

Fehler in der Rechnungslegung und Wechselwirkungen
mit Corporate Governance Elementen
Eine empirische Analyse

Dissertation
zur Erlangung des Doktorgrades
der Wirtschafts- und Sozialwissenschaftlichen Fakultät
der Eberhard Karls Universität Tübingen

vorgelegt von
Dipl. Wirtsch. Ing. Stefan Maul-Scharfenkamp
aus Darmstadt

Tübingen
2017

Tag der mündlichen Prüfung:

30. Juli 2018

Dekan:

Professor Dr. rer. soc. Josef Schmid

1. Gutachter:

Professorin Dr. rer. pol. Renate Hecker

2. Gutachter:

Professor Dr. rer. pol. Martin Ruf

Inhaltsverzeichnis

Inhaltsverzeichnis.....	I
Abbildungsverzeichnis	IV
Tabellenverzeichnis.....	V
Abkürzungsverzeichnis	VII
1 Einleitung.....	1
2 Fehlerkorrekturen in der internationalen Rechnungslegung in Interaktion mit Corporate-Governance-Elementen - Ein Resümee der empirischen Forschung.....	5
2.1 Einleitung.....	6
2.2 Grundlegende theoretische Überlegungen.....	8
2.3 Diskussion der empirischen Studien.....	9
2.3.1 Board of Directors/Audit Committee.....	9
2.3.2 Top Management.....	11
2.3.3 Interne Unternehmenskontrollen.....	14
2.3.4 Abschlussprüfer.....	16
2.3.5 Investoren/Eigenkapitalmarkt	19
2.3.6 Gläubiger/Fremdkapitalmarkt	22
2.3.7 Finanzberichterstattung	22
2.4 Zusammenfassung und Fazit	25
3 Diversity in Misstatement Disclosures and Stock Price Effects - Empirical Evidence from Germany.....	32
3.1 Introduction	33
3.2 Misstatement Disclosures in Germany	35
3.3 Theoretical Background, Literature Review, and Hypotheses	37
3.3.1 Management Disclosures of Accounting Misstatements	38
3.3.2 Investors' Reaction to Accounting Misstatements.....	41
3.4 Methodology.....	43
3.4.1 Management Disclosure	43
3.4.2 Investors' Reaction.....	45
3.5 Sample Selection and Data Description	47
3.6 Empirical Analysis of Misstatement Disclosures	49
3.6.1 Management Disclosure Choice Results.....	49
3.6.2 Event Study Results	55
3.6.3 Sensitivity Tests	68

3.7	Conclusion	69
4	Surprise of Enforcement Releases and the Investors' Reaction - Evidence from the German Capital Market.....	72
4.1	Introduction	73
4.2	Literature Overview.....	74
4.3	Theoretical Background on Surprise	76
4.4	Sample	80
4.5	Methodology.....	82
4.5.1	Anticipation Model	82
4.5.2	Event Study Model.....	83
4.6	Empirical Results.....	84
4.6.1	Anticipation Model Univariate Analysis.....	84
4.6.2	Anticipation Model Multiple Regression Analysis	86
4.6.3	Empirical Results Event Study.....	87
4.6.4	Multiple Regression Analysis	87
4.7	Conclusion	90
5	Do Women on the Board's Audit Committee or on the Supervisory Board Impact Accounting Quality? – Empirical evidence from German listed firms.....	96
5.1	Motivation	97
5.2	Supervisory Boards and Audit Committees in German firms.....	98
5.3	Literature Review	100
5.4	Corresponding Theories	102
5.5	Data and Descriptive Statistics	104
5.5.1	Dataset.....	104
5.5.2	Descriptive Statistics	104
5.5.3	Bivariate Correlations	109
5.6	Methodology & Empirical Results	112
5.6.1	Methodology	112
5.6.2	Empirical Results	112
5.7	Discussion.....	114
5.7.1	Key Findings	114
5.7.2	Contribution to theoretical approaches	116
5.7.3	Contribution to the previous literature	116
5.7.4	Practical Implications, limitations and prospects for future research	117
6	Zusammenfassung, Fazit und Ausblick	118

Literaturverzeichnis..... 121

Abbildungsverzeichnis

Figure 3.1 Cumulated abnormal returns around the first misstatement disclosure for the full sample and for different subsamples.....	59
Figure 3.2 Cumulated abnormal returns around the first misstatement disclosure for the full sample and for different subsamples (w/o unrelated financial information).....	59
Figure 4.1 Timeline of events.....	77
Figure 5.1 Average percentage of females (per year) on the supervisory board and on the audit committees.....	108

Tabellenverzeichnis

Tabelle 2.1 Ergebnisse der Studien je Corporate Governance Element	27
Table 3.1 Description of sample size and sample composition.....	48
Table 3.2 Distribution of the first type of disclosure of the misstatement by industry and year.....	51
Table 3.3 Fisher’s Exact Test to examine the significance of the association between the first type of disclosure and different misstatement characteristics.....	51
Table 3.4 Penalized multinomial logistic regression models testing misstatement characteristics as determinants of the first type of disclosure - full sample.....	53
Table 3.5 Penalized multinomial logistic regression models testing misstatement characteristics as determinants of the first type of disclosure - DPR sample.....	54
Table 3.6 Penalized multinomial logistic regression models testing misstatement characteristics as determinants of the first type of disclosure - full sample: Bootstrap results	56
Table 3.7 Penalized multinomial logistic regression models testing misstatement characteristics as determinants of the first type of disclosure – DPR sample: Bootstrap results.....	57
Table 3.8 Descriptive statistics and univariate results of the event study analysis.....	61
Table 3.9 Descriptive statistics and univariate results to "DPR enforcement error findings"..	62
Table 3.10 Results of the paired comparisons.....	63
Table 3.11 Multiple regression of abnormal returns around the first disclosure of the misstatement and relative importance measures.....	65
Table 4.1 Enforcement release distribution.....	81
Table 4.2 Description of sample size.....	81
Table 4.3 McNemar's Test for categorical variables.....	85
Table 4.4 Results of the paired comparisons of continuous variables.....	86
Table 4.5 Conditional logistic regression analysis to predict enforcement releases.....	88
Table 4.6 Results of the event study.....	89
Table 4.7 Multiple regression of abnormal returns around the first misstatement disclosure	91
Table 4.8 Multiple regression of abnormal returns around the first misstatement disclosure – w/o confounding effects.....	92
Table 4.9 Multiple regression of abnormal returns around the first misstatement disclosure - bootstrap sample.....	93
Table 4.10 Multiple regression of abnormal returns around the first misstatement disclosure - bootstrap sample - w/o confounding effects.....	94

Table 5.1 Example of Codification of the Variable ‘Future Restatement’	105
Table 5.2 Restatement Distribution by Year	106
Table 5.3 Descriptive Statistics	109
Table 5.4 Bivariate Correlations - Pearson	111
Table 5.5 Empirical Results on the impact of women on the supervisory board or audit committee on accounting quality.....	115

Abkürzungsverzeichnis

AC	Audit Committee
BaFin	Bundesanstalt für Finanzdienstleistungsaufsicht
BRC	Blue Ribbon Committee
CEO	Chief Executive Officer
CFO	Chief Financial Officer
COO	Chief Operating Officer
DGAP	Deutsche Gesellschaft für Ad-Hoc Publizität
DPR	Deutsche Prüfstelle für Rechnungslegung
EFRAG	European Financial Reporting Advisory Group
ESMA	European Securities and Markets Authority
GCGC	German Corporate Governance Codex
IAS	International Accounting Standard
IASB	International Accounting Standards Board
IFRS	International Financial Reporting Standards
ITCV	Impact threshold for a confounding variable
MAR	Market Abuse Regulation
MTF	Multilateral Trading Facility
OTF	Organised Trading Facility
PCAOB	Public Company Accounting Oversight Board
SB	Supervisory Board
SEC	(United States) Securities and Exchange Commission
SOX	Sarbanes Oxley Act
US GAAP	United States Generally Accepted Accounting Principles

1 Einleitung

Das externe Rechnungswesen hat zur Aufgabe die Informationen des wirtschaftlichen Handelns eines Unternehmens dem Ersteller, d.h. der Unternehmensführung, als auch externen Adressaten transparent zu machen. Im Vergleich zum internen Rechnungswesen, welches zu einem großen Teil unternehmensindividuell geprägt ist, liefert das externe Rechnungswesen Informationen, welche auf standardisierten Regelungen (z.B. HGB, IFRS oder US-GAAP) beruhen (Pellens, Fülbier, Gassen, & Sellhorn, 2014). Hier wird der Gestaltungsspielraum der Informationsersteller mit dem Ziel eingeschränkt, einheitliche und vergleichbare Informationen für externe Adressaten bereitzustellen. Die Idee hinter dieser Vorgehensweise ist, dass die Rechnungsleger, d.h. die Unternehmensleitung mehr Informationen über das wirtschaftliche Handeln des Unternehmens und dessen gegenwärtigen wie zukünftigen Zustand besitzt als die externen Adressaten der Rechnungslegung (Anteilseigner, Arbeitnehmer, Gläubiger, etc.). Ökonomisch gesehen liegt hier eine asymmetrische Informationsverteilung vor, welche durch die bereitgestellten Informationen der Rechnungslegung vermindert werden soll. Dies wird als der grundlegende Zweck der Rechnungslegung bezeichnet (Pellens et al., 2014).

Jedoch ist in diesem Zusammenhang zu berücksichtigen, dass die Ersteller der Rechnungslegungsinformation auch eigene Interessen verfolgen, und möglicherweise ihre privaten Informationen nur nach einer Anpassung, nicht vollständig oder sogar (bewusst/unbewusst) fehlerhaft publizieren. Die Relevanz von Fehlern in der Rechnungslegung zeigen die vergangenen und gegenwärtigen Bilanzskandale der nationalen und internationalen Unternehmenspraxis. Hier können prominente Fälle z.B. Enron, Worldcom, Thosiba und Tesco oder auch deutsche Beispiele wie die ComROAD AG, MIFA Mitteldeutsche Fahrradwerke AG oder die Hess AG genannt werden, wobei die Liste bei weitem nicht abschließend wäre.

Neben einer einfachen „Unachtsamkeit“ sind vielerlei Motivationen für Fehler in der Rechnungslegung denkbar. Negative Konsequenzen für das Management aufgrund der Bekanntgabe einer nachteiligen Information z.B. dass der Gewinn geringer als erwartet ausfällt oder dass das Jahresergebnis negativ ausfallen würde, könnten eine Rolle spielen. Denn diese Umstände sind geeignet geringere Bonuszahlungen aufgrund einer abnehmenden Aktienbewertung nach sich zu ziehen oder es können auch opportunistische Karriereüberlegungen der Bilanzersteller die Ursache für Fehler in der Rechnungslegung sein (Kothari, Shu, & Wysocki, 2009). Daher werden zum Teil die erlaubten Grenzen der Ermessensspielräume des einzuhaltenden Regelwerks der Rechnungslegung überschritten, um

Informationen mit negativen Konsequenzen zu verbergen. Dies führt unweigerlich zu fehlerhaften Informationen in der Berichterstattung. Dann stellt sich für das Management auch die Frage, wie lange man diesen Fehler verbirgt.

Natürlich ist hierbei zu berücksichtigen, dass dieser Ermessensspielraum der Unternehmensführung im Ordnungsrahmen der vorliegenden Corporate Governance Struktur durch z.B. institutionelle, faktische und juristische Vorgaben eingeschränkt wird (Healy & Palepu, 2001). Unter Corporate Governance versteht man allgemein den faktischen und rechtlichen Ordnungsrahmen für die Überwachung und Leitung eines Unternehmens (Gabler, 2018). So geben z.B. Gesetze, Rechnungslegungsstandards sowie Enforcement-Mechanismen hier einen Handlungsrahmen vor, welcher bei der Entscheidung des Managements einen Fehler in der Rechnungslegung einzugestehen, zu berücksichtigen ist. Der bestehende Corporate Governance Ordnungsrahmen verteilt hierbei Kompetenzen und Verantwortungen auf einzelnen Elemente (z.B. an den Aufsichtsrat, den Abschlussprüfer aber auch den Kapitalmarkt). Denn gerade eine effektive Corporate Governance trägt bedeutend zum Funktionieren des wirtschaftlichen Handelns bei (Bank for International Settlements, 2015). Da eine Verschleierung einer negativen Information bei längerer Zurückhaltung auch eine stärkere Bestrafung z.B. durch den Kapitalmarkt nach sich ziehen könnte, würd dies wieder zu einer schnellstmöglichen Veröffentlichung führen (Skinner, 1994). Ziel dieser Arbeit ist es sich nun mit diesem Konstrukt „Corporate Governance“ und dessen Wechselwirkungen zur Qualität der Rechnungslegung zu beschäftigen.

Der Fokus dieser Arbeit sind Falschdarstellungen in der Rechnungslegung, so genannten „Misstatements“, und deren Wechselwirkung mit einzelnen ausgewählten Corporate Governance Elementen. Hierzu wird im zweiten Kapitel zunächst die Fragen beantwortet, welche Erkenntnisse bezüglich der Determinanten und Konsequenzen von fehlerhafter Berichterstattung bereits in der wissenschaftlichen Literatur gesichert sind und wo Divergenzen vorliegen. Es werden innerhalb eine „State-of-the-Art“ Analyse die bisherigen empirischen Studien zu rückwirkenden Fehlerkorrekturen, so genannten „Restatements“, und deren Zusammenhang mit bedeutenden Elementen der Corporate Governance und die gewonnenen Resultate präsentiert und diskutiert. Dies liefert eine erstmalige Bestandsaufnahme dieses Forschungszweiges und bildet die Ausgangsposition für die nachfolgenden empirischen Analysen.

Kapitel drei setzt sich zunächst mit der Kommunikation von Fehlern in der Rechnungslegung durch die Unternehmensleitung an den Kapitalmarkt auseinander. Dabei wird die Annahme

getroffen, dass die erstmalige Publikationsform eines Fehlers sowohl vom Ermessensspielraum der Unternehmensleitung und den von ihnen verfolgten Interessen, als auch von externen Regularien bestimmt wird (Healy & Palepu, 1993-2001). Es wird dabei davon ausgegangen, dass Fehlereigenschaften die Wahl der erstmaligen Publikationsform beeinflussen. Als Publikationsarten für Fehler in der Rechnungslegung werden DPR Fehlermeldungen des Bundesanzeigers, Ad-Hoc-Meldungen, Unternehmenspressemitteilungen und Unternehmensabschlüsse der Jahre 2005 bis 2014 herangezogen. Dabei werden Hinweise festgestellt, dass bestimmte Eigenschaften die erstmalige Publikationsform beeinflussen. Gerade schwerwiegende Fehler werden in einer Ad-Hoc Meldung publiziert.

Ein weiteres Ziel von Kapitel drei ist es festzustellen, ob die erstmalige Publikationsform der Falschdarstellung für die Adressaten am Eigenkapitalmarkt von Bedeutung ist. Die erstmalige Publikationsform sollte den Teilnehmern am Kapitalmarkt zusätzlich Informationen über den Informationsvorsprung des Managements übermitteln und somit die Kapitalmarktreaktion beeinflussen (Wagenhofer & Ewert, 2015). Gerade Ad-Hoc Meldungen verursachen die stärksten Kapitalmarktreaktionen, DPR Fehlermeldungen des Bundesanzeigers die geringsten, unabhängig z.B. von der Gewinnauswirkung des Fehlers. Neben den bereits bestehenden Analysen zu Kapitalmarktreaktion aufgrund von Fehlermeldungen liefert diese Studie einen neuen Einblick.

Untersuchungsobjekt von Kapitel vier ist, ob die Reaktionen der Eigenkapitalgeber auf eine Fehlermeldung von der Fehlererwartung abhängig sind. Denn bei gleichbleibender Glaubwürdigkeit der veröffentlichten Information sollte die Kapitalmarktreaktion allein von der Überraschung beeinflusst werden (Jennings, 1987). Um die gleichbleibende Glaubwürdigkeit zu gewährleisten, werden allein Fehlerbekanntmachungen des deutschen Enforcement-Systems zwischen 2005 und 2014 berücksichtigt. Anhand erhobener Unternehmenscharakteristika wird ein Maß für die Wahrscheinlichkeit eines Fehlers in der Rechnungslegung ermittelt und dessen Auswirkung auf die Eigenkapitalmarktreaktion analysiert. Die Resultate deuten jedoch darauf hin, dass nicht erwartete Fehler keine stärkeren Kapitalmarktreaktionen verursachen als erwartete. Andere Fehlereigenschaften, wie die kumulierte Ergebniswirkung beeinflussen die Reaktion stärker.

Nachdem in den vorherigen beiden Kapiteln Publikationsformen und Kapitalmarkteffekte von Fehlermeldungen untersucht worden, wird in Kapitel fünf in Kooperation mit Dr. Katrin Scharfenkamp analysiert, inwiefern die Zusammensetzung des Aufsichtsrats einen Einfluss auf die Wahrscheinlichkeit eines Fehlers in der Rechnungslegung hat. Ausgehend von Theorien zu

den verschiedenen Wirkungsrichtungen von Geschlechterdiversität in Teams auf deren Leistung, wird explorativ untersucht, inwieweit die Präsenz von Frauen in Prüfungsausschüssen oder im Aufsichtsrat die Wahrscheinlichkeit für Fehler in der Rechnungslegung determiniert. Empirisch untersucht wird ein Datensatz zu Restatements der DAX 30 Unternehmen von 2005 bis 2015 und der Zusammensetzungen der Aufsichtsräte bzw. Prüfungsausschüsse dieser Unternehmen. Diese Studie leistet ein Beitrag sowohl zum Literaturstrang zu den Effekten von weiblichen Aufsichtsratsmitgliedern auf die Leistung des Aufsichtsrats, als auch zum Literaturstrang zu den Determinanten von Fehlern in der Rechnungslegung. Theoretische und praktische Implikationen der explorativ empirischen Studie werden abschließend aufgezeigt. Zum Abschluss liefert Kapitel sechs noch eine Zusammenfassung der Erkenntnisse, sowie ein Fazit und einen Ausblick.

2 Fehlerkorrekturen in der internationalen Rechnungslegung in Interaktion mit Corporate-Governance-Elementen - Ein Resümee der empirischen Forschung¹

ZUSAMMENFASSUNG: Die Äußerungen rechnungslegungsbezogener Gremien (IASB, SEC, ESMA und EFRAG) bzw. von deren Mitgliedern über die Qualität und Komplexität der Finanzberichterstattung und jüngste Bilanzskandale machen nach wie vor deutlich, wie bedeutend die Identifizierung von Verbesserungspotenzialen in diesem Bereich ist. Fehlerkorrekturen (Restatements) von veröffentlichten IFRS- und US-GAAP-Abschlüssen liefern eine adäquate Grundlage, um Determinanten für fehlerhafte Berichterstattung zu ermitteln und entsprechende Reaktionen festzustellen. Kernanliegen dieses Beitrags ist es, eine Bestandsaufnahme wesentlicher empirischer Resultate wiederzugeben, um Handlungsweisen aufzuzeigen. Dabei werden bedeutende Bestandteile der Corporate Governance einzeln betrachtet.

¹ Bei diesem Kapitel handelt es sich um eine aktualisierte und erweiterte Version der Publikation: Maul, S. (2014). Fehlerkorrekturen in der internationalen Rechnungslegung in Interaktion mit Corporate-Governance-Elementen - Ein Resümee der empirischen Forschung. *Zeitschrift für Corporate Governance*, 9, 227-234.

2.1 Einleitung

Der Jahresabschluss eines Unternehmens gibt die Vermögens-, Finanz- und Ertragslage des vergangenen Geschäftsjahres wieder und stellt daher ein bedeutendes Informationsinstrument dar. Dabei sollen bestehende Corporate-Governance-Strukturen eine korrekte Darstellung sicherstellen. Zu beachten ist jedoch, dass die Abschlusserstellung und -prüfung eine herausfordernde Aufgabe darstellt und sowohl unabsichtliche als auch bewusste Fehler in diesem Prozess nicht ausgeschlossen werden können. Ist eine nachträgliche Korrektur erforderlich, bestätigt dies eine zuvor unentdeckte Falschdarstellung oder Informationsauslassung durch die Unternehmensführung und -überwachung². Daher werden Fehlerkorrekturen als ein Indikator für eine ungenügende Leistung auf Seiten der Corporate Governance betrachtet³. Dieser Beitrag legt den Fokus auf „Restatements“, d.h. eine i.d.R. retrospektive, erfolgsneutrale Korrektur von Fehlern früherer Perioden⁴. Als direktes Resultat einer Falschdarstellung liefern sie eine geeignete Datenquelle zur Ermittlung der Ursachen und Konsequenzen von rechnungslegungsbezogenen Fehlern⁵.

Die ununterbrochene Diskussion über die Qualität internationaler Rechnungslegung wird auf vielfältige Weise geführt und verdeutlicht die Aktualität der Problematik für Forschung und Praxis. So gab das International Accounting Standards Board (IASB) im Jahr 2013 die Bildung einer neuen Arbeitsgruppe im Rahmen seiner „Disclosure Initiative“ bekannt, dessen Ziel es ist, die Darstellung der Finanzberichterstattung deutlich zu verbessern⁶. Auch im IASB Work Plan 2017-2021 liegt der Fokus des Standardsetters aufgrund der „Disclosure Initiative“ auf der Verbesserung des Informationsaustauschs mittels der Finanzberichterstattung⁷. Auch Andrew Ceresney, Co-Direktor der United States Securities and Exchange Commission (SEC) Enforcement-Division, weist auf den Anstieg von Fehlerkorrekturen großer Unternehmen hin⁸. Daneben diskutiert die European Financial Reporting Advisory Group (EFRAG) die Komplexität der Rechnungslegung⁹ und die europäische Wertpapieraufsichtsbehörde ESMA

² Vgl. Abbott et al., *Auditing: A Journal of Practice & Theory* 1/2004, S. 69.

³ Vgl. Dechow et al., *Contemporary Accounting Research* 1/1996 S. 22; Larcker et al., *The Accounting Review* 4/2007, S. 989; Flanagan et al., *International Journal of Commerce and Management* 4/2008 S. 374.

⁴ Siehe IAS 8.5, 8.41 und 8.42; ASC 250-10-20, 250-10-45-23.

⁵ Etwa keine Einschränkung auf nur durch Enforcement-Behörden identifizierte Fehler.

⁶ Vgl. IASB Press Release, IASB announces new staff group to focus on Disclosure Initiative 2013, abrufbar unter: <http://www.ifrs.org/Alerts/PressRelease/Pages/IASB-announces-new-staff-group-to-focus-on-Disclosure-Initiative-October-2013.aspx> (06.03.2014).

⁷ Vgl. IASB, IASB Work Plan 2017-2021, 2016.

⁸ Vgl. Ceresney, *Financial Reporting and Accounting Fraud*, American Law Institute Continuing Legal Education 2013, abrufbar unter: <http://www.sec.gov/News/Speech/Detail/Speech/1370539845772#.UoUOEBCFdek> (26.11.2013).

⁹ Vgl. EFRAG, *Getting a Better Framework, Complexity*, Bulletin, 2014.

(European Securities and Markets Authority) kritisiert aktuell, dass trotz steigender Erfahrung in der IFRS-Rechnungslegung weiterhin eine Verbesserung der Qualität der Finanzberichterstattung geboten sei¹⁰. Dies machte die ESMA erneut in einer öffentlichen Bekanntmachung zusätzlich deutlich¹¹. Als bedeutendes Praxisbeispiel kann die Identifikation finanzieller Unregelmäßigkeiten bei der Reebok India Company im März 2012 aufgeführt werden, welche zu einer Überprüfung der betroffenen Jahresabschlüsse führte. Die interne Untersuchung deckte bilanzierte Scheinumsätze und -gewinne über mehrere Jahre auf. Dies führte u.a. dazu, dass dem damaligen Geschäftsführer gekündigt wurde und mehrere Konzernabschlüsse der adidas Group rückwirkend zu korrigieren waren. Eine Verminderung des im Jahr 2011 ausgewiesenen Konzerngewinns um 62 Mio. €, circa 10 % des fehlerhaft publizierten Betrags war u.a. das Ergebnis¹². Weitere prominente Beispiele sind die Puma SE, die MIFA Mitteldeutsche Fahrradwerke AG, die Teldafax Holding AG, sowie die Drogeriemarktkette Schlecker. Bei Puma wurden aufgrund doloser Handlungen bei einer Tochtergesellschaft, welche im Jahr 2010 zu zusätzlichen Aufwendungen von 31 Mio. € führten, die Vergleichszahlen betreffend das Geschäftsjahr 2009 nachträglich korrigiert¹³, die MIFA Mitteldeutsche Fahrradwerke AG stellte 2014 fest, in den Vorjahren wesentliche falsche Rechnungslegungsangaben gemacht zu haben, die insgesamt mit einem Bilanzverlust von ca. 28 Mio. € beziffert wurden¹⁴. Bei der Teldafax Holding AG, eine der größten deutschen Unternehmenszusammenbrüche, wurden u.a. Buchführungspflichten verletzt¹⁵ und bei Schlecker sollen Wirtschaftsprüfer falsche Bilanzen testiert haben¹⁶.

Die Wechselwirkung mit den Elementen der Corporate Governance begründet das Interesse der wirtschaftswissenschaftlichen Forschung für diesen Themenkomplex¹⁷. Aus Sicht der Unternehmenspraxis erscheint es ebenfalls sinnvoll, sich mit den Ursachen und Wirkungen von fehlerhafter Abschlusserstellung und -publikation auseinanderzusetzen, um die Konsequenzen abschätzen zu können und diese in Zukunft zu vermeiden. Eine höhere Qualität der Berichterstattung wäre die Folge. Vor diesem Hintergrund leistet die nachfolgende State-of-the-Art-Analyse eine Übersicht der bisherigen empirischen Befunde. Dabei gliedert sich der Gang der Untersuchung wie folgt: Nach allgemeinen theoretischen Überlegungen (Abschn. 2)

¹⁰ Vgl. ESMA, Activity Report of the IFRS Enforcement activities in Europe in 2012, 2013, S. 3-4.

¹¹ Vgl. ESMA, Public Statement improving the quality of disclosure in the financial statements, 2015, S. 1-2.

¹² Siehe adidas Group, Geschäftsbericht 2012, S. 203-205.

¹³ Siehe Puma SE, Geschäftsbericht 2010, S. 98.

¹⁴ Vgl. MIFA Mitteldeutsche Fahrrad AG, Ad-Hoc-Mitteilung vom 15.05.2014.

¹⁵ Vgl. Lessmann, Berliner Morgenpost 60/2017 S. 6.

¹⁶ Vgl. Petersen, Schlecker vor Gericht 2017, abrufbar unter: <http://www.heute.de/prozess-gegen-unternehmerfamilie-schlecker-beginnt-46683798.html> (06.03.2017).

¹⁷ Vgl. Baber et al., Accounting Horizons 2/2012 S. 219.

erfolgt in Abschn. 3 die Würdigung der empirischen Befunde der Restatement-Forschung. Abschn. 4 schließt mit einer Zusammenfassung inklusive Fazit.

2.2 Grundlegende theoretische Überlegungen

Der überwiegende Teil empirischer Studien folgt der klassischen Annahme, dass „gute“ Corporate Governance zu qualitativ höherer Rechnungslegung führt, d.h. weniger Fehlerkorrekturen zur Folge habe. Es liegen derzeit jedoch keine aussagekräftigen theoretischen Modelle zur Wechselwirkung zwischen Restatements und Elementen der Corporate Governance vor¹⁸. Somit sind eindeutige theoretische Vorhersagen schwierig zu formulieren. So führen z.B. Kosten-Nutzen-Analysen von Rechnungslegungsentscheidungen, die ein Restatement verursachen, zu abweichenden Befunden. Eine denkbare Sichtweise ist, dass Kapitalmarktteilnehmer die Rechnungslegung für ihre Investitionsentscheidung heranziehen, eine Fehlerbekanntgabe zu einer Neubewertung dieser führt¹⁹ und sich so negativ auf den Aktienkurs auswirkt²⁰. Ergo sollte das Management einen Anreiz haben, die Falschdarstellung zu vermeiden²¹. Jedoch ist auch Gegenteiliges denkbar. Um einmalig die Aktienfinanzierung einer geplanten Unternehmensübernahme zu erleichtern und die Verhandlungsposition zu stärken²², besteht der Anreiz über geschönte Unternehmensinformationen den eigenen Aktienkurs zu steigern²³. Davon würden sowohl die Unternehmensführung als auch die Anteilseigner einmalig profitieren und zwar unabhängig davon, ob es nachfolgend zu einem Restatement kommt²⁴. Weitere Beispiele sind denkbar. So haben unabhängige nicht-geschäftsführende Direktoren (outside directors) des Board of Directors, sollten sie Mitglied mehrerer Boards sein, einen höheren Anreiz zur Überwachung der Managementhandlungen, um sich eine entsprechende Reputation aufzubauen²⁵. Weniger Fehlerkorrekturen wären die Folge²⁶. Jedoch begründet der sie kennzeichnende schlechtere

¹⁸ Vgl. Larcker et al., *The Accounting Review* 4/2007 S. 984.

¹⁹ Vgl. Baber et al., *Accounting Horizons* 2/2012 S. 223.

²⁰ Vgl. Palmrose et al., *Journal of Accounting and Economics* 1/2004 S. 63.

²¹ Vgl. Baber et al., *Accounting Horizons* 2/2012 S. 223.

²² Vgl. Shleifer/Vishny, *Journal of Financial Economics* 3/2003 S. 309.

²³ Vgl. D'Avolio et al., *Technology, Information Production, and Market Efficiency, Economic Policy and the Information Economy* 2001, S. 149.

²⁴ Vgl. Baber et al., *Accounting Horizons* 2/2012 S. 223.

²⁵ Vgl. Vafeas, *Journal of Financial Economics* 1/1999 S. 117; Fama/Jensen, *Journal of Law & Economics* 2/1983 S. 315.

²⁶ Vgl. Baber et al., *Accounting Horizons* 2/2012 S. 223.

Informationsstand über das Unternehmen²⁷ eine durch sie eingeschränkte Überwachung²⁸. Der theoretische Hintergrund erscheint somit nicht eindeutig.

2.3 Diskussion der empirischen Studien

Trotz zahlreicher Restatement-Studien sind State-of-the-Art-Analysen, welche Ergebnisse im Zusammenhang mit einzelnen Institutionen der Corporate Governance zusammenfassen, selten zu finden. Vor allem aus Sicht der Praxis scheint eine präzise Bestandsaufnahme von Forschungsbefunden geboten²⁹, um direkte Möglichkeiten zur Qualitätssteigerung der Finanzberichterstattung aufzuzeigen. Restatements werden hierbei als Surrogat für die Rechnungslegungsqualität, aber auch als Sanktionspotenzial betrachtet. Um die Anzahl der diskutierten Corporate Governance Elemente auf die wesentlichen zu begrenzen, werden folgende rechnungslegungsbezogene Gruppen betrachtet: Das Board of Directors bzw. Audit Committee (Prüfungsausschuss), das Top Management, die internen Unternehmenskontrollen und der Abschlussprüfer. Als bedeutende Adressaten werden Eigen- und Fremdkapitalgeber betrachtet. Zuletzt werden Zusammenhänge zur Finanzberichterstattung präsentiert. Den Hauptteil der bestehenden Restatement-Forschung machen derzeit US-amerikanische Studien aus.

2.3.1 Board of Directors/Audit Committee

Das Board of Directors³⁰ ist für die Qualität des Jahresabschlusses von großer Bedeutung, da es dessen Korrektheit sicherzustellen hat. Dabei übernimmt eine Teilgruppe der Mitglieder des Gremiums, das Audit Committee, konkrete Aufgaben in diesem Bereich³¹. Relevante Studien gehen i.d.R. der Frage nach, ob und wie beide Gremien die Qualität der Bilanzierung prägen. Entsprechend zeigen DeFond/Jiambalvo (1991), dass allein das Bestehen eines Audit Committee im Unternehmen die Wahrscheinlichkeit eines (gewinnreduzierenden) Restatements vermindert³². In diesem Kontext wird der Unabhängigkeit der Committee-Mitglieder gegenüber dem Management und ihrer Finanzexpertise³³ ein beachtlicher Stellenwert zur Stärkung der Corporate Governance zugesprochen³⁴. Dementsprechend

²⁷ Vgl. Bushman et al., *Journal of Accounting and Economics* 2/2004 S. 179.

²⁸ Vgl. Baber et al., *Accounting Horizons* 2/2012 S. 224.

²⁹ Ähnliche Beiträge sind z.B. Freidank/Velte, *ZCG* 1/2012 S. 26-34; Quick/Wiemann, *ZCG* 2/2013 S. 77-85.

³⁰ Hierbei beziehen sich die Aussagen auf das Board von US-Unternehmen.

³¹ Vgl. Larcker/Tayan, *Corporate Governance Matters*, 2011, S. 68, 72.

³² Vgl. DeFond/Jiambalvo, *The Accounting Review* 3/1991 S. 644, 647.

³³ Meist angenommen wenn mindestens ein Mitglied ein Certified Public Accountand, Chartered Financial Analyst, ein ehemaliger chief financial officer o.ä. ist.

³⁴ Vgl. Velte, *Journal für Betriebswirtschaft* 2&3/2009 S. 123.

beobachten Schmidt/Wilkins (2013), dass ein Audit Committee-Mitglied mit Expertenwissen im Bereich der Rechnungslegung die Aussicht auf eine termingerechte Bekanntgabe eines Restatements erhöht, besonders wenn der Vorsitzende des Gremiums das notwendige Expertenwissen besitzt³⁵. Die Forschungsergebnisse zur Unabhängigkeit im Zusammenhang mit Restatements sind jedoch uneinheitlich³⁶. Agrawal/Chadha (2005) stellen fest, dass finanzwirtschaftliche Fachkenntnisse eines unabhängigen Mitglieds in einem der beiden Gremien die Wahrscheinlichkeit eines Restatements signifikant reduziert³⁷. Eine Beteiligung des „chief executive officers“ (CEOs) bei der Auswahl der Direktoren reduziert jedoch die z.T. beobachteten positiven Effekte der Unabhängigkeit und der Fachkenntnisse³⁸. Freiwillige Restatements sind eher bei stärkerer Unabhängigkeit der Mitglieder festzustellen³⁹.

Weitere Befunde sind, dass die Mitgliedschaft mindestens einer Frau im Board die Wahrscheinlichkeit für ein Restatement senkt, begründet u.a. mit weniger ausgeprägtem Gruppendenken⁴⁰, aber kurz- oder langfristig ausgerichtete Aktienoptionen für Mitglieder des Audit Committee eine Zunahme der Wahrscheinlichkeit von gewinnwirksamen Restatements bewirken. Kurzfristige Optionen würden kurzfristigen Unternehmenserfolg begünstigen und langfristigen Optionen würde die entsprechende Anreizwirkung fehlen⁴¹. Für taiwanische Unternehmen⁴² stellt Young et al. (2008) fest, dass je größer die Divergenz zwischen dem Anteilsbesitz (ownership) und der Verfügungsgewalt (control power) des Mehrheitsaktionärs ist, desto eher kommt es zu Restatements. Dabei wird die Verfügungsgewalt als Anteil der dem Mehrheitsaktionär zuzurechnenden Sitze, sowohl im Organ der Unternehmensleitung als auch im Aufsichtsorgan, ermittelt. Zusätzlich steigt durch eine zunehmende Divergenz auch die Schwere der Fehler⁴³.

Eine Konsequenz der Fehlerpublikation ist der Gremienausschluss. Nicht-geschäftsführende Mitglieder des Board of Directors sind aufgrund wesentlicher ergebnisreduzierender Restatements einem hohen Risiko ausgesetzt, aus dem Board ausgeschlossen zu werden.

³⁵ Vgl. Schmidt/Wilkins, *Auditing: A Journal of Practice & Theory* 1/2013 S. 221.

³⁶ Vgl. Abbott et al., *Auditing: A Journal of Practice & Theory* 1/2004 S. 69; Agrawal/Chadha, *Journal of Law and Economics* 2/2005 S. 394; Lin et al., *Managerial Auditing Journal* 9/2006 S. 921; Wang et al., *Applied Financial Economics* 11/2013 S. 963.

³⁷ Vgl. Agrawal/Chadha, *Journal of Law and Economics* 2/2005 S. 394.

³⁸ Vgl. Carcello et al., *Contemporary Accounting Research* 2/2011 S. 396-397, 423.

³⁹ Vgl. Marciukaityte et al., *Financial Analysts Journal* 5/2009 S. 61.

⁴⁰ Vgl. Abbott et al., *Accounting Horizons* 4/2012 S. 607, 626.

⁴¹ Vgl. Archambeault et al., *Contemporary Accounting Research* 4/2008 S. 971, 985.

⁴² Taiwans Rechnungslegungsstandards sind weitgehend identisch mit den US-GAAP, besonders im Bereich der nachträglichen Fehlerkorrektur (Restatement) (Vgl. Sue et al., *Journal of Business Finance & Accounting* 9&10/2013 S. 1069).

⁴³ Vgl. Young et al. *Review of Quantitative Finance and Accounting* 3/2008.

Ebenso Mitglieder des Audit Committee. Auch Board-Mitgliedschaften bei weiteren Unternehmen werden aufgrund eines Restatements eingebüßt. Dies gilt umso eher, je schwerwiegender das Restatement ist (z.B. die Anzahl der betroffenen Quartale), wobei das Audit Committee davon eher betroffen ist. Begründet wird dies mit Reputationsverlusten aufgrund der Falschdarstellung⁴⁴. Vergleichbare Resultate beobachten Arthaud-Day et al. (2006)⁴⁵. Carver (2014) stellt jedoch in diesem Zusammenhang fest, dass die mögliche Beibehaltung eines Mitglieds im Audit Committee nach einem Restatement vom Einfluss des CEO und dessen Mitwirkung im vorherigen Nominierungsprozess positiv beeinflusst wird. Dabei werden vor allem Mitglieder ausgetauscht, die einen stärkeren Anreiz haben die Berichterstattung zu überwachen. Dies deutet eine Einflussnahme nach dem Bekanntwerden des Bilanzfehlers an⁴⁶.

Bei der Ergebnisinterpretation ist jedoch zu beachten, dass die Studien nur das sog. One-Tier-Modell (Vereinigung von Leitung und Kontrolle in einem Gremium) berücksichtigen und eine Gegenüberstellung zum Two-Tier-Modell (Trennung von beidem) nicht stattfindet. Auch dies könnte die Effektivität der Corporate Governance beeinflussen⁴⁷. Berücksichtigt man die Überlegung von Jaswadi (2013), dass im Trennungsmodell der Aufgabenbereiche des Kontrollgremiums in vielerlei Hinsicht denen des Board of Directors entspricht, und das Leitungsgremium mit dem CEO und den geschäftsführenden Direktoren vergleichbar ist⁴⁸, wäre eine Übertragung einzelner Resultate denkbar. Jedoch werden hierbei die Besonderheiten der jeweiligen Systeme außer Acht gelassen⁴⁹. Weiterer Forschungsbedarf scheint erforderlich.

2.3.2 Top Management

Als Bilanzersteller verantwortet das Top Management in erster Linie Fehler in der Rechnungslegung⁵⁰. So bestätigen Aier et al. (2005) einen negativen empirischen Zusammenhang zwischen dem Fachwissen (Berufserfahrung, MBA-Ausbildung, Wirtschaftsprüferzulassung) des „chief financial officers“ (CFOs) und dem Auftreten eines Restatements⁵¹.

⁴⁴ Vgl. Srinivasan, *Journal of Accounting Research* 2/2005 S. 291-292, 301.

⁴⁵ Vgl. Arthaud-Day et al., *Academy of Management Journal* 6/2006 S. 1119.

⁴⁶ Vgl. Carver, *Journal of Accounting and Public Policy* 1/2014 S. 52.

⁴⁷ Vgl. Jungmann, *European Company and Financial Law Review* 4/2007 S. 426.

⁴⁸ Vgl. Jaswadi, *Corporate Governance and Accounting Irregularities: Evidence from the two-tier board structure in Indonesia 2013*, S. 103, 105-106.

⁴⁹ Vgl. Jungmann, *European Company and Financial Law Review* 4/2007 S. 428.

⁵⁰ Vgl. Feldmann et al., *Auditing: A Journal of Practice & Theory* 1/2009 S. 208.

⁵¹ Vgl. Aier et al., *Accounting Horizons* 3/2005 S. 123.

Ebenso kann die Vergütungsform die Qualität der Rechnungslegung beeinträchtigen. So zeigen Burns/Kedia (2006), dass je sensibler das Optionsportfolio des CEOs durch Aktienkursbewegungen beeinflusst wird, desto eher kommt es zu fehlerhaften Geschäftsberichten aufgrund aggressiver Bilanzierung⁵². Ebenfalls wird festgestellt, dass die Wahrscheinlichkeit einer unzutreffenden Berichterstattung bei höherer Aktienoptionsvergütung und erheblichen „in-the-money“-Aktienoptionen⁵³ des CEOs zunimmt. Begründet wird dies mit der Anreizwirkung derartiger Vergütungsbestandteile, die zur kurzfristigen Steigerung der Unternehmensperformance bzw. des Aktienkurses eine Manipulation der Bilanzzahlen fördert⁵⁴. Eine effektive Überwachung des CEOs durch das Board sollte die Wahrscheinlichkeit einer Fehlerkorrektur verringern. Die Zugehörigkeit des CEOs zu den Gründungsmitgliedern der Gesellschaft oder die Tatsache, dass der CEO auch Vorsitzender des Board of Directors ist, scheint jedoch die Überwachung einzuschränken und Fehler somit zu fördern, wobei sich die Studien im letzten Punkt uneins sind⁵⁵. Armstrong et al. (2013) berücksichtigen zusätzlich wie empfindlich der Wohlstand des Managers auf Risikoänderungen reagiert (Portfolio Vega) und stellen fest, dass Aktienportfolios den Anreiz für eine fehlerhafte Berichterstattung erhöhen, wenn ihre Risikoaversität durch das Portfolio sinkt⁵⁶. Ein möglicher weiterer Erklärungsfaktor für Restatements könnte sein, dass bedeutende Unternehmensereignisse den Fokus des Managements von der Rechnungslegung ablenken. Files et al. (2014) stellen für „überlappende“ Restatements (mehrere Restatements betreffen dieselbe Periode) fest, dass diese bei Unternehmen, die aufgegebene Geschäftsbereiche oder Schwächen im internen Kontrollsystem angeben, eher anfallen. Wichtigen Änderungen im operativen Geschäft oder im Überwachungsumfeld scheinen das Management von Problemen in der Finanzberichterstattung abzulenken⁵⁷.

Gehaltseinbußen und Beschäftigungsverluste können die Folge von durch falsche Bilanzierung verursachten Zweifeln an den Fähigkeiten des Top-Managements sein. So zeigen Desai et al. (2006a), dass bestimmte Mitglieder des Managements (Chairman, CEO oder President), deren Gesellschaft ein Restatement vornimmt, einer nahezu doppelt so hohen Ausscheidewahrscheinlichkeit aus dem Unternehmen ausgesetzt sind, als die entsprechende

⁵² Vgl. Burns/Kedia, *Journal of Financial Economics* 1/2006 S. 35, 42.

⁵³ Vgl. Efendi et al., *Journal of Financial Economics* 3/2007 S. 667.

⁵⁴ Vgl. Harris/Bromiley, *Organization Science* 3/2007, S. 352, 362.

⁵⁵ Vgl. Agrawal/Chadha, *Journal of Law and Economics* 2/2005 S. 371, 395; Efendi et al., *Journal of Financial Economics* 3/2007 S. 667.

⁵⁶ Vgl. Armstrong et al., *Journal of Financial Economics* 2/2013 S. 327.

⁵⁷ Vgl. Files et al. *Accounting Horizons* 1/2014 S. 93-95.

Kontrollgruppe⁵⁸. Weitere Studien beobachten analoge Resultate für CEO und CFO⁵⁹. Für diese Vorgehensweise spricht die abnehmende Wahrscheinlichkeit für ein erneutes Restatement bei Austausch des CEO/CFO⁶⁰. Daneben beeinflussen Fehlereigenschaften die nachfolgenden Konsequenzen. So nimmt mit steigendem Ausmaß des Restatements (z.B. Höhe des korrigierten Betrags) die Ausscheidewahrscheinlichkeit des CEOs oder CFOs zu⁶¹. Gerade bewusste Fehler (irregularities) können für einen Abgang im Top Management verantwortlich gemacht werden.⁶² Auch fällt die Wahrscheinlichkeit eines Arbeitsplatzverlustes des CEOs bei dieser Fehlerart doppelt so hoch aus, wenn dieser kein Gründungsmitglied ist, im Vergleich zu einer Gründungsmitgliedschaft. Ist der CEO Gründer, scheidet eher der CFO aus⁶³. Bei sehr schwerwiegenden Fehlern in der Rechnungslegung werden bei der Neuvergabe der CEO-Position vor allem Personen eingestellt, die bereits den Vorstandsvorsitz bei einem anderen Unternehmen inne hatten, die Sanierungserfahrung und einen elitären Bildungshintergrund (Abschluss einer Eliteuniversität) haben⁶⁴. Collins et al. (2008) können bei gewinnsteigernden Fehlern einen Abgang des CFOs oder eine Verringerung seiner Bonuszahlungen nur dann beobachten, wenn die Fehler zu Sammelklagen (class-action securities litigation) führen. Aber auch bei weiteren Managementmitgliedern (z.B. „chief operating officer“ (COO))⁶⁵ findet eine Positionsaufgabe statt. Restatements beeinflussen nicht nur aktuelle, sondern auch nachfolgende Beschäftigungen in anderen Unternehmen. Für Mitglieder des Top-Managements stellen Desai et al. (2006a) fest, dass die Wiedereinstellungsrate gegenüber einer Kontrollgruppe um ca. die Hälfte sinkt. Die neuen Engagements fallen sowohl im Vergleich zu den früheren Positionen, als auch zu den neuen Beschäftigungsverhältnissen von Managern ohne vorheriges Restatement geringwertiger aus⁶⁶. Collins et al. (2009) zeigen vergleichbare und umfangreiche Maßregelungen des CFOs bei gewinnreduzierenden Restatements⁶⁷. Betrachtet man die empirischen Befunde, ist i.d.R. eine Arbeitsmarkt-Disziplinierung des Managements festzustellen. Ebenso sind Anpassungen in der Vergütungsstruktur zu beobachten. Der Vergütungsanteil in Form von Optionen zwei Jahre nach einem Restatement nimmt beim CEO signifikant ab. Zugleich sinkt die Aktienvolatilität und die operative

⁵⁸ Vgl. Desai et al., *The Accounting Review* 1/2006a S. 108.

⁵⁹ Vgl. Arthaud-Day et al., *Academy of Management Journal* 6/2006 S. 1119; Collins et al., *Journal of Accounting, Auditing & Finance* 1/2009 S. 32; Zhang et al., *Asia Pacific Journal of Management* 4/2013 S. 1005-1008.

⁶⁰ Vgl. Chi/Sun *Journal of Accounting and Finance* 2/2014 S. 28-29.

⁶¹ Vgl. Wang/Chou, *Review of Business* 2/2011 S. 24; Land, *Pacific Accounting Review* 3/2010 S. 180.

⁶² Vgl. Hennes et al., *The Accounting Review* 6/2008, S. 1515.

⁶³ Vgl. Leone/Liu, *The Accounting Review* 1/2010 S. 289.

⁶⁴ Vgl. Gomulya/Boeker, *Academy of Management Journal* 6/2014 S. 1759, 1766.

⁶⁵ Vgl. Collins et al., *Advances in Accounting* 2/2008 S. 162, 165.

⁶⁶ Vgl. Desai et al., *The Accounting Review* 1/2006a S. 108.

⁶⁷ Vgl. Collins et al., *Journal of Accounting, Auditing & Finance* 1/2009 S. 9, 25, 28.

Performance steigt. Dies deutet einen gesunkenen Anreiz des CEOs an, übermäßig riskante Investitionen zu realisieren⁶⁸. Allerdings beobachten Wang et al. (2013) im Zeitraum nach dem Sarbanes Oxley Act (SOX) nur vereinzelt eine Abnahme der Vergütung des Managements nach einem Restatement. Eine höhere Mitgliederanzahl im Board hilft, das Vergütungsniveau nach einem Restatement moderat zu halten⁶⁹.

Chakravarthy et al. (2014) vermuten auch einen starken Anreiz des Managements reputationssteigernde Maßnahmen nach Bekanntgabe des Restatments durchzuführen, z.B. Austausch des CEO oder Stärkung der internen Kontrollen. Sie beobachten, dass im Vergleich zu Unternehmen mit korrekter Bilanzierung, die nach einem Restatment veröffentlichen Pressemitteilungen öfters reputationsbildende Maßnahmen enthalten⁷⁰. Jedoch wird eher ein risikominderndes Verhalten bei neuen Gewinnprognosen des Managements nach einem Restatment beobachtet (weniger und ungenauere Prognosen), was gegen eine bewusste Wiederherstellung der Reputation spricht⁷¹. Auch Gordon et al. (2014) beobachtet, dass in der Periode nach einem Restatement die Genauigkeit der Gewinnprognosen im Vergleich zur Periode vor dem Restatement abnimmt. Jedoch erläutern die Autoren dies mit einer Verbesserung der Kontrollmechanismen nach dem Fehler, welche opportunistisches Verhalten durch das Management erschwert. Vor dem Fehler konnten jedoch von der Unternehmensleitung opportunistischer Handlungsspielraum genutzt werden⁷². Zusätzlich hat das Management in US-Unternehmen grundsätzlich Handlungsspielraum, in welcher Form⁷³ ein Restatement bekannt gemacht wird, mit unterschiedlichen Niveaus an Transparenz. Je wesentlicher der Fehler ausfällt, desto transparenter wird die Publikationsform gewählt. Dasselbe gilt für Restatements als Folge von SEC Untersuchungen oder wenn Schwächen im internen Kontrollsystem bestehen⁷⁴.

2.3.3 Interne Unternehmenskontrollen

Wirkungsvolle interne Kontrollen stellen die Grundlage für eine verlässliche und glaubwürdige Rechnungslegung dar. In diesem Kontext treffen Doyle et al. (2007) die Annahme, dass Schwächen der internen Kontrollmechanismen Bilanzpolitik und unbeabsichtigte Fehler

⁶⁸ Vgl. Cheng/Farber, *The Accounting Review* 5/2008 S. 1217.

⁶⁹ Vgl. Wang et al., *Applied Financial Economics* 11/2013 S. 963-964.

⁷⁰ Vgl. Chakravarthy et al., *The Accounting Review* 4/2014 S. 1329, 1330, 1337.

⁷¹ Vgl. Ettredge et al., *Accounting Horizons* 2/2013 S. 347.

⁷² Vgl. Gordon et al., *Journal of Business Finance & Accounting* 7-8/2014 S. 867-869.

⁷³ 8-K report, 10-K report, beide Berichtsformen oder Vornahme des Restatements ohne dies zusätzlich bekannt zu geben.

⁷⁴ Vgl. Plumlee/Yohn, *Journal of Management Accounting Research* 2/2015 S. 121-122.

begünstigen und beides zu Verzerrungen in der Periodenabgrenzung (accruals) führen. Dabei dienen u.a. Restatements als Surrogat für die Qualität der Periodenabgrenzung bzw. für die Rechnungslegungsqualität, da diese aus einer früheren Falschdarstellung resultieren. Es wird ein signifikanter Zusammenhang zwischen diesen und den Schwächen in den internen Unternehmenskontrollen beobachtet. Mängel in den internen Kontrollen erhöhen somit die Restatement-Wahrscheinlichkeit und mindern die Qualität der Finanzberichterstattung⁷⁵. Auch fallen die Fehler in der Rechnungslegung umso schwerwiegender aus, je geringer die Qualität⁷⁶ des internen Kontrollsystems ausfällt⁷⁷. Auch Weisenfeld et al. (2012) finden unter Berücksichtigung des Auditing Standard No. 2⁷⁸ des Public Company Accounting Oversight Board (PCAOB) Hinweise dafür, dass Restatements als bedeutender Indikator für ausgeprägte Schwächen in den internen Unternehmenskontrollen anzusehen sind⁷⁹. Besonders freiwillig bekanntgegebene Restatements, welche den Gewinn nachträglich mindern deuten auf Schwächen im internen Kontrollsystem hin⁸⁰. Jedoch zeigen Srinivasan et al. (2015), dass dieser positive Zusammenhang von Schwächen im internen Kontrollsystem und Restatements nur für Unternehmen aus Ländern mit ausgeprägter Rechtsstaatlichkeit nachgewiesen werden könne. Das Niveau der Durchsetzung von entsprechenden Regelungen beeinflusst die Wahrscheinlichkeit, dass ein Fehler in der Rechnungslegung entdeckt oder veröffentlicht wird⁸¹.

Werden nach einem Restatement die internen Kontrollmechanismen verbessert, nimmt die Wahrscheinlichkeit für ein erneutes Restatement ab⁸². Daneben stellen Guo et al. (2016) fest, dass Unternehmensleistungen an Arbeitnehmer (Altersvorsorge, Gesundheits- und Arbeitsschutzprogramme etc.) die Effektivität der internen Kontrollmechanismen erhöht und so vor allem das Auftreten von unbeabsichtigten Rechnungslegungsfehler signifikant reduziert⁸³.

⁷⁵ Vgl. Doyle et al., *The Accounting Review* 5/2007 S. 1142, 1144, 1158.

⁷⁶ Abhängig von: Auftreten von Schwächen im internen Kontrollsystem, Typ des internen Kontrollproblems, und Anzahl von Schwächen im internen Kontrollsystem.

⁷⁷ Vgl. Wang, *Accounting & Taxation* 1/2013 S. 19-20.

⁷⁸ Da dieser Standard bereits 2007 durch Auditing Standard No. 5 ersetzt wurde, wird aufgrund mangelnder Aktualität auf eine genauere Darstellung der Studie verzichtet.

⁷⁹ Vgl. Weisenfeld et al., *Journal of Finance and Accountancy* 2012 S. 1.

⁸⁰ Vgl. Wang/Huang, *Global Journal of Business Research* 1/2014 S. 1, 4.

⁸¹ Vgl. Srinivasan et al., *The Accounting Review* 3/2015 S. 1201-1202.

⁸² Vgl. Chi/Sun *Journal of Accounting and Finance* 2/2014 S. 28-29.

⁸³ Vgl. Guo et al., *The Accounting Review* 4/2016 S. 1167-1168.

2.3.4 Abschlussprüfer

Der Abschlussprüfer hat prinzipiell die Regelkonformität des Abschlusses festzustellen⁸⁴. Einerseits werden ihm daher Restatements angelastet⁸⁵, da der Fehler vor Veröffentlichung unentdeckt blieb. Andererseits kann auch er die Notwendigkeit eines Restatements aufdecken⁸⁶. Kritisch gesehen werden Gebühren für Leistungen des Abschlussprüfers außerhalb der eigentlichen Prüfung, da sie im Verdacht stehen, dessen Unabhängigkeit und damit die Prüfungsqualität zu beeinträchtigen. Mehr Restatements wären die Konsequenz⁸⁷. Dem widerspricht, dass zusätzliche Beratungsleistungen den erworbenen Kenntnisstand über das Unternehmen verbessern und zu einer qualitativ höherwertigen Prüfung führen⁸⁸. Die empirischen Befunde hierzu divergieren. So finden Kinney et al. (2004) einen signifikant positiven Zusammenhang zwischen unspezifizierten Nichtprüfungsleistungen und Restatements und unterstützen damit prinzipiell die erste Ansicht⁸⁹. Weitere Studien finden dagegen keinen oder nur einen schwachen Zusammenhang zwischen Gebühren für Nichtprüfungsleistungen⁹⁰ und dem Auftreten von Restatements⁹¹. Allerdings lässt sich in einzelnen Studien für andere Gebührenarten eine Abnahme der Prüfungsqualität des Abschlussprüfers beobachten⁹². Aber auch hier stellen z.B. Raghunandan et al. (2003) für abnormale Gesamtgebühren keinen signifikanten Zusammenhang fest⁹³. Überraschenderweise beobachten Blankley et al. (2012) in den Jahren nach dem Sarbanes-Oxley-Act, bei Berücksichtigung der Qualität interner Kontrollen, einen negativen Zusammenhang zwischen unerwartet hohen Prüfungsgebühren und Restatements⁹⁴. Diese negative Beziehung stellen auch Stanley/DeZoort (2007) bei Prüfungsmandaten fest, die nicht länger als drei Jahre bestehen. Begründet wird dies mit zu geringem Arbeitsaufwand und falscher Risikoeinschätzung des Prüfers bzw. geringerer Prüfungsqualität bei neuen Mandaten⁹⁵. Auch

⁸⁴ Vgl. Larcker/Tayan, *Corporate Governance Matters*, 2011, S. 341.

⁸⁵ Vgl. Byrnes et al., *BusinessWeek* 3767/2002 S. 44.

⁸⁶ Vgl. Kryzanowski/Zhang, *Journal of Corporate Finance* 21/2013 S. 89.

⁸⁷ Vgl. Kinney et al., *Journal of Accounting Research* 3/2004 S. 562.

⁸⁸ Vgl. Agrawal/Chadha, *Journal of Law and Economics* 2/2005 S. 377.

⁸⁹ Vgl. Kinney et al., *Journal of Accounting Research* 3/2004 S. 561.

⁹⁰ Dabei werden neben der absoluten Größe auch Verhältniszahlen oder der abnormale Anteil berücksichtigt.

⁹¹ Vgl. Raghunandan et al., *Accounting Horizons* 3/2003 S. 231; Agrawal/Chadha, *Journal of Law and Economics* 2/2005 S. 371; Bloomfield/Shackman, *Managerial Auditing Journal* 2/2008 S. 125; Liu et al., *Auditing: A Journal of Practice & Theory* 1/2009 S. 232.

⁹² Vgl. Kinney et al., *Journal of Accounting Research* 3/2004 S. 579; Bloomfield/Shackman, *Managerial Auditing Journal* 2/2008 S. 137.

⁹³ Vgl. Raghunandan et al., *Accounting Horizons* 3/2003 S. 223.

⁹⁴ Dabei berücksichtigen Blankley et al. (1/2012) nur Restatements, die den Gewinn, die Gewinnrücklagen oder den Cashflow aus betrieblicher Tätigkeit reduzieren oder fehlende Schulden korrigieren.

⁹⁵ Vgl. Stanley/DeZoort, *Journal of Accounting and Public Policy* 2/2007 S. 131; Blankley et al., *Auditing: A Journal of Practice & Theory* 1/2012 S. 79, 81, 86-87, 93.

steuerbezogene Dienstleistungen reduzieren die Wahrscheinlichkeit von (steuerbezogenen) Restatements, d.h. die Qualität der Berichterstattung erhöht sich. Entweder profitiert die Prüfungsqualität davon oder Mandanten hoher Rechnungslegungsqualität wählen ihre Prüfungsgesellschaft aufgrund von Steuerdienstleistungen⁹⁶. Weitere Untersuchungen analysieren Auswirkungen der Branchenspezialisierung des Prüfers auf die Prüfungsqualität und stellen fest, dass damit eine Reduzierung der Restatement-Wahrscheinlichkeit einhergeht⁹⁷. Jedoch lässt der Wechsel von einem nicht spezialisierten zu einem spezialisierten Prüfer diese steigen und umgekehrt⁹⁸. Chin/Chi (2009) finden Hinweise, dass eine Branchenspezialisierung des Prüfers auf Partner-Ebene (signing partner) die Wahrscheinlichkeit für ein Restatement reduziert, eine Spezialisierung auf Gesellschaftsebene (firm-level) allein lasse aber keine signifikanten Unterschiede erkennen⁹⁹. Es folgt daraus, dass eine Branchenspezialisierung des Wirtschaftsprüfers i.d.R. die Qualität der Prüfung und damit der Berichterstattung erhöht. Das Mandat einer Big 4-Wirtschaftsprüfungsgesellschaft¹⁰⁰ verringert nach dem Auftreten eines Restatments die Wahrscheinlichkeit für ein erneutes Restatement¹⁰¹. Zusätzlich sinkt die Restatement-Wahrscheinlichkeit, je länger der Wirtschaftsprüfer mit dem Mandat betraut ist¹⁰². Zudem findet Shin et al. (2011) nur vor der SOX-Periode Hinweise auf einen positiven Zusammenhang zwischen dem Zeitraum von Fehlerentdeckung bis zur Korrektur und der Anstellungsdauer des Wirtschaftsprüfers¹⁰³. Forderungen nach einer verpflichtenden Prüferrotation unterstützt beides nicht. Blankley et al. (2014) beobachten, dass eine abnormal lange Zeitdifferenz zwischen Ende des Geschäftsjahres und dem nachfolgenden Prüfbericht die Wahrscheinlichkeit für eine nachträgliche Korrektur des Abschlusses erhöht¹⁰⁴. Wurde gegen eine Wirtschaftsprüfungsgesellschaft bereits gerichtlich vorgegangen, erhöht dies die Rechnungslegungsqualität des Mandanten. Dies ist auch auf Niederlassungsebene festzustellen¹⁰⁵. Je höher der Arbeitsaufwand des Abschlussprüfers ist, desto geringer ist die Wahrscheinlichkeit für ein Restatement. Dieser Zusammenhang wird jedoch nur eindeutig beobachtet, wenn für das Risiko einer fehlerhaften Berichterstattung kontrolliert wird und

⁹⁶ Vgl. Kinney et al., *Journal of Accounting Research* 3/2004 S. 561, 585; Seetharaman et al., *Journal of Accounting, Auditing & Finance* 4/2011 S. 677.

⁹⁷ Vgl. Bloomfield/Shackman, *Managerial Auditing Journal* 2/2008 S. 126, für Prüfungsmandate ≤ 3 Jahre auch Stanley/DeZoort, *Journal of Accounting and Public Policy* 2/2007 S. 131.

⁹⁸ Vgl. Romanus et al., *Accounting Horizons* 4/2008 S. 410.

⁹⁹ Vgl. Chin/Chi, *Contemporary Accounting Research* 3/2009 S. 757.

¹⁰⁰ PWC, KPMG, EY und Deloitte.

¹⁰¹ Vgl. Chi/Sun *Journal of Accounting and Finance* 2/2014 S. 28-29; Files et al., *Accounting Horizons* 1/2014 S. 93.

¹⁰² Vgl. Stanley/DeZoort, *Journal of Accounting and Public Policy* 2/2007 S. 154-155.

¹⁰³ Vgl. Shin et al., *Journal of Accounting and Finance* 3/2011 S. 36.

¹⁰⁴ Vgl. Blankley et al., *Auditing: A journal of Practice & Theory* 2/2014 S. 27.

¹⁰⁵ Vgl. Lennox/Li, *Journal of Accounting and Economics* 1/2014 S. 59.

zwischen Restatements bei testierter und nicht testierter Berichterstattung unterschieden wird¹⁰⁶.

Eine Vielzahl von Studien legt sein Augenmerk auf die erhöhte Prüfungsqualität der Big 4- bzw. Big 5-Wirtschaftsprüfer¹⁰⁷ und das Verhältnis zu Restatements. Grundsätzlich wird angenommen, dass die Wahrscheinlichkeit für ein Restatement verringert wird¹⁰⁸. Jedoch findet Francis et al. (2013) Hinweise darauf, dass die Prüfungsqualität von Nicht-Big 4-Wirtschaftsprüfern und Big 4-Wirtschaftsprüfern nicht signifikant unterschiedlich ist, wenn die größten Big 4-Niederlassungen¹⁰⁹ nicht berücksichtigt werden. Dies könnte andeuten, dass der bisher festgestellte Qualitätsunterschied bei der Prüfung durch die größten Big 4-Niederlassungen getrieben wird¹¹⁰. Die Befürchtungen, dass ein aufgrund der dominierenden Big 4-Wirtschaftsprüfungsgesellschaften konzentrierter Prüfermarkt die Prüfungsqualität beeinträchtigt, kann von Newton et al. (2013) nicht bestätigt werden. Sie stellen eher eine Zunahme von Restatements bei höherer Wirtschaftsprüferkonkurrenz fest¹¹¹. Für bessere Prüfungsqualität der Big 4-Prüfer steht eine kürzere „dark period“ zwischen Fehlerfeststellung und der Bekanntgabe der Gewinnänderung mittels eines Restatements¹¹².

Auswirkungen im Abschlussprüfer-Mandanten Verhältnis sind ebenfalls festzustellen. So führen Restatements zu signifikant höheren Prüfungshonoraren¹¹³, begründet mit dem gestiegenen Prüfungsrisiko respektive einer verminderten Glaubwürdigkeit. Eine Möglichkeit des Ausgleichs besteht im Austausch des CFOs¹¹⁴. Die Zunahme des wahrgenommenen Prüfungsrisikos durch ein Restatement führt auch eher zu Mandatsniederlegungen. Die Wahrscheinlichkeit dafür steigt bei ausgeprägten Fehlern¹¹⁵, besonders bei „fraud“¹¹⁶, bei einer starken Corporate Governance¹¹⁷, wenn ein Verlust aufgedeckt wird oder die Veröffentlichung

¹⁰⁶ Vgl. Lobo/Zhao, *The Accounting Review* 4/2013 S. 1385-1386.

¹⁰⁷ Zusätzlich Arthur Andersen.

¹⁰⁸ Vgl. z.B. Kryzanowski/Zhang, *Journal of Corporate Finance* 21/2013 S. 104; . Chi/Sun *Journal of Accounting and Finance* 2/2014 S. 28-29; Files et al., *Accounting Horizons* 1/2014 S. 93.

¹⁰⁹ 30 oder mehr Mandanten mit einer Registrierung bei der SEC.

¹¹⁰ Vgl. Francis et al., *Contemporary Accounting Research* 4/2013 S. 1626.

¹¹¹ Vgl. Newton et al., *Auditing: A Journal of Practice & Theory* 3/2013 S. 31-34.

¹¹² Vgl. Schmidt/Wilkins, *Auditing: Journal of Practice & Theory* 1/2013 S. 221-244.

¹¹³ Vgl. Whisenant et al., *Journal of Accounting Research* 4/2003 S. 737; Choi et al., *Auditing: A Journal of Practice & Theory* 02/2010 S. 125.

¹¹⁴ Vgl. Feldmann et al., *Auditing: A Journal of Practice & Theory* 1/2009 S. 219.

¹¹⁵ Vgl. Mande/Son, *Auditing: A Journal of Practice & Theory* 2/2013 S. 119; Thompson/McCoy, *Journal of Legal, Ethical and Regulatory Issues* 2/2008 S. 45.

¹¹⁶ Bezeichnet im Text absichtliche Fehler, die Studien sahen dies meist bei der Ausgabe eines SEC Accounting and Auditing Enforcement Release (AAER) oder bei Unternehmensangaben bzw. Pressemitteilungen mit entsprechenden Angaben/Hinweisen als erfüllt an.

¹¹⁷ Vgl. Mande/Son, *Auditing: A Journal of Practice & Theory* 2/2013 S. 119.

in einer Pressemitteilung erfolgt¹¹⁸. Hennes et al. (2014) kann dies z.T. aber meist nur für Nicht-Big 4-Wirtschaftsprüfer bestätigen. Auch werden bei großen, komplexen Unternehmen der Big 4-Wirtschaftsprüfer seltener entlassen¹¹⁹. Zusätzlich drohen Wirtschaftsprüfern, die mit mehreren Restatements in Verbindung gebracht werden, zusätzliche Prüfungsmandat zu verlieren, die nicht unmittelbar von einem Restatement betroffen sind¹²⁰. Liu et al. (2009) untersuchen den Zusammenhang zwischen Restatements und der folgenden Entlastung des Abschlussprüfers durch die Anteilseigner (shareholder voting)¹²¹. Sie zeigen, dass die Anteilseigner dazu neigen, ihre Entlastung zu versagen, d.h. der Prüfer scheint für die Fehldarstellung verantwortlich gemacht zu werden¹²². Gewinnen Wirtschaftsprüfungsgesellschaften, welche neben den Big 4 bestehen (sog. Second Tier Auditing Firms) neue Mandanten, weisen diese jedoch im Vergleich zu bereits bestehenden Mandaten schwerwiegendere Restatements auf¹²³.

2.3.5 Investoren/Eigenkapitalmarkt

Trotz ihrer ausschließlich indirekten Einflussmöglichkeit auf das Unternehmensgeschehen besitzen Anteilseigner bzw. Investoren dennoch eine einflussreiche Position. So können sie die Kommunikation zur Unternehmensleitung suchen, ihre mit der Beteiligung verbundenen Stimmrechte nutzen oder ihre Anteile veräußern¹²⁴. Bei der Analyse von Leerverkäufen (short-sales)¹²⁵ stellen Desai et al. (2006b) fest, dass bereits einige Monate vor dem Restatement vermehrt auf fallende Kursentwicklungen gesetzt wird. Dabei sind Gesellschaften mit ausgeprägten Periodenabgrenzungen (accruals) vor der Fehlerkorrektur besonders betroffen. „Leerverkäufer“ scheinen Informationen zu nutzen, die auch über die Periodenabgrenzung vermittelt werden, um unzutreffende Rechnungslegung aufzudecken¹²⁶. Auch Griffin (2003) beobachtet einige Monate vor der Bekanntgabe einer Korrektur (corrective disclosure) einen Anstieg der Investorenzahl, die auf fallende Kurse spekulieren¹²⁷ und bestätigt die Befunde.

Sollte der mehrheitliche Eigenkapitalanteil in Familienhand liegen (Family Firms) fallen Restatements bei taiwanesischen Unternehmen schwerwiegendere aus. Daneben fällt die

¹¹⁸ Vgl. Huang/Scholz, *Accounting Horizons* 3/2012 S. 454, 457.

¹¹⁹ Vgl. Hennes et al., *The Accounting Review* 3/2014 S. 1051.

¹²⁰ Vgl. Irani et al., *Accounting Horizons* 4/2015 S. 829.

¹²¹ Nicht verpflichtend, erfolgt im Rahmen guter Corporate Governance.

¹²² Vgl. Liu et al., *Auditing: A Journal of Practice & Theory* 1/2009 S. 237.

¹²³ Vgl. Dey/Robin, *International Journal of Auditing* 16/2012 S. 308-309.

¹²⁴ Vgl. Larcker/Tayan, *Corporate Governance Matters*, 2011, S. 393.

¹²⁵ Verkauf eines Wertpapiers das man beim Geschäftsabschluss nicht besitzt (Vgl. Gabler Wirtschaftslexikon, abrufbar unter: <http://wirtschaftslexikon.gabler.de/Archiv/3330/leerverkauf-v8.html> (04.03.2014)).

¹²⁶ Vgl. Desai et al., *Review of Accounting Studies* 1/2006b S. 71-73.

¹²⁷ Vgl. Griffin, *Journal of Accounting, Auditing & Finance* 4/2003 S. 515.

Wahrscheinlichkeit für ein Restatement bei Familienunternehmen höher aus, sollten die Stimmrechte und Kapitalanteile des Mehrheitsaktionärs zu stark auseinanderfallen und die Integrität des Unternehmens (gemessen anhand der Berichterstattung in den Medien) eher negativ bewertet werden¹²⁸.

Daneben beeinflussen entscheidungsrelevante Jahresabschlussinformationen die Handelsaktivitäten der Kapitalmarktteilnehmer und wirken sich so auf den Börsenkurs aus¹²⁹. Die Publikation eines Restatements löst meist negative Aktienkursreaktionen aus, begründet durch eine Neueinschätzung der zukünftigen Zahlungsströme. Die Glaubwürdigkeit der Berichterstattung ist gemindert, da sowohl die Integrität des Managements, als auch die der internen und externen Kontrollen infrage gestellt werden¹³⁰. Obwohl einzelne Studien wie etwa Kinney/McDaniel (1989) keine signifikanten Kursreaktionen feststellen¹³¹, bestätigen die meisten Untersuchungen diese Sichtweise. Um die Bekanntgabe der Fehlerkorrektur werden signifikante negative abnormale Aktienkursrenditen beobachtet¹³², auch bei aufeinanderfolgende Restatements eines Unternehmens¹³³. Charakteristika der Restatements wirken sich dabei auf die Marktreaktionen aus. Dabei werden ausgeprägtere negative, abnormale Renditen festgestellt, sofern mehrere Bilanzpositionen betroffen sind oder der zuvor berichtete Gewinn verringert wird¹³⁴. Gleiches gilt, wenn Abschlusspositionen korrigiert werden, welche auf eher unkomplizierten Abschätzungen basieren. Investoren verlassen sich hier stärker auf die Korrektheit der Angaben¹³⁵. Jedoch ist es unerheblich, ob es sich dabei um „Value Stocks“ (unterbewertet im Vergleich zu fundamentalen Unternehmenswerten) oder „Glamour Stocks“ (überbewertet im Vergleich zu Fundamentalwerten) handelt¹³⁶. Bei einer Zunahme des zuvor publizierten Gewinns beobachten Callen et al. (2006) meist keine signifikant abnormalen Aktienkursrenditen¹³⁷. Bei sogenannten „Core-Restatements“¹³⁸

¹²⁸ Vgl. Sue et al., *Journal of Business Finance & Accounting* 9&10/2013 S. 1070.

¹²⁹ Vgl. Ruhnke/Simons, *Rechnungslegung nach IFRS und HGB*, 2012, S. 102.

¹³⁰ Vgl. Callen et al., *The Journal of Investing* 3/2006 S. 57; Gleason et al., *The Accounting Review* 1/2008 S. 85.

¹³¹ Kinney/McDaniel, *Journal of Accounting and Economics* 1/1989 S. 77, 87.

¹³² Vgl. z.B. Dechow et al., *Contemporary Accounting Research* 1/1996 S. 11; Palmrose et al., *Journal of Accounting and Economics* 1/2004 S. 60; Akhigbe et al., *Applied Financial Economics* 5/2005 S. 333; Robbani et al., *Southwest Business & Economics Journal* 1/2005/2006 S. 53; Burns/Kedia, *Journal of Financial Economics* 1/2006 S. 64; Xu et al., *Journal of Business Finance & Accounting* 5&6/2006 S. 701; Carcello et al., *Contemporary Accounting Research* 2/2011 S. 413; Nguyen/Puri, *Review of Quantitative Finance and Accounting* 2/2014 S. 211.

¹³³ Files et al., *Accounting Horizons* 1/2014 S. 93.

¹³⁴ Vgl. Palmrose et al., *Journal of Accounting and Economics* 1/2004 S. 74; Barniv/Cao, *Journal of Accounting and Public Policy* 4/2009 S. 337.

¹³⁵ Vgl. Salavei, *Applied Financial Economics* 11/2010 S. 880, 888.

¹³⁶ Xu et al. *Academy of Accounting and Financial Studies Journal* 3/2010 S. 55-56.

¹³⁷ Vgl. Callen et al., *The Journal of Investing* 3/2006 S. 57.

¹³⁸ Beinhalten Umsatzerlöse, Herstellungskosten und laufende operative Aufwendungen (Vgl. Palmrose et al., *Journal of Accounting and Economics* 1/2004 S. 65).

werden ausgeprägtere Aktienkursreaktionen beobachtet¹³⁹. Der Kapitalmarkt berücksichtigt auch, ob die Falschdarstellung auf bewussten Überlegungen des Bilanzerstellers beruht. Ist die Fehlerkorrektur auf absichtliche Fehler bzw. „fraud“ zurückzuführen, zeigen sich deutlich stärkere Kursreaktionen¹⁴⁰. Jedoch stellen Bardos et al. (2013) fest, dass ein Großteil der negativen Kapitalmarktreaktionen durch Prozessrisiken verursacht werden¹⁴¹. Somit fallen die negativen Kapitalmarktreaktionen für Unternehmen, welche einen Prozess aufgrund der Fehlinformation fürchten müssen, deutlich stärker aus¹⁴². Berücksichtigt man nur unbeabsichtigte, „einfache“ Fehler, erzeugen reputationsstarke Unternehmen geringere negative Marktreaktionen als reputationsarme. Ihnen wird eine stärkere Fähigkeit zugesprochen diese Probleme zu lösen¹⁴³. Handlungen des Managements beeinflussen ebenfalls die Kursreaktionen, z.B. die Form der Pressemitteilung, die das Restatement beinhaltet. Je prominenter die Information übermittelt wird, desto stärker sind die negativen Marktreaktionen¹⁴⁴. Zeitlich vor einem Restatement freiwillig veröffentlichte Unternehmensinformationen verringern i.d.R. die negativen Aktienkursreaktionen. Sind diese jedoch übermäßig optimistisch, verstärken sie diese. Ersteres wird mit der Bemühung um Verringerung von Informationsasymmetrien und dem aufgebauten Vertrauensverhältnis zu den Investoren begründet. Bei Zweitem ist das Restatement ein noch überraschenderes negatives Ereignis¹⁴⁵. Die Marktreaktionen werden auch durch persönlich vom Management zuvor getätigte eigene Anteilskäufe bzw. -verkäufe oder durch Aktienrückkäufe bzw. Neuemissionen des Unternehmens beeinflusst (informed trading). Werden Anteile erworben, verringern sich die negativen Marktreaktionen von bewussten Fehlern (irregularities), Anteilsverkäufe bzw. Neuemissionen verstärken sie dagegen. Diese Handlungen werden von Investoren offenbar als glaubwürdiges Signal wahrgenommen, welches die Marktreaktionen beeinflusst¹⁴⁶. Eine Fehler-Identifikation durch den Abschlussprüfer oder ein zeitgleicher Austausch des CEOs verursachen ausgeprägtere negative Kursreaktionen¹⁴⁷.

¹³⁹ Vgl. Palmrose et al., *Journal of Accounting and Economics* 1/2004 S. 71; Akhigbe et al., *Applied Financial Economics* 5/2005 S. 327.

¹⁴⁰ Vgl. Palmrose et al., *Journal of Accounting and Economics* 1/2004 S. 71; Hennes et al., *The Accounting Review* 6/2008, S. 1487; Barniv/Cao, *Journal of Accounting and Public Policy* 4/2009 S. 337; Cao et al. *Contemporary Accounting Research* 3/2012 S. 957;

¹⁴¹ Vgl. Bardos et al., *The Journal of Financial Research* 1/2013 S. 19.

¹⁴² Vgl. Bardos/Mishra, *Applied Financial Economics* 1/2014 S. 51.

¹⁴³ Cao et al., *Contemporary Accounting Research* 3/2012 S. 957.

¹⁴⁴ Vgl. Files et al., *The Accounting Review* 5/2009 S. 1495; Gordon et al., *Review of Quantitative Finance and Accounting* 1/2013 S. 96.

¹⁴⁵ Vgl. Gordon et al., *Review of Quantitative Finance and Accounting* 1/2013 S. 77.

¹⁴⁶ Vgl. Badertscher et al., *The Accounting Review* 5/2011 S. 1526, 1540-1542.

¹⁴⁷ Vgl. Palmrose et al., *Journal of Accounting and Economics* 1/2004 S. 71; Owers et al., *International Business & Economics Research Journal* 5/2002 S. 77-78.

2.3.6 Gläubiger/Fremdkapitalmarkt

Da Fremdkapitalgeber darauf angewiesen sind, dass die von ihnen zur Verfügung gestellten Mittel (verzinst) zurückgezahlt werden, findet auch durch sie eine Überwachung des kreditnehmenden Unternehmens statt¹⁴⁸. Allgemein lässt sich feststellen, dass Restatement-Unternehmen einen höheren Verschuldungsgrad aufweisen. Über eine aggressive Bilanzierung sollen die Kosten einer problematischen Finanzlage gemindert werden¹⁴⁹. Restatements beeinflussen zudem die Fremdkapitalaufnahme. Nach einer Fehlerkorrektur ist eine erkennbare Zunahme des Risikoaufschlags zu beobachten, besonders im Zusammenhang mit „fraud“. Die Kreditfristigkeit fällt kürzer aus und die Forderung nach Kreditsicherheiten und vertraglichen Nebenabreden (debt covenants) steigt. Die demnach mit einem Restatement verbundene Risikozunahme und Informationsbeeinträchtigung begründen striktere Kreditkonditionen¹⁵⁰. Dies wird auch auf Kommunalebene bei kommunaler Fremdkapitalaufnahme (municipal debt) beobachtet¹⁵¹. In einer weiteren Studie werden auf dem Sekundärmarkt für Kreditfinanzierung (secondary loan market) signifikante negative, abnormale Renditen aufgrund von Restatements festgestellt. Diese fallen stärker aus, sofern das Restatement durch die SEC oder den Abschlussprüfer initiiert wird oder die Erfassung von Umsatzerlösen betroffen ist. Dies wird u.a. mit einer erhöhten wahrgenommenen Kreditausfallwahrscheinlichkeit begründet¹⁵². Für 143 Anleihen beobachtet Cornil (2009) einen Anstieg der Fremdkapitalkosten von im Durchschnitt 6,2 % um die Fehlerveröffentlichung. Eine fehlende exakte Quantifizierung der Gewinnanpassung wird besonders sanktioniert¹⁵³. Generell erschwert ein Restatement die Kreditaufnahme. Jedoch ist auch festzustellen, dass im Zeitraum nach einem Restatement im Vergleich zur Eigenkapitalfinanzierung eher Fremdkapital nachgefragt wird. Eigenkapitalgeber scheinen im Vergleich zu Fremdkapitalgeber stärker durch eine Fehlerkorrektur abgehalten zu werden¹⁵⁴.

2.3.7 Finanzberichterstattung

Die Finanzberichterstattung bildet den Kern dieses Beitrags und stellt ein bedeutendes Element der Corporate Governance dar. Mangelnde Transparenz oder Glaubwürdigkeit eben dieser

¹⁴⁸ Vgl. Gray, Finance & Development 1997 S. 29.

¹⁴⁹ Vgl. Burns/Kedia, Journal of Financial Economics 1/2006 S. 47; anders: DeFond/Jiambalvo, The Accounting Review 3/1991 S. 651.

¹⁵⁰ Vgl. Graham et al., Journal of Financial Economics 1/2008 S. 44-45.

¹⁵¹ Vgl. Baber et al., Journal of Accounting and Economics 2-3/2013 S. 212.

¹⁵² Vgl. Park/Wu, Journal of Business Finance & Accounting 9&10/2009 S. 1131, 1145.

¹⁵³ Vgl. Cornil, Review of Business and Economics 2/2009 S. 148.

¹⁵⁴ Vgl. Chen et al., Contemporary Accounting Research 2/2013 S. 752.

beeinträchtigt z.B. die Überwachung des Managements durch die Anteilseigner¹⁵⁵. Ein oftmals genannter Grund für fehlerhafte Bilanzierung ist das hohe Niveau an Komplexität¹⁵⁶ der Rechnungslegung, besonders im internationalen Bereich¹⁵⁷. Bezogen auf die Standardkomplexität gab MicroStrategy, ein US-Softwareanbieter dessen Aktienwert am Tag der Bekanntgabe des Restatements um über 60 % einbrach¹⁵⁸, an, dass die Probleme dieser Komplexität geschuldet seien¹⁵⁹. Plumlee/Yohn (2010) zeigen jedoch, dass Restatements meist auf interne Unternehmensfehler zurückzuführen sind (57 %) und erst an zweiter Stelle Standardmerkmale verantwortlich gemacht werden können (37 %). Meist werden hier Unklarheiten des Standards (58 %) und Ermessensspielräume bei der Anwendung (37 %) als Ursache genannt. Folglich sollte eine Verbesserung der internen Kontrollen die Anzahl der Restatements mindern¹⁶⁰. Peterson (2012) betrachtet in diesem Zusammenhang die Erfassung von Umsatzerlösen und beobachtet, dass je komplexer (Wort- und Methodenanzahl) diese ausfällt, desto eher sind diesen Bereich betreffende Restatements die Folge. Jedoch fallen weitere Konsequenzen (z.B. Eigenkapitalreaktionen) prinzipiell geringer aus¹⁶¹.

Zudem könnten Restatements Verzögerungen bei Veröffentlichungen von weiteren Unternehmensinformationen (z.B. earnings announcements) verursachen und es sei daher sinnvoll, bei weniger relevanten Fehlern eine rückwirkende Korrektur auszulassen¹⁶². Zeitlich ausgeprägte Verzögerungen von Veröffentlichungen fallen jedoch eher selten und meist aufgrund von „fraud“-Untersuchungen an. Korrekturen mehrerer Geschäftsjahre oder multiple Sachverhalte umfassende Fehler sowie Restatements mit einer ausgeprägten Anpassung der vergangenen Ergebnisse, erhöhen jedoch den Zeitverzug. Aber gerade geringfügige Restatements verursachen den kleinsten zeitlichen Rückstand und es kommt kaum zu einer Verbesserung der Aktualität der Finanzdaten¹⁶³. Hirschey et al. (2015) zeigen jedoch, dass gerade Unternehmen, welche nach der Fehlerentstehung zügig diesen mittels Restatements bekannt geben eine größere Glaubwürdigkeit in der Berichterstattung aufweisen¹⁶⁴. Wilson

¹⁵⁵ Vgl. Larcker/Tayan, Corporate Governance Matters, 2011, S. 28.

¹⁵⁶ Komplexität der Standards und der abzubildenden Sachverhalte.

¹⁵⁷ Vgl. Erchinger/Melcher, KoR 11/2008 S. 686.

¹⁵⁸ Vgl. US-General Accounting Office, Financial Statement Restatements — Trends, Market Impacts, Regulatory Responses, and Remaining Challenges (GAO-03-138) 2002 S. 166.

¹⁵⁹ Vgl. Moriarty/Livingston, Financial Executive 5/2001 S. 54.

¹⁶⁰ Vgl. Plumlee/Yohn, Accounting Horizons 1/2010 S. 42, 57; siehe auch Kap. 3.3.

¹⁶¹ Vgl. Peterson, Review of Accounting Studies 1/2012 S. 72-74.

¹⁶² Zu den Überlegungen, welche Fehler nicht durch ein Restatement korrigiert werden sollten, siehe: Advisory Committee on Improvements to Financial Reporting, Final Report of the Advisory Committee on Improvements to Financial Reporting to the United States Securities and Exchange Commission 2008 S. 76-88.

¹⁶³ Vgl. Badertscher/Burks, Accounting Horizons 4/2011 S. 609, 620.

¹⁶⁴ Vgl. Hirschey et al., Journal of Business Finance & Accounting 7&8/2015 S. 826.

(2008) beobachtet mittels einer Analyse des Informationsgehalts des Unternehmensergebnisses (earnings response coefficient) einen entsprechenden Rückgang der Glaubwürdigkeit von Bilanzdaten nach der Fehlerkorrektur, jedoch nur zeitlich begrenzt. Bei besonders kurzen Zeiträumen zwischen der Entdeckung und Bekanntgabe des Fehlers ist die Abnahme der Glaubwürdigkeit auch eher gering¹⁶⁵. Investoren schätzen die Ergebnisse direkt nach dem Restatement als weniger verlässlich ein, dies aber nur vorübergehend¹⁶⁶, zumal das Management nach dem Restatement durch eine bessere Qualität der Periodenabgrenzung (accruals quality) und weniger reale Bilanzpolitik eine höhere Glaubwürdigkeit der Berichterstattung signalisiert¹⁶⁷. Sollte das Unternehmen bereits eine hohe allgemeine Reputation besitzen (gemessen anhand der Liste *Fortune's Most Admired Companies*) ist die Wahrscheinlichkeit für ein Restatement geringer und somit weisen diese Unternehmen auch eine höhere Glaubwürdigkeit bei der Berichterstattung auf¹⁶⁸.

Restatements werden zusätzlich als aussagekräftiger Indikator für buchmäßige Bilanzpolitik betrachtet, da Falschdarstellungen z.T. auf die bewusste Beeinflussung der Bilanzierung im Sinne des Managements zurückzuführen sind¹⁶⁹ und gegenüber anderen Surrogaten (z.B. abnormal accruals) den Vorteil haben, ein direktes Resultat von Manipulation darzustellen¹⁷⁰. Dabei ist zu beachten, dass bei Restatements die legalen Spielräume verlassen wurden, dies bei bilanzpolitischen Maßnahmen aber nicht unbedingt erfolgt¹⁷¹. Ettredge et al. (2010) finden anhand ungewöhnlich hohem Working Capital Hinweise, dass vor der Veröffentlichung fehlerhafter Abschlüsse Bilanzpolitik betrieben wird. Dies wird sowohl mit als auch ohne „fraud“ beobachtet. Bei Letzterem auf geringerem Niveau. Fehlt die erforderliche positive Unternehmensentwicklung, um die geschönten Unternehmenszahlen zu bestätigen, bleibt meist nur der Verstoß gegen das Regelwerk¹⁷². Auch Callen et al. (2008) nutzen Restatements um Jahresabschlusspolitik bzw. -manipulation zu analysieren. Dabei beobachten sie, dass umso ausgeprägter vergangene und zukünftige erwartete Verluste bzw. negative operative Zahlungsströme des Unternehmens sind, desto höher ist die Wahrscheinlichkeiten für eine

¹⁶⁵ Vgl. Hirschey et al., *Journal of Business Finance & Accounting* 7&8/2015 S. 827.

¹⁶⁶ Vgl. Wilson, *The Accounting Review* 2/2008 S. 519.

¹⁶⁷ Vgl. Wiedmann/Hendricks, *Journal of Business Finance & Accounting* 9&10/2013 S. 1095.

¹⁶⁸ Vgl. Cao et al., *Contemporary Accounting Research* 3/2012 S. 956-957.

¹⁶⁹ Vgl. Ettredge et al., *Journal of Business Finance & Accounting* 3&4/2010 S. 333.

¹⁷⁰ Vgl. Marquardt/Wiedman, *Contemporary Accounting Research* 2/2004 S. 465-467; Callen et al., *Auditing: A Journal of Practice & Theory* 2/2008 S. 2.

¹⁷¹ Lewis, *Risk Modeling at the SEC: The Accounting Quality Model*, Financial Executives International Committee on Finance and Information Technology 2012, abrufbar unter: <https://www.sec.gov/News/Speech/Detail/Speech/1365171491988#UoUDYRCFdek> (28.11.2013).

¹⁷² Vgl. Ettredge et al., *Journal of Business Finance & Accounting* 3&4/2010 S. 332, 351.

Manipulation der Umsatzerlöse¹⁷³. Lee et al. (2006) bestimmen mit Hilfe von Restatements Maße für Bilanzpolitik und die Ergebnisqualität und stellen einen positiven Zusammenhang zur Unternehmensperformance fest. Damit bestätigen sie zuvor getätigte modelltheoretische Überlegungen, dass der Aktienmarkt auf Gewinnmeldungen bei Unternehmen mit einer guten Performance deutlicher reagiert und das Management daher den Anreiz hat, das Ergebnis zu hoch auszuweisen. Der relative Anteil des manipulierten Ergebnisses am gesamten Ergebnis wäre aber geringer. Eine höhere Ergebnisqualität wird daher erwartet¹⁷⁴. Auch wird beobachtet, dass Bilanzpolitik genutzt wird, um Diskontinuitäten im Ausweis von Gewinnen (z.B. Vermeidung geringer Verluste) zu erzeugen. Dies führt dann zu Restatements¹⁷⁵. Carol/Kent (2012) vermuten dagegen, dass gerade durch die nachträgliche Fehlerkorrektur Bilanzpolitik ermöglicht wird, da Aufwand in vergangene Perioden verschoben werden kann. Einzelne Anreizfaktoren für Abschlusspolitik, wie der Anteil der Managementvergütung in Form von Bargeld-Bonuszahlungen oder eine schlechte Unternehmensperformance erhöhen den korrigierten Betrag des Gewinns je Aktie signifikant und bestätigen so die Überlegung. Für weitere Anreizfaktoren besteht dieser Zusammenhang jedoch nicht¹⁷⁶.

2.4 Zusammenfassung und Fazit

Das Verlangen nach qualitativ hochwertiger Finanzberichterstattung ist wahrscheinlich schon so alt, wie die Rechnungslegung selbst. Dennoch ist in der heutigen Zeit der Ruf nach Verbesserungsmaßnahmen nicht leiser geworden. Insbesondere im internationalen Bereich ist das Streben nach hoher Qualität ungebrochen, auch aufgrund seiner wachsenden Bedeutung und der steigenden Beteiligenzahl. Hierfür möchte dieser Artikel einen Beitrag leisten.

Der vorliegende Aufsatz resümiert wesentliche Forschungsbefunde zur Verknüpfung von Rechnungslegungsqualität und Corporate Governance im internationalen Kontext. Eine Zusammenfassung über vorgestellte bedeutende Resultate liefert die nachfolgende Tabelle 2.1. Dabei bestätigen sich empirisch die in den meisten Studien angestellten Überlegungen zwischen den betrachteten Elementen der Corporate Governance und der Qualität der Finanzberichterstattung, gemessen anhand von Restatements. Diese Ergebnisse sollten bspw. Regulatoren bei entsprechenden regulatorischen Eingriffen oder auch Investoren bei ihren Anlageentscheidungen bedenken. Zusätzlich wird auch das Sanktionspotenzial von

¹⁷³ Vgl. Callen et al., *Auditing: A Journal of Practice & Theory* 2/2008 S. 1-2, 5.

¹⁷⁴ Vgl. Lee et al., *Review of Accounting Studies* 2&3/2006 S. 306-307, 317, 326.

¹⁷⁵ Vgl. Donelson et al., *Contemporary Accounting Research* 1/2013 S. 242-243.

¹⁷⁶ Vgl. Carol/Kent, *Incentives for Prior Period Error Corrections under IAS 8*, AFAANZ Conference 2012 o.S.

retrospektiven Fehlerkorrekturen deutlich, betrachtet man z.B. ausgelöste Kapitalmarktreaktionen. Besonders die Unternehmensleitung, aber auch der Abschlussprüfer sollte sich den möglichen Konsequenzen bewusst sein. Hier wären entsprechende Anreize, Fehler von vornherein zu vermeiden oder der Negativwirkung entgegenzuwirken. Regulierungsprojekte sollten auch dies berücksichtigen.

Allgemein festigen die empirischen Resultate die grundsätzlich vorherrschende Ansicht, dass eine „gute“ Corporate Governance die Qualität der Finanzberichterstattung steigert. Defizite in diesem Bereich führen aber auch prinzipiell zu einer Zunahme von Falschdarstellungen in der Rechnungslegung. Jedoch bleibt abzuwarten, inwieweit die geführten Diskussionen und vorgestellten Forschungsbefunde zu Verbesserungen der Corporate Governance und damit zu einer qualitativ höherwertigen Rechnungslegung führen

Tabelle 2.1 Ergebnisse der Studien je Corporate Governance Element

Corporate Governance Element	Ergebnis der Studie(n)	Autor(en)/Jahr	
Board of Directors/ Audit Committee	▶ Ein Audit Committee verringert die Wahrscheinlichkeit für ein Restatement.	DeFond/Jiambalvo (1991)	
	▶ Ergebnisse zur Unabhängigkeit der Gremienmitglieder liefern abweichende Resultate.	Abbott et al. (2004) Agrawal/Chadha (2005) Lin et al. (2006) Wang et al. (2013)	
	▶ Finanzwirtschaftliche Fachkenntnisse eines unabhängigen Gremienmitglieds reduzieren die Restatement-Wahrscheinlichkeit.	Agrawal/Chadha (2005)	
	▶ Restatements führen bei Nicht-geschäftsführenden Mitgliedern zu einem Gremienausschluss.	Srinivasan (2005) Arthaud-Day et al. (2006)	
	▶ Aktienoptionen des Audit Committee fördern Restatements.	Archambeault et al. (2008)	
	▶ Diskrepanzen zwischen Anteilsbesitz und Verfügungsgewalt des Mehrheitsaktionärs bedingen Restatements.	Young et al. (2008)	
	▶ Höhere Unabhängigkeit der Mitglieder des Boards erhöht die Wahrscheinlichkeit für freiwillige Restatements	Marciukaityte et al. (2009)	
	▶ Direktorenauswahl des CEO mindert die positiven Effekte der Unabhängigkeit und Fachkenntnisse.	Carcello et al. (2011)	
	▶ Weibliche Board-Mitglieder verringern die Restatement-Wahrscheinlichkeit.	Abbott et al. (2012)	
	▶ Expertenwissen im Bereich der Rechnungslegung verursacht termingerechtere Restatement-Bekanntgabe.	Schmidt/Wilkins (2013)	
	▶ Die Beibehaltung eines Mitglieds im Audit Committee nach einem Restatement hängt von der Einflussnahme des CEO ab.	Carver (2014)	
	Top Management	▶ Ist der CEO Gründungsmitglied erhöht dies die Wahrscheinlichkeit für ein Restatement.	Agrawal/Chadha (2005)
		▶ Die Resultate zum Einfluss eines Vorsitzes des Boards durch den CEO sind uneindeutig.	Agrawal/Chadha (2005) Efendi et al. (2007)
▶ Fachwissen des CFOs verringert die Restatement-Wahrscheinlichkeit.		Aier et al. (2005)	
▶ Restatements führen bei Mitgliedern des Top Managements zu Disziplinierungen über den Arbeitsmarkt.		Arthaud-Day et al. (2006) Desai et al. (2006a) Collins et al. (2008) Collins et al. (2009) Zhang et al. (2013)	
▶ Eine Vergütung des CEOs in Form von Aktienoptionen kann Restatements begünstigen.		Burns/Kedia (2006) Efendi et al. (2007) Armstrong et al. (2013)	
▶ Die Wiedereinstellungsrate für Mitglieder des Top Managements sinkt nach einem Restatement und nachfolgende Beschäftigungen fallen geringerwertiger aus.		Desai et al. (2006a) Collins et al. (2009)	
▶ Restatements verringern die Aktienoptionsvergütung des CEOs.		Cheng/Farber (2008)	

Fortsetzung auf der nächsten Seite

Tabelle 2.1 (Fortsetzung)

	<ul style="list-style-type: none"> ▶ Fehlereigenschaften (z.B. Schwere), bestehende Gründungsmitgliedschaft und nachfolgende Sammelklagen beeinflussen die Ausscheidewahrscheinlichkeit des CEO/CFO. ▶ Eine höhere Mitgliederzahl im Board hält das Vergütungsniveau nach einem Restatement moderat. ▶ Die Genauigkeit von Gewinnprognosen nach einem Restatement nimmt ab. ▶ Pressemitteilung nach einem Restatement geben öfters reputationsbildende Maßnahmen bekannt. ▶ Ein Austausch des CEO/CFO nach einem Restatement verringert die Wahrscheinlichkeit für ein erneutes Restatement. ▶ Auslastende Unternehmensereignisse begünstigen überlappende Restatements. ▶ Nach einem schwerwiegenden Restatement werden eher CEOs mit Führungs- und Sanierungserfahrung sowie mit elitärem Bildungshintergrund eingestellt. ▶ Wesentlichere Fehler werden transparenter Publiziert. 	<p>Collins et al. (2008) Hennes et al. (2008) Leone/Liu (2010) Wang/Chou (2011)</p> <p>Wang et al. (2013)</p> <p>Ettredge et al. (2013) Gordon et al. (2014)</p> <p>Chakravarthy et al. (2014)</p> <p>Chi/Sun (2014)</p> <p>Files et al. (2014)</p> <p>Gomulya/Boeker (2014)</p> <p>Plumlee/Yohn (2015)</p>
Interne Unternehmenskontrollen	<ul style="list-style-type: none"> ▶ Schwächen der internen Unternehmenskontrollen bedingen Restatements. ▶ Je geringer die Qualität des internen Kontrollsystems ist desto schwerwiegender fallen die Fehler aus. ▶ Verbesserungen des internen Kontrollsystems nach einem Restatement und Unternehmensleistungen an Arbeitnehmer (z.B. Altersvorsorge) verringert die Wahrscheinlichkeit für ein erneutes Restatement. 	<p>Doyle et al. (2007) Weisenfeld et al. (2012) Wang/Huang (2014) Srinivasan et al. (2015)</p> <p>Wang (2013)</p> <p>Chi/Sun (2014) Guo et al. (2016)</p>
Abschlussprüfer	<ul style="list-style-type: none"> ▶ Die Befunde im Zusammenhang mit Abhängigkeitsbedenken und Prüfungsqualität aufgrund von Gebührenzahlungen divergieren. ▶ Restatements führen zu höheren Prüfungshonoraren. ▶ Steuerbezogene Dienstleistungen reduzieren die Restatement-Wahrscheinlichkeit. ▶ Längere Mandate verringern die Wahrscheinlichkeit für Restatements. ▶ Branchenspezialisierungen unterbinden Restatements, es sei denn man wechselt von einem nicht spezialisierten Prüfer zu einem spezialisierten. ▶ Restatements verursachen eher eine Mandatsniederlegung, auch bei nicht von dem Restatement betroffenen Unternehmen. 	<p>Raghunandan et al. (2003) Kinney et al. (2004) Agrawal/Chadha (2005) Stanley/DeZoort (2007) Bloomfield/Shackman (2008) Liu et al. (2009) Blankley et al. (2012)</p> <p>Whisenant et al. (2003) Choi et al. (2010)</p> <p>Kinney et al. (2004) Seetharaman et al. (2011)</p> <p>Stanley/DeZoort (2007)</p> <p>Stanley/DeZoort (2007) Bloomfield/Shackman (2008) Romanus et al. (2008) Chin/Chi (2009)</p> <p>Thompson/McCoy (2008) Huang/Scholz (2012) Mande/Son (2013) Irani et al. (2015)</p>

Fortsetzung auf der nächsten Seite

Tabelle 2.1 (Fortsetzung)

▶ Restatements reduzieren Entlastungen des Abschlussprüfers durch die Anteilseigner.	Liu et al. (2009)
▶ Das Verhältnis zwischen dem Zeitraum "Entdeckung eines Fehlers bis Korrektur" und der Mandatslänge ist nur positiv vor Einführung von SOX.	Shin et al. (2011)
▶ Neu Mandanten der "Second Tier" Wirtschaftsprüfungsgesellschaften weisen gegenüber bestehenden Mandaten schwerwiegendere Restatements auf.	Dey/Robin (2012)
▶ Prüfungsqualität zwischen Big 4-Wirtschaftsprüfern und Nicht-Big 4-Wirtschaftsprüfern ist bei Nichtberücksichtigung der größten Big 4-Niederlassungen nicht verschieden.	Francis et al. (2013)
▶ Höherer Arbeitsaufwand des Abschlussprüfers führt unter bestimmten Umständen zu weniger Restatements.	Lobo/Zhao (2013)
▶ Ein konzentrierter Prüfermarkt (Vorherrschaft der Big 4) schränkt die Prüfqualität nicht ein.	Newton et al. (2013)
▶ Big 4-Prüfer verringern die Zeitperiode zwischen Fehlerfeststellung und Bekanntgabe der Gewinnkorrektur.	Schmidt/Wilkins (2013)
▶ Mehr Konkurrenz auf dem Prüfermarkt erhöht die Wahrscheinlichkeit für ein Restatement.	Schmidt/Wilkins (2013)
▶ Lange Zeitperioden zwischen Geschäftsjahresende und Prüfbericht erhöhen die Wahrscheinlichkeit für ein Restatement.	Blankley et al. (2014)
▶ Das Mandat einer Big 4-Wirtschaftsprüfungsgesellschaft verringert nach einem Restatement die Wahrscheinlichkeit für ein erneutes Restatement.	Chi/Sun (2014) Files et al. (2014)
▶ Große, komplexe Unternehmen entlassen ihren Big 4-Wirtschaftsprüfer seltener nach einem Restatement.	Hennes et al. (2014)
▶ Juristisches Vorgehen gegen die Wirtschaftsprüfungsgesellschaft erhöht die Rechnungslegungsqualität nachfolgender Mandate.	Lennox/Li (2014)
Investoren/ Eigenkapitalmarkt	Dechow et al. (1996) Palmrose et al. (2004) Akhigbe et al. (2005) Robbani et al. (2005/2006) Burns/Kedia (2006) Xu et al. (2006) Carcello et al. (2011) Files et al. (2014) Nguyen/Puri (2014)
▶ Restatements führen zu negativen Aktienmarktreaktionen.	
▶ Sind mehrere Bilanzpositionen betroffen, wird der Gewinn nachträglich verringert oder basieren die korrigierten Positionen auf unkomplizierte Schätzungen, werden stärkere negative Marktreaktionen beobachtet. Dasselbe gilt bei einer Fehlerrückstellung durch den Abschlussprüfer und bei zeitgleichem CEO-Austausch.	Owers et al. (2002) Palmrose et al. (2004) Barniv/Cao (2009) Salavei (2010)

Fortsetzung auf der nächsten Seite

Tabelle 2.1 (Fortsetzung)

	<ul style="list-style-type: none"> ▶ Leerverkäufe sind bereits einige Monate vor dem Restatement festzustellen. ▶ "Core-Restatements" und bewusste Fehler bzw. "fraud" verursachen stärkere Reaktionen. ▶ Eine rückwirkende Erhöhung des Gewinns durch ein Restatement verursacht meist keine signifikanten Marktreaktionen. ▶ Je prominenter das Restatement publiziert wird, desto stärker fallen die Reaktionen aus. ▶ "Value Stocks" und "Glamour Stocks" verursachen keine unterschiedlichen Marktreaktionen. ▶ Aktienkäufe vor dem Restatement verringern die negativen Reaktionen, Anteilsverkäufe/Neuemissionen verstärken sie. ▶ Bei einfachen Fehlern sind bei reputationsstarken Unternehmen geringere Marktreaktionen festzustellen. ▶ Erwartete Prozessrisiken aufgrund von Restatements verursachen stärkere negative Kapitalmarktreaktionen. ▶ Zuvor publizierte Unternehmensinformationen sind in der Lage die Reaktionen abzuschwächen, es sei denn diese waren zu optimistisch. ▶ Familienunternehmen verursachen schwerwiegendere Restatements und je stärkere die Kapitalanteile und Stimmrechte des Mehrheitsaktionärs auseinanderlaufen, desto eher kommt es zu einem Restatement. 	<p>Griffin (2003) Desai et al. (2006b) Palmrose et al. (2004) Akhigbe et al. (2005) Hennes et al. (2008) Barniv/Cao (2009) Cao et al. (2012)</p> <p>Callen et al. (2006)</p> <p>Files et al. (2009) Gordon et al. (2013)</p> <p>Xu et al. (2010)</p> <p>Badertscher et al. (2011)</p> <p>Cao et al. (2012)</p> <p>Bardos et al. (2013)</p> <p>Gordon et al. (2013)</p> <p>Sue et al. (2013)</p>	
Gläubiger/ Kapitalmarkt	Fremd-	<ul style="list-style-type: none"> ▶ Resultate zum Verschuldungsgrad von Restatement-Unternehmen sind uneindeutig. ▶ Restatements verschärfen die Kreditbedingungen, auch bei kommunaler Fremdkapitalaufnahme. ▶ Restatements führen zu negativen Anleihenkursreaktionen. ▶ Restatements verursachen negative Renditen auf dem Sekundärmarkt für Kreditfinanzierung. ▶ Fremdkapital wird nach einem Restatement im Vergleich zu Eigenkapital eher nachgefragt. 	<p>DeFond/Jiambalvo (1991) Burns/Kedia (2006) Graham et al. (2008) Baber et al. (2013) Cornil (2009) Park/Wu (2009) Chen et al. (2013)</p>
Finanzbericht- erstattung		<ul style="list-style-type: none"> ▶ Gute Unternehmensperformance erhöht den korrigierten Betrag. ▶ Vergangene und zukünftig erwartete Verluste bzw. negative Zahlungsströme führen zu Restatements der Umsatzerlöse. ▶ Restatements verursachen nur vorübergehend eine Beeinträchtigung der Glaubwürdigkeit von Bilanzdaten, besonders bei kurzen Zeiträumen zwischen Fehlerentdeckung und Bekanntgabe. ▶ Vor einem Restatement wird ausgeprägte Bilanzpolitik betrieben. 	<p>Lee et al. (2006)</p> <p>Callen et al. (2008)</p> <p>Wilson (2008) Hirschey et al. (2015)</p> <p>Ettredge et al. (2010)</p>

Fortsetzung auf der nächsten Seite

Tabelle 2.1 (Fortsetzung)

▶	Die Komplexität der Rechnungslegung wird nicht als Hauptursache für Restatements festgestellt.	Plumlee/Yohn (2010)
▶	Restatements verursachen prinzipiell nur geringe zeitliche Verzögerungen in der weiteren Unternehmensberichterstattung.	Badertscher/Burks (2011)
▶	Unternehmen mit einer hohen Glaubwürdigkeit in der Berichterstattung geben einen Fehler schneller bekannt, verursachen aber weniger Restatements.	Cao et al. (2012) Hirschey et al. (2015)
▶	Die nachträgliche Aufwandsberücksichtigung durch ein Restatement wird bilanzpolitisch genutzt.	Carol/Kent (2012)
▶	Eine Zunahme der Komplexität fördert dennoch Restatements.	Peterson (2012)
▶	Bilanzpolitik wird genutzt um Diskontinuitäten im Gewinnausweis zu erzeugen.	Donelson et al. (2013)
▶	Nach einem Restatement nimmt das Niveau an Bilanzpolitik ab.	Wiedmann/Hendricks (2013)

3 Diversity in Misstatement Disclosures and Stock Price Effects - Empirical Evidence from Germany

ABSTRACT: The disclosing of unfavorable information by a firm's management depends on managerial discretion and reporting regulations. Both determine the first type of disclosure. Investors might be aware of managers' strategic behavior affecting the disclosure choice, and therefore the investors' reaction. Prior research into investors' reaction to misstatement disclosures on the German stock market has focused entirely on enforcement error findings. This study extends this research area using different types of misstatement disclosures. Hence, it provides findings in the misstatement literature by investigating diversity in reporting formats to offer new insight into the complex interactions between disclosure types and information processing. The findings indicate that managers seem to use different types of first disclosures depending on the characteristics of the reported misstatement. In addition, using event study methodology, the results show that an investor's reaction is influenced by the type of the first disclosure.

3.1 Introduction

The detection and disclosure of accounting misstatements is an important part of financial reporting. Corresponding accounting standards (e.g., IAS 8) and international reporting regulations (e.g., the enforcement of financial information) emphasize the relevance of accounting misstatements in financial reporting. Since there are several ways for management to disseminate accounting misstatements to the stock market, management's strategic disclosure choices can be assumed (Goto, Watanabe, & Xu, 2008). It should be of particular interest for the participants of the capital market to identify whether a firm's management detects a misstatement by itself, how it evaluates this misstatement, and (if it is disclosed) which type of first disclosure has been chosen. However, the management's choice is restricted by different reporting regulations. This paper sheds light on this complex system and the black box of managerial disclosure choices by answering two research questions: First, this study examines whether management's disclosure choice for adverse information is influenced by the misstatement characteristics (first subquestion). Second, investors' reactions to the different types of misstatement disclosures are investigated (second subquestion). Therefore, this paper answers these research questions by analyzing a unique German sample of accounting misstatements between 2005 and 2014.

Thus far, research on stock market reactions to accounting misstatements in Germany is currently restricted to enforcement error findings. The main finding of these studies is that the German stock market penalizes such misstatement disclosures via negative abnormal returns, but to a small degree (Hecker & Wild, 2012; Hitz, Ernstberger, & Stich, 2012). This study extends this strand of accounting literature by examining the complex interaction between management's disclosure choice and the information processing in capital markets for a variety of misstatement disclosures. More specifically, this study goes beyond prior research by analyzing additional types of misstatement disclosures: enforcement error findings, ad-hoc announcements, corporate news, and financial statements. By considering these different types of misstatement disclosures, the aim of this study is to uncover managers' disclosure behavior and investors' reaction to different types of misstatement disclosures.

According to the first subquestion, no comparable studies have examined whether the management disclosure choice for adverse information is influenced by the misstatement characteristics. The empirical results of this study suggest that the first type of disclosure of an accounting misstatement

is influenced by the characteristics of the misstatement, giving insights into the incentives of the management and their strategic behavior. Furthermore, the results of Fisher's exact tests and multinomial logistic regressions indicate a relationship between misstatement characteristics and the first disclosure type.

Next, this study aimed to answer the subquestion of whether investors' reaction varies depending on the different types of misstatement disclosures. Based on previous empirical findings on stock market reactions to misstatement disclosures (e.g., Hecker & Wild, 2012; Hitz et al., 2012), this study is the first to point out that investors' reaction significantly depends on the first type of disclosure. To answer this second subquestion, an event study was performed. The results confirm previous findings of stock market penalties for misstatement disclosures. However, the stock market reaction is influenced by the type of the first disclosure of the misstatement. Specifically, ad-hoc announcements seem to induce the strongest stock market penalty compared to other types of first disclosures. In contrast to previous research, I found no significant negative market reactions to enforcement error findings first disclosed on the electronic Federal Gazette.

Although this paper investigates the German stock market, the insights gained might be relevant to other Continental European countries. For example, Italy and France are characterized by the comparably minor role of their equity markets, like Germany (Busse & Colbe, 1996; Shleifer & Vishny, 1997). Furthermore, in the recent past, EU authorities sought to harmonize the institutional frameworks across EU-Member States to ensure that relevant information is made public to all investors in European markets¹⁷⁷. Hence, the procedures for disclosing accounting misstatements in Germany should be (at least partly) comparable to other EU-Member States, and the implications of this paper are therefore also applicable for further European regulators.

As outlined above, I contribute to the existing literature by providing new insight into the management disclosure choices and by pointing out that the stock market reaction is affected by the specific type of the first disclosure of the misstatement. These empirical findings on the varying effects of different types of misstatement disclosures help to provide an understanding of their relevance in the corporate disclosure process. In addition, investors, managers, and academics

¹⁷⁷ For example, under the European Market Abuse legislation (e.g., Directive 2003/6/EC, Directive 2003/124/EC), a single definition of "inside information" was adopted and it laid down the means for the public disclosure of inside information. Furthermore, the European Securities and Markets Authority (ESMA) is strengthening the harmonization of the enforcement of financial information in the EU.

should be interested in learning that and to what extent the type of the first disclosure is an important factor about the question how news is processed by the capital market.

The remainder of this paper is organized as follows: Section 2 describes the relevant institutional background in Germany. Section 3 provides an overview of the related literature as well as the theoretical background and derives the hypotheses. Section 4 and Section 5 outline the methodology and describe the sample. Section 6 presents the empirical results. Finally, Section 7 concludes.

3.2 Misstatement Disclosures in Germany

In this paper, accounting misstatements are defined as intentional and unintentional reported misinformation of accounting data in, e.g., annual financial statements, interim financial statements, and ad-hoc announcements (e.g., Ballwieser & Dobler, 2003; Hofmann, 2008). In short, misstatements are misstated accounting information, which includes restatements, enforcement-related error announcements, and any other disclosed accounting misinformation, implying bad news. Only IFRS accounting information is taken into consideration. This comprehensive definition and the distinct German institutional framework make it important to search a variety of sources for disclosed accounting misstatements.

The first major source of disclosed misstatements are ad-hoc announcements. The Regulation (EU) No 596/2014 of the European Parliament and of the Council of April 16th, 2014 on market abuse (market abuse regulation – MAR) obliges the management of a firm which has issued financial instruments in Article 17 (1) MAR to disclose to the market any inside information of the firm. These ad-hoc disclosure requirements are mandatory to all issuers who have requested or received admission of their financial instruments to trading on a regulated market or a multilateral trading facility (MTF) in an EU Member State. From January 3rd, 2018 this obligation is mandatory to issuers who have received admission of their financial instruments to an organized trading facility (OTF) as well as emission allowance market participants, if the emissions exceed certain thresholds. Inside information is specified in Article 7 (1) MAR. Consolidated, it comprises of any information about a firm that has the potential to influence the price of the financial instrument of the firm and it has not been made public.

Since this study examines the period between 2005 and 2014 the German regulations before the market abuse regulation are explained, as well.

According to (the obsolete) § 15 (1) WpHG (German Securities Trading Act), ad-hoc announcements were an immediate public disclosure of any inside information by the respective firm. Inside information was described in § 13 (1) WpHG as any specific information that is not subject to public knowledge and would have a substantial effect on the stock price of the respective firm (price-sensitive event).

Therefore, ad-hoc announcements can be described as a mandatory type of disclosure before and after the market abuse regulation. However, ad-hoc announcements involve a substantial degree of managerial discretion (Ruhnke & Simons, 2012). The firm's management is obliged to consider every single event and its material relevance for the firm's value (BaFin, 2013), making the assessment of the new private information a management decision for every individual case. The management must determine whether the expected effect on the stock value is substantial and which type of event might induce such a substantial stock market reaction. Inconsistencies and considerable opportunistic management behavior are the consequences (Leis, 2009; Ruhnke & Simons, 2012; Siebel, 2002). If an information is considered value-relevant by the firm's management, a special service provider (e.g., Deutsche Gesellschaft für Ad-Hoc Publizität) is typically used to distribute the information to the market to comply with these obligations (Dymke & Walter, 2008). Furthermore, the ad-hoc announcement must be transmitted to the German company register (BaFin, 2013). One important detail for this paper is that the correction of a material accounting misstatement could be deemed as material for the firm's value and therefore induce a mandatory disclosure of an ad-hoc announcement (Pellens et al., 2014). However, Leis (2009) states that investors should not rely on the firm's management to disclose any price-sensitive information via an ad-hoc announcement.

A second source of accounting misstatements are the error notices from the electronic Federal Gazette. Since 2005, the two-tier German enforcement system has examined the compliance of published financial statements of firms listed on a regulated market segment (§ 37n WpHG). It consists of a private body, the DPR (*Deutsche Prüfstelle für Rechnungslegung* – German Financial Reporting Enforcement Panel), and the German securities regulator BaFin (*Bundesanstalt für Finanzdienstleistungsaufsicht* – Federal Financial Supervisory Authority). On the first level, the

DPR investigates whether there is a concrete indication of the violation of accounting standards and at the request of the BaFin. The DPR's investigations are also performed through systematic sampling. The second level is occupied by the BaFin, which executes an investigation under three conditions. It intervenes if a firm refuses to cooperate with the DPR, if the firm's management disagrees with the DPR's findings, and if there are major doubts raised about the correctness of the investigation. After erroneous financial statements are detected via a DPR- or BaFin investigation, the firm is forced to disclose these findings and substantial parts of the reasoning in the electronic Federal Gazette and a supra-regional financial newspaper or an electronic information provider via a mandatory publication (BaFin, 2013). The objective of this enforcement mechanism is the compliance of accounting standards through adverse disclosure as a deterrent via a negative investor reaction (name and shame mechanism) (Hitz et al., 2012). However, it is important to know that a disclosure on the electronic Federal Gazette does not supersede an ad-hoc announcement if the information is price sensitive (Assmann, 2006).

Corporate news is the third channel for disclosed accounting misstatements. In general, it is an important medium by which firms communicate their financial performance to the market (Henry, 2008). Firms may communicate financial information via corporate news to inform all market participants simultaneously if, e.g., an ad-hoc announcement is deemed not mandatory (www.dgap.de). They represent voluntary and regulated disclosure. Hence, in contrast to ad-hoc announcements and error notices from the electronic federal gazette, the content and timing may be determined by management discretion. All incorporated types of misstatement disclosures are distributed via the Internet and therefore instantly available for the capital market (www.unternehmensregister.de; www.bundesanzeiger.de; www.dgap.de).

3.3 Theoretical Background, Literature Review, and Hypotheses

Communication about a firm's performance between management and investors is essential for an efficient capital market. The disclosure of financial information by managers is particularly important to convey a firm's performance to outside investors, using regulated reports and voluntary communication (Healy & Palepu, 2001). Evidence suggests that both regulated financial reports and voluntarily disclosure provide new and relevant information, making them substantial for the reporting environment. Healy and Palepu (2001) and Kothari (2001) provided an extensive overview of the supporting literature.

3.3.1 Management Disclosures of Accounting Misstatements

Managers are typically better informed than outside investors about their firms' current condition and future performance (Ross, 1977). Therefore, truthful financial reporting is potentially informative to outside investors (Healy & Palepu, 1993). However, conflicts of interest between managers and shareholders, managerial discretion, and financial reporting regulations influence management's disclosing of private information (Healy & Palepu, 1993–2001).

For example, if the management of a firm detects an accounting misstatement, it can either decide to disclose it to the capital market or withhold it. If there is no regulation, managers will carefully consider the disclosure of any information and its economic impact on the firm's value (Shin, 2003). It is up to the management to choose one of the two strategies. On the one hand, managers might have the incentive to disclose the misstatement voluntarily after personal detection (Skinner, 1994). One management strategy would be to improve the credibility of their reporting by disclosing bad news promptly (Healy & Palepu, 1993). Investors may resent adverse surprises and impose costs on firms whose management has a reputation for withholding unfavorable news. Hence, investors might sell their stock and managers might face the risk of litigation by withholding bad news (Skinner, 1994). Comprehensive and timely disclosure of unfavorable information could mitigate these consequences. Additionally, managers may disclose information that reduces the firm's value voluntarily to manipulate the exercise price of awarded stock options (Aboody & Kaznik, 1999), to carry out a management buyout with a lower stock price, or prior to forthcoming union negotiations (Liberty & Zimmerman, 1986). Hence, the management may serve its self-interest and economic consideration by disclosing negative information promptly (Xu & Zhang, 2013).

On the other hand, one economic assumption for managers to withhold bad news is that they hope to conceal it with good news that might arrive, at least to a certain threshold. After this threshold, it becomes too costly or complicated to withhold the damaging news (Kothari, Shu, & Wysocki, 2009). Moreover, managers seem to have strong incentives to withhold bad news. Personal negative consequences for managers (that they seek to prevent) might be career concerns, lower bonus payments, a lower value of stock options, and a decline in the stock price that might arise due to the disclosure of bad news (Kothari et al., 2009). Hence, there is a tendency for managers to withhold such bad news, e.g., accounting misstatements to minimize their individual damage

(Wagenhofer & Ewert, 2015). Shin's (2003) theoretical model supports this notion by showing that management's full disclosure is never a part of an equilibrium, but instead the disclosure of all positive information and the withholding of all negative news. Prior empirical work in the disclosure literature confirms this theoretical assumption (e.g., Kothari et al., 2009). However, in all these considerations, the judgement of the management to disclose an accounting misstatement or withhold it should be affected by the characteristics of the misstatement, e.g., its severity. On one hand, the incentive of the management to withhold a severe misstatement might be stronger due to stronger negative consequences. On the other hand, investors might penalize such a firm more harshly if the withholding of such a severe misstatement is finally revealed.

Furthermore, the disclosure of an accounting misstatement is not only up to the management's discretion. The reporting choices of the management are restricted via regulation (Healy & Palepu, 2001). Law, accounting standards, and enforcement mechanisms regulate the disclosure of financial information in certain areas (Wagenhofer & Ewert, 2015). Ignoring disclosure regulations could induce regulative sanctions, which could reduce the firm's value even more. Hence, it would become too costly for the management to withhold the information (Kothari et al., 2009). But even in the case of regulated reporting, strategic disclosure is possible, without violating investor protection regulations (Goto et al., 2008). For example, managers might attempt to limit investors' negative reaction by simultaneously publishing positive information (Kothari et al., 2009) or avoid telling the whole truth (Shin, 2003) to affect the economic consequence of the disclosure. Hecker and Wild (2012) provided empirical support for this assumption. Hence, for every type of misstatement disclosure, different levels of managerial discretion are possible.

Corporate news, providing plenty of different information, includes voluntary misstatement disclosures and regulated information, e.g., DPR error notices. Hence, it provides, to some extent, substantial room for discretionary behavior regarding timing and content. Therefore, it is strongly driven by reporting incentives. Despite comparably strong regulation, ad-hoc announcements concede a high level of managerial discretion as well. First, the management must determine what a substantial stock market reaction is, and second, it must define the type of event that qualifies to induce such a substantial market reaction (Rhunke & Simons, 2012). Different approaches are discussed in the literature to define a substantial stock market reaction, e.g., a quantitative threshold (Griewel, 2006). However, a uniform quantitative threshold does not consider the unique circumstances of every individual case and must be rejected (Griewel, 2006; Rhunke & Simons,

2012). Consequently, the management must determine this threshold for each individual case, inducing material managerial discretion (Rhunke & Simons, 2012). The criteria to define the type of event, which might induce such a substantial stock market reaction, are even more unclear. The management must predict investors' reaction to an event (e.g., the occurrence of a misstatement), causing additional uncertainties (Rhunke & Simons, 2012). One criterion is that an event should be evaluated as value relevant by the management if it could influence the investment decisions of an average prudent investor. This is a rather vague phrase causing additional managerial discretion (Leis, 2009). Additionally, exaggerated and incorrect ad-hoc announcements are counterproductive and do more harm than good (Happ & Semler, 1998; Kirchhoff, 2009). As a guideline, the BaFin has published a list of possible events that might induce a mandatory ad-hoc announcement (BaFin, 2013). However, this list is not an exhaustive list of possible value-relevant events and is of a non-normative character (Nietsch, 2005). The lack of clarity makes it necessary to use financial analysts to evaluate the necessity of an ad-hoc announcement (Zitzmann, Fischer, & Decker, 2009) and Rhunke and Simons (2012) even suggested a pre-examination through an auditor. Additionally, Leis (2009) stated that investors should not rely on the firm's management to disclose any price-sensitive information via an ad-hoc announcement, illustrating the possible discretion. The third type of disclosure, Federal Gazette enforcement error notices, are regulated severely, dictating the content and timing of the disclosure. The misstatement is detected by an outside party (DPR, BaFin), and this leads to a mandatory disclosure of the misstatement via an enforcement release. But even in this case, strategic disclosure is possible, for example, by simultaneously publishing positive information (Kothari et al., 2009). Additionally, it is possible that the accounting misstatement discovered by the enforcement system is first disclosed earlier, e.g., in a corporate news disclosure or financial statement.

Although these disclosure types differ regarding their regulation and therefore offer different opportunities, they all leave considerable room for the management to act opportunistically. Due to this considerable amount of discretion, all three types of misstatement disclosures are considered in the following analysis. Overall, a firm's disclosure behavior regarding bad news may reflect the strategic behavior of self-interested managers, as it involves judgments, estimations, and assumptions (Goto et al., 2008). This means that the (voluntarily or mandatory) disclosure of an accounting misstatement reflects the disclosure strategy of the management, depending on the first type of disclosure. Therefore, managers might choose the first type of disclosure depending on the

misstatement characteristics by carefully considering the effect of this information and its type of disclosing for the firm's value. Taking this into consideration, I derive the following hypothesis:

H1: The first type of disclosure for an accounting misstatement depends on the characteristics of the misstatement.

3.3.2 Investors' Reaction to Accounting Misstatements

Considering capital market reactions after the disclosure of accounting misstatements, two strands of literature must be reviewed. The first examines firms subject to accounting enforcement actions. For the United States (U.S.), Dechow, Sloan, and Sweeney (1996) found a significant increase in the cost of capital when the manipulation is made public by the Securities and Exchange Commission (SEC). German studies in this area have examined capital market reactions to error announcements revealed by the German enforcement system. Hitz et al. (2012) as well as Hecker and Wild (2012) provided empirical evidence on negative investor reactions to enforcement-induced misstatement publications by German firms, although to a much smaller extent than comparable U.S. studies. Another major part of the event study literature investigates capital market reactions to financial restatements (correction of prior period accounting misstatements) by U.S. firms. They document significant negative abnormal returns over the announcement period (e.g., Akhigbe, Kudla, & Madura, 2005; Burns & Kedia, 2006; Palmrose, Richardson, & Scholz, 2004). To date, little is known about the second issue for other countries (Flanagan, Muse, & O'Shaughnessy, 2008), Germany included. This paper extends these findings by examining both types of misstatements/disclosures and further ones (e.g., ad-hoc announcements, corporate news).

Investors depend on information on firms' performance to make investment decisions (Xu & Zhang, 2013). They use the available information to assess a firm's earning potential, hence updating their judgment if they receive new information. Bad news could enhance the risk and uncertainty of the disclosing firm and deteriorate the future prospect, inducing negative market reactions (Palmrose et al., 2004). I assume that the market price of a security equals the present value of expected future cash flows discounted at the firm's cost of capital. The publication of an accounting misstatement should lower expected future cash flows/earnings and/or increase the cost of capital, due to the higher information risk of the respective firm (Hribar & Jenkins, 2004; Palmrose et al., 2004). Additionally, disclosed accounting misinformation should damage the management's reputation (Karpoff & Lott, 1993). Hence, I hypothesize the following:

H2: The German stock market reacts negatively to the first disclosure of an accounting misstatement.

However, the effect of different types of misstatement disclosures has only partly been analyzed, and therefore still deserves attention. Previous U.S. research suggested that incorporating only one type of misstatement (in this case restatements) that the format influences the reaction of the capital market. Files, Swanson, and Tse (2009) as well as Gordon, Henry, Peytcheva, and Sun (2013) found that firms reporting the restatement more prominently are significantly negatively associated with a larger price decline. Myers, Scholz, and Sharp (2013) classified restatements by their level of transparency, with restatements disclosed in a Form 8-K filing as having high transparency and disclosed in periodic SEC filings as having low transparency. The results suggest that lower transparency generates less negative returns. In contrast to this study, those papers focus on different theoretical frameworks. Gordon et al. (2013) exclusively considered disclosure credibility, while Files et al. (2009) and Myers et al. (2013) expanded on behavioral theory.

Regarding the theoretical background, different frameworks address investors' reactions to different types of misstatement disclosures. Following Dumontier and Raffournier (2002), I argue that investors are using publicly available information to increase their level of knowledge to assess future securities' risk and return and to make investment decisions. Additionally, strategic behavior must be taken into consideration. Rational investors should be aware of the information advantage of managers and incorporate this knowledge in their investment decisions (Wagenhofer & Ewert, 2015). One important aspect is that ad-hoc announcements show that the management deems this information value relevant (see Chapter 2). Therefore, the stock market should react strongly to misstatements disclosed via an ad-hoc announcement because they should contain information deemed price sensitive by the management¹⁷⁸. However, this attribute of price sensitivity is not necessarily associated with enforcement error findings and corporate news and might diminish the negative market reaction compared to ad-hoc announcements. Nonetheless, enforcement error findings are a mandatory disclosure of an accounting misstatement detected by a third party. This could mean that the management withheld this bad news or was unaware of this accounting misstatement. Corporate news disseminates important information, and some managers prefer to disclose information via this type of disclosure (Leis, 2009). Hence, both types could induce

¹⁷⁸ However, the nonoccurrence of a substantial stock market reaction does not prove a misjudgment by the management, it only must be expected (Rhunke & Simons, 2012).

negative stock market reactions, although to a smaller degree compared to ad-hoc announcements. This strategic and regulated disclosure behavior conveys new information to market participants and should influence the induced capital market reaction to the disclosure of an accounting misstatement, depending on the first type of disclosure. The capital market should interpret the disclosure choice by anticipating both the incentives of those who made the disclosure and the set of alternatives they could have had (Dye, 2001). Considering the above arguments leads to the following hypothesis:

H3: Ad-hoc announcements as first disclosure induce stronger negative stock market reactions than enforcement error findings and corporate news.

In this paper, three types of misstatement disclosures are considered in the examination of investors' reaction. Ad-hoc announcements are an important, longstanding, and common source through which investors shape their expectations about a firm's future development and an important part of firm-investor communication (Hauser, 2003). Corporate news also provides a variety of important information (e.g., financial performance) about several companies (Henry, 2008). The last type, error notices from the electronic Federal Gazette, provides only this information in the respective area.

3.4 Methodology

3.4.1 Management Disclosure

To examine the association between misstatement characteristics and management disclosure choices, Fisher's exact tests were performed. I analyzed whether the frequency of misstatements in (not in) a particular row category differed significantly across misstatements in (not in) the specified column category (Plumlee & Yohn, 2010). For each considered misstatement disclosure, I classified it according to its characteristics: The disclosure indicates the occurrence of intentional falsified financial reporting, based on the information of the misstatement disclosure (*FRAUD*)¹⁷⁹, the misstatement is attributed to the DPR, BaFin, or a comparable enforcement institution¹⁸⁰ in the first disclosure (*ENFORCEMENT*), and the misstatement had a negative cumulative effect on profit

¹⁷⁹ I suspect fraud if the disclosure mentions "irregularities," "misconduct," or "failures" by the responsible party, if the accounting misstatement is the result of a "special review, internal audit or investigation" in the firm, and if respective "legal actions" are verified or initiated by the firm.

¹⁸⁰ The Securities Commission of the Republic of Lithuania; The Danish Business Authority.

(*PROFIT_DOWN*). Additional characteristics are as follows: The misstatement disclosed (intentional and unintentional) incorrect reported revenues (*REVENUE*), the misstatement had a cumulative profit-effect below average (*MEANMAG*) and simultaneously disclosed additional financial information, which is unrelated to the misstatement (*INFORMATION*), for example additional balance sheet ratios. Performing a Fisher's exact test made it necessary to convert the data into categorical variables. Specifically, the cumulative profit-effect of the misstatement has been rescaled into two categories, depending on the average profit-effect of the misstatement (below and above the average profit-effect) (*MEANMAG*).

To gain comprehensive insight into how managers determine the first disclosure type, I performed a multinomial logistic regression analysis. The categorical dependent variable *FIRST_DISCLOSURE* had one of four values, depending on the first disclosure type: (a) financial statement; (b) federal gazette; (c) corporate news; (d) ad-hoc announcement. It calculated parameter estimates for each value of predictor variables across each value of a dependent measure, with estimates relative to a baseline category (Campbell & Donner, 1989). The aim of this paper was to more closely examine ad-hoc announcements, which should contain the most severe misstatements. Therefore, the results of the management choice regarding the first disclosure type were presented relative to this category (baseline category = ad-hoc announcements). The model was estimated using data on misstatement and firm characteristics. *FRAUD* is an indicator variable that equals 1 if the misstatement indicates the occurrence of intentional erroneous financial reporting, based on the information of the misstatement disclosure. *MAGNITUDE* is the cumulative profit effect of the accounting error scaled by lagged market capitalization. *PROFIT_DOWN* and *REVENUE* are both indicator variables that equal 1 if the misstatement had a negative cumulative effect on profit or the misstatement disclosed incorrect reported revenues. *FRAUD*, *MAGNITUDE*, *PROFIT-DOWN*, and *REVENUE* are characteristics to measure the severity of the misstatement (Palmrose et al., 2004). The operating performance was measured via *ROA* (return on assets) and firm size via *LOGMCAP*. According to Files et al. (2009), I included *FINANCIAL*, a binary variable that equals 1 for banks and other firms in the financial industry sector because of the specific characteristics of these companies. The following multinomial logistic regression was estimated:

$$\begin{aligned}
 \text{FIRST_DISCLOSURE} = & \alpha + \beta_1 \text{ FRAUD} & + \beta_2 \text{ MAGNITUDE} & + \beta_3 \text{ PROFIT_DOWN} \\
 & + \beta_4 \text{ REVENUE} & + \beta_5 \text{ ROA} & + \beta_6 \text{ LOGMCAP} \\
 & + \beta_7 \text{ FINANCIAL} & + \varepsilon &
 \end{aligned}
 \tag{3.1}$$

Since it is not possible to interpret the sizes of regular coefficients, I estimated the marginal effects. For binary variables, marginal effects measured the discrete change (how do predicted probabilities change if the dummy variable changes from 0 to 1) and for continuous variables, they measured the instantaneous rate of change (Williams, 2016). To control for the fact that the examined accounting misstatements contained a variety of disclosed misinformation, I additionally performed the analysis concentrated on DPR enforcement error findings and the associated first disclosure type (baseline = Federal gazette error notices). By analyzing the enforcement error findings only, the disclosed misstatement information was more comparable. However, since enforcement error findings are only a subsample of the full dataset, the sample size decreased, making it necessary to verify the robustness of the results.

3.4.2 Investors' Reaction

To investigate the effect of different types of misstatement disclosures on a firm's value, the standard event study methodology (outlined by MacKinlay, 1997) were applied. Following this approach, the effect of new information on the stock price was measured by estimating abnormal returns during specific time periods around the event. These abnormal returns were calculated by subtracting the normal expected returns of the security from the actual returns. The expected daily returns were estimated using the commonly applied market model (MacKinlay, 1997), which relates the daily return of a given security to the daily return of a market portfolio using ordinary least squares regression. I choose the CDAX performance index as the market portfolio, which reflects all German stocks across Prime Standard and General Standard and a 250-trading-day period from day [-260] to day [-11] prior to the beginning of the event window. The cumulative abnormal returns (CARs) were calculated by summing daily abnormal returns (ARs) over the examined event period.

Four different event windows surrounding the first misstatement disclosure day [0] were investigated to document significant stock market reactions, with three days being the largest window. The conventional mean and median event-study-specific tests were calculated to assess the significance of the (cumulative) abnormal returns, e.g., the standardized residual test (Patell, 1976), standardized cross-sectional test (Boehmer, Musumeci, & Poulsen, 1991), and the Corrado rank test (Corrado, 1989).

Furthermore, multiple cross-sectional regressions were used to investigate whether the first type of disclosure is associated with different abnormal returns around the misstatement disclosure. I control for additional factors that could alter the results. *AD-HOC*, *NEWS* and *GAZETTE* are indicator variables, each equaling 1 if the misstatement was first disclosed in an ad-hoc announcement, in a corporate news disclosure or on the electronic Federal Gazette, respectively. Two of the disclosure types were incorporated in every regression analysis (Models 1 & 3: *NEWS* and *GAZETTE*; Models 2 & 4: *AD-HOC* and *GAZETTE*), depicted in the regression equation below with the variables *DISCLOSURE_I* and *DISCLOSURE_II*. The misstatement and firm characteristics included in the multinomial model in section 4.1. were included, and additional values that are known determinants of the market reaction were incorporated. *ENFORCEMENT* is a binary variable that takes the value of 1 if the misstatement was attributed to the DPR, BaFin, or a comparable institution. If an outside party detects and reveals an accounting mistake instead of an internal party (e.g., management) the uncertainty regarding the credibility of the internal controls or management should increase (Palmrose et al., 2004). Hence, the reaction should be more severe. All else equal, I postulate, consistent with prior research (e.g., Palmrose et al., 2004), that these characteristic variables (*FRAUD*, *MAGNITUDE*, *PROFIT_DOWN*, and *REVENUE*) would be associated with a more negative stock price reaction. High levels of institutional block ownership are likely to influence market reactions to the misstatement announcement. Hence, I included the variable *INSTITUTIONAL*, the portion of total stocks in issue held by institutional owners. The multiple cross-sectional regressions are as follows:

$$\begin{aligned}
CAR[-1;1] = & \alpha + \beta_1 \textit{DISCLOSURE_I} + \beta_2 \textit{DISCLOSURE_II} + \beta_3 \textit{FRAUD} \\
& + \beta_4 \textit{ENFORCEMENT} + \beta_5 \textit{MAGNITUDE} + \beta_6 \textit{PROFIT_DOWN} \\
& + \beta_7 \textit{REVENUE} + \beta_8 \textit{ROA} + \beta_9 \textit{LOGMCAP} \\
& + \beta_{10} \textit{FINANCIAL} + \beta_{11} \textit{INSTITUTIONAL} + \varepsilon
\end{aligned} \tag{3.2}$$

As a valuable supplement to linear regressions, I calculated the relative important weights using Johnson's (2000) relative weight procedure (Tonidandel & LeBreton, 2011). This method detects the contribution a variable makes to the prediction of a dependent variable by itself and in combination with other independent variables and helps to understand the effect of each predictor in the equation (Johnson & LeBreton, 2004; Tonidandel & LeBreton, 2011). To the best of my knowledge, relative importance weights have not been incorporated in prior studies with a

comparable focus. Researchers interested in the relative importance of variables and their contribution to explain variance in the criterion should perform this method, even if it is not one's primary interest, as it will provide a greater understanding of the specific role played by variables in a multiple regression (Tonidandel & LeBreton, 2011). Once again, a cross-sectional regression was performed with the subsample of enforcement error findings. The advantage was that the information the disclosure provided was more comparable. This approach reduced the considered sample to 48 misstatement disclosures.

3.5 Sample Selection and Data Description

To obtain an extensive sample, the selection procedure involved several sources. The ad-hoc announcements were obtained from the German Company Register, the German regulatory news service "Deutsche Gesellschaft für Ad-Hoc Publizität" (DGAP), Business Wire (German), and euro adhoc (the last two database systems via LexisNexis) based on keyword searches for accounting misstatements (e.g., error, restate, correction). Furthermore, all error notices from the electronic Federal Gazette were collected. Corporate news was restricted to DGAP-News because the DGAP has been the German market leader since its foundation in 1996 (EQS Group 2014) and were also obtained via keyword searches. To ensure that not only the most prominent misstatement disclosures would be identified, a thorough search with over 20 keywords was conducted. Only the misstatements of IFRS financial statements of firms that are listed on a German stock exchange and that made initial announcements between January 1, 2005 and March 31, 2014 were included. Daily market data were obtained from Thomson Reuters Datastream.

Table 3.1, Panel A details the misstatement-publications excluded due to various sample selection criteria to arrive at the final sample. In total, 153 misstatements were excluded, as I discovered more than one announcement for the same misstatement. Because it is possible that an accounting misstatement is disclosed through more than one type of disclosure, I only incorporated the first disclosure in the analysis. The collected misstatements were compared, and only the first disclosure was used in the sample. This resulted in a sample of 223 misstatements to examine the management disclosure choice (Sample 1). To obtain the sample for the event study (Sample 2), additional exclusions were necessary. Five observations had to be eliminated because the related firm had no stock listed. Following McNally and Smith (2007), I controlled for penny stocks by excluding all the stocks trading at prices below € 1, as they are traded infrequently

(<http://www.sec.gov/answers/penny.htm>) and highly speculative (Bouraoui, 2009). In addition, following McWilliams and Siegel (1997) as well as Chen (2013), 42 announcements were eliminated because of confounding effects in [-1;1]. Misstatements with additional financial information that was unrelated to the misstatement were not removed at this point. Finally, three misstatements were eliminated because of missing stock market data. Table 3.1, Panel B classifies the misstatements according to the first type of disclosure. They are classified into four categories: ad-hoc announcements, electronic Federal Gazette error notices, corporate news, and financial statements. To verify the first disclosure of the misstatement regarding Federal Gazette error notices, I screened the financial reports issued after the publication of the erroneous statement but before the disclosure on the Federal Gazette and checked for an earlier misstatement disclosure. Although firms disclosed their misstatement first in a variety of publication types, corporate news was the most common, accounting for 31.8 (31.9) percent of the misstatements. Ad-hoc announcements constituted the next most frequently identified type, representing 30.1 (28.1) percent. Federal Gazette error notices and financial reports accounted for 18.4 (21.9) percent and 19.7 (18.1) percent.

Table 3.1 Description of sample size and sample composition

<i>Panel A: Description of the Final Sample of Misstatements</i>				
	<i>n</i>			
Accounting misstatements from January 2005 to March 2014	376			
1. Exclusion of subsequent disclosures related to the same misstatement	(153)			
Misstatement Sample 1 "Disclosure Choice"	223			
2. Exclusion of firms without stocks listed	(5)			
3. Exclusion of penny stocks (price < 1 €)	(13)			
4. Exclusion of confounding effects	(42)			
5. Missing stock market data in Datastream	(3)			
Misstatement Sample 2 "Event Study"	160			
<i>Panel B: Distribution of Misstatements by first Type of Disclosure</i>				
	<i>Sample 1</i>		<i>Sample 2</i>	
	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>
AD-HOC (Ad-hoc announcements)	67	30.1	45	28.1
GAZETTE (Federal Gazette error notices)	41	18.4	35	21.9
NEWS (Corporate news)	71	31.8	51	31.9
FINANCIAL STATEMENT	44	19.7	29	18.1
Misstatement Sample	223	100	160	100

Table 3.2 gives an overview of the number and percentage of sample observations across industry groups and disclosure year. Most misstatements were disclosed in 2007 (37, 17 percent), followed by 2011 (36, 16 percent), and 2010 (35, 16 percent).

3.6 Empirical Analysis of Misstatement Disclosures

3.6.1 Management Disclosure Choice Results

Table 3.3 provides the descriptive statistics on misstatement characteristics and the results of the Fisher's exact tests. It shows the number of misstatements by misstatement characteristics and details the percentage of misstatements by the first type of disclosure and characteristics. Misstatements containing *FRAUD* were significantly more likely to be first disclosed in an ad-hoc announcement and significantly less likely to be first disclosed on the electronic Federal Gazette and in a financial statement. A total of 131 misstatements were the result of enforcement actions (*ENFORCEMENT*). They were less likely to be first disclosed in an ad-hoc announcement and more likely to be first disclosed on the electronic Federal Gazette. Misstatements with a negative cumulative effect on profit (*PROFIT-DOWN*), incorrect reported revenues (*REVENUE*), and with a cumulative profit-effect below average (scaled by lag market capitalization) (*MEANMAG*) were significantly more likely to be first published in an ad-hoc announcement. This and the results for *FRAUD* seem to indicate that more severe misstatements were first disclosed in an ad-hoc announcement, supporting H1. First disclosures on the electronic Federal Gazette were less likely to contain misstatements with these characteristics. Misstatements affecting revenues were less likely to be disclosed in a financial statement, and misstatements with a cumulative profit effect below average were less likely first disclosed in a corporate news disclosure. The simultaneous disclosure of additional financial information unrelated to the misstatement (*INFORMATION*) was less probable if the first disclosure was via a corporate news disclosure or on the electronic Federal Gazette and more likely if the first disclosure was by a financial statement. Overall, the results support H1.

To gain comprehensive insight into the disclosure of accounting misstatements by management and because the study involves a polychotomous dependent variable, I created a multinomial logit model. Because not all misstatement- and firm characteristics were available for every misstatement case, the sample size decreased to $n = 166$ (for example, in many cases it was not possible to determine the cumulative profit effect *MAGNITUDE*). Hence, the problem of (quasi-)

complete separation might arise due to the sample size (Frischknecht, Eckert, Geweke, & Louviere, 2014) and the small frequency of *FRAUD*. To produce valid estimates with small sample sizes and (quasi-)complete separation, penalized likelihood methods need to be applied (Hosmer, Lemeshow, & Sturdivant 2013). Greenland and Mansournia (2015) proposed a simple penalization method, the log- $F(1,1)$ prior, for logistic regressions and related models. It is trivial to implement and facilitates suitable results with sparse data. They appear in Table 3.4. The columns in Table 3.4 report estimates of the effects of the independent variables on the management's decision to first disclose the misstatement via a corporate news disclosure, the electronic Federal Gazette, and a financial statement relative to a first disclosure as an ad-hoc announcement (baseline category).

Table 3.2 Distribution of the first type of disclosure of the misstatement by industry and year

Industry	Disclosure Year																Total						
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014													
Bank/Savings & Loan			4	2%	1	<1%	1	<1%	3	1%	2	<1%	1	<1%	1	<1%	14	6%					
Industrial	2	<1%	12	5%	23	10%	18	8%	20	9%	28	13%	26	12%	14	6%	9	4%	3	1%	155	70%	
Insurance			1	<1%											1	<1%	1	<1%			3	1%	
Other Financial		1	<1%	4	2%	6	3%	4	2%	2	<1%	8	4%	8	4%	3	1%					36	16%
Transportation			2	0,9%	1	<1%	1	<1%	1	<1%					1	<1%					6	3%	
Utility	1	<1%			3	1%	1	<1%	1	<1%				1	<1%	1	<1%					9	4%
Total	3	1%	13	6%	37	17%	27	12%	27	12%	35	16%	36	16%	24	11%	16	7%	5	2%	223	100%	

Table 3.3 Fisher's Exact Test to examine the significance of the association between the first type of disclosure and different misstatement characteristics

	<u>FRAUD</u>	<u>ENFORCEMENT</u>	<u>PROFIT_DOWN</u>	<u>REVENUE</u>	<u>MEANMAG</u>	<u>INFORMATION</u>
No. of Misstatements	14	131	119	38	99	115
% of Misstatements						
AD-HOC	79 ^{↑↑↑↑}	17 ^{↓↓↓↓}	40 ^{↑↑↑}	53 ^{↑↑↑}	42 ^{↑↑↑}	33
NEWS	21	31	27	34	26 [↓]	27 [↓]
GAZETTE	0 [↓]	31 ^{↑↑↑↑}	13 [↓]	8 [↓]	11 ^{↓↓}	2 ^{↓↓↓↓}
FINANCIAL STATEMENT	0 [↓]	21	20	5 ^{↓↓}	21	38 ^{↑↑↑↑}

↑↑↑↑, ↑↑↑, ↑↑ and ↑ (↓↓↓↓, ↓↓↓, ↓↓ and ↓) reflect a significantly positive (negative) relationship between the first type of disclosure and the examined misstatement characteristic at the 0.1 percent, 1 percent, 5 percent and 10 percent levels, respectively. Variable are defined as follows: *AD-HOC*: A misstatement is classified as *AD-HOC* if the misstatement was first disclosed in an ad-hoc announcement; *NEWS*: A misstatement is classified as *NEWS* if the misstatement was first disclosed via corporate news; *GAZETTE*: A misstatement is classified as *GAZETTE* if the misstatement was first disclosed on the electronic Federal Gazette; *FINANCIAL STATEMENT*: A misstatement is classified as *FINANCIAL STATEMENT* if the misstatement was first disclosed in a financial statement; *FRAUD*: A misstatement is classified as *FRAUD* if the misstatement is associated with allegations of accounting fraud; if the disclosure mentions "irregularities", "misconduct" or "failures" by the responsible party, if the accounting misstatement is the result of a "special review, internal audit or investigation" in the firm, and if respective "legal actions" are verified or initiated by the firm it is evaluated as fraud; *ENFORCEMENT*: A misstatement is classified as *ENFORCEMENT* if the misstatement was attributed to the DPR, BaFin or a comparable institution; *PROFIT_DOWN*: A misstatement is classified as *PROFIT_DOWN* if the misstatement had a negative effect on profit; *REVENUE*: A misstatement is classified as *REVENUE* if the misstatement disclosed incorrect revenues; *MEANMAG*: A misstatement is classified as *MEANMAG* if the misstatement had a cumulative profit-effect below average; *INFORMATION*: A misstatement is classified as *INFORMATION* if the disclosing firm simultaneous discloses additional financial information unrelated to the misstatement.

This means a negative coefficient indicates a decrease in the probability of a misstatement to be first disclosed in the considered disclosure type compared to a first disclosure in an ad-hoc announcement. Misstatements that had a negative cumulative effect on profit were less likely to be first reported via corporate news ($p=0.026$) and on the electronic Federal Gazette ($p=0.014$) than an ad-hoc announcement. Fraud-Misstatements were also less likely disclosed on the electronic Federal Gazette, but only at a 10 percent significance level. Misstatements affecting revenues were more likely to be first disclosed in an ad-hoc announcement than in a financial statement ($p=0.006$).

Since it is not possible to interpret the size of regular coefficients, I calculated the marginal effects. For a misstatement with a negative cumulative profit-effect, the predicted probability for a first disclosure via a corporate news release was 0.109 smaller than an ad-hoc announcement. The marginal effect for a first disclosure via the electronic Federal Gazette was negative as well (-0.117). The marginal effect for the variable *REVENUE* in the category “FINANCIAL STATEMENT” was -0.222. This means that the predicted probability of a first disclosure via a financial statement for a misstatement dealing with revenues was 0.222 smaller than ad-hoc announcements. Thus, these characteristics do matter in the decision of the first disclosure, supporting H1. Additionally, it appeared that more severe misstatements were more likely to be first disclosed in an ad-hoc announcement. Surprisingly, *FRAUD* was only significant in the “GAZETTE” model. One possible explanation is that the frequency of *FRAUD* was too low to show more significant results.

Table 3.5 lists the results for the penalized multinomial model concentrated on DPR enforcement error findings. The sample size and small frequency of *REVENUE* made it necessary to estimate penalized likelihood methods to mitigate caused problems. The results should shed some light on the incentives for managers to disclose only this type of misstatement prior to the mandatory publication on the electronic Federal Gazette. Therefore, the baseline category is the first disclosure on the electronic Federal Gazette. By incorporating only enforcement error findings, the disclosed misstatement information was more similar between the different types of first disclosures. *FRAUD* has not been incorporated in the regression due to a lack of cases with this attribute. Consistent with the former multinomial model, the coefficient for *PROFIT_DOWN* was positive in the “AD-HOC”-model, indicating that DPR misstatements with a negative cumulative effect on profit were more probable to be first disclosed in an ad-hoc announcement than the electronic Federal Gazette ($p=0.003$). For these misstatements, the marginal effect for a first disclosure in an ad-hoc

Table 3.4 Penalized multinomial logistic regression models testing misstatement characteristics as determinants of the first type of disclosure - full sample

Variables	"NEWS"				"GAZETTE"				"FINANCIAL STATEMENT"			
	Pred.	Coeff.	p-value	ME	Pred.	Coeff.	p-value	ME	Pred.	Coeff.	p-value	ME
Intercept	?	1.763	0.371		?	-0.633	0.784		?	0.579	0.783	
Misstatement Characteristics												
FRAUD	(-)	-0.619	0.234	-0.015	(-)	-1.876	0.054 †	-0.127*	(-)	-1.368	0.120	-0.106
MAGNITUDE	(-)	-0.421	0.261	-0.033	(-)	-0.874	0.121	-0.092	(-)	-0.212	0.407	0.019
PROFIT_DOWN	(-)	-0.846	0.026*	-0.109 †	(-)	-1.184	0.014*	-0.117*	(-)	-0.124	0.398	0.066
REVENUE	(-)	-0.064	0.449	0.117	(-)	-0.749	0.139	-0.047	(-)	-2.345	0.006**	-0.222***
Firm Characteristics												
ROA	?	0.006	0.351	0.000	?	0.011	0.262	0.001	?	0.004	0.560	-0.000
LOGMCAP	?	-0.063	0.548	-0.014	?	0.045	0.717	0.010	?	-0.032	0.779	-0.003
FINANCIAL	?	-0.747	0.148	-0.133	?	-0.364	0.559	-0.017	?	0.030	0.954	0.058
Model Statistics												
n		166										
Pseudo R ² (McFadden)		16.75%										
Penalized log pseudolikelihood		-219.41										
Max. VIF		1.28										

Note: Omitted category is Disclosure Type "AD-HOC" (baseline category - A misstatement is classified as *AD-HOC* if the misstatement was first disclosed in an ad-hoc announcement). The other categories are: *NEWS*: A misstatement is classified as *NEWS* if the misstatement was first disclosed via corporate news; *GAZETTE*: A misstatement is classified as *GAZETTE* if the misstatement was first disclosed on the electronic Federal Gazette; *FINANCIAL STATEMENT*: A misstatement is classified as *FINANCIAL STATEMENT* if the misstatement was first disclosed in a financial statement; A penalized likelihood approach was incorporated, using the log- $F(1,1)$ prior (Greenland, & Mansournia, 2015). ***, **, * and † indicate statistical significance at the 0.1 percent, 1 percent, 5 percent and 10 percent levels respectively. Reported p-values are two-sided when no directional prediction is made, and one-sided otherwise. ME represents marginal effects. Variable definitions are as follows: *FRAUD* = 1 if the misstatement is associated with allegations of accounting fraud, and 0 otherwise; if the disclosure mentions "irregularities", "misconduct" or "failures" by the responsible party, if the accounting misstatement is the result of a "special review, internal audit or investigation" in the firm, and if respective "legal actions" are verified or initiated by the firm it is evaluated as fraud; *MAGNITUDE*: Cumulative profit effect of the misstatement scaled by market capitalization measured as of the fiscal year-end prior to the misstatement announcement; *PROFIT_DOWN* = 1 if the misstatement had a negative effect on profit, and 0 otherwise; *REVENUE* = 1 if the misstatement reported erroneous revenues, and 0 otherwise; *ROA*: Return on assets reported as of the fiscal year-end prior to the misstatement announcement (Datastream item "WC08326"); *LOGMCAP*: The natural log of market capitalization reported as of the fiscal year-end prior to the misstatement announcement (Datastream item "MV"); *FINANCIAL* = 1 if the firm operates in the financial sector, and 0 otherwise.

Table 3.5 Penalized multinomial logistic regression models testing misstatement characteristics as determinants of the first type of disclosure - DPR sample

Variables	"AD-HOC"				"NEWS"				"FINANCIAL STATEMENT"			
	Pred.	Coeff.	p-value	ME	Pred.	Coeff.	p-value	ME	Pred.	Coeff.	p-value	ME
Intercept	?	2.129	0.479		?	2.103	0.444		?	-1.311	0.633	
Misstatement Characteristics												
MAGNITUDE	(+)	0.744	0.200	0.139	?	-0.057	0.940	-0.039	?	-0.239	0.816	-0.071
PROFIT_DOWN	(+)	1.856	0.003**	0.261***	?	0.150	0.804	-0.112	?	0.756	0.256	0.032
REVENUE	(+)	0.211	0.404	0.110	?	-0.059	0.945	0.046	?	-2.537	0.036*	-0.232***
Firm Characteristics												
ROA	?	-0.004	0.828	-0.000	?	-0.009	0.531	-0.002	?	0.001	0.927	0.001
LOGMCAP	?	-0.190	0.255	-0.027	?	-0.125	0.402	-0.015	?	0.034	0.808	0.022
FINANCIAL	?	-0.050	0.954	-0.011	?	-0.404	0.616	-0.093	?	0.422	0.563	0.104
Model Statistics												
n		93										
Pseudo R ² (McFadden)		20.96%										
Penalized log pseudolikelihood		-127.659										
Max. VIF		1.36										

Note: Omitted category is Disclosure Type "GAZETTE" (baseline category - A misstatement is classified as *GAZETTE* if the misstatement was first disclosed on the electronic Federal Gazette). The other categories are: *AD-HOC*: A misstatement is classified as *AD-HOC* if the misstatement was first disclosed in an ad-hoc announcement; *NEWS*: A misstatement is classified as *NEWS* if the misstatement was first disclosed via corporate news; *FINANCIAL STATEMENT*: A misstatement is classified as *FINANCIAL STATEMENT* if the misstatement was first disclosed in a financial statement; A penalized likelihood approach was incorporated, using the log- $F(1,1)$ prior (Greenland, & Mansournia, 2015). ***, **, * and † indicate statistical significance at the 0.1 percent, 1 percent, 5 percent and 10 percent levels respectively. Reported p-values are two-sided when no directional prediction is made, and one-sided otherwise. ME represents marginal effects. Variable definitions are as follows: *MAGNITUDE*: Cumulative profit effect of the misstatement scaled by market capitalization measured as of the fiscal year-end prior to the misstatement announcement; *PROFIT_DOWN* = 1 if the misstatement had a negative effect on profit, and 0 otherwise; *REVENUE* = 1 if the misstatement reported erroneous revenues, and 0 otherwise; *ROA*: Return on assets reported as of the fiscal year-end prior to the misstatement announcement (Datastream item "WC08326"); *LOGMCAP*: The natural log of market capitalization reported as of the fiscal year-end prior to the misstatement announcement (Datastream item "MV"); *FINANCIAL* = 1 if the firm operates in the financial sector, and 0 otherwise.

announcement relative to the electronic Federal Gazette was 0.261, supporting H1. Additionally, misstatements with an effect on revenues were less likely to be disclosed in a financial statement than on the electronic Federal Gazette ($p=0.036$), with a marginal effect of -0.232.

In empirical research, the sample size is often constrained by the restrictions of available data (Adcock, 1997), which has been a constant concern in empirical research. Nonetheless, it is not uncommon for empirical papers to incorporate small samples, between 10 and 100 cases in quantitative studies (Bai, Pan, Wang, & Ritchey, 2010). However, with the increase in computing power, resampling methods have emerged as a novel way to address small sample problems (Diaconis, & Efron, 1983). The most commonly-applied method in empirical research with sparse data is the bootstrap method (Efron & Tibshirani, 1998). It has also been used with extensive statistical models, like regressions. They are a very beneficial tool for dealing with small sample problems (Bai, Pan, Wang, & Ritchey, 2010). Hence, to address the issue of the sample size, the bootstrap method, in combination with the penalization method proposed by Greenland and Mansournia (2015) is applied to all incorporated cases and the DPR enforcement error findings, as well. The results are presented in Tables 3.6 and 3.7.

For the full sample (Table 3.6), the coefficient of the variable *PROFIT_DOWN* was negative and significant ($p<0.05$) for the “NEWS”- and “GAZETTE” models, supporting these results in Table 3.4. Other variables were not significant. The associated marginal effects were significant only in the “GAZETTE” model. The bootstrap results for the DPR enforcement error findings show a significant ($p=0.013$) and positive coefficient for misstatements with a negative cumulative profit effect (*PROFIT_DOWN*) first disclosed in an ad-hoc announcement, supporting the former result without the bootstrap method (Table 3.5). The marginal effect was significant at the 1 percent level as well. In contrast to the results in Table 3.5, the *REVENUE* variable was not significant. Nonetheless, the bootstrap results were largely comparable to the regular results in Tables 3.4 and 3.5.

3.6.2 Event Study Results

Figure 3.1 illustrates descriptive evidence of the stock market reaction to accounting misstatements for the full sample and for each first type of disclosure. It presents the cumulative abnormal returns over a 21-day event window [-10;10] for the full sample, for ad-hoc announcements, electronic Federal Gazette error notices, corporate news, and financial statements.

Table 3.6 Penalized multinomial logistic regression models testing misstatement characteristics as determinants of the first type of disclosure - full sample: Bootstrap results

Variables	"NEWS"				"GAZETTE"				"FINANCIAL STATEMENT"			
	Pred.	Coeff.	p-value	ME	Pred.	Coeff.	p-value	ME	Pred.	Coeff.	p-value	ME
Intercept	?	1.763	0.417		?	-0.633	0.813		?	0.579	0.812	
Misstatement Characteristics												
FRAUD	(-)	-0.619	0.426	-0.015	(-)	-1.876	0.384	-0.127*	(-)	-1.368	0.415	-0.106
MAGNITUDE	(-)	-0.421	0.354	-0.033	(-)	-0.874	0.226	-0.092	(-)	-0.212	0.460	0.019
PROFIT_DOWN	(-)	-0.846	0.043*	-0.109	(-)	-1.184	0.025*	-0.117*	(-)	-0.124	0.409	0.066
REVENUE	(-)	-0.064	0.456	0.117	(-)	-0.749	0.349	-0.047	(-)	-2.345	0.326	-0.222***
Firm Characteristics												
ROA	?	0.006	0.613	0.000	?	0.011	0.491	0.001	?	0.004	0.776	-0.000
LOGMCAP	?	-0.063	0.590	-0.014	?	0.045	0.758	0.010	?	-0.032	0.758	-0.003
FINANCIAL	?	-0.747	0.195	-0.133	?	-0.364	0.670	-0.017	?	0.030	0.670	0.058
Model Statistics												
n		166										
Replications		1000										
Pseudo R ² (McFadden)		16.75%										
Penalized log pseudolikelihood		-219.41										
Max. VIF		1.28										

Note: Omitted category is Disclosure Type "AD-HOC" (baseline category - A misstatement is classified as *AD-HOC* if the misstatement was first disclosed in an ad-hoc announcement). The other categories are: *NEWS*: A misstatement is classified as *NEWS* if the misstatement was first disclosed via corporate news; *GAZETTE*: A misstatement is classified as *GAZETTE* if the misstatement was first disclosed on the electronic Federal Gazette; *FINANCIAL STATEMENT*: A misstatement is classified as *FINANCIAL STATEMENT* if the misstatement was first disclosed in a financial statement; A bootstrap (1000 replications) and penalized likelihood approach was incorporated, using the log- $F(1,1)$ prior (Greenland, & Mansournia, 2015). ***, **, * and † indicate statistical significance at the 0.1 percent, 1 percent, 5 percent and 10 percent levels respectively. Reported p-values are two-sided when no directional prediction is made, and one-sided otherwise. ME represents marginal effects. Variable definitions are as follows: *FRAUD* = 1 if the misstatement is associated with allegations of accounting fraud, and 0 otherwise; if the disclosure mentions "irregularities", "misconduct" or "failures" by the responsible party, if the accounting misstatement is the result of a "special review, internal audit or investigation" in the firm, and if respective "legal actions" are verified or initiated by the firm it is evaluated as fraud; *MAGNITUDE*: Cumulative profit effect of the misstatement scaled by market capitalization measured as of the fiscal year-end prior to the misstatement announcement; *PROFIT_DOWN* = 1 if the misstatement had a negative effect on profit, and 0 otherwise; *REVENUE* = 1 if the misstatement reported erroneous revenues, and 0 otherwise; *ROA*: Return on assets reported as of the fiscal year-end prior to the misstatement announcement (Datastream item "WC08326"); *LOGMCAP*: The natural log of market capitalization reported as of the fiscal year-end prior to the misstatement announcement (Datastream item "MV"); *FINANCIAL* = 1 if the firm operates in the financial sector, and 0 otherwise.

Table 3.7 Penalized multinomial logistic regression models testing misstatement characteristics as determinants of the first type of disclosure – DPR sample: Bootstrap results

Variables	"AD-HOC"				"NEWS"				"FINANCIAL STATEMENT"			
	Pred.	Coeff.	p-value	ME	Pred.	Coeff.	p-value	ME	Pred.	Coeff.	p-value	ME
Intercept	?	2.129	0.553		?	2.103	0.516		?	-1.311	0.681	
Misstatement Characteristics												
MAGNITUDE	(+)	0.744	0.289	0.139	?	-0.057	0.966	-0.039	?	-0.239	0.892	-0.071
PROFIT_DOWN	(+)	1.856	0.013*	0.261**	?	0.150	0.834	-0.112	?	0.756	0.318	0.032
REVENUE	(+)	0.211	0.472	0.110	?	-0.059	0.988	0.046	?	-2.537	0.705	-0.232***
Firm Characteristics												
ROA	?	-0.004	0.877	-0.000	?	-0.009	0.688	-0.002	?	0.001	0.955	0.001
LOGMCAP	?	-0.190	0.349	-0.027	?	-0.125	0.481	-0.015	?	0.034	0.835	0.022
FINANCIAL	?	-0.050	0.983	-0.011	?	-0.404	0.865	-0.093	?	0.422	0.785	0.104
Model Statistics												
n		93										
Replications		1000										
Pseudo R ² (McFadden)		20.96%										
Penalized log pseudolikelihood		-127.659										
Max. VIF		1.36										

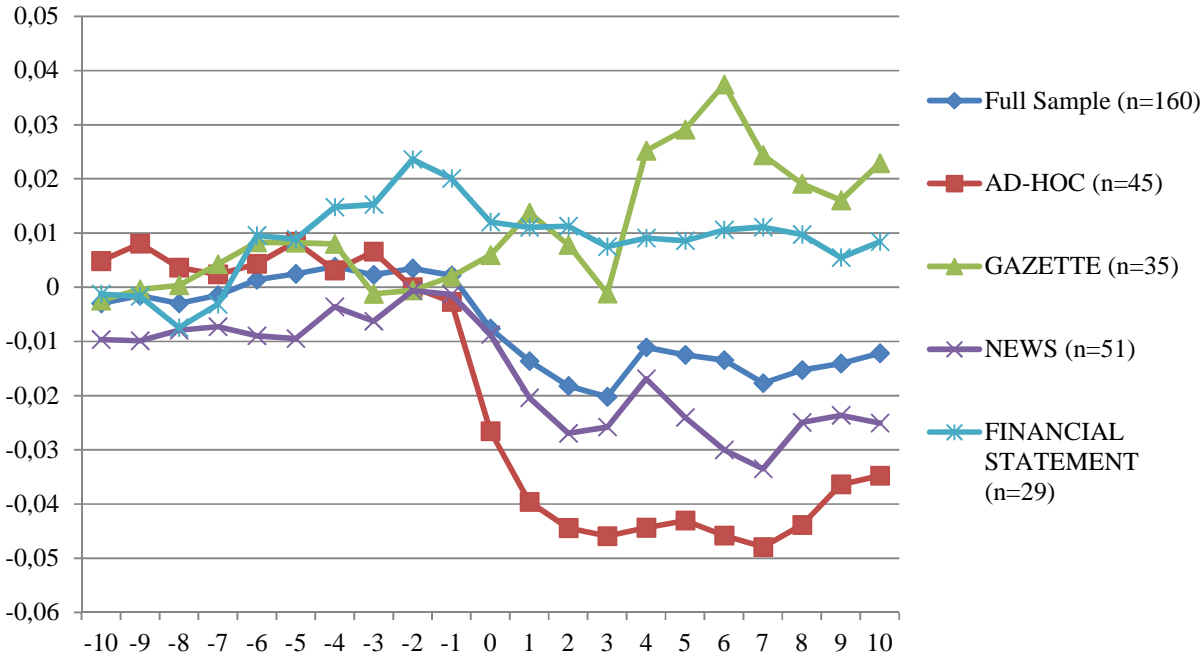
Note: Omitted category is Disclosure Type "GAZETTE" (baseline category - A misstatement is classified as *GAZETTE* if the misstatement was first disclosed on the electronic Federal Gazette). The other categories are: *AD-HOC*: A misstatement is classified as *AD-HOC* if the misstatement was first disclosed in an ad-hoc announcement; *NEWS*: A misstatement is classified as *NEWS* if the misstatement was first disclosed via corporate news; *FINANCIAL STATEMENT*: A misstatement is classified as *FINANCIAL STATEMENT* if the misstatement was first disclosed in a financial statement; A bootstrap (1000 replications) and penalized likelihood approach was incorporated, using the log- $F(1,1)$ prior (Greenland, & Mansournia, 2015). ***, **, * and † indicate statistical significance at the 0.1 percent, 1 percent, 5 percent and 10 percent levels respectively. Reported p-values are two-sided when no directional prediction is made, and one-sided otherwise. ME represents marginal effects. Variable definitions are as follows: *MAGNITUDE*: Cumulative profit effect of the misstatement scaled by market capitalization measured as of the fiscal year-end prior to the misstatement announcement; *PROFIT_DOWN* = 1 if the misstatement had a negative effect on profit, and 0 otherwise; *REVENUE* = 1 if the misstatement reported erroneous revenues, and 0 otherwise; *ROA*: Return on assets reported as of the fiscal year-end prior to the misstatement announcement (Datastream item "WC08326"); *LOGMCAP*: The natural log of market capitalization reported as of the fiscal year-end prior to the misstatement announcement (Datastream item "MV"); *FINANCIAL* = 1 if the firm operates in the financial sector, and 0 otherwise.

Except for the Federal Gazette error notices and the financial statements, every subsample indicated a substantial loss of market value around the day of the misstatement announcement. Federal Gazette error notices without additional financial information unrelated to the misstatement induce no significant reaction, as well (Figure 3.2). Regarding ad-hoc announcements, there seemed to be some prior information leakage causing negative stock market reactions before the first disclosure. Because each separate financial statement provided a wide range of information, statements were not analyzed individually in the paper.

Table 3.8 presents the descriptive statistics and univariate results of the event study analysis; 47.5 percent of the misstatements were first disclosed with additional financial information, which was unrelated to the misstatement. Following Palmrose et al. (2004), the table illustrates the results for the full sample and the subset of misstatements first disclosed without additional financial information unrelated to the misstatement. The results from the full sample and the subset “full sample without unrelated financial information” were consistent with the previous prediction and support H2. Market reactions for a variety of event windows are negative and significantly different from zero. The mean (median) abnormal return on the event day [0] and over a three-day window [-1;1] of approximately -1.0 (-0.3) and -1.7 (-0.9) percent were comparable with the documented stock price reactions from Hitz et al. (2012). The first subsample (ad-hoc announcements) was also associated with significant negative returns over multiple event periods. One important aspect is the magnitude of the valuation discount. The mean (median) abnormal return was approximately -4.0 (-1.5) percent, respectively, -5.5 (-3.1) percent (w/o unrelated financial information) over the event period [-1;1], substantially larger than in prior German studies. These results provide preliminary support for H3.

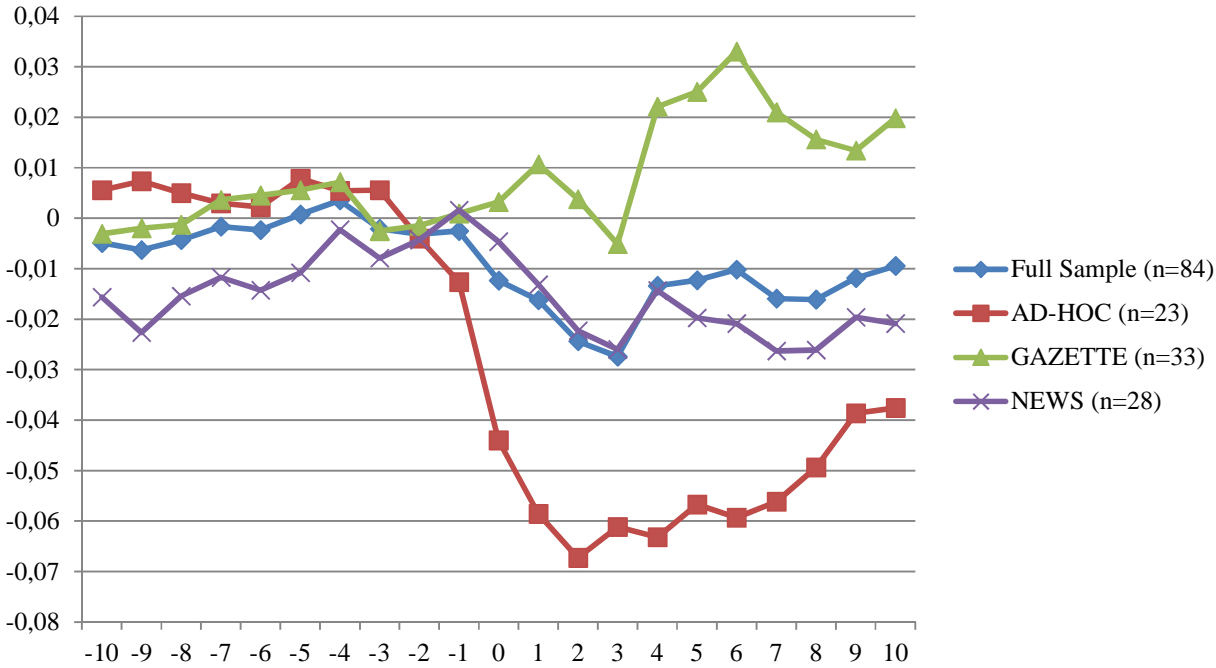
The results of the electronic Federal Gazette error notices are quite interesting. I documented no significant negative market reaction for misstatements first disclosed on the electronic Federal Gazette, which means the adverse disclosure (“name and shame”) mechanism (see Hitz et al., 2012) did not appear to hold for these misstatement disclosures. One possible explanation might be that only minor misstatements might be first disclosed via this type of disclosure (Hecker & Wild, 2012). I also found (weak) significant positive abnormal returns for the full subsample. Apparently, the management was attempting to dilute the stock market penalty by simultaneously publishing additional unrelated financial information, which should compensate for the negative news. Hence, the market seems to react to the additional good news, but not to the Federal Gazette error notices.

Figure 3. 1 Cumulated abnormal returns around the first misstatement disclosure for the full sample and for different subsamples.



Note: The CAR of day [t] equals the sum of ARs from trading day [-10] to [t].

Figure 3. 2 Cumulated abnormal returns around the first misstatement disclosure for the full sample and for different subsamples (w/o unrelated financial information).



Note: The CAR of day [t] equals the sum of ARs from trading day [-10] to [t].

The last subsample contained corporate news and reported significant negative abnormal returns in multiple event periods. Regarding the subset “without unrelated financial information,” the number of cases decreased strongly because corporate news often disclosed additional unrelated financial information (e.g., earnings). The number of significant market reactions decreased as well, but remained detectable nonetheless.

The fact that a misstatements detected by the German enforcement system could be first disclosed in an ad-hoc announcement or via corporate news offers an opportunity to examine the investors’ reaction to comparable information (only enforcement error findings) via different channels. As documented in Table 3.9, the abnormal return for misstatements exposed by the DPR or BaFin and released via corporate news or an ad-hoc announcement produced significant negative abnormal returns. This could not be established with Federal Gazette error notices (Table 3.8) and supports the earlier considerations. However, one could argue that the results for the Federal Gazette could be explained by an anticipation of the misstatement disclosure through the market. To address this issue, I analyzed the stock market behavior for the Federal Gazette subsample before the disclosure (up to 40 days) and found no significant abnormal returns (untabulated).

Table 3.10 reports the results for the paired comparisons. Consistent with H3, the mean and median return differences between ad-hoc announcements and electronic Federal Gazette error notices for the full subsample and the subset (without additional unrelated financial information) were statistically significant for every examined event window. The difference between corporate news and Federal Gazette error notices was significant as well. The observations for the comparison “Ad-hoc vs. Corp. News” supported H3 insofar as there was a statistically significant difference between these two subsamples over the event window [-1;1] for the smaller subsets.

Multiple cross-sectional regression was used to investigate whether the first type of disclosure was associated with different abnormal returns around the misstatement disclosure. To ensure that the regression results were not affected by additional disclosed financial information unrelated to the misstatement, I excluded these observations. I controlled for additional factors that could alter the results. The sample size was reduced to $n = 65$ because not every incorporated misstatement- and firm characteristic was available for every misstatement disclosure. To ensure robust results, the sample-to-variable ratio should be at least 5 to 1 (Princeton University Library, 2007) and the residuals normally distributed (De Vaus, 2002).

Table 3.8 Descriptive statistics and univariate results of the event study analysis

Full Sample ($n=160$)								Full Sample (w/o. unrelated financial information) ($n=84$)						
Window	Mean (C)AR	Median (C)AR	Pos:Neg	t-Test	Patell Z	Boehmer	Corrado	Mean (C)AR	Median (C)AR	Pos:Neg	t-Test	Patell Z	Boehmer	Corrado
[0]	-0.010	-0.003	67:93	-2.049*	-4.044***	-2.010*	-2.154*	-0.010	-0.003	34:50	-1.668†	-3.173**	-1.514	-1.057
[0;1]	-0.016	-0.006	61:99	-2.875**	-4.181***	-2.506*	-2.366*	-0.014	-0.005	34:50	-1.974*	-3.151**	-1.892†	-0.944
[-1;1]	-0.017	-0.009	58:102	-2.879**	-3.634***	-2.511*	-1.930†	-0.013	-0.004	35:49	-1.866†	-2.660**	-1.959†	-0.825
[0;2]	-0.020	-0.009	59:101	-3.658***	-4.414***	-3.153**	-2.342*	-0.022	-0.007	29:55	-3.041**	-3.496***	-2.451*	-1.258
Subsample "AD-HOC" ($n=45$)								Subsample "AD-HOC" (w/o. unrelated financial information) ($n=23$)						
Window	Mean (C)AR	Median (C)AR	Pos:Neg	t-Test	Patell Z	Boehmer	Corrado	Mean (C)AR	Median (C)AR	Pos:Neg	t-Test	Patell Z	Boehmer	Corrado
[0]	-0.024	-0.007	17:28	-1.655†	-5.492***	-1.635	-1.872†	-0.031	-0.016	08:15	-1.648†	-5.936***	-1.614	-1.852†
[0;1]	-0.037	-0.013	18:27	-2.329*	-5.160***	-1.985*	-2.338*	-0.046	-0.034	07:16	-2.216*	-5.415***	-1.907†	-2.241*
[-1;1]	-0.040	-0.015	16:29	-2.328*	-4.659***	-2.071*	-2.296*	-0.055	-0.031	06:17	-2.760**	-5.483***	-2.505*	-2.895**
[0;2]	-0.042	-0.026	15:30	-2.700**	-5.307***	-2.472*	-2.189*	-0.055	-0.028	06:17	-2.603**	-5.182***	-2.197*	-1.850†
Subsample "GAZETTE" ($n=35$)								Subsample "GAZETTE" (w/o. unrelated financial information) ($n=33$)						
Window	Mean (C)AR	Median (C)AR	Pos:Neg	t-Test	Patell Z	Boehmer	Corrado	Mean (C)AR	Median (C)AR	Pos:Neg	t-Test	Patell Z	Boehmer	Corrado
[0]	0.004	0.000	19:16	0.834	1.336	1.481	1.197	0.002	0.000	17:16	0.467	0.803	0.977	0.758
[0;1]	0.012	0.003	21:14	1.820†	1.637	1.843†	1.994*	0.010	0.001	19:14	1.453	1.031	1.375	1.489
[-1;1]	0.014	0.004	22:13	1.927†	1.621	1.963*	1.944†	0.012	0.004	20:13	1.577	1.044	1.545	1.435
[0;2]	0.006	0.001	20:15	0.811	1.069	1.441	1.457	0.003	0.001	18:15	0.398	0.729	1.000	1.063

(continued on next page)

Table 3.8 (continued)

Subsample "NEWS" (<i>n</i> =51)								Subsample "NEWS" (w/o. unrelated financial information) (<i>n</i> =28)						
Window	Mean (C)AR	Median (C)AR	Pos:Neg	t-Test	Patell Z	Boehmer	Corrado	Mean (C)AR	Median (C)AR	Pos:Neg	t-Test	Patell Z	Boehmer	Corrado
[0]	-0.007	-0.006	18:33	-1.156	-2.279*	-1.867†	-2.147*	-0.006	-0.005	09:19	-1.406	-0.988	-1.188	-1.041
[0;1]	-0.019	-0.011	14:37	-3.008**	-3.293***	-3.024**	-2.714**	-0.015	-0.008	08:20	-2.457*	-1.669†	-2.559*	-1.307
[-1;1]	-0.020	-0.015	14:37	-2.890**	-2.635**	-2.907**	-1.885†	-0.009	-0.007	09:19	-1.626	-0.770	-1.389	-0.439
[0;2]	-0.026	-0.016	12:39	-3.713***	-3.537***	-4.069***	-2.688**	-0.024	-0.015	05:23	-3.465***	-2.146*	-3.645***	-1.742†

Note: This table reports the mean and median (cumulative) abnormal returns for specific event windows, the relationship between positive and negative (cumulative) abnormal returns, the test statistic of the cross-sectional t-test, the standardized residual test (Patell Z), the standardized cross-sectional test (Boehmer) and the Corrado rank test (Corrado). ***, **, * and † indicate statistical significance at the 0.1 percent, 1 percent, 5 percent and 10 percent levels respectively (two-tailed). The subsamples are defined as follows: *AD-HOC*: A misstatement is part of this subsample if the misstatement was first disclosed in an ad-hoc announcement; *NEWS*: A misstatement is part of this subsample if the misstatement was first disclosed via corporate news; *GAZETTE*: A misstatement is part of this subsample if the misstatement was first disclosed on the electronic Federal Gazette.

Table 3.9 Descriptive statistics and univariate results to "DPR enforcement error findings"

Subsample "DPR via AD-HOC" (<i>n</i> =14)								Subsample "DPR via NEWS" (<i>n</i> =24)						
Window	Mean (C)AR	Median (C)AR	Pos:Neg	t-Test	Patell Z	Boehmer	Corrado	Mean (C)AR	Median (C)AR	Pos:Neg	t-Test	Patell Z	Boehmer	Corrado
[0]	-0.021	-0.023	05:09	-2.392*	-2.031*	-2.085*	-1.870†	-0.006	-0.004	09:15	-1.375	-0.808	-0.970	-0.759
[0;1]	-0.044	-0.034	03:11	-3.190**	-2.995**	-3.070**	-2.555*	-0.015	-0.005	07:17	-1.890†	-0.911	-0.942	-0.881
[-1;1]	-0.050	-0.030	02:12	-3.280***	-2.983**	-3.490***	-2.608**	-0.013	-0.005	08:16	-1.373	-0.445	-0.620	-0.165
[0;2]	-0.042	-0.027	03:11	-2.996**	-2.315*	-2.681**	-1.763†	-0.025	-0.015	06:18	-2.928**	-1.539	-2.220*	-1.473

Note: This table reports the mean and median (cumulative) abnormal returns for specific event windows, the relationship between positive and negative (cumulative) abnormal returns, the test statistic of the cross-sectional t-test, the standardized residual test (Patell Z), the standardized cross-sectional test (Boehmer) and the Corrado rank test (Corrado). ***, **, * and † indicate statistical significance at the 0.1 percent, 1 percent, 5 percent and 10 percent levels respectively (two-tailed). *AD-HOC*: An enforcement error finding is part of this subsample if it was first disclosed in an ad-hoc announcement; *NEWS*: An enforcement error finding is part of this subsample if it was first disclosed via corporate news.

Table 3.10 Results of the paired comparisons

<i>Full Subsample</i>		[0]	[0;1]	[-1;1]	[0;2]	<i>w/o. unrelated financial information</i>	[0]	[0;1]	[-1;1]	[0;2]
AD-HOC vs. GAZETTE	Mean (Median)	-0.028 † (-0.007) †	-0.049 ** (-0.015) *	-0.054 ** (-0.019) **	-0.048 ** (-0.027) **	Mean (Median)	-0.034 † (-0.016) †	-0.056 * (-0.035) **	-0.067 ** (-0.035) **	-0.058 * (-0.028) **
AD-HOC vs. NEWS	Mean (Median)	-0.016 (-0.001)	-0.018 (-0.002)	-0.020 (-0.000)	-0.016 (-0.010)	Mean (Median)	-0.025 (-0.012)	-0.031 (-0.027)	-0.046 * (-0.024) *	-0.031 (-0.013)
NEWS vs. GAZETTE	Mean (Median)	-0.011 (-0.006) *	-0.031 ** (-0.014) **	-0.034 ** (-0.019) ***	-0.032 ** (-0.017) ***	Mean (Median)	-0.009 (-0.005)	-0.025 ** (-0.009) *	-0.021 * (-0.012) *	-0.027 * (-0.016) **

Note: ***, **, * and † indicate statistical significance at the 0.1 percent, 1 percent, 5 percent and 10 percent levels respectively (two-tailed). T-tests are used for means and Mann-Whitney U-tests are used for medians. The subsamples are defined as follows: *AD-HOC*: A misstatement is part of this subsample if the misstatement was first disclosed in an ad-hoc announcement; *NEWS*: A misstatement is part of this subsample if the misstatement was first disclosed via corporate news; *GAZETTE*: A misstatement is part of this subsample if the misstatement was first disclosed on the electronic Federal Gazette.

Other sample size guidelines indicate even lower minimum ratios of 2 to 1 required for adequate estimations (Austin & Steyerberg, 2015). The ratio present in Model 1 and Model 2 was 5.9 (65 cases and 11 independent variables), and the normality test (D'Agostino, Belanger, & D'Agostino, 1990; Royston, 1991) could not reject a normal distribution of the residuals ($p=0.377$), supporting robust results. Additionally, the F-test incorporates the sample size and the number of independent variables and evaluates the validity of the regression by estimating the model significance (Backhaus, Erichson, Plinke, & Weiber, 2016). The F-statistics for Model 1 and Model 2 was highly significant ($p<0.001$), supporting the validity of the results (Table 3.11). I calculated variance inflation factors to quantify the severity of multicollinearity. All values were well below 5 (Table 3.11), indicating that multicollinearity was not an issue (Craney & Surles, 2002).

Table 3.11 presents the regression results for cumulative abnormal returns measured over the [-1;1] event window as the dependent variable. The three-day event window was chosen for the multiple regression to capture the possible short leakage prior to the publication and delayed investor reaction after the announcement (Files et al., 2009; Rhee & Fiss, 2014). In Model 1, the stock market reaction was less negative when misstatements were first disclosed via corporate news (*NEWS*) or on the electronic Federal Gazette (*GAZETTE*) instead of an ad-hoc announcement. Both factors had a positive coefficient (0.035 and 0.054) and were statistically significant at the 0.005 and 0.001 levels. Ad-hoc announcements seem to generate the most negative capital market returns, consistent with H3. The relative weight analysis revealed that *GAZETTE* was also the most important predictor for Model 1 (0.240) and *NEWS* the fourth-most important (0.137), together accounting for nearly 40 percent of the explained variance. Regression model 2 contained *AD-HOC* and *GAZETTE*, which means the baseline category was corporate news. The *GAZETTE* coefficient was positive (0.019) and significant at the 0.052 level. There was a statistically (weak) significant difference between misstatements first disclosed as a corporate news disclosure or on the electronic Federal Gazette in the regression analysis. Again, one of the considered disclosure-type variables in Model 2 was the most important predictor (*AD-HOC*, 0.310). Combined with the second disclosure-type variable, they accounted for over 40 percent of the explained variance.

Both regression models included variables to control for misstatement characteristics. The first factor *FRAUD* was associated with more negative returns in Models 1 and 2 with a significance level of $p=0.001$. It also represented almost 20 percent of the total variance of the criterion variable that could be attributed to all predictors combined (Rank=2).

Table 3.11 Multiple regression of abnormal returns around the first disclosure of the misstatement and relative importance measures

Variables	Pred.	Model 1					Model 2					Model 3					Model 4				
		Coeff.	p-value	Std. Weight	Rank order	ITCV	Coeff.	p-value	Std. Weight	Rank order	ITCV	Coeff.	p-value	Std. Weight	Rank order	ITCV	Coeff.	p-value	Std. Weight	Rank order	ITCV
Intercept	?	-0.081	0.081 †				-0.047	0.328				-0.112	0.038 **				-0.055	0.334			
First Disclosure Type																					
AD-HOC	(-)						-0.035	0.005 **	0.310	1	-0.456						-0.057	0.001 ***	0.489	1	-0.642
NEWS	(+)	0.035	0.005 **	0.137	4	0.101						0.057	0.001 ***	0.234	2	0.181					
GAZETTE	(+)	0.054	0.001 ***	0.240	1	0.125	0.019	0.052 †	0.098	4	-0.023	0.064	0.001 ***	0.295	1	0.158	0.008	0.250	0.084	4	-0.115
Misstatement Characteristics																					
FRAUD	(-)	-0.098	0.001 ***	0.196	2		-0.098	0.001 ***	0.198	2											
ENFORCEMENT	(-)	-0.034	0.024 *	0.034	8		-0.034	0.024 *	0.036	8											
MAGNITUDE	(-)	-0.002	0.444	0.015	10		-0.003	0.444	0.015	10		0.011	0.719	0.019	8		0.011	0.719	0.018	8	
PROFIT_DOWN	(-)	-0.009	0.179	0.171	3		-0.009	0.179	0.143	3		-0.006	0.269	0.128	3		-0.006	0.269	0.090	3	
REVENUE	(-)	0.032	0.984	0.032	9		0.032	0.984	0.033	9		0.040	0.993	0.115	4		0.040	0.993	0.118	2	
Firm Characteristics																					
ROA	?	-0.001	0.016 *	0.050	7		-0.001	0.016 *	0.052	6		-0.001	0.069 †	0.040	7		-0.001	0.069 †	0.049	7	
LOGMCAP	?	0.004	0.143	0.057	6		0.004	0.143	0.049	7		0.003	0.304	0.091	5		0.003	0.304	0.078	5	
FINANCIAL	?	-0.017	0.177	0.008	11		-0.017	0.177	0.006	11		-0.018	0.259	0.017	9		-0.018	0.259	0.010	9	
INSTITUTIONAL	?	-0.045	0.213	0.061	5		-0.045	0.213	0.062	5		0.044	0.170	0.061	6		0.044	0.170	0.065	6	
Model Statistics																					
n		65					65					48					48				
adj. R ²		31.83%					31.83%					36.94%					36.94%				
F-statistic		3.95***					3.95***					3.66**					3.66**				
Max. VIF		3.06					2.64					3.34					2.18				

(continued on next page)

Table 3.11 (continued)

Note: The OLS regression model in this table analyzes the cumulative abnormal return (CAR) measured over the [-1,1] window, with day 0 indicating the misstatement announcement. In all regressions, I use robust standard errors using Huber (1967) / White (1980) procedure. ***, **, * and † indicate statistical significance at the 0.1 percent, 1 percent, 5 percent and 10 percent levels respectively. Reported p-values are two-sided when no directional prediction is made, and one-sided otherwise. Relative weight analysis is used to determine relative importance weights (standardized). The ITCV index is defined as the product of the partial correlations between dependent and confounding variable and the partial correlation between independent and confounding variable that makes the coefficient statistically insignificant. The impact is defined as the product of the partial correlation between the independent variable and the control variable and the partial correlation between the independent and the control variable. Variable definitions are as follows: *AD-HOC* = 1 if the misstatement was first disclosed in an ad-hoc announcement, and 0 otherwise; *NEWS* = 1 if the misstatement was first disclosed via corporate news, and 0 otherwise; *GAZETTE* = 1 if the misstatement was first disclosed on the electronic Federal Gazette, and 0 otherwise; *FRAUD* = 1 if the misstatement is associated with allegations of accounting fraud, and 0 otherwise; if the disclosure mentions “irregularities”, “misconduct” or “failures” by the responsible party, if the accounting misstatement is the result of a “special review, internal audit or investigation” in the firm, and if respective “legal actions” are verified or initiated by the firm it is evaluated as fraud; *ENFORCEMENT* = 1 if the misstatement was attributed to the DPR, BaFin or a comparable institution, and 0 otherwise; *MAGNITUDE*: Cumulative profit effect of the misstatement scaled by market capitalization measured as of the fiscal year-end prior to the misstatement announcement; *PROFIT_DOWN* = 1 if the misstatement had a negative effect on profit, and 0 otherwise; *REVENUE* = 1 if the misstatement reported erroneous revenues, and 0 otherwise; *ROA*: Return on assets reported as of the fiscal year-end prior to the misstatement announcement (Datastream item “WC08326”); *LOGMCAP*: The natural log of market capitalization reported as of the fiscal year-end prior to the misstatement announcement (Datastream item “MV”); *FINANCIAL* = 1 if the firm operates in the financial sector, and 0 otherwise; *INSTITUTIONAL*: Portion of total shares in issue held by investment banks or institutions. (Datastream item “NOSHIC”).

In both models, externally initiated misstatement disclosures induced stronger negative market reactions ($p=0.024$). Both results were consistent with the former postulated prediction. The last finding contradicts results reported in U.S. studies regarding the SEC (Palmrose et al., 2004). Further misstatement characteristics were insignificant. Interestingly, the regression coefficient for *PROFIT_DOWN* was insignificant, but the relative weight analysis showed that the variable was the third-most important predictor of all variables (>0.14). Hence, this analysis provided information not available from the values produced from multiple regression analysis (Tonidandel & LeBreton, 2011). Among the firm characteristic factors, I found a significant ($p=0.016$) negative coefficient (-0.001) for *ROA* in the regressions. Investors' reactions to misstatement disclosures with positive operating performance differed from weak performers. Firms with higher reported *ROA* the fiscal year before the misstatement announcement had more severe market reactions. Apart from the discussed variables, there are standardized weights <0.07 .

Models 3 and 4 repeat the analysis for DPR enforcement error findings. This subsample contains no fraudulent misstatement. Additionally, every considered misstatement is detected by the German enforcement system. Hence, the variables (*FRAUD*, *ENFORCEMENT*) are excluded from the calculation because of missing variation. The results were similar to the former models. DPR enforcement error findings disclosed via an ad-hoc announcement seemed to induce the strongest negative abnormal return. In contrast to Model 2, I found no significant difference between DPR enforcement findings first disclosed via corporate news and via the electronic Federal Gazette. This might be due to the fact that both types of disclosure contained mandatory enforcement releases with (more or less) dictated wording. The sample-to-variable ratio was 5.3 (48 cases and nine independent variables), and the test for normality distribution for the residuals could not be rejected ($p=0.516$), supporting the explanatory power of the results. Furthermore, the statistical significance of the overall model was highly significant ($p<0.01$).

When observations are non-randomly sorted into discrete groups, self-selection problems arise (Maddala, 1991), raising the possibility of endogeneity. In the examined setting, an endogenous indicator variable was likely to be included as an independent variable (Lennox, Francis, & Wang, 2012). This problem arose because the choice of the first type of disclosure might not be random. Including control variables did not solve this problem. The standard procedure to control for this is the two-stage model developed by Heckman (1979). Unfortunately, Larcker and Rusticus (2010) stated, “*There is no fool-proof way of dealing with the problem of endogeneity in empirical accounting research*” and “*there are several fundamental requirements that must be met.*” For example, to successfully control for endogeneity, at least one instrumental variable must be identified

that is correlated with the response variable in the first-stage model, but is not associated with the dependent variable in the second-stage model. Economic theory, prior empirical findings, and intuition are necessary to convince the reader of the choice of the instrumental variables (Larcker & Rusticus, 2010). Unfortunately, an essential number of accounting studies fail to follow this procedure, producing non-robust results (Lennox et al., 2012). Using deficient instrumental variables is more likely to provide inaccurate conclusions than simple OLS regression without controlling for endogeneity (Larcker & Rusticus, 2010).

There did not appear to be a valid instrument variable in the examined setting of this paper to implement a convincing selection model. For example, Files et al. (2009) used the number of management earnings forecasts in the year prior to the restatement announcement. However, Gordon et al. (2013) showed that the pre-restatement disclosure amount influences the market reaction to the restatement announcement, casting doubt that the selection bias has truly been eliminated. Therefore, I followed the suggestion of Larcker and Rusticus (2010) and assessed how large the endogeneity problem must be to change the examined regression results. I used the approach developed by Frank (2000) to analyze the potential impact of unobserved confounding variables. I calculated the impact threshold for a confounding variable (ITCV) to derive the minimum correlation required to change a statistically significant variable into an insignificant result. High (low) values indicate robust (not robust) results. I calculated the ITCV values for all first disclosure-type variables (see Table 3.11).

The relevant ITCV in Model 1 for *NEWS (GAZETTE)* was 0.101 (0.125), implying that a confounding variable would need to have a correlation of 0.318 (0.353) with *NEWS (GAZETTE)* and *CAR* for the results to be overturned. As a benchmark, I calculated the impact of the inclusion of each independent variable on *NEWS (GAZETTE)*. The impact is the product of the partial correlation between *NEWS (GAZETTE)* and the control variable and between *CAR* and the control variable (Larcker & Rusticus, 2010). The highest impact represented *GAZETTE (PROFIT_DOWN)* with -0.159 (-0.203) (untabulated), suggesting that an unobserved confounding variable must be substantially more highly correlated with *NEWS (GAZETTE)* and *CAR*. This provides some confidence in the results of Model 1. The results in Models 2, 3, and 4 were comparable, although the ITCVs were somewhat smaller. The lowest value was -0.023 (Model 2, *GAZETTE*), indicating a necessary correlation of 0.150 to overturn the significance. Even there, the calculated values did not meet this threshold (untabulated).

3.6.3 Sensitivity Tests

I performed several sensitivity analyses for the study to validate the robustness of my results. First, most analysis were conducted as well for a subsample of DPR enforcement error findings to control

for the fact that the examined accounting misstatements contained a variety of disclosed misinformation. By analyzing the enforcement error findings alone, the provided information by the disclosed misstatement was more comparable. Second, to address the problem of (quasi-) separation in the multinomial logistic regression model differently, I performed the regression analysis without the variable *FRAUD* for the full sample and without the variable *REVENUE* for the DPR sample. The results were essentially unchanged (untabulated).

Third, I conducted the event study with an alternative estimation period of 150 trading days. The untabulated results showed largely unchanged outcomes in comparison to the main analyses. I also examined different calculations of abnormal returns. The results remained largely robust by calculating continuously compounded returns (log returns). To account for non-synchronous trading, I applied the correction proposed by Scholes and Williams (1977); to account for the tendency for betas to regress toward one over time, I utilized the estimator of a firm's beta from Blume (1975) (Lally, 1998). The results were quite similar to the ones presented. A few additional test statistics and event windows were significant with application of the "Blume Adjustment".

In addition, I used the three-factor model developed by Fama and French (1993) to measure normal returns. The daily data of Fama/French factors for Germany were provided from Prof. Stehle (<https://www.wiwi.hu-berlin.de/professuren/bwl/bb>) and based on Brückner, Lehmann, Schmidt, and Stehle (2014). By applying this model, I came to the same conclusions as before. For example, the most severe valuation discount was still related to ad-hoc announcements. Some (weak) significant positive market reactions by Federal Gazette error notices without additional unrelated financial information were found.

Finally, I addressed the issue related to the sample size of the cross-sectional regression analysis. Not every control variable was available for the whole subset, reducing the sample size. Hence, I re-ran the multiple regression analyses including only the corresponding test variable(s) "Disclosure Type" in Model s1 and 2, arriving at a sample size of 84 misstatements. *AD-HOC*, *NEWS*, and *GAZETTE* were significant at the $p < 0.05$ level, thus confirming the results of the original analyses.

3.7 Conclusion

This study is the first to investigate the management disclosure choice and investor reactions for a unique German dataset of accounting misstatements, offering two main contributions. The first contribution is to provide new insights into the management behavior to disclose adverse information. The empirical results indicated that more severe accounting misstatements were more likely to be disclosed in an ad-hoc announcement. Fisher's exact test and penalized multinomial regression

analysis revealed that the management seemed to consider the characteristics of the misstatement when selecting the first type of disclosure, indicating strategic behavior and different manager incentives.

The second contribution is the analysis of the information processing in the German capital market. Consistent with previous literature, significant negative abnormal returns for the full sample around the first disclosure event were identified. I also found that firms announcing their accounting misstatement in an ad-hoc announcement were exposed to a more severe valuation discount than other types of first disclosures. However, when analyzing misstatements first disclosed via the electronic Federal Gazette alone, no significant negative market reaction was discovered. Apparently, the “name and shame” mechanism of the German enforcement system does not operate if the first disclosure is made via this platform. Multiple regression analysis still suggested that ad-hoc announcements induced the strongest negative capital market reaction. Federal Gazette error notices induce the lowest market reaction. Apparently, the valuation discount produced by the disclosure of an accounting misstatement was influenced by the type of the announcement, regardless of the severity and other control variables. The results remained robust to different sensitivity tests.

Managers seem to consider the severity of an accounting misstatement to determine the misstatements’ effect on a firm’s value. If it is deemed value relevant, it induces a mandatory ad-hoc announcement. Managers seem to pursue this strategy to avoid sanctions from the authorities, as they could reduce the firm’s value even more. Hence, ad-hoc announcements induce the strongest capital market reaction, as investors are aware of this strategic behavior. By observing an ad-hoc announcement investors receive the signal that the management attributes the accounting misstatement value relevant. Additionally, managers seem to try to dilute the negative effect of mandatory enforcement disclosures by simultaneously publishing other positive financial information (similar results Hecker & Wild, 2012). This causes positive market reactions, which confirms the management’s strategic behavior in an attempt to conceal bad news with good news. Hence, the results presented in this paper suggest that the first disclosure of an accounting misstatement is influenced by management’s strategic disclosure behavior. The stock market participants are receiving different “signals” depending on the first type of disclosure, inducing different market reactions. Altogether, the findings should be of interest for German and other European regulators, which should reconsider current publication regulations. Managers with responsibilities to disclose financial information, investors, and academics might find the results valuable as well.

This study and the interpretations of its results should be considered in light of several limitations. First, the endogeneity problem was identified and discussed in the study. Unfortunately, there is not

a convincing selection model to control for this problem. Therefore, the results could be impacted by selection bias. Nevertheless, utilizing the approach developed by Frank (2000), I concluded that this should be a minor issue. Second, sample sizes in some analyses might affect the robustness of the results. For example, the dataset did not allow to control for year fixed effects because of the unequal distribution of the disclosure year. However, empirical modifications and tests supported the explanatory power of these findings. Additionally, the *FRAUD* variable might not contain all possible fraud cases. Only definitely deliberate accounting misstatement were evaluated as fraud. Hence, some deliberate misstatements might not be evaluated as fraud.

Future researchers could analyze this context on an international level, comparing the results between different institutional backgrounds. It could also be interesting to investigate management's misstatement disclosure choice before implementing the enforcement system. Lacking this monitoring institution, the managerial discretion to disclose detected misstatements was more pronounced.

4 Surprise of Enforcement Releases and the Investors' Reaction - Evidence from the German Capital Market

ABSTRACT: I examine the influence of misstatement surprise on investor reaction to the disclosure of enforcement releases. So far, its impact on the stock market has not been analyzed. For a sample of 107 German enforcement error findings, I find that audit quality, firm performance, firm growth and firm size are significant predictors of an accounting misstatement and a subsequent disclosed enforcement release. Using these firm characteristics to generate a surrogate for the unexpectedness of an enforcement release, I examine its connection to the negative investors' reaction. Unexpected misstatements do not cause stronger negative stock market reactions. Controlling for confounding effects generates no significant relations between the unexpectedness and the stock market reaction, as well. These findings provide insights into the complex relationship between accounting quality, event unexpectedness, and investor reaction in the area of enforcement releases by suggesting that different firm characteristics are related to a misstatement. However, market participants are not more surprised by different enforcement release and deem other misstatement characteristics more important.

4.1 Introduction

The reaction of investors to management disclosure depends theoretically on two aspects. These are the believability ('credibility') and the unexpected component ('surprise') of the information (Jennings, 1987). Management disclosure containing similar information content with comparable credibility but different levels of surprise should induce different responses from investors, with stronger reactions to unexpected events. Enforcement releases should be an unexpected ('surprising') event for the stock market.

Enforcement releases are the disclosure of material accounting misstatements (Hitz, Ernstberger, & Stich, 2012). So far, the potential influence of surprise to the stock market reaction to enforcement releases has not been examined in the misstatement literature, only individual variables have been incorporated (e.g. Richardson, Tuna, & Wu, 2002). Hence, it is unclear to what extent the investor reaction to the first disclosure of enforcement releases (the examined event) is driven by the unexpectedness of the misstatement. I use identified, easy to obtain determinants of misreporting in financial statements to measure the surprise of a disclosed misstatement. Certain characteristics of a firm, like e.g. performance or leverage (Kinney, & McDaniel, 1989; Burns, & Kedia, 2006; Richardson, et al., 2002) should significantly increase the probability for a misstatement in financial reporting. I argue that rational participants of the stock market are well aware of these connections and may evaluate the occurrence of an accounting misstatement for firms with certain characteristics more likely in comparison to firms lacking such characteristics. Hence, the accounting quality might be anticipated in the stock price. The stock market might already include respectively price in these relevant financial information and the probable misstatement for firms with particular characteristics. Therefore, a misstatement might not be evaluated as a big surprise for investors, and might lack subsequent stock market reactions. For other firms, the stock market might not expect an enforcement release, inducing stronger negative stock market reactions by occurrence.

To examine whether the stock market responds differently to anticipated versus surprise enforcement releases, I estimate conditional logistic regressions to obtain a measurement for the unexpectedness of an accounting misstatement. The results show that firm performance (return on assets), firm growth (revenue growth), audit quality ('Big five' versus 'Non big five' auditor) and firm size (log total assets) predict misstatements and subsequent enforcement releases. By estimating the probability for an enforcement error finding with different firm characteristics for every enforcement release, I receive a measurement of the surprise of a misstatement.

Further results of multiple regression analyses show that the market reactions are not influenced by the unexpectedness of the enforcement release in the manner that surprising enforcement releases induce stronger stock market penalties. Other misstatement characteristics (e.g. profit effect) seem to be more important for the capital market. To support the explanatory power of the results, I control for confounding effects and perform resampling methods. These results show an insignificant relationship between the unexpectedness and the stock market reaction, as well.

The remainder of the paper is organized as follows: while Section 2 presents the literature review, the theoretical background on surprise and the concluding hypothesis is derived in Section 3. The sample and methodology are described in Sections 4 and 5. Section 6 presents the results of the empirical analysis. Finally, Section 7 presents the conclusions based on the empirical findings.

4.2 Literature Overview

This study contributes to two strands in the economic literature. First, it ties in with studies on the effects of surprises on investor reactions. Second, it provides novel insights into the influence of misstatement surprises on stock market value.

Former economic literature examines the effects of surprise in different backgrounds. Ajayi and Mehdiian (1994) examine the ‘post event’ investor reaction to good and bad ‘surprises’ across the world’s major financial markets. Good and bad ‘surprises’ are determined with a quantitative criterion of daily return deviations greater than or equal to 2.5 percent from the expected broad market return. Their post event analysis (60-day period following the surprise event) suggests that stock return variability is higher following unexpected events and price variability following the surprise event is larger for unfavorable information than favorable news. However, the focus of this paper is not to examine the relationship between the level of surprise and the subsequent stock market reaction. Instead, this study examines and compares different hypotheses of investor behavior (efficient market hypothesis, overreaction hypothesis, and uncertain information hypothesis) on an international level.

Purda (2007) examines bond rating changes and the subsequent stock market reaction. Using different financial characteristics of the firms that have been known to be related to the rating level, Purda (2007) estimates the probability of a rating change. By incorporating the probability of a rating change in the analysis, she finds no significant difference between stock price reactions to anticipated and unanticipated rating changes. There seems to be no significant association between the level of unexpectedness and the stock price reaction. Bredin, Hyde, Nitzsche and O’Reilly (2009) investigate the stock market response to international monetary policy surprises in the

United Kingdom (UK) and Germany. By analyzing the impact of the unexpected changes, they find that UK monetary policy surprises have a negative effect in both Germany and UK. German/Euro area monetary policy changes seems to have no significant impact for both countries. For Germany, Andres, Betzer, Van Den Vongard, Haesner, and Theissen (2013) analyze the stock price reactions to dividend announcements. By modeling dividend surprises, they show that the stock market significantly reacts to the surprise of the announcement, but not to the dividend change per se.

Another related strand of research in the accounting literature which received significant attention is the stock market reaction to earnings surprises. Unexpected earnings should provide new information to investors causing stock market reactions (Datta, & Dhillon, 1993). Early studies that observe that investors do care about earnings surprises are e.g. Ball and Brown (1968) and Watts (1978). Recent studies are using analysts' forecasts of earnings as proxies for the market expectation to calculate the unexpected realization (O'Brien, 1988). As anticipated, the literature shows that positive earnings surprises are increasing market value and stock prices of firms with negative earnings surprises are declining (e.g. Bartov, Givoly, & Hayn, 2002; Kasznik, & McNichols, 2002). However, despite the well-documented positive relation, other studies show a contrarian relationship for surprisingly many firms (Kinney, Burgstahler, & Martin, 2002; Johnson, & Zhao, 2012). Hence, the earnings surprise magnitude seems not to be a reliable indicator for the stock market reaction to earnings announcements (Kinney et al., 2002). Possible originators for the unexpected results is 'noise' in the measured earnings surprises and stock market response (Johnson, & Zhao, 2012).

To investigate the impact of misstatement surprise on the reaction of the stock market, a misstatement disclosure with similar credibility has to be utilized. This is established by using German enforcement error findings only, because the audit is performed by an outside independent body (BaFin, 2013). In Germany, a two-tier enforcement system screens the compliance of published financial statements of firms listed on the regulated market (§ 37n WpHG (German Securities Trading Act). In the German enforcement system two entities perform this assignment: the DPR (Deutsche Prüfstelle für Rechnungslegung – German Financial Reporting Enforcement Panel), and the German securities regulator BaFin (Bundesanstalt für Finanzdienstleistungsaufsicht – Federal Financial Supervisory Authority). The DPR is a private body, which performs investigations on the first level through sampling, following a concrete indication for a misstatement or if there is a request from the BaFin. The BaFin represents the second level of the German enforcement system. It takes the investigation over in case that the

accused firm refuses to cooperate with the DPR, if the correctness of the investigation from the DPR is in question or if the firm's management disagrees with the error finding. In case that a material erroneous financial statement is uncovered, the affected firm is required to disclose the detection and further substantial information in the electronic Federal Gazette and a supra-regional financial newspaper or an electronic information provider. The BaFin is also equipped with formal executive power to enforce the misstatement disclosure (BaFin, 2013). Then, these enforcement releases are available via the electronic Federal Gazette and contain material misstatements (Hitz, et al., 2012).

Former literature already provided empirical evidence for negative abnormal returns around the disclosure of the German enforcement error findings (Hitz, et al., 2012; Hecker, & Wild, 2012). Both papers find only marginal stock market penalties and so far, the examined number of German enforcement error findings is somewhat small.

Based on these previous findings, this study contributes to this strand of literature by analyzing whether market reactions are influenced by the unexpectedness of the enforcement release and the connected misstatement. Hence, this study does not verify the former results, but examines if the stock market reaction is influenced by the surprise of the new information.

4.3 Theoretical Background on Surprise

Surprise can only exist in the presence of uncertainty, e.g. through missing or unknown information (Itti & Baldi, 2009). One important theoretical framework regarding decision making under uncertainty is the Bayesian theorem. A Bayesian decision maker learns by assimilating new external information and revising related beliefs. From the Bayesian perspective, probabilities are interpreted as degrees of belief. Hence, this process (referred to as Bayesian learning) is a revising of probabilities in the light of new information, transforming prior belief distribution into posterior belief distribution (Rachev, Hsu, Bagasheva, & Fabozzi, 2008).

A theoretical model of surprise based on the Bayesian theorem was developed by Itti and Baldi (2009): The prior probability distribution $\{P(M)\}_{M \in \dot{M}}$ over hypotheses or models M in a model space \dot{M} characterized the background information of an individual. With each model M or hypothesis a likelihood function $P(D/M)$ is associated. This function expresses how likely any observation D is under the assumption that a specific model M is correct. The effect of obtaining new data D on the observer is to transform her/his prior distribution $\{P(M)\}_{M \in \dot{M}}$ into the posterior distribution $\{P(M/D)\}_{M \in \dot{M}}$ by applying Bayes' theorem:

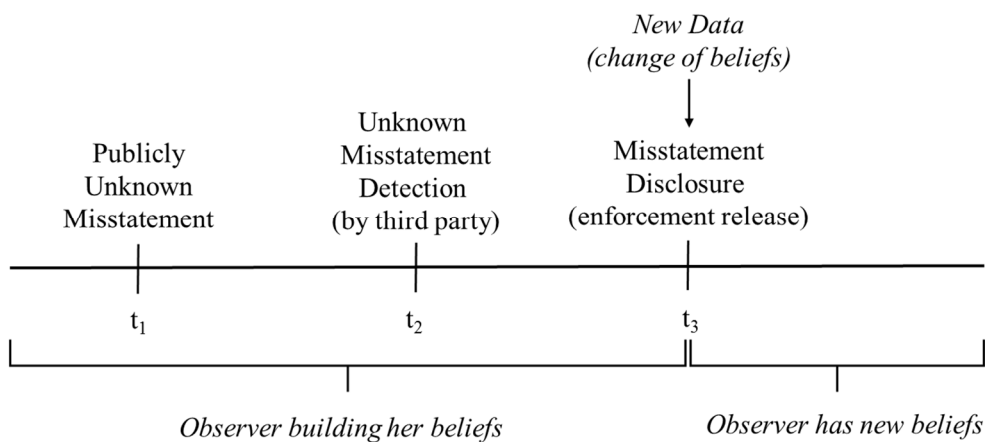
$$\forall M \in \dot{M}, P(M|D) = \frac{P(D|M)}{P(D)} P(M) \quad (4.1)$$

The new data D is surprising for the observer if the posterior distribution after obtaining the new information substantially differs from the prior distribution. If there is no surprise, it does not affect the individual's beliefs. The posterior distribution equals the prior distribution. Quantifying the distance between the prior and posterior distribution is an option to formally measure the surprise (e.g. via Kullback-Leibler divergence) (Kullback, 1959; Itti & Baldi, 2009).

This study applies the quoted theoretical model to the area of enforcement of accounting, where the first disclosure of an enforcement release is interpreted as new data which could change the observer's beliefs, depending on the prior beliefs. Figure 4.1 shows the timeline of events. A firm produces in t_1 a publicly unknown misstatement, which is detected by a third party (e.g. DPR) in t_2 . With the available information the observer is building her/his beliefs about the firm causing an accounting misstatement. In t_3 the misstatement is disclosed via an enforcement release. If the accounting misstatement was expected by the observer, there should be no change in the beliefs and vice versa. Transferred to the stock market, if the investors (observer) expected the accounting misstatement, there should be no significant stock market reaction on t_3 .

In order to assess the level of surprise of an accounting misstatement, previous literature contemplates the determinants of erroneous financial statements considering enforcement error findings or restatements (correction of prior period accounting misstatements). This paper focuses on measurements which can easily be obtained from financial statements or comparable sources.

Figure 4. 1 Timeline of events



For the US, Richardson, Tuna and Wu (2002) examine the usefulness of accounting information in predicting earnings restatements between 1971 and 2002. A primary motive for earnings

management seems to be the manipulation of external financing costs and the pressure of the capital market, resulting in an earning restatement. Using firms which have been subject to enforcement actions by the Securities and Exchange Commission (SEC) by overstating earnings, Dechow, Ge, Larson and Sloan (2011) develop a prediction model for SEC Accounting and Auditing Enforcement Releases. They incorporate accrual quality, firm performance, nonfinancial and off-balance-sheet measures, and stock/debt market variables and argue that misstatements are made to conceal financial problems and to keep a high market valuation. Especially accruals quality has been widely discussed in the misstatement literature (e.g. Dechow, Sloan, & Sweeney, 1995; Dechow, & Dichev, 2002; Larcker, & Richardson, 2004). Both studies (Dechow et al., 2011; Richardson et al., 2002) find that accrual quality is an important indicator of accounting manipulation. Hence, Investors seem to appear to be sensitive to information conveyed by the size of accruals. The Management of a firm might use accruals to manage accounting information, eventually causing manipulation of financial information (Desai, Krishnamurthy, & Venkataraman, 2006). Therefore, higher levels of accruals of a firm might be used as an indicator by the stock market for imminent accounting misstatements. This should decrease the unexpectedness of an enforcement release and therefore the negative stock market reaction. Contrary findings are shown by Richardson et al. (2002). They show that higher total accruals cause stronger negative stock market reactions. In contrast to this paper they do not examine the surprise effect of an accounting misstatement. Instead, they incorporate accruals only.

Regarding German enforcement releases, Ecker, Francis, Olsson and Schipper (2013) find for 83 releases, that the firms disclosing an enforcement release have larger absolute total accruals. The detection of abnormal accruals between firms with an enforcement release and a peer sample without an enforcement release is more powerful by matching the samples with lagged total assets.

Consistent with prior literature on restatements, the management of a financially weak firm with poor performance and closeness to covenant violations is more likely to manipulate accounting information to avoid subsequent penalties than a financially strong firm (e.g. Kinney, & McDaniel, 1989; Burns, & Kedia, 2006; Richardson, Tuna, & Wu, 2002). Hence, it seems reasonable to believe, that a management with previous high levels of leverage and insufficient performance (e.g. return on assets) in the past is more likely to disclose an enforcement release due to a misstatement. However, the effect might be inverse, making the effect ambiguous. Firms with higher use of debt rely heavily on outside capital, facing higher financing costs if the misstatement is revealed (Karpoff, Lee, & Martin, 2008). Additionally, the management of a firm is more likely

to manipulate accounting information when there is a decrease in the free cash flow of the firm over time (Dechow et al., 2011).

Another possible important variable are the IFRS financial reporting resources. Stronger resources should prevent accounting misstatements, making the occurrence less likely. However, they are not observable directly and a proxy needs to be incorporated. Minor resources might exist in rapidly growing firms with substantial revenue growth, providing the proxy (Ernstberger, et al., 2012). Additionally, aggressive revenue recognition might also require disputatious financial reporting, causing more misstatements (Chaney, & Philipich, 2002). Altogether, high revenue growth should induce more errors in the financial reporting. Both variables should influence the expectations of the stock market regarding accounting misstatements.

Different nonfinancial variables might also be able to influence the surprise of an accounting misstatement. One important factor is the accounting quality of the firm. In 2005, International Financial Reporting Standards (IFRS) became mandatory for the consolidated accounts of listed firms by a European Union wide regulation. The goal of this ruling was to improve the quality and comparability of financial reporting in the European Union (Verriest, Gaeremynck, & Thornton, 2013). IFRS adoption is deemed as an important determinant of the accounting quality of a firm (Houqe, Van Zijl, Dunstan, Karim, 2012). In Germany, a large quantity of firms choose to adopt IFRS voluntarily prior to 2005 (Van Tendeloo, Vanstraelen, 2005). These firms have made the decision voluntarily to report higher accounting quality, making it more likely that they have stronger incentives to improve their financial reporting (Soderstrom & Sun, 2007).

Audit quality should be another important factor to influence the extent to which misstatements might occur. The effectiveness of auditing should depend on the quality of the auditor. High quality auditors are more likely to uncover dubious accounting choices. Hence, misstatements are less likely in firms with high quality auditors (Becker, DeFond, Jiambalvo, & Subramanya, 1998). In prior literature it is assumed, that the 'Big 4' (KPMG, PwC, EY and Deloitte & Touche), and in the German setting the 'Big 5' (plus BDO) provide higher audit quality and, therefore, reporting quality (e.g. DeFond, & Jiambalvo, 1991; Becker, et al., 1998; Ernstberger, Hitz, & Stich, 2012). Another audit related misstatement indicator might be the auditor's opinion. The stock market might already have expected an accounting misstatement if the enforcement release refers to a financial statement without an unobjectionable unqualified opinion. This might be a cause for a DPR examination. The subsequent enforcement release might be missing the surprise for the stock market, inducing a lower stock price impact (Hecker, & Wild, 2012).

Dechow et al. (2011) propose an abnormal reduction of the number of employees as an additional nonfinancial measurement for the occurrence of a misstatement. If the management tries to conceal bad financial performance, they might reduce the number of employees in the firm. This could improve the firms' financial status. Additionally, if the physical assets of the firm are overstated, the difference between the change in employee headcount and the change in assets might be a useful measure of the firms' economic reality. A negative relation between abnormal reduction of employees and enforcement releases can be expected. Therefore, an erroneous financial statement of a firm with characteristics that indicate a high accounting quality should be less anticipated, not priced in the firm value, induce a greater surprise for investors and cause stronger stock market reactions on the disclosure of the misstatement. All these determinants should be incorporated in the anticipation measurement model. Taking the arguments into consideration, I derive the following hypothesis:

Hypothesis: Higher unexpectedness (surprise) of an accounting misstatement induces stronger negative stock market reactions on the disclosure of the misstatement.

4.4 Sample

The DPR enforcement error findings are obtained from the electronic Federal Gazette (www.bundesanzeiger.de). The examined sample is limited to error findings between January 01, 2005 and December 31, 2014. 210 enforcement error findings could be retrieved in this period. To increase the comparability only IFRS related misstatements from German firms are included. In order to eliminate disclosures containing the same misstatement and due to missing data, some of the enforcement releases had to be excluded. Finally, 107 enforcement error findings remain in the enforcement release sample to be incorporated in the anticipation model. Table 4.1 shows the distribution of the enforcement releases per year of the misstatement. In comparison, Ecker et al. (2013) examine 83 unique enforcement releases.

To construct a suitable control sample, I match every observation of the enforcement release sample with an appropriate firm. The BaFin releases a list of firms which are subject to the German enforcement system. This list provides an overview of firms which could have been reviewed by the German enforcement system. I use this list (from July, 2014) to match the firms on the following characteristics: the matched observation has no enforcement release in the examined period, it is from the year of the misstatement, the firm applied IFRS in the corresponding period and it belongs to the same business sector (Eikon: TRBC Business Sector Code). Furthermore, the control firm is similar in size (using the year-end market capitalization).

Table 4.1 Enforcement release distribution

Misstatement Year	No.	Proportion
2004	2	1,87%
2005	22	20,56%
2006	15	14,02%
2007	12	11,21%
2008	14	13,08%
2009	17	15,89%
2010	10	9,35%
2011	8	7,48%
2012	7	6,54%
Total	107	100,00%

Next, the sample for the event study has been selected. In order to obtain the first disclosure of every enforcement finding, I checked the financial statements after the publication of the erroneous statement and before the disclosure on the electronic Federal Gazette. Additionally, I checked LexisNexis for an earlier disclosure of DPR enforcement error findings. Several characteristics of the disclosure generate exclusions: Previous disclosures without the mentioning of the DPR or the BaFin were excluded and several error findings were also excluded from the analysis because of missing data and unrealistic stock returns due to penny stocks (price < €1). 101 enforcement error findings remain in the event study sample. Table 4.2 gives a short description of the sample size and required exclusions.

Table 4.2 Description of sample size

Enforcement Releases from 2005 to 2014	210
- Exclusion of subsequent announcements related to the same misstatement	(-13)
- Exclusion of Non-IFRS misstatements	(-25)
- Exclusion of non-German firms	(-15)
	157
Missing data	(-50)
- Previous disclosure (w/o DPR/BaFin) and Missing data	(-46)
- Penny Stocks (price < 1€)	(-10)
Enforcement Release Sample	107
Event Study Sample	101

4.5 Methodology

4.5.1 Anticipation Model

To estimate the firm's probability to disclose an accounting misstatement respective an enforcement release as a function of different firm characteristics, I compare firms with disclosed enforcement releases with a matched sample of firms without such a disclosure. Conditional logistic regression is appropriate to analyze matched samples (Hosmer, Lemeshow, & Sturdivant, 2013). Applying the outlined determinants from the theoretical section of this study (section 3), the following conditional logistic regression model is generated:

$$\begin{aligned} MISSTATEMENT_i = & \beta_1 IFRS2005_i + \beta_2 BIG5_i + \beta_3 AUDITOP_i + \beta_4 ROA_i + \\ & \beta_5 LEVERAGE_i + \beta_6 GROWTH_i + \beta_7 EMPLOYEE_i + \\ & \beta_8 FREECF_i + \beta_9 ACCRUALS_i + \beta_{10} SIZE_i + \varepsilon_i \end{aligned} \quad (4.2)$$

MISSTATEMENT is an indicator variable that equals one, if firm *i* is from the enforcement release sample, and zero otherwise. *IFRS2005* represents the accounting quality and is an indicator variable that equals one if firm *i* applied IFRS before 2005, and zero otherwise. *BIG5* reflects the audit quality and is an indicator variable that takes the value one if firm *i* has a 'Big5' auditor (KPMG, PWC, EY, Deloitte & Touche, and BDO) in the year of the misstatement. *AUDITOP* is an indicator variable with the value of one if firm *i* has not an unqualified auditor opinion without commentary in the year of the misstatement, *ROA* is the return on assets for firm *i*, *LEVERAGE* is the ratio of the total debt to total equity for firm *i*, and *GROWTH* is the growth of revenues over the year of the misstatement of firm *i*. *EMPLOYEE* is the percentage change in the number of employees minus the percentage change in total assets for firm *i*. *FREECF* is the change in free cash flow during the misstatement year.

Three different measurements for *ACCRUALS* are incorporate, total accruals (*TOTACC*), operating accruals (*OPACC*) and abnormal accruals (*ABACC*). The first two have been incorporated in former literature (Richardson, 2003; Desai et al. (2006) and are calculated at the fiscal year end before the misstatement year as follows (following Desai et al. 2006)¹⁸¹:

$$TOTACC = (NET EARNINGS - CFOA - CFIA)/(TOTAL ASSETS) \quad (4.3)$$

$$OPACC = (NET EARNINGS - CFOA)/(TOTAL ASSETS) \quad (4.4)$$

¹⁸¹ CFOA = Cash flow from operating activities; CFIA = Cash flow from investing activities.

The third, abnormal accruals, is based on the commonly used cross-sectional version of the Jones model of discretionary accruals ($i = \text{firm}; t = \text{year}$) (DeFond & Jiambalvo, 1994; Dechow et al., 2011):

$$\frac{\text{TOTACC}_{i,t}}{\text{Total Assets}_{i,t-1}} = \beta_1 \frac{1}{\text{Total Assets}_{i,t-1}} + \beta_2 \frac{\Delta \text{Revenues}_{i,t}}{\text{Total Assets}_{i,t-1}} + \beta_3 \frac{\text{grossPPE}_{i,t}}{\text{Total Assets}_{i,t-1}} + \text{ABACC}_{i,t} \quad (4.5)$$

Additionally, the regression model controls for *SIZE* (natural log of total assets). To ensure a relevant relationship between the covariates and the dependent variable I perform a purposeful selection of variables, suggested by Hosmer et al. (2013), which should result in the ‘best’ model to predict accounting misstatements by a firm. They describe a seven step method of selecting variables for a multiple regression model. Step 1 is to perform univariate analysis of each independent variable, Step 2 is to evaluate the importance of each variable by its statistical significance and Step 3 is to perform different regression analyses and to check the coefficients of the variables for large changes in magnitude. In Step 4 variables are identified which make a relevant contribution in the presence of other variables, Step 5 demands to examine the selected variables more closely. In Step 6, interaction effects are analyzed, and Step 7 requires to check the goodness of fit of the chosen model. However, this is not an automatic system. This method should be viewed as an additional support to careful considerations and does not replace common sense.

4.5.2 Event Study Model

To examine whether enforcement error findings induce negative stock market returns the event study methodology is applied (for more detail, see MacKinlay, 1997). This method measures the impact of a novel information on the firm value by estimating abnormal returns on the examined event. Abnormal returns are retrieved by subtracting the expected returns of the stock value from the actual returns. The expected returns are estimated with ordinary least square regression analysis by using an estimation period before the event windows, using the market model. This model relates the daily return of a stock to the daily return of a market portfolio via regression analysis. The chosen market portfolio in this paper is the CDAX performance index and a [-260] to [-11] estimation period. To control for delayed investor reaction and information leakage, several event windows surrounding the event day [0] are examined. To detect significant abnormal returns around the event day, appropriate event study specific tests are calculated: cross sectional t-test, standardized residual test (Patell, 1976), standardized cross-sectional test (Boehmer, Musumeci, & Poulsen, 1991) and the Corrado rank test (Corrado, 1989).

To examine if the market penalty for an accounting misstatement is influenced by the level of unexpectedness, the following multiple cross-sectional regression analyses is estimated:

$$(C)AR_i = \beta_0 + \beta_1 \textit{PROBABILITY}_i + \beta_2 \textit{MAGNITUDE}_i + \beta_3 \textit{PROFITDWN}_i + \beta_3 \textit{REVENUE}_i + \varepsilon_i \quad (4.6)$$

(C)AR are the (cumulative) abnormal returns around the first disclosure. *PROBABILITY* is the estimated probability of a firm not to misstate their financial reporting, retrieved from the conditional logistic regression analysis (Section 5.1.). This probability is chosen to reflect the unexpectedness of an accounting misstatement (increase of the probability not to generate a misstatement = increase of the unexpectedness of a misstatement). Additionally, I control for misstatement characteristics that have been found in former research (e.g. Palmrose, Richardson, & Scholz, 2004) to alter the results. *MAGNITUDE* contains the cumulative profit effect of the accounting misstatement scaled by market capitalization measured as of the fiscal-year end prior to the disclosure. Enforcement releases involving revenues and enforcement releases with a negative cumulative effect on profit are incorporated via indicator variables, *REVENUE* and *PROFITDWN*.

Additionally, I calculate relative important weights by performing Johnson's (2000) relative weight procedure (Tonidandel & LeBreton, 2011). With this empirical method, I can estimate the contribution of a variable to the prediction of a dependent variable by itself and in combination with other independent variables (Johnson & LeBreton, 2004). This method is a useful supplement to multiple regression analysis (Tonidandel & LeBreton, 2011).

4.6 Empirical Results

4.6.1 Anticipation Model Univariate Analysis

This section estimates univariate analysis for each possible covariate for the anticipation regression model. For categorical variables (*BIG5*, *AUDITOP* and *IFRS2005*) McNemar's Test is performed. This test is appropriate for matched case-control studies (McNemar, 1947). The results are presented in Table 4.3. The results show that there is a no statistically significant ($p < 0.1$) difference of audit quality (represented by *BIG5*) between the enforcement release sample and the matched control sample, between IFRS early adopters (before 2005) and non-early adopters, and between auditor opinions (unqualified and not unqualified opinion).

Table 4.3 McNemar's Test for categorical variables

Sample	Control		Total
	<i>BIG5</i>	<i>NonBIG5</i>	
<i>BIG5</i>	37	20	57
<i>NonBIG5</i>	30	20	50
Total	67	40	107
Prob > chi2			0.157
Exact McNemar significance			0.203

Sample	Control		Total
	<i>IFRS2005</i>	<i>NoIFRS2005</i>	
<i>IFRS 2005</i>	85	10	95
<i>NoIFRS2005</i>	11	1	12
Total	96	11	107
Prob > chi2			0.827
Exact McNemar significance			1.000

Sample	Control		Total
	<i>AUDITOP</i>	<i>NoAUDITOP</i>	
<i>AUDITOP</i>	0	3	3
<i>NoAUDITOP</i>	6	98	104
Total	6	101	107
Prob > chi2			0.317
Exact McNemar significance			0.508

Note: ***, ** and * indicate statistical significance at the 1 percent, 5 percent and 10 percent levels respectively. Reported p-values are two-sided. Variables are defined as follows: *BIG5* is an indicator variable that equals one if the firm has a 'Big5' auditor in the misstatement year, *IFRS2005* an indicator variable that equals one if the firm applied IFRS before 2005, *AUDITOP* is an indicator variable that equals one if the firm has not an unqualified auditor opinion without commentary in the year of the misstatement.

For continuous variables (*ROA*, *LEVERAGE*, *GROWTH*, *EMPLOYEE*, *FREECF*, *TOTACC*, *OPACC* and *ABACC* as well as *SIZE*) two-sample t-tests and Wilcoxon signed-rank tests are performed. Table 4.4 illustrates the results. *ROA* is statistically significant for both empirical tests ($p = 0.001$), showing that poor firm performance increases the probability of a misstatement. *LEVERAGE* and *GROWTH* are weak statistically significant ($p < 0.1$) by different tests, indicating that higher leverage and revenue growth are making accounting manipulation more likely. All other variables are statistically insignificant ($p > 0.1$). These univariate results should be considered for the selection of the relevant covariates. To ensure that every important variable is included in the regression model a less traditional significance level is to be incorporated (Hosmer et al. 2013). Every variable whose univariate test has a p-value less than 0.3 should be considered as an important variable for the multiple regression analysis. *IFRS2005*, *AUDITOP* and *EMPLOYEE*, *TOTACC*, *OPACC* as well as *ABACC* are above this threshold ($p > 0.3$) and they might be negligible for the anticipation regression model.

Table 4.4 Results of the paired comparisons of continuous variables

Sample vs. Matched Sample	Sample Mean	Control Mean	p-value	Sample Median	Control Median	p-value
<i>ROA</i>	-1.552	3.572	0.001***	2.404	3.966	0.000***
<i>LEVERAGE</i>	322.416	120.964	0.195	61.875	34.917	0.066*
<i>GROWTH</i>	0.282	0.101	0.076*	0.066	0.052	0.355
<i>EMPLOYEE</i>	17.813	27.425	0.787	-1.030	-2.975	0.562
<i>FREECF</i>	1564.195	-53.156	0.344	-31.862	-48.594	0.209
<i>TOTACC</i>	0.005	0.002	0.925	0.018	0.016	0.388
<i>OPACC</i>	-0.042	-0.037	0.733	-0.030	-0.030	0.815
<i>ABACC</i>	0.004	0.122	0.610	0.020	0.012	0.991
<i>SIZE</i>	19.012	18.827	0.204	18.845	18.650	0.165

Note: ***, ** and * indicate statistical significance at the 1 percent, 5 percent and 10 percent levels respectively (two-tailed). T-tests are used for means and Wilcoxon signed-ranks tests are used for medians. Variables are defined as follows: *ROA* is the return on assets, *LEVERAGE* is the ratio of the total debt to total equity, *GROWTH* is the growth of revenues over the year of the misstatement, *EMPLOYEE* is the percentage change in the number of employees minus the percentage change in total assets in the misstatement year, *FREECF* is the change in free cash flow during the misstatement year and *SIZE* is the natural log of total assets. *TOTACC* are total accruals ($(NET\ EARNINGS - CFOA - CFIA)/TOTAL\ ASSETS$), *OPACC* are operating accruals ($(NET\ EARNINGS - CFOA)/TOTAL\ ASSETS$) and *ABACC* are abnormal accruals, residuals of the cross-sectional version of the Jones model.

4.6.2 Anticipation Model Multiple Regression Analysis

Table 4.5 reveals the results of the conditional logistic regression. Model 1, Model 2 and Model 3 contain all independent variables discussed in section 3 (Model 1 *TOTACC*; Model 2 *OPACC*; Model 3 *ABACC*). Three of the examined firm characteristics (*BIG5*, *ROA* and *GROWTH*) have a

statistically significant impact ($p < 0.05$) on the occurrence of a misstatement and they follow the predicted direction. *IFRS2005*, *AUDITOP*, *LEVERAGE*, *EMPLOYEE*, *FREECF* and the accrual variables *TOTACC*, *OPACC* and *ABACC* are not statistically significant, missing strong explanatory power. Conducting the purposeful selection of covariates, recommended by Hosmer et al. (2013), leads to Model 4. This model contains every significant variable of Model 1, 2 and 3 (*BIG5*, *ROA* and *GROWTH*) and additionally *SIZE*. The results are almost unchanged except that *SIZE* is (weakly) significant ($p = 0.080$) with a positive effect.

73 of the 107 misstatement firms have a probability ≥ 0.5 for a misstatement and 71 of the 107 non-misstatement firms have a probability < 0.5 for a misstatement. Hence, the prediction of 144 (67.29 %) cases is correct (untabulated). In a second step, the results from Model 4 are used to estimate the probability of a firm not to generate a misstatement for each firm in the enforcement release sample. This probability is “1 – probability of a positive outcome (a misstatement)”. It is incorporated because it reflects the unexpectedness of an accounting misstatement ($j =$ number of groups; $t =$ number of observations per group):

$$PROBABILITY = 1 - \frac{\exp(X_{jt}\beta)}{\sum_{t=1}^T \exp(X_{jt}\beta)} \quad (4.7)$$

4.6.3 Empirical Results Event Study

Table 4.6 shows descriptive statistics and univariate results of the event study analysis for the enforcement error findings. For the event study sample ($n=101$), I find significantly negative abnormal returns for a variety of examined event windows. However, the Corrado test statistic (Corrado, 1989) is not significant. The strongest mean stock market penalty is during the event window [0;3] with cumulative abnormal returns of -2,2 percent. Additionally, following McWilliams and Siegel (1997) as well as Chen (2013) 50 enforcement releases were eliminated because of confounding effects in [-1;1]. The number of statistical significant abnormal returns decreases strongly.

4.6.4 Multiple Regression Analysis

In the following section, I examine the effect of surprise regarding investor reactions to misstatements. Table 4.7 presents the results for the cross-sectional regression analysis. The dependent variable is the *(C)AR* on the event day [0], over the event window [-1;1] (three days around the event window) and [0;2] (event day and two days after the event).

Table 4.5 Conditional logistic regression analysis to predict enforcement releases

Firm Characteristics	Pred.	Model 1			Model 2			Model 3			Model 4		
		Coeff.	p-value	Odds	Coeff.	p-value	Odds	Coeff.	p-value	Odds	Coeff.	p-value	Odds
IFRS2005	(-)	-0.523	0.165	0.592	-0.444	0.204	1.000	-0.454	0.198	0.635			
BIG5	(-)	-0.735	0.016**	0.480	-0.742	0.015**	0.476	-0.722	0.018**	0.486	-0.747	0.014**	0.474
AUDITOP	(+)	0.016	0.492	1.016	-0.092	0.835	0.913	-0.090	0.545	0.914			
ROA	(-)	-0.058	0.002***	0.944	-0.061	0.001***	0.941	-0.061	0.001***	0.941	-0.056	0.001***	0.946
LEVERAGE	?	0.000	0.629	1.000	0.000	0.615	1.000	0.000	0.620	1.000			
GROWTH	(+)	1.167	0.024**	3.214	1.213	0.020**	3.364	1.217	0.017**	3.377	1.098	0.019**	2.999
EMPLOYEE	(-)	-0.001	0.146	0.999	-0.001	0.127	0.999	-0.001	0.126	0.999			
FREECF	(-)	9.60e-06	0.538	1.000	5.36e-06	0.526	1.000	5.05e-06	0.525	1.000			
TOTACC	(+)	0.107	0.449	1.113									
OPACC	(+)				-1.430	0.835	0.239						
ABACC	(+)							-1.454	0.844	0.234			
SIZE	?	0.291	0.110	1.338	0.291	0.104	1.338	0.288	0.108	1.333	0.278	0.080*	1.321
n		214			214			214			214		
pseudo R ²		18,59%			19,20%			19,26%			16,72%		
Prob > chi ²		0.002***			0.002***			0.002***			0.001***		
Max. VIF		1.50			1.51			1.51			1.29		
Mean VIF		1.19			1.20			1.20			1.16		

Note: This table shows conditional logistic regression to estimate the probability that a misstatement and a subsequent enforcement release will occur. ***, ** and * indicate statistical significance at the 1 percent, 5 percent and 10 percent levels respectively. Reported p-values are two-sided when no directional prediction is made, and one-sided otherwise. Variables are defined as follows: *BIG5* is an indicator variable that equals one if the firm has a 'Big5' auditor in the misstatement year, *IFRS2005* an indicator variable that equals one if the firm applied IFRS before 2005, *AUDITOP* is an indicator variable that equals one if the firm has not an unqualified auditor opinion without commentary in the year of the misstatement. *ROA* is the return on assets, *LEVERAGE* is the ratio of the total debt to total equity, *GROWTH* is the growth of revenues over the year of the misstatement, *EMPLOYEE* is the percentage change in the number of employees minus the percentage change in total assets in the misstatement year, *FREECF* is the change in free cash flow during the misstatement year and *SIZE* is the natural log of total assets. *TOTACC* are total accruals ($(NET\ EARNINGS - CFO - CFI)/TOTAL\ ASSETS$), *OPACC* are operating accruals ($(NET\ EARNINGS - CFO)/TOTAL\ ASSETS$) and *ABACC* are abnormal accruals, residuals of the cross-sectional version of the Jones model.

The regression results show that no significant relationship ($p > 0.1$) between the stock market reaction and *PROBABILITY* for the analyzed event windows. Therefore, if an enforcement error finding was not expected by the capital market, the induced stock market reaction does not turn out to be more severe, if an enforcement release is disclosed. This empirical finding contradicts the hypothesis of this study, that unexpected misstatements induce stronger negative stock market reactions. The relative weight analysis for *PROBABILITY* shows that the variable is not an important predictor, as well. It accounts for 18 percent of the explained variance or less and represents at most the third most important predictor for regression in table 4.7.

Table 4.6 Results of the event study

Event Study Sample (n=101)							
Event Window	Mean (C)AR	Median (C)AR	Pos:Neg	t-Test	Patell Z	Boehmer	Corrado
[0]	-0.008	-0.004	43 : 58	-2.130**	-1.756*	-1.290	-1.271
[0;1]	-0.012	-0.005	44 : 57	-2.119**	-1.699*	-1.284	-0.738
[-1;1]	-0.013	-0.003	42 : 59	-1.986**	-1.581*	-1.345	-0.524
[0;2]	-0.019	-0.009	40 : 61	-2.957***	-2.410**	-2.060**	-1.471
[-2;2]	-0.019	-0.009	44 : 57	-2.957***	-2.345**	-2.338**	-1.074
[0;3]	-0,022	-0.010	42 : 59	-3.360***	-2.538**	-2.367**	-1.454
[-3;3]	-0,021	-0.012	42 : 59	-2.594***	-2.180**	-2.372**	-1.129

Event Study Sample - w/o confounding effects (n=51)							
Event Window	Mean (C)AR	Median (C)AR	Pos:Neg	t-Test	Patell Z	Boehmer	Corrado
[0]	-0.006	-0.003	21 : 30	-1.588	-0.591	-0.725	-0.540
[0;1]	-0.005	-0.005	21 : 30	-0.802	-0.576	-0.682	0.092
[-1;1]	-0.004	-0.003	24 : 27	-0.607	-0.429	-0.591	0.279
[0;2]	-0.014	-0.005	19 : 32	-2.170**	-1.142	-1.386	-0.610
[-2;2]	-0.015	0.000	26 : 25	-1.759*	-0.976	-1.223	-0.050
[0;3]	-0,018	-0.009	20 : 31	-2.677***	-1.450	-1.841*	-0.460
[-3;3]	-0,020	-0.012	20 : 31	-2.161**	-1.290	-1.688*	-0.330

Note: This table reports the mean and median (cumulative) abnormal returns for specific event windows, the relationship between positive and negative (cumulative) abnormal returns, the test statistic of the cross-sectional t-test, the standardized residual test (Patell Z), the standardized cross-sectional test (Boehmer), and the Corrado rank test (Corrado). *, **, *** indicates significance at the 10 percent, 5 percent and 1 percent levels, respectively (two-tailed).

Further variables with a significant negative impact are the misstatement characteristics *MAGNITUDE*, *PROFITDWN* and *REVENUE*. *PROFITDWN* has a significant negative effect in all three regression analysis in table 4.7. Consistent with prior research, misstatements with a negative cumulative profit effect seem to induce a stronger negative stock market reaction. The *MAGNITUDE* coefficient is significantly negative in the same regression models. Misstatements disclosing overvalued cumulative profit induce stronger negative market reactions. *REVENUE* is

only weakly significant ($p < 0.1$) with a negative coefficient in the first regression model, therefore lacking strong explanatory power. Relative weights analysis reveals that especially *PROFITDWN* is an important predictor, accounting for over 45 percent of the explained variance in every regression model.

Table 4.8 represents regression results controlled for confounding effects. Only in the second regression analysis (*CAR* [-1;1]) is *PROBABILITY* weakly significant ($p = 0.064$). Hence, the results seem to confirm the findings of the regression analysis for the total event study sample (table 4.7), that the unexpectedness of an accounting misstatement is not relevant for the market reaction. The variable *PROFITDWN* is the only variable significant in all three regression analysis without confounding effects with a negative impact. Relative weights analysis reveals that this variable has explanatory power by explaining over 50 percent of the variance in the first and second regression model and over 40 in model 3 (see table 4.8). The sample size decreases to 30 enforcement releases, affecting the explanatory power of the regression results. *MAGNITUDE* is only significant in the first regression analysis.

As a robustness check and to specifically address the small sample problem and comparatively low empirical power, I perform the bootstrap resampling method. This approach is the most commonly-applied method in empirical research with sparse data to improve explanatory power (Efron & Tibshirani, 1998). The corresponding results are presented in table 4.9 and 4.10. It reveals that the findings of the main analysis are almost unchanged. They support the findings obtained without using resampling methods. Additionally, I performed the multiple regression analysis without financial institutions. Because of the financial crisis in 2007 and 2008 misstatements from such firms might not be a big surprise for the capital market, inducing weaker stock market reactions. The results regarding the variable *PROBABILITY* are almost unchanged (untabulated).

4.7 Conclusion

In this paper, I examine whether the unexpectedness of the disclosure of an accounting misstatement influences the investor reaction. So far, the surprise of an accounting misstatement and its impact on the stock market reaction has not been analyzed in the economic literature. This paper is the first to provide a deeper insight into this relationship. I develop a simple logistic regression model of misstatement anticipation to calculate a surrogate for the surprise of the enforcement release. No violation of accounting standards should be expected by firms with high audit quality and strong firm performance. A higher probability of an accounting misstatement is found by rapidly growing firms and bigger firms, affecting the surprise of an accounting

Table 4.7 Multiple regression of abnormal returns around the first misstatement disclosure

Dependent variable:													
(C)AR	Pred	[0]				[-1;1]				[0;2]			
		Coeff.	p-value	Std. Weight	Rank Order	Coeff.	p-value	Std. Weight	Rank Order	Coeff.	p-value	Std. Weight	Rank Order
INTERCEPT	?	0.003	0.700			0.001	0.956			-0.013	0.460		
PROBABILITY	(-)	0.011	0.775	0.098	3	-0.025	0.303	0.030	4	0.022	0.717	0.180	3
MAGNITUDE	(-)	-0.086	0.002***	0.348	2	-0.050	0.020**	0.176	3	-0.056	0.025**	0.094	4
PROFITDWN	(-)	-0.033	0.000***	0.479	1	-0.028	0.074*	0.451	1	-0.038	0.009***	0.527	1
REVENUE	(-)	-0.019	0.080*	0.075	4	0.033	0.982	0.344	2	0.035	0.956	0.199	2
n		59				59				59			
adj. R ²		0.33				0.00				0.12			
F-statistic		7.26***				2.11*				2.71**			
Max. VIF		1.48				1.48				1.48			
Mean VIF		1.25				1.25				1.25			

Note: The OLS regression model analyzes the (cumulative) abnormal return ((C)AR) measured on the event day [0], over the [-1;1] and the [0;2] window. In all regressions, I use robust standard errors. ***, ** and * indicate statistical significance at the 1 percent, 5 percent and 10 percent levels respectively. Reported p-values are two-sided when no directional prediction is made, and one-sided otherwise. Relative weight analysis is used to determine relative importance weights (standardized). Variables are defined as follows: *PROBABILITY* is the estimated probability of a firm not to misstate their financial reporting, retrieved from the conditional logistic regression analysis, *MAGNITUDE* contains the cumulative profit effect of the accounting misstatement scaled by market capitalization measured as of the fiscal-year end prior to the disclosure, *PROFITDWN* is an indicator variable that equals one if the misstatement had a negative effect on profit, and 0 otherwise, and *REVENUE* is an indicator variable that equals one if the enforcement release involves revenues.

Table 4.8 Multiple regression of abnormal returns around the first misstatement disclosure – w/o confounding effects

Dependent variable:													
(C)AR	[0]					[-1;1]				[0;2]			
	Pred.	Coeff.	p-value	Std. Weight	Rank Order	Coeff.	p-value	Std. Weight	Rank Order	Coeff.	p-value	Std. Weight	Rank Order
INTERCEPT	?	0.004	0.706			0.029	0.170			-0.020	0.414		
PROBABILITY	(-)	0.006	0.622	0.052	3	-0.069	0.064*	0.166	3	0.043	0.826	0.206	3
MAGNITUDE	(-)	-0.067	0.007***	0.269	2	-0.036	0.144	0.045	4	-0.042	0.225	0.051	4
PROFITDWN	(-)	-0.032	0.003***	0.676	1	-0.041	0.026**	0.524	1	-0.040	0.052*	0.443	1
REVENUE	(-)	-0.004	0.686	0.002	4	0.037	0.947	0.265	2	0.038	0.925	0.300	2
n		30				30				30			
adj. R ²		0.16				0.11				0.17			
F-statistic		3.46**				1.56				2.84**			
Max. VIF		1.43				1.43				1.43			
Mean VIF		1.26				1.26				1.26			

Note: The OLS regression model analyzes the (cumulative) abnormal return ((C)AR) measured on the event day [0], over the [-1;1] and the [0;2] window. In all regressions, I use robust standard errors. ***, ** and * indicate statistical significance at the 1 percent, 5 percent and 10 percent levels respectively. Reported p-values are two-sided when no directional prediction is made, and one-sided otherwise. Relative weight analysis is used to determine relative importance weights (standardized). Variables are defined as follows: *PROBABILITY* is the estimated probability of a firm not to misstate their financial reporting, retrieved from the conditional logistic regression analysis, *MAGNITUDE* contains the cumulative profit effect of the accounting misstatement scaled by market capitalization measured as of the fiscal-year end prior to the disclosure, *PROFITDWN* is an indicator variable that equals one if the misstatement had a negative effect on profit, and 0 otherwise, and *REVENUE* is an indicator variable that equals one if the enforcement release involves revenues.

Table 4.9 Multiple regression of abnormal returns around the first misstatement disclosure - bootstrap sample

Dependent variable:													
(C)AR	Pred	[0]				[-1;1]				[0;2]			
		Coeff.	p-value	Std. Weight	Rank Order	Coeff.	p-value	Std. Weight	Rank Order	Coeff.	p-value	Std. Weight	Rank Order
INTERCEPT	?	0.003	0.729			0.001	0.956			-0.013	0.479		
PROBABILITY	(-)	0.011	0.749	0.098	3	-0.025	0.303	0.030	4	0.022	0.709	0.180	3
MAGNITUDE	(-)	-0.086	0.006***	0.348	2	-0.050	0.076*	0.176	3	-0.056	0.048**	0.094	4
PROFITDWN	(-)	-0.033	0.000***	0.479	1	-0.028	0.067*	0.451	1	-0.038	0.008***	0.527	1
REVENUE	(-)	-0.019	0.103	0.075	4	0.033	0.968	0.344	2	0.035	0.994	0.199	2
n		59				59				59			
adj. R ²		0.33				0.00				0.12			
Wald chi2		30.65***				6.02				9.78**			
Replications		1,000				1,000				1,000			

Note: The OLS regression model analyzes the (cumulative) abnormal return ((C)AR) measured on the event day [0], over the [-1;1] and the [0;2] window. In all regressions, I use robust standard errors. ***, ** and * indicate statistical significance at the 1 percent, 5 percent and 10 percent levels respectively. Reported p-values are two-sided when no directional prediction is made, and one-sided otherwise. Relative weight analysis is used to determine relative importance weights (standardized). Variables are defined as follows: *PROBABILITY* is the estimated probability of a firm not to misstate their financial reporting, retrieved from the conditional logistic regression analysis, *MAGNITUDE* contains the cumulative profit effect of the accounting misstatement scaled by market capitalization measured as of the fiscal-year end prior to the disclosure, *PROFITDWN* is an indicator variable that equals one if the misstatement had a negative effect on profit, and 0 otherwise, and *REVENUE* is an indicator variable that equals one if the enforcement release involves revenues.

Table 4.10 Multiple regression of abnormal returns around the first misstatement disclosure - bootstrap sample - w/o confounding effects

Dependent variable:													
(C)AR	[0]					[-1;1]				[0;2]			
	Pred.	Coeff.	p-value	Std. Weight	Rank Order	Coeff.	p-value	Std. Weight	Rank Order	Coeff.	p-value	Std. Weight	Rank Order
INTERCEPT	?	0.004	0.746			0.029	0.228			-0.020	0.446		
PROBABILITY	(-)	0.006	0.606	0.052	3	-0.069	0.095*	0.166	3	0.043	0.805	0.206	3
MAGNITUDE	(-)	-0.067	0.139	0.269	2	-0.036	0.373	0.045	4	-0.042	0.307	0.051	4
PROFITDWN	(-)	-0.032	0.002***	0.676	1	-0.041	0.028**	0.524	1	-0.040	0.046**	0.443	1
REVENUE	(-)	-0.004	0.801	0.002	4	0.037	0.872	0.265	2	0.038	0.865	0.300	2
n		30				30				30			
adj. R ²		0.16				0.11				0.17			
Wald chi2		5.00				5.18				8.52*			
Replications		1,000				1,000				1,000			

Note: The OLS regression model analyzes the (cumulative) abnormal return ((C)AR) measured on the event day [0], over the [-1;1] and the [0;2] window. In all regressions, I use robust standard errors. ***, ** and * indicate statistical significance at the 1 percent, 5 percent and 10 percent levels respectively. Reported p-values are two-sided when no directional prediction is made, and one-sided otherwise. Relative weight analysis is used to determine relative importance weights (standardized). Variables are defined as follows: *PROBABILITY* is the estimated probability of a firm not to misstate their financial reporting, retrieved from the conditional logistic regression analysis, *MAGNITUDE* contains the cumulative profit effect of the accounting misstatement scaled by market capitalization measured as of the fiscal-year end prior to the disclosure, *PROFITDWN* is an indicator variable that equals one if the misstatement had a negative effect on profit, and 0 otherwise, and *REVENUE* is an indicator variable that equals one if the enforcement release involves revenues.

misstatement. However, the results indicate that the unexpectedness of an accounting misstatement does not increase the negative reaction of the stock market regarding the enforcement release, contradicting the hypothesis of this study. I found no evidence that not anticipated misstatements induce stronger stock market penalties. The capital market might be capable to anticipate such accounting misstatements nonetheless or deems them as negligible. The results of the empirical study reveal that other misstatement attributes such as a negative profit effect and the cumulative profit effect are more important for the capital market to influence the stock market reaction. Additional possible explanations might be, that only minor accounting misstatements have been incorporated in the analysis, therefore lacking stock market reactions or a substantial number of accounting errors could induce not a higher but a lower net profit of the firm, causing positive stock market reactions by increasing the net profit after correction.

The results should be mainly of interest for investors, but for regulators, auditors and every financial statement user, as well. First, the analysis of different, but easily obtainable characteristics of German firms for an enforcement helps to expose misstatement firms in the future and improve the function of the capital market. Second, the reaction of the capital market to unexpected enforcement releases has been examined. Based on my findings, that surprise misstatements are not inducing stronger negative stock market reactions, investors might be able to predict misstatements, even if financial and nonfinancial information are not indicating it.

5 Do Women on the Board's Audit Committee or on the Supervisory Board Impact Accounting Quality? – Empirical evidence from German listed firms¹⁸²

ABSTRACT: This study examines the impact of the percentage of women on the overall supervisory board on accounting quality in terms of the probability of future restatements. Since the verification of the financial statement is a comparably specific task of the supervisory board, we contribute to the previous literature by additionally analyzing separate effects of the percentage of women on the audit committee (which verifies the financial statement before the presentation in the overall supervisory board meeting) and the percentage of women on the residual supervisory board. In doing so, we refer to several theoretical approaches on the effects of (gender) diversity on team performance. The empirical analysis is based on a dataset of German listed firms between 2005 and 2015. Pooled logit regressions and Random-effects estimations reveal that women on the audit committee have no significant impact on the probability of a future restatement. Conversely, our findings show that a higher percentage of women in the overall supervisory board has a significant positive impact on the probability of a future restatement indicating lower accounting quality. This effect might be driven by the percentage of women on the residual supervisory board since we also find a significant positive impact of this subgroup on the probability of a future restatement. Practical implications are provided.

Key Words: Accounting Quality, Gender Diversity, Germany, Misstatements, Restatements, Audit Committee, Supervisory Board, Women

JEL Codes: C13, G34, J16, J24, M41, M42

¹⁸² Zusammen mit Dr. Katrin Scharfenkamp, Lehrstuhl für Allgemeine Betriebswirtschaftslehre, Universität Duisburg-Essen.

5.1 Motivation

Several studies on the effects of gender diversity on supervisory boards on several outcomes such as firm performance, assume that the members of a supervisory board contribute equally to the analyzed supervisory board's task or outcome (for an overview see Post & Byron, 2015 and Kirsch, 2017). In contrast and for reasons of efficiency, different tasks of the supervisory board are executed by committees in order to ensure that topic related specialists of the supervisory board work on particular tasks and therefore divide labor within the board. These special committees present their work results to the residual board members in the (regular) board meetings. Due to the specificity of different supervisory board's tasks and subsequent outcomes, there is a need to not only analyze the effect of present women on the overall supervisory board, but to analyze deeper the gender related composition of board committees. Examples for such tasks respectively committees are the nomination of executive board members (nominating committee), or the supervision of the firm's financial statement by the audit committee.

In this study, we focus on accounting quality because one of the supervisory board's tasks is to verify the firm's financial statement. Since this task requires a particular professional expertise and accounting knowledge, we do not only analyze the impact of the overall supervisory board on accounting quality but also investigate the separate effects of the percentage of women on the audit committee and the percentage of women on the residual supervisory board¹ on accounting quality. In doing so, we make a first attempt to control for the assumption that women on the audit committee might have the required professional expertise and accounting knowledge and therefore can provide a more fruitful input to the verification of the financial statement than women on the residual supervisory board (with maybe less or even no accounting knowledge) could do.²

By outlining corresponding theoretical approaches on the effects of (gender) diversity in teams on team performance, our paper investigates for a hand-collected sample of German listed firms (2005-2015) whether women on the overall supervisory respectively the audit committee or the

¹ Members of the supervisory board, which are not member of the audit committee, are called 'residual supervisory board members'.

² Based on the recommendation of the GCGC (2017) regarding the required specific qualification of audit committee members, we assume a (self-) selection of (better or more specific) qualified women into the audit committee.

residual supervisory board have a significant impact on accounting quality in terms of the probability of a future restatement.

Our contribution therefore is threefold. First, we provide empirical evidence on theoretical approaches predicting different impacts of team diversity on team outcomes. Second, this is the first study which analyzes this research question for German listed firms. Third, we contribute to previous studies by being the first who split the percentage of women on the overall supervisory board into women on the audit committee and women on the residual board. So far, previous studies only analyzed the effects of either the overall supervisory board or the audit committee on accounting quality.

The remainder of our study is as follows: in the second section, we describe the institutional background of our analyzed setting. Afterwards and with special focus on women, we outline our contribution to the previous literature on the determinants of accounting quality (section 3). Thereafter in section 4, an overview of controversial theoretical approaches on the effects of gender diversity in teams on team performance are presented and discussed. The dataset as well as the corresponding descriptive statistics and bivariate correlations are described in section 5. In section 6, we explain our methodology and present our empirical results. Finally, the key findings and contribution of our study to the previous literature are discussed. In addition, practical implications, limitations of our study and prospects for future research are outlined (section 7).

5.2 Supervisory Boards and Audit Committees in German firms

Different countries possess different corporate governance structures. In contrast to the Anglo-American shareholder focused corporate governance system with the one-tier board-system, the German corporate board system of a publicly listed firm (Aktiengesellschaft or AG) is two-tiered, consisting of a management board (Vorstand) and a supervisory board (Aufsichtsrat). Moreover, supervisory boards of German listed firms are co-determined meaning that the directors represent shareholders and employees. The management board determines the strategic plan of the firm and represents the firm to outsiders. The supervisory board oversees the management board, appoints their members and sets their compensation (Gorton, & Schmid, 2004).

Besides the supervision of the management board, one additional task of the supervisory board (in two-tier systems) is to verify the firm's financial statement in order to ensure proper

accounting quality. The examination of the financial statement is usually executed by a subgroup of the supervisory board: the audit committee³.

The establishment of an audit committee is generally optional in Germany. The board of directors has the possibility to establish an audit committee due to § 107 (3) AktG (Stock Corporation Act). However, additional regulations make the formation of an audit committee quasi mandatory. First, §§ 93 and 116 AktG regulate the due diligence of the management and supervisory board and virtually force them to implement an audit committee for larger firms with considerable board sizes (Huyer, 2008). It seems comprehensible that larger firms have to make use of committees to perform an appropriate supervision (Velte, 2009).

The German Corporate Stock Law (§ 107 (3) AktG) lists the duties of the German audit committee as the supervision of: 1. the financial reporting process, 2. the effectivity of the internal control system, 3. the risk management system, 4. the internal revision system, as well as 5. the external audit.

Due to the comparably high specificity of this board committee's task, the committee's composition might generate benefits due to a higher professionalization and a distinct financial expertise of the committee's members (Velte, 2009)⁴. Additionally, the German Corporate Governance Codex (GCGC) recommends the chair of the audit committee to have "specific knowledge and experience in applying accounting principles" (ibidem: section 5.3.2). In addition, the chair should be independent. There is no specification in the GCGC referring to the characteristics of other members of the audit committee.

We examine the relationship between restatements and the composition of the supervisory board and especially the audit committee because these two bodies of the corporate governance system are responsible for the managerial oversight of the financial reporting (Velte, 2009). The audit committee is assigned with the assurance of suitable financial reporting quality (Abbott, Parker, and Presley, 2012). Nevertheless, the audit committee typically reports to the

³ Audit committees originated from the U.S. They are mandatory for firms listed on an U.S. stock exchange since 2003, inaugurated by the Sarbanes-Oxley-Act (SOX). Before this act, they have been mandatory for firms listed on the New York Stock Exchange and the American Stock Exchange (Köhler, 2005). Their main purpose is to ensure appropriate financial reporting quality and to monitor the reporting process (BRC, 1999). The member of an audit committee of a U.S. firm must be independent, comply with the financial education requirements of the security exchange the firm is listed and at least one member has to qualify as an "audit committee financial expert" (Deloitte, 2015).

⁴ Even though there is no regulated quorum of members, a controversial discussion within the committee should be possible without occupying the entire supervisory board (Buhleier, & Krowas, 2011) since only the audit committee deeply investigates the financial statements and their results are presented to the residual directors in supervisory board meetings.

residual supervisory board so that the effectiveness of the audit committee also depends on the support of the residual supervisory board of directors (Abbott, et al., 2012). Additionally, § 107 (3) AktG (together with § 171 AktG) specifically state, that the verification of the firm's financial statement may not be transferred to a committee. For these reasons, we analyze the effects of women on the overall supervisory board as well as on the audit committee and the residual supervisory board on accounting quality.

5.3 Literature Review

Besides gender economic studies on the effects of women on supervisory boards on e.g. firm performance (for an overview see Post & Byron, 2015, Kirsch, 2017), this paper particularly ties in with previous studies on the presence of women on supervisory boards and audit committees and their impact on accounting quality.

Distribution of women among supervisory board committees

So far, only few studies investigate the distribution of women among supervisory board committees. For supervisory boards in the United States (one-tier system), Adams and Ferreira (2009) find that females serve on significantly more board committees than male directors. Moreover, significantly more women serve on audit committees than men. Conversely, Bozhinov, Koch and Schank (2017) find for a sample of German listed firms (two-tier system, meaning that the supervisory boards contain both shareholder and employee representatives) between 2005 and 2016 that women are underrepresented on the boards' audit committees compared to other committees. We contribute in particular to the finding of Bozhinov et al. (2017) by outlining whether women in audit committees have a significant impact on accounting quality despite their underrepresentation.

Women and Accounting Quality

The current findings on the impact of women on audit committees or supervisory boards on the firms' accounting quality are inconclusive, so far.

Positive impact of women on accounting quality

For instance, Krishnan and Parsons (2008) show that earnings quality is higher for firms with higher gender diversity (based on the Catalyst censuses) in senior management, using different measurements of earnings quality (e.g. conservatism, skewness, smoothness), which represent the quality of the accounting information. Examining the U.S. board of directors, Abbott, et al. (2012) find that female board presence reduces the likelihood of a restatement resulting in better

accounting quality. Likewise, Pucheta-Martínez, Bel-Oms and Olcina-Sempere (2016) find that a higher percentage of female audit committee members increases accounting quality in terms of a lower probability of a qualified auditor opinion due to errors, non-GAAP compliance or the omission of information. In addition, Chen, Eshleman and Soileau (2015) show that firms with greater female board representation are less likely to have internal control weaknesses in terms of ensuring that the management of a firm provides reliable accounting information. However, these results are not driven by women on the audit committee. Moreover, Thiruvadi and Huang (2011) find that the presence of one woman on the audit committee significantly improves accounting quality because of a significant increase of negative discretionary accruals (reducing income) which indicates less earnings management. Srinidhi, Gul and Tsui (2011) show that earnings management is lower for firms with female supervisory board members or female audit committee members, using discretionary accruals quality as measurement and via the meeting or beating earnings benchmarks by firms. This indicates higher accounting quality.

No significant impact of women on accounting quality

In contrast, Sun, Liu and Lan (2011) do not identify a significant effect of the percentage of women on the audit committee on the level of discretionary accruals, indicating no significant effect on accounting quality.

Ambiguous findings on the impact of women on accounting quality

Another proxy for accounting quality are audit fees. Here, different interpretations are possible. Frankel, Johnson and Nelson (2002) argue that high audit fees strengthen the auditor's economic bond with the client. This increases the pressure to allow earnings management. However, higher quality audits cause higher audit fees, contradicting this view (Huang, Huang, & Lee, 2014). Effective audit committees may demand more audit effort to achieve a better accounting quality, leading to better financial reporting and higher audit fees (Abbott, Parker, Peters, & Raghunandan, 2003). Still, an effective audit committee with strong internal controls and subsequent high quality financial reporting may reduce the assessed risk level by the auditor and, therefore, implies lower audit fees (Ittonen, Miettinen, and Vähämaa, 2010).

Conversely, Ittonen et al. (2010) find a significant negative effect of women as audit committee chairs on audit fees. Insignificant evidence is provided by Harjoto, Laksmana and Lee (2015) who observe no significant effect. Nevertheless, Harjoto et al. (2015) show that a higher percentage of female directors on the audit committee causes shorter audit delays. Furthermore, Aldamen, Hollindale and Ziegelmayer (2016) show a significant positive association between

women on the audit committee and audit fees. In sum, the results of previous studies on the effects of women on audit fees are inconclusive and do not allow any interpretation in only one direction of the observed effects.

Conversely to our study, the presented previous studies mostly analyze firms in the Anglo-American one-tier board system with unified managerial and supervisory responsibilities. In addition, the presented studies measure accounting quality by using indirect measurements such as discretionary accruals or audit fees. We contribute to this strand of literature by using restatements as an immediate result of an accounting misstatement (meaning errors in the financial statement) which have not been tested as a more precise measurement for accounting quality in the German two tier board and committee system, so far. Additionally, this study is the first to consider the effect of the percentage of women on the residual board (beside the percentage of women on the audit committee) on accounting quality, giving new insights.

5.4 Corresponding Theories

The impact of team diversity on team outcomes has been intensively discussed in the psychological and economic literature. While some studies provide arguments for a negative impact of team diversity on team outcomes (similarity attraction paradigm and social categorization theories), there is also one approach (resource dependence theory) assuming that team diversity has a positive impact on the team's outcome. In addition, critical mass theory assumes a u-shaped impact of diversity on team outcomes, meaning that a negative impact of a certain minority group can be turned into a positive impact if a team contains a critical mass of this minority. In the following section, the arguments of these approaches are explained in more detail as well as the implications for our research questions are outlined.

Negative impact of gender diversity on accounting quality

Following the similarity attraction paradigm of Byrne (1961), Byrne, Clore and Worchel (1966) or Byrne (1971), a team with homogeneous characteristics of its members cooperates better than a team with heterogeneous members. In this respect, team-members might prefer more cooperation with similar characterized teammates of one attribute, resulting in less conflicts and easier teamwork than in teams with highly diverse team-members. Referring to our research question, predominantly male audit committees or supervisory boards are assumed to cooperate more efficiently than teams which contain men and women. Following this argument, a significant negative impact of women on the audit committee or supervisory board on accounting quality is assumed.

A comparable argument is provided by social categorization theory (Tajfel, 1978; Tajfel and Turner, 1986; Turner, 1987) and social identification theory (Hogg, & Abrams, 1988; Turner, 1987). Team performance is influenced by different interpersonal processes regarding within-group communication, cohesion or conflicts. These interpersonal processes might be influenced by the aspiration of individuals towards a high level of self-esteem which is influenced by the social categorization and resulting comparison of oneself to others. This social comparison is determined by socio-demographic characteristics, such as gender, age, race, status or religion (Williams, & O'Reilly, 1998) and finally leads to stereotyping, polarization, and anxiety. For consequence and empirically evident (Timmermann, 2000), members of heterogeneous teams are faced with less individual satisfaction with the group, less within-group communication and less cooperation, so that a higher level of conflict and maybe also an increased level of turnover might result (Crocker & Major, 1989; Martin & Shanahan, 1983; Williams & O'Reilly, 1998). Hence and according to the similarity-attraction paradigm (Byrne, 1961; Byrne et al., 1966; Byrne, 1971), social categorization theories assume gender diverse supervisory boards or audit committees to have a less efficient teamwork and a negative impact on accounting quality.

Positive impact of gender diversity on accounting quality

According to resource-dependence theory (see e.g. Pfeffer, 1972; Pfeffer & Salancik, 1978), gender diverse supervisory boards might outperform male supervisory boards due to an increasing variety of expertise and perspectives. Due to different gender specific traits (see Wegge, Roth, Neubach, Schmidh, & Kanfer, 2008), this theoretical approach assumes that gender diverse supervisory boards and audit committees have more controversial discussions (see Campbell & Mínguez-Vera, 2008) and consider more different aspects, resulting in a better board's performance (see e.g. Ali, Ng, & Kulik, 2014; Biggins, 1999; Hillman, Shropshire, & Cannella, 2007). Hence, gender diverse audit committees or supervisory boards might have more intensive discussions about the audit committee's statements than male boards might have, resulting in less future restatements and better accounting quality.

U-shaped impact of gender diversity on accounting quality

Besides these arguments, Kanter (1977) points out that the direction of impact of a minority in teams on the team outcome might change with an increasing number of minority members. In other words, she outlines that the predominant presence of male members in a supervisory and e.g. only one female board member might lead to a distorted perception of the female director. This distorted perception of a female director implies that she is rather seen as a "token" – a

representative of her gender – than as a board member with valuable resources. Then, supervisory boards suffer from a negative impact of female board members on team outcomes as long as a particular critical number of female board members is not reached. If a critical number of female board members or even more women are present, the previous negative impact of female board members on the supervisory board outcomes is assumed to change into a positive one. This assumption bases on the argument that previously token women are no longer perceived as representatives of their gender. Instead their male board colleagues now perceive the women's resources so that they can effectively contribute to the supervisory board's outcomes. A u-shaped impact of female supervisory board members with a critical mass of three women on e.g. firm performance (Joecks et al., 2013) or activeness in board discussions (Schwartz-Ziv, 2017) is empirically evident.

Referring to our scenario, it could be assumed that there is also a u-shaped effect of women on accounting quality. Hence, a critical number of female directors on the audit committee as well as on the supervisory board would be necessary to realize a positive impact of their presence on accounting quality. Audit committees or supervisory boards with less women than a necessary critical number of female members might create lower accounting quality than those supervisory boards which reached this critical mass of women.

5.5 Data and Descriptive Statistics

5.5.1 Dataset

The analyzed sample contains hand collected information on the composition of the supervisory board and their audit committee members for German firms listed on the DAX 30 between 2005 and 2015, always by year end. Moreover, we collected restatement data from annual reports via key word search (e.g. restate, error, IAS 8). This leads to panel data of a total of 330 firm-years. Additional financial data was obtained from Thomson Reuters Eikon. The firms of the DAX 30 are chosen for this analysis, because these major German firms implemented an audit committee for quite some time. Finally, our sample consists of 249 observations because of missing data.

5.5.2 Descriptive Statistics

Dependent variable

To analyze the effects of the board's and audit committee's functional and gender-related composition on accounting quality, we focus on a firm's restatement indicating that the firm

corrected an accounting error within the previous financial statements. Following Blankley, Hurtt and MacGregor (2012), the dummy variable ‘Future Restatement’ indicates accounting errors (misstatements) in previous financial statements and is coded backwards as 1 for the two years (t-1, t-2) previous of a disclosed restatement in year t, and 0 otherwise. Table 5.1 presents an example of this codification:

Table 5.1: Example of Codification of the Variable ‘Future Restatement’

Year	Firm	Restatement	Misstatement
2010	Firm A	0	0
2011	Firm A	0	1
2012	Firm A	0	1
2013	Firm A	1	0
2010	Firm B	0	1
2011	Firm B	0	1
2012	Firm B	1	0
2013	Firm B	0	0

Source: Own compilation

Firm A disclosed a restatement in 2013. Following the codification of Blankley et al. (2012), the variable “Future Restatement” is coded one for 2011 and 2012. Firm B made a restatement in the year 2012. Hence, 2010 and 2011 are coded one. There are two practical reasons for the choice of this approach. First, the management discloses sparsely information in financial statements about the affected years concerning the misstatement. The financial statements mostly reveal that the last fiscal year and a not defined number of fiscal years in the past are affected. Second, we follow the statement of Blankley et al. (2012), saying that the length of the misstatement is “*of less concern because the presence of any undetected material misstatement is evidence of audit failure*” (see *ibidem*: 85). This is also valid for a firm’s internal audit of the supervisory board and especially the audit committee.

In this study, we identify 48 restatements (a detailed overview about the distribution of restatements is presented in Table 5.2). While only one restatement is found in 2005, the maximum number of 7 restatements is observed in 2012.

Table 5.2: Restatement Distribution by Year

2005	1	2.08%
2006	6	12.50%
2007	6	12.50%
2008	6	12.50%
2009	3	6.25%
2010	3	6.25%
2011	3	6.25%
2012	7	14.58%
2013	6	12.50%
2014	5	10.42%
2015	2	4.17%
Total	48	100%

Source: Own compilation

Explanatory Variable

In this study, we focus on the effect of women on the overall supervisory board as well as on the audit committee or on the residual supervisory board on the probability of a future restatement as our main explanatory variables. Our sample contains a mean of 14.61 percent female directors on board. The minimum percentage of female supervisory board members is no woman on board and the corresponding maximum is at 43.75 percent. In contrast, the average percentage of women on audit committees is lower with approximately 8 percent. While having no woman on the audit committee is the minimum, the maximum percentage of female members on the audit committee is 50 percent, which is 6.25 percentage points higher than the maximum percentage of female supervisory board members. Moreover, we calculated the difference between women on the audit committee and the percentage of women on the residual supervisory board. Then, the average percentage of women on the supervisory board who are not members of the audit committee is 12.21 percent, with a minimum of no woman and at maximum 31.25 percent (see also Table 5.3).

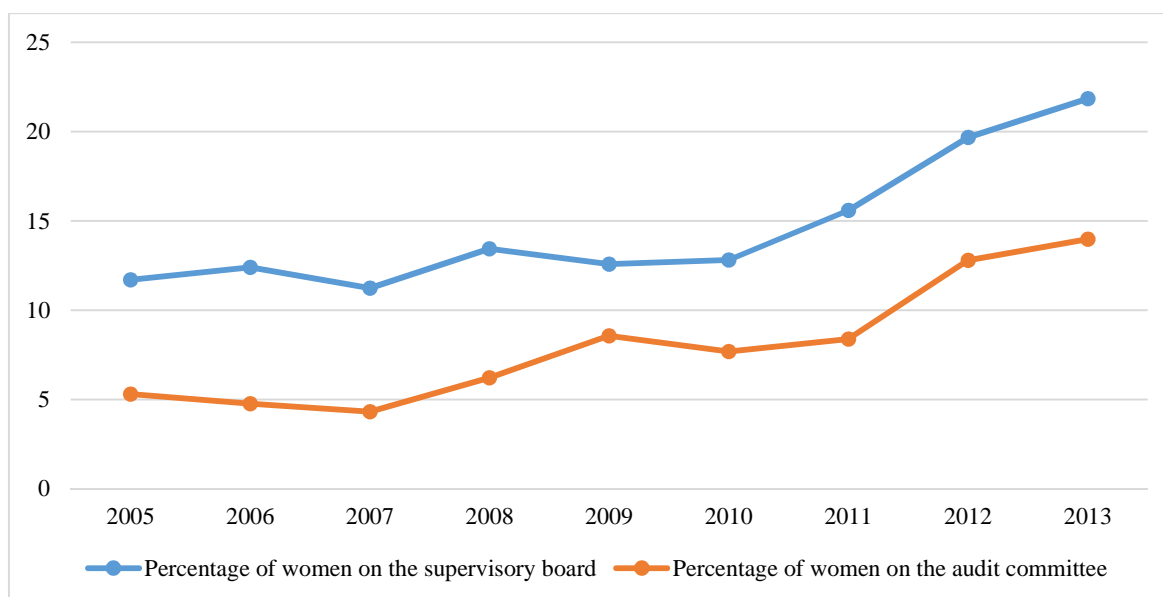
For the analyzed time span of our sample, we further aggregated the average percentage of women on the overall supervisory board as well as on the investigated audit committees per year. Figure 5.1 illustrates the development of female participation on supervisory boards and

on audit committees from 2005 to 2013⁵. For the overall average percentage of females on supervisory boards, we observe 11.7 percent of females in 2005 and a following minimum of 11.23 percent in 2007. Afterwards, the average percentage of female supervisory board members increases up to 13.45 percent in 2008 but declines down to 12.81 percent in 2009. Like Bozhinov et al. (2017), we observe a strong increase in the average percentage of female supervisory board members in 2011 up to 15.6 percent. This increase might be caused by the evolving national discussion on a possible introduction of a mandatory gender quota (see Bozhinov 2017). Moreover, this development might be also influenced by an additional recommendation in the German Corporate Governance Codex from 2010 which advises supervisory boards to ensure diversity and particularly taking qualified women into account for the nomination of management board members (see section 5.1.2, GCGC, 2010). From 2011 to 2013, the average percentage of women in the analyzed supervisory boards steadily increased up to approximately 22 percent.

For the average percentage of females in supervisory boards, we also observe a decrease from 5.3 percent in 2005 to 4.3 percent in 2007. However and conversely to the average overall percentage of females in supervisory boards, the average percentage of females in audit committees nearly doubled from 4.32 percent in 2007 up to 8.57 percent in 2009. After a decrease by 0.9 percentage points in 2008, the average percentage of female audit committee members steadily increased up to approximately 14 percent in 2013.

⁵ Since we analyze the impact of the percentage of women on the supervisory boards or audit committees including a lag, we do not include the percentage of women on supervisory boards in 2014 or 2015 because it is unknown if a restatement occurred in 2016 or not. Hence, the coding for 2014 and 2015 is unclear. (see coding of our dependent variable in Table 5.1).

Figure 5.1: Average percentage of females (per year) on the supervisory board and on the audit committees



Source: Own compilation

Controls

Besides the explanatory variables, we control for three bundles of variables. First, we control for further characteristics of the audit committee. Second, we control for characteristics of the analyzed supervisory board. Third, we control for firm related characteristics which might also determine future restatements.

The audit committees in these supervisory board contain 5 members on average, with a minimum of 3 and a maximum of 6 individuals. Since the analyzed supervisory boards are all co-determined, we control for the percentage of employee representatives on the audit committee. In this sample, we observe 45 percent (on average) of employee representatives on the audit committee, with at minimum no employee representative or at maximum 50 percent. In order to control for the intensity of the audit committees' discussions, we control for the number of audit committee's meetings. In our sample, the audit committees had at least one meeting, on average 5 meetings, and at maximum 12 meetings.

Regarding the overall analyzed supervisory boards, we control for the board size. In our sample, the average supervisory board consists of 18 members, with a minimum of 6 and a maximum of 21 individuals.

Finally, we control for two firm related characteristics. According to previous literature on institutional determinants of restatements, we control for the firm's size (LN total Assets (t-1)).

As larger firms are subject to closer scrutiny leading to more aggressive accounting (Richardson, Tuna, & Wu, 2002). Hence, more restatements should be expected (Blankley et al., 2012). In addition, we control for the previous firm performance in terms of return on assets (ROA (t-1)), because of previous studies which clarified that worse performing firms have significantly more restatements than well performing firms (Agrawal, & Chadha, 2008; Collins, Masli, Reitenga, & Sanchez, 2009).

The descriptive statistics of our sample are summed up in Table 5.3:

Table 5.3: Descriptive Statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
<i>Dummy</i> ‘Future Restatement’	249	0.289	0.454	0	1
Percentage of Women on the Supervisory Board	249	14.613	9.562	0	43.75
Percentage of Women on AC	249	8.032	13.459	0	50
Percentage of Women on the Residual Supervisory Board	249	12.205	7.468	0	31.25
Size of AC	249	5.008	0.920	3	6
Percentage Employee Representatives on AC	249	45.495	8.111	0	50
No. of AC’s Meetings	249	5.008	1.706	1	12
Board size	249	17.542	3.525	6	21
LN Total Assets (t-1)	249	24.769	1.500	21.719	28.421
ROA (t-1)	249	3.667	4.361	-10.588	27.067

Source: Own compilation

5.5.3 Bivariate Correlations

In order to avoid distortions of our empirical findings due to multicollinearity of the explanatory variables and controls, we tested bivariate Pearson correlations. This method seems appropriate since all of the tested variables are metric. By contrast, our dependent variable is bivariate and therefore not included. In Table 5.4, the results of the Pearson Correlation Matrix are summed up.

With respect to our explanatory variables, we observe that the percentage of women on the supervisory board has a significant positive correlation with the percentage of women on the audit committee ($r=0.618^{***}$), the percentage of women in the residual supervisory board

($r=0.273^{***}$), the size of the audit committee ($r=0.264^{***}$), the percentage of employee representatives on the audit committee ($r=0.176^{***}$), the number of audit committee meetings ($r=0.265^{***}$), and firm size ($r=0.256^{***}$). The same positive correlations are observed for the percentage of women on the audit committee and the size of the audit committee ($r=0.255^{***}$), the percentage of employee representatives on the audit committee ($r=0.185^{***}$), the number of audit committee's meetings ($r=0.185^{***}$), the board size ($r=0.156^{**}$), and firm size ($r=0.301^{***}$). Since the percentage of women in the residual supervisory who do not serve on the audit committee is the difference of the percentage of women in the supervisory board minus the percentage of women who serve on the audit committee, we observe a significant negative correlation ($r=-0.346^{***}$) with the percentage of women on the audit committee and a significant positive correlation with board size ($r=0.173^{***}$).

For our controls, we observe a significant positive correlation between the size of the audit committee and the percentage of employee representatives on the audit committee ($r=0.361^{***}$) as well as the board size ($r=0.311^{***}$). A significant negative correlation is shown for the size of the audit committee and previous firm performance ($r=-0.157^{**}$).

The number of audit committee meetings shows significant positive correlations with the board size ($r=0.133^{**}$) and firm size ($r=0.401^{***}$). By contrast, the number of audit committee meetings is significant negatively correlated with previous firm performance ($r=-0.296^{**}$).

Furthermore, the board size is significant positively correlated with firm size ($r=0.358^{***}$), but negatively correlated with previous firm performance ($r=-0.234^{***}$). Finally, firm size and firm performance are significant negatively correlated ($r=-0.490^{***}$). Since all coefficients are below 0.618, we find no indications for multicollinearity. Nevertheless, we calculated Variation Inflation Factors (VIFs) and provide the maximum factor for each of our presented estimations in section 6, indicating no distortions of our findings due to multicollinearity.

Table 5.4. Bivariate Correlations - Pearson

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) Percentage of Women on Supervisory Board (SB)	1.000							
(2) Percentage of Women on AC	0.618***	1.000						
(3) Percentage of Women on the Residual SB	0.273***	-0.346***	1.000					
(4) Size of AC	0.264***	0.255***	-0.002	1.000				
(5) Percentage Employee Representatives on AC	0.176***	0.185***	0.115	0.361***	1.000			
(6) No. of AC's Meetings	0.265***	0.185***	0.016	0.013	-0.187	1.000		
(7) Board size	0.080	0.156**	0.173***	0.311***	0.314	0.133**	1.000	
(8) LN Total Assets (t-1)	0.256***	0.301***	0.001	0.112	-0.121	0.401***	0.358***	1.000
(9) ROA (t-1)	-0.114	-0.083	0.031	-0.157**	0.225	-0.296**	-0.234***	-0.490***

Source: Own compilation; Note: *** $p < 0.01$, ** $p < 0.05$

5.6 Methodology & Empirical Results

5.6.1 Methodology

The panel data set of 30 firms between 2005 and 2015 in this analysis requires to use appropriate empirical models. A common procedure would be a pooled logit regression containing every observed case (firm-year) (see models 1 to 4, Table 5.5). However, this procedure has the disadvantage not to capture unobserved individual heterogeneity across firms that causes future restatements.

Two additional common empirical procedures to deal with unobserved heterogeneity in logistic regression models are the “fixed effects model” and the “random effects model”. The fixed effects model controls for unobserved time invariant characteristics. A disadvantage of this procedure is, that it will not perform well with data for which the time variation per firm is minimal or for slowly changing variable. In addition, this procedure cannot be used to analyze the effect of time-invariant independent variables on the dependent variable. For example, if the number of audit committee meetings of a firm does not change in the observed period this information cannot be used in the fixed effect model. The alternative “random effects model” has the advantage to estimate the effect of time invariant variables and includes firms with constant dependent variables over time. One disadvantage is, that not every important variable might be observable, leading to omitted variables in the model. According to the performed Hausman tests, random effects estimations are preferred under the null hypothesis in our study (see 5 to 8, Table 5.5).

Our empirical analysis is conducted in four steps. First, we test whether the percentage of women on the overall supervisory board has an effect on the probability of a future restatement without controls (see models 1 and 5, Table 5.5). Second, we estimate the effect of the percentage of women on the overall supervisory board on the probability of a future restatement including controls (models 2 and 6, Table 5.5). Third, we test whether this relationship is probably non-linear (models 3 and 7, Table 5.5). Fourth, we split the percentage of women on the overall supervisory board. Therefore, we test the impact of the percentage of women who sit on the audit committee and the percentage of women of the residual supervisory board on the probability of a future restatement including all controls (models 4 and 8, Table 5.5).

5.6.2 Empirical Results

This section presents the findings of our empirical analyses, which are provided in Table 5.5.

The estimations of pooled logit and random effects logit regression reveal robustly a significant positive impact of the percentage of women on the supervisory board on the probability of a future restatement respectively lower accounting quality. This effect even holds when additional controls are included in the models (models 1-3 and 5-7, Table 5.5). The test for a possible non-linear relationship (models 3 and 7) reveals a weakly significant inverted u-shaped relationship in the random effects regression (model 7, Table 5.5). In other words, we find weak empirical evidence for a firstly positive impact of the percentage of women on the supervisory board on the probability of a future restatement (indicating lower accounting quality), which changes into a negative impact for all supervisory boards with a critical mass of 30 percent or more women on board (resulting in higher accounting quality). One reason for the weak significance of this effect could be the fact that our analyzed firms did not reach this critical threshold (on average) for the analyzed time span from 2005 to 2015 (as illustrated in Figure 2). Moreover, this finding is not confirmed by the similar pooled logit estimation (model 3, Table 5.5).

Splitting the percentage of women in the overall supervisory board into the percentage of women on the audit committee and the percentage of women on the residual board shows that the percentage of women on the audit committee has no significant impact on the probability of a future restatement respectively accounting quality (see models 4 and 8, Table 5.5). By contrast, the percentage of women on the residual supervisory board has a significant positive impact on the probability of a future restatement indicating lower accounting quality (see models 4 and 8, Table 5.5). Admittedly, this effect is only weakly significant in the pooled logit regression (see model 4, Table 5.5)⁶.

With respect to our controls, we find weakly significant empirical evidence for a positive effect of the number of meetings of the audit committee on the probability of a future restatement respectively lower accounting quality (see models 4 and 8, Table 5.5). Moreover, we find larger board size to have a significant negative impact on the probability of a future restatement resulting in higher accounting quality in model 4 (Table 5.5). For the firm size, we find a robust and highly significant positive impact on the probability of a future restatement (see models 2-4 and 6-8, Table 5.5) indicating that larger firms have a significantly lower accounting quality.

⁶ We also tested for possible non-linear effects of the percentage of women on the audit committee or residual supervisory board on accounting quality. Since we did not find any significant non-linear relationships, the results are not presented in this paper.

5.7 Discussion

In this paper, we analyze whether women on the overall supervisory board, the audit committee or the residual supervisory board have a significant impact on the firms' accounting quality. Therefore, this study refers to several theoretical approaches which predict different directions of this effect. While a negative association is predicted by the similarity-attraction-paradigm (Byrne, 1961; Byrne et al., 1966; Byrne, 1971) and the social categorization theories (Tajfel 1978; Tajfel and Turner 1986; Turner 1987), a positive association is predicted by resource-dependence theory (see e.g. Pfeffer, 1972; Pfeffer & Salancik, 1978). In addition, a u-shaped effect of women on board or on the audit committee on accounting quality can be predicted based on the critical mass approach (Kanter, 1977). Here the underlying assumption is that a critical number of women is necessary to change the negative impact (due to their status as tokens and the resulting disregard of their resources) into a positive one.

5.7.1 Key Findings

The first key finding of this study is that the percentage of women on the audit committee has no robust or significant impact on the number of future restatements respectively the firm's accounting quality. Following this observation, the gender of an audit committee's member does not make a difference with respect to accounting quality in terms of the probability of a future restatement. Consequently, women and men in audit committees do not contribute significantly differently to the work of the audit committees. One possible reason for this finding could be that the qualifications and accounting expertise are equal among men and women in audit committees so that the gender has no significant impact on the probability of a future restatements.

The second key finding of this study is that the percentage of women on the overall supervisory board has a significant positive impact on the probability of future restatements which might be driven by the women who are not members of the audit committee since we find a significant positive impact here, too. This effect can be interpreted in two directions: The first argument could be that due to the higher percentage of women on the overall as well as residual supervisory boards more errors in the financial statements are discovered and disclosed due to more fruitful and critical discussion of the audit committee's presented results with the residual supervisory board. The second and contradictory argument implies that a higher percentage of women on the overall or residual supervisory board indicates more undiscovered errors in the

Table 5.5 Empirical Results on the impact of women on the supervisory board or audit committee on accounting quality

	(1) Pooled Logit Prob. future restatement	(2) Pooled Logit Prob. future restatement	(3) Pooled Logit Prob. future restatement	(4) Pooled Logit Prob. future restatement	(5) Random Effects Prob. future restatement	(6) Random Effects Prob. future restatement	(7) Random Effects Prob. future restatement	(8) Random Effects Prob. future restatement
Percentage of Women on SB	0.114*** (0.028)	0.114*** (0.034)	0.213** (0.100)		0.108*** (0.032)	0.105*** (0.030)	0.250*** (0.086)	
Percentage of Women on SB ²			-0.003 (0.002)				-0.004* (0.002)	
Percentage of Women on AC				0.051 (0.031)				0.032 (0.027)
Percentage of Women on the Residual SB				0.034* (0.019)				0.036*** (0.013)
Size of AC		-0.209 (0.339)	-0.156 (0.354)	0.084 (0.333)		-0.250 (0.336)	-0.165 (0.375)	-0.016 (0.427)
Percentage Employee Representatives on AC		-0.007 (0.030)	-0.013 (0.031)	-0.005 (0.035)		0.007 (0.036)	0.000 (0.040)	0.001 (0.046)
No. of AC's Meetings		0.127 (0.111)	0.145 (0.110)	0.231* (0.118)		0.156 (0.144)	0.202 (0.154)	0.284* (0.161)
Board size		-0.053 (0.073)	-0.069 (0.073)	-0.155** (0.069)		-0.064 (0.084)	-0.089 (0.093)	-0.143 (0.108)
LN Total Assets (t-1)		0.510*** (0.152)	0.525*** (0.153)	0.521*** (0.169)		0.629*** (0.227)	0.658*** (0.242)	0.746*** (0.279)
ROA (t-1)		-0.009 (0.054)	-0.006 (0.055)	-0.027 (0.056)		0.017 (0.071)	0.018 (0.074)	0.021 (0.079)
Year Fixed Effects	Incl.	Incl.	Incl.	Incl.	Incl.	Incl.	Incl.	Incl.
Constant	-2.032*** (0.591)	-12.83*** (3.738)	-13.64*** (3.967)	-14.80*** (4.765)	-2.149*** (0.712)	-16.07*** (5.690)	-17.50*** (6.123)	-20.75*** (7.122)
Observations	249	249	249	249	249	249	249	249
Number of IDs	36	36	36	36	36	36	36	36
Wald-Chi ² /Prob>Chi ²	47.16***	59.80***	60.17***	63.81***	18.94**	30.06**	29.35**	24.38*
Pseudo-R ² /McFadden R ²	0.163	0.257	0.265	0.231	0.232	0.274	0.287	0.279
Max VIF	1.00	1.66	9.60	1.73	1.00	1.66	9.60	1.73
Hausman-Test (Chi ² /Prob>Chi ²)					1.49/0.997	2.49/0.477	2.82/0.589	0.22/0.896

Note: For all pooled logit regressions (models 1-4), we provide robust standard errors clustered on the firm-level in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

financial statement due to a maybe less critical discussion and resulting in more restatements in the future.

5.7.2 Contribution to theoretical approaches

Our empirical findings contribute in various ways to the outlined theoretical approaches on the impact of women on supervisory boards or audit committees on accounting quality (see section 4). Firstly, we find that the percentage of women on the overall supervisory board have a significant negative impact on accounting quality. This indicates empirical evidence for social-categorization theories and the similarity-attraction paradigm predicting heterogeneous teams to have worse cooperation than homogenous teams resulting in lower team performance. The same theoretical contribution is given for the percentage of women on the residual supervisory board if we additionally control for the percentage of women on the audit committee. By contrast and following the contradictory interpretation of our findings, a higher probability of a future restatement due to an increased percentage of women on the (residual) supervisory board might also be caused by more critical and fruitful discussions of the audit committee's results, indicating empirical evidence for resource-dependence theory (see Pfeffer, 1972; Pfeffer & Salancik, 1978).

Moreover, we find weak empirical evidence for Kanter's (1977) critical mass theory since this significant negative impact of women on supervisory boards on accounting quality might change into a positive one, once a critical mass of 30 percent women on the supervisory board is present. Then, the boards' team performance and consequently accounting quality could be improved if 30 percent or more women bring in their knowledge and provide (new) resources to the board's work (according to the argument of resource-dependence theory, see Pfeffer, 1972; Pfeffer & Salancik, 1978).

Since we observe no significant impact of the percentage of women on the audit committee on accounting quality, we do not find empirical evidence for any of these theoretical approaches for this subgroup of the supervisory board.

5.7.3 Contribution to the previous literature

Our result of no significant effect of the percentage of women on the audit committee on the probability of a future restatement is in line with the finding of Sun et al. (2011). Additionally, we find a negative effect for the overall as well as residual supervisory board. This finding contradicts previous literature finding a positive effect of women on the board or audit committee and accounting quality (see e.g. Krishnan & Parsons, 2008; Pucheta-Martínez et al., 2016; Thiruvadi & Huang, 2011). One possible explanation is, that the majority of the discussed papers are using alternative proxies for

accounting quality (e.g. accruals, auditor opinion or internal control weakness). One advantage of our paper towards these papers is that it incorporates a direct result of an accounting misstatement, a restatement instead of rather indirect measurements of accounting quality. The only exception is the study of Abbott et al. (2012) also analyze restatements in order to examine the relationship between women on the board and accounting quality. In contrast to our study, they analyze the U.S. board of directors and only incorporate a dummy variable instead of the proportion of women on the board, giving no indication whether an increase of female presence on board has a significant impact on accounting quality. Furthermore, they do not include female audit committee presence.

5.7.4 Practical Implications, limitations and prospects for future research

Referring to the introduction of a mandatory gender quota of 30 percent for German listed firms in 2016, our findings provide further but tentative indications and therefore practical and political implications for the effects of women on supervisory boards and especially on audit committees (for a sample before the quota, 2005-2015). Since we find weak evidence for an inverted u-shaped effect of the percentage of women on the overall supervisory board on accounting quality, the introduction of the mandatory gender quota might help to change the empirically evident negative relationship (before the quota) into a positive direction for firms which fulfill it and therefore reach the critical mass of 30 percent. Moreover, our findings show no significant effect of women on the audit committee indicating that women on this committee do not provide a significant different input to the committee's work than men on this committee. This result could be interpreted as good news for firms since the members of the audit committee seem to equally contribute to the verification of the financial statement. Moreover, one political implication could be that following this result there is no need for an additional regulation to regulate the gender quota on the supervisory board committees.

However, this study is not without limitations. The empirical analyses are based on a comparatively small dataset of the DAX 30 firms so that it could be a fruitful additional step to enlarge the dataset and replicate our analyses. Since this study is the first which also considers the effect of the percentage of women on the residual board (beside the percentage of women on the audit committee) on accounting quality, previous studies which did only analyze either the overall supervisory board or the audit committee could be re-estimated by controlling for women outside the audit committee. More insights on the insignificant impact of women on audit committees on accounting quality could be gained by analyzing and comparing the qualification of male and female audit committee members for the analyzed firms in more detail.

6 Zusammenfassung, Fazit und Ausblick

Nachstehend erfolgt eine Zusammenfassung der in dieser Arbeit gewonnenen Ergebnisse mit abschließendem Fazit und einem Ausblick für die zukünftige Forschung.

Bereits im zweiten Kapitel dieser Arbeit wurde anhand vorliegender Forschungsergebnisse verdeutlicht, dass ein bedeutender Zusammenhang zwischen der Qualität der Rechnungslegung, gemessen mithilfe von Restatements, und den Ausprägungen der Corporate Governance Elemente besteht. Ein ausgeprägter und durchdachter rechtlicher und faktischer Ordnungsrahmen, d.h. „gute“ Corporate Governance ist in der Lage, eine mangelnde Rechnungslegungsqualität zu verhindern bzw. ihr Auftreten abzumildern. Ebenso ist ein solches System eher dazu in der Lage Rechnungslegungsmängel nach Entstehung aufzudecken. Schwächen in diesem Bereich erhöhen jedoch die Wahrscheinlichkeit, dass es zu Mängeln in der Berichterstattung kommt und diese unentdeckt bleiben. Diese gewonnenen Erkenntnisse werden neben weiteren Forschungsergebnissen genutzt, um in den folgenden drei Kapiteln weiteren Forschungsbedarf zu begründen und neue Erkenntnisse zu gewinnen.

Die Studie in Kapitel drei liefert erstmalig einen Einblick in den Kommunikationsprozess der Unternehmensleitung. Es wird analysiert wie ein Fehler in der Rechnungslegung erstmalig innerhalb des faktischen und rechtlichen Rahmens publiziert wird. Hierfür wurden Ad-Hoc Meldungen, DPR Fehlermeldungen des Bundesanzeigers, Unternehmenspressemitteilungen und Abschlüsse der Jahre 2005 bis 2014 untersucht. Dabei werden mittels multinomialer logistischer Regression Anhaltspunkte beobachtet, die andeuten, dass Eigenschaften der Rechnungslegungsfehler in die Wahl der erstmaligen Publikation einfließen. Zudem wird die Reaktion des Eigenkapitalmarktes auf die jeweilige Fehlerveröffentlichung analysiert. Über die Form der Publikation könnten private Informationen der Unternehmensleitung an die Kapitalmarktteilnehmer übermittelt werden und daher die Reaktion beeinflussen. Empirische Regressionsergebnisse zeigen, dass die Kapitalmarktreaktion von der erstmaligen Publikationsform beeinflusst wird, auch z.B. unabhängig von der Fehlerschwere (z.B. Effekt auf das Jahresergebnis).

Kapitel vier widmet sich erneut der Reaktion des Eigenkapitalmarktes auf die Veröffentlichung eines Fehlers in der Rechnungslegung und untersucht hier nun den Zusammenhang zwischen der Fehlererwartung durch die Investoren am Eigenkapitalmarkt und der folgenden Marktreaktion. Hierbei werden, um eine Vergleichbarkeit zu ermöglichen, allein Fehlerfeststellungen des deutschen Enforcement Systems betrachtet. Empirische Ergebnisse zeigen, dass gerade von Unternehmen mit einer höheren Prüfungsqualität durch den Abschlussprüfer (Big 4 Wirtschaftsprüfer) und guter

Unternehmensperformance, Fehler in der Rechnungslegung eher unerwartet sind. Bei schnell wachsenden Unternehmen und größeren Unternehmen kommt es dagegen eher zu Fehlern in der Rechnungslegung. Die empirischen Resultate deuten aber darauf hin, dass die negative Reaktion des Eigenkapitalmarktes nicht von der Fehlererwartung beeinflusst wird. Für weitere Eigenschaften, wie die Fehlerschwere, wird ein stärkerer Einfluss festgestellt. Entweder sind die wenigsten Fehler für den Kapitalmarkt unerwartet, oder die betrachteten Fehler sind für die Investoren nicht von großer Bedeutung und andere Eigenschaften werden eher berücksichtigt.

In der Studie in Kapitel fünf wird der Einfluss von Frauen im Prüfungsausschuss bzw. Aufsichtsrat auf Rechnungslegungsfehler untersucht. Ausgehend von einer ausführlichen Darstellung anknüpfender Theorien zu den verschiedenen Wirkungsrichtungen von Geschlechterdiversität in Teams auf die Teamleistung, wird der oben beschriebene Zusammenhang empirisch untersucht. Die empirische Analyse basiert dabei auf Restatements der DAX 30 Unternehmen zwischen 2005 und 2015 und den Zusammensetzungen der Prüfungsausschüsse bzw. Aufsichtsräte. Durch die Schätzung von Random-Effects Regressionen und Pooled-Logit-Regressionen wird für unser Sample deutlich, dass Frauen in Prüfungsausschüssen keinen signifikanten Einfluss auf die Wahrscheinlichkeit eines Rechnungslegungsfehlers haben. Dieses Ergebnis könnte darauf hinweisen, dass durch die vergleichsweise hohe Aufgabenspezifität des Prüfungsausschuss und der folglich fachspezifischen Ausbildung oder Expertise der Ausschussmitglieder Geschlechtereffekte keine Rolle spielen, da Frauen und Männer nicht signifikant verschiedene Beiträge zur Prüfung der Rechnungslegung leisten. Hingegen finden wir einen signifikant positiven Einfluss für die Präsenz von Frauen im residualen Aufsichtsrat auf die Wahrscheinlichkeit eines Rechnungslegungsfehlers. Dieses Ergebnis kann sowohl positiv wie negativ interpretiert werden.

Eine wichtig zusammenfassende Erkenntnis dieser Arbeit ist, dass ein effektiver Ordnungsrahmen durch Corporate Governance bedeutend zum Funktionieren des wirtschaftlichen Handelns beiträgt (Bank for International Settlements, 2015). Die Überwachungsfunktion des Corporate Governance Systems weiter zu entwickeln, ohne jedoch das wirtschaftliche handeln substanziell einzuschränken, sollte auch weiterhin das zukünftige Ziel von Veränderungen und Weiterentwicklungen dieses Systems sein. Hierfür leistet diese Arbeit einen Beitrag, indem sowohl bereits vorliegende Forschungsergebnisse subsumiert wurden und Rechnungslegungsersteller, die Adressaten, als auch die Überwachungsinstitutionen in den durchgeführten Studien zur Rechnungslegungsqualität Berücksichtigung fanden. Insgesamt zeigen die Forschungsergebnisse, dass Fehler in der Rechnungslegung eine hohe Bedeutung für die betrachteten Elemente der Corporate Governance spielen. Denn gerade diese sind geeignet, die Informationsfunktion der Berichterstattung

einzuschränken und somit auch jedwedem wirtschaftliche Handeln. Fehler in der Berichterstattung zeigen Schwächen im System auf, welche dann zu beheben sind.

Einschränkend wird an dieser Stelle darauf hingewiesen, dass die in dieser Arbeit durchgeführten empirischen Studien allein die deutsche Corporate Governance betrachten. Zukünftige, hieran anschließende Studien könnten dies auf einer internationalen Ebene untersuchen, und hier die Ergebnisse für unterschiedliche institutionelle Rahmenbedingungen miteinander vergleichen. Dies könnte die Erstellung einer „best practice“ Lösung für die Struktur und Elemente der Corporate Governance ermöglichen.

Literaturverzeichnis

- Aboody, D., & Kasznik, R. (2000). CEO stock option awards and the timing of corporate voluntary disclosure. *Journal of Accounting and Economics*, 29, 73-100.
- Abbott, L. J., Parker, S., & Peters, G. F. (2004). Audit committee characteristics and restatements. *Auditing: A Journal of Practice & Theory*, 23, 69-87.
- Abbott, L. J., Parker, S., Peters, G. F., & Raghunandan, K. (2003). The association between audit committee characteristics and audit fees. *Auditing: A Journal of Practice & Theory*, 22, 17-32.
- Abbott, L. J., Parker, S., & Presley, T. J. (2012). Female board presence and the likelihood of financial restatements. *Accounting Horizons*, 26, 607-629.
- Adams, R., & Ferreira, D. (2009). Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics*, 94, 291–309.
- Adcock, C. J. (1997). Sample size determination: A review. *The Statistician*, 46, 261-283.
- Agrawal, A., & Chadha, S. (2005). Corporate governance and accounting scandals. *Journal of Law and Economics*, 48, 371-406.
- Aier, J. K., Comrix, J., Gunlock, M. T., & Lee, D. (2005). The financial expertise of CFOs and Accounting restatements. *Accounting Horizons*, 19, 123-135.
- Ajayi, R. A., & Mehdian, S. (1994). Rational investors' reaction to uncertainty: Evidence from the world's major market. *Journal of Business Finance & Accounting*, 21, 533-545.
- Akhigbe, A., Kudla, R. J. & Madura, J. (2005). Why are some corporate earnings restatements more damaging? *Applied Financial Economics*, 15, 327-336.
- Aldamen, H., Hollindale, J., & Ziegelmayer, J. L. (2016). Female audit committee members and their influence on audit fees. *Accounting and Finance*, 1-33.
- Ali, M., Ng, Y. L., & Kulik, C. T. (2014). Board age and gender diversity: A test of competing linear and curvilinear predictions. *Journal of Business Ethics*, 125, 497–512.
- Andres, C., Betzer, A., van den Bongard, Inga, Haesner, C., & Theissen, E. (2013). The information content of dividend surprises: Evidence from Germany. *Journal of Business Finance & Accounting*, 40, 620-645.

- Archambeault, D. S., Dezoort, F. T., & Hermanson, D. R. (2008). Audit committee incentive compensation and accounting restatements. *Contemporary Accounting Research*, 25, 965-992.
- Armstrong, C. S., Larcker, D. F., Ormazabal, G., & Taylor, D. J. (2013). The relation between equity incentives and misreporting: The role of risk-taking incentives. *Journal of Financial Economics*, 109, 327-350.
- Arthaud-Day, M. L., Certo, S. T., Dalton, C. M., & Dalton, D. R. (2006). A changing of the guard: Executive and director turnover following corporate financial restatements. *Academy of Management Journal*, 49, 1119-1136.
- Assmann, H.-D. (2006). Ad hoc Publizitätspflichten im Zuge von Enforcementverfahren zur Überprüfung der Rechnungslegung nach §§ 342b ff. HGB und §§ 37n ff. WpHG. *Die Aktiengesellschaft*, 51, 261-272.
- Austin, P. C., & Steyerberg, E. W. (2015). The number of subjects per variable required in linear regression analyses. *Journal of Clinical Epidemiology*, 68, 627-636.
- Backhaus, K., Erichson, B., Plinke, W., & Weiber, R. (2016). *Multivariate Analysemethoden: Eine anwendungsorientierte Einführung*. Berlin, Heidelberg: Springer Gabler.
- Badertscher, B. A., & Burks, J. J. (2011). Accounting restatements and the timeliness of disclosure. *Accounting Horizons*, 25, 609-629.
- Badertscher, B. A., Hribar, S. P., & Jenkins, N. T. (2011). Informed trading and the market reactions to accounting restatements. *The Accounting Review*, 86, 1519-1547.
- BaFin (2013) *Emittentenleitfaden der Bundesanstalt für Finanzdienstleistungsaufsicht*. Retrieved from http://www.bafin.de/SharedDocs/Downloads/DE/Leitfaden/WA/dl_emittentenleitfaden_2013.pdf?__blob=publicationFile&v=5.
- Bai, H., Pan, W., Wang, L. L., & Ritchey, P. N. (2010). Another look at resampling: Replenishing small samples with virtual data through S-SMART. *Journal of Modern Applied Statistical Methods*, 9, 181-197.
- Ball, R., & Brown, P. (1968). An empirical evaluation of accounting income numbers. *Journal of Accounting Research*, 6, 159-178.
- Ballwieser, W., & Dobler, M. (2003). Bilanzdelikte: Konsequenzen, Ursachen und Massnahmen zu ihrer Vermeidung. *Die Unternehmung*, 57, 449-469.

- Baber, W. R., Gore, A. K., Rich, K. T., & Zhang, J. X. (2013). Accounting restatements, governance and municipal debt financing. *Journal of Accounting and Economics*, 56, 212-227.
- Baber, W. R., Liang, L., & Zhu, Z. (2012). Associations between internal and external corporate governance characteristics: Implications for investigating financial accounting restatements. *Accounting Horizons*, 26, 219-237.
- Bardos, K. S., Golec, J., & Harding, J. P. (2013). Litigation risk and market reaction to restatements. *The Journal of Financial Research*, 36, 19-42.
- Bardos, K. S., & Mishra, D. (2014). Financial restatements, litigation and implied cost of equity. *Applied Financial Economics*, 24, 51-71.
- Bartov, E., Givoly, D., & Hayn, C. (2002). The rewards to meeting or beating earnings expectations. *Journal of Accounting and Economics*, 33, 173-204.
- Bank for International Settlements (2015). Basel Committee on Banking Supervision -Corporate governance principles for banks. *Guidelines*.
- Becker, C. L., DeFond, M. L., Jiambalvo, J., & Subramanyam, K. R. (1998). The effect of audit quality on earnings management, *Contemporary Accounting Research*, 15, 1-24.
- Biggins J. V. (1999). Making board diversity work. *Corporate Board*, 20, 11–17.
- Blankley, A. I., Hurtt, D. N., & MacGregor, J. E. (2012). Abnormal audit fees and restatements. *Auditing: A Journal of Practice & Theory*, 31, 79-96.
- Blankley, A. I., Hurtt, D. N., & MacGregor, J. E. (2014). The relationship between audit report lags and future restatements. *Auditing: A Journal of Practice & Theory*, 33, 27-57.
- Bloomfield, D., & Shackman, J. (2008). Non-audit service fees, auditor characteristics and earnings restatements. *Managerial Auditing Journal*, 23, 125-141.
- Blue Ribbon Committee (BRC). 1999. *Reports and Recommendations of the Blue Ribbon Committee on improving the effectiveness of corporate audit committees*. Stamford: BRC.
- Blume, M. E. (1975). Betas and their regression tendencies. *Journal of Finance*, 30, 785-795.
- Boehmer, E., Musumeci, J., & Poulsen, A. B. (1991). Event-study methodology under conditions of event-induced variance. *Journal of Financial Economics*, 30, 253-272.
- Bouraoui, T. (2009). Stock spams: An empirical study on penny stock market. *International Review of Business Research Papers*, 5, 292-305.

- Bozhinov, V. (2017). *Shareholder wealth effects of women on boards promoting policies: Evidence from Germany*. (Working Paper). Location: SSRN.
- Bozhinov, V., Koch, V., Schank, T. (2017). Has the push for equal gender representation changed the role of women on German supervisory boards? (IZA Discussion Paper No. 11057). Retrieved from: <http://ftp.iza.org/dp11057.pdf>.
- Bredin, D., Hyde, S., Nitsche, D., & O'Reilly, G. (2009). European monetary policy surprises: The aggregate and sectoral stock market response. *International Journal of Finance and Economics*, 14, 156-171.
- Brückner, R., Lehmann, P., Schmidt, M.H., & Stehle, R. (2014). *Fama/French factors for Germany: Which set is best?* (Working Paper). Location: SSRN.
- Buhleier, C., & Krowas, N. (2011). *Lexikon: Prüfungsausschuss (Audit Committee)*. Bundesanzeiger Verlag. Retrieved from: <https://www.bundesanzeiger-verlag.de/betrifft-unternehmen/unternehmensrecht/aktuelles/news-details-fachbeitraege-unternehmensrecht/artikel/lexikon-pruefungsausschuss-audit-committee-5528.html>.
- Burns, N., & Kedia, S. (2006). The impact of performance-based compensation on misreporting. *Journal of Financial Economics*, 79, 35-67.
- Bushman, R., Chen, Q., Engel, E., & Smith, A. (2004). Financial accounting information, organizational complexity and corporate governance systems. *Journal of Accounting and Economics*, 37, 167–201.
- Busse von Colbe, W. (1996). Accounting and the business economics tradition in Germany. *European Accounting Review*, 5, 413-434.
- Byrne, D. (1961). Interpersonal attraction and attitude similarity. *Journal of Abnormal and Social Psychology*, 62, 713-7015.
- Byrne, D., Clore, G. L., Jr., & Worchel, P. (1966). Effect of economic similarity-dissimilarity on interpersonal attraction. *Journal of Personality and Social Psychology*, 4, 220-224.
- Byrne, D. (1971). *The attraction paradigm*. New York: Academic Press.
- Byrnes, N., McNamee, M., Brady, D., Lavelle, L., & Palmeri, C. (2002). Accounting in crisis – Reform is urgent. Here's what needs to be done. *BusinessWeek*, 3767, 44-48

- Callen, J. L., Livnat, J., & Segal, D. (2006). Accounting restatements: Are they always bad news for investors? *The Journal of Investing*, 15, 57-68.
- Callen, J. L., Robb, S. W. G., & Segal, D. (2008). Revenue manipulation and restatements by loss firms. *Auditing: A Journal of Practice & Theory*, 27, 1-29.
- Campbell, M. K., & Donner, A. (1989). Classification efficiency of multinomial logistic regression relative to ordinal logistic regression. *Journal of the American Statistical Association*, 84, 587-591.
- Campbell, K., & Mínguez-Vera, A. (2008). Gender diversity in the boardroom and firm financial performance. *Journal of Business Ethics*, 83, 435-451.
- Cao, Y., Myers, L. A., & Omer, T. C. (2012). Does company reputation matter for financial reporting quality? Evidence from restatements. *Contemporary Accounting Research*, 29, 956-990.
- Carcello, J. V., Neal, T. L., Palmrose, Z.-V., & Scholz, S. (2011). CEO involvement in selecting board members, audit committee effectiveness, and restatements. *Contemporary Accounting Research*, 28, 396-430.
- Carver, B. T. (2014). The retention of directors on the audit committee following an accounting restatement. *Journal of Accounting and Public Policy*, 33, 51-68.
- Ceresney (2013), *Financial Reporting and Accounting Fraud*, American Law Institute Continuing Legal Education, Retrieved from: <http://www.sec.gov/News/Speech/Detail/Speech/1370539845772#.UoUOEBCFdek>
- Chakravarthy, J., deHaan, E., & Rajgopal, S. (2014). Reputation repair after a serious restatement. *The Accounting Review*, 89, 1329-1363.
- Chaney, P. K., & Philipich, K. L. (2002). Shredded reputation: The cost of audit failure. *Journal of Accounting Research*, 40, 1221-1245.
- Chen, F. (2013). *Bondholder wealth effect surrounding bond offering announcements* (Working Paper).
- Chen, X., Cheng, Q., & Lo, A. K. (2013). Accounting restatements and external financing choices, *Contemporary Accounting Research*, 30, 750-779.
- Chen, Y., Eshleman, J. D., & Soileau, J. S. (2016). Board gender diversity and internal control weaknesses. *Advances in Accounting, incorporating Advances in International Accounting*, 33, 11-19.

- Cheng, Q., & Farber, D. B. (2008). Earnings restatements, changes in CEO compensation, and firm performance. *The Accounting Review*, 83, 1217-1250.
- Chi, Y.-H., Sun, H.-L. (2014). Reoccurrence of financial restatements: The effect of auditor change, management turnover and improvement of internal control. *Journal of Accounting and Finance*, 14, 28-44.
- Chin, C.-L., & Chi, H.-Y. (2009). Reducing restatements with increased industry expertise. *Contemporary Accounting Research*, 26, 729-765.
- Choi, J.-H., Kim, J.-B., & Zang, Y. (2010). Do abnormally high audit fees impair audit quality? *Auditing: A Journal of Practice & Theory*, 29, 115-140.
- Collins, D., Masli, A., Reitenga, A. L., & Sanchez, J. M. (2009). Earnings restatements, the Sarbanes-Oxley Act, and the disciplining of Chief Financial Officers. *Journal of Accounting, Auditing & Finance*, 24, 1-34.
- Collins, D., Reitenga, A. L., & Sanchez, J. M. (2008). The impact of accounting restatements on CFO turnover and bonus compensation: Does securities litigation matter? *Advances in Accounting*, 24, 162-171.
- Cornil, A. (2009). The impact of accounting restatements on a firm's cost of public debt. *Review of Business and Economics*, 2, 148-178.
- Corrado, C. J. (1989). A nonparametric test for abnormal security-price performance in event studies. *Journal of Financial Economics*, 23, 385-395.
- Craney, T. A., & Surles, J. G. (2002). Model-dependent variance inflation factor cutoff values. *Quality Engineering*, 14, 391-403.
- Crocker, J., & Major, B. (1989). Social stigma and self-esteem: The self-protective properties of stigma. *Psychological Review*, 96, 608-630.
- D'Agostino, R. B., A. J. Belanger, & R. B. D'Agostino Jr. (1990). A suggestion for using powerful and informative tests of normality. *American Statistician*, 44, 316-321.
- D'Avolio, G., Gildor, E., & Shleifer, A. (2001). Technology, Information Production, and Market Efficiency. *Economic Policy and the Information Economy*, 125-160.
- Datta, S. & Dhillon, U. S. (1993). Bond and stock market response to unexpected earnings announcements. *The Journal of Financial and Quantitative Analysis*, 28, 565-577.

- Dechow, P. M., & Dichev, I. D. (2002). The quality of accruals and earnings: the role of accrual estimation errors. *The Accounting Review*, 77, 35-59.
- Dechow, P. M., Ge, W., Larson, C. R., & Sloan, R. G. (2011). Predicting material accounting misstatements. *Contemporary Accounting Research*, 28, 17-82.
- Dechow, P. M., Sloan, R. G., & Sweeney, A. P. (1995). Detecting earnings management. *The Accounting Review*, 70, 193-225.
- Dechow, P. M., Sloan, R. G., & Sweeney, A. P. (1996). Causes and consequences of earnings manipulation: An analysis of firms subject to enforcement actions by the SEC. *Contemporary Accounting Research*, 13, 1-36.
- DeFond, M. L., & Jiambalvo, J. (1991). Incidence and circumstances of accounting errors. *The Accounting Review*, 66, 643-655.
- DeFond, M. L., & Jiambalvo, J. (1994). Debt covenant violation and manipulation of accruals. *Journal of Accounting and Economics*, 17, 145-176.
- Desai, H., Hogan, C. E., & Wilkins, M. S. (2006). The reputational penalty for aggressive accounting: Earnings restatements and management turnover. *The Accounting Review*, 81, 83-112.
- Desai, H., Krishnamurthy, S., & Venkataraman, K. (2006). Do short sellers target firms with poor earnings quality? Evidence from earnings restatements. *Review of Accounting Studies*, 11, 71-90.
- Dey, R. M., & Robin, A. (2012). The post-SOX evolution of the client portfolio of the second tier: A focus on restatement and internal control risk. *International Journal of Auditing*, 16, 308-334.
- De Vaus, D. (2002). *Analyzing social science data: 50 key problems in data analysis*. London: Sage Publications.
- Diaconis, P., & Efron, B. (1983). Computer-intensive methods in statistics. *Scientific American*, 248, 96-108.
- Donelson, D. C., Mcinnis, J. M., & Mergenthaler, R. D. (2013). Discontinuities and earnings management: Evidence from restatements related to securities litigation. *Contemporary Accounting Research*, 30, 242-268.
- Doyle, J. T., Ge, W., & McVay, S. (2007). Accruals quality and internal control over financial reporting. *The Accounting Review*, 82, 1141-1170.

- Dumontier, P., & Raffournier, B. (2002). Accounting and capital markets: A survey of the European evidence. *European Accounting Review*, 11, 119-151.
- Dye, R. A. (2001). An evaluation of “essays on disclosure” and the disclosure literature in accounting. *Journal of Accounting and Economics*, 32, 181-235.
- Dymke, B. M., & Walter, A. (2008). Insider trading in Germany – Do corporate insider exploit inside information? *Business Research*, 1, 188-205.
- Ecker, F., Francis, J., Olsson, P., & Schipper, K. (2013). Estimation sample selection for discretionary accruals models. *Journal of Accounting and Economics*, 56, 190-211.
- Efendi, J., Srivastava, A., & Swanson, E. P. (2007). Why do corporate managers misstate financial statements? The role of option compensation and other factors. *Journal of Financial Economics*, 85, 667-708.
- EFRAG (2014), *Getting a Better Framework, Complexity*, Bulletin.
- Efron, B., & Tibshirani, R. J. (1998). *An introduction to the bootstrap*. New York: Chapman & Hall, Inc.
- EQS Group (2014). *Annual Report 2013 of the EQS Group AG*. Retrieved from: http://germany.eqs.com/en/Investor_Relations/Reports_and_Figures/Reports
- Erchinger, H., & Melcher, W. (2008). Fehler in der internationalen Rechnungslegung – Bilanzierung, Prüfung und Berichterstattung (Teil 2)-. *Zeitschrift für internationale und kapitalmarktorientierte Rechnungslegung*, 11, 679-689.
- Ernstberger, J., Hitz, J. M., & Stich, M. (2012). *Why do firms produce erroneous IFRS financial statements?* (Working Paper). Location: SSRN.
- ESMA (2013), *Activity Report of the IFRS Enforcement activities in Europe in 2012*.
- ESMA (2015), *Public Statement improving the quality of disclosure in the financial statements*.
- Ettredge, M., Huang, Y., & Zhang, W. (2013). Restatement disclosure and management earnings forecasts. *Accounting Horizons*, 27, 347-369.
- Ettredge, M., Scholz, S., Smith, K. R., & Sun, Lili. (2010). How do restatements begin? Evidence of earnings management preceding restated financial reports. *Journal of Business Finance & Accounting*, 37, 332-355.

- Fama, E. F., & French, K. R. (1993). Common risk factors in the returns on stocks and bonds. *Journal of Financial Economics*, 33, 3-56.
- Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *Journal of Law & Economics*, 26, 301-325.
- Feldmann D. A., Read, W. J., & Abdolmohammadi, M. J. (2009). Financial restatements, audit fees, and the moderating effect of CFO turnover. *Auditing: A journal of Practice & Theory*, 28, 205-223.
- Files, R., Swanson, E. P., & Tse, S. (2009). Stealth disclosure of accounting restatements. *The Accounting Review*, 84, 1495-1520.
- Files, R., Sharp, N. Y., & Thompson, A. M. (2014). Empirical evidence on repeat restatements. *Accounting Horizons*, 28, 93-123.
- Firth, D. (1993). Bias reduction of maximum likelihood estimates. *Biometrika*, 80, 27-38.
- Flanagan, D. J., Muse, L. A., & O'Shaughnessy, K. C. (2008). An overview of accounting restatement activity in the United States. *International Journal of Commerce and Management*, 18, 363-381.
- Francis, J. R., Michas, P. N., & Yu, M. D. (2013). Office size of Big 4 auditors and client restatements. *Contemporary Accounting Research*, 30, 1626-1661.
- Frank, K. A. (2000). Impact of confounding variable on a regression coefficient. *Sociological Methods & Research*, 29, 147-194.
- Frankel, R. M., Johnson, M. F., & Nelson, K. K. (2002). The relation between auditors' fees for nonaudit services and earnings management. *The Accounting Review*, 77, 71-105.
- Freidank, C.-C., & Velte, P. (2012). Anbieterkonzentration am internationalen Prüfungsmarkt und Auswirkungen auf die Prüfungsqualität. *Zeitschrift für Corporate Governance*, 7, 26-34.
- Frischknecht, B. D., Eckert, C., Geweke, J., & Louviere, J. L. (2014). A simple method for estimating preference parameters for individuals. *International Journal of Research in Marketing*, 31, 35-48.
- Gabler (2018). Definition Corporate Governance. Retrieved from: <https://wirtschaftslexikon.gabler.de>
- German Corporate Governance Codex (GCGC). (2017). Retrieved from: http://www.dcgk.de/files/dcgk/usercontent/en/download/code/170214_Code.pdf.
- Gleason, C. A., Jenkins, N. T., & Johnson, W. B. (2008). The contagion effects of accounting restatements. *The Accounting Review*, 83, 83-110.

- Gomulya, D., & Boeker, W. (2014). How firms respond to financial restatements: CEO successors and external reactions. *Academy of Management Journal*, *57*, 1759-1785.
- Gordon, E. A., Henry E., Peytcheva, M., & Sun, L. (2013). Discretionary disclosure and the market reaction to restatements. *Review of Quantitative Finance and Accounting*, *41*, 75-110.
- Gordon, E. A., Henry E., Xudong, L., & Sun, L. (2014). Management guidance pre- and post-restatement. *Journal of Business Finance & Accounting*, *41*, 867-892.
- Gorton, G., & Schmid, F. A. (2004). Capital, labor, and the firm: a study of German codetermination. *Journal of the European Economic Association*, *2*, 863-905.
- Goto, S., Watanabe, M., & Xu, Y. (2008). Strategic disclosure and stock returns: Theory and evidence from US cross-listing. *The Review of Financial Studies*, *22*, 1585-1620.
- Graham, J. R., Li, S., & Qiu, J. (2008). Corporate misreporting and bank loan contracting. *Journal of Financial Economics*, *89*, 44-61.
- Greenland, S., & Mansournia, M. A. (2015). Penalization, bias reduction, and default priors in logistic and related categorical and survival regressions. *Statistics in Medicine*, *34*, 3133-3143.
- Griewel, E. (2006). *Ad hoc-Publizität und Zwischenberichterstattung im deutschen Corporate Governance-System: Eine Analyse vor dem Hintergrund europäischer Harmonisierungsbestrebungen*. Wiesbaden: Gabler.
- Griffin, P. A. (2003). A league of their own? Financial analysts' responses to restatements and corrective disclosures. *Journal of Accounting, Auditing & Finance*, *18*, 479-518.
- Guo, J., Huang, P., Zhang, Y., & Zhou, N. (2016). The effect of employee treatment policies on internal control weaknesses and financial restatements. *The Accounting Review*, *91*, 1167-1194.
- Happ, W., & Semler, J. (1998). Ad hoc-Publizität im Spannungsfeld von Gesellschaftsrecht und Anlegerschutz - Zum Begriff der „Tatsache“ in § 15 WpHG bei mehrstufigen Entscheidungsprozessen. *Zeitschrift für Unternehmens- und Gesellschaftsrecht*, *27*, 116-141.
- Harjoto, M. A., Laksmana, I., & Lee, R. (2015). The impact of demographic characteristics of CEOs and directors on audit fees and audit delay. *Managerial Auditing Journal*, *30*, 963-997.
- Harris, J., & Bromiley, P. (2007). Incentives to cheat: The influence of executive compensation and firm performance on financial misrepresentation. *Organization Science*, *18*, 350-367.

- Hauser, S. E. (2003). *Informationsverarbeitung am Neuen Markt*. Wiesbaden: Deutscher Universitäts-Verlag.
- Healy, P. M., & Palepu, K. G. (1993). The effect of firms' financial disclosure strategies on stock prices. *Accounting Horizons*, 7, 1-11.
- Healy, P. M., & Palepu, K. G. (2001). Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of Accounting and Economics*, 31, 405-440.
- Hecker, R., & Wild, A. (2012). The market effects of the German two-tier enforcement of financial reporting. *Tübinger Diskussionsbeiträge der Wirtschafts- und Sozialwissenschaftlichen Fakultät*, Nr. 334, 1-40.
- Heckman, J. J. (1979). Sample selection bias as a specification error. *Econometrica*, 47, 153-161.
- Hennes, K. M., Leone, A. J., & Miller, B. P. (2008). The importance of distinguishing errors from irregularities in restatement research: The case of restatements and CEO/CFO turnover. *The Accounting Review*, 83, 1487-1519.
- Hennes, K. M., Leone, A. J., & Miller, B. P. (2014). Determinants and market consequences of auditor dismissals after accounting restatements. *The Accounting Review*, 89, 1051-1082.
- Henry, E. (2008). Are investors influenced by how earnings press releases are written? *Journal of Business Communication*, 45, 363-407.
- Hillman, A. J., Shropshire, C., & Cannella, A. A. (2007). Organizational predictors of women on corporate boards. *Academy of Management Journal*, 50, 941-952.
- Hirschey, M., Smith, K. R., & Wilson, W. M. (2015). The timeliness of Restatement disclosures and financial reporting credibility. *Journal of Business Finance & Accounting*, 42, 826-859.
- Hitz, J.-M., Ernstberger, J., & Stich, M. (2012) Enforcement of accounting standards in Europe: Capital-market-based evidence for the two-tier mechanism in Germany. *European Accounting Review*, 21, 253-281.
- Hofmann, S. (2008). *Handbuch Anti-Fraud-Management: Bilanzbetrug erkennen – vorbeugen – bekämpfen*. Berlin: Erich Schmidt Verlag.
- Hogg, M. A., & Abrams, D. (1988). *Social identifications: A social psychology of intergroup relations and group processes*. London: Routledge.

- Hosmer, D. W., Lemeshow, S., & Sturdivant, R. X. (2013) *Applied Logistic Regression*. Hoboken, New Jersey: John Wiley & Sons.
- Houque, M. N., Van Zijl, T., Dunstan, K., & Karim, A.K.M. W. (2012). The effect of IFRS adoption and investor protection on earnings quality around the world. *The International Journal of Accounting*, 47, 333-355.
- Hribar, P., & Jenkins, N. T. (2004). The effect of accounting restatements on earnings revision and the estimated cost of capital. *Review of Accounting Studies*, 9, 337-356.
- Huang, T.-C., Huang, H.-W., & Lee, C.-C. (2014). Corporate executive's gender and audit fees. *Managerial Auditing Journal*, 29, 527-547.
- Huang, Y., & Scholz, S. (2012). Evidence on the association between financial restatements and auditor resignations. *Accounting Horizons*, 26, 439-464.
- Huber, P. J. (1967). The behavior of maximum likelihood estimates under nonstandard conditions. In LeCam, L. M. & Neyman, J. (Eds.), *Proceedings of the Fifth Berkeley Symposium on Mathematical Statistics and Probability* (pp. 221-233). University of California Press.
- Huwer, W. (2008). *Der Prüfungsausschuss des Aufsichtsrats*. Berlin: Duncker & Humblot.
- IASB (2013). IASB Press Release: *IASB announces new staff group to focus on Disclosure Initiative 2013*, Retrieved from: <http://www.ifrs.org/Alerts/PressRelease/Pages/IASB-announces-new-staff-group-to-focus-on-Disclosure-Initiative-October-2013.aspx>
- IASB (2016). IASB Work Plan 2017 – 2021.
- Irani, A. J., Tate, S. L., & Xu, L. (2015). Restatements: Do they affect auditor reputation for quality? *Accounting Horizons*, 29, 829-851.
- Itti, L., & Baldi, P. (2009). Bayesian surprise attracts human attention. *Vision Research*, 49, 1295-1306.
- Ittonen, K., Miettinen, J., & Vähämaa, S. (2010). Does female representation on audit committees affect audit fees? *Quarterly Journal of Finance and Accounting*, 49, 113-139.
- Jennings, R. (1987). Unsystematic security price movements, management earnings forecasts, and revisions in consensus analyst earnings forecasts. *Journal of Accounting Research*, 25, 90-110.
- Joecks, J. (2013). Gender diversity in the boardroom: What exactly constitutes a critical mass? *Journal of Business Ethics*, 118, 61-72.

- Johnson, J. W. (2000). A heuristic method for estimating the relative weight of predictor variables in multiple regression. *Multivariate Behavioral Research*, 35, 1–19.
- Johnson, J. W., & LeBreton, J. M. (2004). History and use of relative importance indices in organizational research. *Organizational Research Methods*, 7, 238-257.
- Johnson, W. B., & Zhao, R. (2012). Contrarian share price reactions to earnings surprises. *Journal of Accounting, Auditing & Finance*, 27, 236-266.
- Kanter, R. M. (1977). *Men and women of the corporation*. New York: Basic Books.
- Karpoff, J. M., & Lott, J. R. (1993). The reputational penalty firms bear from committing criminal fraud. *Journal of Law and Economics*, 36, 757-802.
- Karpoff, J. M., Scott Lee, D., & Martin, G. S. (2008). The cost of firms of cooking the books. *The Journal of Financial and Quantitative Analysis*, 43, 581-611.
- Kasznik, R., & McNichols, M. F. (2002). Does meeting earnings expectations matter? Evidence from analyst forecast revisions and share prices. *Journal of Accounting Research*, 40, 727-759.
- Kinney, W. R., Burgstahler, D., & Martin, R. (2002). Earnings surprise ‘materiality’ as measured by stock returns. *Journal of Accounting Research*, 40, 1297-1329.
- Kinney, W. R., & McDaniel, L. S. (1989). Characteristics of firms correcting previously reported quarterly earnings. *Journal of Accounting and Economics* 11, 71-93.
- Kinney, W. R., Palmrose, Z.-V., & Scholz, S. (2004). Auditor independence, non-audit services, and restatements: Was the U.S. government right? *Journal of Accounting Research*, 42, 561-588.
- Kirchhoff, K. R. (2009). Grundlagen der IR. In K.R. Kirchhoff & M. Piwinger (Eds.), *Praxishandbuch Investor Relations: Das Standardwerk der Finanzkommunikation* (pp. 35-62). Wiesbaden: Gabler.
- Kirsch, A. (2017). (in press) The gender composition of corporate boards: A review and research agenda. *Leadership Quarterly*.
- Köhler, A. G. (2005). Audit committees in Germany – Theoretical reasoning and empirical evidence. *Schmalenbach Business Review*, 57, 229-252.
- Kothari, S. P. (2001). Capital markets research in accounting. *Journal of Accounting and Economics*, 31, 105-231.

- Kothari, S. P., Shu, S. & Wysocki, P. D. (2009). Do managers withhold bad news? *Journal of Accounting Research*, 47, 241-276.
- Kryzanowski, L., & Zhang, Y. (2013). Financial restatements and Sarbanes–Oxley: Impact on Canadian firm governance and management turnover. *Journal of Corporate Finance*, 21, 87-105.
- Kullback, S. (1959). *Information theory and statistics*. New York: Wiley.
- Lally, M. (1998). An examination of Blume and Vasicek betas. *The Financial Review*, 33, 183-198.
- Land, J. K. (2010). CEO turnover around earnings restatements and fraud. *Pacific Accounting Review*, 22, 180-198.
- Larcker, D. F., & Richardson, S. A. (2004). Fees paid to audit firms, accrual choices, and corporate governance. *Journal of Accounting Research*, 42, 625-658.
- Larcker, D. F., Richardson, S. A., & Tuna, I. (2007). Corporate governance, accounting outcomes, and organizational performance. *The Accounting Review*, 82, 963-1008.
- Larcker, D. F., & Rusticus, T. O. (2010). On the use of instrumental variables in accounting research. *Journal of Accounting and Economics*, 49, 186-205.
- Lee, C.-W. J., Li, L. Y., & Yue, H. (2006). Performance, growth and earnings management. *Review of Accounting Studies*, 11, 305-334.
- Leis, J. (2009). Die neue Ad-hoc-Publizität. In K.R. Kirchhoff & M. Piwinger (Eds.), *Praxishandbuch Investor Relations: Das Standardwerk der Finanzkommunikation* (pp. 414-432). Wiesbaden: Gabler.
- Lennox, C. S., Francis, J. R., & Wang, Z. (2012). Selection models in accounting research. *The Accounting Review*, 87, 589-616.
- Lennox, C., & Li, B. (2014). Accounting misstatements following lawsuits against auditors. *Journal of Accounting and Economics*, 57, 58-75.
- Leone, A. J., & Liu, M. (2010). Accounting irregularities and executive turnover in founder-managed firms. *The Accounting Review*, 85, 287-314.
- Lessmann, P. (2017). Bewährungsstrafen nach Teldafax-Pleite; Zwei Ex-Vorstände des Billigstromanbieters werden unter anderem wegen Insolvenzverschleppung verurteilt. *Berliner Morgenpost*, 60, 6.
- Liberty, S. E., & Zimmerman, J. L. (1986). Labor union contract negotiations and accounting choices. *The Accounting Review*, 61, 692-712.

- Lin, J. W., Li, J. F., & Yang, J. S. (2006). The effect of audit committee performance on earnings quality. *Managerial Auditing Journal*, 21, 921-933.
- Liu, L.-L., Raghunandan, K., & Rama, D. (2009). Financial restatements and shareholder ratifications of the auditor. *Auditing: A Journal of Practice and Theory*, 28, 225-240.
- Lobo, G. J., & Zhao, Y. (2013). Relation between audit effort and financial report misstatements: Evidence from quarterly and annual restatements. *The Accounting Review*, 88, 1385-1412.
- MacKinlay, A. C. (1997). Event studies in Economics and Finance. *Journal of Economic Literature*, 35, 13-39.
- Maddala, G. S. (1991). A perspective on the use of limited-dependent and qualitative variables models in accounting research. *The Accounting Review*, 66, 788-807.
- Mande, V., & Son, M. (2013). Do financial restatements lead to auditor changes? *Auditing: A Journal of Practice & Theory*, 32, 119-145.
- Marciukaityte, D., Szewczyk, S. H., & Varma, R. (2009). Voluntary vs. forced financial restatements: The role of board independence. *Financial Analysts Journal*, 65, 61-76.
- Martin, P. Y., & Shanahan, K. A. (1983). Transcending the effects of sex composition in small Groups. *Social Work with Groups*, 6, 19-32.
- McNally, W. J., & Smith, B.F. (2007) Long-run returns following open market share repurchases. *Journal of Banking & Finance*, 31, 703-717.
- McNemar, Q. (1947). Note on the sampling error of the 'test' difference between correlated proportions or percentages. *Psychometrika*, 12, 153-157.
- McWilliams, A., & Siegel, D. (1997) Event studies in management research: Theoretical and empirical issues. *Academy of Management Journal*, 40, 626-657.
- Moriarty, G. B., & Livingston, P. B. (2001). Quantitative measures of the quality of financial reporting. *Financial Executive*, 53-56.
- Myers, L. A., Scholz, S., & Sharp, N. Y. (2013) *Restating under the radar? Determinants of restatement disclosure choices and the related market reactions* (Working Paper). Location: SSRN.
- Newton, N. J., Wang, D., & Wilkins, M. S. (2013). Does a lack of choice lead to lower quality? Evidence from auditor competition and client restatements. *Auditing: A Journal of Practice & Theory*, 32, 31-67.

- Nguyen, D., & Puri, T. N. (2014). Information asymmetry and accounting restatement: NYSE-AMEX and NASDAQ evidence, *Review of Quantitative Finance and Accounting*, 43, 211-244.
- Nietsch, M. (2005). Schadensersatzhaftung wegen Verstoßes gegen Ad-hoc-Publizitätspflichten nach dem Anlegerschutzverbesserungsgesetz. *Betriebs-Berater*, 60, 785-790.
- O'Brien, P. C. (1988). Analysts' forecast as earnings expectations. *Journal of Accounting and Economics*, 10, 53-83.
- Owers, J. E., Lin, C.-M., & Rogers, R. C. (2002). The informational content and valuation ramifications of earnings restatements. *International Business & Economics Research Journal*, 1, 71-87.
- Palmrose, Z.-V., Richardson, V. J., & Scholz, S. (2004). Determinants of market reactions to restatement announcements. *Journal of Accounting and Economics*, 27, 59-89.
- Park, J. C., & Wu, Q. (2009). Financial restatements, cost of debt and information spillover: Evidence from the secondary loan market. *Journal of Business Finance & Accounting*, 36, 1117-1147.
- Patell, J. M. (1976). Corporate forecasts of earnings per share and stock price behavior: Empirical tests. *Journal of Accounting Research*, 14, 246-276.
- Pellens, B., Fülber, R. U., Gassen, J., & Sellhorn, T. (2014). *Internationale Rechnungslegung: IFRS 1 bis 13, IAS 1 bis 41, IFRIC-Interpretationen, Standardentwürfe*. Stuttgart: Schäffer-Poeschel.
- Petersen (2017), *Schlecker vor Gericht*, Retrieved from: <http://www.heute.de/prozess-gegen-unternehmerfamilie-schlecker-beginnt-46683798.html>.
- Peterson, K. (2012). Accounting complexity, misreporting, and the consequences of misreporting. *Review of Accounting Studies*, 17, 72-95.
- Pfeffer, J. (1972). Merger as a Response to Organizational Interdependence. *Administrative Science Quarterly*, 17, 382-394.
- Pfeffer, J., & Salancik, G. (1978). *The External Control of Organizations: A Resource Dependence Perspective*. New York: Harper & Row Publishers.
- Plumlee, M., & Yohn, T. L. (2010). An analysis of the underlying causes attributed to restatements. *Accounting Horizons*, 24, 41-64.
- Plumlee, M. A., & Yohn, T. L. (2015). An examination of management's regulatory filing choices surrounding restatements. *Journal of Management Accounting Research*, 27, 121-144.

- Post, C., & Byron, K. (2015). Women on boards and firm financial performance: A Meta-Analysis. *Academy of Management Journal*, 58, 1546-1571.
- Princeton University Library (2007). *Data and Statistical Services: Introduction to Regression*. Retrieved from: http://dss.princeton.edu/online_help/analysis/regression_intro.htm.
- Pucheta-Martínez, M. C., Bel-Oms, I., & Olcina-Sempere, G. (2016). Corporate governance, female directors and quality of financial information. *Business Ethics: A European Review*, 25, 363-385.
- Purda, L. D. (2007). Stock market reaction to anticipated versus surprise rating changes. *The Journal of Financial Research* 30, 301-320.
- Rachev, S. T., Hsu, J. S. J., Bagasheva, B. S., & Fabozzi, F. J. (2008). *Bayesian Methods in Finance*. Hoboken, NJ: John Wiley & Sons.
- Raghunandan, K., Read, W. J. & Whisenant, J. S. (2003). Initial evidence on the association between nonaudit fees and restated financial statements. *Accounting Horizons*, 17, 223-234.
- Rhee, E. Y., & Fiss, P. C. (2014). Framing controversial actions: Regulatory focus, source credibility, and stock market reaction to poison pill adoption. *Academy of Management Journal*, 57, 1734-1758.
- Richardson, S. (2003). Earnings quality and short sellers. *Accounting Horizons, Supplement*, 49-61.
- Richardson, S., Tuna, K., & Wu, M. (2002). *Predicting earnings management: The case of earnings restatements* (Working Paper). Location: SSRN.
- Robbani, M. G., Anantharaman, S., & Bhuyan, R. (2006). Financial restatements and their impact on stock prices: Evidence from the US financial markets. *Southwest Business & Economics Journal*, 14, 53-62.
- Romanus, R. N., Maher, J. J., & Fleming, D. M. (2008). Auditor industry specialization, auditor changes, and accounting restatements. *Accounting Horizons*, 22, 389-413.
- Ross, S. A. (1977). The determination of financial structure: The incentive-signaling approach. *The Bell Journal of Economics*, 8, 23-40.
- Royston, P. (1991). Sg3.5: Comment on sg3.4 and an improved D'Agostino test. *Stata Technical Bulletin*, 3, 23-24.
- Ruhnke, K., & Simons, D. (2012). *Rechnungslegung nach IFRS und HGB*. Stuttgart: Schäffer-Poeschel.

- Salavei, K. (2010). Implications of financial statement restatements of different items. *Applied Financial Economics*, 20, 879–890
- Schmidt, J., & Wilkins, M. S. (2013). Bringing darkness to light: The influence of auditor quality and audit committee expertise on the timeliness of financial statement restatement disclosures. *Auditing: A Journal of Practice & Theory*, 32, 221-244.
- Scholes, M., & Williams, J. (1977). Estimating betas from nonsynchronous data. *Journal of Financial Economics*, 5, 309-327.
- Schwartz-Ziv, M. (2017). Gender and board activeness: The role of a critical mass. *Journal of Financial and Quantitative Analysis*, 52, 751-780.
- Seetharaman, A., Sun, Y., & Wang, W. (2011). Tax-related financial statement restatements and auditor-provided tax services. *Journal of Accounting, Auditing & Finance*, 26, 677-698.
- Shin, H. S. (2003). Disclosure and assets returns. *Econometrica*, 71, 105-133.
- Shin, H., Xu, R. Z., & Lacina, M. (2011). Auditor characteristics and early accounting error detection: Evidence from financial restatements. *Journal of Accounting and Finance*, 11, 36-52.
- Shleifer, A., & Vishny, W. (1997). A survey of corporate governance. *Journal of Finance*, 52, 737-783.
- Shleifer, A., & Vishny, W. (2003). Stock market driven acquisitions. *Journal of Financial Economics*, 70, 295–311.
- Siebel, U. R. (2002). Insidergeschäfte mit Anleihen. *Zeitschrift für Bank- und Kapitalmarktrecht*, 2, 795-801.
- Skinner, D. J. (1994). Why firms voluntarily disclose bad news. *Journal of Accounting Research*, 32, 38-60.
- Soderstrom, N. S., & Sun, K. J. (2007). IFRS adoption and accounting quality: A review. *European Accounting Review*, 16, 675-702.
- Srinidhi, B., Gul, F. A., & Tsui, J. (2011). Female directors and earnings quality. *Contemporary Accounting Research*, 28, 1610-1644.
- Srinivasan, S. (2005). Consequences of financial reporting failure for outside directors: Evidence from accounting restatements and audit committee members. *Journal of Accounting Research*, 43, 291-334.

- Srinivasan, S., Wahid A. S., & Yu, G. (2015). Admitting mistakes: Home country effect on the reliability of restatement reporting. *The Accounting Review*, *90*, 1201-1240.
- Sue, S.-H., Chin, C.-L., & Chan, A. L.-C. (2013). Exploring the causes of accounting restatements by family firms. *Journal of Business Finance & Accounting*, *40*, 1068-1094.
- Sun, J., Liu, G., & Lan, G. (2011). Does female directorship on independent audit committees constrain earnings management? *Journal of Business Ethics*, *99*, 369-382.
- Tajfel, H. (1978). Social categorization, social identity, and social comparison. In H. Tajfel (Ed.), *Differentiation between social groups: Studies in the social psychology of intergroup relations* (pp. 61-76). London: Academic Press.
- Tajfel, H., & Turner, J. (1986). The Social Identity Theory of Intergroup Behavior. In S. Worchel, & W. Austin (Ed.) *Psychology of Intergroup Relations* (pp. 7-24). Chicago: Nelson-Hall.
- Thiruvadi, S., & Huang, H.-W. (2011). Audit committee gender differences and earnings management. *Gender in Management: An International Journal*, *26*, 483-498.
- Thompson, J. H., & McCoy, T. L. (2008). An analysis of restatements due to errors and auditor changes by fortune 500 companies. *Journal of Legal, Ethical and Regulatory Issues*, *11*, 45-57.
- Timmerman, T. A. (2000). Racial Diversity, Age Diversity, Interdependence, and Team Performance, *Small Group Research*, *31*, 592-606.
- Tonidandel, S., & LeBreton J. M. (2011). Relative importance analysis: A useful supplement to regression analysis. *Journal of Business and Psychology*, *26*, 1-9.
- Torres-Reyna, O. (2007). Panel data analysis fixed and random effects using Stata (v. 4.2). Data & Statistical Services, Princeton University. Retrieved from <https://www.princeton.edu/~otorres/Panel101.pdf>
- Turner, J. (1987). *Rediscovering the social group: A social categorization theory*. Cambridge: Blackwell.
- US-General Accounting Office. (2002). Financial Statement Restatements — Trends, Market Impacts, Regulatory Responses, and Remaining Challenges (GAO-03-138).
- Vafeas, N. (1999). Board meeting frequency and firm performance. *Journal of Financial Economics*, *53*, 113-142.

- Van Tendeloo, B., & Vanstraelen, A. (2005). Earnings Management under German GAAP versus IFRS. *European Accounting Review*, *14*, 155-180.
- Velte, P. (2009). Die Implementierung von Prüfungsausschüssen/Audit Committees des Aufsichtsrats/Supervisory board mit unabhängigen und finanzkompetenten Mitgliedern. *Journal für Betriebswirtschaft*, *59*, 123-174.
- Verriest, A., Gaeremynck, A., & Thornton, D. B. (2013). The impact of corporate governance on IFRS adoption choices. *European Accounting Review*, *22*, 39-77.
- Wagenhofer, A., & Ewert, R. (2015). *Externe Unternehmensrechnung*. Berlin Heidelberg: Springer.
- Wang, T.-S., Lin, Y.-M., & Chao, C.-F. (2013). Board independence, executive compensation and restatement. *Applied Financial Economics*, *23*, 963-975.
- Wang, Y.-F. (2013). Internal control and financial quality: Evidence from post-SOX restatements. *Accounting & Taxation*, *5*, 19-28.
- Wang, Y.-F., & Chou, L.-T. L. (2011). Impact of restatement characteristics and subsequent earnings management on post-SOX executive turnover, *Review of Business*, *31*, 24-50.
- Wang, Y.-F., & Huang, Y.-T. (2014). Types of restatement decisions and ex-ante red flags of internal control quality. *Global Journal of Business Research*, *8*, 1-8.
- Watts, R. L. (1978). Systematic 'abnormal' returns after quarterly earnings announcements. *Journal of Financial Economics*, *6*, 127-150.
- Wegge, J., Roth, C., Neubach, B., Schmidt, K. H., & Kanfer, R. (2008). Age and gender diversity as determinates of performance and health in public organization: The role of task complexity and group size. *Journal of Applied Psychology*, *93*, 1301–1313.
- Weisenfeld, L., Seshi, G., & Ruf, B. (2012). Restated financial statements and type of internal control disclosures. *Journal of Finance and Accountancy*, 1-24.
- Whisenant, S., Sankaraguruswamy, S., & Raghunandan, K. (2003). Evidence on joint determination of audit and non-audit fees. *Journal of Accounting Research*, *41*, 721-744.
- White, H. (1980). A heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroskedasticity. *Econometrica*, *48*, 817-838.
- Wiedman, C. I., & Hendricks, K. B. (2013). Firm accrual quality following restatements: A signaling view. *Journal of Business Finance & Accounting*, *40*, 1095-1125.

- Williams, K. Y. & O'Reilly, C. A. (1998). Demography and diversity in organizations: A review of 40 years of research. *Research in Organizational Behavior*, 20, 77-140.
- Williams, R. (2016). *Marginal effects for continuous variables*. Retrieved from: <https://www3.nd.edu/~rwilliam/stats3/Margins02.pdf>.
- Wilson, W. M. (2008). An empirical analysis of the decline in the information content of earnings following restatements. *The Accounting Review*, 83, 519-548.
- Xu, T., Li, D., & Jin, J. J. (2010). Short term market reaction to earnings restatements: Value stocks vis-a-vis glamour stocks. *Academy of Accounting and Financial Studies Journal*, 14, 55-73.
- Xu, T., Najand, M., & Ziegenfuss, D. (2006). Intra-Industry effects of earnings restatements due to accounting irregularities. *Journal of Business Finance & Accounting*, 33, 696-714.
- Xu, S. X., & Zhang, X. (2013). Impact of Wikipedia on market information environment: Evidence on management disclosure and investor reaction. *MIS Quarterly*, 37, 1043-1068.
- Young, C.-S., Tsai, L.-C., & Hsu, H.-W. (2008). The effect of controlling shareholders' excess board seats control on financial restatements: evidence from Taiwan. *Review of Quantitative Finance and Accounting*, 30, 297-314.
- Zhang, X., Wei, J.-T., & Wu, H.-H. (2013). Forced financial information restatements and management turnover: Market discipline and large family shareholders' intervention in an emerging economy, *Asia Pacific Journal of Management*, 30, 1005-1029.
- Zitzmann, A., Fischer, T., & Decker, T. (2009). Rechtsfragen der IR. In K.R. Kirchhoff & M. Piwinger (Eds.), *Praxishandbuch Investor Relations: Das Standardwerk der Finanzkommunikation* (pp. 93-137). Wiesbaden: Gabler.