p.), report less *ROA* (-3.0 pct.p.) and show less liquidity (*CUR* ratio -0.497). Furthermore, highly significant differences in the metrics for earnings management and real activities manipulation are found. The FREP-denounced firms report higher total accruals, higher discretionary *MJM*- as well as *DDM*-accruals; the metrics for abnormal cash flow and abnormal production costs also show the expected distinction (All differences mentioned are significant at least a the 10% level.).

In order to assure the robustness of my results, I alter the regarded financial ratios and modify the models for (real) earnings management. The acid ratio, as an alternative liquidity measure, the use of the long-term *LEV* ratio or the debt-to-equity ratio, as proxies for the dependency on external financing, and the profit margin, as alternative profitability measure, all show a similar behavior as the originally investigated variables described above. The tests on differences between the control group and the misstatement group as well as the time series differences show significant distinctions in many cases. The investigated Altman's Z-Score serves as measure of financial distress (Altman (1968)). For the misstatement sample the metric is significantly lower in the *year t* than in the pre-years and the decline continues in the post-years; it is also lower compared to the control group. Values of the metric below 2.6 are seen as critical, values below 1.1 indicate a serious risk of insolvency of a firm. The measured mean values for the misstatement sample are below 2.6 since the *year t-1* and decline in all subsequent years; in *t+3* the mean value comes close to 1.

I alter the metrics for earnings management: Instead of analyzing total accruals I regard working capital accruals; they show a similar development over time. Furthermore, I use the Dechow et al. (1995) model to measure discretionary accruals instead of the Kothari et al. (2005) metric. Again, the result of high accrual

adjustments in the year of misstatement stays significant. As further indicator of misstated financial statements, I calculate the 'balance sheet bloat' metric used by Ettredge et al. (2010). They obtain good results in predicting misstatements by the use of unusually high accounts of working capital in the years prior to a misstatement. However, I do not find significant results for this metric. Neither does the metric differ significantly over time, nor does it indicate differences towards the control group. I conclude that in the German setting the different versions of the Jones-model or the Dechow and Dichev model might be a better choice for investigating the denounced firms.

Finally, as additional evidence on real activities management, I compute the metric introduced by Ernstberger et al. (2011). They build a single aggregated measure that combines all three 'abnormal value estimators' used in Roychowdhury (2006). My results suggest that the total real activities manipulations are significantly higher for the misstatement sample in the *year t* than for the control group.

As final additional analysis on the sample of FREP-denounced firms, I pick up the findings provided by the decile rankings of alleged firms relative to the total sample of German firms (cf. Section 2.2.3 and Table 2.2, Panel C). These rankings show an overrepresentation of relatively small and quite big firms, firms with high *Leverage* ratios and low-profitable firms in the misstatement sample. The sample is divided according to those possible drivers of errors. For investigations on the severity of error findings, error announcements are regarded as more severe, if they contain more single error findings and if the error findings have an impact on the reported earnings (Ernstberger et al. (2012a)). Dividing the sample by the median value of *SALES* in the year of misstatement shows that larger firms are obliged to report significantly less single errors (3.2 vs. 4.1) per error announcement. Furthermore, these errors have an impact on the firms' earnings in only 68% of the cases (small firms: 86%; difference significant). Other size proxies, the FREP's statements in their activity reports as well as Pellens et al. (2012) confirm these findings. Hence, I conclude that error severity depends on firm size. The FREP comes to the conclusion that especially the high complexity of IFRS could overwhelm small and medium-sized firms (FREP (2008)).

By splitting the sample by the leverage ratio of the firms, I gather evidence that a higher error severity can only be attributed to very high ratios of debt. The 10% of firms with the highest *LEV* ratios report significantly more single errors per error announcement than the rest of the sample (5.1 vs. 3.4). A division of the sample according to profitability (*ROA*, loss-reporting firms) and growth rates (*Sales-Growth*, changes in *ROA*) does not result in significant differences of error

severity. I also regard the different sub-samples over time and analyze their development over time. Nothing that could alter or question the main results was observed. The time series development of several sub-samples is comparable to the whole sample's.

2.5 Conclusion

The European Parliament decided that consolidated financial statements should be prepared in conformity with International Financial Reporting Standards for financial years starting since 1 January 2005 (*Regulation EC No. 1606/2002*). At the same time, the Parliament recognized the necessity to ensure the compliance with the accounting standards by the creation of appropriate and strict enforcement regimes in the EU-member states. Germany opted for a two-tiered external financial reporting enforcement mechanism; since July 2005 the 'Financial Reporting Enforcement Panel' (FREP) examines prior audited financial reports in cooperation with the 'Federal Financial Supervisory Authority' (BaFin). A sanctioning mechanism for misstating firms was implemented, as material infringements of reporting standards are disclosed via public error announcements ('name and shame').

Since the findings of FREP investigations are now available for a couple of years, this study takes the opportunity to sum up the disclosed error announcements and to evaluate the development of misstating firms over time. Until May 2011 the adverse disclosure mechanism censured 151 firms (100 evaluable error announcements) for infringing international accounting standards. As on average 3.64 errors are detected and 29% of announcements even contain five or more single findings, I conclude that announcements and errors cannot simply be driven by unintentional mistakes. Furthermore, 12% of the misstating firms are subject to error findings twice. These facts are interpreted as indications of a weak accounting environment and poor corporate governance within these firms.

The FREP frequently attributes error findings to the complexity and the challenging application of IFRS. While this might explain accounting errors of small and unexperienced firms, this study finds evidence for other important influences on the misstatements. Highly levered and less profitable firms are overrepresented in the misstatement sample; the development over time and the comparison with control firms highlight the findings of increasing external financing and a deteriorating situation of profitability of the misstating firms. Furthermore, the

results on models of (discretionary) accruals and of real activities manipulations indicate the influence of earnings management on the misstatements. Accounts management and real manipulations are used conjointly; both practices increase the probability to cross the boundaries of GAAP-conform accounting. The metrics also show high values of discretion in accounting numbers of the misstating years as well as a clear distinctions to the non-misstating firms. Consistent with these findings is the fact that 77% of announcements contain errors that affect the period's earnings.

All of this leads to the conclusion that error findings cannot entirely be attributed to the complexity of IFRS. Rather, my results indicate that firms have incentives to manage earnings and the financial reporting as a whole towards the boundaries of IFRS-conformity. Expanding (low cost) external financing, achieving favorable credit-ratings, hiding a downturn in operating performance and incentives of managerial compensation are reasons alleged for this behavior. Indications of the presence of these motivations are provided by my empirical examinations.

This study's results contribute to the better understanding of the development within firms that cross into non-GAAP accounting. I examine the trends in balance sheet data, financial ratios and (real) earnings management and thereby provide new information on the German enforcement regime. Furthermore, I show the influence of earnings quality and financial ratios on the accuracy of reported numbers. This could provide guidance for policy makers and investors in Germany as well as for international standard setters and coordinating EU-authorities.

However, the investigations are limited to the description of the development of misstating over time and the elaboration of distinctions to control firms. Further research is needed to draw well-founded conclusions for different stakeholders of accounting information. Hitz et al. (2012) already described capital market reactions to error announcements, future studies could contribute in creating knowledge on the prediction of misstatements by analyzing differences in corporate governance structures or by investigating the role of the auditor.

Chapter 3

Enforcement Releases, Firm Characteristics and Earnings Quality: Insights from Germany's two-tiered Enforcement System

Abstract

The implementation of a two-tier external enforcement mechanism in Germany 2004 allows examining the interrelation of enforcement releases, firm characteristics and earnings quality for a unique institutional framework. Until May 2011 in 151 cases the announcement of errors in prior disclosed and audited financial statements was mandatory ordered by the enforcement authority. Prior literature documents the correlation between underperformance in financial ratios and the probability of erroneous disclosure of financial statements; I provide evidence for differences in characteristics between firms with enforcement releases and control firms as well as the whole German publicly traded firms (4,730 firm-year observations, regulated market). Further, research affirms the connection of financial ratios to earnings quality metrics. I consider the accuracy of financial information to be correlated with its quality and therefore examine the differences in earnings quality between various sub-samples. Overall the results document the underperformance in important financial ratios as well as indicate an inferior earnings quality of firms subject to enforcement releases vis-a-vis the control groups. These results hold with regard to both, different earnings quality specifications and different periods observed. This study appends the earnings quality discussion and contributes to develop a comprehensive picture of accounting quality for the unique institutional settings of Germany. I show that a conjoint two-tier public and private enforcement system is effective and might be an adequate model for other countries. Implications for the regulation of corporate governance, the enforcement panel and the auditor are identified.

JEL Classification: M 40, 41, 42

Keywords: enforcement, earnings quality, Germany

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3.1 Introduction

Corporate reporting, auditing, financial oversight and accounting regulation are in focus of politicians, scientists, professionals and the public since a series of accounting scandals and the financial crisis hit the economy and the way of organizing and controlling corporations. This environment led to the regulatory response of institutional reforms of accounting and auditing systems. The goal of those reforms was to improve the quality and reliability of financial information by strengthening investor protection, improving financial disclosure and enhancing internal governance as well as external enforcement.

The implementation of the 2002 'IAS Regulation' (*Regulation (EC) No. 1606/2002, par. 16*) mandates the members of the European Union to "take appropriate measures to ensure compliance with international accounting standards" and to set up "a proper and rigorous enforcement regime". Therefore in 2004 German legislation established a unique two-tiered external enforcement mechanism. On the first stage a private organization, the 'Financial Reporting Enforcement Panel' (FREP), conducts investigations of (prior audited) financial statements of regulated market-listed firms on their compliance with relevant accounting standards. In case of error findings the second-tier institution, the German securities regulator 'Federal Financial Supervisory Authority' (BaFin), has the executive power to order the disclosure of these findings ('name and shame' sanctioning).

Prior literature provides evidence on underperformance of firms in key financial ratios being closely connected to the probability of misstated/fraudulent disclosure of financial statements and to consequential enforcement releases (Dechow et al. (2010)). Further academic research showed a high correlation of these key financials to commonly applied earnings quality metrics. Hence, I consider the accuracy of financial information to be correlated with its quality. As the reforms have been implemented to enhance the quality of financial information, the question arises whether those reforms met their target. To analyze this, this study compares key financial ratios and the quality of earnings of 151 firms with publicly announced error findings to a control group firms, without error findings.

The assessment of this unique sample is of international interest as it provides the possibility to investigate the efficiency of the German two-tier (private and public) system in comparison to the public structure in the US and the private body in UK. As Coffee (2005) and Enriques and Volpin (2007) outline, differences in corporate legislation and ownership between distinct countries should result in different regulatory arrangements concerning corporate governance structures. In this sense I provide an informative analysis of the prevailing German system,

examine if this system is effective for a typical continental European code-law country, investigate if the reforms initiated by the EU in 2002 succeeded in enhancing accounting quality and if a combined public and private enforcement system might be an adequate model for other countries. This study might therefore be of interest for regulators in Germany and EU member states that have to obey the 'IAS regulation', for supranational institutions (European Securities and Markets Authority, International Accounting Standards Board), for the national enforcement institutions (FREP, BaFin, SEC, FRRP) as well as for all other addresses of financial statements.

The results show that firms subject to public error announcements have lower operating performance, are less profitable and have higher leverage ratios than the control group - prior, in the year of and subsequent to the occurrence of accounting errors. The findings also indicate lower earnings quality of firms with publicly announced error findings by the FREP vis-a-vis a control group and the total sample of German firms publicly listed in a regulated market segment (4,730 firm-year observations); the findings are also robust to different time horizons and a large variety of earnings quality metrics. Furthermore, this paper examines how earnings quality metrics together with financial statement ratios can contribute in identifying financial statements of adverse earnings quality and that these metrics contain information indicating the faultiness of financial reporting. The empirical results show the possibility of recognizing firms with poor accuracy of accounting through firm characteristics and earnings quality measures, apart from controversial discretionary accruals models (Bayley and Taylor (2007) and Dechow et al. (2011)).

To my best knowledge, this is the first study that directly addresses the outcomes of the enforcement mechanism in Germany (i.e. the error findings) and does research on the systematical connection of disclosure errors, key financial ratios and earnings quality. Ernstberger et al. (2012) examine consequences (on earnings quality, liquidity and valuation) of an increase in the overall level of enforcement for affected firms, but do not directly address the firms subject to FREP-error findings. Hitz et al. (2012) evaluate a sample based on the error findings, but investigate market reactions to error announcements; they do not evaluate any balance sheet data, financial ratios or earnings quality.

The study further contributes to accounting and auditing related literature by an empirical examination on the relation of enforcement actions by the German FREP and earnings quality. My approach adds to the earnings quality discussion in connection to different corporate supervision regimes as the German enforcement is unique in its two-tiered organization. In contrast to existing literature that analyzes different influences on earnings quality in Germany over time, I contribute

by analyzing the quality of financial information differentiated by the enforcement releases and error announcement published by the enforcement authorities. I provide evidence that the particular structure of the system is effective, that reforms in Germany are detecting poor accounting quality and that the combined public and private enforcement might also be adequate for other countries.

The remainder of the paper is structured as follows. Section 3.2 describes the institutional background of financial statement oversight in Germany. Section 3.3 deals with firm characteristics as determinants of both enforcement releases and earnings quality. Section 3.4 addresses the sample selection procedure and the empirical approach. Section 3.5 is designated to the presentation of the empirical results. Section 3.6 concludes.

3.2 Financial Statement Oversight and Enforcement System in Germany

Until 2004 the financial statement oversight in Germany rested on two traditional pillars: One, the firm-internal control structure consists of a two board organization, with the executive board responsible for running the business, the establishment of reporting systems and the preparation of financial statements as well as the supervisory board with monitoring functions. Two, the second classical pillar of oversight is the auditor respectively the statutory audit that is mainly responsible for the compliance of financial information with accounting standards.

In 2004 the '*Bilanzkontrollgesetz*' (Financial Reporting Enforcement Act) implemented an external enforcement system as 'third supporting pillar'. A strict enforcement of accounting standards is considered an important contribution to enhance accuracy, truthfulness and transparency of financial information; it also ensures high quality financial statements. As a result of numerous discussions concerning the organization of an external enforcement system - public (e.g. the SEC in the US) vs. private (e.g. the FRRP in the UK) - the German legislation decided to install a two-tier mechanism that combines the advantages of both possible organizational forms.

On the first level of enforcement the 'Financial Reporting Enforcement Panel' (FREP), a privately organized body, endorsed as enforcement organization by the Federal Government, examines the compliance of financial statements with effective accounting standards (IFRS and German GAAP). Addressees of

enforcement actions are firms with securities traded in the regulated segment of the German stock exchange. The FREP investigates (consolidated) financial statements (annual or interim) and the corresponding management reports. The selection of the firms reviewed is based upon indication for accounting infringements, on request of the BaFin or, in most cases, proactively on sampling. As the coverage of the investigations has to be limited, due to the capacities of the FREP, examinations are focused either on the issues that led to the indication (indication based reviews), or on 'Examination Areas of Emphasis' released by the FREP at the end of each year for the following year (sample based reviews) (FREP (2010)). Hitz et al. (2012) provide a detailed description of the enforcement system.

As a private association the FREP has neither the sovereign power to force cooperation of firms in the review process, nor the right to order the publication of accounting errors detected. Therefore, the 'Federal Financial Supervisory Authority' (BaFin), as a public state agency with executive power, participates in the second level of the examination process. In case the FREP detects the accounting of a firm to be deficient, the concerned firm is informed and the BaFin mandates the error announcement in the '*eBundesanzeiger*' (Electronic Federal Gazette of Germany). Thus adverse disclosure is the central instrument of the enforcement mechanism; the firms thereby suffer from negative publicity ('name and shame').

The FREP took up its task in July 2005; until 12/31/2010 the panel examined 625 financial statements of firms listed on German stock exchanges. With a total of 151 error findings, this equals an over-all error rate of 24.2%. The FREP highlights the complexity of the IFRS as one major driver of errors. Especially the goodwill impairment test and the purchase price allocation of IFRS 3, presentation and disclosure for financial instruments (IAS 32, IAS 39 and IFRS 7), lease accounting (IAS 17) and the accounting for deferred taxes (IAS 12) are recently prone to errors. The complexity of IFRS accounting is largely due to the frequent recognition of assets and liabilities at fair value. An analysis of the accounting errors shows that the majority is related to the proper application of fair-value-measurement (2008: 70%, 2009: 61%, 2010: 61%) (FREP (2010)).

Most of the errors induce revenue/expense and earnings consequences (FREP (2010)). The violations are not one-time occurrences but rather evidence of structural weaknesses in the firm's accounting and corporate governance settings. Von Keitz and Wenk (2010) report an average amount of 4.2 single error findings per enforcement release; furthermore, I find that about 14% of the firms in the sample used in this study are subject to a public error announcement/enforcement release in more than one case. Hitz et al. (2012) find that enforced firms have

relatively poor governance quality, report poor profitability and tend to have strong earnings management incentives. Based on capital market reactions to error announcements, they consider the German adverse disclosure sanction to be effective. Ernstberger et al. (2012) examine the impact of accounting enforcement reforms on earnings quality, liquidity and the valuation of the affected firms; they state overall improvements due to the new established enforcement mechanism. Other studies on the German enforcement system describe the organization of the system (Haller and Bernais (2005), Zuelch (2005)), present an overview of the finding of the first years of enforcement in Germany (von Keitz and Stolle (2008), Hein (2010)), and analyze the enforcement disclosure practices (Henselmann et al. (2009)). Stich (2011) examines the impact of the enforcement reforms on the cost of debt and equity capital.

A detailed description of the distribution of misstating firms over time and industries as well as evaluations of the error announcements and information contained in the publications are given in Chapter 2, pp. 16 et seqq.

3.3 Firm Characteristics as Determinants of Enforcement Releases and Earnings Quality

3.3.1 Association between Firm Characteristics and Enforcement Releases

Based on the literature on misstatements and SEC enforcement releases I do not consider the errors detected by the FREP to be random and unintentional mistakes in the accounting. I rather regard the releases as evidence of structural weaknesses in the firms' accounting and corporate governance settings as well as their financial performance. Accordingly, the misstatements could reflect earnings manipulation instead of mistakes.

Dechow et al. (1996) find that earnings manipulations are driven by the attempt to expand external financing at low cost, the avoidance of breaking debt covenant constraints and by weak internal governance structures (cf. Jiambalvo (1996)). Dechow et al. (2010) summarize determinants and consequences of SEC 'Accounting and Auditing Enforcement Releases' (AAERs); the AAERs are indicators of earnings management and are driven by several firm specific factors

like managerial compensation, debt covenants, capital market incentives and corporate governance settings.

Several studies provide descriptive evidence on distinguishing firms subject to enforcement releases from control samples by key financial data: Dechow et al. (1996) find that while generating less cash from operations relative to total assets, AAER-firms tend to have a high leverage ratios, high *MTB* ratios and a high valuation of equity compared to a matched control group. Beneish (1999) also compares AAER-firms to a control sample and finds that AAERs report significantly lower profit margins, less return-on-assets (*ROA*), larger (total and discretionary) accruals and a higher growth of sales. The characteristics of firms that have been subject to adverse rulings by UK's FRRP are investigated by Peasnell et al. (2001). The FRRP-sample reports lower scaled earnings, more negative earnings and a higher *Leverage* compared to matched control firms.

Financial data of AAER-firms are compared to the entire population of COMPUSTAT in Jones et al. (2008) and Dechow et al. (2011); the studies document significant differences in total assets, *ROA*, valuation (*MTB*, *P/E* ratio) and leverage; AAERs report larger (income-increasing - total and discretionary) accruals. Ettredge et al. (2010) compare fraud firms (AAERs included) to the total COMPUSTAT population and find the fraud firms to be higher levered and more profitable as well as higher valuated (*MTB, P/E* ratio).

Based on the findings of prior research on SEC- and FRRP-enforced firms, I expect to find similar distinctions for German firms and institutional settings by comparing firms with publicly announced error findings by the FREP/BaFin (below: enforcement release (ER)- firms) to a peer group of control firms. I expect to reveal that ER-firms are less successful in generating operating cash flow; misstating financial statements could be due to a declining performance in the underlying business.

H3.1a: ER-firms generate less cash flow from operations than control firms in the year an erroneous financial statement is reported.

Further, I assume to gather evidence that ER-firms are also less profitable than control firms due to the weak performance in generating cash flows that cannot be fully compensated by income-increasing accounting choices.

H3.1b: ER-firms are less profitable than control firms in the year an erroneous financial statement is reported.

I expect that ER-firms are higher levered than the control sample. The impact of tightened rating requirements (Basel Accords) or seeking low cost external financing when raising or replacing bank debt could cause misstatements (Schindele (2013)). The erroneous disclosure could also be connected to the avoidance of breaking debt covenant restrictions.

H3.1c: ER-firms are higher levered than control firms in the year an erroneous financial statement is reported.

Maintaining high stock prices, a high market valuation as well as positive expectations of the future performance could be another driver of misstatements. I expect the ER-firms to show relative high *P/E* and *MTB ratios*. (The findings of Chapter 2 (p. 52) also indicate that the market might not fully account for the development within ER-firms.)

H3.1d: ER-firms show a relatively higher market valuation than control firms in the year an erroneous financial statement is reported.

Feroz et al. (1991) explore the motivation for enforcement actions, the consequences of investigations and market reactions; they detect underperformance of AAER-firms on capital markets in the years *prior* to enforcement releases. Ettredge et al. (2010) investigate the development of earnings management *prior* to restatements of financial reports and AAERs. They document a 'balance sheet bloat' phenomenon by providing evidence that managers tend to systematically accumulate large non-cash working capital, income-increasing accounting choices prior to the restatement/enforcement release period. Management uses their discretion to manipulate earnings e.g. for reasons of avoiding debt covenant violations, seeking low-cost external financing, enhancing stock-based compensation or meeting analyst earnings expectations. If firm performance does not improve, the balance sheet gets bloated more and more. Hence, Ettredge et al. (2010) see the enforcement releases caused by crossing into erroneous/fraudulent accounting after the managers maxed out the boundaries of GAAP-conform accounting. The level

of balance sheet bloat is correlated to many of the firm characteristics analyzed in this study.

On the other hand, Leng et al. (2011) document the long-term performance of AAER-firms *subsequent* to an enforcement release. They report significant negative operating performance (profitability, liquidity and leverage) of the AAERs as well as an underperformance in market based measures and stock performance in the post three years to the enforcement release. Further, they find significant evidence indicating a greater corporate failure risk of AAER-firms and detect the financial ratios to be correlated with the risk of bankruptcy and debt default.

Additionally a time perspective is added to the accounting process by the 'numbers game', most prominently described by Arthur Levitt, the SEC's former chairman. He stresses the high importance for firms to 'meet or beat' analysts' estimates and earnings projections in order to avoid sanctions by the capital markets (Levitt (1998b)).

Based on the findings of Ettredge et al. (2010) and Leng et al. (2011) I formulate the following hypotheses which state that *H3.1a to H3.1d permanently* hold over a certain period of time before and after the announcement of errors, i.e. an FREP enforcement release.

H3.2a: ER-firms permanently generate less cash flow from operations than control firms in a period of time around the year an erroneous financial statement is reported.

H3.2b: ER-firms are permanently less profitable than control firms in a period of time around the year an erroneous financial statement is reported.

H3.2c: ER-firms are permanently higher levered than control firms in a period of time around the year an erroneous financial statement is reported.

H3.2d: ER-firms show a permanent higher market valuation than control firms in a period of time around the year an erroneous financial statement is reported.

3.3.2 Association between Firm Characteristics and Earnings Quality

The comprehensive review of earnings quality literature by Dechow et al. (2010) highlights the importance of firm characteristics as one main determinant of earnings quality.

Properties of earnings such as persistence and volatility (Lev (1983)), smoothness (Leuz et al. (2003)) and magnitude of accruals (Dechow (1994)) capture if accruals contribute in an effective allocation of cash flows to reporting periods (Francis et al. (2004)). These measures are driven by operating characteristics and key financial ratios. Petroni (1992) and Doyle et al. (2007) show that firm performance influences the quality of earnings. Poor operating performance increases the likelihood of improving accounting numbers by overly aggressive accounting tactics. If firms are less successful in generating operating cash flow and suffer from a declining performance of its underlying business, the management might consider masking this deterioration by the use of income increasing accruals.

Leverage is a determinant of earnings quality as debt covenant restrictions lead managers to manipulate financial statements (Watts and Zimmerman (1986)). Dechow et al. (1996) show the connection between earnings management and the pressure to constantly raise new external financing at low cost caused by a large amount of debt financing, hence a high leverage ratio. Research also found leverage linked to earnings quality proxies as 'magnitude of accruals' (DeFond and Jiambalvo (1994)), target beating (Dichev and Skinner (2002)) and aggressive accounting choices (Sweeney (1994)).

Key financial ratios of market valuation are also connected to earnings quality. Achieving or maintaining a high market valuation and strengthening the financial performance of the firm could motivate managers to manage earnings: Enduring high stock prices facilitate the financing of a firm through low costs of capital and low pressure of debt covenants. Management compensation is regularly based on the valuation of the firm and thereby generates incentives to manage earnings.

Concluding, prior research finds evidence on the firm characteristics being linked to various earnings quality proxies. However, there is a kind of circularity between the financial ratios and earnings quality. On the one hand financial statement ratios are shown to be one major determinant of earnings quality. Firm characteristics are reflected in the abstract construct of earnings quality and commonly used earnings quality metrics are highly correlated to key financial ratios. On the other hand, academic research finds evidence that firms subject to

SEC/FRRP-enforcement releases can be distinguished by the use of key financial ratios from non-misstating firms.

For that reason I investigate the interconnection of FREP enforcement and firm characteristics as well as of firm characteristics and earnings quality. I expect to find evidence that weak firm performance (*H3.1a*), low profitability (*H3.1b*), high leverage ratios (*H3.1c*) and high market valuation (*H3.1d*) of ER-firms are connected to their earnings quality.

H3.3: Earnings quality of disclosed financial statements containing errors is inferior to the earnings quality of comparable control firms not being subject to FREP enforcement releases.

Further, I do not regard the violations as one-time occurrences, but rather a reflection of structural weaknesses in the firm's accounting and corporate governance settings. Internal control systems and corporate governance structure are related to both, earnings quality and the likelihood of an enforcement release (Dechow et al. (2010)). The fact that on average one enforcement announcement consists of 4.2 single errors and that 14 percent of firms suffer from more than one FREP enforcement release highlights my view of structural problems within the ER-firms. Another piece of evidence for long lasting inferior earnings quality of denounced firms are the studies by Ettredge et al. (2010) and Leng et al. (2011) that show the enduring underperformance of firms prior and after an AAER.

I expect this underperformance to be detected by the earnings quality measures applied to the sample of FREP-enforced firms. I assume the outcomes of the accounting process of ER-firms to be of worse quality than the information provided by comparable control firms over a period of time around the erroneous disclosure.

H3.4: Earnings quality of firms that have been subject to FREP enforcement releases is permanently inferior to the earnings quality of comparable control firms that never have been subject to FREP enforcement releases.

I want to remark that I formulate all hypotheses in a general way. The precise specifications of open constructs like e.g. the term earnings quality (H3.3 and 3.4) or the exact period of time for testing the hypotheses H3.2a - H3.2d and H3.4 are described and defined in the subsequent sections.

3.4 Empirical Design

3.4.1 Sample Selection

To access prior error findings I follow the procedure suggested by the FREP: I use the website of the 'Electronic Federal Gazette of Germany' and search the page for '*Fehlerbekanntmachungen'* (error announcements). This procedure returns a list of 151 separate announcements (from 07/01/2005 to 05/31/2011). I exclude 7 observations of firms with head offices out of Germany, 26 observations related to banks, insurance companies and similar financial-services firms are eliminated, and 33 findings are removed due to missing data in the Worldscope database. Thus, the final sample of firms that have been subject to accounting enforcement actions by the FREP (ER-firms) consists of 85 observations in the misstatement/error year (cf. Table 3.1).

For each of the 85 ER-firms a control firm is identified (below: non enforcement release- (NER-) firm). The potential control firms have to be listed in the regulated market-segment of the Frankfurt Stock Exchange, must not be a provider of financial services and must not be subject to FREP enforcement releases in any year regarded in this study (615 distinct firms meet these requirements). The control firms are matched to the ER-firms by minimizing the absolute difference in total assests *(TA)* between the firms (in the year the ER-firm discloses an erroneous statement (error/misstatement year)) and controlling for the same two-digit SIC-code and the same accounting standards system applied. This selection process results in a peer-group of 77 control firms in the error year. In 8 cases no control firm could be identified due to either the lack of firms with the same industry membership and/or the same accounting standards followed. However, the results stay qualitatively unchanged and conclusions are the same if the 8 firms without a matched control firm are deleted.

I also examine these two subsamples of ER- and NER-firms in the ten-year window from 2000 to 2009 ('all year' considerations). All available firm-years in the Worldscope database in this period equal 707 observations for the ER-group and 639 observations for the NER-group (cf. Table 3.1).

Table 3.1. Sample Selection, Industry and Yearly Distribution of ER-firms

Panel A: Sample selection

Number of error announcements (as of 05/31/2011)	151
Less: number of firms with head office out of Germany	(7)
Less: number of financial service providers	(26)
Less: observations eliminated due to data availability	(33)
Numbers of observations finally selected to the study	85

Panel B: Industry distribution of ER-firms

Division (Obs.) [%]	SIC-code	Industry	Obs.
Construction (2) [2.4]	15	Building Construction	1
	16	Heavy Construction Except Building	1
Manufacturing (36) [42.4]	20	Food And Kindred Products	2
	23	Apparel & Other Finished Products Mfrs	1
	27	Printing Publishing & Allied Industries	1
	28	Chemicals & Allied Products Mfrs	7
	30	Rubber & Miscellaneous Plastics Mfrs	3
	33	Primary Metal Industries Mfrs	1
	35	Industrial & Commercial Machinery Mfrs	7
	36	Electronic & Other Electrical Equip Mfrs	7
	37	Transportation Equipment Mfrs	5
	38	Measuring & Analyzing Instruments Mfrs	2
Transportation and Communications (8) [9.4]	42	Motor Freight Transportation/Warehouse	1
	47	Transportation Services	1
	48	Communications	5
	49	Electric, Gas, And Sanitary Services	1
Wholesale Trade (7) [8.2]	50	Wholesale Trade-Durable Goods	5
	51	Wholesale Trade-Nondurable Goods	2
Retail Trade (2) [2.4]	52	Building Materials & Hardware	1
	59	Miscellaneous Retail	1
Services (28) [32.9]	73	Business Services	18
	79	Amusement & Recreation Services	2
	80	Health Services	1
	83	Social Services	3
	87	Engineering & Accounting & Mgmt Svcs	2
	89	Miscellaneous Service Not Elsewhere Classifie	2
other (2) [2.4]	96	Administration of Economic Programs	1
	99	Nonclassified Establishments	1

(Continued)

Table 3.1. (Continued)

PANEL C: Yearly distribution of (sub-)Samples

Year	ER-firms (err. year)	Control-firms (matched years)	(SUM)	ER-firms (all years)	Control-firms (all years)	(SUM)	Total Sample
2000	---	---	---	64	59	(123)	527
2001	---	---	---	66	60	(126)	529
2002	---	---	---	65	61	(126)	506
2003	---	---	---	67	61	(128)	481
2004	6	5	(11)	67	64	(131)	470
2005	22	20	(42)	73	66	(139)	456
2006	14	11	(25)	76	70	(146)	454
2007	16	16	(32)	77	70	(147)	450
2008	15	14	(29)	77	65	(142)	439
2009	12	11	(23)	75	63	(138)	418
SUM	85	77	(162)	707	639	(1346)	4730

Notes: Observations in Panel C:
ER-firms (err. year): Disclosed fin. stmt. announced as erroneous by FREP; misstatement year.
Control firms (matched year): Year-, industry- and size-matched control firm observations; corresponding to the ER-firm's error year.
ER-firms (all years): All available firm-year obs. of firms subject to FREP-error announcements.
Control firms (all years): All firm years of above specified control firms.
Total Sample: All General- and Prime standard- listed firms.

3.4.2 Earnings Quality Metrics

This study utilizes several metrics of earnings quality. Persistence of earnings is closely connected to firm valuation. More persistent earnings are more useful as summary measure for future performance of a firm and thereby annuitize the firm value more precisely. Earnings persistence can be detected by the slope coefficient ß in a regression of current earnings on future earnings (Model (3.1a); Lev (1983), Kormendi and Lipe (1987), Easton and Zmijewski (1989)):

$$Earn_{t+1} = \alpha_1 + \alpha_2 ER_t + \beta_1 Earn_t + \beta_2 ER_t \times Earn_t + \varepsilon_t \quad (3.1a)$$

All variables are scaled by lagged total assets and defined in Table 3.2. All regression models in this study are estimated as fully interacted models. The interaction term's coefficient $ß_2$ shows difference between the control group and treatment group (ER is a dummy variable that equals 1 for the ER-firms and 0 for all others). $ß_2$ is expected to be negative, indicating less persistent earnings of the ER-firms.

The second measure of persistence (Model (3.1b)) decomposes total earnings into the cash flow component and total accruals (Sloan (1996), Li et al. (2011)).

Prior research finds that the cash flow component of earnings is more persistent than the accrual component (i.e. ß$_2$ smaller as ß$_1$).

$$Earn_{t+1} = \alpha_1 + \alpha_2 ER_t + \beta_1 CFO_t + \beta_2 Acc_t + \beta_3 ER_t \times CFO_t + \beta_4 ER_t \times Acc_t + \varepsilon_t \quad (3.1b)$$

All variables are scaled by lagged total assets; interaction terms document the differences between ER- and NER-firms, negative signs are expected.

Models (3.1a) and (3.1b) can also serve as measures of predictability. Predictability of current earnings (Model (3.1a); Lipe (1990), Francis et al. (2004)), respectively of cash flow and accruals (Model (3.1b); Barth et al. (2001), Eng et al. (2005)) for future earnings relies on the explanatory power (adj. R^2) of these models.

Accruals equal the difference between cash flows and earnings. The information contained in accruals is not per se negative, but 'abnormal' large accruals are regarded as highly discretionary and thereby as influenced by (aggressive) accounting choices and earnings management. As accruals revert, those components of earnings are in general less persistent than cash flows. I do not attempt to model the accrual process to distinct 'normal' from 'abnormal' accruals, as various empirical studies do by applying the (modified) models of Jones (1991) or Dechow and Dichev (2002). Instead I follow Dechow et al. (2010, p.358) who state, that "[...] the measures of abnormal accruals obtained from the models tend to be positively correlated with the level of accruals. In other words, a firm with extreme accruals also has extreme abnormal accruals." Furthermore, Bayley and Taylor (2007) and Dechow et al. (2011) state that, due to low incremental information contained in various measures of discretionary accruals, research should abstain from those models and supplement total accruals with other financial statement ratios. Therefore, I measure the magnitude of accruals by regarding asset-scaled total accruals (3.2a) as well as the absolute value of total accruals (3.2b). I expect that the ER-firms report significantly higher levels of these metrics than the *size-matched* control group, indicating lower quality of earnings.

$$Acc\ I = Total\ Accruals\ /\ Total\ Assets \quad (3.2a)$$

$$Acc\ II = |Total\ Accruals| \quad (3.2b)$$

Table 3.2. Definition of Variables

*Financial statement data *, ***	
$Earn_t$	earnings (net income) in the year t.
CFO_t	cash flow from operations in the year t.
Acc_t	total accruals, diff. of earnings and cash flow; $Earn_t$ - CFO_t.
TA_t	total assets in the year t.
$TEqu_t$	total equity in the year t.
$TDebt_t$	total debt in the year t.
*Market-based data **	
MC_t **	year-end market capitalization in the year t.
Ret_t	market return from 9 months before fiscal year-end in t to three months after fiscal year-end in t.
Binary variables	
NEG_t	binary variable; =1 if Ret_t is negative, = 0 otherwise.
ER_t	binary variable; =1 for ER-firms, = 0 for all other firms.
ER-y	binary variable; =1 for ER-firms in the year of disclosing an erroneous financial statement, = 0 for all other observations.
ER-x	binary variable; =1 for ER-firms in all years, = 0 for all other observations.
Financial Statement Ratios	
Earn/TA	earnings scaled by total assets; $Earn_t$ / TA_t.
CFO/TA	cash flow from operations scaled by total assets; CFO_t / TA_t.
PER_t *	price-earnings ratio in the year t.
MTB_t *	market-to-book ratio in the year t.
ROA_t *	return-on-assets in the year t.
TDebt/TA *	debt-ratio; =$TDebt_t$ / TA_t.
TEqu/TA *	equity-ratio; =$TEqu_t$ / TA_t.
Other data	
ΔCFO **	change of CFO from year t-1 to year t.
ΔAcc **	change of Acc from year t-1 to year t.
ACC 1	total accruals scaled by total assets; =Acc_t / TA_t .
ACC 2 **	absolute value of total accruals.
SMOOTH 1	firm-level standard deviation of earnings divided by the standard deviation of cash flow from operations; =σ(Earn) / σ(CFO).
SMOOTH 2	firm-level correlation between change in total accruals and change in cash flow from operations; =corr(ΔAcc, ΔCFO).

* Source: Thomson Financial Worldscope database.
** In million Euros

Measuring earnings quality by the smoothness of the earnings stream is double-edged. On the one hand, an accrual-based accounting system uses accruals to smooth random fluctuations in the timing cash flows by matching the revenues and expenses to the period in which they are economically caused. Thereby, smoothing leads to persistent earnings and an enhanced decision usefulness of accounting numbers. On the other hand, smoothing-accruals can delay the timely recognition of changes in the fundamental performance of a firm and thereby hide a downturn in operating business. Finally, smoothing measures are positively correlated with measures of *low* earnings quality (Leuz et al. (2003), Chen et al. (2010)). I use two proxies of smoothness: Lower ratios for the standard deviation of earnings divided by the standard deviation of cash flows indicate more smoothing (3.3a). So does a more negative correlation coefficient between the change in accruals and the change in cash flows (3.3b). Both measures are calculated on the firm-level basis.

$$Smooth\ I = \sigma(Earn)/\sigma(CFO) \tag{3.3a}$$

$$Smooth\ II = Corr(\Delta Acc, \Delta CFO) \tag{3.3b}$$

According to the efficient market hypothesis (Fama (1970)) all public available information is reflected in prices. If accounting earnings reflect much of this information, they are value relevant. My value relevance metric is based on the goodness-of-fit measure adj. R^2 of a regression of stock market capitalization (*MC*) on book value of equity and net income (e.g. Ohlson (1995), Jermakowicz et al. (2007), Barth et al. (2008) and Devalle et al. (2010)). A high earnings response coefficient ß$_2$ depicts value relevant and thereby decision useful earnings; negative signs for the interaction terms are expected.

$$MC_t = \alpha_1 + \alpha_2 ER_t + \beta_1 TEqu_t + \beta_2 Earn_t + \beta_3 ER_t \times TEqu_t + \beta_4 ER_t \times Earn_t + \varepsilon_t \tag{3.4}$$

All variables are scaled by market capitalization of the year t (Easton and Summers (2003)). Barth and Clinch (2009) test different specifications of model (3.4) with respect to scaling and scale effects. They find that no specification dominates the others; I also run the unscaled model (general good performance according to Barth and Clinch (2009)) and obtain similar results.

Finally, I derive earnings quality by the measure of timely loss recognition (conditional conservatism). Timeliness enhances decision usefulness of accounting numbers by providing more up to date numbers of influencing (negative) events (Ball and Shivakumar (2005)). If economic losses, reflected by market prices, come down to the books closer in time, the coefficient ß$_2$ of the reverse earnings-return regression (3.5) (Basu (1997)) should be positive (the interaction term's coefficient ß$_4$ negative, indicating inferior earnings quality of ER-firms).

$$\frac{Earn_t}{MC_t} = \alpha_1 + \alpha_2 ER_t + \alpha_3 NEG_t + \beta_1 Ret_t + \beta_2 NEG_t \times Ret_t + \beta_3 ER_t \times Ret_t + \beta_4 ER_t \times NEG_t \times Ret_t + \varepsilon_t \quad (3.5)$$

3.5 Empirical Analysis

3.5.1 Sample and Descriptive Data

Table 3.1, Panel B contains information on the industry distribution of the ER-firms. The largest number of disclosed error findings is related to the different industries of the manufacturing sector (36 errors/42%), followed by several services-industries (28/33%) and transportation and communication (8/9%). Table 3.1, Panel C gives the yearly distribution of the different (sub-) samples identified by the selection process. The number of firms with error findings is relative stable with around 16 per year.

Table 3.3 gives descriptive data and statistics for the ER-firms and the matched control group. In all considerations I use the financial statement data as originally reported prior to restatements. Thereby, I focus on the information the management communicates to the addressees of the financial statements. I investigate whether or not the applied key financial ratios and earnings quality metrics are effective in indicating this information as of bad quality. The ER-firms report negative earnings in the year the erroneous financial statement is disclosed (mean -38.85 million), whereas the control firms on average disclose positive earnings in the year of matching (mean 42.02 million). 36 out of 85 ER-firms report negative earnings this equals 43%. Control firms: 22%. The average amount of accruals (mean) is higher for the ER-firms than for the NER-firms (-139.51 million vs. -7.16 million).

Table 3.3. Descriptive Statistics

	ER-firms (error year)						Control-firms (matched year)					
Panel A: Basic data												
	n	Mean	Median	s.d.	Min.	Max.	n	Mean	Median	s.d.	Min.	Max.
Earn	84	-38.85	0.68	479.75	-3122.00	2235.00	77	42.02	1.88	204.35	-88.68	1347.00
CFO	83	100.20	2.44	453.01	-212.36	3415.00	77	49.18	6.80	146.89	-65.13	1024.00
Acc	83	-139.51	-2.34	537.54	-3008.30	259.85	77	-7.16	-2.50	93.37	-307.00	573.00
TA	85	3170.46	133.35	18776.94	1.05	170000.00	77	626.86	130.09	2063.17	2.06	15769.00
MC	83	1010.59	64.28	3214.92	0.95	24472.84	77	657.58	75.37	2503.70	1.35	19901.36
Panel B: Key financials / Firm characteristics												
	n	Mean	Median	s.d.	Min.	Max.	n	Mean	Median	s.d.	Min.	Max.
Earn/TA	83	-0.05	0.01	0.26	-1.75	0.29	77	0.04	0.04	0.10	-0.28	0.40
CFO/TA	82	-0.03	0.04	0.24	-1.43	0.29	77	0.09	0.08	0.14	-0.26	0.65
PER	83	-2.47	8.88	84.07	-576.00	238.96	77	24.79	13.86	90.03	-192.43	583.20
MTB	83	1.89	1.65	6.42	-44.31	26.23	77	1.50	1.57	7.40	-59.97	15.23
ROA	82	-3.47	2.86	22.81	-156.82	19.23	77	4.40	5.16	9.14	-33.54	38.14
TDebt/TA	82	0.26	0.24	0.21	0.00	0.71	77	0.15	0.12	0.17	0.00	0.88
TEqu/TA	82	0.33	0.36	0.70	-5.47	1.29	77	0.52	0.50	0.22	-0.25	0.94
Panel C: Earnings attributes												
	n	Mean	Median	s.d.	Min.	Max.	n	Mean	Median	s.d.	Min.	Max.
ACC 1	82	-0.02	-0.04	0.21	-1.19	0.68	77	-0.05	-0.05	0.12	-0.63	0.32
ACC 2	83	159.98	5.84	531.74	0.21	3008.30	77	34.68	4.02	86.90	0.08	573.00
SMOOTH 1	84	1.51	1.08	1.47	0.07	7.97	77	1.23	0.89	1.08	0.18	6.16
SMOOTH 2	82	-0.52	-0.75	0.49	-1.00	0.69	77	-0.67	-0.81	0.39	-1.00	0.83

(Continued)

Table 3.3. Continued

Panel D: Correlations

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Earn	(1)		**0.39**	**0.61**	**0.44**	**0.49**	**0.21**	0.05	0.03	0.02	**0.24**	-0.06	0.03
CFO	(2)	**0.52**		**-0.49**	**0.88**	**0.82**	0.06	0.09	-0.01	0.01	0.07	0.06	-0.05
Acc	(3)	0.07	**-0.57**		**-0.34**	**-0.24**	0.14	-0.03	0.04	0.02	**0.16**	-0.12	0.07
TA	(4)	**0.38**	**0.58**	**-0.49**		**0.75**	0.01	0.01	0.00	0.01	0.01	0.07	-0.06
MC	(5)	**0.43**	**0.56**	**-0.40**	**0.9**		0.08	0.05	0.00	0.04	0.08	0.00	-0.01
Earn/TA	(6)	**0.81**	**0.37**	**0.20**	**0.17**	**0.28**		**0.64**	0.08	0.01	**0.98**	-0.08	**0.67**
CFO/TA	(7)	**0.42**	**0.73**	**-0.48**	**0.23**	**0.27**	**0.53**		**0.16**	-0.06	**0.58**	-0.08	**0.26**
PER	(8)	**0.55**	**0.17**	0.07	0.06	0.12	**0.52**	**0.29**		0.00	0.08	0.00	0.00
MTB	(9)	**0.25**	0.16	0.01	0.12	**0.43**	**0.28**	0.15	**0.16**		-0.01	**-0.29**	0.10
ROA	(10)	**0.78**	**0.39**	**0.19**	**0.19**	**0.27**	**0.97**	**0.51**	**0.45**	**0.25**		-0.03	**0.67**
TDebt/TA	(11)	-0.10	0.11	**-0.24**	**0.38**	**0.17**	**-0.26**	-0.15	-0.06	-0.07	**-0.16**		**-0.28**
TEqu/TA	(12)	0.08	-0.09	**0.24**	**-0.30**	-0.14	**0.25**	**0.17**	0.09	-0.10	**0.17**	**-0.68**	

Notes: The variables are defined in Table 3.2.
Spearman (below) and Pearson (above) correlation coefficients. Bold numbers indicate two-tailed significance at the 0.05 level.
Observations: Disclosed fin. statements announced as erroneous by FREP (err. years) and year-, industry- and size-matched control firm observations.

Table 3.3 also contains a table of correlation coefficients. Several correlations are high, especially concerning the variables $Earn_t$ and CFO_t ($Earn_t$ // ROA_t or CFO_t // TA_t). This is not surprising as many financial statement ratios are derived from these numbers. Other high correlations are alike reasonable (TA_t // MC_t or *TDebt/TA* // *TEqu/TA*).

Table 3.4 contains the differences of the variables between the sub-samples observed. Due to the selection procedure the ER-firms and the control firms cannot be distinguished in size in the matching years. The differences in *TA* and *MC* (mean and median) are not significant (cf. Column (1)). This indicates the success of my matching procedure.

3.5.2 Univariate Results - Firm Characteristics

According to the hypotheses formulated above, I evaluate the financial ratios in two dimensions of time: I compare the observations of ER-firms in the year of disclosing an erroneous financial statement to the observations of the matched control firms in this year (comparison of 85 misstated financial statements to 77 control firms). Secondly, all available firm-year observations of the ten-year period from 2000 to 2009 of the ER-group (707 obs.) are examined in contrast to those of the NER-group (639 obs.). Table 3.4 contains the results of tests on differences between the sub-samples.

Regarding the results, one can observe that the ER-firms are less successful in generating cash flow from operations. This finding holds for the year of disclosure of a misstated financial statement (Column (1)) as well as for the larger time frame around the error occurrence (Column (2)). The ER-firms are less profitable than the controls in both time-relations, as the *ROA* affirms (diff. in means -7.87% (error years)). The debt-to-assets and the equity-to-assets ratios show the differences in leverage (*LEV*) on high significance levels in the error-year as well as in all years. ER-firms have more debt (diff. in means +10.5% (error years)) and are less equity-financed (diff. in means -19.2% (error years)). With regard to the ratios of market valuation the findings are ambiguous: the signs of the differences in *MTB* ratios change, but none of the differences (mean/median, error years/all years) is significant. Differences in *P/E* ratios unexpectedly show a lower valuation of accounting earnings of the ER-firms in the error years. This finding could be interpreted as indication for the market realizing the weak performance of the ER-firms and the investors expecting the ER-firms to have lower growth opportunities

than the control firms. This outcome is contradicting the findings in Chapter 2 (p. 52) where is seems like the market would not 'see through' the ER-firms' numbers. However, in both studies the evidence for market valuation is ambiguous and signs as well as significance of the metrics are unstable.

Table 3.4. Differences in Data and Firm Characteristics

			(1) Control vs. ER-firms (err. year)		(2) Control vs. ER-firms (all years)	
		Exp. Sign	Diff.	p-value	Diff.	p-value
Panel A: Basic data						
Earn	Mean		-80.87	0.168	-3.24	0.814
	Med.		*-1.20*	*0.041*	*-1.25*	*0.019*
CFO	Mean		51.02	0.324	70.39	0.000
	Med.		*-4.36*	*0.123*	*-2.31*	*0.154*
Acc	Mean		-132.35	0.030	-73.63	0.000
	Med.		*0.16*	*0.944*	*-0.44*	*0.380*
TA	Mean	=	2543.60	0.225	3065.09	0.000
	Med.		*3.26*	*0.347*	*10.51*	*0.118*
MC	Mean	=	353.01	0.428	537.78	0.001
	Med.		*-11.09*	*0.916*	*-14.23*	*0.656*
Panel B: Key financials / Firm characteristics						
Earn/TA	Mean	-	-0.09	0.003	-0.04	0.019
	Med.		*-0.03*	*0.002*	*-0.02*	*0.000*
CFO/TA	Mean	-	-0.12	0.000	-0.03	0.100
	Med.		*-0.04*	*0.002*	*-0.03*	*0.000*
PER	Mean	+	-27.26	0.057	11.53	0.657
	Med.		*-4.98*	*0.064*	*-2.29*	*0.023*
MTB	Mean	+	0.39	0.769	-0.37	0.427
	Med.		*0.08*	*0.978*	*0.13*	*0.541*
ROA	Mean	-	-7.87	0.006	-3.99	0.002
	Med.		*-2.30*	*0.007*	*-1.21*	*0.000*
TDebt/TA	Mean	+	10.55	0.001	7.83	0.000
	Med.		*11.97*	*0.000*	*6.58*	*0.000*
TEqu/TA	Mean	-	-19.22	0.022	-13.47	0.000
	Med.		*-14.15*	*0.001*	*-11.17*	*0.000*

Notes: The variables are defined in Table 3.2.
Sign shows the expected direction of the differences.
Diff. equals the difference between the ER-firms and the control group.
t-tests are used for tests of differences in means and Wilcoxon tests for tests of median differences. (Two-tailed) p-values are reported.
Observations:
Column (1): Disclosed fin. statements announced as erroneous by FREP (err. years) vs. year-, industry- and size-matched control firms.
Column (2): All firm-year obs. of firms subject to FREP-error announcements vs. all firm years of above specified control firms; observed periods: 2000 - 2009.

Taking all financial ratios and firm characteristics into account, the findings show that almost all analyzed differences have the expected sign and the conducted t- respectively Wilcoxon-tests document statistical significance. I find no evidence inconsistent with the hypotheses and thereby state that ER-firms have worse performance (*H3.1a*), are less profitable (*H3.1b*) and are higher levered (*H3.1c*) in the year of accounting error occurrence than the comparable NER-firms. The findings on market valuation (*H3.1d*) are inconclusive. Therefore, I find that the ER-firms underperform relative to the NER-firms in multiple dimensions of financial ratios and firm characteristics in the year the FREP later documented the faultiness of disclosed financial statements by an enforcement release. With regard to all firm-years available for the comparison the same is true; the majority of the hypotheses set up are supported in the period from 2000 to 2009. The control firms show better key financial ratios in the long term regarding firm performance (*H3.2a*), are continuously less profitable (*H3.2b*) and higher levered (*H3.2c*). Again, only the findings on market valuation (*H3.2d*) are inconclusive.

I want to remark that the hypotheses H3.1a - H3.2d are tested on a univariate basis in this paper, respectively in Chapter 3. However, Chapter 4 contains multivariate logistic regressions that also outline the influence of variables discussed so far on the probability of disclosing an erroneous financial statement and thus confirm this Chapter's findings and argumentation (cf. pp. 106 and 120).

3.5.3 Multivariate Results - Earnings Quality Metrics

The earnings quality models are estimated by pooled OLS-regressions; taking heteroscedasticity into account, I derive robust (White) standard errors. The differences between the sub-samples are addressed by introducing interaction terms that are tested on jointly being zero by Wald tests. To mitigate the influence of outliers, I winsorize the continuous variables at the top and bottom one percent. The calculation of the earnings quality metrics include all data sets for which the necessary data is available, leading to differences in the number of observations for the different metrics and years (unbalanced panel). I also run the models with the original (not winsorized) data and in general find the same results, the conclusions remain stable. Working with a balanced panel would have reduced the total sample size (total firm year observations in unbalanced panel: 5437, balanced panel: 3890). The results are presented in Tables 3.5 to 3.9. Columns (1) compare the findings of the years of the ER-firms' error occurrence to the control group (misstatement period), whereas Columns (2) are designated for the larger time frame.

Table 3.5 presents the estimation results of Model (3.1a). The persistence of earnings is higher for the control group than for the ER-firms in the error-year (Column (1): ß$_1$: 0.794 vs. ß$_1$+ß$_2$ 0.436). The interaction term shows the predicted sign and is significant. The same holds for the multi-year considerations (Column (2)): The regression coefficient related to earnings of 0.504 for the NER-firms is high, compared to the ER-firms' of 0.374. Again, the interaction term is significant and negative.

The findings on the persistence of current operating cash flow and current accruals for next period's earnings (Model (3.1b)) are similar (Table 3.6). The prediction of a higher persistence of cash flows towards the accruals is affirmed. The difference is more pronounced within the ER-firms. The significant negative interaction terms concerning the accruals of the ER-firms in both time relation document the transitory nature of the ER-firms' numbers (Columns (1) and (2)). With the lowest of all coefficients (0.137/0.194), the ER-firms' accruals especially show low persistence (control group: 0.611/0.369).

Please note that the measures of persistence do not only differ statistically, but are also economically highly relevant. E.g. the ER-firms' earnings are only nearly half as persistent as the control firms' (Table 3.5, Column (1)) and, as mentioned above, accruals are particularly nonpersistent (Table 3.6, Columns (1) and (2)).

I find evidence for a higher predictability of accounting numbers for the control group than for the ER-firms. To assess predictability of earnings respectively cash flows and accruals for future earnings, I drop the interaction terms in the Models (3.1a) and (3.1b) and estimate separate regressions for the sub-samples of interest (results not tabulated). Predictability is measured by the explanatory power (adj. R^2) of those regressions or by differences in standard error of regression (robustness check due to issues raised about the across-sample incomparability of R^2s by Gu (2007); however conclusions are the same). Regarding the comparison of the ER-firms' error years to the matched years of the control firms, predictability of future earnings is higher for the control firms in both models (diff. in adj. R^2 -0.1683 (3.1a), -0.0314 (3.1b) (not tabulated)). The results of comparing all available firm-year observations of these groups support these findings: the differences in adj. R^2 are even more pronounced.

The findings on the two measures of accruals are inconclusive (Table 3.7). No significant difference in accruals scaled by total assets (*ACC I*) could be found. The absolute value of total accruals (*ACC II*) is significant larger for the ER-firms (Column (1)). These firms recognize larger amounts of accruals in the years of the error findings (mean +125.29 million) than the size-matched control group;

however, the relation does not persist regarding all available firm years (Column (2): no significance). This is an indicator for excessive use of accrual accounting in the erroneous/misstatement year. Large amounts of these accruals could be discretionary and lead to the enforcement release later on.

Table 3.5. Persistence of Earnings

	Exp. Sign	(1) Control vs. ER (err. year)	(2) Control vs. ER (all years)	(3) Sample vs. ER(err. year)	(4) Sample vs. ER (all years)
Earn	+	0.794 ***	0.504 ***	0.477 ***	0.477 ***
		(0.00)	*(0.00)*	*(0.00)*	*(0.00)*
ER-y		-0.047		-0.051 **	
		(0.11)		*(0.03)*	
ER-y × Earn	-	-0.358 *		-0.042	
		(0.06)		*(0.67)*	
ER-x			-0.030 ***		-0.018 **
			0.00		*(0.01)*
ER-x × Earn	-		-0.130 *		-0.103 *
			(0.10)		*(0.10)*
Const.		-0.009	0.007	-0.005 **	-0.005 **
		(0.61)	*(0.14)*	*(0.03)*	*(0.03)*
Observations		133	1137	3493	4005
Adj. R-squared		0.270	0.252	0.308	0.288
F-Stat		24.03	56.00	159.90	168.20
F-Stat p-value		0.000	0.000	0.000	0.000
SE Regr		0.154	0.145	0.133	0.138
Wald-Stat		4.372	9.100	2.520	4.799
Wald-Stat p-value		0.015	0.000	0.081	0.008

Notes: The variables are defined in Table 3.2.
Sign shows the expected direction of the coefficients.
(Two-tailed) p-values of the coefficients in parentheses; *, **, and *** indicate (two-tailed) significance at least at the 0.1, 0.05, and 0.01 level.
Wald-statistics refer to tests on the interaction terms' coefficients jointly being zero.
The models are estimated as pooled OLS-regression with robust standard errors.
Estimated Model (3.1a):

$$Earn_{t+1} = \alpha_1 + \alpha_2 ER_t + \beta_1 Earn_t + \beta_2 ER_t \times Earn_t + \varepsilon_t$$

All variables are scaled by Total Assets of the year t-1 and winsorized at the top and bottom 1 percent.
Observations:
Column (1): Disclosed fin. statements announced as erroneous by FREP (err. years) vs. year-, industry- and size-matched control firms.
Column (2): All firm-year obs. of firms subject to FREP-error announcements vs. all firm years of above specified control firms; observed periods: 2000 - 2009.
Column (3): Disclosed fin. statements announced as erroneous by FREP (err. years) vs. General- and Prime standard- listed firms; observed periods: 2000 - 2009.
Column (4): All firm-year obs. of firms subject to FREP-error announcements vs. General- and Prime standard- listed firms; observed periods: 2000 - 2009.

Table 3.6. Persistence of Cash Flows and Accruals

	Exp. Sign	(1) Control vs. ER (err. year)	(2) Control vs. ER (all years)	(3) Sample vs. ER(err. year)	(4) Sample vs. ER (all years)
CFO	+	0.863 ***	0.595 ***	0.564 ***	0.564 ***
		(0.00)	*(0.00)*	*(0.00)*	*(0.00)*
Acc	+	0.611 ***	0.369 ***	0.343 ***	0.343 ***
		(0.00)	*(0.00)*	*(0.00)*	*(0.00)*
ER-y		-0.035		-0.041 **	
		(0.25)		*(0.04)*	
ER-y × CFO	-	-0.248		0.052	
		(0.28)		*(0.68)*	
ER-y × Acc	-	-0.474 **		-0.205	
		(0.02)		*(0.19)*	
ER-x			-0.033 ***		-0.020 ***
			(0.00)		*(0.01)*
ER-x × CFO	-		-0.074		-0.042
			(0.40)		*(0.51)*
ER-x × Acc	-		-0.175 *		-0.148 **
			(0.07)		*(0.05)*
Const.		-0.020	-0.001	-0.014 ***	-0.014 ***
		(0.37)	*(0.83)*	*(0.00)*	*(0.00)*
Observations		132	1124	3423	3928
Adj. R-squared		0.380	0.306	0.362	0.340
F-Stat		13.07	38.57	108.70	119.80
F-Stat p-value		0.000	0.000	0.000	0.000
SE Regr		0.142	0.139	0.126	0.131
Wald-Stat		2.477	6.544	1.494	3.225
Wald-Stat p-value		0.064	0.000	0.214	0.022

Notes: The variables are defined in Table 3.2.
Sign shows the expected direction of the coefficients.
(Two-tailed) p-values of the coefficients in parentheses; *, **, and *** indicate (two-tailed) significance at least at the 0.1, 0.05, and 0.01 level.
Wald-statistics refer to tests on the interaction terms' coefficients jointly being zero.
The models are estimated as pooled OLS-regression with robust standard errors.
Estimated Model (3.1b):

$$Earn_{t+1} = \alpha_1 + \alpha_2 ER_t + \beta_1 CFO_t + \beta_2 Acc_t + \beta_3 ER_t \times CFO_t + \beta_4 ER_t \times Acc_t + \varepsilon_t$$

All variables are scaled by Total Assets of the year t-1 and winsorized at the top and bottom 1 percent.
Observations:
Column (1): Disclosed fin. statements announced as erroneous by FREP (err. Years) vs. year-, industry- and size-matched control firms.
Column (2): All firm-year obs. of firms subject to FREP-error announcements vs. all firm years of above specified control firms; observed periods: 2000 - 2009.
Column (3): Disclosed fin. statements announced as erroneous by FREP (err. years) vs. General- and Prime standard- listed firms; observed periods: 2000 - 2009.
Column (4): All firm-year obs. of firms subject to FREP-error announcements vs. General- and Prime standard- listed firms; observed periods: 2000 - 2009.

The two measures of smoothness are also reported in Table 3.7. All findings on smoothness Model (3.3a) in Column (2) are insignificant. Concerning the measurement of smoothness through the correlation coefficient between the change in accruals and the change in cash flows (Model (3.3b)) in Column (2), the analysis of differences indicate a smoother earnings stream for the NER-firms. The correlation is more negative, suggesting that these firms smooth out more cash flow variation by accrual accounting (mean correlation coefficients -0.52 vs. -0.67). This leads to more persistent and predictable numbers, but could also be interpreted as evidence for more earnings management in the control firms.

The results for the value relevance measure (Model (3.4)) are presented in Table 3.8. The negative interaction term for the ER-firms (error years; Column (1)) shows a significant smaller impact of accounting-income on the market (-0.757). The difference in the earnings response coefficient is large, economic significance is given and market participant should be aware of this distinction. In regard of all firm-years available for the compared groups this inequality cannot be supported. I dropped the interaction terms of Model (3.4) to estimate separate regressions for the sub-samples of interest. The comparison of the two groups shows small differences in value relevance (diff. in adj. R^2: -2.4% (error years) / -3.4% (all years) (results not tabulated)).

Finally, Table 3.9 presents the results for timely loss recognition (Model (3.5)). The evidence is weak, the measure of the differences in the recognition of positive vs. negative events, $ß_2$, is not significant in the year of matching. Although the Wald-tests indicate differences between ER- and NER-firms in both time relations, none of the interaction terms is significant. Column (3) contrasts the ER-group to the total sample of firms as analysis of sensitivity (cf. Section 3.5.4). In this case I can document a lower TLR (low conditional conservatism) for the ER-firms.

In regard of all empirical results gathered, I document differences in the earnings quality of firms subject to FREP enforcement releases vis-a-vis the control group of NER-firms. The control firms' earnings stream is more persistent and more predictable than the ER-firms'. Further, the ER-firms accumulate large accruals in their balance sheets. I interpret these findings as strong signals for earnings management. Additionally, I document less value relevant accounting numbers for the FREP-denounced firms; timely loss recognition also shows the distinction of the groups. Hence, I provide evidence that earnings quality of disclosed financial statements containing errors is inferior to the earnings quality of the reporting of

comparable firms not being subject to FREP enforcement releases; hypothesis *H3.3* holds.

With regard to all firm-years available since the year 2000, I come to the conclusion that the quality of earnings of FREP-denounced firms is permanently inferior to the earnings quality of the control group (as suggested by hypothesis *H3.4*). ER-firms provide less persistent earnings with low predictability for future accounting outcomes. The magnitude of accruals is high, suggesting much discretion in the numbers. Smoothing of earnings seems to be higher for the controls.

Table 3.7. Accruals and Smoothness

			(1) Control vs. ER (err. year)		(2) Control vs. ER (all years)		(3) Sample vs. ER(err. year)		(4) Sample vs. ER (all years)	
		Exp. Sign	Diff.	p-value	Diff.	p-value	Diff.	p-value	Diff.	p-value
ACC 1	Mean	+	0.030	0.38	-0.010	0.25	0.030	0.65	0.000	0.85
	Med.		*0.010*	*0.35*	*0.000*	*0.95*	*0.010*	*0.06*	*0.000*	*0.48*
ACC 2	Mean	+	125.290	0.04	75.000	0.71	37.740	0.00	89.140	0.04
	Med.		*1.820*	*0.11*	*1.560*	*0.31*	*3.310*	*0.02*	*0.870*	*0.09*
SMOOTH 1	Mean	-			0.280	0.21			-0.230	0.74
	Med.				*0.190*	*0.35*			*0.010*	*0.89*
SMOOTH 2	Mean	-			0.150	0.05			0.020	0.69
	Med.				*0.060*	*0.09*			*0.030*	*0.83*

Notes: The variables are defined in Table 3.2.
Sign shows the expected direction of the differences.
Diff. equals the difference between the ER-firms and the concerning control group.
t-tests are used for tests of differences in means and Wilcoxon tests for tests of median differences.
(Two-tailed) p-values are reported.
Observations:
Column (1): Disclosed fin. statements announced as erroneous by FREP (err. Years) vs. year-, industry- and size-matched control firms.
Column (2): All firm-year obs. of firms subject to FREP-error announcements vs. all firm years of above specified control firms; observed periods: 2000 - 2009.
Column (3): Disclosed fin. statements announced as erroneous by FREP (err. years) vs. General- and Prime standard- listed firms; observed periods: 2000 - 2009.
Column (4): All firm-year obs. of firms subject to FREP-error announcements vs. General- and Prime standard- listed firms; observed periods: 2000 - 2009.

Table 3.8. Value Relevance

	Exp. Sign	(1) Control vs. ER (err. year)	(2) Control vs. ER (all years)	(3) Sample vs. ER(err. year)	(4) Sample vs. ER (all years)
TEqu	+	0.663 ***	0.675 ***	0.627 ***	0.627 ***
		(0.00)	*(0.00)*	*(0.00)*	*(0.00)*
Earn	+	0.485	0.023	0.003	0.003
		(0.21)	*(0.81)*	*(0.91)*	*(0.91)*
ER-y		1.738		0.889	
		(0.17)		*(0.22)*	
ER-y × TEqu	-	-0.055		-0.019	
		(0.70)		*(0.86)*	
ER-y × Earn	-	-0.757 *		-0.275	
		(0.09)		*(0.19)*	
ER-x			2.272 ***		0.936 **
			(0.00)		*(0.02)*
ER-x × TEqu	-		-0.105 **		-0.057
			(0.04)		*(0.12)*
ER-x × Earn	-		-0.021		-0.002
			(0.84)		*(0.97)*
Const.		0.104	-0.383	0.953 ***	0.953 ***
		(0.92)	*(0.31)*	*(0.00)*	*(0.00)*
Observations		160	1297	4099	4682
Adj. R-squared		0.522	0.531	0.541	0.538
F-Stat		19.91	129.30	420.40	459.30
F-Stat p-value		0.000	0.000	0.000	0.000
SE Regr		0.691	0.685	0.678	0.680
Wald-Stat		2.231	6.576	2.569	3.103
Wald-Stat p-value		0.087	0.000	0.053	0.026

Notes: The variables are defined in Table 3.2.
Sign shows the expected direction of the coefficients.
(Two-tailed) p-values of the coefficients in parentheses; *, **, and *** indicate (two-tailed) significance at least at the 0.1, 0.05, and 0.01 level.
Wald-statistics refer to tests on the interaction terms' coefficients jointly being zero.
The models are estimated as pooled OLS-regression with robust standard errors.
Estimated Model (3.4):

$$MC_t = \alpha_1 + \alpha_2 ER_t + \beta_1 TEqu_t + \beta_2 Earn_t + \beta_3 ER_t \times TEqu_t + \beta_4 ER_t \times Earn_t + \varepsilon_t$$

All variables are scaled by Market Capitalization of the year t (Easton and Summers (2003)) and winsorized at the top and bottom 1 percent.
Observations:
Column (1): Disclosed fin. statements announced as erroneous by FREP (err. Years) vs. year-, industry- and size-matched control firms.
Column (2): All firm-year obs. of firms subject to FREP-error announcements vs. all firm years of above specified control firms; observed periods: 2000 - 2009.
Column (3): Disclosed fin. statements announced as erroneous by FREP (err. years) vs. General- and Prime standard- listed firms; observed periods: 2000 - 2009.
Column (4): All firm-year obs. of firms subject to FREP-error announcements vs. General- and Prime standard- listed firms; observed periods: 2000 - 2009.

Table 3.9. Timely Loss Recognition

	Exp. Sign	(1) Control vs. ER (err. year)	(2) Control vs. ER (all years)	(3) Sample vs. ER(err. year)	(4) Sample vs. ER (all years)
NEG		0.159 **	0.167 ***	0.186 ***	0.197 ***
		(0.03)	*(0.00)*	*(0.00)*	*(0.00)*
Ret		0.076 *	-0.057	-0.058 ***	-0.051 **
		(0.07)	*(0.42)*	*(0.00)*	*(0.01)*
NEG × Ret	+	0.248	1.069 ***	1.342 ***	1.334 ***
		(0.33)	*(0.00)*	*(0.00)*	*(0.00)*
ER-y		-0.001		-0.073	
		(0.99)		*(0.17)*	
ER-y × Ret		-0.035		0.048 *	
		(0.18)		*(0.10)*	
ER-y × NEG × Ret	-	0.470		-0.574 ***	
		(0.13)		*(0.00)*	
ER-x			0.033		-0.016
			(0.66)		*(0.81)*
ER-x × Ret			0.045		0.026
			(0.47)		*(0.20)*
ER-x × NEG × Ret	-		0.371		0.119
			(0.20)		*(0.62)*
Const.		-0.034	-0.019	0.011	0.001
		(0.44)	*(0.46)*	*(0.32)*	*(0.96)*
Observations		153	1242	3605	4166
Adj. R-squared		0.164	0.161	0.172	0.172
F-Stat		4.39	15.03	48.24	52.41
F-Stat p-value		0.000	0.000	0.000	0.000
SE Regr		0.275	0.606	0.611	0.624
Wald-Stat		2.576	1.710	3.520	1.415
Wald-Stat p-value		0.056	0.163	0.014	0.236

Notes: The variables are defined in Table 3.2.
Sign shows the expected direction of the coefficients.
(Two-tailed) p-values of the coefficients in parentheses; *, **, and *** indicate (two-tailed) significance at least at the 0.1, 0.05, and 0.01 level.
Wald-statistics refer to tests on the interaction terms' coefficients jointly being zero.
The models are estimated as pooled OLS-regression with robust standard errors.
Estimated Model (3.5):

$$\frac{Earn_t}{MC_t} = \alpha_1 + \alpha_2 ER_t + \alpha_3 NEG_t + \beta_1 Ret_t + \beta_2 NEG_t \times Ret_t + \beta_3 ER_t \times Ret_t + \beta_4 ER_t \times NEG_t \times Ret_t + \varepsilon_t$$

All variables are winsorized at the top and bottom 1 percent.
Observations:
Column (1): Disclosed fin. statements announced as erroneous by FREP (err. Years) vs. year-, industry- and size-matched control firms.
Column (2): All firm-year obs. of firms subject to FREP-error announcements vs. all firm years of above specified control firms; observed periods: 2000 - 2009.
Column (3): Disclosed fin. statements announced as erroneous by FREP (err. years) vs. General- and Prime standard- listed firms; observed periods: 2000 - 2009.
Column (4): All firm-year obs. of firms subject to FREP-error announcements vs. General- and Prime standard- listed firms; observed periods: 2000 - 2009.

3.5.4 Sensitivity Analyses and Limitations

Several checks to assert the robustness of the main results are performed. The most appropriate way of matching a control group would be to select firms out of the pool that the FREP has investigated but found no error in their reporting. Unfortunately no such 'error-free' list is published by the FREP - neither proactively, nor upon personal request. Hence the control firms potentially cluster in three classes: (1) FREP-examined and error-free; (2) not examined and error-free and (3) not examined and erroneous. However, I altered the peer selection procedure: Instead of matching the firms by total assets in the year the erroneous financial statement was disclosed I changed the size-proxy to total asset in the year before the error occurrence and to market capitalization in these two years. All matching variants qualitatively lead to similar empirical results (alternative results not tabulated).

Furthermore, I attempt to mitigate this problem as well as general concerns on the selection of control groups by calculating all relevant metrics and related tests as a comparison between the whole sample of German publicly traded firms (615 distinct firms and 4730 firm-years from 2000 to 2009 (cf. Table 3.1, Panel C for yearly distribution of the this total sample)) and the ER-group. The results reported in Columns (3) of the Tables 3.5 to 3.9 contain the findings of comparing the erroneous financial statements (85 obs.) to the whole sample of the German market (4730 firm-year observations)). Columns (4) of the tables compare the results of all 707 firm-year observations of the ER-group to those of the total sample. In general, the findings on the earnings quality metrics allow similar conclusions, but the distinction between the whole sample and the ER-firms is less pronounced than compared to the matched control firms. In all but one cases the Wald-test shows inequality between ER-firms and the total sample. Accruals are higher for ER-firms than for the total sample, the persistence of earnings and accruals is lower and losses are recognized slower. The earnings response coefficient is significant in a one-sided test. The differences for the metrics of earnings smoothness are insignificant regarding the comparison of ER-firms and the total sample.

3.6 Conclusion

This contribution focuses on the implementation of a two-tier enforcement mechanism in Germany. In 2004 the 'Financial Reporting Enforcement Panel' has been established as a private body which acts on the first level of enforcement, responsible for examining financial statements and corresponding management reports of German listed firms. On a second level the German securities regulator 'BaFin' has the executive power to force cooperation of firms and to mandate the disclosure of errors. Until May 2011 the BaFin ordered the announcement of errors in 151 cases. The enforcement system is an essential improvement of the external supervision of compliance of financial information with the applicable reporting framework, in addition to the control mechanisms of corporate governance and the external statutory audit.

The study compares firm characteristics and earnings attributes of FREP denounced firms to a control group. My findings show that the denounced firms underperform in operating performance, are less profitable and more highly levered in different time frames; the results also indicate an inferior earnings quality vis-a-vis several control groups and the total sample of German publicly listed firms, in the misstatement year as well as a large time frame. Empirical evidence suggests that the ER-firms are less successful in generating operating cash flow and therefore use income increasing accruals to hide this fact. This finding is evidence on a weak accounting environment and poor corporate governance settings within the FREP-denounced firms. The enforcement panel might consider the further surveillance of misstating firms by mandatory follow-up examinations or higher selection probabilities of these firms in regular examinations. Auditors should consider error findings as increasing factors for audit risk.

Limitations of this paper's approach and methodology arise as the metrics used to capture earnings quality can be criticized. As the FREP error announcements can be viewed as an objective indication of poor financial statement quality, my calculations might serve as cross-check for the metrics. So, another insight of my findings is that the selected measures of earnings quality can ex-post distinguish the objective 'bad' sample from the control group and thereby are capable of reflecting earnings quality.

This study appends accounting and auditing related literature. I document the interrelation between FREP error announcements and firm characteristics on the one hand, and the connection of the financial statement ratios and earnings quality on the other hand. Thereby, I contribute to recent discussions by developing a comprehensive picture of earnings and accounting quality for the unique institutional settings of Germany. I show that a conjoint two-tier public and private

enforcement system is effective and might be an adequate model for other countries. However, the quality of financial reporting is not only dependent of the external enforcement system. Further research should focus in detail on corporate governance and auditing settings of the denounced firms.

Chapter 4

The Effects of Earnings Management on Enforcement Releases and their Recognition in Audit Fees

Abstract

In 2004 German legislation established the Financial Reporting Enforcement Panel. In 147 cases since then, the panel has ordered the announcement of errors in previously disclosed and audited financial statements of German firms. We use a adequately chosen subset of this unique dataset to evaluate the consequences of increasing earnings management over time on enforcement releases and their recognition in audit fees. Ettredge et al. (2010) provide evidence on a phenomenon called 'balance sheet bloat' that is due to income increasing earnings management and later influences the disclosure of misstated financial statements. Thus, the evidence of earnings management recognition in audit fees (Abbott et al. (2006)) and the hypothesis of future information content in fees by Stanley (2011) leads us to hypothesize that auditors recognize increasing audit risk in audit fees before the enforcement process starts. We extend related earnings management and audit fee literature by modeling the development of earnings management within the misstatement firms and systematically link it to auditor reactions. We find significant predictive power of different commonly used accrual measures for enforcement releases in the period prior and up to the misstatement period. In this period of time, we also observe an audit fee increase, e.g. the recognition of increased audit risk. We investigate an audit fee effect after the misstatement period but find no significant relation.

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JEL Classification: M 40, 41, 42

Keywords: enforcement, earnings management, audit fees, Germany

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4.1 Introduction

We develop a theory of consequences of earnings management on enforcement releases and how an auditor accounts for those effects when pricing statutory audits. We provide evidence of a link between the phenomenon called 'balance sheet bloat' by Ettredge et al. (2010), the recognition of future information content in audit fees by Stanley (2011) and the charging of audit risks in fees by Simunic and Stein (1996).

In 2004 the '*Bilanzkontrollgesetz'* (Financial Reporting Enforcement Act) established an enforcement mechanism in Germany. The enforcement panel was introduced simultaneously with the mandatory implementation of IFRS for German listed firms. It is organized as a public-private two-tier-system and should ensure compliance with IFRS. The 'Financial Reporting Enforcement Panel' (FREP) took up its task in July 2005 and since that time has ordered the announcement of errors in previously disclosed and audited financial statements in 147 cases (as of 12/31/2010). The evaluation of this unique sample is of international interest as it provides a chance to research the efficiency of this two-tier enforcement system in comparison to the public structure in the US or the private body in the UK. Furthermore, it offers the opportunity to investigate the relation between earnings management, enforcement releases and audit risk recognition.

Prior literature provides evidence on the connection between earnings management and the probability of misstated/fraudulent disclosure of financial statements and consequential enforcement releases (Jones et al. (2008)). In this study a positive relation between (discretionary) accruals and enforcement releases is observable. Ettredge et al. (2010) document a phenomenon they call 'balance sheet bloat' and its connection to restatements in later periods. That is, the deteriorating situation of a company leads to income increasing earnings management and eventually, erroneous/fraudulent accounting once the managers exhaust the boundaries of GAAP-conforming accounting. With respect to audit fees, Abbott et al. (2006) find a positive significant impact of earnings management on audit fees and Feldmann et al. (2009) report an 'ex post' increase in audit fees for the years subsequent to an enforcement release. After the misstatement period, they assume a loss in organization legitimacy and a higher level of audit risk as reasons for this (upward) price premium. Stanley (2011) investigates influences of future events on audit fees and finds that auditors include future information by an audit fee premium. Building upon the 'balance sheet bloat' of Ettredge et al. (2010) and earnings management pricing in audit fees by Abbott et al. (2006), and considering the future information hypothesis of Stanley (2011), we predict an 'ex

ante' recognition of the increased accounting risk in audit fees for the 'bloat-periods' prior to an enforcement release.

Our first analysis provides additional evidence on the usefulness of (discretionary) accruals models to predict misstatements. Accruals serve as earnings management proxies and indicate the existence of a 'balance sheet bloat'. Our second level of analysis extends the audit fee pricing literature and addresses the consequences of enforcement releases. We extract the audit fee development through the 'balance sheet bloat' periods until the misstatement year and afterwards.

The misstatement-predicting power of earnings management proxies is tested using a pooled logistic regression analysis. We match a sample of firms for which the FREP documented the misstatement of financial statements by an enforcement release (ER-firms) with a control group to evaluate the between-firm differences in earnings management behavior (sample of 172 matched firms). The development of earnings management over time is tested using a conditional fixed-effects logistic regression model to extract the within-firm variation in ER-firms. Audit fee models then allow us to observe the variation in fees over time. Therefore we extend the sample with all available data for the period 2006 to 2010 to 647 firm-year observations. According to our three different methods of investigating fees around the time of an enforcement release ('*ex ante', 'ex post', 'total'*), we split up the sample to extract the predicted audit fee effects in the related time horizons. We run firm fixed-effects in our regressions for the different time periods.

Our findings show that the level of earnings management for ER-firms is higher than for control firms. This indicates the efficiency of the two-tier system in Germany and is in line with prior studies. In our time-series model we observe a higher level of earnings management in the period of the misstated financial statement and the year before in comparison to prior periods. This provides evidence on the existence of a 'balance sheet bloat'. Applying audit fee models, we find evidence for an '*ex ante'* recognized price premium in the fees. This delivers insight into the interaction between earnings management, its recognition in audit risk and the future information content in audit fees. In our '*ex post'* consideration no significant positive effect on audit fees can be observed.

This study contributes to the literature in three main ways. First, we provide additional evidence on the usefulness of (discretionary) accruals as proxies to predict misstated/fraudulent disclosure of financial statements. In the same manner we show the efficiency of the German two-tier enforcement system and the existence of a 'balance sheet bloat' in this regulatory setting. Second, we find the recognition of higher accounting risk in audit fees before an investigation by the enforcement

body even starts. This shows that audit fees contain information about the future. We assume a compensation of a 'bloated' balance sheet by higher audit fees and provide evidence for this relation. In our opinion, this field of research needs further attention to evaluate the information contained in audit fees. Third, the detailed modeling of earnings management development within firms and the systematic linking to auditor reaction are major contributions and extensions to the literature researching consequences of enforcement releases as well as the research on audit fees and its determinants. We consider this as an important contribution as it connects different approaches and streams of accounting research that previously were investigated separately and builds a confound framework for further investigations.

The reminder of the paper is structured as follows: Section 4.2 summarizes the legal environment in Germany with respect to the internal control structures, the audit fee reporting and the enforcement system. Section 4.3 reviews the literature and develops our hypotheses. In Section 4.4 we explain our research design and the sample selection process. Section 4.5 contains the univariate and multivariate results. Section 4.6 concludes and summarizes our results.

4.2 Legal Background - Financial Statement Oversight in Germany

4.2.1 Management Board, Supervisory Board and Audit Committee

The internal financial statement oversight of German firms is characterized by a two board structure. The executive board is in charge of the management of the company, thereby its responsibility includes the establishment of reporting systems and the preparation of financial statements. The supervisory board's main task is monitoring the executive board, thus, inter alia, it is accountable for the examination of financial statements and issues concerning the statutory audit. Since the introduction of the 'German Corporate Governance Code' (GCGC) in 2002 the supervisory board is encouraged to establish an "Audit Committee which, in particular, handles issues of accounting, risk management and compliance, the necessary independence required of the auditor, the issuing of the audit mandate to the auditor, the determination of auditing focal points and the fee agreement." (cf. GCGC, Section 5.3.2; Koehler (2005)). The existence of an audit committee is

regularly regarded as an important contribution to internal surveillance and an improvement of corporate governance, due to the financial expertise inherent in this council.

4.2.2 Statutory Audit and Audit Fees

The traditional form of external financial statement oversight in Germany is provided by the auditor and the statutory audit. As a consequence of the two-board structure of internal surveillance, it is the supervisory board that is responsible for questions of auditor selection and auditor engagement alike it is the addressee of the long form audit report. As mentioned above, if an audit committee is put in place, those responsibilities are transferred. The mandatory disclosure of audit fees was implemented by the 'Financial Reporting Enforcement Act' and became effective January 1, 2005; hence 'German Commercial Code' (par. 285 No. 17 and 314 (1) No. 9) requires publicly traded firms to disclose fees both for the parent company and for subsidiaries for the following categories: i) audits, ii) other attestation services, iii) tax consultancy and iv) other services. The statutory audit enhances the monitoring function of the internal supervisory bodies and likewise contributes to the credibility and accuracy of financial statements for the benefit of external users.

4.2.3 External Enforcement System

German financial statement oversight was amended and improved by the passage of the 'Financial Reporting Enforcement Act'. The act implemented an enforcement mechanism examining the compliance of international accounting standards. The enforcement system is organized as a public-private-cooperation of the 'Federal Financial Supervisory Authority' (BaFin), a public authority, and the privately organized 'Financial Reporting Enforcement Panel' (FREP). In this two-tiered mechanism the FREP serves as the primary investigative body that examines if (individual and consolidated) financial statements (annual or interim) and the corresponding management reports of firms listed in the regulated market of a German stock exchange comply with the effective accounting standards. As the investigations cannot achieve a full coverage of firms, the investigations of the latest approved financial statements are based on indicators of accounting irregularities and upon random sampling. In the case that the review process indicates the

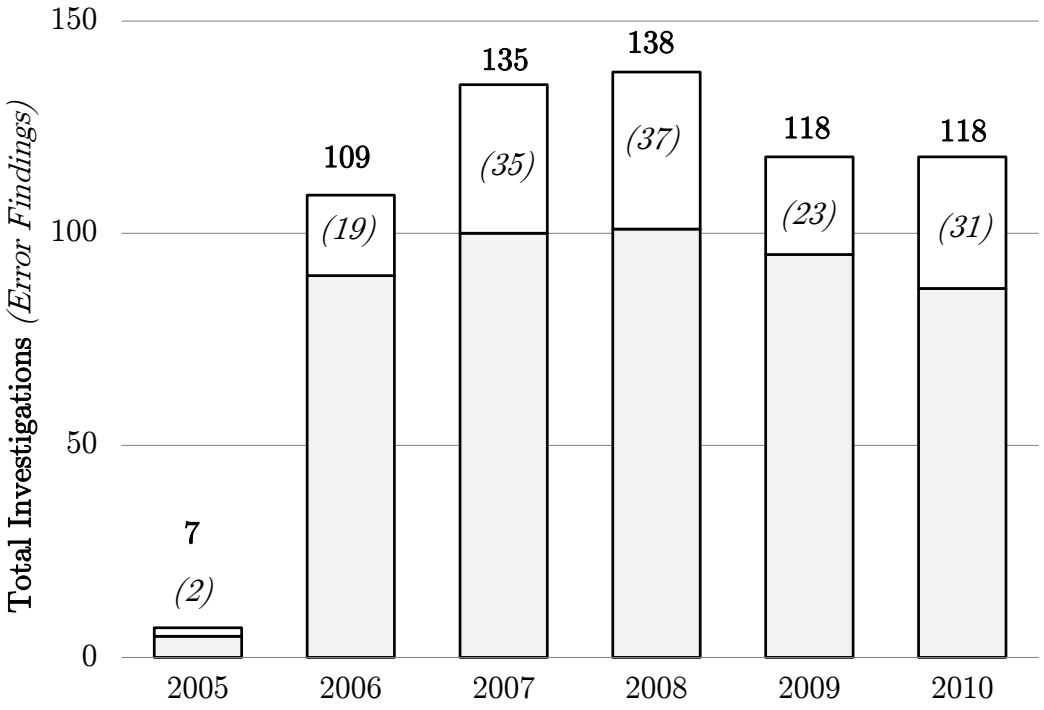
reporting contains errors, the concerned firm should publically announce the findings; however, no firm is obliged to cooperate with the FREP. Therefore, the second tier of the enforcement mechanism includes the BaFin, which forces the collaboration of the firm and/or orders the announcement of accounting errors with sovereign power. This adverse disclosure and the negative publicity are the central sanctioning mechanism of the German enforcement system. The errors are released in the '*eBundesanzeiger*' (Electronic Federal Gazette of Germany) and in at least one official supra-regional stock exchange gazette.

The FREP has reviewed 625 financial statements and corresponding management reports since the enforcement system became effective in July 2005. The examinations showed that almost one out of every four financial reports contained errors; with a total of 147 error findings (the error rate equals 23.5%) (all numbers as of 12/31/2010; cf. Figure 4.1).

By complementing and supporting the supervisory board and the auditor, the primary institutions surveying the compliance of financial statements, the introduced enforcement system is a substantial extension to the financial oversight in Germany, enhancing investor protection as well as the accuracy, transparency and quality of disclosed financial information (Ernstberger et al. (2012b)). With its two-tiered structure and the organization as public-private cooperation the German mechanism is unique in its structure. Analyzing the results of the investigations adds a similarly unique perspective to the existing literature and research on international corporate governance, corporate control and auditing settings.

A detailed description of the distribution of misstating firms over time and industries as well as evaluations of the error announcements and information contained in the publications is given in Chapter 2, pp. 16 et seqq.

Figure 4.1. Financial Reporting Enforcement Panel Investigations since 2005



Source: FREP (2010)

4.3 Literature Review and Hypotheses Development

4.3.1 The Effect of Earnings Management on Enforcement Releases

This section develops the framework for the empirical analysis. In the first step, we identify the reasons for enforcement releases that aroused attention in academic research. Our main issues are the examination of the relation between enforcement releases and earnings management as well as internal and external governance structures for the unique German setting. In the second part of the section we investigate the effects of enforcement releases on audit fees.

There is a large body of academic research examining the reasons for the misstatement of financial statements and subsequent enforcement releases. The recent literature review by Dechow et al. (2010) summarizes determinants and

consequences of SEC 'Accounting and Auditing Enforcement Release' (AAER) that were identified by accounting research. They state that AAERs are, on the one hand, driven by several firm specific factors; manager compensation, debt covenants, capital market incentives and corporate governance settings (e.g. existence of an audit committee, characteristics of the board of directors, auditor choice) are frequently discussed in the reviewed studies. On the other hand, the connection of AAERs and earnings management is shown by the majority of those studies; AAERs are regarded as an indicator of managed earnings.

The literature provides a vast number of possible motivations for managing earnings and academics have developed different theories: Watts and Zimmerman (1990) introduce the 'bonus hypothesis' and the 'debt hypothesis'. The first says that managers of firms with bonus plans are more likely to manage earnings to affect current period's reported income. The latter hypothesis proposes the higher the firm's leverage, the more likely the upward-management of income by the management. Dechow et al. (1996) argue that practitioners emphasize the role of financial information in lending and investment decisions by creditors and stockholders as major motivations for earnings management and manipulation.

Jones et al. (2008) and Dechow et al. (2011) use total and discretionary accruals as proxies for earnings management to predict misstated disclosure. Jones et al. (2008) report evidence on ten proxies of earnings management that are significantly associated with fraudulent events. Dechow et al. (2011) find that earnings management is unusually high for firms in their misstating years relative to the entire (control) population of COMPUSTAT firms. The latter study states that 'the overstatement of revenues, misstatement of expenses, and capitalizing costs are the most frequent types of misstatements' and another typical observation around the time of misstatement is a deteriorating firm performance in financial and nonfinancial measures (Dechow et al. (2011), p. 76).

Ettredge et al. (2010) expand this view by investigating the development of earnings management prior to restatements of financial reports and to AAERs. They list various incentives for earnings management, i.e. for reasons of avoiding debt covenant violations, seeking low-cost external financing, enhancing stock-based compensation or meeting analyst earnings expectations. As an extension they document a phenomenon they call 'balance sheet bloat' and define it as the accumulation of large non-cash working capital accounts caused by aggressive accounting choices. They assume (and provide evidence) that managers tend to systematically accumulate income-increasing accounting choices prior to the restatement/enforcement release period and use their discretion to manage earnings. If firm performance does not improve, the balance sheet gets bloated more

and more. Hence, Ettredge et al. (2010) consider the enforcement releases caused when managers cross into erroneous/fraudulent accounting after they have exhausted the boundaries of GAAP-conforming accounting.

The first part of our study contributes to this line of research by analyzing if accruals, financial and nonfinancial information are useful for identifying FREP enforcement releases, our proxy for intended and non-intended misstatements.

Reviewing the former enforcement releases of the German enforcement system it becomes apparent that the majority is related to the proper application of fair-value-measurement (2008: 70%, 2009: 61%, 2010: 61%). Thereby most of the errors induce revenue/expense and earnings consequences (FREP (2010)). Furthermore, it seems as if the violations are not one-time occurrences, but rather evidence of structural weaknesses in the firm's accounting and corporate governance settings. Von Keitz and Wenk (2010) report that on average firms are obliged to disclose 4.2 errors per error announcement and document that 7.5% of firms' disclosures are due to a public error announcement in more than one case (the share of firms with more than one error announcement equals 12.9% in our sample). As shown in Chapter 2 (p. 16 et seqq.) 77% of error announcements are connected to the misstatement of bottom line earnings and the announcements consist of 3.6 errors on average.

Based on the related literature on enforcement releases and the error findings by the FREP we do not consider the misstatements detected by the German enforcement system to be random occurrences of unintentional mistakes. Rather, we think that errors are driven by two main causes. First, the increasing complexity of accounting standards might cause misstatements in accounting, especially if the reports and firm structures become vast. Second, we expect earnings management to a driver of errors and subsequent enforcement releases. The academic framework, as well as the empirical evidence connecting misstatements/enforcement releases to earnings management, is unambiguous. Therefore, we expect to find evidence of a positive relation between earnings management and a subsequent enforcement release when comparing ER-firms to a matched sample of control firms:

H4.1a: Earnings management is higher for ER-firms disclosing an erroneous financial statement than for a Non-ER-control-sample.

Firms and management have vast incentives and motivations to manage earnings and these accounting choices lead to bloated accounts. If steadily applied, these practices might cause GAAP-violated financial reports. We analyze this time

series perspective of earnings management and expect to find evidence of an existing 'balance sheet bloat' prior to the enforcement release:

H4.1b: Earnings management increases the probability of disclosing an erroneous financial statement; a balance sheet bloat can be observed over time for ER-firms.

As discussed above, the violations of GAAP can be regarded as evidence of internal and external structural weaknesses in the firm's accounting and corporate governance settings. Internal control systems and corporate governance structure are related to both, earnings quality and the likelihood of an enforcement release (Dechow et al. (2010)). Compared to control firms, AAER-firms suffer from a weak monitoring of management (characteristics of board of directors, outside major shareholders) (Dechow et al. (1996)) and are less likely to have (active and independent) audit committees. As an internal control mechanism an audit committee improves the corporate governance structure and reduces the agency costs by monitoring financial reporting quality. Therefore, we predict a lower error rate for firms that establish a voluntary audit committee (Sattler (2010) develops a more sophisticated measure of corporate governance in Germany, however, we abstain from rebuilding the measure as our focus is different).

H4.2: ER-firms disclosing an erroneous financial statement are less likely to have established a voluntary audit committee than a Non-ER-control-sample.

The task of an auditor and the statutory audit as an external control structure is comparable to internal control functions of an audit committee. Farber (2005) reports that AAER-firms are audited by BIG4-auditors more rarely. Consequently, we predict a negative relation between an ER-firm and an (high quality) audit supplied by a Big4 auditor (Knechel et al. (2013)):

H4.3: ER-firms disclosing an erroneous financial statement are less likely to be audited by a BIG4-auditor than a Non-ER-control-sample.

Please note that we formulate all hypotheses in a general way. The precise specifications of open constructs like e.g. the term earnings management (H4.1a

and 4.1b) or the exact period of time for testing the hypotheses are described and defined in the subsequent sections.

4.3.2 The Recognition of Enforcement Releases in Audit Fees

Empirical evidence for the structure of the German audit market as well as for determinants of audit and non-audit fees in Germany are available from the studies of Zimmerman (2008), Bigius and Zimmermann (2008, 2009), Koehler et al. (2010), Koehler and Ratzinger-Sakel (2012) as well as Wild (2010, 2012). International literature has shown that enforcement releases and restatements induce various (unfavorable) effects for firms and directors: Increases in the firm's cost of equity capital (Hribar and Jenkins, 2004), more negative returns (Palmrose et al. (2004)), higher manager turnover rates (Feroz et al. (1991), Desai et al. (2006), Feldmann et al. (2009)) as well as outside director turnover rates (Srinivasan (2005)) are documented.

Feldmann et al. (2009) investigate post-restatement audit fees and find evidence that fees are affected via a higher audit risk on those clients. The auditor has to adjust the audit plan according to the risk of loss on the engagement and increase the planned audit hours to gather additional evidence if required. According to the International Standard on Auditing 315.5 the 'auditor shall perform risk assessment procedures to provide a basis for the identification and assessment of risks of material misstatement at the financial statement and assertion levels.' The primary risks affecting the auditor can be split up into client business risk, audit risk, and auditor business risk (Johnstone, 2000). Audit risk is defined as the risk of an auditor *not* detecting material misstatements in a financial statement, when they in fact exist, and *not* modifying her judgment (e.g. to a qualified opinion). Auditor business risk is the risk that an auditor incurs litigation or reputation losses arising in connection with audited financial statements (Stanley, 2011). Empirical studies of audit fees document that higher client business risk is positively related to higher audit fees (Hay et al. (2006); Hay (2013)). Following the audit pricing models by Simunic (1980) and Simunic and Stein (1996) this increase in audit fees can be split into the influence on the auditor's effort (audit risk) and a price premium covering 'an expected liability loss' (auditor business risk; Beatty (1993)).

Prior empirical research examining the determinants of audit fees provides evidence of a negative correlation between audit fees and various dimensions of the

current economic situation of a client. Important client characteristics are size, complexity, profitability, debt levels and structural weaknesses in control systems (see the meta-analyses by Hay et al. (2006) and Hay (2013)). Further studies relate academic measures of earnings management to audit fees. Charles et al. (2010) show the association between financial reporting risks (measured by the Modified-Jones-Model and additionally by a commercial risk measure) and Big4 audit fees. Abbott et al. (2006) find that high (low) earnings management risk is associated with higher (lower) audit fees. They interpret the findings as consistent with a conservatism bias on the part of auditors (arising from asymmetric litigation risk).

In this study we analyze the impact of publically disclosed enforcement releases by the FREP on a firm's audit fees. In this case we can obtain a high level of confidence in identifying firms with material misstatements in its financial statements (with the public announcement of the misstatements by the FREP), relative to studies that approximate misstatements by earnings-based measures such as (discretionary) accruals. Unidentified earnings manipulations, limited budget and capacities by the enforcement panel, as well as selection bias, are potential disadvantages of using enforcement releases as objective ex post audit risk and auditor business risk proxies (Dechow et al. (2010)).

Our study extends the literature with two contributions from the following research questions: (1) Does the auditor charge an *ex ante* additional price premium in the audit fees for ER-firms? (2) Does the auditor charge an *ex post* additional price premium in the audit fees for ER-firms?

Related to the first question, we combine theories and findings of several prior studies: Literature has shown that enforcement releases are the consequence of earnings management practices (Jones et al. (2008)) and that earnings management accumulates in 'bloated' balance sheets (Ettredge et al. (2010)). Abbott et al. (2006) show that earnings management maps into higher audit fees and Stanley (2011) shows that auditors anticipate future information during the pricing of audits. We extend literature by linking these streams of research.

Stanley (2011) investigates whether audit fees are a leading indicator of client business risk and contain potential information for stakeholders. He finds a link between observed audit prices (as risk indicator) and future changes in clients' economic condition and their operational performance. Thus, the auditor includes a future business risk component (premium) in the audit fees to compensate for the additional risk of the anticipated changes. The systematic accumulation of income-increasing accounting choices in the periods prior to and including the restatement and/or an enforcement release ('balance sheet bloat') investigated by Ettredge et al. (2010) shows an increasing enforcement risk over time as the boundaries of the

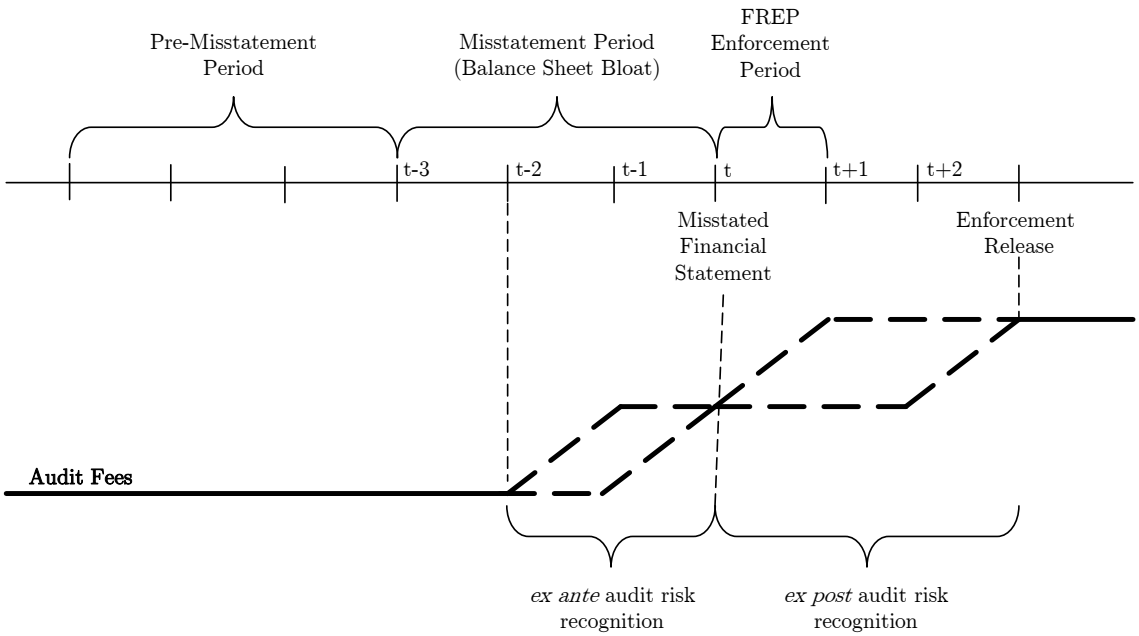
GAAP are approached/crossed. Altogether, the future information contained in audit fees and the enforcement release risk that is driven by accumulated earnings management leads to the assumption that ER-firms have a different auditor business risk than non-ER-firms and higher audit fees, holding other business risk drivers constant.

We assume that this development over time is observable for and anticipated by the auditor and that she rationally reacts in two ways: Firstly, by an adjustment of planned work effort (audit hours) on those clients and secondly by charging the ER-firms an additional audit business risk premium. Therefore, we build the hypothesis:

H4.4: Audit fees are ex ante higher for ER-firms in comparison to a Non-ER-control-sample.

The timeline of information recognition could be as follows: Some periods in advance, the firm starts to manage earnings (e.g. in year *t-3*). This behavior is subsequently realized by the auditor with a time lag of at least one period. The auditor anticipates the future relevance of the aggressive earnings management and considers consequences for the audit risk of the client (e.g. in period *t-1* and/or *t*). Figure 4.2 gives an overview of the divided time horizon in an 'ex ante audit risk recognition'-period and an 'ex post audit risk recognition'-period.

Figure 4.2. Timeline of Audit Risk Recognition



Please note that the dotted lines in Figure 4.2 are ideal-typical examples of the possible adjustment process. There might be other timings of audit fee adjustments in the periods round the misstatements, hence other lines could be added to the figure. For the sake of clarity we kept the graph slim.

We motivate the second research question of an additional *ex post* price premium by the following prior findings: Feldmann et al. (2009) investigate the influence of financial restatements on audit fees. They find evidence that post-restatement audit fees are higher for restatement firms compared to a control group. Two reasons are alleged: On the one hand, restatement firms suffer from a loss of organizational legitimacy; the restatement reduces both the reliability of a firm's financial reporting system and the assessment of expertise of the executive management entrusted with the preparation of the financial statements (Arthaud-Day et al. (2006)). On the other hand, the occurrence of accounting errors and/or subsequent enforcement releases (should) alter the auditor's attitude towards the client and hence her assessment of audit risk. A decline in the client's trustworthiness, credibility and competence regarding the accounting process, the risk of high earnings management (Bedard and Johnstone (2004)) as well as weak internal control structures (Raghunandan and Rama (2006)) are influencing factors, put forth as reasons for an increased audit risk. All these factors are shown to be connected to financial restatements and enforcement releases. As a consequence of both arguments the auditor is obliged to face this by adjusting her professional skepticism towards those clients and thus expand audit procedures and audit efforts (cf. International Standard on Auditing 315). The higher audit costs have to be borne by the clients as higher audit fees subsequent to error findings and related enforcement releases. This leads to the following hypothesis:

H4.5: Audit fees are ex post higher for ER-firms in the periods following the misstated financial statement in comparison to a Non-ER-control-sample.

New examinations by the FREP are restricted by law to the most recent approved (consolidated) financial statements and the latest management report published by the firms under investigation. Thus, the FREP has to take up its examination process within a few months following the disclosure of financial statements. The point in time of public announcement of the error finding (the enforcement release) can differ depending on the agreement or disagreement of the enforced company. On average, errors are announced 652 days after the fiscal year-end for the corresponding statement, but the standard deviation is high at 276 days (see also Chapter 2, Table 2.3 for similar numbers). This time lag and the different

steps of disclosure (ad-hoc disclosure and official disclosure in the 'Electronic Federal Gazette') make it difficult to identify the exact date of release of the error announcement. In any case, between the enforcement of the financial statement by the FREP and the following annual report, the result of the enforcement action must delineate and be recognized by the auditor (as additional private information) and thereby should affect the following annual audits. Therefore, we expect to find influences on audit fees in the year directly subsequent to the year of an erroneous financial statement ('start period' for investigations) and the following fiscal periods until the public announcement of the enforcement release ('ex post audit risk recognition'-period: e.g. *t+1* until *t+n*). See again Figure 4.2 for graphical clarification of this process. A possible combination of both effects respectively a singular ex ante / ex post recognition leads to a concluding overall hypothesis. This hypothesis also takes in consideration that the FREP investigation process leads to an additional effort and more working hours for the auditor at the investigated firms, hence an effect might be observable in the audit fees.

H4.6: Audit fees are higher for ER-firms in comparison to a Non-ER-control-sample.

Please note again that all hypotheses are formulated in a general way. The precise specifications of open constructs and the exact period of time for testing the hypotheses (ex-ante, ex-post period) are described and defined in the subsequent sections.

4.4 Research Design and Sample Selection

4.4.1 Earnings Management Model

Literature provides insights into variables that are useful for detecting misstatements. Jones et al. (2008) use ten different proxies to predict misstated/fraudulent financial statements and find a significant positive influence of all the accrual measures. They start with total accruals and examine whether the explanatory power of the model is enhanced when accruals are substituted by different discretionary accruals measures. They find that *not all* discretionary accrual models have incremental prediction power. Bayley and Taylor (2007) show for a sample of 129 AAER firms (and a matched control group) that total accruals

are more useful than various discretionary accrual measures in identifying accounting misstatements. They suggest that earnings quality studies should abstain from further refinements of accrual models and alternatively consider complementing total (or discretionary) accruals with other financial ratios; Dechow et al. (2011) agree and provide further evidence. Important to mention when reviewing the literature is that the measures of discretionary accruals tend to be positively correlated with the level of total accruals (Dechow et al., 2010). We provide evidence for both aspects. First, we include total accruals and various measures of discretionary accruals to add additional evidence to the literature. Second, we include financial statement and non-financial information to follow the proposition by Bayley and Taylor (2007) and Dechow et al. (2011).

To test hypotheses *H4.1a*, *H4.2* and *H4.3* we measure the following robust logistic regression:

$$ER_{i,t} = \beta_0 + \beta_1 LEV_{i,t} + \beta_2 ROA_{i,t} + \beta_3 \Delta AR_{i,t} + \beta_4 \Delta INV_{i,t} + \beta_5 AC_{i,t} + \beta_6 BIG4_{i,t} + \beta_7 EM_{i,t} + \varepsilon_{i,t} \quad (4.1)$$

Table 4.1 provides detailed definitions of all variables. ER is a dichotomous variable that equals 'one' for firms disclosing a financial statement announced as erroneous by FREP for the year of the misstatement and 'zero' for the control group of firms (matched by total assets, industry and financial year). To test the influence of earnings management (*EM*) on the probability of ER (*H4.1a*) we include four EM-proxies (discussed below) for total and discretionary accruals. *H4.1a* predicts a positive influence of earnings management on the dependent variable ER. For *H4.2* we include a binary variable equal to 'one' for the existence of an audit committee (*AC*) and predict a negative relation between an enforcement release and the existence of an audit committee. The voluntary set-up of an audit committee and the mandatory membership of a financial expert in the committee should improve the corporate governance structure and mitigate the accounting and misstatement risk. *H4.3* assumes a lower enforcement release risk for a *BIG4*-audited firm, with a *BIG4* auditor as a proxy for high audit quality. We include the control variables financial leverage (*LEV*), return on assets (*ROA*), change in accounts receivables *(ΔAR*) and change in inventories *(ΔINV*) in our models. The variable *LEV* controls for the financial structure and refers to the so-called 'debt hypothesis' of the management. The variable *ROA* is a proxy for the profitability and is linked to the so-called 'bonus hypothesis' of the management. Following

Dechow et al. (2011) the misstatement of the accounts receivable improves sales growth and the misstatement of inventory improves gross margin. Both metrics are closely followed by investors. Therefore, we predict a positive influence of ΔAR and ΔINV on an enforcement release.

We include the following proxies for earnings management, hence for the EM variable, in Model (4.1): Measures of discretionary accruals are (at least) partly responsible for the amount of total accruals (Dechow et al. (2010)). In our first regression we regard total accruals, before modeling the accrual accounting process in detail. We calculate the total accruals (ACC) as differences between income before extraordinary items and operating cash flow for year t. Our discretionary accrual models include the Modified- Jones-Model (*MJM*; Dechow et al. (1995))

$$ACC_{i,t} = \beta_0 + \beta_1\left(1/ASSETS_{i,t-1}\right) + \beta_2\left(\Delta Sales_{i,t} - \Delta AR_{i,t}\right) + \beta_3 PPE_{i,t} + \varepsilon_{i,t} \quad (4.2)$$

and the performance-adjusted Modified-Jones-Model (*MJM-ROA*; Kothari et al. (2005))

$$ACC_{i,t} = \beta_0 + \beta_1\left(1/ASSETS_{i,t-1}\right) + \beta_2\left(\Delta Sales_{i,t} - \Delta AR_{i,t}\right) + \beta_3 PPE_{i,t} + \beta_4 ROA_{i,t-1} + \varepsilon_{i,t} \quad (4.3)$$

to predict the discretionary accruals. As accrual quality model we use the Dechow-Dichev-Model (*DDM*; Dechow and Dichev (2002)):

$$WCACC_{i,t} = \beta_0 + \beta_1 CFO_{i,t-1} + \beta_2 CFO_{i,t} + \beta_3 CFO_{i,t+1} + \varepsilon_{i,t} \quad (4.4)$$

Working capital accruals ($WCACC$) are computed as net income before extraordinary items plus depreciation minus operating cash flows for year t. All variables are scaled by lagged total assets. We run Model (4.2) to (4.4) cross-sectional for at least 5 observations of each year and industry combination (12-industry classification by Fama and French (2008)). We include all available

companies of the German Stock market. The residuals are used as measure for the discretionary accruals (*MJM, MJM-ROA,* and *DDM*).

Additionally to the single period model, we include a time series perspective to provide further evidence of an existing 'balance sheet bloat' (Ettredge et al. (2010)). According to hypothesis *H4.1b,* we search for evidence of earnings management preceding the misstatement reporting period. Using a conditional fixed-effects logistic regression model, we test the relation between earnings management and a misstated financial statement over time:

$$ER\text{-}bloat_{i,t} = \beta_{0_i} + \beta_1 ASSETS_{i,t} + \beta_2 LEV_{i,t} + \beta_3 ROA_{i,t} + \beta_4 AR_{i,t} + \beta_5 INV_{i,t} + \beta_6 EM_{i,t} + \varepsilon_{i,t} \quad (4.5)$$

ER-bloat is a dichotomous variable that equals 'one' for firms disclosing a financial statement announced as erroneous by FREP for the year of the misstatement (period *t*) and in the period before (period *t-1*); zero otherwise. We include all ER-firm years from 2005 to the period of the misstated financial statement, e.g. we compare the time window in the period around the misstatement (*t* and *t-1*) to the prior years. Based on the included firm-level fixed effects, we drop the proxies for corporate governance (*AC*, *BIG4*; low level of 'within' variation). We add a size proxy and the total values of accounts receivable and inventories (scaled by total assets) instead of their change as in Model (4.1).

Table 4.1. Definition of variables

$ER_{i,t}$	Binary variable that takes a value of one in period t for firm i disclosing a misstated financial statement in period t, zero otherwise.
ER-$bloat_{i,t}$	Binary variable that takes a value of one in period t and t-1 for firm i disclosing a misstated financial statement in period t, zero otherwise.
ER-$time_{i,t}$	Enforcement release variable substituted by ER-exante, ER-expost and ER-total.
ER-$exante_{i,t}$	Binary variable that takes a value of one in period t and t-1 for firm i disclosing a misstated financial statement in period t, zero otherwise.
ER-$expost_{i,t}$	Binary variable that takes a value of one in period t+n (n positive) for firm i disclosing a misstated financial statement in period t, zero otherwise.
ER-$total_{i,t}$	Binary variable that takes a value of one in period t-1, t and t+n (n positive) for firm i disclosing a misstated financial statement in period t, zero otherwise.
$LEV_{i,t}$	Total debt divided by Total Assets of firm i in period t. We winsorize LEV at the top and bottom 1 percent.
$ROA_{i,t}$	Income before extraordinary items plus net-of-tax interest expense deflated by average Total Assets of firm i in period t. We winsorize ROA at the top and bottom 1 percent.
$AR_{i,t}$	Sum of accounts receivables scaled by Total Assets of firm i in period t. We winsorize AR at the top and bottom 1 percent.
$\Delta AR_{i,t}$	Change of net accounts receivables of firm i in period t scaled by lagged Total Assets where the change of net accounts receivables is calculated as the difference between net accounts receivables in period t and net accounts receivables of period t-1. We winsorize ΔAR at the top and bottom 1 percent.
$INV_{i,t}$	Sum of inventories scaled by Total Assets of firm i in period t. We winsorize INV at the top and bottom 1 percent.
$\Delta INV_{i,t}$	Change of net inventories of firm i in period t scaled by lagged Total Assets where the change of inventories is calculated as the difference between inventories in period t and inventories of period t-1. We winsorize ΔINV at the top and bottom 1 percent.
$AC_{i,t}$	Binary variable that takes a value of one if firm i has voluntarily established an audit committee in line with the German Corporate Governance Code in period t, and zero otherwise.
$BIG4_{i,t}$	Binary variable that takes a value of one if firm i has a 'BIG4' auditor in period t, and zero otherwise.
$ASSETS_{i,t}$	Natural logarithm of Total Assets of firm i in period t.
$EM_{i,t}$	Earnings Management variable substituted by ACC, MJM, MJM-ROA and DDM of firm i in period t.
$ACC_{i,t}$	Change of non-cash total accruals scaled by lagged Total Assets of firm i in period t where the change of non-cash total accruals is calculated as the difference between net income before extraordinary items and cash flow from operations.
$\Delta SALES_{i,t}$	Change of revenues of firm i in period t scaled by lagged Total Assets where the change of revenues is calculated as the difference between revenues in period t and revenues of period t-1.

(Continued)

Table 4.1. Continued

$PPE_{i,t}$	Gross property, plant and equipment of firm i in period t scaled by lagged Total Assets.
$MJM_{i,t}$	Total signed discretionary accruals for firm i in period t measured as the residual from the Modified-Jones-Model (Dechow et al. (1995)) estimated for each year and industry combination (12-industry classification by Fama and French (2008)) with at least 5 observations, scaled by Total Assets. We winsorize MJM at the top and bottom 1 percent.
$MJM\text{-}ROA_{i,t}$	Total signed discretionary accruals for firm i in period t measured as the residual from a Modified-Jones-Model with performance adjustment (Kothari et al. (2005)) estimated for each year and industry combination (12-industry classification by Fama and French (2008)) with at least 5 observations including lagged return on assets, scaled by Total Assets. We winsorize MJM-ROA at the top and bottom 1 percent.
$WCACC_{i,t}$	Change of non-cash working capital accruals scaled by lagged Total Assets of firm i in period t where change of non-cash working capital accruals is calculated as the difference between net income before extraordinary items plus depreciation and cash flow from operations.
$CFO_{i,t}$	Cash flow from operating activities scaled by the lagged Total Assets of firm i in period t ($CFO_{i,t-1}$ and $CFO_{i,t+1}$, respectively).
$DDM_{i,t}$	Working capital signed discretionary accruals for firm i in period t measured as the residual from the Dechow-Dichev-Model (Dechow and Dichev (2002)) estimated for each year and industry combination (12-industry classification by Fama and French (2008)) with at least 5 observations, scaled by Total Assets. We winsorize DDM at the top and bottom 1 percent.
$AFEE_{i,t}$	Natural logarithm of audit fees for firm i in period t where audit fees are 'audit fees' billed by the firm's statutory auditor as reported in the firm's annual report according to the German Commercial Code in the four categories audit fees, audit-related fees, tax fees and all other fees.
$AUDCHG_{i,t}$	Binary variable that takes a value of one if firm i's auditor in period t is different from the auditor in period t-1, and zero otherwise.

4.4.2 Audit Fee Model

To test the hypotheses *H4.4* to *H4.6* on the influence of high enforcement release risk/misstatement risk on audit fees we estimate the following fixed-effects within regression (considering robust standard errors), to account for the panel data structure:

$$AFEE_{i,t} = \beta_{0_i} + \beta_1 ASSETS_{i,t} + \beta_2 LEV_{i,t} + \beta_3 ROA_{i,t} + \beta_4 AR_{i,t} + \beta_5 INV_{i,t} + \beta_6 AC_{i,t} + \beta_7 BIG4_{i,t} + \beta_8 AUDCHG_{i,t} + \beta_9 ER\text{-}time_{i,t} + \varepsilon_{i,t} \quad (4.6)$$

where *AFEE* is equal to the logarithm of audit fees.

We test the relation between audit fees and enforcement releases in three ways: *H4.4* suggests higher audit fees for ER-firms in the periods up to the misstatement period, i.e. we assume a possible anticipatory recognition of a high accounting risk company by an audit fee premium charged by the auditor (see Figure 4.2: *'ex ante'* recognition period). *H4.5* assumes an audit fee increase after the disclosure of the misstated financial statements (see Figure 4.2: *'ex post'* recognition period). Hypothesis *H4.6* predicts an overall audit fee increase for ER-firms (combination of '*ex ante*' and '*ex post'* recognition period). To extract these three effects we substitute *ER-time* in Model (4.6) by three different binary variables (*ER-exante, ER-expost, ER-total*) and thus three different sub-samples. The sample selection (see below) results in 130 firms in the time period *t*, for which audit fees are available (65 ER-firms and 65 control firms). The selected observation period from 2006 to 2010 provides the opportunity to divide the sample into different fractions. To test *H4.4* we only include the misstatement period as well as all available data for the sample in the years *ex ante*, e.g. until 2006. This leads to an unbalanced sample/panel. The dichotomous variable *ER-time* is substituted by *ER-exante*, which equals 'one' in periods *t-1* and *t* for firms disclosing a misstated financial statement in period *t*, and 'zero' otherwise. For *H4.5* we consider firm year observations of the misstatement year and all following periods. *ER-expost* equals 'one' in *t+n (for positive n)* if the firm discloses misstated financial statements in period *t*, and 'zero' otherwise. For *H4.6* we include all available firm-years in our sample. Hence, *ER-total* is equal to 'one' from *t-1* until *t+n* if the firm discloses a misstated financial statement in period *t*, otherwise zero. In all three cases we predict a positive influence on audit fees.

To control for other fee drivers, we include firm and auditor attributes identified by prior research to be associated with the remuneration of auditors (Hay et al. (2006)). We include the variable *ASSETS* to control for the size effect. As a proxy for financial risk, our firm-related control variable is total debt deflated by total assets (*LEV*). Return on assets (*ROA*) as a measure of profitability reflects the extent to which the auditor may be exposed to liability in the event that a client fails (auditor risk). The variables *AR* and *INV* - accounts receivables and inventories deflated by assets - control for higher risk of error and requiring specialized audit procedures and high audit effort (Hay et al. (2006)). As a proxy for the corporate governance quality we include a binary variable for the (voluntary) existence of an audit committee (*AC*). As an audit attribute control variable we include auditor type (*BIG4*). Finally, we expect a negative correlation between auditor changes (*AUDCHG*) and audit fees (DeAngelo (1981); Kanodia and Mukherji (1994)).

4.4.3 Sample Selection an Data

To access prior error findings we follow the procedure suggested by the FREP: We use the official website of the Electronic Federal Gazette of Germany and search the page for '*Fehlerbekanntmachungen'* (error announcements). This procedure returns a list of 147 separate announcements from 2005 to 12/31/2010. Based on these error findings we start our sample-selection procedure: 7 observations of firms with head offices outside of Germany are eliminated. We do not include banks, insurance companies and similar financial-services firms in our study (e.g. Gassen et al. (2006); Leuz et al. (2003)); hence 30 observations are deleted. We collect our financial data from the Worldscope database; 24 findings are deleted due to missing data availability. Thus, our final sample of firms that has been subject to FREP accounting enforcement releases (ER-group/firm) consists of 86 observations.

For each of the 86 ER-firms, we identify a control firm. The control group is matched by industry (same Fama and French (2008) 12-industry classification), year (year of matching is the year of the ER-firm's erroneous statement) and size (minimum of absolute difference in total assets) (Dechow et al. (1996); Beneish (1999); Peasnell et al. (2001)). To be considered as a potential control firm in the selection process, a firm has to be located in Germany, must not be a provider of financial services and must not be subject to enforcement-actions by the FREP in any regarded year in this study.

The data for the variables was obtained as follows: We hand-collected the information about the year-end auditors as well as for the existence of an audit committee in a firm from the annual financial statements for the years 2005 to 2010. Information about the audit fees is also hand-collected from the annual financial statements. The disclosure of audit fees and the use of international accounting standards became mandatory in 2005. To exclude this event period as well as possible biases due to the IFRS implementation in this year, we start to collect the audit fees since 2006. All other data used in our calculations are obtained from the Worldscope database for the years 2005 to 2010.

4.5 Empirical Results

4.5.1 Descriptive Statistics and Univariate Results

Table 4.2 provides descriptive data and basic statistics for the sub-samples of ER- and control firms. In general, mean and median values for the variables applied in our models do not essentially differ, which shows no bias in the dataset.

Due to the matching procedure the ER-firms and their controls cannot be distinguished by size. Although on average the control firms report fewer *ASSETS* (mean total assets 3,430 million) than the ER firms (mean 5,800 million), the t-test does not indicate significant differences (also for log-assets). This suggests the success of our matching procedure. An audit committee (*AC*) is set up by 37% of the ER-firms and 45% of the control firms. Only 43% of the ER-firms engage a *BIG4* auditor for their year-end audit. This is relatively low compared to the 60% of control firms that engage a *BIG4* auditor; accordingly a highly significant t-test confirms the difference. Furthermore, differences in *LEV* can be observed (means 0.19 vs. 0.26) and the t-test affirms the higher level of indebtedness of the ER firms. This univariate result can provide a first signal of one important incentive for earnings management within the ER-firms. The firms subject to a FREP enforcement release are less profitable than the controls as the *ROA* affirms (difference in means: -2.4%; no significance). The mean reported numbers for *AR*, ΔAR as well as *INV* and ΔINV differ marginally between the two compared sub-samples; t-tests show no distinction. Audit fees are on average higher within the control firms (mean 0.72 million vs. 0.51 million), but the variation of the reported numbers is large in both sub-samples as high standard deviations and high differences between mean and median values are shown. The t-test on this variable does not indicate significant differences between the two groups.

Table 4.2, Panel A also provides descriptive statistics for our different measures of (discretionary) accruals, again separately for the control firms and the ER-firms. The main finding of analyzing univariate differences between the sub-samples is that ER-firms' accrual numbers are higher than those of the control group. The misstated financial statements contain larger total accruals than the compared reporting of the control firms (means of Control vs. ER-firms: *ACC* - 0.04/0.003; t-test significant). Separating the discretionary component from the total accruals number, i.e. by using the Modified-Jones-Model and respectively the performance-adjusted Modified-Jones-Model, results in higher discretionary accruals measures for the ER-firms in both models (means of Control vs. ER-firms: *MJM* 0.00/0.04; *MJM-ROA* 0.00/0.05). Again the t-tests as well as the median

values confirm the distinction. Measuring estimation errors in working capital accruals by applying Dechow and Dichev's (2002) model, results in the same conclusion: Estimation errors and hence abnormal accruals are high for ER-firms in terms of mean and median values; t-tests confirm the differences (means of Control vs. ER-firms: *DDM* 0.00/0.04). Summing up, we find various indications, on a univariate basis, for the large use of (income increasing) accrual accounting choices within the ER-firms' financial statements and hence first evidence of our hypotheses suggesting that enforcement releases are driven by earnings management.

Panel B of Table 4.2 contains the Pearson/Spearman correlation matrix between the variables described above. We limit our commentary to the strongest correlations observable: The decision to engage a *BIG4* auditor is correlated with the size (*ASSETS*) of the firm (Pearson corr. coeff. = 0.50). *BIG4* also shows significant correlations with the ER-dummy (-0.17) and the existence of an audit committee (0.50). The existence of an audit committee is largely dependent on firm size (0.57). This is not surprising since forming an audit committee out of an already small supervisory board is neither possible nor useful especially for small firms. This size dependence of AC could explain the fact that no significant differences could be found in this variable between the ER-firms and our size-matched control firms.

Table 4.2. Descriptive statistics and correlation

Panel A: Descriptive statistics for the Control and the ER sample

		Control firms					ER firms					
	n	Mean [Prop.]	Mdn	s.d.	Min	Max	Mean [Prop.]	Mdn	s.d.	Min	Max	Mean Diff.
ASSETS (Mio. €)	86	3,430	140	19,000	2.70	174,000	5,800	130	29,000	1.42	210,000	2,370
ASSETS (ln)	86	19.11	18.76	2.15	14.81	25.88	19.06	18.68	2.35	14.16	26.08	0.047
LEV	86	0.19	0.14	0.21	0.00	0.94	0.26	0.23	0.21	0.00	0.94	-0.068 **
ROA	86	0.04	0.05	0.13	-0.52	0.34	0.01	0.04	0.14	-0.52	0.34	0.024
AR	86	0.23	0.20	0.12	0.04	0.58	0.20	0.20	0.11	0.02	0.58	0.026
ΔAR	86	0.02	0.02	0.10	-0.25	0.48	0.04	0.02	0.14	-0.25	0.48	-0.023
INV	86	0.12	0.09	0.13	0.00	0.47	0.12	0.09	0.12	0.00	0.48	0.004
ΔINV	86	0.01	0.00	0.05	-0.08	0.22	0.02	0.00	0.09	-0.15	0.35	-0.014
AC	86	[0.45]					[0.37]					0.081
BIG4	86	[0.60]					[0.43]					0.174 **
AFEE (Mio. €)	65	0.72	0.21	1.43	0.02	8.00	0.51	0.18	0.98	0.03	5.60	0.21
AFEE (ln)	65	12.43	12.23	1.38	9.95	15.89	12.28	12.11	1.22	10.13	15.54	0.15
ACC	86	-0.04	-0.04	0.12	-0.31	0.43	0.00	-0.03	0.16	-0.43	0.43	-0.043 **
MJM	86	0.00	0.00	0.10	-0.27	0.45	0.04	0.02	0.14	-0.35	0.45	-0.039 **
MJM-ROA	86	0.00	0.00	0.10	-0.27	0.37	0.05	0.03	0.12	-0.21	0.37	-0.039 **
DDM	75	0.00	0.00	0.10	-0.21	0.43	0.04	0.02	0.13	-0.31	0.43	-0.038 **

Panel B: Correlation of variables

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
ER	(1)		-0.03	**0.19**	-0.12	-0.1	0.05	-0.01	0.07	-0.08	**-0.17**
ASSETS	(2)	-0.01		**0.31**	0.05	-0.13	-0.04	**0.28**	0.1	**0.58**	**0.48**
LEV	(3)	**0.15**	**0.2**		-0.13	-0.13	-0.1	0.07	-0.06	**0.15**	0.12
ROA	(4)	-0.09	0.08	-0.06		**0.2**	**0.24**	0.14	**0.22**	-0.04	-0.11
AR	(5)	-0.11	-0.15	**-0.15**	0.14		**0.25**	0.07	0.03	-0.06	-0.11
ΔAR	(6)	0.1	0.05	-0.1	0.12	**0.25**		0.05	0.14	-0.05	-0.11
INV	(7)	-0.02	0.11	-0.04	0.12	0.04	-0.01		**0.29**	0.13	0.09
ΔINV	(8)	0.1	0.15	0.02	0.1	0.04	**0.28**	**0.23**		-0.05	-0.09
AC	(9)	-0.08	**0.57**	0.1	-0.01	-0.06	0.02	0.05	0.02		**0.5**
BIG4	(10)	**-0.17**	**0.5**	0.06	-0.05	-0.11	-0.04	0.05	-0.07	**0.5**	

Notes: This table shows descriptive statistics and correlations for the matched sample (172 observations). Panel A provides descriptive statistics of the independent variables. Panel B shows pair-wise Spearman (above the diagonal) and Pearson correlation coefficients (below the diagonal) for all variables. Bold numbers indicate two-tailed significance at the 0.05 level. Variables are defined in Table 4.1.

4.5.2 Multivariate Results - Earnings Management Models

Table 4.3 presents the results of our logistic Models (4.1) and (4.5) concerning our hypothesis on earnings management and the influencing factors on an enforcement release.

We report outcomes for our matched model approach (Models (4.1)) in Columns (1) to (4). In these specifications we include the ER-firms in the year the FREP documented a misstated financial statement (period *t*) and the corresponding observations of the year, size and industry matched control group. For these two groups of comparison, we regress the disclosure of an erroneous financial statement (as documented by an enforcement release; *ER*) on several control variables included in each of the reported specifications and four measures of (discretionary) accruals.

We find evidence that enforcement releases are driven by earnings management: In accordance with prior literature we measure the misstatement/management of earnings through its accrual component. Therefore, we estimate the influence of total accruals on the probability of an enforcement release. As Column (1) shows, total accruals have a significant positive influence on the misstatement probability (coef.=3.05). This is consistent with several studies that also find evidence that total accruals are helpful in identifying material accounting misstatements - without further decomposition in an 'expected' and an unexpected/ discretionary component (Bayley and Taylor (2007), Dechow et al. (2011)).

We investigate the influence of *long-term* discretionary accruals on misstatements by applying two versions of the Jones-Model. The result for the modified Jones-Model (Dechow et al. (1995)) shows the expected positive impact on the misstatement probability (coef.=3.17) and is significant at the 5%-level. As Kothari et al. (2005) show an additional control for firm performance within the *MJM* could improve the measure of discretionary accruals, we additionally report the results for the performance-adjusted Modified-Jones-Model. As results again show the predicted sign (coef.=3.66) with significance, we find evidence of earnings management via long-term discretionary accruals in our sample.

We further investigate the influence of *short-term* accruals on misstatements by applying Dechow and Dichev's (2002) model. This measure of short term estimation errors within the working capital accruals significantly affect the probability of disclosing misstated financial statement and FREP enforcement releases (cf. Column (4); coef.=4.14). The relatively large measures of estimation

errors indicate less accrual and earnings persistence within the ER-firms, possibly driven by the extensive use of earnings management practices. Please note, the McFadden pseudo R^2s of the four specifications are all around 8%; this is comparable to other studies, e.g. the similar specification by Jones et al. (2008).

To provide further evidence of earnings management causing erroneous disclosure of financial statements, we additionally report outcomes for the conditional fixed-effects model (Model (4.5)) in Columns (5) - (8) of Table 4.3. In these specifications we include time series data of the ER-firms; the dependent *ER*-variable equals 'one' in the year of the misstatement (period *t*) and in the period before (period *t-1*) and 'zero' in the preceding years.

Ettredge et al. (2010) document that sustained income-increasing earnings management choices accumulate in balance sheet accounts and lead to restatements in the following periods. We find evidence for this phenomenon: The two versions of the Jones-Model indicate the influence of earnings management. Long-term discretionary accruals significantly affect the misstatement likelihood; the regression coefficient for the *MJM* (coef.=3.21) and for the performance-adjusted *MJM-ROA* (coef.=4.12) are positive and significant at the 5%-level. *Short term* accruals also bear incremental information for predicting FREP enforcement releases as the results for the *DDM* show (Column (8); coef.=3.53; significant at 5%-level). The measure of total accruals shows the predicted sign but is not significant for the time series model. The McFadden pseudo R^2s of the latter four specifications are higher (around 15%) than for the matched design.

Altogether we gather evidence that supports our earnings management hypothesis *(H4.1a*). Enforcement releases are driven by the extensive use of discretionary accounting choices. All four model specifications of our matched sample approach show that earnings management is high for ER-firms and reveal significant influences of accrual measures on the probability of disclosing a misstated financial statement. Further, we find evidence of a long-term balance sheet bloat prior to the misstatement period by means of our time series (fixed-effects) approach. This supports hypothesis *H4.1b*. Steadily applied earnings management results in 'bloated' balance sheet accounts and these practices cause GAAP-violating financial reports.

Regarding the results of the other variables included we come to the following conclusions: We try to capture different internal control systems and the corporate governance structure of the firms by including a dummy variable for the

existence of an audit committee in our matched sample approach. Regardless of the (discretionary) accruals measure applied (Columns (1) - (4)), the variable shows no significant influence on the probability of an enforcement release. Hypothesis *H4.2*, which suggests the existence of an audit committee decreases the probability of erroneous reporting, is not supported. External controls structures and the audit quality are reflected in the dummy for a *BIG4*-auditor. In all specifications of the matched sample approach the existence of a *BIG4*-auditor reduces the probability of an enforcement release (negative signs on high significance levels). This suggests that the audit quality of a *BIG4*-audit/auditor is superior to others and that this external surveillance of a firm is effective in preventing misstated reporting and enhancing the credibility of financial statements. Hypotheses *H4.3* is affirmed.

Prior research stresses the particular influence of high leverage ratios on the misstatement probability. We find supporting evidence: *LEV* is positively related to the erroneous disclosure of financial statements in all eight specifications (high significance levels). As we expect that the disclosure of misstated statements could be driven by the attempt to mask a weak general firm performance by earnings management, we include *ROA* as control. The results support our suggestion; the probability of erroneous disclosure is significantly negative associated with *ROA* (in all but one case) in both research designs (matched model and fixed-effects model). The significant influences of *LEV* and *ROA* support our findings of a 'balance sheet bloat' as both variables indicate the deteriorating development of the firm situation.

We also include two accrual components in each specification: Receivables and inventories (respectively the change of these variables in the matched model approach). Inventories significantly influence the misstatement likelihood in the fixed-effects models. The other measures show the predicted positive signs in most cases, but without significance. *ASSETS* are included in the fixed-effects models to capture size effects. The results show a positive size dependency of error announcements.

Table 4.3. Logistic Model of Earnings Management on Enforcement Releases

		Matched Model					Fixed-effects Model			
	Exp. Sign	(1) Coef. *(t-value)*	(2) Coef. *(t-value)*	(3) Coef. *(t-value)*	(4) Coef. *(t-value)*	Exp. Sign	(5) Coef. *(t-value)*	(6) Coef. *(t-value)*	(7) Coef. *(t-value)*	(8) Coef. *(t-value)*
Constant	?	0.027	-0.061	-0.107	0.07					
		(0.09)	*(-0.20)*	*(-0.35)*	*(0.20)*					
LEV	+	1.824 **	1.705 **	1.700 **	1.467 **	ASSETS	+	0.743 **	0.808 **	0.770 **	1.623 **
		(2.21)	*(2.00)*	*(2.00)*	*(1.72)*			*(2.06)*	*(2.18)*	*(2.11)*	*(2.67)*
ROA	-	-2.813 **	-2.645 **	-1.307	-3.657 **	LEV	+	3.678 **	3.580 **	3.606 **	4.116 ***
		(-1.76)	*(-1.80)*	*(-0.96)*	*(-2.10)*			*(2.40)*	*(2.30)*	*(2.32)*	*(2.44)*
ΔAR	+	1.291	1.152	1.223	1.385	ROA	-	-2.326 *	-2.754 **	-2.037 *	-4.683 **
		(0.83)	*(0.74)*	*(0.79)*	*(0.67)*			*(-1.43)*	*(-1.71)*	*(-1.49)*	*(-2.26)*
ΔINV	+	0.765	0.998	0.693	0.383	AR	+	-0.646	-0.760	-0.810	1.942
		(0.33)	*(0.43)*	*(0.29)*	*(0.14)*			*(-0.25)*	*(-0.29)*	*(-0.31)*	*(-0.58)*
AC	-	0.085	0.066	0.057	0.006	INV	+	8.349 **	8.371 *	8.529 *	8.855 *
		(0.22)	*(0.17)*	*(0.15)*	*(0.01)*			*(1.67)*	*(1.63)*	*(1.65)*	*(1.45)*
BIG4	-	-0.731 **	-0.755 **	-0.760 **	-0.856 **						
		(-1.97)	*(-2.01)*	*(-2.02)*	*(-2.12)*						
ACC	+	3.053 **				ACC	+	1.997			
		(1.94)						*(1.21)*			
MJM	+		3.170 **			MJM	+		3.209 **		
			(1.82)						*(1.69)*		
MJM-ROA	+			3.656 **		MJM-ROA	+			4.124 **	
				(2.08)						*(1.93)*	
DDM	+				4.141 **	DDM	+				3.533 **
					(1.88)						*(1.67)*
McFadden R2		0.082	0.079	0.083	0.088	McFadden R2		0.128	0.138	0.144	0.184
Chi2		17.249	16.655	17.747	14.51	Chi2		20.897	22.509	23.518	26.241
Number of Obs.		172	172	172	150	Number of Obs.		189	189	189	170

Notes: This table shows the results of our earnings management models. The matched model compares ER-firms to a control sample in the period of the misstated financial statement. The observations are matched by year, size and industry. In all logistic regressions of our matched model we use robust standard errors. The conditional fixed-effects logistic regression model includes all ER-firms from 2004 to the misstated financial statement period. The depending variable takes a value of one in period t (misstatement period) and t-1 (zero otherwise) to extract the 'balance sheet bloat' effect. Variables are defined in Table 4.1. *, **, and *** indicate one-tailed significance at the 0.1, 0.05, and 0.01 level when the expected sign is positive or negative.

4.5.3 Multivariate Results - Audit Fee Models

Table 4.4 contains the results of our audit fee models (Model (4.6)). We present our results for the '*ex ante'*, '*ex post'* and '*total'* model. We run fixed-effects regression models to account for the panel data structure.

In the '*ex ante'* model all available 'prior firm-years' are included. This leads to a total unbalanced panel of 308 firm-year observations. The dummy variable *ER-exante* captures the recognition of increased audit risk in and the effects of earnings management on audit fees in *t-1* and *t*. The variable indicates a highly significant increase in audit fees in these periods (coef.=0.105). This leads to a confirmation of *H4.4*. In other words, the auditor realizes and prices the accounting risk increase and the bloating of accounts before the actual misstated financial statement is finally disclosed. Confirming the findings by Stanley (2011), the audit fees contain future information in respect of enforcement release risk.

The '*ex post'* model includes all available firm-years following the misstated financial statement period of our sample. The variable *ER-expost* - equal to 'one' for ER-firms after the period *t* - shows no significant influence on the audit fees. Accordingly, we cannot observe an audit fee increase in the periods after the misstated financial statement is disclosed. *H4.5* must be rejected and the observed audit fee increase by Feldmann et al. (2009) cannot be confirmed.

In the '*total'* model we find a significant positive audit fee effect for a sample of 647 firm-year observations (coef.=0.105). This rise in audit fees shows the combined effect of both recognition periods. *H4.6* can be confirmed. The beta-values of the '*ex ante'* and the '*total'* model are nearly the same. Therefore, we assume the recognition of the risk developed in a 'balance sheet bloat' firm before the misstated financial statement is disclosed.

For the included control variables we observe for all three models a significant positive influence of size (*ASSETS*) and leverage (*LEV*) as well as a negative influence of auditor change. Only for the *'ex ante'* model are the variables *BIG4* and *INV* positively related to audit fees at significant levels. *ROA* has a negative influence in the *'total'* model.

The adjusted R^2s of the three specifications are between 19 and 26 percent, these relative low values are typical for fixed effects models (compared to pooled OLS specifications). The R^2s are comparable to other studies, e.g. Wild (2012).

Table 4.4. Regression of Enforcement Releases on Audit Fees

		ex ante	ex post	total
	Exp. Sign	Coef. *(t-value)*	Coef. *(t-value)*	Coef. *(t-value)*
ASSETS	+	0.192 ***	0.382 ***	0.296 ***
		(5.65)	*(6.46)*	*(6.14)*
LEV	+	0.428 **	0.436 **	0.308 **
		(1.91)	*(2.31)*	*(2.17)*
ROA	-	-0.162	-0.170	-0.322 **
		(-1.25)	*(-0.81)*	*(-2.13)*
AR	+	-0.246	0.044	0.028
		(-1.12)	*(0.15)*	*(0.11)*
INV	+	0.911 **	0.531	0.269
		(2.38)	*(1.17)*	*(0.69)*
AC	+	0.178	-0.052	-0.039
		(1.19)	*(-0.42)*	*(-0.35)*
BIG4	+	0.596 ***	-0.070	0.039
		(7.30)	*(-0.51)*	*(0.31)*
AUDCHG	-	-0.260 ***	-0.144 ***	-0.202 ***
		(-3.01)	*(-3.26)*	*(-4.04)*
ER-exante	+	0.105 **		
		(1.94)		
ER-expost	+		0.040	
			(0.63)	
ER-total	+			0.105 **
				(1.70)
Constant	?	8.095 ***	4.930 ***	6.550 ***
		(11.85)	*(4.29)*	*(7.04)*
Adj. R2		0.261	0.185	0.193
F		20.931	9.388	11.878
Number of Obs.		308	566	647

Notes: This table shows the results of our audit fee models. The audit fee model compares ER-firms to a control sample in different time periods (ex ante, ex post and total). The observations are matched by year, size and industry in the period of the misstated financial statement. In all regressions we use a fixed-effects model to account for the panel data structure. Variables are defined in Table 4.1. *, **, and *** indicate one-tailed significance at the 0.1, 0.05, and 0.01 level when the expected sign is positive or negative.

4.5.4 Sensitivity Analysis and Limitations

We perform several checks to assert the robustness of our main results and to analyze the sensitivity of variations in our research design. All the results described in this section are not tabulated.

Regarding the analysis of earnings management we modify the matched model approach by comparing the ER-firms to the whole sample of German listed firms (1,925 firm years) instead of matching a control group. The results are stable: total accruals (coef.=4.42; t-stat=4.77), the *MJM* (coef.=4.19; t-stat=4.32), the performance-adjusted *MJM* (coef.=5.18; t-stat=4.95) as well as the *DDM* (coef.=4.36; t-stat=3.92) indicate the influence of earnings management for the erroneous disclosure of financial statements. The results for the control variables are comparable. The conclusions for *H4.1a* are stable.

To further investigate the connection of an audit committee to and the influence of a *BIG4* auditor on the probability of a misstatement (*H4.2* and *H4.3),* we considered interaction terms between the earnings management metrics and the dummy variables *AC* and *BIG4*, respectively. However, we could not find significant evidence for interaction effects. The basic results remain unchanged.

To validate the audit fee results we run the fixed-effects model only with ER-firms. Using this method we extract only the within-firm variation in audit fees over time. The results are stable for all significant variables. Further we analyze the final announcement date of the enforcement release as another *'ex post'* point of time an auditor might adjust audit fees. We run additional regressions for the total period and for the year after the misstatement year and search for an increase in audit fees when the error finding became public. The results show that the final release provides no new information to the auditor. In both specifications the measure is insignificant (total period: coef.=0.04, t-stat=0.71; years after: coef.=0.03, t-stat=0.53), confirming our main result that the auditor anticipates and prices the FREP error finding in advance.

We winsorize the continuous variables to mitigate the influence of outliers. As this can be critical, we re-run all reported regressions with the original data. The main findings and conclusions are stable; coefficients are similar to the ones reported and significance in general is lower.

Limitations of this investigation include issues related to the sample size and a possible self-selection bias. The enforcement release as an objective measure of accounting risk includes different negative aspects. First, the budget of the FREP results in a pre-sample selection by the enforcement panel. Second, for the control

group the amount of accounting risk is not observable. The ER or non-ER definition does not provide a continuous measure of audit risk. Accordingly, the matching procedure can lead to different comparability between the samples.

4.6 Conclusion

The 'Financial Reporting Enforcement Panel' took up its task in 2005; until 2010 147 cases error announcement were disclosed. Our study evaluates the unique dataset derived from these error findings. This is of international interest as the German enforcement system is based on two tiers - a private body and a public institution. The EU commission stresses the importance of a strict enforcement of IFRS; we analyze the German implementation as a counterpart to the well-researched public structure enforcement in the US and the private organization in the UK.

Our focus and the contribution to the literature are threefold: First, we provide additional evidence on the usefulness of (discretionary) accruals to predict misstated/fraudulent disclosure of financial statements. Our results show that total accruals, different versions of the Jones-Model as well as the Dechow-Dichev-Model contain incremental information for detecting misstated financial statements. By the use of logistic panel analysis, we find evidence that firms subject to FREP error announcements can be distinguished from control firms through their use of earnings management (between variation). Analyzing the years prior to the misstatement, we find that these firms excessively use earnings management practices that lead to the 'balance sheet bloat' phenomenon (within variation).

Our second contribution to the literature examines the influence of enforcement releases on audit fees. Resulting from the 'balance sheet bloat' hypothesis (Ettredge et al. (2010)) and the audit fee future information content hypothesis (Stanley (2011)) we find a recognition of audit risk in audit fees prior to FREP announcements. We assume auditors compensate for a 'bloated' balance sheet by charging higher audit fees. This adds a new component to the audit fee and enforcement release consequences literature. We do not find evidence of a price premium for audit fees after the disclosure of misstated financial statements.

Third, the detailed modeling of earnings management development within the firms and the systematic linkage to auditor reactions and fee pricing are major contributions and extensions to the 'balance sheet bloat' picture of Ettredge et al.

(2010), the literature researching consequences of enforcement releases as well as the research on audit fees and its drivers. Our study connects different approaches and streams of accounting research and builds up a confound framework for further investigations.

Chapter 5
Summary and Conclusion

This dissertation discusses the enforcement of accounting standards in Germany. The legal basis for the external enforcement of accounting standards in Germany was created by the *'Bilanzkontrollgesetz'* (Financial Reporting Enforcement Act) at the end of 2004. An enforcement mechanism was installed to enforce accounting standard compliance by regular reviews of disclosed financial statements. The system was established as implementation of EU guidelines. Since 2005, International Financial Reporting Standards (IFRS) shall be applied for consolidated financial statements of firms listed on a regulated market segment within the European Union (EU) (*Regulation EC No. 1606/2002*). Simultaneously to the harmonization of accounting standards, the EU fostered the standardization of enforcement systems to ensure compliance with international accounting standards. Par. 16 of the so-called 'IAS Regulation' mandates the 'Committee of European Securities Regulators' (CESR) to "develop a common approach to enforcement". Germany's unique two-tiered system operates since July 2005; it involves the '*Deutsche Pruefstelle fuer Rechnungslegung*' (Financial Reporting Enforcement Panel) a newly established private organization primary assigned to conduct the reviews. As the second tier the *'Bundesanstalt fuer Finanzdienstleistungsaufsicht'* (Federal Financial Supervisory Authority) has the sovereign authority to order the publication of errors ('error announcements') and if necessary, to force the cooperation of firms in the review process.

The Introduction addresses on the theoretical background of financial reporting enforcement. The common approach and the legal basis enforcement in the European Union are described; differences throughout the Union are outlined.

Building on that the thesis consists of three individual essays that analyze three specific questions in the context of the enforcement of financial reporting standards in Germany.

The first paper (Chapter 2) focuses on the systematical evaluation of the information contained in 100 selected error announcements (from a total of 151 disclosed). The study finds that error announcements on average contain 3.64 single errors and 77% affect the reported profit. Small, highly levered and relatively unprofitable firms are overrepresented in the sample of misstatement firms. In a second step, the essay investigates the development of censured firms over time; the pre- and post-misstatement development of the firms in terms of balance sheet data, financial ratios and (real) earnings management are tracked. The analysis detects increasing leverage ratios and a decline in profitability over time. In the year of misstatement firms report large total and discretionary accruals, indicating earnings management. Compared to matched control firms, significant differences in profitability, market valuation, earnings management and real activities manipulations are observable. A major contribution of this first study is the examination of trends in financial data and (real) earnings management over a number of years round misstatement as well as the elaboration of the distinction to non-misstating firms. The results show the meaning of the enforcement of IFRS for the quality of financial reporting to standard setters, policy makers, and investors in Germany.

The second paper (Chapter 3) examines the interrelation of enforcement releases, firm characteristics and earnings quality. Prior literature documents the correlation between underperformance in financial ratios and the probability of erroneous disclosure of financial statements; this study provides evidence for differences in characteristics between firms with enforcement releases and control firms as well as the whole German publicly traded firms (4,730 firm-year observations). Furthermore, research affirms the connection of financial ratios to earnings quality metrics. The accuracy of financial information is considered to be correlated with its quality and therefore the differences in earnings quality between various sub-samples is examined. Overall the results document the underperformance in important financial ratios as well as indicate an inferior earnings quality of firms subject to enforcement releases vis-a-vis the control groups. These results hold with regard to both, different earnings quality specifications and different periods observed. This study appends the earnings quality discussion and contributes to develop a comprehensive picture of accounting quality for the unique institutional settings of Germany. The paper shows that a conjoint two-tier public and private enforcement system is effective and might be an adequate model for

other countries. Implications for the regulation of corporate governance, the enforcement panel and the auditor are identified.

The third essay (Chapter 4) additionally considers the role of the auditor. The firms subject to error announcements are used to evaluate the consequences of increasing earnings management over time on enforcement releases and their recognition in audit fees. Prior literature provides evidence on a phenomenon called 'balance sheet bloat' that is due to income increasing earnings management and later influences the disclosure of misstated financial statements. The evidence of earnings management recognition in audit fees and findings on the content of future information in audit fees leads to the hypothesis that auditors recognize increasing audit risk in fees before the enforcement process starts. The study extends related earnings management and audit fee literature by modeling the development of earnings management within the misstatement firms and systematically link it to auditor reactions. Significant predictive power of different commonly used accrual measures for enforcement releases in the period prior and up to the misstatement period are found by the study. In the same period of time, an audit fee increase, i.e. the recognition of increased audit risk can be observed. A possible audit fee effect after the misstatement period is investigated but no significant relation is obtained.

Concluding, the reporting of the firms, the enforcement system as well as the auditor and general corporate governance all interact and are interdependent. Therefore, a generalization of the results would only be possible if these influencing factors would be comparable. With the harmonization of accounting standards and the common approach for enforcement, the European Union provides a homogeneous legal background for two main influences on accounting information. Other areas might still require regulation and standardization. However, the financial reporting always depends on a firm's situation and at last there are always people making decisions and providing the information according to their individual motivations and incentives.

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.

Sir David Tweedie, former Chairman of IASB

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Academic Education

09/2009 - 05/2014	PhD Student, Graduate School of Law, Economics and Society, University of Wuerzburg
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Awards and Grants

2012	Best Paper Award, International Association for Accounting Education and Research (IAAER) Conference 2012, Amsterdam, Netherlands
2009	Prize to the Best Graduate in Business Administration and Economics, University of Wuerzburg
2006	Deloitte Award and Scholarship for the Best Student in Accounting and Auditing

PUBLICATIONS

Strohmenger, Manuel. 'Enforcement Releases, Firm Characteristics and Earnings Quality: Insights from Germany's two tiered Enforcement System', *Journal of International Financial Management & Accounting* (forthcoming).

PRESENTATIONS

05/2013	36th Annual Congress of the European Accounting Association (EAA), Paris, France
07/2012	3rd WHU Doctoral Summer Program in Accounting Research (SPAR), Vallendar, Germany - *Invitation*
06/2012	International Association for Accounting Education and Research (IAAER) Conference 2012, Amsterdam, Netherlands - *Best Paper Award*
06/2012	74th Annual Conference of the German Academic Association for Business Research (VHB), Bolzano, Italy
05/2012	35th Annual Congress of the European Accounting Association (EAA), Ljubljana, Slovenia
02/2012	2nd Annual Meeting of the Graduate School of Law, Economics and Society of the University of Wuerzburg, Oberjoch, Germany
06/2011	73rd Annual Conference of the German Academic Association for Business Research (VHB), Kaiserslautern, Germany - *Participation*
04/2011	34th Annual Congress of the European Accounting Association (EAA), Rome, Italy
03/2011	1st Annual Meeting of the Graduate School of Law, Economics and Society of the University of Wuerzburg, Oberjoch, Germany
05/2010	PwC Doctoral Seminar, Montabaur, Germany

PROFESSIONAL EXPERIENCE

01/2013 - 01/2014	Instructor of the Executive MBA 'Business Integration' of the University of Wuerzburg
04/2010 - 03/2013	Lecturer at Academy of Business Administration and Public Management, Wuerzburg
12/2007 - 02/2008	Deloitte & Touche GmbH, Frankfurt, Germany
08/2006 - 09/2006	DZ Bank, Nuernberg, Germany
09/2005 - 10/2005	Raiffeisenbank Karlstadt Gemuenden eG, Karlstadt, Germany