

# **TECHNISCHE UNIVERSITÄT MÜNCHEN**

Fakultät für Wirtschaftswissenschaften  
Full Professorship Financial Accounting

## **Essays on Audit Failures, Restatements and Audit Market Structure**

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Vollständiger Abdruck der von der Fakultät für Wirtschaftswissenschaften der Technischen Universität München zur Erlangung des akademischen Grades eines Doktors der Wirtschaftswissenschaften (Dr. rer. pol.) genehmigten Dissertation.

Vorsitzender: Prof. Dr. Reiner Braun

Prüfer der Dissertation:

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3. Prof. Dr. Alwine Mohnen (mündl. Prüfung)

Die Dissertation wurde am 23.05.2019 bei der Technischen Universität München eingereicht und durch die Fakultät für Wirtschaftswissenschaften am 15.09.2019 angenommen.



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## List of Abbreviations

AAA	American Accounting Association
AAER	Accounting and Auditing Enforcement Release
ABl. EG	Amtsblatt der Europäischen Gemeinschaft
ABl. EU	Amtsblatt der Europäischen Union
Abs.	Absatz
Abschn.	Abschnitt
a.F.	alte Fassung
AG	Aktiengesellschaft
AktG	Aktiengesetz
AReG	Abschlussprüfungsreformgesetz
Art.	Artikel
BaFin	Bundesanstalt für Finanzdienstleistungsaufsicht
Bd.	Band
BeckOK	Beck'scher Online-Kommentar
BFH	Bundesfinanzhof
BGBI.	Bundesgesetzblatt
Big 4	PricewaterhouseCoopers, EY, KPMG, and Deloitte
BilMoG	Bilanzrechtsmodernisierungsgesetz
BilReG	Bilanzrechtsreformgesetz
bspw.	Beispielsweise
BS WP/vBP	Berufssatzung für Wirtschaftsprüfer/vereidigte Buchprüfer

BVR	Bundesverband der Deutschen Volksbanken und Raiffeisenbanken e.V.
bzgl.	bezüglich
bzw.	beziehungsweise
CDAX	Composite DAX
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CPA	Certified Public Accountant
CRR	Capital Requirement Regulation
DAX	Deutscher Aktienindex
DCGK	Deutsche Corporate Governance Kodex
DGRV	Deutsche Genossenschafts- und Raiffeisenverband e.V.
d.h.	das heißt
DOI	Digital Object Identifier
DPR	Deutsche Prüfstelle für Rechnungslegung
DRS	Deutscher Rechnungslegungs Standard
EAA	European Accounting Association
EARNet	European Auditing Research Network
ed.	edition
eds.	editors
eG	eingetragene Genossenschaft
EG	Europäische Gemeinschaft
e.g.	exempli gratia
EHUG	Gesetz über elektronische Handelsregister und Genossenschaftsregister sowie das Unternehmensregister

et al.	et alii / et aliae
EU	Europäische Union
EUR	Euro
e.V.	eingetragener Verein
EWG	Europäische Wirtschaftsgemeinschaft
f.	folgende
ff.	fortfolgende
Fn.	Fußnote
FREP	Financial Reporting Enforcement Panel
FFSA	Federal Financial Supervisory Authority
GAAP	Generally Accepted Accounting Principles
gem.	gemäß
GenG	Genossenschaftsgesetz
GenTraG	Gesetz zum Bürokratieabbau und zur Förderung der Transparenz bei Genossenschaften
ggf.	gegebenenfalls
GmbH	Gesellschaft mit beschränkter Haftung
GmbHG	GmbH-Gesetz
GoB	Grundsätze ordnungsgemäßer Buchführung
grds.	grundsätzlich
GuV	Gewinn- und Verlustrechnung
H	hypothesis
HGB	Handelsgesetzbuch
IAS	International Accounting Standards
IDW	Institut der Wirtschaftsprüfer in Deutschland e.V.

IDW RS HFA	IDW Stellungnahmen zur Rechnungslegung des Hauptfachausschusses
i.e.	id est
IFRS	International Financial Reporting Standards
insb.	insbesondere
i. S.	im Sinne
i.V.m.	in Verbindung mit
Jr.	Junior
KapGes.	Kapitalgesellschaften
KWG	Kreditwesengesetz
Mio.	Million
Mrd.	Milliarde
Nr.	Nummer
OLS	Ordinary Least Squares
PCAOB	Public Company Accounting Oversight Board
PhD	Doctor of Philosophy
PIE	Public Interest Entity / Unternehmen von öffentlichem Interesse
RGBl.	Reichsgesetzblatt
Rn.	Randnummer
ROA	Return on Assets
S.	Seite
SEC	United States Securities and Exchange Commission
SIC	Standard Industry Classification
sog.	sogenannt

u.a.	unter anderem
US	United States
USA	United States of America
vgl.	vergleiche
vs.	versus
WpHG	Wertpapierhandelsgesetz
WPO	Wirtschaftsprüferordnung
z.B.	zum Beispiel

# **1 Introduction**

## **1.1 Importance of Auditing**

### **1.1.1 Background**

Since the beginning of the 21st century, various accounting scandals have led to a loss of public trust in capital markets (Eilifsen and Willekens 2008), in particular raising concerns about the credibility of corporate financial disclosures (Barret, Ante, Symonds, and McNamee 2002; Mercer 2004). Some of the most prominent accounting scandals among companies were, for instance, Enron, WorldCom for the United States (US), ComRoad for Germany or Kanebo for Japan (Jones 2011).

In general, primary users of financial statements are considered to be investors as well as creditors (Carcello, Hermanson, and McGrath 1992). As financial statements provide financial information about the company investors may use financial statements as a source to make their investment decisions (Wagenhofer and Ewert 2015). The auditing of financial statements increases the credibility of information provided in those financial statements, therefore supporting an efficient capital allocation (Dyckhoorn and Sinning 1982).

The loss of public trust in capital markets potentially threatening the efficient allocation of capital may be regained by enacting new auditing regulations with the purpose of restoring trust in the audit itself (Eilifsen and Willekens 2008; DeFond and Francis 2005). Restoring trust in the auditing profession may have a positive impact on the credibility of audited financial statements. Further, enacting new auditing regulations may be an attempt to prevent future accounting scandals avoiding further damage being inflicted upon the auditing profession, standard setters, regulators and, in particular, shareholders (Ball 2009).



An example for the increase in regulation after accounting scandals was the introduction of the Sarbanes-Oxley Act in the US in 2002 (DeFond and Francis 2005) pursuing one of its main objectives to increase the independence of audit firms (Linck, Netter, and Yang 2009), thus increasing audit quality (PCAOB 2011) and the credibility of financial statements (Khurana and Raman 2004). The US also introduced the Public Company Accounting Oversight Board (PCAOB) as an institution being responsible for regulating and overseeing auditing and introduced stricter rules on, for instance, the provision of non-audit services (Coates 2007) like assurance services, business advisory services or tax services (Kinney, Palmrose, and Scholz 2004).

### 1.1.2 The Concept of Auditing

The auditor's<sup>1</sup> task, in general, is to approve the correct application of General Accepted Accounting Standards (GAAP) in corporate financial statements and to inform the users of financial statements about any issues, for instance, potentially threatening the going concern of a company (Marten, Quick, and Ruhnke 2015). The assurance provided by an auditor helps to reduce the risk of financial statements containing false information, thus improving resource allocation including, for instance, contracting efficiency (Dyckhoorn and Sinning 1982; DeFond and Zhang 2014).

Audits are conducted by hierarchically organized teams of auditors. At the top of the hierarchically organized audit teams are the lead and concurring auditors, each of them bearing the responsibility of the audit engagement (Downar, Ernstberger, and Koch 2017). In Germany, in particular, the lead auditor is conducting the audit while the concurring auditor is mainly reviewing the work done by the audit team, his/her role being comparable to an engagement quality reviewer in the US (Downar et al. 2017; Wirtschaftsprüferkammer

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<sup>1</sup> Auditor refers to either an audit firm or an individual auditor.

2007).<sup>2</sup> The composition of the audit team may have an influence on the provided audit quality (Carcello et al. 1992). For example, the geographical distance between the lead and concurring auditor improves the mutual monitoring through greater distance, thus providing higher audit quality (Downar et al. 2017).

### 1.1.3 The Concept of Audit Quality

One of the first definitions of audit quality is provided by DeAngelo (1981) who defines audit quality as the joint probability of detecting and reporting a client's accounting system violation by the auditor reflecting a pass-fail dichotomy of audit quality. However, the oversimplification of defining audit quality as a binary variable fails to capture the wide variety of responsibilities an auditor bears during an audit (DeFond and Zhang 2014). Thus, DeFond and Zhang (2014) define (higher) audit quality as a greater assurance of financial statements truthfully reporting the firm's actual economic situation by the respective auditor, thus audit quality being a part of financial reporting quality<sup>3</sup>. In contrast to the definition of audit quality by DeAngelo (1981) DeFond and Zhang (2014) view audit quality rather as a continuum within legally defined boundaries.

A comprehensive understanding of audit quality is challenging as it is subject to various factors. In his seminal publication, Francis (2011) identifies five main dimensions influencing audit quality. These are (1) audit inputs, (2) audit processes, (3) audit firms, (4) audit industry and audit markets and (5) institutions. These dimensions are subsequently explained based on Francis (2011). First, audit inputs, for instance, reflect the choice of personnel with certain expertise and experience and the choice of testing procedures providing useful evidence for the audit, the latter being used by the audit team to assess the

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<sup>2</sup> For more details, see also § 38 paragraph 2 of the Professional Charter for Professional Accountants in Public Practice (*Satzung für Wirtschaftsprüfer/vereidigte Buchprüfer* (BS WP/vBP)).

<sup>3</sup> See section 1.2.1 for a more comprehensive explanation of financial reporting quality.

collected evidence leading to the auditor's report (e.g., Carey and Simnett 2006). Second, audit processes reflect, for instance, the functioning of the audit team with respect to decision-making, planning, control mechanisms, and risk assessment (e.g., Knechel, Rouse, and Schelleman 2009). Third, audit firms may have an impact on the audit, as they are responsible for training their personnel as well as providing appropriate incentives for good work (e.g., Francis and Yu 2009). Fourth, the structure of the audit market may have an impact on the provided audit as lack of competition amongst audit firms resulting from an oligopoly may impair the provided audit quality (e.g., Francis, Michas, and Seavey 2013). Fifth, institutions, which set accounting and auditing practices, may exert influence on auditors, thus potentially influencing the provided audit quality (e.g., Lee and Mande 2003).

#### 1.1.4 Insights from Audit Research

The main goals of audit research are on the one hand to provide guidance for regulators and practitioners to improve accounting standards and audit procedures (Francis 2011) and on the other hand, to understand better the determinants and consequences of high or low audit quality (DeFond and Zhang 2014). Using different proxies for audit quality and exploiting particular events improves upon our general understanding of the audit process (DeFond and Zhang 2014). An example of particular events are, for instance, accounting scandals which have had an impact on audit research using cases like Enron (e.g., Cahan, Emanuel, and Sun 2009; Cahan and Zhang 2006; Feldmann and Read 2010; Landsman, Nelson, and Rountree 2009; Lennox and Pittman 2010), WorldCom (e.g., Lennox and Pittman 2010), ComRoad (e.g., Weber, Willenborg, and Zhang 2008) or Kanebo (Skinner and Srinivasan 2012). Further, our understanding of the audit process can be enhanced by carrying out audit research on three different levels which are (1) audit firm level (e.g., DeAngelo 1981), (2) audit office level (e.g., Swanquist and Whited 2015) and (3) individual

auditor level (e.g., Li, Qi, Tian, and Zhang 2017). However, these different levels are also attributable to differences in data availability.

### *Measurement of Audit Quality*

The definitions of audit quality by DeAngelo (1981) and DeFond and Zhang (2014) highlight considerable differences regarding the interpretation of audit quality. In general, the audit outcome is observable via the auditor's report issued by the audit firm (Francis 2011). While explicit audit failures like criminal prosecution against an auditor may directly be observable (Francis 2011), differences in the truthful presentation of the economic situation in the financial statement assessed by an auditor (DeFond and Zhang 2014) are not observable or rather too costly to observe (DeAngelo 1981). Francis (2011) specifies audit failure as the erroneous issuance of an unqualified opinion in the auditor's report. Based on DeFond and Zhang (2014) proxies for the measurement of audit quality used in audit research can be evaluated according to their measurement level distinguishing between discrete and continuous proxies as well as their measurement accuracy.

Discrete proxies of audit quality, in general not being able to capture variations of audit quality, are material misstatements in financial statements (DeFond and Zhang 2014) like accounting restatements or enforcement actions via the Accounting and Auditing Enforcement Releases (AAERs) issued by the United States Securities and Exchange Commission (SEC) for the US (e.g., Lennox and Pittman 2010). For Germany a comparable proxy is the announcement of enforcement errors by the German enforcement system. Material misstatements as an audit quality proxy are especially suitable as low audit quality proxy (Christensen, Glover, Omer, and Shelley 2016). However, a major drawback is the scarcity of these events (DeFond and Zhang 2014).

Another discrete proxy for audit quality is the auditor's opinion from the auditor's report like type II going concern error<sup>4</sup> (e.g., Knechel and Vanstraelen 2007) which is a good proxy for low audit quality (DeFond and Zhang 2014). However, based on the definition of type II going concern error, it is limited to a sample of financially distressed companies, thus raising the question of the external validity of the results beyond financially distressed companies (DeFond and Zhang 2014). Finally, auditor characteristics like size of the audit firm (e.g., DeAngelo 1981) also being related to the categorization of Big N versus non-Big N audit firms (Mansi, Maxwell, and Miller 2004)<sup>5</sup> or auditor specialization referring to an industry (e.g., Balsam, Krishnan, and Yang 2003) are additional discrete proxies for audit quality. Although, auditor characteristics like the size of the audit firm has a sound constructive validity it does not capture audit quality variations within the respective audit firm (DeFond and Zhang 2014). Further, the measurement accuracy of audit quality via auditor specialization may not be satisfactory (DeFond and Zhang 2014).

In contrast, continuous proxies for audit quality, in general being able to capture subtle variations of audit quality, are proxies for financial reporting quality like discretionary accruals (e.g., Francis, Maydew, and Sparks 1999) based on the Jones (1991) model (DeFond and Zhang 2014). The higher the provided audit quality, the greater is the assurance of the truthful presentation of the respective financial statement, thus the greater is the financial reporting quality (DeFond and Zhang 2014). The strength of measuring variations of audit quality contrasts with the issue of possibly not measuring only audit quality as high financial reporting quality may be a result of, for instance, the company's well-established reporting system (DeFond and Zhang 2014). Further, there are perceptive proxies of audit

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<sup>4</sup> A type II going concern error is the non-issuance of a going concern opinion for a financially distressed company subsequently filing for bankruptcy (Knechel and Vanstraelen 2007).

<sup>5</sup> Recent audit literature uses the categorization of Big 4 audit firms which are PricewaterhouseCoopers, EY, KPMG, and Deloitte (Francis and Wang 2008). Because of prior mergers and downfall of audit firms the study by Mansi et al. (2004) refers to Big 6 audit firms including the aforementioned Big 4 audit firms.

quality (DeFond and Zhang 2014) such as capital market reactions in conjunction with an associated audit event like a change of an auditor (e.g., Knechel, Naiker, and Pacheco 2007; Griffin and Lont 2010). Although good data coverage constitutes an advantage for this type of proxy, it is usually an indirect measurement of audit quality raising the question of measurement accuracy (DeFond and Zhang 2014). Lastly, audit fees (e.g., DeFond, Francis, and Wong 2000; Vermeer, Raghunandan, and Forgione 2009) or audit hours (e.g., Deis, Jr. and Giroux 1992) reflecting the auditor's effort are additional continuous proxies for audit quality (DeFond and Zhang 2014). Having well-developed audit fee models in the audit research literature (e.g., Simunic 1980) actual data availability of audit fees and especially audit hours is rather limited (DeFond and Zhang 2014).

#### *Benefits from high Audit Quality*

Audit research on audit quality shows that high audit quality reduces agency costs (DeFond and Zhang 2014). Agency costs arise from information asymmetries between the management and the stakeholders of the company, especially investors (Healy and Palepu 2001) resulting, for instance, in a moral hazard problem (DeFond and Zhang 2014). As the management usually does not provide the capital needed for the company, the capital of the company is supplied by external investors like shareholders or creditors (Watts and Zimmerman 1983). To mitigate the moral hazard problem, the efforts of the management can be monitored, for instance, by disclosing financial statements, further mitigating the problem by auditing the financial statement to assure the credibility of the presented information (DeFond and Zhang 2014).

From a company's perspective, high audit quality is important. One benefit resulting from audited financial statements are lower interest rates on bank loans (Blackwell, Noland, and Winters 1998).<sup>6</sup> According to Kim, Simunic, Stein, and Yi (2011), the benefit of lower

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<sup>6</sup> The study by Blackwell et al. (1998) compares private companies with voluntary audited financial statements and no audited financial statements.

interest rates are related to the greater credibility of audited financial statements resulting in less information risk and debt monitoring costs. Further, Lennox and Pittman (2011) find that companies pursuing their audit of financial statements voluntarily following a regulation change for certain companies from mandatory to voluntary audited financial statements have better credit ratings as these companies are sending out a positive signal about their credit risk. Further, companies with audited financial statements have lower cost of debt (Minnis 2011).

### *Auditor Independence*

One key requirement to ensure a high level of audit quality is auditor independence (Watts and Zimmerman 1983) being a crucial criterion for the credibility of financial statements (Firth 1997). In general, the auditor is hired by the company to conduct the audit of financial statements, thus potentially resulting in auditor independence being impaired because of economic dependence (Beattie, Brandt, and Fearnley 1999). However, to counterbalance the potential impairment of auditor independence the introduction of various regulations ensuring auditor independence may help (Beattie et al. 1999). So far, audit research has identified various factors, which may influence auditor independence. For instance, factors impairing auditor independence may be non-audit services provided by the auditor like tax advice (Benston 1985) which increase the economic dependence on the respective company (Firth 1997). However, a large amount of audit literature finds no impairment of auditor independence. For instance, the study by Craswell, Stokes, and Laughton (2002) find no impairment of auditor independence by audit fees reflecting the economic importance of a respective client. Further, Hope and Langli (2010) do not find an association between auditor independence and audit quality arguing that auditors are abiding by the known professional ethics. For a particular industry like the banking industry, Kanagaretnam, Krishnan, and Lobo (2010) do not find any impairment of auditor

independence for large banks as they are highly regulated. Further differentiating between different levels of audit research there is no evidence of impaired auditor independence when differences in audit quality at the audit firm level (e.g., Chung and Kallapur 2003) as well as at the audit office level are examined (e.g., Chen, Sun, and Wu 2010; Chung and Kallapur 2003; Reynolds and Francis 2001). At the individual auditor level, there is some evidence of impaired auditor independence reflected in the economic dependence of a client in case of low litigation risk and/or weak threat of sanctions (e.g., Chen et al. 2010). However, by establishing a strong institutional environment strengthening investor protection the impairment of auditor independence vanishes (Chen et al. 2010).

#### *Auditor Tenure*

Another possible factor potentially influencing auditor independence is the length of the client-auditor employment relationship also known as auditor tenure (Geiger and Raghunandan 2002). On the one hand, auditor's long tenure may be beneficial to higher audit quality because a long client-auditor relationship enables the auditor to acquire client-specific knowledge enhancing the understanding of underlying business operations as well as processes (Geiger and Raghunandan 2002). On the other hand, long auditor tenure may impair auditor independence as a longer client-auditor relationship may increase the economic dependence of the client as well as personal ties with the client (Gul, Jaggi, and Krishnan 2007) resulting in lower audit quality (Geiger and Raghunandan 2002). One approach to mitigate the possible negative effects of high auditor dependence is to introduce mandatory auditor rotation (DeFond and Zhang 2014) which can be further distinguished between the rotation of individual auditors (internal rotation) and the rotation of the audit firm (external rotation) (PCAOB 2011).

Arguments in favor of auditor rotation, especially external rotation, suggest that the auditor may be less susceptible towards pressure exercised from management and may



enable a new auditor to see the audit from a different perspective possibly mitigating the effect of operational blindness (PCAOB 2011). Arguments against auditor rotation suggest that it may have a negative impact on audit quality. For instance, auditor rotation may result in the loss of client-specific knowledge possibly increasing the risk of audit failures. In addition, it may result in higher probability of undetected management fraud and may increase the possibility of management deceiving new auditors (PCAOB 2011).

Audit research, however, mainly finds that long auditor tenure does not result in low audit quality (Carcello and Nagy 2004; Geiger and Raghunandan 2002; Johnson, Khurana, and Reynolds 2002; Ghosh and Moon 2005; Mansi et al. 2004; Myers, Myers, and Omer 2003), thus, questioning the concept of mandatory external auditor rotation. The result is robust for various audit quality measures like discretionary accruals (Myers et al. 2003), AAERs related to fraud (Carcello and Nagy 2004), audit opinions for companies before filing for bankruptcy (Geiger and Raghunandan 2002) or Big 4 versus non-Big 4 audit firms (Mansi et al. 2004). Specifically referring to internal rotation Chi, Huang, Liao, and Xie (2009) find no evidence that mandatory rotation itself improves audit quality. Lennox, Wu, and Zhang (2014), however, find that mandatory internal rotation improves audit quality arguing that the departing audit partner provides high audit quality to avoid any criticism referring to his/her conducted audit by his/her successor (peer review effect).

## 1.2 Essays on Audit Failures, Restatements and Audit Market Structure

### 1.2.1 Motivation, Research Design, and Main Results

So far, the literature review has illustrated the importance of auditing. The following doctoral thesis contributes to the literature by providing new insights into the consequences of low audit quality for involved auditors by examining personal consequences of audit failures at the individual auditor level, in particular distinguishing between the roles of

individual auditors which is enabled by using a German setting. Personal consequences are examined by looking at the portfolio structure, the learning effect and career development of individual auditors. Further, by empirically examining the disclosure of restated financial statements in Germany the doctoral thesis contributes to the literature by providing first insights into this type of disclosure and potentially identifying a sample of restatements as a basis for future audit research. Lastly, by examining the audit structure of cooperatives as well as the audit market of credit cooperatives for Germany the doctoral thesis contributes to the literature by illustrating the audit structure of cooperatives and respectfully shedding light on the development of the audit market of credit cooperatives.

#### *Personal Consequences of Audit Failures for Lead and Concurring Auditors*

The first essay examines the personal consequences of audit failures for individual auditors distinguishing in particular between lead and concurring auditors. As both, lead and concurring auditors, are legally responsible for the conducted audit and hierarchically at the top of the audit teams (Downar et al. 2017) the results shed light onto the respective roles of individual auditors within audit teams and illustrate potential differences when facing personal consequences, thus providing some indications to improve provided audit quality further. For the US, these roles of lead and concurring auditors are comparable to lead audit partners and engagement quality reviewers, respectively (Epps and Messier 2007). Further, the expressions “concurring partner” or “reviewing partner” may synonymously be used for the term engagement quality reviewer (Messier, Kozloski, and Kochetova-Kozloski 2010; Manry, Mock, and Turner 2008). While lead auditors bear the responsibility for the audit process, concurring auditors are responsible for quality assurance in the audit process (Epps and Messier 2007; Messier et al. 2010). In Germany, concurring auditors are partners whereas lead auditors are often of lower rank (e.g., managers or senior managers) (Koch and Salterio 2017).

Examining audit quality at the individual auditor level is an intriguing question as one of the main identified drivers of audit quality by the Financial Reporting Council are audit partners and the respective staff (Financial Reporting Council 2006; Holm and Zaman 2012). The closer look at the individual auditor level may provide some indications about the effectiveness of self-regulating mechanisms or suggest regulators to take further action (DeFond and Francis 2005) in the pursuit of ensuring high quality audits. Further, it may provide some indications about the effectiveness of quality control mechanism within the respective audit firms (e.g., Aobdia 2019).

This essay enhances our understanding of preventive and corrective effects in terms of a self-regulating mechanism resulting from the detection and disclosure of audit failures. If publicly known negative personal consequences serve as an example for other individual auditors, it may be an incentive for other individual auditors to provide higher levels of high quality audits (preventive effect). Further, publicly known audit failures may provide an incentive for individual auditors involved in audit failures to learn from them (Salterio 1994) and, thus, enhancing the audit quality of the respective individual auditor in the future (corrective effect).

This essay is related to the study by Sundgren and Svanström (2017). They examine the consequences for individual auditors involved in disciplinary sanctions issued by the Swedish Public Oversight Body. Sundgren and Svanström (2017) do not find any changes in auditors' client portfolio for sanctioned individual auditors but negative changes in the salary, especially for Big 4 auditors. Because Sundgren and Svanström (2017) examine only private clients, their results are not necessarily transferable to public firms. In general, results for private firms often do not apply for public firms due to the inherent differences between both groups of firms (e.g., Ball and Shivakumar 2005; Chaney, Jeter, and Shivakumar 2004).

As a consequence, the first essay provides an important contribution for the following reasons.

First, using a German setting this essay examines private as well as public firms in comparison to Sundgren and Svanström (2017). Additionally, differentiating between lead and concurring auditors this essay contributes to the literature on the role of individual auditors following the call for more research on the role of individual auditors by Simnett, Carson, and Vanstraelen (2016). The better understanding of the role of individual auditors having a crucial influence on the audit process contributes to the better understanding of audit team characteristics resulting in high quality audits (Simnett et al. 2016). Second, it contributes to the literature on the consequences of low audit quality by providing new insights and expanding on the study by Sundgren and Svanström (2017). Third, it contributes to the literature on individual auditor's career development examining the likelihood of leaving the audit firm or even the auditing profession following audit failures. This may provide some indications about the existing self-regulating mechanisms ensuring high quality audits or the lack thereof.

Looking at the personal consequences for lead and concurring auditors, this essay, in detail, examines three different aspects of personal consequences: (1) changes in client portfolio structure, (2) changes in auditor's career development, and (3) changes in audit quality due to a potential learning effect following an audit failure.

The analysis of the individual auditors' client portfolio structure builds on the literature on auditor reputation and audit failures. Skinner and Srinivasan (2012) argue that an audit failure has a negative impact on the reputation of an audit firm leading, amongst others, to lower public credibility for conducting high quality audits. This kind of reputational loss may further result in losing clients and thus audit fees (Weber et al. 2008). However, to mitigate or even prevent this kind of reputational loss the audit firm might replace the

individual auditor involved in an audit failure signaling their determination to provide high quality audits (Skinner and Srinivasan 2012). Further, because of inherent differences between public and private clients (e.g., Chaney and Philipich 2002; Chaney et al. 2004; Carson, Simnett, Soo, and Wright 2012), the strength of a negative effect on the individual auditors' portfolio structure might be different. Moreover, the strength of the effect might be different between lead and concurring auditors because of their tasks and hierarchical positions.

Audit failures may also have an impact on auditors' career development. Prior literature on the implications of unintentional and intentional accounting errors for CEOs and CFOs documents, for instance, higher probability of management turnover as well as greater difficulties on the labor market faced after the accounting error (e.g., Desai, Hogan, and Wilkins 2006; Hennes, Leone, and Miller 2007; Collins, Masli, Reitenga, and Sanchez 2009; Land 2010). Looking at lead and concurring auditors bearing great responsibility for their respective audits and considering the overall importance of an audit they might face similar consequences compared to CEOs and CFOs, facing negative consequences, for instance, with regard to their career prospects after audit failures. If that is the case, individual auditors might move to other audit firms or even leave the auditing profession to improve upon their career prospects. However, these negative consequences may be less pronounced for individual auditors with a well-established business network like audit partners (Carter and Spence 2014). Overall, the expectation is to find a higher likelihood of employment changes after audit failures, especially for lead auditors as they are more involved in the audit and are usually of lower rank compared to concurring auditors.

Further, audit failures might have an impact on the learning effect of lead and concurring auditors. Looking at prior literature on the effectiveness of formal sanctions against individual auditors Chang, Chen, Chou, and Ko (2016) document that sanctions lead to

higher audit quality. Further, Firth, Mo, and Wong (2014) find that sanctions increase the probability of issuing going concern opinion implying higher conservatism of auditors. However, Knechel, Vanstraelen, and Zerni (2015) do not find any changes in the reporting behavior of individual auditors after audit reporting failures concluding that individual auditors have a systematic attribute which is not subject to change. Sundgren and Svanström (2017) do not find any changes in the reporting behavior of audit partners after being sanctioned as well. Apart from legal or disciplinary sanctions, the impact of reputational shocks on audit quality is less clear. If incidences of low audit quality are directly attributable to individual auditors, consequently having a tarnished reputation as a result, the individual auditor might try to learn from his/her audit failures (Sitkin 1992) to restore its tarnished reputation and avoid future audit failures.

To examine the personal consequences of audit failures for lead and concurring auditors this essay uses a German setting. In comparison to the US, where both litigation as well as reputation matters (Skinner and Srinivasan 2012), Germany has a lower reputation risk for auditors, thus enabling research to disentangle litigation risk from reputation risk as possible drivers for audit quality (Weber et al. 2008). Consequently, this enables the essay to examine the influence of reputational risk without biases due to legal risk. As for the measurement of audit failures, the essay uses the publication of enforcement errors by the German enforcement system<sup>7</sup> (FREP and FFSA). These instances of audit failures are a direct proxy

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<sup>7</sup> The German enforcement system has a two-tier structure comprised of the German Financial Reporting Enforcement Panel (FREP – *Deutsche Prüfstelle für Rechnungslegung* (DPR)) on the first level and on the second level the German Federal Financial Supervisory Authority (FFSA – *Bundesanstalt für Finanzdienstleistungsaufsicht* (BaFin)) (DPR 2018; Hitz, Ernstberger, and Stich 2012). According to § 342b paragraph 2 sentence 2 of the German Commercial Code (*Handelsgesetzbuch* (HGB)) companies subject to the examination process by the German enforcement system are listed companies on a German stock exchange trading securities in accordance with § 2 paragraph 2 sentence 1 of the German Securities Trading Act (*Wertpapierhandelsgesetz* (WpHG)) (DPR 2009). On the first level, the FREP investigates listed companies either based on indications or random and risk based sampling (Hitz et al. 2012). The investigation focuses on annual financial statements, interim financial statements as well as management reports examining the conformity with the respective accounting principles and policies as its main objective (Hitz et al. 2012). On the second level, the FFSA takes over if the company refuses the investigation or does not accept the outcome of the investigation conducted by the FREP (Hitz et al. 2012). Further, the FFSA ensures the disclosure of errors identified during the investigation (Hitz et al. 2012).

for low audit quality because of actual violations of accounting standards. Supporting this notion Christensen et al. (2016) and Francis (2011) consider enforcement actions as indicators of low audit quality or audit failures.

This essay examines lead and concurring auditors following audit failures who have conducted audits of public and/or private companies from 2005 to 2013. To examine personal consequences, this essay uses a difference-in-differences design and a matched sample in which individual auditors with audit failures are defined as the treatment group and individual auditors without audit failures are defined as the control group.

As for the main results, the essay documents that lead and concurring auditors lose audit fees, public clients and, in particular, prestigious clients following audit failures. However, there are no negative effects for the portfolio structure of private clients which is consistent with the study by Sundgren and Svanström (2017). Further, the essay does not find robust evidence that lead and concurring auditors experience a higher likelihood of employment change (termination) following an audit failure. Looking at the learning effect of individual auditors the essay does not document robust evidence in favor of a learning effect for lead and concurring auditors following audit failures by examining changes in audit quality. Overall, the findings suggest that lead and concurring auditors face some negative personal consequences after audit failures.

#### *Disclosure of Restated Financial Statements of CDAX-companies*

Apart from the auditor's perspective, the companies involved in audit failures like enforcement errors may publish a revised version of the respective financial statement to ensure transparency towards their users of financial statements and thus potentially preventing any related future information uncertainties having, for instance, an impact on stock returns of the respective company (Zhang 2006). It is important to emphasize that the disclosure of restated financial statements due to an enforcement error is by itself not

mandatory for companies according to IDW RS HFA 6 paragraph 20. Thus, it raises the question if the respective companies involved in an enforcement error disclose restated financial statements in the first place. Having identified the respective restated financial statements, further analysis with regard to the nature of restatements like the type can be carried out to, for instance, identify potential common issues. Going beyond enforcement errors the analyses can be expanded to the overall disclosure of restated financial statements including accounting restatements to analyze the relevance of restatements in Germany and potentially providing some indications about the financial reporting quality. The relevance can be assessed by looking at the proportion of restated financial statements to the total amount of disclosed financial statements.

Accounting restatements are an exemplary proxy used to capture financial reporting quality (Archambeault, DeZoort, and Hermanson 2008; Cao, Myers, and Omer 2012). As there is no explicit definition of what financial reporting quality is (McDaniel, Martin, and Maines 2002) Jonas and Blanchet (2000) provide an exemplary framework on how to assess financial reporting quality. Jonas and Blanchet (2000) identify thereto the following main characteristics which are (1) relevance, (2) reliability, (3) comparability, (4) consistency and (5) clarity of financial reports. Based on Jonas and Blanchet (2000) relevance reflects the usefulness and timeliness of information as well as its predictive value while reliability reflects the verifiability, completeness, representational faithfulness and neutrality of financial reports. Moreover, comparability of financial reports takes into account the accounting done for similar transactions within companies allowing users of financial reports to compare the information across companies while consistency of financial reports reflects the use of same accounting policies and procedures across periods. Finally, the clarity characteristic focuses on the understandability of the respective financial reports.



Thus, the second essay<sup>8</sup> examines the publication of restated annual financial statements for CDAX-companies. In more detail, this essay examines the relevance of published restated financial statements in Germany and conducts a content analysis of the identified published restated financial statements looking more closely at the type and extent of the respective restatements. As this essay looks in general at published restated financial statements in Germany, disclosed restated financial statements due to enforcement errors by the German enforcement system, if available, are a part of the identified sample. Further, the study provides an overview of the legal regulation regarding restatement of financial statements according to HGB as well as to the International Financial Reporting Standards (IFRS).

This essay contributes to the accounting literature by providing new evidence on the content of restated financial statements. Further, as to my knowledge, no prior study examined published restated financial statements of German CDAX-companies. Thus, the identified restated financial statements may contribute to future research by suggesting a novel data basis.

In general, according to HGB, there is no explicit legal regulation referring to financial restatements. However, DRS 13 and IDW RS HFA 6 provide some guidance in, for instance, clarifying the meaning of financial restatements and how to address them. In contrast, according to IFRS restatements are explicitly regulated in IAS 8. Similar to HGB, according to IAS 8.41 the restatement of a financial statement might be mandatory if the respective financial statement is not in compliance with IFRS potentially threatening the fair presentation of the financial statement according to IAS 1. Relating thereto materiality of errors plays a decisive role in restating financial statements (IAS 8.41).

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<sup>8</sup> This essay is published in *Zeitschrift für internationale und kapitalmarktorientierte Rechnungslegung* 18 (12): 561-569.

Prior research literature has been addressing the issue of financial restatements, thus emphasizing its importance as restatements may result in severe consequences. For instance, financial restatements are associated with negative capital market reactions (Palmrose, Richardson, and Scholz 2004) and higher probabilities of management turnover (Desai et al. 2006; Arthaud-Day, Certo, Dalton, and Dalton 2006) as well as changes of the respective audit firm (Hennes, Leone, and Miller 2014; Liu, Raghunandan, and Rama 2009). Further, Plumlee and Yohn (2010) find that primary causes of restatements are internal errors within the company referring, for instance, to bookkeeping and managing records as well as accounting standards lacking clarity. Looking at audit characteristics, Stanley and DeZoort (2007) find a negative association of audit tenure and the likelihood of restatements arguing that longer engagements enable the auditor to acquire client-specific knowledge, thus increasing audit quality. Looking at audit committee characteristics, Abbott, Parker, and Peters (2004) find that available financial expertise of audit committee members, as well as the independence of the audit committee, is negatively associated with restatements.

For the period from 2005 to 2014, the essay identifies 196 published restated financial statements which can be further subdivided into 56 non-content-related or formal restatements and 140 content-related restatements. This essay focuses on content-related restatements as these restatements can be seen as more severe<sup>9</sup>. Out of 140 content-related restatements 16.43% are identified as material restatements. The total amount of identified restatements accounts for 3.41% of published financial statements for the fiscal period from 2005 to 2014 and 5.56% of financial statements involved in an enforcement error.<sup>10</sup> Out of the 196 identified published restated financial statements the notes to the financial statements are most frequently restated. Looking at the auditors' reports, there is virtually no change between the financial statement and the respective restated financial statement.

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<sup>9</sup> For the definition of formal and content-related restatements see section 3.4.

<sup>10</sup> For further details on the calculation of the respective ratios see section 3.5.

Thus far, the doctoral thesis has put a strong emphasis on the audit of public companies conducted by Big 4 and non-Big 4 auditors. A considerable amount of prior archival literature uses data of public companies due to data availability (Knechel and Vanstraelen 2007; Hope, Thomas, and Vyas 2013). Relating thereto results on the audit or the audit structure, especially of Big 4 auditors, is extensive as illustrated at the beginning of the introduction. However, in Germany a special group of companies like the cooperatives, which have a rather special audit structure, exists further. In comparison to the audit of public companies, one intriguing characteristic of the audit of cooperatives is their auditor-client relationship which is usually a long-term relationship (Kaya, Loy, and Zentgraf 2018).

In general, this unique audit structure of cooperatives is regulated in the fourth section of the German Cooperatives Act (*Genossenschaftsgesetz (GenG)*)<sup>11</sup>. According to § 54 GenG, every cooperative is obliged to belong to an auditing association which conducts the respective audit according to § 53 GenG. This particular membership at an auditing association as well as the limited number of auditing associations is facilitating the long-term auditor-client relationship between cooperatives and auditing associations (Kaya et al. 2018). The scope of the cooperative audit includes among others the audit of economic conditions and compliance of management with regulations according to § 53 paragraph 1 sentence 1 GenG. Furthermore, auditing associations have to operate on a not-for-profit basis in accordance with § 63b paragraph 1 GenG. Consequently, the economic incentive for auditing associations might be less pronounced in comparison, for instance, to Big 4 auditors, thus mitigating the dependence between cooperatives and the respective auditing associations (Kaya et al. 2018).

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<sup>11</sup> The fourth section of the GenG includes the paragraphs from § 53 GenG to § 64c GenG.

Reflecting upon credit cooperatives, in particular, it is interesting to note that they weathered the financial crisis quite well in comparison to German private credit banks (Neumann and Reichel 2006; Reichel 2011; Ott 2012b). Based on Ott (2012b) the better performance of credit cooperatives may be explained by the legal form of their company and/or by their audit structure. Having a closer look at the audit structure of cooperatives and the development of the audit market for credit cooperatives it may provide useful indications for audits beyond cooperatives conceivably contributing to the improvement of audit quality.

Thus, the third essay<sup>12</sup> examines the audit market structure of credit cooperatives and addresses further important incidents with respect to the legal environment. Moreover, it outlines in detail the legal aspects of the audit of cooperatives.

The introduction of the European Union (EU) regulation 537/2014 (Europäische Parlament und Rat der Europäischen Union 2014), which was implemented in national law by the German Audit Reform Act (*Abschlussprüfungsreformgesetz* (AReG)) (Bundesgesetzblatt 2016) in 2016, reflects the latest major legal changes towards the audit of Public Interest Entities (PIE) including credit cooperatives as well<sup>13</sup>, thus affecting auditing associations. In general, it addresses, amongst others, the issue of internal and external auditor rotation as well as the issuance of transparency reports (Europäische Parlament und Rat der Europäischen Union 2014). Looking further back to the year 2009, the introduction of the Accounting Law Modernization Act (*Bilanzrechtsmodernisierungsgesetz* (BilMoG)) (Bundesgesetzblatt 2009) affected the audit of credit cooperatives as well. For instance, since BilMoG certified accountants are the only ones allowed to sign the auditor's report (Bundesgesetzblatt 2009).

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<sup>12</sup> This essay is published in *Die Wirtschaftsprüfung* 71 (22): 1395-1402.

<sup>13</sup> See section 4.2.3 for more details.

Taken together, the audit of cooperatives, as well as auditing associations as a particular form of audit firms, are considerably different from the audit of public companies and their respective audit firms. Consequently, shedding light on this special group of companies provides important insights into audit research.<sup>14</sup>

Examining the audit market of credit cooperatives for the time period from 2006 to 2016 this essay finds that similarly to the market concentration of Big 4 audit firms for capital market-oriented companies (Loy and Heidrich 2017), the audit market for credit cooperatives consists of a few audit firms too. In addition, due to the nature of a quasi-permanent mandate, this essay documents little variation in the market share among auditing associations. In contrast to the external auditor rotation, which is mandatory for audit firms auditing capital market-oriented companies<sup>15</sup>, there is virtually no external auditor rotation among auditing associations. With regard to the internal auditor rotation, this essay documents further that the majority of individual auditors has an auditor tenure below the maximum limit concluding that the abolishment of the internal auditor rotation following AReG should not negatively affect audit quality of auditing associations.

### 1.2.2 Structure of the Doctoral Thesis

The remainder of my doctoral thesis is structured as follows. Chapter 2 presents the essay “Personal Consequences of Audit Failures for Lead and Concurring Auditors” including an introduction, literature review, hypothesis development, data, main results, additional analyses as well as a conclusion. Chapter 3 presents the essay “Eine empirische Analyse berechtigter Abschlüsse deutscher CDAX-Unternehmen” including an introduction, overview of national and international regulation of restatements, literature review, data,

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<sup>14</sup> See, for example, Kaya et al. (2018).

<sup>15</sup> For Germany this refers to §§ 264d, 316, 318 HGB in conjunction with the EU regulation 537/2014 (Europäische Parlament und Rat der Europäischen Union 2014).

results, discussion, and conclusion. Chapter 4 presents the essay “Zur Marktsituation von Prüfungsverbänden deutscher Kreditgenossenschaften” including introduction, an overview of the cooperative audit structure, data, results, outlook, and conclusion. Chapter 5 concludes.

## **2 Personal Consequences of Audit Failures for Lead and Concurring Auditors**

### **Abstract:**

This paper examines the personal consequences of audit failures for signing auditors. Specifically, it investigates whether and how audit failures influence lead auditors' and concurring auditors' client portfolios, careers, and audit quality. We use the announcements of enforcement errors triggered by the German Enforcement Body as a proxy for audit failures. We find that after audit failures both lead and concurring auditors face negative personal consequences in terms of losing public and prestigious clients. However, we are unable to document that lead and concurring auditors are more likely to leave the current audit firm or even the auditing profession after an audit failure. We do not observe any learning effect in terms of audit quality improvements in the years following an audit failure. Overall, the results provide new evidence that both signing auditors face some negative consequences following an audit failure.

**Keywords:** audit failure, enforcement error, client portfolio, career development, audit quality, lead auditor, concurring auditor

**Co-authors:** Benedikt Downar, Jürgen Ernstberger, Christopher Koch

**Publication details:**

Working Paper. Earlier versions of this paper were presented at the following international peer-reviewed conferences and workshops: PhD workshop at the EARNet 2015 Conference, University of Lausanne (Switzerland), 2015; 6<sup>th</sup> WHU Doctoral Summer Program in Accounting Research, WHU – Otto Beisheim School of Management (Germany), 2017; Auditing Section Midyear Meeting, Orlando (USA), 2017; 40<sup>th</sup> EAA Annual Congress, Valencia (Spain), 2017; 23<sup>rd</sup> Annual International Symposium on Audit Research, Sydney (Australia), 2017; AAA 2018 Annual Meeting, Washington, DC (USA), 2018. Preparation for submission to the international journal '*Business Research*'. Please notice that this version is likely to be subject to further adaptations. Thus, please cite the latest version of this paper.

**Acknowledgements:**

We appreciate the helpful comments made by Ilias Basioudis, Pietro Andrea Bianchi, Limei Che, Aasmund Eilifsen, Jere R. Francis, Ulfert Gronewold, Sven Hayn, Christian Leuz, Maximilian Müller, Tobias Svanström, Marleen Willekens.



## 2.1 Introduction

This paper examines the personal consequences of audit failures for signing auditors beyond disciplinary sanctions. Specifically, it investigates the impact of audit failures on the signing auditors' client portfolios and their careers. Investigating these consequences helps to understand the preventive and corrective effects of uncovering and disclosing audit failures. Adverse personal consequences may have a preventive effect by creating incentives for signing auditors to provide high audit quality and to avoid audit failures. Moreover, the uncovering of audit failures may have a corrective effect and may contribute to enhancing audit quality in the future by fostering learning for the signing auditors involved (Salterio 1994).

Most closely related to our study is Sundgren and Svanström (2017) who examine the consequences of disciplinary sanctions for individual auditors issued by the Swedish Public Oversight Body. They investigate the consequences for the portfolio of *private clients*, compensation, and auditor reporting behavior. They find that auditors do not lose private clients but earn less after a sanction. Furthermore, auditors do not adjust their reporting behavior after experiencing this kind of sanction.

Our study contributes to the generalizability of the findings of Sundgren and Svanström (2017). We confirm their findings concerning the impact on auditors' portfolio of private clients and learning effects and expand their findings in the following three ways.

First, we examine the client portfolio of both public and private clients. As listed clients are of particular importance for an audit firm one might expect that the consequences of audit failures differ for public and private clients. Second, we test whether enforcement errors have adverse consequences for career development. While Sundgren and Svanström (2017) focus on changes in the income of individual auditors, we investigate whether

individual auditors face career consequences by leaving their current audit firm or even the auditing profession altogether. Third, we investigate not only the personal consequences for the lead auditor but also those for the concurring auditor. While lead auditors bear the responsibility for the audit process and are regularly non-partners, concurring auditors are partners and are responsible for quality assurance in the audit process (Messier et al. 2010).<sup>16</sup> However, given the limited involvement of concurring auditors compared to lead auditors, one might suspect that they experience less severe sanctions. Fewer adverse consequences for concurring auditors might indicate fewer incentives to exercise the monitoring role effectively.

We explore the consequences of audit failures using a German setting for the following reasons: First, Germany has a low litigation environment, rendering the role of personal sanctions beyond penalties for ensuring audit quality more important (Weber et al. 2008). Second, the German setting enables us to collect data on individual auditors' portfolios of private and public firms and enables us to identify both the concurring and the lead auditor of each engagement as both individual auditors sign the auditor's report. An intriguing question not previously addressed is whether the consequences of audit failures differ for lead and concurring auditors.<sup>17</sup>

In our setting, we use publication of enforcement errors triggered by the German Financial Reporting Enforcement Panel (FREP - DPR) and the German Federal Financial Supervisory Authority (FFSA – BaFin) as proxies for audit failures.<sup>18</sup> These German enforcement releases are issued in the case of material misstatement in financial reports. To

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<sup>16</sup> For more details for Germany, see also § 38 paragraph 2 of the Professional Charter for Professional Accountants in Public Practice (BS WP/vBP).

<sup>17</sup> After passing the CPA exam, auditors act regularly as signing auditors (Koch and Salterio 2017) making it possible to examine client portfolios, career and audit quality over time for audit partners and non-audit partners.

<sup>18</sup> In additional tests, we investigate the effects of type II going concern errors as an alternative audit failure proxy.

ensure that the enforcement releases indicate audit failures, we restrict our analyses to enforcement releases for annual financial statements with clean auditors' reports. We assume that enforcement releases after clean audit opinions signal low audit quality and thus audit failures (Christensen et al. 2016; Francis 2011; Brocard, Franke, and Voeller 2018).

Our findings suggest that both the lead and the concurring auditor experience negative personal consequences from audit failures. While we corroborate the findings of Sundgren and Svanström (2017) that audit failures have no effect on the portfolio of private clients, we observe that signing auditors involved in audit failures lose public clients. Interestingly, we observe that both lead auditors and concurring auditors experience a drop in the fee volume from public clients. This finding suggests that the audit market imposes sanctions on both signing auditors resulting from audit failures. However, we do not find any evidence that the probability of exiting the profession increases after the uncovering of an audit failure. Again, we observe that this effect holds for both lead and concurring auditors. Finally, and consistently with Sundgren and Svanström (2017), we do not find evidence of learning as the audit quality provided by the signing auditors does not increase after the uncovering of audit failures.

In additional tests, we use the non-issuance of going concern modifications prior to the insolvency of a client (type II going concern errors) as an alternative proxy for audit failure. We find consistent, albeit weaker effects for our portfolio structure analysis supporting the notion that the announcement of enforcement errors is more visible than type II going concern errors (Christensen et al. 2016). Further, we test whether other companies audited by the signing auditors involved in the audit failure experience negative abnormal stock market returns but we do not find any significant results.

Our study contributes to several fields of literature. First, we demonstrate that not only the lead auditors but also concurring auditors experience negative personal consequences

from audit failures. This finding contributes to the literature on the role and incentives of top-level, i.e., signing auditors. Second, we contribute to the literature on the consequences of low audit quality. Consistent with prior literature we find no effects regarding the auditors' portfolio of private clients. However, we provide new evidence that it has negative effects on the auditors' portfolio of public clients. Third, we provide evidence of the consequences of audit failures on the career development of individual auditors. We find that audit failures do not have an impact on the likelihood of leaving the audit firm or even the audit profession. Taken together, our findings are of particular importance for audit firms and regulators in understanding the consequences of audit failures.

We organize the remainder of the paper as follows. Section 2.2 reviews prior literature on audit failure consequences. Section 2.3 describes our data set and the German institutional setting. Next, we discuss the theory, research design and results of the effects of the publication of enforcement errors for the involved signing auditors with respect to client portfolio (section 2.4), career development (section 2.5), and audit quality (section 2.6). Section 2.7 contains additional analyses and robustness checks and section 2.8 concludes.

## 2.2 Literature Review on Audit Failure Consequences

### 2.2.1 Audit Failures and Auditor Reputation

The first set of studies investigates the reputational consequences of major audit failures for audit firms. Chaney and Philipich (2002) show that the events related to the Enron audit failure tarnished the reputation of Arthur Andersen as clients of that audit firm suffered abnormally large losses in their market value in reaction to those events. Barton (2005) substantiates the negative reputational effects for Arthur Andersen after the Enron scandal. The study shows that clients changed to other audit firms after the scandal and that the defection rate was higher for clients with higher visibility in the capital market. Using a low

litigation setting, Weber et al. (2008) provide evidence that a major audit failure in Germany led to reputational losses for the involved audit firm. They find that public clients of that audit firm suffered negative market reactions in response to the audit failure. Further, they observe that the audit firm involved in the audit failure lost clients. In a similar vein, Skinner and Srinivasan (2012) provide supporting evidence using audit failures of Japanese audit firms. Looking at accounting restatements, Hennes et al. (2014) find a higher likelihood of audit firm dismissal after a more serious accounting restatement. However, this effect is more pronounced for non-Big 4 audit firms arguing that an auditor change is related to switching costs as well as the available pool of alternative audit firms. Overall, these studies show that audit failures have negative reputational effects for the audit firm involved.

Recently, audit research has started to investigate the reputational effects of audit failures at the audit office level. Swanquist and Whited (2015) show that client restatements, as a proxy for audit failure, have a negative effect on the reputation of the respective audit office. They document that audit failures have a negative impact on the likelihood of attracting new and retaining old clients. In addition, they document that clients prefer audit offices with a higher reputation, in terms of a lower frequency of restatements. Substantiating these findings, Francis, Mehta, and Zhao (2017) document that not only audit failures but also losing a major client may impair audit office reputation based on the observation that audit offices losing a major client are more likely to lose same-industry clients in the following years and need to provide fee discounts to remaining clients.

Emerging literature investigates whether audit partners involved in audit failures suffer personal reputational losses. Sundgren and Svanström (2017) show that audit partners do not lose private clients following a sanction issued by the Swedish Public Oversight Body. However, they find that sanctioned audit partners receive lower compensation than non-

sanctioned audit partners.<sup>19</sup> A recent study by Aobdia and Petacchi (2018) provides evidence that US engagement partners lose clients after the announcement of clients' restatements.

### 2.2.2 Audit Failures and Auditor Learning

In response to the uncovering of an audit failure, one might argue that auditors adapt their behavior to avoid the repetition of an audit failure in the future, leading to higher audit quality. Consistent with this reasoning, some studies provide evidence of an audit quality enhancing learning effect following audit failures. Chang et al. (2016) examine the effect of disciplinary actions<sup>20</sup> imposed by Taiwan regulatory agencies on audit partners' audit quality. They find that the likelihood of financial restatements in the pre-sanction period is higher for disciplined audit partners compared to non-disciplined auditors. However, following disciplinary actions, the likelihood of a restatement decreases for disciplined auditors. Sun, Cahan, and Xu (2016) provide evidence for the changing behavior of audit partners after being sanctioned by the China Securities Regulatory Commission. They find that sanctioned audit partners are more conservative following regulatory sanctions. In a similar vein, Firth et al. (2014) find that auditors are more likely to issue going concern opinions after enforcement actions against audit firms by the Chinese regulatory authority.<sup>21</sup>

In contrast to this study, Sundgren and Svanström (2017) show that audit partners do not change their reporting behavior after being sanctioned by the Swedish Public Oversight Body. Due to the focus on Swedish firms, results primarily apply to private firms. In addition, Knechel et al. (2015) observe that audit quality varies at the individual auditor level

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<sup>19</sup> The salary of the audit partner is positively associated with the size of the client portfolio. Furthermore, Sundgren and Svanström (2017) mention that the reduction in salary might be influenced by various factors of which one is the disciplinary sanction of the audit firm.

<sup>20</sup> Audit partners sanctions include warning, reprimand, suspension or revocation.

<sup>21</sup> Enforcement actions against the auditor are admonishment, appropriation, monetary fine and suspension. It increases the litigation risk for the auditor if the auditor is held accountable for the enforcement error thereby reducing the credibility of the financial statement for investors.

but remains stable over time. That is, auditors providing low audit quality in the past are likely to provide low audit quality in the future.

### 2.3 Data and Institutional Background

In our empirical analyses, we use the announcements of enforcement errors as an indicator for audit failures (Christensen et al. 2016; Francis 2011; Brocard et al. 2018). Enforcement errors are publicly observable (Knechel and Vanstraelen 2007) and signal egregious cases of low audit quality (DeFond and Zhang 2014). The purpose of enforcement actions is to uncover material misstatements in financial statements (Brocard et al. 2018). Issuing a clean auditor's report for an erroneous financial statement can be seen as an audit failure by the individual auditor in consequence of not collecting sufficient evidence required by the respective auditing standards (Francis 2011). Specifically, we focus on enforcement errors triggered by the FREP and the FFSA. The FREP is a private review panel, constituting the first tier of the German enforcement system. It is responsible for reviewing the financial reports of companies listed on the German regulated market segment. The FFSA is a governmental institution constituting the second tier of the German enforcement system. It has the authority to force firms to disclose the FREP findings and to conduct a second review in cases of disagreements (Hitz et al. 2012). The most important consequence of an enforcement error is that it needs to be published ('name and shame'-mechanism). Beyond that, there are only small fines for the firm and, in exceptional cases, reprimands or fines for auditors. For further information about the process of the German enforcement system see Hitz et al. (2012) and Ernstberger, Stich, and Vogler (2012).

We extract enforcement errors as well as financial statements of public and private firms from the electronic version of the Federal Gazette (*elektronischer Bundesanzeiger*)<sup>22</sup>. For

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<sup>22</sup> For further details, see [www.bundesanzeiger.de/ebanzwww/wexsservlet](http://www.bundesanzeiger.de/ebanzwww/wexsservlet).

each enforcement error, we identify the individual auditors responsible for the audit engagements, i.e., the lead auditor and concurring auditor.

Table 1 presents the sample selection of the signing auditors of annual reports associated with an enforcement error. For the period from 2005 to 2013, we identify 199 enforcement errors in the electronic version of the Federal Gazette. We delete 28 enforcement errors related to unaudited financial reports, e.g., interim financial reports, and 19 enforcement errors related to foreign companies listed in Germany as well as companies audited by foreign audit firms. Our final sample consists of 152 enforcement errors for annual reports audited by German audit firms. For these enforcement errors, we are able to identify 117 unique concurring auditors and 142 unique lead auditors.



Table 1: Sample selection for the enforcement error analyses

<b>Panel A: Identifiable enforcement error sample</b>		
Number of enforcement errors related to fiscal years from 2005 till 2013		199
- Interim reports		(28)
- Foreign companies listed on the German regulated market		(19)
<i>Number of enforcement error observations (company years)</i>		<u>152</u>
<b>Panel B: Identifiable unique individual auditors</b>		
	Concurring auditor	Lead auditor
Number of enforcement error observations (company years)	152	152
- Non-identifiable auditors	(17)	(4)
- Repeated occurrence of an individual auditor	(18)	(6)
<i>Number of unique individual auditors</i>	<u>117</u>	<u>142</u>
<b>Panel C: Pre matching sample</b>		
	Concurring auditor	Lead auditor
Number of unique individual auditors	117	142
<b>Career development analysis</b>		
<i>Number of unique individual auditors with available information</i>	117	142
<b>Portfolio structure analysis</b>		
- Leaving the auditing profession	(0)	(6)
- Missing information on portfolio structure	(0)	(5)
- Time period (+/- 2 years)	(36)	(41)
<i>Number of unique individual auditors with available information</i>	<u>81</u>	<u>90</u>
<b>Learning effect analysis</b>		
- Missing data on accruals	(27)	(43)
<i>Number of unique individual auditors with available information</i>	<u>54</u>	<u>47</u>

(continued on next page)

Table 1 (continued)

**Panel D: Post matching sample**

	Concurring auditor	Lead auditor
<b><i>Career development analysis</i></b>		
Number of unique individual auditors (pre matching)	117	142
- No available control individual auditors according to our matching criteria	(83)	(84)
Number of unique individual auditors (post matching)	34	58
Relating thereto:		
<i>Number of unique control individual auditors</i>	631	1,256
<i>Number of individual auditor year observations</i>	6,682	10,676
<b><i>Portfolio structure analysis</i></b>		
Number of lead auditors (pre matching)	81	90
- No available control individual auditors according to our matching criteria	(0)	(0)
Number of unique individual auditors (post matching) for the largest sample	81	90
Relating thereto:		
<i>Number of unique control individual auditors</i>	2,778	3,789
<i>Number of individual auditor year observations</i>	31,140	33,420
<b><i>Learning effect analysis</i></b>		
Number of lead auditors (pre matching)	54	47
- No available control individual auditors according to our matching criteria	(0)	(1)
Number of unique individual auditors (post matching) for the combined public and private sample	54	46
Relating thereto:		
<i>Number of unique control individual auditors</i>	958	675
<i>Number of individual auditor year observations</i>	6,300	3,691

This table presents the sample selection for our enforcement error sample. Our enforcement error sample functions as a starting point for further sample selections (Panel A). Based on our enforcement error observations we are able to identify 142 unique lead auditors and 117 unique concurring auditors (Panel B). Panel C illustrates the sample selection for each of our portfolio structure, career development and learning effect analysis of our uniquely identified lead and concurring auditors prior to matching. Panel D illustrates the number of lead and concurring auditors after matching.

To collect data on the individual auditors, we use the register of the German Chamber of Public Accountants<sup>23</sup>. We gather data on individual auditor demographics (e.g., age, gender, date of CPA appointment) and on their employment (e.g., audit firm, audit office). We collect data on the career levels of individual auditors from the business-oriented social networking service XING.<sup>24</sup> We identify lead and concurring auditors from the auditor's report that is disclosed as part of the client's annual financial statement published in the electronic version of the Federal Gazette<sup>25</sup>. The concurring auditor signs the auditor's report on the left-hand side and the lead auditor signs the auditor's report on the right-hand side (Wirtschaftsprüferkammer 2007).<sup>26</sup> Finally, we collect financial data for public companies from Worldscope Datastream and for private companies from the Bureau van Dijk Orbis database.

After excluding annual financial statements without identifiable signing auditors, our starting sample from 2005 to 2013 comprises of 289,905 annual financial statements<sup>27</sup> audited by 9,366 unique individual auditors.<sup>28</sup> We further exclude 301 individual auditors with missing data on the audit firm. For each set of personal consequences, i.e., client

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<sup>23</sup> For further details, see [www.wpk.de/berufsregister](http://www.wpk.de/berufsregister).

<sup>24</sup> XING ([www.xing.de](http://www.xing.de)) is similar to LinkedIn ([www.linkedin.com](http://www.linkedin.com)) but focuses on German professionals.

<sup>25</sup> The electronic version of the Federal Gazette contains all published annual financial statements except for very small corporation entities. Prior to 2005 companies were not obliged to disclose their annual financial statements in the electronic version of the Federal Gazette. A subset of all published financial statements belong to companies obligated to have audited statutory accounts.

<sup>26</sup> In rare circumstances, only one auditor signs the audit opinion. If only one individual auditor is stated in the auditor's report, he/she is defined as lead auditor as the lead auditor conducts the audit. We note that some individual auditors, even audit partners, do not sign auditors' reports each year. Consequently, we set years without any audited clients to zero.

<sup>27</sup> The number includes, e.g., unconsolidated as well as consolidated financial statements, the respective revisions and amendments of these for the same company. Subsequently, we only look at unconsolidated and consolidated financial statements. If unconsolidated as well as consolidated financial statements are available for the same company year, we use consolidated financial statements. Please note that this sample includes all individual auditors in our treatment as well as in our control group. The respective sample size is derived from our baseline sample of 397,011 observations (also compare Table 15).

<sup>28</sup> We use all available data independent of the client industry (e.g., financial sector firms), as the consequences for individual auditors following an audit failure should be unrelated to the industry of the client. Please note that this starting sample is further used to identify the respective individual auditors in our treatment as well as in our control group.

portfolio, career, and learning effect, we derive separate subsamples. We present details on the sample composition of each sample in the respective section below.

## 2.4 Effects of Enforcement Errors on Signing Auditors' Client Portfolio

### 2.4.1 Theory

Audit failures of individual auditors may be associated with changes in individual auditors' client portfolio even in the absence of external oversight institutions and explicit sanctions due to reputational shocks. An audit failure inflicts damage on the reputation of an audit firm and, as a result, reduces its public credibility for providing high quality audits (Skinner and Srinivasan 2012). These reputational shocks increase the risk of losing clients and, thus, audit fees (Weber et al. 2008). In response to these risks, audit firms might remove individual auditors involved in audit failures from the client. Clients might also be motivated to replace a signing auditor involved in an audit failure to avoid being tarnished by the diminished reputation of that individual auditor. Consistent with this argument, Aobdia, Lin, and Petacchi (2015) show that capital markets react positively after the substitution of a low quality individual auditor with a high quality individual auditor.

While the aforementioned arguments imply a negative effect on an individual auditor's client portfolio, the strength of this effect might differ for private and public clients. From an audit firm's perspective, public clients are of utmost importance due to the higher level of audit fees and public prestige gained over their competitors (Carson et al. 2012). From a client perspective, public companies have higher visibility and might face more severe consequences following audit failures (Chaney and Philipich 2002). In contrast, private firms are less visible and often more concerned about low audit fees than about auditor reputation (Chaney et al. 2004). Overall, we state the following hypothesis:

*H1: Signing auditors involved in audit failures experience a negative effect on their client portfolio after audit failures compared to signing auditors not involved in audit failures.*

In the following, we differentiate between the roles of signing auditors, i.e., lead auditor and concurring auditor. Both the lead auditor and concurring auditor are legally responsible for the audit outcome. However, in Germany, they differ with respect to their career level and tasks. While concurring auditors are usually partners and mainly involved in reviewing the audit work, lead auditors are often of lower rank (e.g., managers, senior managers, or directors) and responsible for planning, guiding and concluding the audit. Given the lesser involvement of concurring auditors and their higher rank compared to lead auditors, one might expect that concurring auditors may experience less severe consequences.

#### 2.4.2 Research Design

We examine the consequences of audit failures on lead and concurring auditor's client portfolio building on the approach of Lennox and Li (2012). In particular, we use a difference-in-differences approach and a matched sample of individual auditors with audit failures (treatment group) and individual auditors without audit failures (control group). This approach enables us to analyze changes in an individual auditor's client portfolio following the announcement of an audit failure controlling for any effects unrelated to an audit failure. For all analyses, we use a four-year period  $([-2;+2])$  around the publication of the audit failure ('cutoff year'). We exclude the cutoff year because audit failures are announced during the year and it is unclear whether the effects have already materialized in that year. However, the effects should manifest themselves in the following years. Given that our control group outnumbers our treatment group, we use a one-to-many matching with replacement (Shipman, Swanquist, and Whited 2017).<sup>29</sup> We match each individual auditor

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<sup>29</sup> We find similar results using a 1:1 matching approach. Using the treatment group and all available observations of the control group, similar to Lennox and Li (2012), leads to comparable results as well.

responsible for an audit failure with other individual auditors not being involved in audit failures on the following criteria: gender, Big 4 affiliation, fiscal year and similar age (tolerance range of 2 years)<sup>30</sup>. To examine the differences in the roles of signing auditors within an audit team we conduct all analyses separately for lead auditors and concurring auditors. Our model is defined as follows:

$$\begin{aligned} \text{Consequences}_{it} = & \alpha_0 + \beta_1 \text{Treatment}_i + \beta_2 \text{Post}_{it} + \beta_3 \text{Treatment}_i * \text{Post}_{it} \\ & + \sum_k \beta_k \text{Controls}_{kit} + \text{Year fixed effects} + \varepsilon_{it}, \end{aligned} \quad (1)$$

All variables are defined in section 2.9 Appendix A.  $\text{Treatment}_i$  ( $\beta_1$ ) is a binary variable indicating treatment group auditors, and  $\text{Post}_{it}$  ( $\beta_2$ ) is a binary variable indicating periods following the announcement of an audit failure. The interaction term  $\text{Post}_{it} * \text{Treatment}_i$  ( $\beta_3$ ) indicates client portfolio changes for individual auditors involved in audit failures following the announcement of an audit failure controlling for changes unrelated to audit failures. If audit failures have a negative effect on auditors' client portfolio, we expect to find a negative and significant coefficient on  $\beta_3$ .

The dependent variable *Consequences* stands for several client portfolio measures. We examine changes in the total number of clients ( $\text{Clients}_{total_{it}}$ ) as well as their respective components, i.e., changes in the total number of both private ( $\text{Clients}_{private_{it}}$ ) and public clients ( $\text{Clients}_{public_{it}}$ ). We exploit the structure of the German stock market to examine changes in the number of prestigious clients defined as companies listed in the "Prime Standard" stock market segment<sup>31</sup> ( $\text{Clients}_{prime_{it}}$ ). We examine changes of logarithmic audit fees for all clients ( $\text{Audit}_{fees}_{total_{it}}$ ), public clients ( $\text{Audit}_{fees}_{public_{it}}$ ), private

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<sup>30</sup> We conduct the matching for individual auditors involved in enforcement errors two years before the announcement of the enforcement error. As for our matching approach we conduct a 1:N matching with replacement whereas the number of control observations to one treatment observation is limited to a maximum number of 100 observations. This matching approach is less susceptible to outliers of the control group and the treatment effect can be measured more accurately.

<sup>31</sup> The Prime Standard Segment is part of the regulated market in Germany with the highest transparency requirements.

clients (*Audit\_fees\_private<sub>it</sub>*) and prestigious clients (*Audit\_fees\_prime<sub>it</sub>*). Due to data limitations for private clients, we replace missing audit fees by the square root of total assets<sup>32</sup>. Finally, in line with Lennox and Li (2012), we use the ratio of gaining and losing clients (*Portfolio\_growth<sub>it</sub>*).

We include control variables to proxy for differences in individual auditor characteristics derived from Gul, Wu, and Yang (2013), Zerni (2012) and Sundgren and Svanström (2014). We control for general experience using the natural logarithm of the years since the CPA appointment (*Ln(CPA\_age<sub>it</sub>)*). We include the binary variable *Gender<sub>i</sub>* that takes the value of one for female individual auditors and zero otherwise to control for trait differences between male and female individual auditors (Barua, Davidson, Rama, and Thiruvadi 2010). We include the binary variable *Retire\_age<sub>it</sub>* indicating closeness to retirement age. We control for general and audit-related qualifications using variables indicating whether an individual auditor holds a doctorate or an honorary professorship (*Education<sub>i</sub>*), audit experience at the client level (*Tenure<sub>it</sub>*) and industry specialization (*Industry\_specialist<sub>it</sub>*). In addition, we control for audit firm's characteristics by including the binary variable *Big\_4<sub>it</sub>*. To control for outliers, we winsorize all continuous variables at the one percent and 99 percent level. The OLS regressions include year fixed effects and robust standard errors.<sup>33</sup>

In deriving our sample for the portfolio analysis, we start from the baseline sample described in the preceding section. We exclude all individual auditors with missing data on portfolio structure for estimating model (1) over the four-year period. This data requirement leads to a final treatment group of 90 unique lead auditors and 81 unique concurring auditors

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<sup>32</sup> Simunic (1980) finds a nonlinear association (e.g., using square root) between audit fees and the client's total assets. Due to low data coverage of actual audit fees we replenish audit fees using the square root of client's total assets. For public firms we replenish 61.6 % of audit fees and for private firms we replenish 97.9 % of audit fees respectively. Thus, please note that the respective results should be interpreted with caution.

<sup>33</sup> Our basic model 1 does not control for any further client characteristics. In additional analysis, we control for client, individual auditor, audit office and audit firm characteristics. This test leads to virtually unchanged results.

prior to matching. After matching, the control group for lead auditors includes 3,789 lead auditors and the control group for concurring auditors includes 2,778 concurring auditors.<sup>34</sup>

### 2.4.3 Results

Table 2 presents descriptive statistics for the variables used for examining the influence of audit failures on lead and concurring auditor's client portfolio. Table 2 Panel A shows that concurring auditors are more likely to be male than lead auditors (97.4 versus 86.4 percent), are more likely hold a doctorate or an honorary professorship (13.3 versus 8.0 percent), have more general audit experience (15.2 versus 10.7 years), and have a longer client firm tenure (1.917 versus 1.762 years). On average, concurring auditors audit more clients per year than lead auditors (8.240 versus 4.379 clients), more public clients (0.252 versus 0.117 clients), and more private clients (7.988 versus 4.262 clients). However, concurring auditors, on average, generate lower fees from auditing prestigious clients than lead auditors (128,027 EUR versus 160,974 EUR), lower audit fees from auditing public clients (48,630 EUR versus 58,629 EUR), but higher audit fees from auditing private clients (5,177 EUR versus 4,866 EUR). Note that the audit fee distribution is skewed because not every individual auditor acts as signing auditor each year. Supporting the notion that concurring auditors are older and higher ranked than lead auditors, we find statistically significant differences between the two groups with respect to general expertise, age, education, client tenure and several measures of client portfolio size.

Table 2 Panel B presents descriptive statistics before (PRE) and after (POST) the audit failure for lead auditors' client portfolio variables. We see significant average declines in prestigious clients (0.294 versus 0.117), public clients (0.844 versus 0.389), audit fees from auditing all clients (17,641 EUR versus 7,934 EUR), prestigious clients (180,052 EUR

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<sup>34</sup> After matching, we have an average matched control group size of 91.833 lead auditors and an average matched control group size of 95.111 concurring auditors.



versus 63,959 EUR), public clients (72,620 EUR versus 34,544 EUR), and portfolio growth (0.511 versus 0.101) after the enforcement error for the treatment group only. The results for the control group are less pronounced or even the opposite looking at the difference between before and after the enforcement error.

Table 2 Panel C presents descriptive statistics before (PRE) and after (POST) the audit failure for concurring auditors' client portfolio variables. We see significant average declines in prestigious clients (0.636 versus 0.352), public clients (1.543 versus 0.840), audit fees from auditing all clients (10,840 EUR versus 8,103 EUR), and portfolio growth (0.856 versus 0.160) after the enforcement error for the treatment group only. The results for the control group are less pronounced looking at the difference between before and after the enforcement error or even the opposite.

Table 2: Descriptive statistics of the portfolio structure sample

Panel A: Descriptive statistics of the portfolio structure sample									
	Lead auditor				Concurring auditor				$\Delta$ Mean
	N	Median	Mean	Sd	N	Median	Mean	Sd	
<i>Clients_total<sub>it</sub></i>	33,420	2.000	4.379	6.165	31,140	3.000	8.240	13.115	3.861***
<i>Audit_fees_total<sub>it</sub></i>	23,107	8.381	8.657	1.249	21,882	8.477	8.674	1.067	0.017
<i>Clients_public<sub>it</sub></i>	33,420	0.000	0.117	0.388	31,140	0.000	0.252	0.702	0.135***
<i>Audit_fees_public<sub>it</sub></i>	3,311	11.019	10.979	2.325	4,971	10.829	10.792	2.068	-0.187***
<i>Clients_private<sub>it</sub></i>	33,420	2.000	4.262	6.109	31,140	3.000	7.988	12.876	3.726***
<i>Audit_fees_private<sub>it</sub></i>	22,425	8.328	8.490	0.926	21,449	8.424	8.552	0.869	0.062***
<i>Clients_prime<sub>it</sub></i>	33,420	0.000	0.049	0.232	31,140	0.000	0.106	0.409	0.057***
<i>Audit_fees_prime<sub>it</sub></i>	1,505	11.626	11.989	2.448	2,457	11.599	11.760	2.134	-0.229***
<i>Portfolio_growth<sub>it</sub></i>	33,324	0.000	0.333	0.940	31,103	0.000	0.418	1.123	0.085***
<i>Ln(CPA_age)<sub>it</sub></i>	33,420	2.485	2.372	0.609	31,140	2.773	2.719	0.483	0.347***
<i>Gender<sub>i</sub></i>	33,420	0.000	0.136	0.342	31,140	0.000	0.026	0.159	-0.110***
<i>Retire_age<sub>it</sub></i>	33,420	0.000	0.208	0.406	31,140	0.000	0.441	0.496	0.233***
<i>Education<sub>i</sub></i>	33,420	0.000	0.080	0.271	31,140	0.000	0.133	0.339	0.053***
<i>Tenure<sub>it</sub></i>	33,420	1.684	1.762	1.409	31,140	1.941	1.917	1.384	0.155***
<i>Industry_specialist<sub>it</sub></i>	33,420	0.000	0.341	0.474	31,140	0.000	0.429	0.495	0.088***
<i>Big_4<sub>it</sub></i>	33,420	0.000	0.412	0.492	31,140	0.000	0.437	0.496	0.025***

(continued on next page)

Table 2 (continued)

Panel B: PRE / POST analysis for lead auditors

		PRE				POST				
		N	Median	Mean	Sd	N	Median	Mean	Sd	Δ Mean
<i>Clients_total<sub>it</sub></i>	<i>Treatment</i>	180	3.000	5.294	6.054	180	3.000	4.522	5.266	-0.772
	<i>Control</i>	16,530	2.000	4.605	6.621	16,530	2.000	4.141	5.673	-0.464***
<i>Audit_fees_total<sub>it</sub></i>	<i>Treatment</i>	155	9.236	9.778	1.771	128	8.612	8.979	1.562	-0.799***
	<i>Control</i>	11,540	8.367	8.611	1.185	11,284	8.385	8.686	1.291	0.075***
<i>Clients_public<sub>it</sub></i>	<i>Treatment</i>	180	1.000	0.844	0.775	180	0.000	0.389	0.672	-0.455***
	<i>Control</i>	16,530	0.000	0.122	0.399	16,530	0.000	0.101	0.357	-0.021***
<i>Audit_fees_public<sub>it</sub></i>	<i>Treatment</i>	117	11.156	11.193	1.780	53	10.491	10.450	1.645	-0.743**
	<i>Control</i>	1,703	11.043	10.956	2.281	1,438	11.019	11.008	2.434	0.052
<i>Clients_private<sub>it</sub></i>	<i>Treatment</i>	180	2.000	4.450	5.874	180	2.000	4.133	5.037	-0.317
	<i>Control</i>	16,530	2.000	4.483	6.567	16,530	2.000	4.040	5.619	-0.443***
<i>Audit_fees_private<sub>it</sub></i>	<i>Treatment</i>	113	8.394	8.603	0.939	117	8.329	8.612	1.367	0.009
	<i>Control</i>	11,172	8.312	8.437	0.849	11,023	8.341	8.541	0.990	0.104***
<i>Clients_prime<sub>it</sub></i>	<i>Treatment</i>	180	0.000	0.294	0.492	180	0.000	0.117	0.339	-0.177***
	<i>Control</i>	16,530	0.000	0.051	0.239	16,530	0.000	0.043	0.217	-0.008***
<i>Audit_fees_prime<sub>it</sub></i>	<i>Treatment</i>	50	12.401	12.101	2.021	20	10.840	11.066	2.117	-1.035*
	<i>Control</i>	773	11.513	11.901	2.377	662	11.806	12.112	2.561	0.211
<i>Portfolio_growth<sub>it</sub></i>	<i>Treatment</i>	180	0.000	0.511	1.217	180	0.000	0.101	0.946	-0.410***
	<i>Control</i>	16,467	0.000	0.525	0.976	16,497	0.000	0.143	0.856	-0.382***

Panel C: PRE / POST analysis for concurring auditors

		PRE				POST				
		N	Median	Mean	Sd	N	Median	Mean	Sd	Δ Mean
<i>Clients_total<sub>it</sub></i>	<i>Treatment</i>	162	9.000	15.222	16.069	162	8.500	12.605	13.291	-2.617
	<i>Control</i>	15,408	3.000	8.618	13.567	15,408	3.000	7.743	12.568	-0.875***
<i>Audit_fees_total<sub>it</sub></i>	<i>Treatment</i>	152	8.809	9.291	1.301	132	8.799	9.000	1.106	-0.291**
	<i>Control</i>	10,799	8.432	8.624	1.082	10,799	8.513	8.711	1.042	0.087***
<i>Clients_public<sub>it</sub></i>	<i>Treatment</i>	162	1.000	1.543	1.716	162	0.000	0.840	1.323	-0.703***
	<i>Control</i>	15,408	0.000	0.254	0.695	15,408	0.000	0.231	0.665	-0.023***
<i>Audit_fees_public<sub>it</sub></i>	<i>Treatment</i>	116	11.001	11.156	1.463	72	10.916	10.935	1.741	-0.221
	<i>Control</i>	2,524	10.841	10.782	2.084	2,259	10.811	10.779	2.085	-0.003
<i>Clients_private<sub>it</sub></i>	<i>Treatment</i>	162	8.000	13.679	15.465	162	7.500	11.765	12.849	-1.914
	<i>Control</i>	15,408	3.000	8.364	13.332	15,408	3.000	7.512	12.340	-0.852***
<i>Audit_fees_private<sub>it</sub></i>	<i>Treatment</i>	131	8.526	8.608	0.803	129	8.655	8.770	0.954	0.162
	<i>Control</i>	10,576	8.380	8.493	0.855	10,613	8.470	8.607	0.878	0.114***
<i>Clients_prime<sub>it</sub></i>	<i>Treatment</i>	162	0.000	0.636	0.938	162	0.000	0.352	0.709	-0.284***
	<i>Control</i>	15,408	0.000	0.106	0.407	15,408	0.000	0.098	0.393	-0.008*
<i>Audit_fees_prime<sub>it</sub></i>	<i>Treatment</i>	74	12.188	11.948	1.912	42	11.247	11.360	1.933	-0.588
	<i>Control</i>	1,224	11.562	11.738	2.209	1,117	11.608	11.787	2.071	0.049
<i>Portfolio_growth<sub>it</sub></i>	<i>Treatment</i>	162	0.693	0.856	1.586	162	0.000	0.160	1.176	-0.696***
	<i>Control</i>	15,381	0.000	0.632	1.145	15,398	0.000	0.201	1.049	-0.431***

(continued on next page)

## Table 2 (continued)

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This table shows descriptive statistics for our matched portfolio structure sample consisting of unique concurring auditor years and unique lead auditors' years involved in an enforcement error (treatment group) and a sample of unique concurring auditor years and unique lead auditor years without an enforcement error (control group). Panel A illustrates the differences between lead auditors and concurring auditors, Panel B illustrates the differences between the PRE and POST period of enforcement errors for lead auditors and Panel C illustrates the differences between the PRE and POST period of enforcement errors for concurring auditors. We use a four-year window around the cutoff year for each individual auditor. The cutoff year is defined as the publication year of the enforcement error which is excluded. In addition, we use a simple T-test to examine any differences in mean before and after the enforcement error (Panel B, C) as well as between lead and concurring auditors (Panel A). N varies due to different data coverage. All variables are defined as in section 2.9 Appendix A. All continuous variables are winsorized at the one percent and 99 percent level. \*\*\*, \*\*, and \* denote two-tailed statistical significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

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Table 3 shows the correlation matrix for all variables used for our client portfolio analysis. We mainly find correlations in the predicted direction. Supporting the notion that public and in particular prestigious clients are of importance for an individual auditor, we find positive correlations between prestigious clients ( $Clients\_prime_{it}$ ) and the total number of audit fees (0.362) as well as audit fees earned by public clients (0.341). Respectively, we find positive correlations for the audit fees of prestigious clients with the total number of audit fees (0.553) as well as audit fees earned by public clients (0.930).

Table 3: Correlation matrix of the portfolio structure sample

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
<i>Clients_total<sub>it</sub></i>	(1)		<b>0.041</b>	<b>0.347</b>	<b>-0.146</b>	<b>0.995</b>	<b>0.027</b>	<b>0.217</b>	<b>-0.215</b>	<b>0.304</b>	<b>0.056</b>	<b>-0.082</b>	<b>0.014</b>	-0.006	<b>0.571</b>	<b>0.723</b>	<b>0.155</b>
<i>Audit_fees_total<sub>it</sub></i>	(2)	<b>-0.071</b>		<b>0.366</b>	<b>0.558</b>	0.006	<b>0.833</b>	<b>0.323</b>	<b>0.494</b>	<b>-0.078</b>	<b>0.008</b>	-0.006	<b>0.051</b>	<b>0.020</b>	<b>0.113</b>	<b>0.337</b>	<b>0.529</b>
<i>Clients_public<sub>it</sub></i>	(3)	<b>0.335</b>	<b>0.319</b>		<b>0.027</b>	<b>0.283</b>	<b>0.169</b>	<b>0.653</b>	<b>-0.036</b>	<b>0.094</b>	<b>0.036</b>	<b>-0.058</b>	<b>0.025</b>	<b>0.033</b>	<b>0.208</b>	<b>0.357</b>	<b>0.254</b>
<i>Audit_fees_public<sub>it</sub></i>	(4)	<b>-0.128</b>	<b>0.589</b>	0.012		<b>-0.151</b>	<b>0.202</b>	<b>0.394</b>	<b>0.917</b>	<b>-0.052</b>	<b>0.086</b>	<b>-0.018</b>	<b>0.059</b>	<b>0.046</b>	<b>0.041</b>	<b>0.058</b>	<b>0.261</b>
<i>Clients_private<sub>it</sub></i>	(5)	<b>0.999</b>	<b>-0.091</b>	<b>0.284</b>	<b>-0.130</b>		<b>0.014</b>	<b>0.167</b>	<b>-0.217</b>	<b>0.305</b>	<b>0.056</b>	<b>-0.078</b>	<b>0.015</b>	<b>-0.012</b>	<b>0.557</b>	<b>0.710</b>	<b>0.141</b>
<i>Audit_fees_private<sub>it</sub></i>	(6)	-0.003	<b>0.705</b>	<b>0.132</b>	<b>0.191</b>	<b>-0.011</b>		<b>0.159</b>	<b>0.170</b>	<b>-0.083</b>	0.005	<b>0.017</b>	<b>0.049</b>	-0.006	<b>0.111</b>	<b>0.346</b>	<b>0.424</b>
<i>Clients_prime<sub>it</sub></i>	(7)	<b>0.200</b>	<b>0.362</b>	<b>0.707</b>	<b>0.341</b>	0.163	<b>0.139</b>		<b>0.045</b>	<b>0.048</b>	<b>0.047</b>	<b>-0.041</b>	<b>0.031</b>	<b>0.052</b>	<b>0.142</b>	<b>0.267</b>	<b>0.246</b>
<i>Audit_fees_prime<sub>it</sub></i>	(8)	<b>-0.181</b>	<b>0.553</b>	<b>-0.054</b>	<b>0.930</b>	<b>-0.180</b>	0.143	0.019		<b>-0.043</b>	<b>0.110</b>	<b>-0.060</b>	<b>0.055</b>	<b>0.086</b>	<b>0.024</b>	<b>-0.080</b>	<b>0.195</b>
<i>Portfolio_growth<sub>it</sub></i>	(9)	<b>0.321</b>	<b>-0.105</b>	<b>0.116</b>	<b>-0.056</b>	<b>0.320</b>	<b>-0.096</b>	<b>0.062</b>	<b>-0.041</b>		<b>-0.096</b>	<b>-0.009</b>	<b>-0.071</b>	-0.005	<b>-0.221</b>	<b>0.196</b>	<b>0.023</b>
<i>Ln(CPA_age)<sub>it</sub></i>	(10)	<b>0.098</b>	<b>0.017</b>	<b>0.046</b>	<b>0.082</b>	<b>0.097</b>	0.004	<b>0.056</b>	<b>0.110</b>	<b>-0.090</b>		<b>-0.257</b>	<b>0.723</b>	<b>0.111</b>	<b>0.125</b>	<b>0.033</b>	<b>-0.008</b>
<i>Gender<sub>i</sub></i>	(11)	<b>-0.084</b>	<b>-0.018</b>	<b>-0.056</b>	<b>-0.026</b>	<b>-0.082</b>	<b>0.014</b>	<b>-0.040</b>	<b>-0.059</b>	<b>-0.015</b>	<b>-0.270</b>		<b>-0.198</b>	<b>-0.075</b>	<b>-0.037</b>	<b>-0.050</b>	<b>0.016</b>
<i>Retire_age<sub>it</sub></i>	(12)	<b>0.071</b>	<b>0.057</b>	<b>0.037</b>	<b>0.059</b>	<b>0.070</b>	<b>0.040</b>	<b>0.046</b>	<b>0.052</b>	<b>-0.063</b>	<b>0.628</b>	<b>-0.198</b>		<b>0.117</b>	<b>0.036</b>	<b>0.028</b>	<b>0.123</b>
<i>Education<sub>i</sub></i>	(13)	<b>0.009</b>	<b>0.048</b>	<b>0.048</b>	<b>0.059</b>	0.006	<b>-0.009</b>	<b>0.065</b>	<b>0.075</b>	-0.001	<b>0.104</b>	<b>-0.075</b>	<b>0.117</b>		<b>-0.008</b>	0.002	<b>-0.019</b>
<i>Tenure<sub>it</sub></i>	(14)	<b>0.264</b>	<b>0.108</b>	<b>0.153</b>	<b>0.038</b>	<b>0.260</b>	<b>0.115</b>	<b>0.119</b>	<b>0.025</b>	<b>-0.245</b>	<b>0.148</b>	<b>-0.036</b>	<b>0.038</b>	<b>-0.008</b>		<b>0.354</b>	<b>0.011</b>
<i>Industry_specialist<sub>it</sub></i>	(15)	<b>0.614</b>	<b>0.148</b>	<b>0.335</b>	<b>0.026</b>	<b>0.606</b>	<b>0.294</b>	<b>0.256</b>	<b>-0.104</b>	<b>0.239</b>	<b>0.041</b>	<b>-0.050</b>	<b>0.028</b>	0.002	<b>0.306</b>		<b>0.296</b>
<i>Big_4<sub>it</sub></i>	(16)	<b>0.210</b>	<b>0.409</b>	<b>0.232</b>	<b>0.257</b>	<b>0.201</b>	<b>0.358</b>	<b>0.232</b>	<b>0.189</b>	<b>0.042</b>	<b>-0.036</b>	<b>0.016</b>	<b>0.123</b>	<b>-0.019</b>	0.000	<b>0.296</b>	

This table shows correlations of all variables used for estimating model 1 for our matched sample consisting of unique individual auditors involved in an enforcement error (treatment group) and a sample of unique individual auditors without an enforcement error (control group). Pearson (Spearman) correlations are presented below (above) the diagonal. All variables are defined as in section 2.9 Appendix A. All continuous variables are winsorized at the one percent and 99 percent level. Bold numbers indicate significance at least at the 10 percent level.

Table 4 presents the results for estimating model (1) separately for lead auditors and concurring auditors. Controlling for time trends like the general economic development unrelated to the enforcement error as well as individual auditor and audit firm's characteristics, we find a significantly negative sign at  $Post_{it} * Treatment_i$  indicating a decrease in the total number of public clients (-0.413 versus -0.645), prestigious clients (-0.161 versus -0.262), the total amount of audit fees (-0.822 versus -0.369) as well as the total amount of audit fees from prestigious clients (-1.516 versus -0.751) for both the lead auditor and concurring auditor after the enforcement error. Further, lead auditors earn fewer audit fees from public clients after the enforcement error compared to concurring auditors (-0.826). However, looking at concurring auditors, we find a significant reduction in the clients' portfolio growth (-0.239). We conclude that both lead and concurring auditors face negative consequences from enforcement errors. With respect to our control variables - experience, gender, retirement age, education, client tenure, industry specialization and Big 4 affiliation - they all have an effect on our dependent variables. The explanatory power of the models ranges between 5.87 percent and 33.29 percent.<sup>35</sup>

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<sup>35</sup> As a robustness check, we further use negative binomial regression for the following dependent variables  $Clients_{total_{it}}$ ,  $Clients_{public_{it}}$ ,  $Clients_{private_{it}}$ ,  $Clients_{prime_{it}}$  due to being count variables (Schmidt and Wilkins 2013). The results stay virtually unchanged (see Table 11). For our model 1 including additional controls mentioned in footnote 33 the results stay virtually unchanged for the OLS regression as well as for the negative binomial regression.

Table 4: Regression results for changes in the portfolio structure of individual auditors for the matched sample after an enforcement error

<b>Panel A: Lead auditor</b>									
	<i>Clients_</i> <i>total<sub>it</sub></i>	<i>Audit_fees_</i> <i>total<sub>it</sub></i>	<i>Clients_</i> <i>public<sub>it</sub></i>	<i>Audit_fees_</i> <i>public<sub>it</sub></i>	<i>Clients_</i> <i>private<sub>it</sub></i>	<i>Audit_fees_</i> <i>private<sub>it</sub></i>	<i>Clients_</i> <i>prime<sub>it</sub></i>	<i>Audit_fees_</i> <i>prime<sub>it</sub></i>	<i>Portfolio_</i> <i>growth<sub>it</sub></i>
<i>Post<sub>it</sub></i>	-0.157* (0.086)	0.053** (0.022)	0.010 (0.006)	0.340*** (0.117)	-0.167* (0.085)	0.002 (0.017)	0.000 (0.004)	0.635*** (0.197)	-0.031** (0.014)
<i>Treatment<sub>i</sub></i>	-0.727* (0.407)	1.091*** (0.134)	0.684*** (0.057)	0.670*** (0.175)	-1.411*** (0.403)	0.150* (0.083)	0.226*** (0.036)	0.824*** (0.298)	-0.035 (0.078)
<b><i>Post<sub>it</sub> * Treatment<sub>i</sub></i></b>	<b>0.431</b> <b>(0.525)</b>	<b>-0.822***</b> <b>(0.188)</b>	<b>-0.413***</b> <b>(0.075)</b>	<b>-0.826***</b> <b>(0.285)</b>	<b>0.844</b> <b>(0.513)</b>	<b>-0.091</b> <b>(0.147)</b>	<b>-0.161***</b> <b>(0.044)</b>	<b>-1.516**</b> <b>(0.591)</b>	<b>-0.063</b> <b>(0.104)</b>
<i>Ln(CPA_age)<sub>it</sub></i>	-0.589*** (0.059)	0.062*** (0.015)	-0.025*** (0.005)	0.477*** (0.077)	-0.564*** (0.059)	-0.011 (0.011)	0.003 (0.003)	0.894*** (0.119)	-0.087*** (0.010)
<i>Gender<sub>i</sub></i>	-0.630*** (0.071)	-0.051*** (0.019)	-0.036*** (0.006)	-0.048 (0.118)	-0.595*** (0.071)	-0.015 (0.016)	-0.013*** (0.003)	0.109 (0.195)	-0.020 (0.014)
<i>Retire_age<sub>it</sub></i>	-0.262*** (0.089)	-0.093*** (0.025)	-0.030*** (0.006)	-0.196 (0.134)	-0.233*** (0.089)	-0.005 (0.018)	-0.015*** (0.004)	-0.305 (0.191)	0.004 (0.014)
<i>Education<sub>i</sub></i>	-0.316** (0.144)	0.147*** (0.036)	0.012 (0.007)	0.191 (0.151)	-0.328** (0.144)	0.023 (0.024)	0.023*** (0.005)	0.237 (0.206)	-0.042** (0.016)
<i>Tenure<sub>it</sub></i>	0.650*** (0.016)	0.046*** (0.011)	0.029*** (0.001)	0.102** (0.044)	0.622*** (0.016)	-0.007 (0.008)	0.013*** (0.001)	-0.057 (0.066)	-0.126*** (0.003)
<i>Industry_specialist<sub>it</sub></i>	5.747*** (0.085)	0.193*** (0.017)	0.124*** (0.005)	0.282*** (0.098)	5.622*** (0.085)	0.168*** (0.014)	0.051*** (0.003)	0.117 (0.160)	0.457*** (0.012)
<i>Big_4<sub>it</sub></i>	-0.468*** (0.066)	0.879*** (0.021)	0.093*** (0.005)	1.338*** (0.092)	-0.561*** (0.066)	0.638*** (0.015)	0.071*** (0.003)	1.290*** (0.149)	-0.079*** (0.010)
<i>Constant</i>	1.374*** (0.122)	9.092*** (0.099)	0.101*** (0.012)	9.712*** (0.250)	1.273*** (0.123)	8.497*** (0.065)	-0.005 (0.007)	9.933*** (0.373)	0.379*** (0.023)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	33,420	23,107	33,420	3,311	33,420	22,425	33,420	1,505	33,324
adj. R <sup>2</sup>	0.2850	0.1692	0.0888	0.1051	0.2757	0.1631	0.0587	0.0916	0.1906

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Table 4 (continued)

## Panel B: Concurring auditor

	<i>Clients_</i> <i>total<sub>it</sub></i>	<i>Audit_fees_</i> <i>total<sub>it</sub></i>	<i>Clients_</i> <i>public<sub>it</sub></i>	<i>Audit_fees_</i> <i>public<sub>it</sub></i>	<i>Clients_</i> <i>private<sub>it</sub></i>	<i>Audit_fees_</i> <i>private<sub>it</sub></i>	<i>Clients_</i> <i>prime<sub>it</sub></i>	<i>Audit_fees_</i> <i>prime<sub>it</sub></i>	<i>Portfolio_</i> <i>growth<sub>it</sub></i>
<i>Post<sub>it</sub></i>	-0.424** (0.196)	-0.065*** (0.018)	-0.031** (0.012)	0.005 (0.087)	-0.394** (0.193)	-0.045*** (0.015)	-0.015** (0.007)	0.148 (0.120)	-0.011 (0.018)
<i>Treatment<sub>i</sub></i>	3.077*** (1.073)	0.614*** (0.098)	1.171*** (0.132)	0.580*** (0.147)	1.906* (1.035)	0.083 (0.063)	0.476*** (0.072)	0.543** (0.222)	0.146 (0.102)
<b><i>Post<sub>it</sub> * Treatment<sub>i</sub></i></b>	<b>-0.558</b> <b>(1.340)</b>	<b>-0.369***</b> <b>(0.132)</b>	<b>-0.645***</b> <b>(0.165)</b>	<b>-0.247</b> <b>(0.256)</b>	<b>0.087</b> <b>(1.300)</b>	<b>0.051</b> <b>(0.099)</b>	<b>-0.262***</b> <b>(0.089)</b>	<b>-0.751**</b> <b>(0.369)</b>	<b>-0.239*</b> <b>(0.136)</b>
<i>Ln(CPA_age)<sub>it</sub></i>	1.305*** (0.155)	0.109*** (0.017)	0.059*** (0.009)	0.415*** (0.105)	1.246*** (0.153)	0.071*** (0.014)	0.045*** (0.005)	-0.072 (0.157)	0.004 (0.015)
<i>Gender<sub>i</sub></i>	0.022 (0.403)	-0.118*** (0.035)	-0.061*** (0.019)	0.092 (0.195)	0.083 (0.399)	-0.091*** (0.029)	-0.014 (0.012)	-0.031 (0.211)	-0.019 (0.035)
<i>Retire_age<sub>it</sub></i>	0.694*** (0.174)	-0.050*** (0.017)	-0.016 (0.010)	-0.263*** (0.082)	0.710*** (0.172)	0.014 (0.014)	-0.020*** (0.006)	-0.070 (0.114)	-0.087*** (0.016)
<i>Education<sub>i</sub></i>	-0.246 (0.157)	0.257*** (0.024)	0.139*** (0.014)	0.530*** (0.081)	-0.385** (0.156)	0.158*** (0.018)	0.098*** (0.009)	0.689*** (0.110)	-0.006 (0.017)
<i>Tenure<sub>it</sub></i>	0.549*** (0.032)	0.109*** (0.011)	0.039*** (0.002)	0.140*** (0.035)	0.510*** (0.032)	0.039*** (0.009)	0.021*** (0.002)	0.125** (0.052)	-0.168*** (0.004)
<i>Industry_specialist<sub>it</sub></i>	12.493*** (0.145)	0.016 (0.017)	0.347*** (0.008)	-0.405*** (0.106)	12.146*** (0.143)	0.060*** (0.015)	0.133*** (0.005)	-1.318*** (0.169)	0.682*** (0.014)
<i>Big_4<sub>it</sub></i>	3.763*** (0.130)	0.800*** (0.017)	0.249*** (0.008)	1.037*** (0.077)	3.515*** (0.128)	0.658*** (0.015)	0.147*** (0.005)	1.133*** (0.116)	-0.048*** (0.012)
<i>Constant</i>	-5.273*** (0.372)	8.771*** (0.091)	-0.152*** (0.024)	9.650*** (0.323)	-5.121*** (0.367)	8.183*** (0.060)	-0.134*** (0.015)	11.546*** (0.483)	0.317*** (0.038)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	31,140	21,882	31,140	4,971	31,140	21,449	31,140	2,457	31,103
adj. R <sup>2</sup>	0.3329	0.2002	0.1587	0.0699	0.3230	0.1886	0.1032	0.0992	0.2112

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#### Table 4 (continued)

This table presents the results of estimating model 1 examining the consequences of enforcement errors on auditors' client portfolio using a matched sample. The dummy variable  $Post_{it}$  is defined as 1 if fiscal year is after the cutoff year, otherwise 0. The dummy variable  $Treatment_{it}$  is defined as 1 if the observations belong to the treatment group, otherwise 0 if the observations belong to the control group. All models are estimated using a four-year window around the cutoff year for each individual auditor. The cutoff year is defined as the publication year of the enforcement error. All models are estimated separately for lead auditors (Panel A) and concurring auditors (Panel B) involved in enforcement errors. We estimate all models using OLS regressions with year fixed effects and robust standard errors. All variables are defined as in section 2.9 Appendix A. We use the following identical matching criteria:  $Gender_{it}$ ,  $Big_{4it}$ , fiscal year and a similar matching criterion for the age of the individual auditor between the treatment group and the control group. Our 1:N matching is a matching approach with replacement, although the number of control observations to one treatment observation is restricted to a maximum number of 100 observations. The numbers in parenthesis are robust standard errors of the respective coefficients. \*\*\*, \*\*, and \* denote two-tailed statistical significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

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We also examine separately the effect of enforcement errors on lead auditors and concurring auditors using observations from the treatment group only (see Table 12). Looking at the effect on the portfolio structure for individual auditors, we find a significant decrease in the total number of audit fees for all clients and a decrease in the total number of prestigious clients and public clients for both the lead auditor and the concurring auditor. These results indicate that individual auditors suffer from enforcement errors by losing clients, especially prestigious clients. In addition, concurring auditors earn fewer audit fees from prestigious clients following an audit failure. However, they experience an increase in the total number of private clients. Controlling for different individual auditor characteristics, we find that, overall, industry specialization, tenure and Big 4 affiliation have an effect on our portfolio structure variables for both lead and concurring auditors.<sup>36</sup>

## 2.5 Effects of Enforcement Errors on Signing Auditors' Career

### 2.5.1 Theory

Audit failures might also have an influence on an individual auditor's career. Supporting this notion, Sundgren and Svanström (2017) document lower compensation for individual auditors responsible for audit failures in Sweden. Likewise, prior literature on the consequences of intentional and unintentional accounting errors for CEOs and CFOs (Desai et al. 2006; Hennes et al. 2007; Collins et al. 2009; Land 2010) documents a higher likelihood of management turnover and negative labor market consequences (e.g., lower-ranking rehiring positions) following accounting errors.

We argue that individual auditors might face career consequences after audit failures. Audit failures might negatively affect career prospects leading to a lower likelihood of promotion. Consequently, auditors might move to other audit firms or even non-audit firms

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<sup>36</sup> Using negative binomial regression, we virtually get unchanged results for our dependent count variables.

to improve their career prospects. In the worst case scenario, individual auditors might have to leave the audit profession following audit failures. In contrast, one might argue that individual auditors responsible for the audit engagement are usually at higher career levels and are often audit partners. As these individual auditors have a well-established network (Carter and Spence 2014), negative consequences might seem unlikely. We examine the consequences of audit failures for both concurring and lead auditors, of which the latter are not necessarily audit partners (Koch and Salterio 2017). Thus, we expect to find a higher likelihood of employment changes following audit failures, at least for lead auditors. Therefore, we state the following hypothesis.

*H2: Signing auditors involved in audit failures are more likely to leave their audit firm after audit failures compared to signing auditors not involved in audit failures.*

#### 2.5.2 Research Design

To examine the influence of audit failures on an individual auditor's career, we examine the employment changes of individual auditors using data from XING and the professional register of the German Chamber of Public Accountants. We use the same approach as for our portfolio structure analysis (model 1) but modify it to reflect the specifics of our career setting. First, we use an alternative set of control variables derived from Chevalier and Ellison (1999). We control for individual auditor characteristics like gender, education, tenure, and experience as well as closeness to retirement age and individual auditors' performance (annual growth of the total number of clients ( $Ap\_performance\_1_{it}; Ap\_performance\_1_{it-1}$ ) and annual growth of audit fees ( $Ap\_performance\_2_{it}; Ap\_performance\_2_{it-1}$ )). Second, we use all available data instead of a four-year window because the career movements are severe consequences that need time to materialize. Finally, we use the individual auditors' career level, i.e., manager, senior manager, or partner, as an additional matching criterion for our matched sample approach. This approach

enables us to control for differences in termination rates or likelihoods conditional on the career level. For example, partners are less likely to be terminated than managers as they are co-owners of the audit firm. Our dependent variable for career analysis (*Termination<sub>it</sub>*) is a binary variable that takes a value of one if an individual auditor leaves his/her current audit firm during the year and zero otherwise.<sup>37</sup>

Starting from our baseline sample, we exclude all individual auditors with missing information on future employment. This data requirement leads to a final treatment group of 142 unique lead auditors and 117 unique concurring auditors prior to matching. After matching, we end up with a final sample consisting of 58 unique lead auditors along with 1,256 corresponding unique control lead auditors and 34 unique concurring auditors along with 631 corresponding unique control concurring auditors.<sup>38</sup> The resulting difference of individual auditors before and after matching is due to the missing career levels of individual auditors used as an additional matching criterion.

### 2.5.3 Results

Table 5 presents descriptive statistics for variables used for examining the influence of audit failures on lead and concurring auditors' career development. Table 5 Panel A presents descriptive statistics between lead and concurring auditors. We find that concurring auditors are more likely to be male than lead auditors (97.7 versus 93.9 percent), more likely to hold a doctorate or an honorary professorship (8.5 versus 4.0 percent), have more general audit experience (11.8 versus 7.5 years), and have a longer client firm tenure (2.869 versus 2.681

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<sup>37</sup> Please note that employment changes might be attributable to voluntary terminations, forced dismissals or retirement. As reasons for employment changes are not publicly available, we caution not to overstate results. We note that using business-oriented social networking service like XING might lead to a selection effect resulting in a sample which is skewed to younger individual auditors. In terms of generalizability the selection effect for termination is small as we additionally use the German Chamber of Public Accountants in which termination of younger and older individual auditors can be identified.

<sup>38</sup> After matching, we have an average matched control group size of 44.086 lead auditors and an average matched control group size of 44.176 concurring auditors.

years). Furthermore, concurring auditors have a lower termination rate than lead auditors (0.069 versus 0.080).

Table 5 Panel B presents descriptive statistics before (PRE) and after (POST) the audit failure for termination variable of lead auditors. For the treatment group, we observe an average increase in the termination rate (0.085 versus 0.124) after the enforcement error. For the control group, we also see an increase in the termination rate (0.065 versus 0.095) after the cutoff year as well. However, the difference in mean is lower compared to the treatment group only.

Table 5 Panel C presents descriptive statistics before (PRE) and after (POST) the audit failure for concurring auditor's termination variable. For the treatment group as well as for the control group we see an average increase in the termination rate (0.044 versus 0.068; 0.045 versus 0.107) after the cutoff year with the enforcement error. However, the difference in mean is higher compared to the treatment group. The difference in mean is only significant for the control group for both lead and concurring auditors.

Table 5: Descriptive statistics of the termination sample

<b>Panel A: Descriptive statistics of the termination sample</b>									
	<b>Lead auditor</b>				<b>Concurring auditor</b>				$\Delta$ Mean
	N	Median	Mean	Sd	N	Median	Mean	Sd	
<i>Termination<sub>it</sub></i>	10,676	0.000	0.080	0.272	6,682	0.000	0.069	0.254	-0.011***
<i>Ap_age_adjusted_performance_1<sub>it</sub></i>	10,676	0.000	-0.603	7.020	6,682	0.000	-1.513	11.139	-0.910***
<i>Ap_age_adjusted_performance_2<sub>it</sub></i>	10,676	0.000	-0.035	0.576	6,682	-0.006	-0.078	0.776	-0.043***
<i>Ap_performance_1<sub>it</sub></i>	10,676	0.000	0.144	1.254	6,682	0.000	0.184	1.517	0.040*
<i>Ap_performance_1<sub>it-1</sub></i>	10,676	0.000	0.561	1.934	6,682	0.000	0.850	3.693	0.289***
<i>Ap_performance_2<sub>it</sub></i>	10,676	0.002	0.015	0.112	6,682	0.004	0.015	0.104	0.000
<i>Ap_performance_2<sub>it-1</sub></i>	10,676	0.003	0.015	0.113	6,682	0.003	0.014	0.110	-0.001
<i>Af_growth<sub>it</sub></i>	10,676	0.054	1.840	27.298	6,682	0.045	2.529	55.338	0.689
<i>Ln(CPA_age)<sub>it</sub></i>	10,676	2.079	2.018	0.575	6,682	2.485	2.471	0.415	0.453***
<i>Gender<sub>i</sub></i>	10,676	0.000	0.061	0.240	6,682	0.000	0.023	0.149	-0.038***
<i>Retire_age<sub>it</sub></i>	10,676	0.000	0.017	0.131	6,682	0.000	0.112	0.315	0.095***
<i>Education<sub>i</sub></i>	10,676	0.000	0.040	0.196	6,682	0.000	0.085	0.279	0.045***
<i>Tenure<sub>it</sub></i>	10,676	2.500	2.681	1.159	6,682	2.700	2.869	1.124	0.188***
<i>Industry_specialist<sub>it</sub></i>	10,676	0.000	0.477	0.499	6,682	1.000	0.597	0.490	0.120***
<i>Big_4<sub>it</sub></i>	10,676	0.000	0.406	0.491	6,682	0.000	0.426	0.495	0.020***

**Panel B: PRE / POST analysis for lead auditors**

		<b>PRE</b>				<b>POST</b>				$\Delta$ Mean
		N	Median	Mean	Sd	N	Median	Mean	Sd	
<i>Termination<sub>it</sub></i>	<i>Treatment</i>	260	0.000	0.085	0.279	185	0.000	0.124	0.331	0.039
	<i>Control</i>	5,277	0.000	0.065	0.246	4,954	0.000	0.095	0.294	0.030***

**Panel C: PRE / POST analysis for concurring auditors**

		<b>PRE</b>				<b>POST</b>				$\Delta$ Mean
		N	Median	Mean	Sd	N	Median	Mean	Sd	
<i>Termination<sub>it</sub></i>	<i>Treatment</i>	205	0.000	0.044	0.205	88	0.000	0.068	0.254	0.024
	<i>Control</i>	3,752	0.000	0.045	0.207	2,637	0.000	0.107	0.309	0.062***

This table shows descriptive statistics for our matched termination sample consisting of unique concurring auditor years and unique lead auditors years involved in an enforcement error (treatment group) and a sample of unique concurring auditor years and unique lead auditor years without an enforcement error (control group). Panel A illustrates the differences between lead auditors and concurring auditors, Panel B illustrates the differences between the PRE and POST period of enforcement errors for lead auditors and Panel C illustrates the differences between the PRE and POST period of enforcement errors for concurring auditors. We use all available data. In addition, we use a simple T-test to examine any differences in mean before and after the enforcement error (Panel B, C) as well as between lead and concurring auditors (Panel A). All variables are defined as in section 2.9 Appendix A. All continuous variables are winsorized at the one percent and 99 percent level. \*\*\*, \*\*, and \* denote two-tailed statistical significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

Table 6 presents the correlation matrix for the career development of individual auditors both for the treatment and for the control group. We find some correlations in the predicted

direction. However, we find a positive correlation, e.g., between the termination rate and the annual growth rate ( $Af\_growth_{it}$ ) of the audit firm (0.031) which is counterintuitive. A similar association persists for the experience (0.037) and tenure (0.042) of the individual auditor. In addition, we find a negative correlation between experience and the first performance measure ( $Ap\_performance_{Iit}$ ) of the individual auditor (-0.082) as well as for the lagged performance measure ( $Ap\_performance_{Iit-1}$ ) (-0.073). The same applies to the second performance measure. However, most of the correlations are almost zero.

Table 6: Correlation matrix of the termination sample

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
<i>Termination<sub>it</sub></i>	(1)		<b>0.013</b>	0.012	<b>-0.027</b>	<b>-0.032</b>	-0.007	<b>-0.021</b>	<b>-0.031</b>	<b>0.048</b>	-0.005	0.002	-0.002	<b>0.029</b>	<b>-0.067</b>	<b>-0.154</b>
<i>Ap_age_adjusted_performance_1<sub>it</sub></i>	(2)	<b>0.014</b>		<b>-0.158</b>	<b>-0.375</b>	0.010	<b>0.090</b>	<b>-0.020</b>	0.007	<b>-0.023</b>	0.004	<b>-0.079</b>	<b>-0.020</b>	<b>0.104</b>	<b>-0.074</b>	<b>0.051</b>
<i>Ap_age_adjusted_performance_2<sub>it</sub></i>	(3)	<b>0.018</b>	<b>-0.101</b>		<b>0.076</b>	<b>-0.035</b>	<b>-0.383</b>	<b>0.063</b>	-0.010	<b>0.062</b>	-0.002	<b>0.055</b>	<b>0.016</b>	0.003	<b>-0.021</b>	<b>-0.072</b>
<i>Ap_performance_1<sub>it</sub></i>	(4)	<b>-0.026</b>	<b>-0.633</b>	<b>0.069</b>		<b>-0.041</b>	<b>-0.167</b>	<b>0.038</b>	-0.004	<b>-0.096</b>	0.010	<b>-0.060</b>	0.011	<b>-0.294</b>	<b>0.185</b>	<b>-0.036</b>
<i>Ap_performance_1<sub>it-1</sub></i>	(5)	<b>-0.029</b>	0.005	-0.009	<b>-0.021</b>		<b>0.040</b>	<b>-0.173</b>	<b>-0.037</b>	<b>-0.118</b>	0.000	<b>-0.050</b>	0.007	<b>-0.252</b>	<b>0.090</b>	<b>0.040</b>
<i>Ap_performance_2<sub>it</sub></i>	(6)	-0.008	<b>0.071</b>	<b>-0.535</b>	<b>-0.161</b>	0.010		<b>-0.176</b>	<b>0.178</b>	-0.012	-0.005	0.009	<b>-0.017</b>	<b>0.058</b>	<b>0.017</b>	<b>0.065</b>
<i>Ap_performance_2<sub>it-1</sub></i>	(7)	<b>-0.033</b>	<b>-0.166</b>	<b>0.101</b>	<b>0.197</b>	<b>-0.114</b>	<b>-0.185</b>		<b>0.018</b>	<b>-0.024</b>	-0.005	-0.003	-0.008	<b>0.037</b>	<b>0.018</b>	<b>0.060</b>
<i>Af_growth<sub>it</sub></i>	(8)	<b>0.031</b>	-0.001	<b>-0.023</b>	-0.008	0.003	<b>0.155</b>	-0.006		<b>-0.062</b>	0.000	<b>-0.016</b>	0.007	<b>-0.040</b>	<b>0.031</b>	<b>0.125</b>
<i>Ln(CPA_age)<sub>it</sub></i>	(9)	<b>0.037</b>	<b>0.091</b>	<b>0.080</b>	<b>-0.082</b>	<b>-0.073</b>	<b>-0.027</b>	<b>-0.042</b>	-0.006		<b>-0.082</b>	<b>0.348</b>	<b>0.065</b>	<b>0.328</b>	<b>-0.029</b>	<b>-0.208</b>
<i>Gender<sub>i</sub></i>	(10)	-0.005	<b>-0.034</b>	-0.002	<b>0.022</b>	0.007	-0.004	0.000	0.003	<b>-0.077</b>		<b>-0.045</b>	<b>-0.037</b>	<b>-0.074</b>	<b>-0.016</b>	0.002
<i>Retire_age<sub>it</sub></i>	(11)	0.002	0.007	<b>0.050</b>	<b>-0.043</b>	0.003	-0.004	<b>-0.013</b>	-0.006	<b>0.338</b>	<b>-0.045</b>		<b>0.054</b>	<b>0.103</b>	<b>0.033</b>	<b>0.022</b>
<i>Education<sub>i</sub></i>	(12)	-0.002	0.005	-0.002	0.003	0.008	-0.002	0.012	-0.002	<b>0.060</b>	<b>-0.037</b>	<b>0.054</b>		<b>0.017</b>	<b>0.024</b>	<b>-0.036</b>
<i>Tenure<sub>it</sub></i>	(13)	<b>0.042</b>	<b>0.134</b>	<b>-0.013</b>	<b>-0.256</b>	<b>-0.189</b>	<b>0.070</b>	<b>-0.021</b>	<b>-0.022</b>	<b>0.325</b>	<b>-0.073</b>	<b>0.109</b>	<b>0.014</b>		<b>-0.114</b>	<b>-0.177</b>
<i>Industry_specialist<sub>it</sub></i>	(14)	<b>-0.067</b>	<b>-0.083</b>	<b>0.037</b>	<b>0.132</b>	<b>0.103</b>	<b>-0.059</b>	0.005	-0.008	<b>-0.025</b>	<b>-0.016</b>	<b>0.033</b>	<b>0.024</b>	<b>-0.139</b>		<b>0.290</b>
<i>Big_4<sub>it</sub></i>	(15)	<b>-0.154</b>	<b>-0.056</b>	<b>-0.079</b>	<b>0.027</b>	<b>0.078</b>	<b>0.087</b>	<b>0.082</b>	<b>-0.013</b>	<b>-0.229</b>	0.002	<b>0.022</b>	<b>-0.036</b>	<b>-0.168</b>	<b>0.290</b>	

This table shows correlations of all variables used for estimating a modified model 1 for our matched termination sample consisting of unique individual auditors involved in an enforcement error (treatment group) and a sample of matched individual auditors without an enforcement error (control group). Pearson (Spearman) correlations are presented below (above) the diagonal. All variables are defined as in section 2.9 Appendix A. All continuous variables are winsorized at the one percent and 99 percent level. Bold numbers indicate significance at least at the 10 percent level.

Table 7 presents the multivariate results examining the career consequences of individual auditors following enforcement errors using difference-in-differences design for consistency reasons. Due to the low number of events, we present logistic and OLS regressions for our matched sample.<sup>39</sup> We do not find any evidence of a higher likelihood of termination ( $Post_{it} * Treatment_i$ ).

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<sup>39</sup> For concurring auditors the sample size for the logistic regression is smaller compared to the sample size of the OLS regression due to separation. Therefore, as a robustness check we additionally estimate the logistic regression using penalized maximum likelihood estimates suggested by Firth (1993) (Heinze and Schemper 2002). The results stay virtually unchanged.



Table 7: Regression results for the career development of individual auditors for the matched sample after an enforcement error

	Lead auditor		Concurring auditor	
	OLS regression	Logistic regression	OLS regression	Logistic regression
	Termination <sub>it</sub>	Termination <sub>it</sub>	Termination <sub>it</sub>	Termination <sub>it</sub>
<i>Post<sub>it</sub></i>	-0.012** (0.006)	-0.144* (0.082)	0.005 (0.008)	0.039 (0.117)
<i>Treatment<sub>i</sub></i>	0.028 (0.018)	0.671** (0.261)	0.004 (0.015)	0.248 (0.378)
<b><i>Post<sub>it</sub> * Treatment<sub>i</sub></i></b>	<b>-0.007 (0.029)</b>	<b>-0.471 (0.346)</b>	<b>-0.038 (0.031)</b>	<b>-0.771 (0.606)</b>
<i>Ln(CPA_age)<sub>it</sub></i>	-0.003 (0.006)	-0.058 (0.085)	0.006 (0.010)	0.071 (0.154)
<i>Gender<sub>i</sub></i>	-0.016 (0.010)	-0.294* (0.155)	0.021 (0.016)	0.527 (0.421)
<i>Retire_age<sub>it</sub></i>	-0.001 (0.022)	-0.036 (0.280)	0.002 (0.012)	-0.104 (0.194)
<i>Education<sub>i</sub></i>	-0.028 (0.018)	-0.346* (0.188)	0.016 (0.016)	0.214 (0.218)
<i>Tenure<sub>it</sub></i>	-0.018*** (0.003)	-0.247*** (0.046)	0.000 (0.004)	-0.060 (0.052)
<i>Industry_specialist<sub>it</sub></i>	-0.006 (0.006)	-0.064 (0.082)	0.002 (0.007)	0.057 (0.113)
<i>Ap_age_adjusted_performance_1<sub>it</sub></i>	-0.001** (0.000)	-0.017** (0.008)	-0.001** (0.000)	-0.017 (0.013)
<i>Ap_age_adjusted_performance_2<sub>it</sub></i>	-0.002 (0.005)	-0.025 (0.084)	0.008* (0.005)	0.336** (0.131)
<i>Ap_performance_1<sub>it</sub></i>	-0.004* (0.002)	-0.055 (0.050)	-0.005** (0.002)	-0.197* (0.106)
<i>Ap_performance_1<sub>it-1</sub></i>	0.001 (0.002)	0.021 (0.029)	0.000 (0.000)	-0.050 (0.041)
<i>Ap_performance_2<sub>it</sub></i>	-0.008 (0.027)	-0.185 (0.454)	0.048 (0.042)	1.139 (0.777)
<i>Ap_performance_2<sub>it-1</sub></i>	-0.053*** (0.019)	-1.312*** (0.442)	-0.036 (0.022)	-1.715** (0.854)
<i>Af_growth<sub>it</sub></i>	-0.000** (0.000)	-0.014* (0.008)	0.000*** (0.000)	0.001*** (0.000)
<i>Big_4<sub>it</sub></i>	-0.075*** (0.006)	-1.220*** (0.104)	-0.114*** (0.007)	-3.053*** (0.238)
<i>Constant</i>	0.157*** (0.030)	-2.455*** (0.785)	0.050 (0.032)	-1.253*** (0.462)
Year fixed effects	Yes	Yes	Yes	Yes
N	10,676	10,676	6,682	6,601
adj. / pseudo R <sup>2</sup>	0.0557	0.1227	0.0893	0.2270

This table examines the career development of lead auditors and concurring auditors after enforcement errors. We estimate an OLS regression and a logistic regression for the matched sample. Our model for the matched sample is estimated using all available data before and after the cutoff year. The cutoff year is defined as the publication year of the enforcement error. We use logistic regression and OLS regression with year fixed effects and robust standard errors. All variables are defined as in section 2.9 Appendix A. For our matched sample, we use a 1:N matching approach with replacement using the following matching criteria: *Gender<sub>i</sub>*, *Big\_4<sub>it</sub>*, fiscal year, career level and age of the individual auditor between the treatment group and the control group.

(continued on next page)

## Table 7 (continued)

The number of control observations to one treatment observation is restricted to a maximum number of 100 observations. For the OLS regression, the adjusted  $R^2$  is calculated whereas for the logistic regression the pseudo  $R^2$  is calculated. The numbers in parenthesis are robust standard errors of the respective coefficients. \*\*\*, \*\*, and \* denote two-tailed statistical significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

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We also examine the effect of enforcement errors separately for lead auditors and concurring auditors using the treatment group only prior to matching (see Table 13). Both for lead and for concurring auditors, we observe no significant results for the likelihood of termination estimating a logistic as well as an OLS regression. Overall, we do not find any results for the termination of lead auditors and concurring auditors. These results indicate that lead auditors, as well as concurring auditors, do not suffer negative career effects.

## 2.6 Effects of Enforcement Errors on Audit Quality

### 2.6.1 Theory

Prior research emphasizes the effectiveness of formal sanctions being an incentive for auditors to provide high audit quality (Firth et al. 2014; Chang et al. 2016; Sundgren and Svanström 2017; Sun et al. 2016). Examining the effect of disciplinary actions in Taiwan, Chang et al. (2016) find that sanctions lead to higher audit quality in terms of fewer restatements by audited clients. Firth et al. (2014) find that sanctions by the Chinese regulatory authority increase the likelihood of issuing going concern opinions indicating more conservative auditor behavior. In contrast, Sundgren and Svanström (2017) show that audit partners do not change their reporting behavior after being sanctioned by the Swedish Public Oversight Body. Relatedly, Knechel et al. (2015) do not find any changes in the reporting aggressiveness and individual auditors' conservatism after audit reporting failures surmising that individual auditors have a systematic attribute influencing the audit process.

While prior studies find evidence of learning after legal or disciplinary sanctions, the potential effects on audit quality following reputational shocks are less clear. We argue that individual auditors might change their behavior if incidences of low audit quality are directly attributable to themselves (preventive effect). Supporting this notion, the new PCAOB regulation requires the disclosure of engagement auditors (PCAOB 2015) enabling clients to keep a track record of the individual auditors who have consistently provided high audit quality over time. As audit failures impair the reputation of individual auditors, they might learn from past audit failures to restore their tarnished reputation (corrective effect) (Salterio 1994). Sitkin (1992) argues that failure is important for the learning process and adaptation to new circumstances within an organization to confront better new challenges in the future. In Germany, lead and concurring auditors of all engagements are publicly disclosed. Examining PCAOB inspections of audit engagements focusing on the evaluation on the provided work of audit engagements collecting conclusive evidence to issue an audit opinion, Aobdia (2018) finds an increase in audit firm effort for inspected as well as non-inspected audit engagements after the PCAOB inspection concluding insufficient audit engagement work. As reputational consequences of audit failures are directly attributable to individual auditors, we expect that lead and concurring auditors change their reporting behavior to restore their tarnished reputation.

As both signing auditors are legally responsible for audit outcomes, we expect to find similar effects for lead and concurring auditors. Therefore, we state the following hypothesis.

*H3: Signing auditors involved in audit failures improve their audit quality after audit failures compared to signing auditors not involved in audit failures.*

To measure learning effect, prior studies (Francis and Michas 2013; Li et al. 2017) focus on the contagion effect on other clients as well as on the portfolio of other individual auditors at the same audit office. In our study, we look at the mean accrual quality of an individual

auditors' client portfolio before and after his/her audit failure to determine the learning effect.<sup>40</sup>

### 2.6.2 Research Design

To examine the learning effect following audit failures, we examine changes in individual auditors' audit quality following audit failures. We rely on the same approach as for our portfolio analysis (model 1) but use an alternative set of control variables. We define learning effect as the change in individual auditors' audit quality following audit failures. We measure audit quality using the unsigned discretionary accruals of a cross-sectional performance adjusted modified Jones model (Kothari, Leone, and Wasley 2005), estimated separately for public and private clients at the industry year level. We calculate discretionary accruals separately for public and private companies because of different data sources for public (Worldscope Datastream) and private companies (Bureau van Dijk Orbis). As we are estimating regressions at the individual auditor-year level, we control for differences in client's characteristics by first regressing discretionary accruals on a set of client's characteristics like size, leverage, and growth of total assets and use residuals for further analyses. In detail, we use the average residuals at the individual auditor year level separately for public clients ( $Aq\_public_{it}$ ) and private clients ( $Aq\_private_{it}$ ) as the dependent variable. We do not combine accruals of private and public clients to avoid systematic biases due to different data sources.

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<sup>40</sup> The contagion effect in Li et al. (2017) is measured by the longitudinal self-contagion effect and the lateral contagion effect. The longitudinal self-contagion effect is measured for the same individual auditor before and after the audit failure. The lateral contagion effect is measured by comparing auditors involved in an audit failure and auditors not involved in the audit failure requiring that both auditors are from the same audit office. We argue that an improvement in the audit quality of the individual auditor is related to his/her characteristics and therefore to his/her learning process. Therefore, we use the term learning effect instead of longitudinal self-contagion effect.

Starting from our baseline sample, we exclude all individual auditor years with missing information for discretionary accruals.<sup>41</sup> This data requirement leads to a final treatment group of 47 unique lead auditors and 54 unique concurring auditors prior to matching. After matching, we end up with a final sample consisting of 46 unique lead auditors along with 675 corresponding unique control lead auditors and 54 unique concurring auditors along with 958 corresponding unique control concurring auditors.<sup>42</sup>

### 2.6.3 Results

Table 8 presents descriptive statistics for variables used for examining the influence of audit failures on the lead and concurring auditor's learning effect. Table 8 Panel A presents descriptive statistics between lead and concurring auditors. We find that the average concurring auditor is more likely to be male (96.0 versus 94.4 percent), more likely to hold a doctorate or an honorary professorship (12.3 versus 7.9 percent), have more general audit experience (15.5 versus 10.9 years), and have a longer client firm tenure (2.485 versus 2.373 years), compared to an average lead auditor. With respect to our learning effect measures, the average lead auditor provides lower audit quality for public clients (0.003 versus 0.002). The provided average audit quality for private clients is lower for lead auditors compared to concurring auditors as well (0.007 versus 0.006).

Table 8 Panel B presents descriptive statistics before (PRE) and after (POST) the audit failure for lead auditors' learning effect variables. For the treatment group, we see a decline in the audit quality of public clients (0.000 versus 0.015) and an increase in audit quality for

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<sup>41</sup> Please note that we drop all individual auditors who do not have at least one observation before and after the cutoff year.

<sup>42</sup> Differentiating between, first, our public and private client setting and, second, between lead and concurring auditors after matching we are able to identify 30 lead auditors with an average matched control group size of 9.733 lead auditors for our public client setting. Respectively, we are able to identify 31 concurring auditors with an average matched control group size of 15.419 concurring auditors. For our private client setting we are able to identify 27 lead auditors with an average matched control group size of 37.596 lead auditors. Respectively, we are able to identify 43 concurring auditors with an average matched control group size of 43.698 concurring auditors.

private clients (-0.014 versus -0.021) after the enforcement error. However, the differences in mean are not significant. For the control group, we see an increase in the audit quality of public clients (0.014 versus -0.008) as well as private clients (0.010 versus 0.006) after the enforcement error. The differences in mean are significant for public clients only.

Table 8 Panel C presents descriptive statistics before (PRE) and after (POST) the audit failure for concurring auditors' learning effect variables. For the treatment group, we see an increase in the audit quality of public clients (-0.013 versus -0.021), for the control group we see, however, a decrease in audit quality (0.003 versus 0.005). For the treatment group as well as for the control group we see a decline in the audit quality for private clients (-0.006 versus 0.020; 0.005 versus 0.007). For all of our differences in mean, we do not find any significant results.

Table 8: Descriptive statistics of the learning effect sample

<b>Panel A: Descriptive statistics of the learning effect sample</b>									
	<b>Lead auditor</b>				<b>Concurring auditor</b>				$\Delta$ Mean
	N	Median	Mean	Sd	N	Median	Mean	Sd	
<i>Aq_public<sub>it</sub></i>	904	-0.001	0.003	0.125	1,434	0.000	0.002	0.103	-0.001
<i>Aq_private<sub>it</sub></i>	3,010	0.001	0.007	0.140	5,426	-0.001	0.006	0.127	-0.001
<i>Ln(CPA_age)<sub>it</sub></i>	3,691	2.485	2.387	0.533	6,300	2.833	2.744	0.404	0.357***
<i>Gender<sub>i</sub></i>	3,691	0.000	0.056	0.229	6,300	0.000	0.040	0.196	-0.016***
<i>Retire_age<sub>it</sub></i>	3,691	0.000	0.174	0.379	6,300	0.000	0.475	0.499	0.301***
<i>Education<sub>i</sub></i>	3,691	0.000	0.079	0.270	6,300	0.000	0.123	0.329	0.044***
<i>Tenure<sub>it</sub></i>	3,691	2.292	2.373	1.005	6,300	2.391	2.485	1.026	0.112***
<i>Industry_specialist<sub>it</sub></i>	3,691	1.000	0.789	0.408	6,300	1.000	0.789	0.408	0.000
<i>Big_4<sub>it</sub></i>	3,691	1.000	0.750	0.433	6,300	1.000	0.615	0.487	-0.135***

<b>Panel B: PRE / POST analysis for lead auditors</b>										
		<b>PRE</b>				<b>POST</b>				$\Delta$ Mean
		N	Median	Mean	Sd	N	Median	Mean	Sd	
<i>Aq_public<sub>it</sub></i>	<i>Treatment</i>	51	-0.007	0.000	0.084	49	0.006	0.015	0.079	0.015
	<i>Control</i>	396	0.001	0.014	0.142	408	-0.004	-0.008	0.114	-0.022**
<i>Aq_private<sub>it</sub></i>	<i>Treatment</i>	36	-0.029	-0.014	0.143	48	-0.010	-0.021	0.098	-0.007
	<i>Control</i>	1,374	0.000	0.010	0.167	1,552	0.002	0.006	0.113	-0.004

<b>Panel C: PRE / POST analysis for concurring auditors</b>										
		<b>PRE</b>				<b>POST</b>				$\Delta$ Mean
		N	Median	Mean	Sd	N	Median	Mean	Sd	
<i>Aq_public<sub>it</sub></i>	<i>Treatment</i>	60	-0.001	-0.013	0.078	54	-0.016	-0.021	0.073	-0.008
	<i>Control</i>	674	-0.004	0.003	0.108	646	0.004	0.005	0.101	0.002
<i>Aq_private<sub>it</sub></i>	<i>Treatment</i>	65	-0.020	-0.006	0.135	77	0.001	0.020	0.125	0.026
	<i>Control</i>	2,501	0.001	0.005	0.144	2,783	-0.002	0.007	0.110	0.002

This table shows descriptive statistics for our matched learning effect sample consisting of unique concurring auditor years and unique lead auditors years involved in an enforcement error (treatment group) and a sample of unique concurring auditor years and unique lead auditor years without an enforcement error (control group). Panel A illustrates the differences between lead auditors and concurring auditors, Panel B illustrates the differences between the PRE and POST period of enforcement errors for lead auditors and Panel C illustrates the differences between the PRE and POST period of enforcement errors for concurring auditors. We use a four-year window around the cutoff year for each individual auditor. The cutoff year is defined as the publication year of the enforcement error which is excluded. In addition, we use a simple T-test to examine any differences in mean before and after the enforcement error (Panel B, C) as well as between lead and concurring auditors (Panel A). N varies due to different data coverage. All variables are defined as in section 2.9 Appendix A. All continuous variables are winsorized at the one percent and 99 percent level. \*\*\*, \*\*, and \* denote two-tailed statistical significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

Table 9 present the correlation matrix for the learning effect of individual auditors together for the treatment as well as for the control group. We mainly find correlations in

the predicted direction. Unexpectedly, we find a negative, albeit weak, association between the audit quality of private clients and industry specialists (0.022), Big 4 auditors (0.091) as well as education (0.018).

Table 9: Correlation matrix of the learning effect sample

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<i>Aq_private<sub>it</sub></i>	(1)		0.030	-0.004	0.015	<b>0.034</b>	<b>-0.022</b>	0.002	<b>0.059</b>	<b>0.121</b>
<i>Aq_public<sub>it</sub></i>	(2)	0.003		<b>-0.045</b>	<b>-0.058</b>	-0.003	-0.011	<b>0.058</b>	<b>0.037</b>	<b>-0.051</b>
<i>Ln(CPA_age)<sub>it</sub></i>	(3)	-0.002	<b>-0.053</b>		<b>-0.128</b>	<b>0.696</b>	<b>0.088</b>	<b>0.188</b>	<b>0.035</b>	-0.010
<i>Gender<sub>i</sub></i>	(4)	0.008	<b>-0.059</b>	<b>-0.125</b>		<b>-0.147</b>	<b>-0.035</b>	<b>0.022</b>	<b>-0.026</b>	-0.013
<i>Retire_age<sub>it</sub></i>	(5)	<b>0.020</b>	0.008	<b>0.584</b>	<b>-0.147</b>		<b>0.081</b>	<b>0.110</b>	<b>0.067</b>	<b>0.137</b>
<i>Education<sub>i</sub></i>	(6)	<b>0.018</b>	0.012	<b>0.089</b>	<b>-0.035</b>	<b>0.081</b>		0.012	<b>0.026</b>	<b>-0.045</b>
<i>Tenure<sub>it</sub></i>	(7)	-0.006	0.010	<b>0.196</b>	<b>0.028</b>	<b>0.101</b>	0.013		-0.004	<b>-0.052</b>
<i>Industry_specialist<sub>it</sub></i>	(8)	<b>0.022</b>	0.029	<b>0.039</b>	<b>-0.026</b>	<b>0.067</b>	<b>0.026</b>	<b>-0.032</b>		<b>0.330</b>
<i>Big_4<sub>it</sub></i>	(9)	<b>0.091</b>	<b>-0.034</b>	<b>-0.022</b>	-0.014	<b>0.137</b>	<b>-0.045</b>	<b>-0.055</b>	<b>0.330</b>	

This table shows correlations of all variables used for estimating model 1 for our matched learning effect sample consisting of unique individual auditors involved in an enforcement error (treatment group) and a sample of matched individual auditors without an enforcement error (control group). Pearson (Spearman) correlations are presented below (above) the diagonal. All variables are defined as in section 2.9 Appendix A. All continuous variables are winsorized at the one percent and 99 percent level. Bold numbers indicate significance at least at the 10 percent level.

Table 10 presents separately results of examining the influence of audit failures on the learning effect for private and public clients of lead (column 1 and 2) and concurring auditors (column 3 and 4). As for our other analyses, we first conduct analyses examining effects for the treatment group of individual auditors only (see Table 14). For our treatment sample, we do not find significant learning effects. For our matched sample and difference-in-differences design, we find negative coefficient estimates for the interaction term *Treatment<sub>i</sub> \* Post<sub>it</sub>*, indicating a positive learning effect, for private clients for lead auditors and concurring auditors involved in audit failures. However, no results are significant at conventional levels. The explanatory power of the models ranges between 3.33 and 5.51 percent. We conclude that neither lead auditors nor concurring auditors learn from their prior audit failure in terms of improvements in audit quality following the revelation of an audit failure.



Table 10: Regression results for the learning effect of individual auditors for the matched sample after an enforcement error

	Lead auditor		Concurring auditor	
	$Aq\_public_{it}$	$Aq\_private_{it}$	$Aq\_public_{it}$	$Aq\_private_{it}$
$Post_{it}$	-0.004 (0.009)	-0.011* (0.006)	-0.002 (0.005)	0.002 (0.004)
$Treatment_i$	-0.035*** (0.011)	0.014 (0.016)	-0.019** (0.008)	0.008 (0.012)
$Post_{it} * Treatment_i$	<b>0.016</b> <b>(0.014)</b>	<b>-0.009</b> <b>(0.019)</b>	<b>0.006</b> <b>(0.011)</b>	<b>-0.002</b> <b>(0.017)</b>
$Ln(CPA\_age)_{it}$	-0.027*** (0.009)	-0.010* (0.005)	-0.026*** (0.009)	-0.001 (0.004)
$Gender_i$	0.000 (.)	-0.001 (0.007)	0.026 (0.016)	-0.003 (0.007)
$Retire\_age_{it}$	0.012 (0.010)	0.004 (0.006)	0.008 (0.006)	0.004 (0.004)
$Education_i$	-0.011 (0.007)	0.017* (0.009)	0.010 (0.007)	-0.002 (0.004)
$Tenure_{it}$	-0.003 (0.004)	-0.006** (0.003)	-0.003 (0.002)	-0.001 (0.002)
$Industry\_specialist_{it}$	-0.033*** (0.009)	-0.030*** (0.007)	-0.006 (0.006)	-0.017*** (0.004)
$Big\_4_{it}$	-0.007 (0.007)	0.015*** (0.005)	-0.014** (0.006)	0.017*** (0.003)
<i>Constant</i>	0.141*** (0.024)	0.113*** (0.014)	0.139*** (0.025)	0.088*** (0.012)
Year fixed effects	Yes	Yes	Yes	Yes
N	904	3,010	1,434	5,426
adj. R <sup>2</sup>	0.0510	0.0551	0.0333	0.0487

This table presents the results of estimating model 1 examining the learning effect of enforcement errors for our matched sample. Our estimation is based on using a four-year window around the cutoff year for each individual auditor. The cutoff years is defined as the publication year of the enforcement error. Our estimations are done separately for lead auditors and concurring auditors involved in enforcement errors. We use OLS regression with year fixed effects and robust standard errors. All variables are defined as in section 2.9 Appendix A. The matched sample shows the effects of the respective dependent variables considering the treatment group as well as the control group. For our matched sample, we use a 1:N matching approach with replacement using the following matching criteria: Gender<sub>i</sub>, Big\_4<sub>it</sub>, fiscal year and age of the individual auditor between the treatment group and the control group. The number of control observations to one treatment observation is restricted to a maximum number of 100 observations. The numbers in parenthesis are robust standard errors of the respective coefficients. \*\*\*, \*\*, and \* denote two-tailed statistical significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

## 2.7 Additional Analyses

### 2.7.1 Effects of Type II Going Concern Errors on Signing Auditors' Client Portfolio, Career, and Audit Quality

So far, our results indicate that audit failures in terms of enforcement errors have a significant influence on lead auditors' and concurring auditors' client portfolios, but no influence on the career development as well as on audit quality of individual auditors.

To provide additional insights, we replicate our analysis using type II going concern errors as a measurement of audit failures (DeFond, Raghunandan, and Subramanyam 2002; Geiger and Raghunandan 2002). Similar to enforcement errors of the German Enforcement Body, type II going concern errors are not directly linked to sanctions but may have reputational consequences for an individual auditor. In contrast to enforcement errors, type II going concern errors are not explicitly disclosed. As publicly available audit failures are more likely associated with stronger personal consequences for involved signing auditors, we expect to find weaker results using type II going concern errors.<sup>43</sup>

We define type II errors as cases in which the audit opinion does not include a going concern modification but in which the audited firm declares insolvency within the following two years.<sup>44</sup> To identify type II going concern errors, we extract insolvency information of companies from the database InsolNet.<sup>45</sup> InsolNet provides data on insolvency proceedings

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<sup>43</sup> We note that, in our sample, clients related to type II going concern errors are private clients only whereas clients related to enforcement errors are public clients only. The number of type II going concern errors for public clients is negligible. We do not consider type I errors. In cases of type I error it is not distinguishable whether it is the cause of conservatism or the individual auditor's misjudgment and therefore classified as an audit failure.

<sup>44</sup> Compared to the definition of Knechel et al. (2015) we use a larger window as the insolvency of the company is usually well known before the official date of filing for insolvency. We also include previous going concern opinions to isolate better the audit quality skill of individual auditors anticipating possible going concern issues of the respective clients.

<sup>45</sup> In addition, we also use insolvency information from the database Bureau van Dijk Orbis.

in Germany since 1999. We use the same research design as for our prior analyses and use the year of opened insolvency proceeding as the cutoff year.<sup>46</sup>

With respect to individual auditors' client portfolio, we find a decrease in the total number of clients, in the total number of private clients and in the clients' portfolio growth both for lead and concurring auditors after type II going concern errors. Further, for lead auditors only we find a decrease in the total number and in the amount of audit fees for prestigious clients. For concurring auditors only, we find a decrease in the total amount of audit fees for public clients.<sup>47</sup> Comparing the effects for concurring auditors and lead auditors, the results are more pronounced for concurring auditors. Overall, enforcement errors and type II going concern errors have a negative impact on individual auditors' portfolio structure both for lead auditors and for concurring auditors.

Examining career consequences for lead auditors and concurring auditors following type II going concern errors, we find a significant increase in the likelihood of termination for lead auditors. We conclude that type II going concern errors being minor audit failures have some impact on the career development of lead auditors.

Examining the learning effect of individual auditors following type II going concern errors, we find a significant increase in discretionary accruals for private clients only for concurring auditors as well as for lead auditors. Taken together, the results suggest that, audit failures do not trigger a change in signing auditors' behavior.

To sum up, individual auditors face negative personal consequences following enforcement as well as type II going concern errors. Supporting the notion that enforcement errors lead to a stronger reputational shock, we find more pronounced results for enforcement errors.

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<sup>46</sup> We refer to the section 2.10 Appendix B for detailed results.

<sup>47</sup> In additional analysis, we find a decrease in the total number of clients as well as private clients for both concurring auditors and lead auditors using negative binomial regression. Further, for lead auditors only we also find a decrease in the total amount of prestigious clients using negative binomial regression.

## 2.7.2 Role of Signing Auditors and Spillover Effects

Next, we take a closer look at particular roles of lead auditors and concurring auditors involved in audit failures, i.e., we examine whether lead auditors involved in audit failures face consequences for engagements in which they are involved as concurring auditors and vice versa. In untabulated analyses, we do not find significant changes after audit failures for lead and concurring auditors.

Furthermore, we examine the spillover effects of individual auditors following an audit failure by studying the market reactions of other public clients of individual auditors related to enforcement errors using an event study (Corrado 1989). As shown by Weber et al. (2008), the consequences of audit failures are not limited to the parties involved but also affect other clients of the same audit firm. Thus, our results could provide some additional insights into the reputational effects for individual auditors following an audit failure. To ensure unbiased estimates, we focus on the announcement of the first news about an audit failure. To identify rumors, we rely on news reports using the Nexis database. To determine market reactions, we estimate a market model over the estimation period from -280 trading days prior to the event to -30 trading days prior to the event ([-280;30]) using the DAX index as the market index. Building on Hitz et al. (2012) we examine abnormal market reactions during the event window of +/- 5 trading days around the event announcement. For our estimation window, we require a minimum of 200 trading days with available data. In untabulated analyses, we do not find significant spillover effects for individual auditors with enforcement errors. Our findings indicate that the awareness of capital market participants regarding the past provided audit quality of individual auditors is low. We note that the explanatory power of this test is limited as individual auditors often audit only a few public clients each year.

### 2.7.3 Robustness Checks

Last, we conduct robustness checks to substantiate our findings. First, we vary the length of our PRE-POST period by using (1) all available years, (2) one year around the cutoff year, (3) three years around the cutoff year and (4) one year before and two years after the cutoff year. For all four variations, we find significant effects indicating a worsening client portfolio structure for both lead auditors and concurring auditors. For the learning effect analyses, we find no significant learning effect for both lead and concurring auditors and for the career development analyses we virtually find unchanged results. Second, we vary the control group of our difference-in-differences design for our portfolio structure and termination analysis using individual auditors auditing public clients during our examination period<sup>48</sup>. We virtually find unchanged results. Third, we vary our control variables. In particular, we use alternative proxies for retirement age to control for possible measurement errors. We virtually find unchanged results as well. Fourth, we repeat all analyses using a subsample in which no audit firm change occurred for the respective client after the announcement of the enforcement error. We find unchanged results for the portfolio structure; for the learning effect as well as for the career development analysis. Fifth, we replicate our portfolio and learning effect analyses excluding auditors with employment changes to reduce the influence of confounding effects due to new employment. For our portfolio as well as for our learning effect analyses, we find virtually unchanged results. Sixth, we use the total number of years since his/her CPA appointment of the respective individual auditor instead of his/her age as a matching criterion. This leads to unchanged results. Seventh, we vary the definition of the cutoff year using the next year after the fiscal year of the erroneous financial statement to control for possible anticipation effects. For our

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<sup>48</sup> We require the individual auditor (control) to audit at least one public client during our examination period to be included into the control group.

portfolio analyses, we find less pronounced results. For our learning effect and career development analyses we find no results. Finally, as termination can be seen as a consequential effect of enforcement errors, we estimate our respective model using data only after the enforcement error for our matched sample. We find unchanged results.

## 2.8 Conclusion

This study examines the consequences of audit failures for German lead auditors and concurring auditors. In contrast to prior research, we focus on the personal consequences of audit failures associated with reputational shocks instead of sanctions by oversight bodies. We examine the personal consequences for the signing auditors' client portfolio and career, as well as the change of the signing auditor's provided audit quality following an audit failure (learning effect).

For our study, we exploit the advantages of the German setting, which enables us to identify audit failures for both signing auditors in a low-litigation risk environment that renders the role of reputational effects more important. We focus on the publication of enforcement errors triggered by the FREP and the FFSA as a measurement of audit failure.

Using difference-in-differences design and a matched sample, we find that lead and concurring auditors lose audit fees, public clients and prestigious clients in particular, following audit failures. However, we do not find any indications that lead and concurring auditors experience a change of employment (termination) following an audit failure. With respect to changes in audit quality, we do not find any results indicating a positive learning effect of signing auditors. In additional analyses, we find supporting results using type II going concern errors as an alternative measure of audit failure associated with reputational shocks. Overall, our results point to negative personal consequences for lead auditors and concurring auditors following an audit failure.

Our study contributes to several fields of research. First, we provide insights into the consequences of audit failures for lead and concurring auditors. Second, we contribute to the literature on the role of lead and concurring auditors by providing evidence that both signing auditors experience negative consequences following audit failures. Third, we provide new insights into the consequences of audit failures for career outcomes. Thus, our results are important for regulators in evaluating potential sanctions following an audit failure.

However, some caveats remain. First, due to the scope of the German Enforcement Body in contrast to, e.g., SEC enforcement actions the number of audit failures is low. Second, due to the short time series and overlap with the financial crisis, the generalizability of the results is limited. Thus, future research is necessary for a better understanding of the consequences of audit failures.

## 2.9 Appendix A

<b>Variable definitions</b>	
<b>Variable</b>	<b>Definitions</b>
<i>Consequences<sub>it</sub></i>	Representative variable for <i>Clients_total<sub>it</sub></i> , <i>Clients_public<sub>it</sub></i> , <i>Clients_private<sub>it</sub></i> , <i>Clients_prime<sub>it</sub></i> , <i>Portfolio_growth<sub>it</sub></i> , <i>Audit_fees_total<sub>it</sub></i> , <i>Audit_fees_public<sub>it</sub></i> , <i>Audit_fees_private<sub>it</sub></i> , <i>Audit_fees_prime<sub>it</sub></i>
<i>Post<sub>it</sub></i>	Binary variable, 1: years following the announcement of an audit failure, 0: otherwise. We exclude audit failure announcement year.
<i>Treatment<sub>i</sub></i>	Binary variable, 1: an individual auditor is involved in audit failures (i.e., enforcement errors or type II going concern errors), 0: otherwise.
<i>Clients_total<sub>it</sub></i>	Sum of public and private clients audited by individual auditor <i>i</i> in year <i>t</i> .
<i>Clients_public<sub>it</sub></i>	Number of public clients audited by individual auditor <i>i</i> in year <i>t</i> .
<i>Clients_private<sub>it</sub></i>	Number of private clients audited by individual auditor <i>i</i> in year <i>t</i> .
<i>Clients_prime<sub>it</sub></i>	Number of public clients which are part of the "Prime Standard" stock market segment audited by individual auditor <i>i</i> in year <i>t</i> . The "Prime Standard" stock market segment is part of the regulated market in Germany with the highest transparency requirements.
<i>Portfolio_growth<sub>it</sub></i>	Natural logarithm of one plus the number of clients gained minus the natural logarithm of one plus the number of clients lost by individual auditor <i>i</i> in year <i>t</i> (Lennox and Li 2012).
<i>Audit_fees_total<sub>it</sub></i>	Mean of the sum of the natural logarithm of audit fees of public clients and private clients audited by individual auditor <i>i</i> in year <i>t</i> . Missing values of audit fees are replaced by the square root of total assets.
<i>Audit_fees_public<sub>it</sub></i>	Mean of the sum of the natural logarithm of audit fees of public clients audited by individual auditor <i>i</i> in year <i>t</i> . Missing values of audit fees are replaced by the square root of total assets.
<i>Audit_fees_private<sub>it</sub></i>	Mean of the sum of the natural logarithm of audit fees of private clients audited by individual auditor <i>i</i> in year <i>t</i> . Missing values of audit fees are replaced by the square root of total assets.
<i>Audit_fees_prime<sub>it</sub></i>	Mean of the natural logarithm of audit fees of public clients which are part of the "Prime Standard" stock market segment audited by individual auditor <i>i</i> in year <i>t</i> . Missing values of audit fees are replaced by the square root of total assets.

*(continued on next page)*



Variable	Definitions
$Aq\_public_{it}$	Mean of unsigned total discretionary accruals of public clients audited by individual auditor $i$ in year $t$ . Total discretionary accruals are calculated as follows. First, we calculate the residuals of a cross-sectional performance-adjusted modified Jones model (Kothari et al. 2005) estimated for each industry-year combination using all non-financial companies covered by Worldscope Datastream universe (subscripts are omitted for the sake of brevity): $TA_t = \beta_0 \cdot (1/AT_{t-1}) + \beta_1 \cdot (D\_REV_t - D\_REC_t) + \beta_2 \cdot PPE_t + \beta_3 \cdot ROA_{t-1} + v_t$ . We require at least ten observations for each industry-year combination. Industry definition is based on Fama/French 12 industries classification. $TA$ = (net income before extraordinary items minus operating cash flow) divided by total assets at the end of year $t-1$ . $AT$ = total assets at the end of the year. $D\_REV$ = change in revenue from the prior year to year $t$ divided by total assets at the end of year $t-1$ . $D\_REC$ = change in accounts receivable from the prior year to year $t$ . $PPE$ = net property, plant and equipment at the end of year $t$ divided by total assets at the end of year $t-1$ . $ROA_{t-1}$ = net income before interest and taxation for year $t-1$ divided by average total assets for year $t-1$ . Second, we control for differences in client characteristics by regressing the first-stage residuals on the following client characteristics: size, leverage and growth of total assets. $v_t = \beta_0 \cdot SIZE_t + \beta_1 \cdot LEV_t + \beta_2 \cdot GROWTH\_AT_t + w_t$ . $SIZE$ = natural logarithm of the total assets in year $t$ . $LEV$ = liabilities divided by total assets in year $t$ . $GROWTH\_AT$ = change in total assets from the prior year to year $t$ divided by total assets at the end of year $t-1$ . The resulting residuals are the total discretionary accruals.
$Aq\_private_{it}$	Mean of unsigned total discretionary accruals of public clients audited by individual auditor $i$ in year $t$ . The calculation of total discretionary accruals follows two steps. First, we calculate the residuals of a cross-sectional performance-adjusted modified Jones model (Kothari et al. 2005) estimated for each industry-year combination using the whole Bureau van Dijk Orbis universe (non-financial companies only). Industry definition is based on the first two digits of the four digit SIC code number. We require at least ten observations for each industry-year combination. Second, we control for differences in client characteristics by regressing the previous calculated residuals on a set of client characteristics like size, leverage, and growth of total assets. The resulting residuals are the total discretionary accruals. For further details, see the variable definition of $Aq\_public_{it}$ .
$Ln(CPA\_age)_{it}$	Natural logarithm of the total number of years since his/her CPA appointment for individual auditor $i$ in year $t$ .
$Gender_i$	Binary variable, 1: individual auditor $i$ is female, 0: otherwise.
$Retire\_age_{it}$	Binary variable, 1: an individual auditor is in the fourth age quartile of the sample distribution differentiated by Big 4 and non-Big 4 affiliation (Sundgren and Svanström 2014), 0: otherwise.
$Education_i$	Binary variable, 1: individual auditor $i$ holds a doctorate or an honorary professorship, 0: otherwise.

*(continued on next page)*

Variable	Definitions
<i>Tenure<sub>it</sub></i>	Mean of the consecutive number of respective client years audited by individual auditor i in year t.
<i>Industry_specialist<sub>it</sub></i>	Binary variable which equals 1 if the individual auditor i is a specialist in at least one industry using Fama/French 12 industries classification. An industry specialist is defined as the individual auditor being in the upper quartile of audited total assets within an industry and year t (Zerni 2012), 0: otherwise.
<i>Big_4<sub>it</sub></i>	Binary variable, 1: individual auditor i in year t works at a Big 4 audit firm (PricewaterhouseCoopers, EY, KPMG, and Deloitte), 0: otherwise.
<i>Termination<sub>it</sub></i>	Binary variable, 1: individual auditor i leaves his/her respective audit firm in year t, 0 otherwise.
<i>Ap_age<sub>it</sub></i>	Age of the individual auditor i in year t.
<i>Ap_age_mean</i>	Mean of the individual auditor's age differentiated by concurring auditor and lead auditor.
<i>Ap_performance_1<sub>it</sub></i>	Annual growth rate of the number of clients audited by the individual auditor i in year t.
<i>Ap_performance_2<sub>it</sub></i>	Annual growth rate of the amount of audit fees earned by the individual auditor i in year t.
<i>Af_growth<sub>it</sub></i>	Annual growth rate of the total amount of audit fees earned by the audit firm in year t.
<i>AP_age_adjusted_Performance_1<sub>it</sub></i>	Annual growth rate of the number of clients audited by the individual auditor i in year t adjusted for his/her age $[(Ap\_age_{it} - Ap\_age\_mean) * Ap\_performance\_1_{it}]$ .
<i>AP_age_adjusted_Performance_2<sub>it</sub></i>	Annual growth rate of the amount of audit fees earned by the individual auditor i in year t adjusted for his/her age $[(Ap\_age_{it} - Ap\_age\_mean) * Ap\_performance\_2_{it}]$ .

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This table defines all variables used in our study.

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## 2.10 Appendix B

Table 11: Negative binomial regression results for changes in portfolio structure of individual auditors for the matched sample after an enforcement error

<b>Panel A: Lead auditor</b>				
	<i>Clients_</i> <i>total</i> <sub><i>it</i></sub>	<i>Clients_</i> <i>public</i> <sub><i>it</i></sub>	<i>Clients_</i> <i>private</i> <sub><i>it</i></sub>	<i>Clients_</i> <i>prime</i> <sub><i>it</i></sub>
<i>Post</i> <sub><i>it</i></sub>	-0.021 (0.018)	0.061 (0.053)	-0.023 (0.019)	0.002 (0.075)
<i>Treatment</i> <sub><i>i</i></sub>	-0.051 (0.084)	1.786*** (0.093)	-0.236** (0.097)	1.512*** (0.145)
<b><i>Post</i><sub><i>it</i></sub> * <i>Treatment</i><sub><i>i</i></sub></b>	<b>0.092</b> <b>(0.124)</b>	<b>-0.466***</b> <b>(0.178)</b>	<b>0.209</b> <b>(0.136)</b>	<b>-0.660**</b> <b>(0.263)</b>
<i>Ln(CPA_age)</i> <sub><i>it</i></sub>	-0.191*** (0.014)	-0.274*** (0.033)	-0.188*** (0.014)	-0.069 (0.053)
<i>Gender</i> <sub><i>i</i></sub>	-0.136*** (0.019)	-0.311*** (0.061)	-0.129*** (0.019)	-0.296*** (0.091)
<i>Retire_age</i> <sub><i>it</i></sub>	-0.087*** (0.022)	-0.327*** (0.055)	-0.079*** (0.022)	-0.298*** (0.077)
<i>Education</i> <sub><i>i</i></sub>	-0.100*** (0.034)	0.116* (0.061)	-0.108*** (0.035)	0.443*** (0.080)
<i>Tenure</i> <sub><i>it</i></sub>	0.502*** (0.008)	0.362*** (0.013)	0.501*** (0.008)	0.381*** (0.020)
<i>Industry_specialist</i> <sub><i>it</i></sub>	1.148*** (0.015)	0.999*** (0.042)	1.155*** (0.015)	0.983*** (0.065)
<i>Big_4</i> <sub><i>it</i></sub>	-0.081*** (0.015)	0.817*** (0.040)	-0.106*** (0.016)	1.641*** (0.073)
<i>Constant</i>	-0.148*** (0.013)	-0.364*** (0.123)	-0.069*** (0.013)	-1.118*** (0.390)
Year fixed effects	Yes	Yes	Yes	Yes
N	33,420	33,420	33,420	33,420
pseudo R <sup>2</sup>	0.1109	0.1168	0.1079	0.1503

(continued on next page)

Table 11 (continued)

**Panel B: Concurring auditor**

	<i>Clients_</i> <i>total</i> <sub><i>it</i></sub>	<i>Clients_</i> <i>public</i> <sub><i>it</i></sub>	<i>Clients_</i> <i>private</i> <sub><i>it</i></sub>	<i>Clients_</i> <i>prime</i> <sub><i>it</i></sub>
<i>Post</i> <sub><i>it</i></sub>	-0.030 (0.021)	-0.129*** (0.046)	-0.028 (0.021)	-0.151** (0.066)
<i>Treatment</i> <sub><i>i</i></sub>	0.251*** (0.073)	1.835*** (0.116)	0.116 (0.079)	1.794*** (0.146)
<i>Post</i> <sub><i>it</i></sub> * <i>Treatment</i> <sub><i>i</i></sub>	<b>-0.032</b> <b>(0.110)</b>	<b>-0.604***</b> <b>(0.173)</b>	<b>0.053</b> <b>(0.116)</b>	<b>-0.589***</b> <b>(0.220)</b>
<i>Ln(CPA_age)</i> <sub><i>it</i></sub>	0.178*** (0.023)	0.403*** (0.056)	0.172*** (0.023)	0.827*** (0.101)
<i>Gender</i> <sub><i>i</i></sub>	-0.021 (0.052)	-0.386*** (0.119)	-0.009 (0.052)	-0.176 (0.160)
<i>Retire_age</i> <sub><i>it</i></sub>	-0.083*** (0.020)	-0.257*** (0.043)	-0.069*** (0.020)	-0.461*** (0.065)
<i>Education</i> <sub><i>i</i></sub>	0.053** (0.021)	0.472*** (0.039)	0.039* (0.022)	0.769*** (0.051)
<i>Tenure</i> <sub><i>it</i></sub>	0.500*** (0.009)	0.270*** (0.013)	0.496*** (0.009)	0.270*** (0.020)
<i>Industry_specialist</i> <sub><i>it</i></sub>	1.734*** (0.017)	1.807*** (0.042)	1.737*** (0.017)	1.757*** (0.065)
<i>Big_4</i> <sub><i>it</i></sub>	0.346*** (0.017)	1.127*** (0.037)	0.321*** (0.017)	1.791*** (0.063)
<i>Constant</i>	0.049*** (0.012)	0.165*** (0.043)	0.103*** (0.012)	0.317*** (0.071)
Year fixed effects	Yes	Yes	Yes	Yes
N	31,140	31,140	31,140	31,140
pseudo R <sup>2</sup>	0.1202	0.1647	0.1176	0.1878

This table presents the results of estimating model 1 examining the consequences of enforcement errors on auditors' client portfolio using a matched sample. The dummy variable *Post*<sub>*it*</sub> is defined as 1 if fiscal year is after the cutoff year, otherwise 0. The dummy variable *Treatment*<sub>*i*</sub> is defined as 1 if the observations belong to the treatment group, otherwise 0 if the observations belong to the control group. All models are estimated using a four-year window around the cutoff year for each individual auditor. The cutoff year is defined as the publication year of the enforcement error. All models are estimated separately for lead auditors (Panel A) and concurring auditors (Panel B) involved in enforcement errors. We estimate all models using negative binomial regressions with year fixed effects and robust standard errors. All variables are defined as in section 2.9 Appendix A. We use the following identical matching criteria: *Gender*<sub>*i*</sub>, *Big\_4*<sub>*it*</sub>, fiscal year and a similar matching criterion for the age of the individual auditor between the treatment group and the control group. Our 1:N matching is a matching approach with replacement, although the number of control observations to one treatment observation is restricted to a maximum number of 100 observations. The numbers in parenthesis are robust standard errors of the respective coefficients. \*\*\*, \*\*, and \* denote two-tailed statistical significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

Table 12: Regression results for changes in the portfolio structure for the treatment sample after an enforcement error

<b>Panel A: Lead auditor</b>									
	<i>Clients_</i> <i>total<sub>it</sub></i>	<i>Audit_fees_</i> <i>total<sub>it</sub></i>	<i>Clients_</i> <i>public<sub>it</sub></i>	<i>Audit_fees_</i> <i>public<sub>it</sub></i>	<i>Clients_</i> <i>private<sub>it</sub></i>	<i>Audit_fees_</i> <i>private<sub>it</sub></i>	<i>Clients_</i> <i>prime<sub>it</sub></i>	<i>Audit_fees_</i> <i>prime<sub>it</sub></i>	<i>Portfolio_</i> <i>growth<sub>it</sub></i>
<i>Post<sub>it</sub></i>	<b>1.164</b> <b>(0.753)</b>	<b>-0.858***</b> <b>(0.286)</b>	<b>-0.258**</b> <b>(0.109)</b>	<b>-0.655</b> <b>(0.422)</b>	<b>1.422**</b> <b>(0.721)</b>	<b>-0.054</b> <b>(0.233)</b>	<b>-0.185***</b> <b>(0.069)</b>	<b>-1.406</b> <b>(0.949)</b>	<b>0.005</b> <b>(0.160)</b>
<i>Ln(CPA_age)<sub>it</sub></i>	-1.123* (0.595)	0.051 (0.213)	-0.111 (0.086)	-0.148 (0.293)	-1.012* (0.575)	0.124 (0.126)	-0.068 (0.060)	-0.724 (0.538)	-0.060 (0.122)
<i>Gender<sub>i</sub></i>	-0.132 (0.731)	-0.199 (0.318)	-0.311*** (0.104)	-1.239*** (0.471)	0.179 (0.713)	0.378 (0.314)	-0.057 (0.060)	-0.673 (1.133)	-0.016 (0.152)
<i>Retire_age<sub>it</sub></i>	-0.959 (0.741)	-0.055 (0.347)	-0.138 (0.113)	0.183 (0.494)	-0.821 (0.717)	-0.197 (0.182)	-0.013 (0.079)	0.332 (0.786)	0.267* (0.160)
<i>Education<sub>i</sub></i>	0.341 (0.992)	0.471 (0.298)	0.058 (0.144)	0.240 (0.412)	0.283 (0.955)	0.263 (0.256)	0.266** (0.125)	0.122 (0.624)	0.030 (0.187)
<i>Tenure<sub>it</sub></i>	0.007 (0.129)	0.279*** (0.075)	0.146*** (0.022)	0.106 (0.094)	-0.138 (0.128)	0.019 (0.077)	0.055*** (0.015)	0.397* (0.212)	-0.201*** (0.032)
<i>Industry_specialist<sub>it</sub></i>	5.328*** (0.575)	-0.442* (0.234)	0.166** (0.083)	-0.103 (0.332)	5.162*** (0.560)	-0.042 (0.184)	0.115** (0.054)	-0.230 (0.691)	0.373*** (0.120)
<i>Big_4<sub>it</sub></i>	-2.338*** (0.538)	1.023*** (0.232)	-0.310*** (0.074)	1.087*** (0.347)	-2.028*** (0.529)	0.724*** (0.214)	0.029 (0.048)	1.552** (0.713)	-0.193* (0.106)
<i>Constant</i>	4.026*** (1.239)	10.101*** (0.525)	0.853*** (0.188)	11.038*** (0.594)	3.173*** (1.199)	7.860*** (0.313)	0.205 (0.155)	11.723*** (0.913)	0.654** (0.257)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	360	283	360	170	360	230	360	70	360
adj. R <sup>2</sup>	0.2974	0.1919	0.2466	0.0897	0.2790	0.0853	0.1137	0.0065	0.2531

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Table 12 (continued)

## Panel B: Concurring auditor

	<i>Clients_</i> <i>total</i> <sub><i>it</i></sub>	<i>Audit_fees_</i> <i>total</i> <sub><i>it</i></sub>	<i>Clients_</i> <i>public</i> <sub><i>it</i></sub>	<i>Audit_fees_</i> <i>public</i> <sub><i>it</i></sub>	<i>Clients_</i> <i>private</i> <sub><i>it</i></sub>	<i>Audit_fees_</i> <i>private</i> <sub><i>it</i></sub>	<i>Clients_</i> <i>prime</i> <sub><i>it</i></sub>	<i>Audit_fees_</i> <i>prime</i> <sub><i>it</i></sub>	<i>Portfolio_</i> <i>growth</i> <sub><i>it</i></sub>
<i>Post</i> <sub><i>it</i></sub>	<b>4.372**</b> <b>(1.940)</b>	<b>-0.433***</b> <b>(0.149)</b>	<b>-0.426*</b> <b>(0.237)</b>	<b>-0.325</b> <b>(0.368)</b>	<b>4.798**</b> <b>(1.875)</b>	<b>-0.079</b> <b>(0.121)</b>	<b>-0.257**</b> <b>(0.121)</b>	<b>-1.023*</b> <b>(0.519)</b>	<b>0.262</b> <b>(0.224)</b>
<i>Ln(CPA_age)</i> <sub><i>it</i></sub>	0.924 (1.988)	-0.383* (0.214)	-0.399 (0.255)	0.242 (0.338)	1.323 (1.891)	-0.280* (0.156)	0.001 (0.119)	-0.094 (0.608)	0.016 (0.222)
<i>Gender</i> <sub><i>i</i></sub>	8.318** (3.284)	-0.478 (0.297)	-0.472 (0.288)	0.242 (0.445)	8.791*** (3.204)	-0.576*** (0.148)	0.115 (0.228)	-1.385* (0.776)	-0.284 (0.356)
<i>Retire_age</i> <sub><i>it</i></sub>	1.848 (2.055)	0.358* (0.206)	0.194 (0.225)	0.504 (0.321)	1.653 (1.977)	0.233 (0.161)	0.018 (0.125)	-0.436 (0.543)	-0.112 (0.207)
<i>Education</i> <sub><i>i</i></sub>	5.183** (2.265)	-0.017 (0.173)	0.299 (0.232)	-0.578** (0.269)	4.884** (2.182)	0.129 (0.129)	0.051 (0.101)	-0.866* (0.488)	-0.187 (0.183)
<i>Tenure</i> <sub><i>it</i></sub>	-0.680* (0.368)	0.326*** (0.083)	0.126*** (0.039)	0.086 (0.107)	-0.806** (0.361)	0.266*** (0.091)	0.043* (0.022)	0.309 (0.228)	-0.275*** (0.054)
<i>Industry_specialist</i> <sub><i>it</i></sub>	15.317*** (1.235)	-0.095 (0.194)	0.983*** (0.144)	0.419 (0.298)	14.333*** (1.201)	0.203 (0.146)	0.412*** (0.076)	-0.244 (0.476)	0.685*** (0.139)
<i>Big_4</i> <sub><i>it</i></sub>	4.155*** (1.582)	0.514*** (0.150)	0.037 (0.178)	0.581** (0.235)	4.118*** (1.503)	0.626*** (0.119)	0.281*** (0.095)	1.627*** (0.374)	0.045 (0.148)
<i>Constant</i>	-5.257 (4.866)	10.680*** (0.674)	1.702** (0.660)	10.327*** (0.887)	-6.959 (4.651)	7.599*** (0.779)	0.133 (0.295)	11.787*** (1.745)	0.927* (0.554)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	324	284	324	188	324	260	324	116	324
adj. R <sup>2</sup>	0.3921	0.2135	0.1208	0.0983	0.3842	0.2320	0.0901	0.1838	0.3256

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Table 12 (continued)

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This table presents the results of estimating model 1 examining the consequences of enforcement errors on auditors' client portfolio using the treatment sample prior to matching. The dummy variable  $Post_{it}$  is defined as 1 if fiscal year is after the cutoff year, otherwise 0. All models are estimated using a four-year window around the cutoff year for each individual auditor. The cutoff year is defined as the publication year of the enforcement error. All models are estimated separately for lead auditors (Panel A) and concurring auditors (Panel B) involved in enforcement errors. We estimate all models using OLS regressions with year fixed effects and robust standard errors. All variables are defined as in section 2.9 Appendix A. The numbers in parenthesis are robust standard errors of the respective coefficients. \*\*\*, \*\*, and \* denote two-tailed statistical significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

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Table 13: Regression results for the career development of individual auditors for the treatment sample after an enforcement error

	Lead auditor		Concurring auditor	
	OLS regression	Logistic regression	OLS regression	Logistic regression
	<i>Termination<sub>it</sub></i>	<i>Termination<sub>it</sub></i>	<i>Termination<sub>it</sub></i>	<i>Termination<sub>it</sub></i>
<i>Post<sub>it</sub></i>	<b>0.004</b> <b>(0.024)</b>	<b>0.031</b> <b>(0.332)</b>	<b>0.030</b> <b>(0.026)</b>	<b>0.390</b> <b>(0.420)</b>
<i>Ln(CPA_age)<sub>it</sub></i>	-0.024 (0.016)	-0.444* (0.243)	0.021 (0.015)	0.443 (0.505)
<i>Gender<sub>i</sub></i>	-0.044** (0.021)	-0.653* (0.366)	0.023 (0.040)	0.510 (0.644)
<i>Retire_age<sub>it</sub></i>	0.009 (0.028)	0.214 (0.450)	-0.020 (0.022)	-0.916* (0.478)
<i>Education<sub>i</sub></i>	0.064*** (0.016)	1.960** (0.989)	0.046 (0.035)	0.923 (0.648)
<i>Tenure<sub>it</sub></i>	-0.027*** (0.008)	-0.416*** (0.129)	-0.025*** (0.008)	-0.467*** (0.147)
<i>Industry_specialist<sub>it</sub></i>	-0.044** (0.019)	-0.526 (0.331)	-0.041* (0.021)	-0.628 (0.401)
<i>Ap_age_adjusted_performance_1<sub>it</sub></i>	-0.000 (0.000)	-0.032 (0.055)	-0.000 (0.000)	-0.037 (0.034)
<i>Ap_age_adjusted_performance_2<sub>it</sub></i>	0.001 (0.004)	-0.000 (0.000)	0.005 (0.005)	-0.001 (0.001)
<i>Ap_performance_1<sub>it</sub></i>	-0.004* (0.002)	-0.520 (0.480)	-0.000 (0.001)	-0.419 (0.298)
<i>Ap_performance_1<sub>it-1</sub></i>	-0.005** (0.003)	-0.376 (0.351)	0.000 (0.001)	-0.226 (0.278)
<i>Ap_performance_2<sub>it</sub></i>	0.027 (0.051)	-0.607 (1.908)	0.084** (0.034)	1.376 (1.402)
<i>Ap_performance_2<sub>it-1</sub></i>	-0.000 (0.030)	-1.409 (1.582)	0.030 (0.022)	0.883 (1.767)
<i>Af_growth<sub>it</sub></i>	-0.000 (0.000)	-0.001 (0.004)	0.000 (0.000)	0.031 (0.020)
<i>Big_4<sub>it</sub></i>	-0.026 (0.017)	-0.523* (0.282)	-0.055*** (0.016)	-1.296*** (0.330)
<i>Constant</i>	0.065* (0.035)	-4.136*** (1.283)	-0.024 (0.049)	-2.930** (1.345)
Year fixed effects	Yes	Yes	Yes	Yes
N	943	840	867	488
adj. / pseudo R <sup>2</sup>	0.0757	0.1897	0.1041	0.1925

This table examines the career development of lead auditors and concurring auditors after enforcement errors. We estimate an OLS regression and a logistic regression for the treatment sample prior to matching. Our model is estimated using all available data before and after the cutoff year. The cutoff year is defined as the publication year of the enforcement error. We use logistic regression and OLS regression with year fixed effects and robust standard errors. All variables are defined as in section 2.9 Appendix A. For the OLS regression, the adjusted R<sup>2</sup> is calculated whereas for the logistic regression the pseudo R<sup>2</sup> is calculated. The numbers in parenthesis are robust standard errors of the respective coefficients. \*\*\*, \*\*, and \* denote two-tailed statistical significance at the 1 percent, 5 percent, and 10 percent levels, respectively.



Table 14: Regression results for the learning effect of individual auditors for the treatment sample after an enforcement error

	Lead auditor		Concurring auditor	
	<i>Aq_public<sub>it</sub></i>	<i>Aq_private<sub>it</sub></i>	<i>Aq_public<sub>it</sub></i>	<i>Aq_private<sub>it</sub></i>
<i>Post<sub>it</sub></i>	<b>0.012</b> (0.026)	<b>0.003</b> (0.042)	<b>-0.018</b> (0.022)	<b>0.043</b> (0.031)
<i>Ln(CPA_age)<sub>it</sub></i>	-0.008 (0.020)	-0.024 (0.043)	0.089*** (0.027)	0.003 (0.055)
<i>Gender<sub>i</sub></i>	0.000 (.)	0.086** (0.042)	0.042 (0.043)	0.051 (0.033)
<i>Retire_age<sub>it</sub></i>	-0.051* (0.026)	0.040 (0.036)	-0.023 (0.021)	0.046 (0.039)
<i>Education<sub>i</sub></i>	0.016 (0.023)	0.008 (0.044)	0.006 (0.017)	-0.005 (0.028)
<i>Tenure<sub>it</sub></i>	0.005 (0.009)	-0.008 (0.023)	0.007 (0.010)	-0.034* (0.019)
<i>Industry_specialist<sub>it</sub></i>	0.016 (0.018)	0.064 (0.049)	-0.006 (0.019)	0.015 (0.036)
<i>Big_4<sub>it</sub></i>	-0.033 (0.020)	-0.014 (0.037)	-0.028* (0.015)	0.031 (0.026)
<i>Constant</i>	-0.001 (0.039)	-0.063 (0.088)	-0.249*** (0.075)	-0.080 (0.170)
Year fixed effects	Yes	Yes	Yes	Yes
N	104	84	114	142
adj. R <sup>2</sup>	0.0021	-0.0409	0.0383	0.0210

This table presents the results of estimating model 1 examining the learning effect of enforcement errors for the treatment sample prior to matching. Our estimation is based on using a four-year window around the cutoff year for each individual auditor. The cutoff years is defined as the publication year of the enforcement error. Our estimations are done separately for lead auditors and concurring auditors involved in enforcement errors. We use OLS regression with year fixed effects and robust standard errors. All variables are defined as in section 2.9 Appendix A. The numbers in parenthesis are robust standard errors of the respective coefficients. \*\*\*, \*\*, and \* denote two-tailed statistical significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

Table 15: Sample selection for the type II going concern error analyses

<b>Panel A: Potential type II going concern errors</b>		
Starting sample of disclosed information from the electronic version of the German Federal Gazette from 2005 to 2013		397,011
- Missing signing auditor information		(34,933)
- Public companies		(11,926)
- Companies which did not file for insolvency at some point in time		(337,175)
- No type II going concern errors according to the definition		(12,332)
<i>Identified type II going concern errors (company years)</i>		<i>645</i>
<b>Panel B: Identified unique individual auditors with the defined type II going concern error</b>		
	Concurring auditor	Lead auditor
Number of identified type II going concern errors (company years)	645	645
- Non-identifiable auditors	(184)	(32)
- Repeated occurrence of an individual auditor	(102)	(112)
<i>Number of unique individual auditors</i>	<i>359</i>	<i>501</i>
<b>Panel C: Pre matching sample</b>		
	Concurring auditor	Lead auditor
Number of unique individual auditors	359	501
<i>Career development analysis</i>		
<i>Number of unique individual auditors with available information</i>	<i>359</i>	<i>501</i>
<i>Portfolio structure analysis</i>		
- Leaving the auditing profession	(5)	(14)
- Missing information on portfolio structure	(9)	(11)
- Time period (+/- 2 years)	(167)	(238)
<i>Number of unique individual auditors with available information</i>	<i>178</i>	<i>238</i>
<i>Learning effect analysis</i>		
- Missing data on accruals	(72)	(131)
<i>Number of unique individual auditors with available information</i>	<i>106</i>	<i>107</i>

This table presents the sample selection for our type II going concern error sample. Final observations refer to the treatment group prior to matching.

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**Table 15 (continued)**

Our type II going concern error sample functions as a starting point for further sample selections (Panel A). Based on our type II going concern error observations we are able to identify 501 unique lead auditors and 359 unique concurring auditors (Panel B). Panel C illustrates the sample selection for each of our portfolio structure, career development and learning effect analysis of our uniquely identified lead and concurring auditors before matching.

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Table 16: Regression results for changes in the portfolio structure of individual auditors for the matched sample after a type II going concern error

<b>Panel A: Lead auditor</b>									
	<i>Clients_</i> <i>total<sub>it</sub></i>	<i>Audit_fees_</i> <i>total<sub>it</sub></i>	<i>Clients_</i> <i>public<sub>it</sub></i>	<i>Audit_fees_</i> <i>public<sub>it</sub></i>	<i>Clients_</i> <i>private<sub>it</sub></i>	<i>Audit_fees_</i> <i>private<sub>it</sub></i>	<i>Clients_</i> <i>prime<sub>it</sub></i>	<i>Audit_fees_</i> <i>prime<sub>it</sub></i>	<i>Portfolio_</i> <i>growth<sub>it</sub></i>
<i>Post<sub>it</sub></i>	-0.100* (0.058)	0.033*** (0.012)	-0.004 (0.004)	0.175** (0.088)	-0.095* (0.057)	0.017 (0.010)	0.002 (0.002)	0.229 (0.142)	0.008 (0.009)
<i>Treatment<sub>i</sub></i>	2.189*** (0.301)	-0.146*** (0.026)	0.009 (0.017)	-0.359 (0.274)	2.180*** (0.302)	-0.108*** (0.022)	-0.016** (0.007)	-0.254 (0.321)	0.125*** (0.044)
<b><i>Post<sub>it</sub> * Treatment<sub>i</sub></i></b>	<b>-0.873** (0.380)</b>	<b>-0.027 (0.042)</b>	<b>-0.001 (0.025)</b>	<b>-0.188 (0.433)</b>	<b>-0.872** (0.380)</b>	<b>-0.010 (0.038)</b>	<b>-0.013* (0.008)</b>	<b>-1.656** (0.730)</b>	<b>-0.191*** (0.061)</b>
<i>Ln(CPA_age)<sub>it</sub></i>	-0.677*** (0.031)	0.029*** (0.007)	-0.018*** (0.002)	0.416*** (0.052)	-0.659*** (0.031)	-0.014** (0.006)	-0.004*** (0.001)	0.554*** (0.085)	-0.117*** (0.006)
<i>Gender<sub>i</sub></i>	-0.356*** (0.048)	-0.042*** (0.012)	-0.019*** (0.004)	0.139* (0.076)	-0.336*** (0.048)	-0.038*** (0.010)	-0.005** (0.002)	0.309*** (0.118)	-0.013 (0.009)
<i>Retire_age<sub>it</sub></i>	0.123*** (0.041)	-0.132*** (0.009)	-0.032*** (0.002)	-0.318*** (0.094)	0.155*** (0.041)	-0.069*** (0.008)	-0.009*** (0.001)	-0.497*** (0.152)	0.025*** (0.007)
<i>Education<sub>i</sub></i>	-0.607*** (0.058)	0.035*** (0.014)	0.017*** (0.004)	0.285*** (0.090)	-0.625*** (0.059)	-0.020** (0.010)	0.015*** (0.002)	0.590*** (0.147)	-0.024*** (0.009)
<i>Tenure<sub>it</sub></i>	0.663*** (0.008)	0.030*** (0.004)	0.016*** (0.001)	0.079*** (0.027)	0.647*** (0.008)	0.013*** (0.003)	0.006*** (0.000)	0.074 (0.047)	-0.115*** (0.002)
<i>Industry_specialist<sub>it</sub></i>	5.578*** (0.053)	0.230*** (0.008)	0.115*** (0.003)	0.202*** (0.057)	5.463*** (0.053)	0.218*** (0.007)	0.046*** (0.002)	-0.007 (0.103)	0.399*** (0.008)
<i>Big_4<sub>it</sub></i>	-0.041 (0.053)	0.828*** (0.015)	0.090*** (0.004)	1.141*** (0.062)	-0.130** (0.053)	0.643*** (0.012)	0.071*** (0.003)	1.460*** (0.091)	-0.098*** (0.008)
<i>Constant</i>	1.547*** (0.118)	9.608*** (0.329)	0.082*** (0.023)	10.472*** (0.409)	1.464*** (0.120)	8.486*** (0.216)	0.024 (0.017)	10.028*** (0.591)	0.544*** (0.033)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	92,185	64,461	92,185	6,287	92,185	63,416	92,185	2,405	91,805
adj. R <sup>2</sup>	0.2936	0.1677	0.0633	0.0883	0.2850	0.1602	0.0496	0.1328	0.1453

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Table 16 (continued)

## Panel B: Concurring auditor

	<i>Clients_</i> <i>total<sub>it</sub></i>	<i>Audit_fees_</i> <i>total<sub>it</sub></i>	<i>Clients_</i> <i>public<sub>it</sub></i>	<i>Audit_fees_</i> <i>public<sub>it</sub></i>	<i>Clients_</i> <i>private<sub>it</sub></i>	<i>Audit_fees_</i> <i>private<sub>it</sub></i>	<i>Clients_</i> <i>prime<sub>it</sub></i>	<i>Audit_fees_</i> <i>prime<sub>it</sub></i>	<i>Portfolio_</i> <i>growth<sub>it</sub></i>
<i>Post<sub>it</sub></i>	0.423*** (0.135)	-0.006 (0.014)	0.010 (0.008)	-0.047 (0.076)	0.413*** (0.133)	0.009 (0.013)	-0.003 (0.005)	0.011 (0.107)	-0.016 (0.013)
<i>Treatment<sub>i</sub></i>	5.739*** (0.622)	-0.135*** (0.035)	0.095** (0.047)	0.213 (0.214)	5.644*** (0.616)	-0.139*** (0.026)	0.034 (0.027)	0.183 (0.267)	0.240*** (0.062)
<b><i>Post<sub>it</sub> * Treatment<sub>i</sub></i></b>	<b>-2.292*** (0.868)</b>	<b>0.084 (0.067)</b>	<b>0.061 (0.065)</b>	<b>-0.512* (0.285)</b>	<b>-2.353*** (0.856)</b>	<b>0.054 (0.056)</b>	<b>0.016 (0.037)</b>	<b>-0.515 (0.359)</b>	<b>-0.323*** (0.088)</b>
<i>Ln(CPA_age)<sub>it</sub></i>	1.628*** (0.070)	0.056*** (0.008)	0.059*** (0.004)	0.368*** (0.067)	1.569*** (0.069)	0.042*** (0.007)	0.026*** (0.002)	0.146 (0.106)	0.004 (0.007)
<i>Gender<sub>i</sub></i>	-0.474*** (0.180)	-0.006 (0.024)	-0.045*** (0.010)	-0.390*** (0.117)	-0.429** (0.177)	0.042* (0.022)	-0.033*** (0.005)	-0.706*** (0.155)	-0.024 (0.019)
<i>Retire_age<sub>it</sub></i>	0.198* (0.103)	-0.010 (0.011)	-0.020*** (0.006)	-0.169*** (0.060)	0.218** (0.102)	0.008 (0.009)	-0.003 (0.004)	0.060 (0.087)	-0.076*** (0.010)
<i>Education<sub>i</sub></i>	0.077 (0.096)	0.240*** (0.014)	0.109*** (0.008)	0.531*** (0.055)	-0.032 (0.094)	0.153*** (0.012)	0.076*** (0.005)	0.576*** (0.076)	-0.032*** (0.010)
<i>Tenure<sub>it</sub></i>	0.487*** (0.019)	0.058*** (0.006)	0.027*** (0.001)	0.180*** (0.026)	0.459*** (0.018)	0.028*** (0.005)	0.014*** (0.001)	0.197*** (0.037)	-0.139*** (0.002)
<i>Industry_specialist<sub>it</sub></i>	9.884*** (0.097)	0.056*** (0.011)	0.271*** (0.005)	-0.086 (0.063)	9.613*** (0.096)	0.100*** (0.009)	0.106*** (0.003)	-0.753*** (0.103)	0.562*** (0.009)
<i>Big_4<sub>it</sub></i>	3.629*** (0.097)	0.844*** (0.013)	0.251*** (0.006)	1.229*** (0.050)	3.378*** (0.096)	0.686*** (0.011)	0.154*** (0.004)	1.420*** (0.073)	-0.048*** (0.009)
<i>Constant</i>	-7.067*** (0.411)	9.135*** (0.273)	-0.051 (0.055)	9.712*** (0.336)	-7.016*** (0.420)	7.958*** (0.178)	0.003 (0.049)	10.559*** (0.462)	0.459*** (0.050)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	66,437	45,668	66,437	8,375	66,437	44,929	66,437	4,024	66,317
adj. R <sup>2</sup>	0.2871	0.2021	0.1325	0.1057	0.2774	0.1879	0.0962	0.1303	0.1531

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Table 16 (continued)

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This table presents the results of estimating model 1 examining the consequences of type II going concern errors on auditors' client portfolio using a matched sample. The dummy variable  $Post_{it}$  is defined as 1 if the fiscal year is after the cutoff year, otherwise 0. The dummy variable  $Treatment_i$  is defined as 1 if the observations belong to the treatment group, otherwise 0 if the observations belong to the control group. All models are estimated using a four-year window around the cutoff year for each individual auditor. The cutoff year is defined as the year of filing for insolvency. All models are estimated separately for lead auditors (Panel A) and concurring auditors (Panel B) involved in type II going concern errors. We estimate all models using OLS regressions with year fixed effects and robust standard errors. All variables are defined as in section 2.9 Appendix A. We use the following matching criteria:  $Gender_i$ ,  $Big_{4it}$ , fiscal year and age of the individual auditor between the treatment group and the control group. Our 1:N matching is a matching approach with replacement, although the number of control observations to one treatment observation is restricted to a maximum number of 100 observations. The numbers in parenthesis are robust standard errors of the respective coefficients. \*\*\*, \*\*, and \* denote two-tailed statistical significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

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Table 17: Regression results for the career development of individual auditors for the matched sample after a type II going concern error

	Lead auditor		Concurring auditor	
	OLS regression	Logistic regression	OLS regression	Logistic regression
	Termination <sub>it</sub>	Termination <sub>it</sub>	Termination <sub>it</sub>	Termination <sub>it</sub>
<i>Post<sub>it</sub></i>	-0.001 (0.004)	0.020 (0.046)	0.008 (0.006)	0.100 (0.068)
<i>Treatment<sub>i</sub></i>	-0.012 (0.009)	-0.207 (0.195)	-0.002 (0.011)	-0.030 (0.252)
<b><i>Post<sub>it</sub> * Treatment<sub>i</sub></i></b>	<b>0.033*</b> <b>(0.017)</b>	<b>0.456*</b> <b>(0.248)</b>	<b>0.010</b> <b>(0.022)</b>	<b>0.152</b> <b>(0.340)</b>
<i>Ln(CPA_age)<sub>it</sub></i>	-0.015*** (0.003)	-0.188*** (0.042)	0.007 (0.007)	0.044 (0.090)
<i>Gender<sub>i</sub></i>	-0.019*** (0.006)	-0.309** (0.121)	-0.018* (0.010)	-0.628** (0.317)
<i>Retire_age<sub>it</sub></i>	-0.017** (0.008)	-0.263** (0.124)	-0.008 (0.009)	-0.077 (0.139)
<i>Education<sub>i</sub></i>	0.004 (0.009)	0.055 (0.112)	0.021** (0.010)	0.273* (0.142)
<i>Tenure<sub>it</sub></i>	-0.015*** (0.002)	-0.166*** (0.023)	-0.005* (0.003)	-0.082*** (0.030)
<i>Industry_specialist<sub>it</sub></i>	-0.008** (0.003)	-0.108** (0.045)	-0.007 (0.005)	-0.082 (0.063)
<i>Ap_age_adjusted_performance_1<sub>it</sub></i>	-0.001*** (0.000)	-0.018*** (0.003)	-0.000 (0.000)	-0.003 (0.005)
<i>Ap_age_adjusted_performance_2<sub>it</sub></i>	-0.009*** (0.002)	-0.143*** (0.050)	0.007** (0.003)	0.339*** (0.087)
<i>Ap_performance_1<sub>it</sub></i>	0.001 (0.001)	0.008 (0.022)	-0.003* (0.001)	-0.085* (0.044)
<i>Ap_performance_1<sub>it-1</sub></i>	0.003** (0.001)	0.042*** (0.014)	0.000 (0.000)	-0.027 (0.020)
<i>Ap_performance_2<sub>it</sub></i>	-0.008 (0.016)	-0.256 (0.281)	0.018 (0.028)	0.501 (0.412)
<i>Ap_performance_2<sub>it-1</sub></i>	-0.008 (0.014)	-0.300 (0.261)	-0.057*** (0.018)	-1.482*** (0.420)
<i>Af_growth<sub>it</sub></i>	-0.000*** (0.000)	-0.026*** (0.005)	0.000*** (0.000)	0.001*** (0.000)
<i>Big_4<sub>it</sub></i>	-0.071*** (0.004)	-1.119*** (0.069)	-0.111*** (0.004)	-2.856*** (0.176)
<i>Constant</i>	0.107*** (0.015)	-0.699*** (0.164)	0.055** (0.022)	-1.367*** (0.281)
Year fixed effects	Yes	Yes	Yes	Yes
N	31,852	31,623	15,982	15,775
adj. / pseudo R <sup>2</sup>	0.0560	0.1133	0.0848	0.1793

This table examines the career development of lead auditors and concurring auditors after type II going concern errors. We estimate an OLS regression and a logistic regression for the matched sample. Our model for the matched sample is estimated using all available data after the cutoff. The cutoff year is defined as the year of filing for insolvency.

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Table 17 (continued)

We use logistic regression and OLS regression with year fixed effects and robust standard errors. All variables are defined as in section 2.9 Appendix A. For our matched sample, we use a 1:N matching approach with replacement using the following matching criteria:  $Gender_i$ ,  $Big\_4_i$ , fiscal year, career level and age of the individual auditor between the treatment group and the control group. The number of control observations to one treatment observation is restricted to a maximum number of 100 observations. For the OLS regression, the adjusted  $R^2$  is calculated whereas for the logistic regression the pseudo  $R^2$  is calculated. The numbers in parenthesis are robust standard errors of the respective coefficients. \*\*\*, \*\*, and \* denote two-tailed statistical significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

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Table 18: Regression results for the learning effect of individual auditors for the matched sample after a type II going concern error

	Lead auditor		Concurring auditor	
	$Aq\_public_{it}$	$Aq\_private_{it}$	$Aq\_public_{it}$	$Aq\_private_{it}$
$Post_{it}$	0.012 (0.023)	-0.002 (0.004)	0.002 (0.008)	-0.000 (0.003)
$Treatment_i$	0.019 (0.028)	-0.015* (0.008)	0.003 (0.013)	-0.018*** (0.005)
$Post_{it} * Treatment_i$	<b>-0.029</b> <b>(0.039)</b>	<b>0.021*</b> <b>(0.012)</b>	<b>-0.006</b> <b>(0.018)</b>	<b>0.020**</b> <b>(0.009)</b>
$Ln(CPA\_age)_{it}$	-0.012 (0.015)	-0.003 (0.003)	-0.010* (0.006)	0.002 (0.002)
$Gender_i$	-0.032 (0.030)	0.018*** (0.006)	0.009 (0.009)	-0.007 (0.004)
$Retire\_age_{it}$	0.008 (0.024)	0.009** (0.003)	0.011* (0.006)	0.000 (0.002)
$Education_i$	0.012 (0.018)	-0.004 (0.004)	-0.003 (0.007)	-0.004 (0.003)
$Tenure_{it}$	-0.019* (0.010)	-0.001 (0.001)	-0.000 (0.002)	-0.001 (0.001)
$Industry\_specialist_{it}$	-0.029 (0.021)	-0.018*** (0.003)	-0.002 (0.006)	-0.010*** (0.002)
$Big\_4_{it}$	0.013 (0.017)	0.016*** (0.003)	-0.025*** (0.007)	0.018*** (0.002)
$Constant$	0.171** (0.066)	0.093*** (0.008)	0.113*** (0.017)	0.081*** (0.007)
Year fixed effects	Yes	Yes	Yes	Yes
N	248	10,184	1,468	12,097
adj. R <sup>2</sup>	0.0092	0.0506	0.0195	0.0462

This table presents the results of estimating model 1 examining the learning effect of type II going concern errors for our matched sample. Our estimation is based on using a four-year window around the cutoff year for each individual auditor. The cutoff years is defined as the year of filing for insolvency. Our estimations are done separately for lead auditors and concurring auditors involved in type II going concern errors. We use OLS regressions with year fixed effects and robust standard errors. All variables are defined as in section 2.9 Appendix A. The matched sample shows the effects of the respective dependent variables considering the treatment group as well as the control group. For our matched sample, we use a 1:N matching approach with replacement using the following matching criteria:  $Gender_i$ ,  $Big\_4_{it}$ , fiscal year and age of the individual auditor between the treatment group and the control group. The number of control observations to one treatment observation is restricted to a maximum number of 100 observations. The numbers in parenthesis are robust standard errors of the respective coefficients. \*\*\*, \*\*, and \* denote two-tailed statistical significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

### 3 Berichtigungen in den Abschlüssen deutscher CDAX- Unternehmen<sup>49</sup>

#### **Abstract:**

In der Literatur liegen bislang keine empirischen Auswertungen von berichtigten Konzern- bzw. Jahresabschlüssen für Deutschland vor. Dieser Beitrag verfolgt als Ziel, eine erste empirische Auswertung aller veröffentlichten berichtigten Abschlüsse im Geschäftsjahreszeitraum von 2005-2014 von deutschen CDAX-Unternehmen durchzuführen. Berichtigungen können dabei wichtig sein für die Klarstellung der tatsächlichen Vermögens-, Finanz- und Ertragslage des betroffenen Unternehmens. Bei den 196 identifizierten Berichtigungen handelt es sich größtenteils um inhaltliche Berichtigungen, wobei am häufigsten der Anhang betroffen ist. Als Folge des deutschen Enforcementverfahrens werden kaum berichtigte Konzern- bzw. Jahresabschlüsse veröffentlicht.

**Keywords:** Abschlussberichtigungen, CDAX-Unternehmen

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<sup>49</sup> Es wird darauf hingewiesen, dass im Vergleich zur veröffentlichten Version des Beitrages in der *Zeitschrift für internationale und kapitalmarktorientierte Rechnungslegung* 18 (12): 561-569 die Nummerierung der Tabellen bzw. Abbildungen fortlaufend angepasst worden sind. Des Weiteren wurde der Zitationsstil innerhalb des Beitrages, soweit möglich, angepasst, um innerhalb der vorliegenden Dissertation eine einheitliche Darstellung sicherzustellen. Die in der vorliegenden Dissertation jeweils aktuellste Gesetzestextfassung wird ohne Jahresangabe zitiert. Aus Konsistenzgründen wurden teilweise Abkürzungen entfernt und ausgeschrieben bzw. eingeführt. Die jeweiligen Abbildungen wurden aus der veröffentlichten Fassung entnommen. Zudem wird darauf hingewiesen, dass nur die veröffentlichte Fassung des Beitrages in der *Zeitschrift für internationale und kapitalmarktorientierte Rechnungslegung* 18 (12): 561-569 zitiert werden soll.

**Publication details:**

Published in: *Zeitschrift für internationale und kapitalmarktorientierte Rechnungslegung* 18

(12): 561-569.

### 3.1 Einleitung

Nachträgliche Berichtigungen von Konzern- bzw. Jahresabschlüssen sind von hoher Relevanz in der Forschung und Praxis. Indikationen dafür liefert bspw. die US-amerikanische Forschungsliteratur, die sich mit dieser Thematik intensiv auseinandersetzt. Für US-amerikanische Berichtigungen wird aufgezeigt, dass diese mit negativen Konsequenzen für Unternehmen und Investoren assoziiert sind wie bspw. mit negativen Kapitalmarktreaktionen<sup>50</sup>, höheren Wahrscheinlichkeiten eines Vorstandswechsels<sup>51</sup> oder sogar eines Abschlussprüferwechsels<sup>52</sup>. Da Konzern- und Jahresabschlüsse allgemein eine wesentliche Informationsquelle für Abschlussadressaten, insb. Investoren, darstellen<sup>53</sup>, sind Berichtigungen von Abschlüssen grds. von zentraler Bedeutung. Für Deutschland existiert bisher keine vergleichbare empirische Studie. Der vorliegende Beitrag schließt einen Teil der Lücke, indem zunächst die Verbreitung von Berichtigungen in Deutschland im Vergleich zu US-amerikanischen Berichtigungen ergründet wird. Dabei wird die Menge veröffentlichter berichtigter Abschlüsse identifiziert und eine erste empirische Evidenz hinsichtlich der Art und des Umfangs der Berichtigungen vorgestellt. Zum einen kann die somit identifizierte Menge als Grundlage für weitere Forschungsvorhaben dienen und zum anderen wird ein Einblick in die Veröffentlichungspraxis von berichtigten Abschlüssen gewährt.

Im Rahmen des Beitrags werden zunächst die gesetzlichen Regelungen für Bilanzberichtigungen nach HGB und IFRS dargestellt mit einem anschließenden Überblick zur bisherigen Forschung. Im Rahmen einer empirischen Auswertung werden darauf aufbauend alle berichtigten Konzern- bzw. Jahresabschlüsse von CDAX-Unternehmen aus

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<sup>50</sup> Vgl. Palmrose et al. (2004), S. 59 ff.

<sup>51</sup> Vgl. Desai et al. (2006), S. 83 ff.; Arthaud-Day et al. (2006), S. 1119 ff.

<sup>52</sup> Vgl. Hennes et al. (2014), S. 1051 ff.

<sup>53</sup> Vgl. Wagenhofer und Ewert (2015), S. 4 f.

dem elektronischen Bundesanzeiger für die Geschäftsjahre von 2005-2014 untersucht. Insb. wird der Frage nachgegangen, welche Bestandteile des Konzern- bzw. Jahresabschlusses berichtigt wurden. Dabei wird zwischen formellen und inhaltlichen Berichtigungen unterschieden<sup>54</sup> sowie zwischen wesentlichen und unwesentlichen.

Die Analyse zeigt, dass von den 196 berichtigten Konzern- bzw. Jahresabschlüssen 140 inhaltliche Berichtigungen sind und 23 davon als wesentlich einzustufen sind. Der Auslöser von inhaltlichen Berichtigungen ist dabei nur selten eine vorhergehende Feststellung im Rahmen des deutschen Enforcementverfahrens. Die Ursache von formellen Berichtigungen liegt meist bei Darstellungsfehlern des vorhergehenden Konzern- bzw. Jahresabschlusses.

## 3.2 Gesetzliche Regelungen von Bilanzberichtigungen von Konzern- bzw. Jahresabschlüssen

### 3.2.1 HGB

Nach HGB stellen Bilanzberichtigungen die Berichtigung eines fehlerhaften Bilanzansatzes nach Feststellung des Jahresabschlusses dar.<sup>55</sup> Dabei wird von einem fehlerhaften Bilanzansatz ausgegangen, falls zwingende handelsrechtliche Vorschriften und/oder die GoB verletzt worden sind.<sup>56</sup> Dabei spielt in der Praxis der normativ-subjektive Fehlerbegriff eine wichtige Rolle. Danach liegt ein Fehler vor, falls die Bilanz objektiv gegen die zu beachtenden Rechtsvorschriften oder die bestehenden Verhältnisse verstößt und der Kaufmann bei pflichtmäßiger und gewissenhafter Prüfung zum Zeitpunkt der

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<sup>54</sup> Im US-amerikanischen Raum wird von einer Berichtigung (financial restatement) gesprochen, falls man sich auf den veröffentlichten fehlerhaften Finanzbericht eines Unternehmens nicht mehr verlassen kann, sodass eine Klarstellung in Form eines berichtigten Finanzberichts notwendig ist (vgl. Scholz (2014), Financial Restatement Trends in the United States: 2003-2012, S. 1, abrufbar unter: <http://hbfm.link/4287> [Abruf: 24.01.2018]).

<sup>55</sup> Vgl. Schubert (2016), § 253 HGB Rn. 806 ff. Damit ist auch die Berichtigung der GuV gemeint (vgl. Schubert (2016), § 253 HGB Rn. 802). Gem. § 242 Abs. 3 HGB bilden die Bilanz und die GuV den Jahresabschluss.

<sup>56</sup> Vgl. Schubert (2016), § 253 HGB Rn. 803.

Bilanzerstellung die Fehlerhaftigkeit des Abschlusses erkennen konnte.<sup>57</sup> In Abgrenzung dazu verkörpert der objektive Fehlerbegriff ausschließlich den Verstoß gegen die zu beachtenden Vorschriften.<sup>58</sup> Die Beseitigung des fehlerhaften Abschlusses hat zu erfolgen, falls der *Fehler von einigem Gewicht* ist.<sup>59</sup> Der Begriff *Fehler von einigem Gewicht* kann dabei i.V.m. einem wesentlichen Fehler gesetzt werden.<sup>60</sup> Eine Hilfestellung zum Fehlerbegriff bietet der DRS 13, der „[...] Unrichtigkeiten oder Verstöße gegen zwingende Bilanzierungsgrundsätze. [...]“<sup>61</sup> als Fehler definiert. Als Beispiele werden dabei Rechenfehler, fehlerhafte Anwendung von Bilanzierungsgrundsätzen und Fehlinterpretation von Sachverhalten genannt (vgl. DRS 13.6).

Der Begriff der Wesentlichkeit ist den GoB entnommen<sup>62</sup> und verfolgt das Ziel, die jeweiligen Tatbestände im Jahresabschluss zu beachten und ggf. anzugeben, die für die Adressaten des Jahresabschlusses von Bedeutung sind. Als Orientierung für die Auslegung von bedeutenden Sachverhalten sind alle Tatbestände zu berücksichtigen, die das Jahresergebnis sowie die Rechnungslegung beeinflussen.<sup>63</sup> Exemplarisch können folgende Schwellenwerte für die Feststellung wesentlicher Abweichungen im geänderten Jahresabschluss als Anhaltspunkt dienen: mindestens 10% des Jahresüberschusses/-fehlbetrags; mindestens 5% der Bilanzsumme; mindestens 10% besonders wichtiger sonstiger Einzelposten sowie die vorsätzliche Vereitelung einer Überschreitung gesellschaftsrechtlich relevanter Grenzen (bspw. in Bezug auf die Einteilung in eine

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<sup>57</sup> Vgl. Hennrichs und Pöschke (2018), § 172 AktG Rn. 76; Hennrichs (2013), S. 682; Friedl und Buchner (2014), S. 184. Ein Beispiel dafür ist eine bestimmte unklare Rechtslage zum Zeitpunkt der Bilanzerstellung und der darauffolgenden Befolgung der Expertenmeinung, die sich im Nachhinein als objektiv falsch herausstellt. Im Steuerrecht wurde dagegen der subjektive Fehlerbegriff mit dem Beschluss des BFH vom 31.01.2013 aufgegeben (vgl. Prinz (2013), S. 650 ff.).

<sup>58</sup> Vgl. Hennrichs (2013), S. 687.

<sup>59</sup> Vgl. IDW RS HFA 6, Rn. 14.

<sup>60</sup> Vgl. Petersen, Bansbach und Dornbach (2016), S. 167.

<sup>61</sup> DRS 13.6.

<sup>62</sup> Vgl. Wittmann (2016), § 243 HGB Rn. 37.

<sup>63</sup> Vgl. Winkeljohann und Büssow (2016), § 252 HGB Rn. 70.

Unternehmensgrößenklasse).<sup>64</sup> Dabei handelt es sich nicht um allgemeingültige Schwellenwerte in Bezug auf die Wesentlichkeit, da derartige Werte nicht vorhanden sind.<sup>65</sup>

Die Berichtigung eines fehlerhaften Abschlusses muss durchgeführt werden, wenn die tatsächliche Vermögens-, Finanz- und Ertragslage des Unternehmens ohne die Berichtigung nicht wahrheitsgetreu dargestellt wird.<sup>66</sup> Grds. gilt, dass Korrekturen im laufenden Abschluss<sup>67</sup> vorgenommen werden können, falls keine Nichtigkeit des Abschlusses besteht.<sup>68</sup> Auch eine Rückwärtsänderung des fehlerhaften Abschlusses, der nicht nichtig ist, ist möglich, allerdings nicht zwingend, außer im Fall einer erforderlichen zeitnahen Informationsvermittlung an die Adressaten, die im laufenden Abschluss nicht erreicht werden können.<sup>69</sup> Falls durch eine Veröffentlichung bspw. im folgenden Zwischenbericht eine zeitnahe Informationsvermittlung gegeben ist, ist eine Rückwärtsänderung nicht mehr notwendig.<sup>70</sup> Einen weiteren besonderen Fall stellt die Unternehmensbekanntmachung festgestellter Fehler im Rahmen des Enforcementverfahrens durch die Deutsche Prüfstelle für Rechnungslegung (DPR) oder durch die BaFin dar, die ebenso das Kriterium einer zeitnahen Informationsvermittlung erfüllt. Die Fehlerfeststellung im Rahmen des deutschen Enforcementverfahrens stellt für sich keine Berichtigungspflicht dar.<sup>71</sup>

Die Nichtigkeit eines Jahresabschlusses stellt einen besonderen Fall dar. Dabei kann die Nichtigkeit eines Jahresabschlusses begründet sein in der Inkorrektheit bzgl. der Prüfung des

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<sup>64</sup> Vgl. Winkeljohann und Büssow (2016), § 252 HGB Rn. 71; Winkeljohann und Schellhorn (2016), § 264 HGB Rn. 57. Für den Konzernabschluss können ähnliche Abweichungen wie im Fall des Jahresabschlusses angenommen werden (vgl. Winkeljohann und Büssow (2016), § 252 HGB Rn. 71; Winkeljohann und Rimmelspacher (2016), § 297 HGB Rn. 197).

<sup>65</sup> Vgl. Winkeljohann und Büssow (2016), § 252 HGB Rn. 71; Mayer-Wegelin (2006), S. 8 f.

<sup>66</sup> Es sei an dieser Stelle angemerkt, dass für Konzernabschlüsse nach HGB die gleichen Voraussetzungen in Bezug auf die Berichtigung von fehlerhaften Konzernabschlüssen gelten wie für Jahresabschlüsse (vgl. Schubert (2016), § 253 HGB Rn. 846).

<sup>67</sup> Unter einem laufenden Abschluss wird der zuletzt offene Jahresabschluss verstanden, der noch nicht festgestellt worden ist (vgl. IDW RS HFA 6, Rn. 15).

<sup>68</sup> Vgl. IDW RS HFA 6, Rn. 21.

<sup>69</sup> Vgl. IDW RS HFA 6, Rn. 21.

<sup>70</sup> Vgl. IDW RS HFA 6, Rn. 18.

<sup>71</sup> Vgl. IDW RS HFA 6, Rn. 20.

Jahresabschlusses (§§ 256 Abs. 1 Nr. 2, 256 Abs. 1 Nr. 3, 173 Abs. 3 AktG und § 316 Abs. 3 HGB), des Jahresabschlusses selber in bestimmten Fällen (§§ 256 Abs. 1 Nr. 1, 256 Abs. 1 Nr. 4, 256 Abs. 4 und 256 Abs. 5 AktG) sowie der Feststellung des Jahresabschlusses (§§ 256 Abs. 1 Nr. 4, 256 Abs. 2, 256 Abs. 3, 234 Abs. 3 und 235 Abs. 2 AktG).<sup>72</sup> Je nach Sachverhalt ist jedoch eine nachträgliche Heilung innerhalb enger Fristen möglich (vgl. § 256 Abs. 6 AktG). Der nichtige Jahresabschluss muss dabei durch einen wirksamen Jahresabschluss ersetzt werden, falls die Nichtigkeit des Jahresabschlusses nicht geheilt worden ist.<sup>73</sup> Im Fall eines geheilten nichtigen Jahresabschlusses ist eine ausschließliche Korrektur im laufenden Abschluss zulässig.<sup>74</sup>

Im Fall einer Rückwärtsberichtigung eines fehlerhaften Abschlusses, welcher mehrere Geschäftsperioden zurückliegt, müssen auch alle darauffolgenden Jahresabschlüsse aufgrund des Grundsatzes der Bilanzverknüpfung nach § 252 Abs. 1 Nr. 1 HGB berichtigt werden.<sup>75</sup>

Für Konzernabschlüsse nach HGB gelten die gleichen Voraussetzungen in Bezug auf die Berichtigung von fehlerhaften Konzernabschlüssen wie für Jahresabschlüsse.<sup>76</sup>

In Abgrenzung zu Bilanzberichtigungen handelt es sich bei Bilanzänderungen nach HGB um Änderungen fehlerfreier Bilanzansätze.<sup>77</sup> Die Änderungen selber unterliegen keiner zeitlichen Beschränkung, allerdings müssen dabei wichtige rechtliche, wirtschaftliche oder steuerliche Gründe vorliegen.<sup>78</sup> Beispielhafte Gründe für eine Änderung können die

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<sup>72</sup> Vgl. Haug (2018), Nichtigkeit des Jahresabschlusses Rn. 2.

<sup>73</sup> Vgl. IDW RS HFA 6, Rn. 15.

<sup>74</sup> Vgl. Schubert (2016), § 253 HGB Rn. 806.

<sup>75</sup> Vgl. Schubert (2016), § 253 HGB Rn. 807. Eine Bilanzberichtigung wird grds. durch das zuständige Organ wie bspw. dem Vorstand einschließlich Aufsichtsrat oder der Hauptversammlung eingeleitet (vgl. Schubert (2016), § 253 HGB Rn. 808).

<sup>76</sup> Vgl. Schubert (2016), § 253 HGB Rn. 846.

<sup>77</sup> Sowohl der Begriff der Bilanzberichtigung als auch der Bilanzänderung sind aus dem Steuerrecht zu entnehmen. Handelsrechtlich wird übergreifend auch von einer Änderung des Jahresabschlusses gesprochen, vgl. Schubert (2016), § 253 HGB Rn. 800. Somit werden die Begriffe Bilanzberichtigung sowie Bilanzänderung nach HGB im Beitrag synonymhaft verwendet.

<sup>78</sup> Vgl. Schubert (2016), § 253 HGB Rn. 835; IDW RS HFA 6, Rn. 9.



Anpassung der Ergebnisse aus der steuerlichen Außenprüfung sein, um eine überwiegende Übereinstimmung zwischen der Handelsbilanz und der Steuerbilanz zu wahren sowie nachträgliche steuerrechtliche Wahlrechtsausübungen.<sup>79</sup> Ein weiterer Grund kann die Gewinnung neuer Erkenntnisse im Fall hoher Verluste nach der Feststellung des Jahresabschlusses sein, die eine Erhöhung der Gewinnrücklagen unter Minimierung der Gewinnausschüttung für sinnvoll erscheinen lassen.<sup>80</sup> Die Vorgehensweise in Bezug auf die Anpassung des Jahresabschlusses ist dabei analog zur Vorgehensweise bei Bilanzberichtigungen.<sup>81</sup> Im Fall einer nachträglichen Änderung des Jahresabschlusses, wobei darunter sowohl Bilanzänderungen als auch Bilanzberichtigungen zu verstehen sind, muss dieser gem. § 325 Abs. 1b HGB nach § 325 Abs. 1 HGB offengelegt werden. Gem. § 316 Abs. 3 HGB muss der geänderte Jahresabschluss einer Nachtragsprüfung unterzogen werden, falls die vorgenommenen Änderungen es erfordern.

Im berichtigten Jahresabschluss sollten im Anhang alle vorgenommenen Anpassungen angegeben werden und der berichtigte Jahresabschluss muss als solcher kenntlich gemacht werden.<sup>82</sup>

### 3.2.2 IFRS

Die Definition des Fehlerbegriffs nach den internationalen Rechnungslegungsnormen ist in IAS 8.5 gegeben. Dabei stellen eine fehlerhafte Wiedergabe oder nicht vorhandene Bestandteile des Abschlusses aufgrund der Nicht- oder Fehlanwendung zuverlässiger Informationen einen Fehler dar. Ähnlich zu HGB ist für die Beurteilung, ob ein Abschluss fehlerhaft ist, der subjektive Informationsumfang entscheidend. Dieser ist definiert als die zum Zeitpunkt der Abschlusserstellung vorhandenen Informationen, für die eine Einholung

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<sup>79</sup> Vgl. Schubert (2016), § 253 HGB Rn. 835; Hennrichs und Pöschke (2018), § 172 AktG Rn. 68.

<sup>80</sup> Vgl. Schubert (2016), § 253 HGB Rn. 835.

<sup>81</sup> Vgl. Schubert (2016), § 253 HGB Rn. 840.

<sup>82</sup> Vgl. Schubert (2016), § 253 HGB Rn. 807; IDW RS HFA 6, Rn. 30.

dem Bilanzierenden zumutbar war.<sup>83</sup> Somit ergibt sich die Fehlerhaftigkeit durch die fehlerhafte oder Nichtanwendung des subjektiven Informationsumfangs. In IAS 8.5 ist zudem eine beispielhafte Aufzählung von Fehlern gegeben, bei denen es sich um Rechenfehler, falsche Anwendung von Bewertungs- und Bilanzierungsmethoden, falsche Auslegung von Tatsachen sowie Betrug handelt.

Im Vergleich zu Abschlüssen nach HGB ist eine Neuaufstellung des Konzernabschlusses nach IFRS im Rahmen einer Bilanzberichtigung nicht zwingend notwendig, da die Veröffentlichung eines Konzernabschlusses nach IFRS reinen Informationszwecken dient, sodass eine Anpassung im laufenden Abschluss grds. möglich ist. Davon abweichend müssen allerdings rückwirkende Anpassungen vorgenommen werden, soweit die Paragraphen IAS 8.41 ff. anzuwenden sind.<sup>84</sup> Auf diese wird im Folgenden eingegangen.

Die Pflicht zur rückwirkenden Korrektur eines nach IFRS aufgestellten Abschlusses besteht nach IAS 8.41, falls es sich um einen wesentlichen Fehler, der sich in einer bestimmten Art und Weise auf die Darstellung der Vermögens-, Finanz- und Ertragslage des Unternehmens auswirkt, handelt.<sup>85</sup> Dabei ist das Fehlen oder die Änderung eines Bestandteils im Abschluss nach IAS 1.7 und IAS 8.5 wesentlich, falls dadurch eine anderweitige wirtschaftliche Entscheidung des Abschlussadressaten im Vergleich zu einem fehlerfreien Abschluss getroffen wird. Dies ist einhergehend mit dem grundlegenden Prinzip der Entscheidungsnützlichkeit von IFRS-Abschlüssen.<sup>86</sup> Die Wesentlichkeit kann durch einen Fehler sowie durch das Zusammenspiel mehrerer einzelner Fehler begründet sein und sowohl qualitativer als auch quantitativer Natur sein.<sup>87</sup>

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<sup>83</sup> Vgl. Driesch (2016), § 45 Rn. 41, 44. Im Gegensatz dazu berücksichtigt der objektive Informationsumfang alle theoretisch vorliegenden Informationen zum Zeitpunkt der Abschlusserstellung.

<sup>84</sup> Vgl. Grottel (2016), § 342b HGB Rn. 47.

<sup>85</sup> Vgl. Driesch (2016), § 45 Rn. 42, 44.

<sup>86</sup> Vgl. Wawrzinek und Lübbig (2016), § 2 Rn. 20.

<sup>87</sup> Vgl. Driesch (2016), § 45 Rn. 42.

Weitere Fehlerkategorien sind unwesentliche Fehler und unwesentliche aber bewusst herbeigeführte Fehler, die auf die Beeinflussung der Vermögens-, Finanz- und Ertragslage des Unternehmens abzielen. Für beide Fehlerkategorien besteht keine Berichtigungspflicht, allerdings ist für letzteres eine Berichtigung naheliegend, da diese nicht vereinbar mit dem Prinzip des *true and fair view* der IFRS ist.<sup>88</sup> Fehler, die in bereits veröffentlichten Abschlüssen festgestellt worden sind, müssen nach IAS 8.42 retrospektiv ausgebessert werden. Dabei wird der Abschluss so korrigiert, als hätte es den Fehler gem. IAS 8.5 nie gegeben.<sup>89</sup> Die Anpassung des Fehlers erfolgt grds. in der aktuellen Berichtsperiode, wobei je nach Art des Fehlers ggf. die aktuelle Berichtsperiode sowie die Vergleichsperiode angepasst werden.<sup>90</sup> Eine retrospektive Anpassung ist bedingt durchführbar, falls die Bestimmung des entsprechenden Korrekturbetrags aus der Vorperiode bzw. Vorperioden nur eingeschränkt möglich ist.<sup>91</sup> Dabei ist der Korrekturbetrag ausschließlich auf die Vorperioden beschränkt, für die eine Ermittlung des Korrekturbetrags möglich ist.<sup>92</sup>

Des Weiteren sind gem. IAS 8.49 zusätzliche Anhangangaben bzgl. der Fehlerkorrektur notwendig. Im Detail sind die Art des Fehlers, der Korrekturbetrag für jeden betreffenden Abschlussposten und für jede Periode sowie ggf. die Auswirkungen auf den verwässerten sowie unverwässerten Gewinn je Aktie, die Summe der Berichtigungsbeträge und eine entsprechende Erklärung bei einer eingeschränkt durchführbaren retrospektiven Änderung anzugeben.<sup>93</sup>

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<sup>88</sup> Vgl. Driesch (2016), § 45 Rn. 44; Wawrzinek und Lübbig (2016), Rn. 44.

<sup>89</sup> Vgl. Petersen et al. (2016), S. 164.

<sup>90</sup> Vgl. Zülch und Willms (2014), IAS 8 Rn. 52.

<sup>91</sup> Vgl. Zülch und Willms (2014), IAS 8 Rn. 55, 57.

<sup>92</sup> Vgl. Zülch und Willms (2014), IAS 8 Rn. 55.

<sup>93</sup> Vgl. Zülch und Willms (2014), IAS 8 Rn. 56.

### 3.2.3 Gegenüberstellung HGB und IFRS

Bei der Gegenüberstellung der Regelungen zur Fehlerberichtigung von Abschlüssen nach HGB und IFRS kann festgestellt werden, dass in den IFRS die Regelungen explizit in den Standards enthalten sind (vgl. IAS 8), während es nach HGB keine expliziten Regelungen gibt. Die Vorgehensweise nach HGB stützt sich auf die Angaben nach DRS 13 und IDW RS HFA 6.<sup>94</sup> Eine explizite Regelung kann insoweit vorteilhaft sein, als dadurch die Ambivalenz bei der Vorgehensweise einer Berichtigung in der Praxis minimiert werden kann.

Wie in den internationalen als auch den nationalen Normen (IAS 8.5, bzw. DRS 13), werden mögliche Fehler beispielhaft aufgelistet.<sup>95</sup> Vergleichbar ist auch das Vorliegen eines fehlerhaften Abschlusses, bei dem die subjektive Komponente, d.h. die Möglichkeit der Erkennung des Fehlers durch den Bilanzierenden bei pflichtmäßiger und gewissenhafter Prüfung zum Zeitpunkt der Abschlusserstellung, eine Rolle spielt. Für das Prinzip der Wesentlichkeit ergeben sich zwischen IFRS und HGB insoweit Unterschiede, dass nach IFRS die Wesentlichkeit im IAS 8.5 beschrieben wird, während nach HGB eine derartige Klarstellung nicht vorliegt (vgl. Abschn. 3.2.1 und 3.2.2).

Im Gegensatz zu den IFRS, welche ausschließlich eine retrospektive Anpassung des Abschlusses vorsehen, ist nach HGB je nach Sachverhalt eine retrospektive, bspw. im Fall eines nichtigen Abschlusses, oder eine prospektive Änderung, d.h. eine Berichtigung im laufenden Abschluss, bspw. im Fall einer geheilten Nichtigkeit eines Abschlusses, vorgesehen.<sup>96</sup> Sowohl nach HGB als auch nach IFRS sind Anhangangaben im Fall einer Berichtigung eines Abschlusses geboten. Nach IFRS sind dabei die Angaben nach IAS 8.49

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<sup>94</sup> Vgl. Petersen et al. (2016), S. 167.

<sup>95</sup> Vgl. Driesch (2016), § 45 Rn. 53.

<sup>96</sup> Vgl. Petersen et al. (2016), S. 167.

anzugeben, während die Angabepflicht im HGB nicht ausdrücklich klargestellt ist (vgl. Abschn. 3.2.1 und 3.2.2).

### 3.3 Stand der Forschung zu Bilanzberichtigungen

Die bisherige Forschung zu Bilanzberichtigungen konzentriert sich primär auf US-amerikanische Unternehmen<sup>97</sup>. Dabei werden Bilanzberichtigungen<sup>98</sup> regelmäßig als Indikatoren für Rechnungslegungs- bzw. Prüfungsqualität interpretiert.<sup>99</sup>

Die häufigsten Ursachen von Bilanzberichtigungen sind interne Fehler im Unternehmen wie bspw. fehlerhafte Buchungen sowie die fehlerhafte Anwendung von Standards aufgrund ihrer Komplexität bzw. ihrer eingeschränkten Verständlichkeit.<sup>100</sup>

Neben den Ursachen befassen sich weitere Studien mit den Folgen von Bilanzberichtigungen. Dabei wird insb. ein negativer Zusammenhang zwischen Kapitalmarktreaktionen und Bilanzberichtigungen gezeigt.<sup>101</sup> Die Effektstärke ist dabei höher, falls die Bilanzberichtigung i.V.m. Umsatzänderungen<sup>102</sup> oder mit einem vorausgehenden Betrugsfall steht<sup>103</sup> oder der Fehler durch die jeweilige Wirtschaftsprüfungsgesellschaft aufgedeckt worden ist.<sup>104</sup> Zum anderen führen Bilanzberichtigungen vermehrt zu Vorstandswechseln.<sup>105</sup> Mit Bilanzberichtigungen sind des

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<sup>97</sup> Vgl. bspw. Mande und Son (2013), S. 119 ff.

<sup>98</sup> Im Folgenden wird der englische Begriff financial restatement als Bilanzberichtigung übersetzt.

<sup>99</sup> Vgl. Plumlee und Yohn (2010), S. 41 ff.; Palmrose et al. (2004), S. 59 ff.

<sup>100</sup> Vgl. Plumlee und Yohn (2010), S. 41 ff.

<sup>101</sup> Vgl. Scholz (2008), The Changing Nature and Consequences of Public Company Financial Restatements 1997-2006, S. 1 ff., abrufbar unter: <http://hbfm.link/4424> (Abruf: 25.01.2018); Hennes, Leone und Miller (2008), S. 1487 ff.; Palmrose et al. (2004), S. 59 ff.

<sup>102</sup> In der Studie wird die Richtung der Umsatzänderungen nicht genauer spezifiziert, allerdings ist beispielhaft die Rede von negativen Umsatzänderungen (vgl. Scholz (2008), S. 1 ff., abrufbar unter: <http://hbfm.link/4424> [Abruf: 25.01.2018]).

<sup>103</sup> Vgl. Scholz (2008), S. 1, abrufbar unter: <http://hbfm.link/4424> (Abruf: 25.01.2018).

<sup>104</sup> Vgl. Palmrose et al. (2004), S. 59 ff.

<sup>105</sup> Vgl. Desai et al. (2006), S. 83 ff.; Arthaud-Day et al. (2006), S. 1119 ff.; Hennes et al. (2008), S. 1487 ff.

Weiteren Wechsel von Wirtschaftsprüfungsgesellschaften<sup>106</sup> sowie der jeweiligen Person des Wirtschaftsprüfers<sup>107</sup> verbunden.

Weitere Studien befassen sich mit dem Einfluss verschiedener Faktoren auf die Bilanzberichtigung. Dabei weisen zum einen Unternehmen mit berichtigten Abschlüssen in Bezug auf ihre Kapitalstruktur einen höheren Leverage auf.<sup>108</sup> Des Weiteren reduzieren bestimmte Charakteristika von Prüfungsausschüssen wie die Unabhängigkeit sowie auch die vorhandene Expertise des Prüfungsausschusses<sup>109</sup> die Wahrscheinlichkeit einer Bilanzberichtigung.<sup>110</sup> In Bezug auf die Abschlussprüfung kann ein negativer Zusammenhang zwischen der Mandatslaufzeit und einer Bilanzberichtigung festgestellt werden mit der Begründung, dass der Erwerb an mandantenspezifischem Wissen für die Sicherstellung einer höheren Prüfungsqualität förderlich ist.<sup>111</sup> Für Deutschland existieren bisher keine empirischen Studien zum Thema Bilanzberichtigungen. Es gibt allerdings verschiedene empirische Studien, die Zusammenhänge von Fehlerbekanntmachungen im Rahmen des deutschen Enforcementverfahrens untersuchen. Ähnlich zu US-amerikanischen Studien besteht dabei ein negativer Zusammenhang zwischen der Kapitalmarktreaktion und der Fehlerbekanntmachung durch die DPR oder BaFin.<sup>112</sup>

Die im Rahmen des Beitrags identifizierte Menge an berichtigten Abschlüssen kann als Grundlage für weitere Forschungsvorhaben dienen, wie bspw. der Untersuchung von

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<sup>106</sup> Vgl. Liu et al. (2009), S. 225 ff.

<sup>107</sup> Vgl. Mande und Son (2013), S. 119 ff.

<sup>108</sup> Vgl. Kinney und McDaniel (1989), S. 71 ff.; In der Studie werden dabei berichtigte Quartalsberichte untersucht.

<sup>109</sup> Die Unabhängigkeit des Prüfungsausschusses ist definiert durch die Anzahl der Mitglieder, die nicht in einem engen Abhängigkeitsverhältnis zum Unternehmen stehen wie bspw. als Mitarbeiter oder als Verwandte von Vorstandsmitgliedern. Die Expertise des Prüfungsausschusses ist definiert durch das Vorhandensein von Mitgliedern mit Fachwissen im Bereich des Finanzmanagements oder der Rechnungslegung (vgl. Abbott et al. (2004), S. 69 ff.).

<sup>110</sup> Vgl. Abbott et al. (2004), S. 69 ff.

<sup>111</sup> Vgl. Stanley und DeZoort (2007), S. 131 ff.

<sup>112</sup> Vgl. Hitz et al. (2012), S. 253 ff.

Einflussfaktoren auf die Veröffentlichung von berechtigten Abschlüssen sowie deren Signalwirkung.<sup>113</sup>

### 3.4 Daten und Methodik

Für die Untersuchung wurden alle von deutschen CDAX-Unternehmen im elektronischen Bundesanzeiger veröffentlichten Berichtigungen für die Geschäftsjahre 2005-2014 ausgewertet.<sup>114</sup> Der Fokus auf CDAX-Unternehmen liegt in der Offenlegungspflicht begründet. Gem. § 325 HGB besteht für KapGes. die Pflicht zur Offenlegung ihrer entsprechenden Unterlagen im elektronischen Bundesanzeiger. Bis Ende 2011 war die Einreichung noch in Papierform möglich.<sup>115</sup> Allerdings mussten KapGes. bereits vorher ihre Unterlagen beim elektronischen Bundesanzeiger einreichen.<sup>116</sup> Somit ist eine Homogenität in Bezug auf die Offenlegungspflichten gegeben.

Für die empirische Untersuchung von Berichtigungen<sup>117</sup> werden ausschließlich Veröffentlichungen mit positiven Suchtreffern für die Stichwörter „Berichtigung“, „berichtigt“, „geänderter“ sowie „korrigierter“ betrachtet.<sup>118</sup> Für den Betrachtungszeitraum konnten insgesamt 522 Berichtigungen von deutschen CDAX-Unternehmen identifiziert

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<sup>113</sup> Zu beachten ist, dass die identifizierte Menge einer Selbstselektion unterliegt, da verschiedene Faktoren einen Einfluss auf die Entdeckung eines fehlerhaften Abschlusses haben und da bei Fehlerentdeckung im Rahmen des Enforcementverfahrens keine Pflicht zur Berichtigung des Abschlusses besteht (vgl. IDW RS HFA 6, Rn. 20). Folglich sind abweichende Ergebnisse im Verhältnis zu US-amerikanischen Studien möglich.

<sup>114</sup> Die jeweilige Zusammensetzung der CDAX-Unternehmen um die Jahresenden von 2005-2014 sind aus dem Daily Weighting File bzw. Index Composition Report der Deutschen Börse bzw. der STOXX Ltd. entnommen worden. Die Analyse der berechtigten Abschlüsse für die Geschäftsjahre von 2005-2014 basieren auf der Untersuchung der Veröffentlichungsangaben des elektronischen Bundesanzeigers seit der Inbetriebnahme am 01.01.2007 (vgl. Reinholdt, (2016), § 325 HGB Rn. 2) bis einschließlich dem Erhebungsstand vom 29.04.2016. Da nach der Datenaufbereitung keine berechtigten Abschlüsse für frühere Geschäftsjahre als 2005 vorliegen, stellt das Geschäftsjahr 2005 den Anfang des Betrachtungszeitraums. Nach § 325 Abs. 1 Satz 1 HGB müssen die offenlegungspflichtigen Unterlagen spätestens ein Jahr nach dem jeweiligen Abschlussstichtag eingereicht sein.

<sup>115</sup> Vgl. Fehrenbacher (2013), § 325 HGB Rn. 76.

<sup>116</sup> Vgl. § 325 HGB (2006) a.F. durch Art. 1 Gesetz über elektronische Handelsregister und Genossenschaftsregister sowie das Unternehmensregister (EHUG) vom 10.11.2006 (BGBl. I 2006 S. 2553).

<sup>117</sup> Eine weitere identifizierte Art von erneuten Veröffentlichungen im elektronischen Bundesanzeiger sind Ergänzungen.

<sup>118</sup> Als Ausgangspunkt für die Schlüsselwortsuche diente die Informationsspalte aus dem elektronischen Bundesanzeiger.

werden. Für die Analyse der Art von Berichtigungen werden darüber hinaus folgende Beobachtungen ausgeschlossen: Korrekturen sowie Doppelveröffentlichungen, um eine Mehrfachzählung auszuschließen; Berichtigungen von Zwischenberichten, wie z.B. Quartalsberichte oder Halbjahresberichte, da diese nicht prüfungspflichtig sind<sup>119</sup>; Berichtigungen von Konzern- und Jahresabschlüssen des gleichen Unternehmens. In diesen Fällen wird der Konzernabschluss als primäre Quelle verwendet, da etwaige Berichtigungen, mit hoher Wahrscheinlichkeit, in beiden Abschlüssen identisch sind. Des Weiteren werden Berichtigungen, die ausschließlich auf nachträglich bekanntgegebenen Beschlüssen der Hauptversammlung beruhen und kein entsprechender berichtigter Abschluss veröffentlicht worden ist, ausgeschlossen. Abschließend werden berichtigte Abschlüsse, die im Rahmen eines Joint Audit geprüft wurden, nicht berücksichtigt, da in diesem Fall die Zuordnung des verantwortlichen Abschlussprüfers nicht eindeutig ist.

Die finale Stichprobe umfasst insgesamt 196 Abschlüsse, davon 92 Konzernabschlüsse und 104 Jahresabschlüsse, die nachträglich im elektronischen Bundesanzeiger berichtigt worden sind. Eine tabellarische Übersicht der Stichprobenauswahl ist in Tabelle 19 dargestellt.

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<sup>119</sup> Vgl. Hebestreit (2016), § 43 Rn. 116.



Tabelle 19: Stichprobenauswahl

Vorgehensweise der Datenaufbereitung	Anzahl an Beobachtungen
Alle identifizierten berichtigten Abschlüsse von deutschen CDAX Unternehmen für die Geschäftsjahre von 2005-2014	522
- Bereinigung der durch die Berichtigung doppelte Veröffentlichung	- 252
- Veröffentlichungen, die keine Konzern- bzw. Jahresabschlüsse sind	- 16
- Ausschließliche Nachtragsänderungen durch die Hauptversammlung	- 23
- Zweifache Berichtigung des gleichen Konzern- bzw. Jahresabschlusses	- 4
- Vorrang des Konzernabschlusses gegenüber dem Jahresabschluss bei gleichem Stichtag des Unternehmens	- 29
- Unternehmen mit einem Joint Audit	- 2
Finale Stichprobe	196

Zur Analyse der Berichtigungen werden die folgenden Abschlussbestandteile auf ihre Veränderung analysiert<sup>120</sup>: Bilanz, GuV, Anhang, Lagebericht, Bestätigungsvermerk, Entsprechenserklärung zum Deutschen Corporate Governance Kodex (DCGK), Kapitalflussrechnung, Eigenkapitalpiegel, Segmentberichterstattung, Beschlüsse sowie Vorschläge der Ergebnisverwendung. Die Wahl der Abschlussbestandteile leitet sich ab durch die explizite Aufzählung offenlegungspflichtiger Unterlagen.<sup>121</sup>

Darüber hinaus werden die Berichtigungen in formelle und inhaltliche sowie wesentliche und unwesentliche Berichtigungen unterteilt. Die Abgrenzung formeller Berichtigungen zu inhaltlichen Berichtigungen stellt die angepasste Informationslage im veröffentlichten berichtigten Dokument in der Art dar, dass die Anpassung einen Einfluss auf die ursprüngliche Investitionsentscheidung eines Investors haben kann.<sup>122</sup> Im Detail werden jegliche aufgrund der Berichtigung neu hinzugekommenen Informationen grds. als

<sup>120</sup> Veränderungen werden durch einen Vergleich zwischen dem zuerst veröffentlichten Abschluss und dem zuletzt veröffentlichten berichtigten Abschluss identifiziert.

<sup>121</sup> Vgl. Reinholdt (2016), § 325 HGB Rn. 15 (57, 82 f.). Man beachte dabei, dass der Hinweis der Entsprechenserklärung zum DCGK ein Bestandteil des Anhangs ist und die Angaben zur Ergebnisverwendung entweder in der GuV oder im Anhang gemacht werden können.

<sup>122</sup> Vgl. Scholz (2014), S. 1 f., abrufbar unter: <http://hbfm.link/4287> (Abruf: 24.01.2018).

inhaltliche Berichtigung gehandhabt. Für die Wesentlichkeit einer Berichtigung werden Änderungen der Bilanzsumme sowie der Jahresüberschüsse/-fehlbeträge zwischen nicht berichtigten und berichtigten Abschlüssen betrachtet. Wesentlichkeit ist dann gegeben, wenn die Veränderung der Bilanzsumme 5% oder die Veränderung des Jahresüberschusses/-fehlbetrags 10% übersteigt (vgl. Abschn. 3.2.1).<sup>123</sup> Des Weiteren wird auf die Veränderung der Unternehmenscharakteristika wie Bilanzsumme und Kapitalrentabilität<sup>124</sup> (ROA) der berichtigten Unternehmen eingegangen sowie auf mögliche Unterschiede wie bspw. in Bezug auf die Veröffentlichungsdauer einer Berichtigung zwischen formellen und inhaltlichen Berichtigungen. Abschließend werden Informationen aus dem Bestätigungsvermerk, insb. Angaben zur Prüfungsdauer und den Wirtschaftsprüfungsgesellschaften genutzt, um mögliche Zusammenhänge zur Abschlussprüfung zu untersuchen.

### 3.5 Inhaltsanalyse der Berichtigungen

#### 3.5.1 Überblick über die erhobenen Berichtigungen

Die 196 Berichtigungen lassen sich 144 verschiedenen CDAX-Unternehmen zuordnen<sup>125</sup>, davon haben 106 Unternehmen im Betrachtungszeitraum eine Berichtigung veröffentlicht, 27 Unternehmen zwei Berichtigungen und 11 Unternehmen mehr als zwei Berichtigungen. Im Zeitablauf lässt sich feststellen, dass für das Geschäftsjahr 2005 nur eine Veröffentlichung vorliegt, dagegen sind für das Geschäftsjahr 2011 die meisten Berichtigungen (30)<sup>126</sup> angefallen. Die Veröffentlichungsdauer im elektronischen Bundesanzeiger, definiert als die Anzahl der Kalendertage zwischen dem

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<sup>123</sup> Vgl. Winkeljohann und Büssow (2016), § 252 HGB Rn. 70 f.; Winkeljohann und Schellhorn (2016), § 264 HGB Rn. 57; Winkeljohann und Rimmelspacher (2016), § 297 HGB Rn. 197.

<sup>124</sup> Die Kapitalrentabilität ist definiert als das Verhältnis von Jahresüberschuss/-fehlbetrag zur Bilanzsumme.

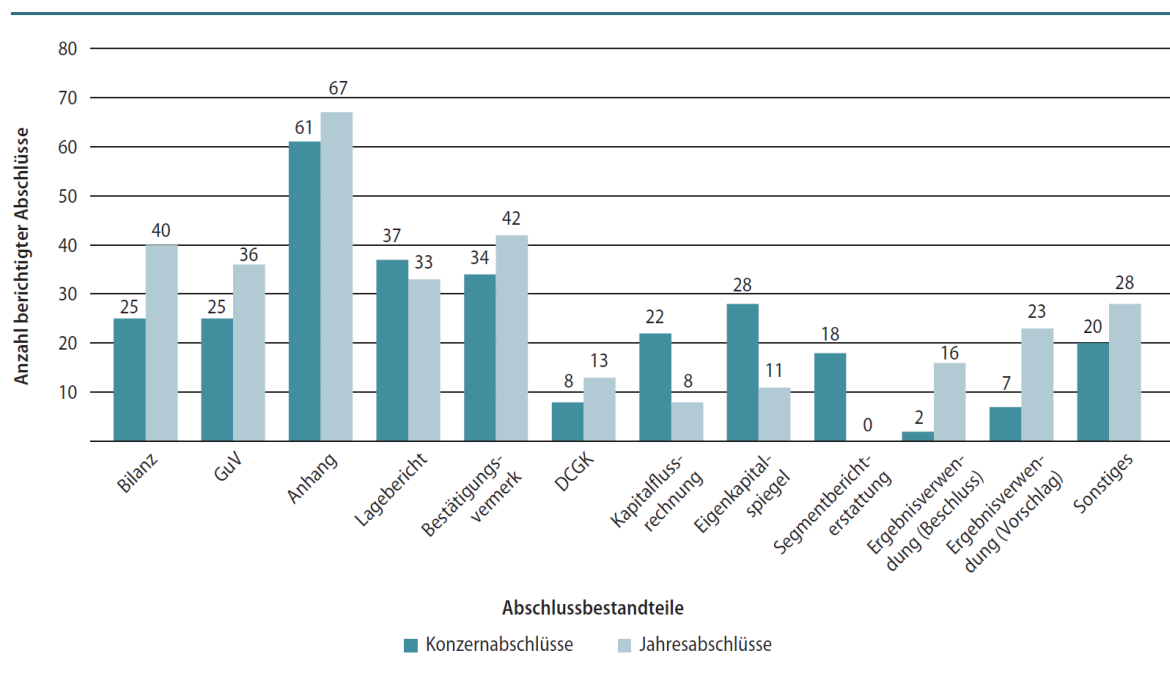
<sup>125</sup> Von den 144 Unternehmen sind 84 Unternehmen im Prime Standard und 60 im General Standard gelistet.

<sup>126</sup> Falls nicht im Abschn. spezifiziert, handelt es sich bei den Angaben in Klammern um Anzahlangaben.

Veröffentlichungsdatum der Berichtigung im elektronischen Bundesanzeiger und dem Bilanzstichtag des jeweiligen Konzern- bzw. Jahresabschlusses, beträgt im Durchschnitt 367,63 Tage (Median = 270 Tage).

Die Ergebnisse der Analyse der betroffenen Abschlussbestandteile, die zur besseren Vergleichbarkeit nach Konzern- und Jahresabschlüssen aufgrund abweichender Umfänge offenkundigspflichtiger Unterlagen<sup>127</sup> differenziert werden, sind in Abbildung 1 dargestellt.

Abbildung 1: Überblick über die berichtigten Bestandteile der Konzern- bzw. Jahresabschlüsse



In den 92 berichtigten Konzernabschlüssen wird am häufigsten der Anhang (61) berichtet, gefolgt vom Lagebericht (37). Am seltensten sind die vorgeschlagene (7) sowie

<sup>127</sup> Nach § 264 Abs. 1 Satz 2 HGB besteht für kapitalmarktorientierte KapGes. nach § 264d HGB die Pflicht zur Erweiterung ihres Jahresabschlusses, bestehend aus einer Bilanz sowie einer GuV gem. § 242 Abs. 3 HGB, neben einem Anhang und einem Lagebericht gem. § 264 Abs. 1 Satz 1 HGB um eine Kapitalflussrechnung sowie einen Eigenkapitalpiegel, falls kein Konzernabschluss aufgestellt werden muss. Die Segmentberichterstattung ist dabei freiwillig. Diese Bestandteile sind offenkundigspflichtig (vgl. Reinholdt (2016), § 325 HGB Rn. 15).

die beschlossene (2) Ergebnisverwendung von Berichtigungen betroffen.<sup>128</sup> Im Vergleich dazu wird in den 104 berichtigten Jahresabschlüssen am häufigsten der Anhang (67) berichtigt, gefolgt vom Bestätigungsvermerk (42). Aus Gründen der besseren Vergleichbarkeit werden Bestandteile wie die Kapitalflussrechnung und der Eigenkapitalspiegel, die gem. § 264 Abs. 1 Satz 2 HGB teilweise verpflichtend sind, sowie die freiwillige Angabe eines Segmentberichts nicht berücksichtigt. Demzufolge wird am seltensten die Entsprechenserklärung zum DCGK (13) berichtigt.

Durchschnittlich werden 3,12 Bestandteile pro Konzernabschluss und 3,05 Bestandteile pro Jahresabschluss berichtigt. Die Spanne der Anzahl berichtigter Bestandteile erstreckt sich beim Konzernabschluss von 1 (44) bis 10 (3), beim Jahresabschluss dagegen von 1 (44) bis 9 (1).

Sowohl für Konzern- als auch für Jahresabschlüsse ist erkennbar, dass am häufigsten jeweils der Anhang von Berichtigungen betroffen ist. Die Berichtigung des Lageberichts scheint bei Konzernabschlüssen eine stärkere Bedeutung zu haben. Hinsichtlich der Anzahl der betroffenen Bestandteile wird sowohl im Konzernabschluss als auch im Jahresabschluss meistens nur ein Bestandteil korrigiert.

### 3.5.2 Inhaltliche Berichtigungen

Im Folgenden wird auf inhaltliche Berichtigungen eingegangen, da diese gem. der Definition in Abschn. 3.4 im Vergleich zu formellen Berichtigungen schwerwiegender sind.<sup>129</sup>

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<sup>128</sup> Bei dem Bestandteil „Sonstiges“ handelt es sich um einen Sammelposten von weiteren Bestandteilen des Konzern- bzw. Jahresabschlusses wie bspw. Bericht des Aufsichtsrats, Bilanzzeit, Versicherung der gesetzlichen Vertreter sowie von Berichtigungen, die den Konzern- bzw. Jahresabschluss als Ganzes betreffen wie bspw. eine falsche Überschrift.

<sup>129</sup> Berichtigungen, die sowohl inhaltlich als auch formell sind, werden als inhaltliche Berichtigungen gehandhabt. Somit ergeben sich reine formelle Berichtigungen durch den Unterschied zwischen gesamten (vgl. Abschn. 3.5.1) und inhaltlichen Berichtigungen.

Abbildung 2: Überblick über die inhaltlich berichtigten Bestandteile der Konzern- bzw. Jahresabschlüsse

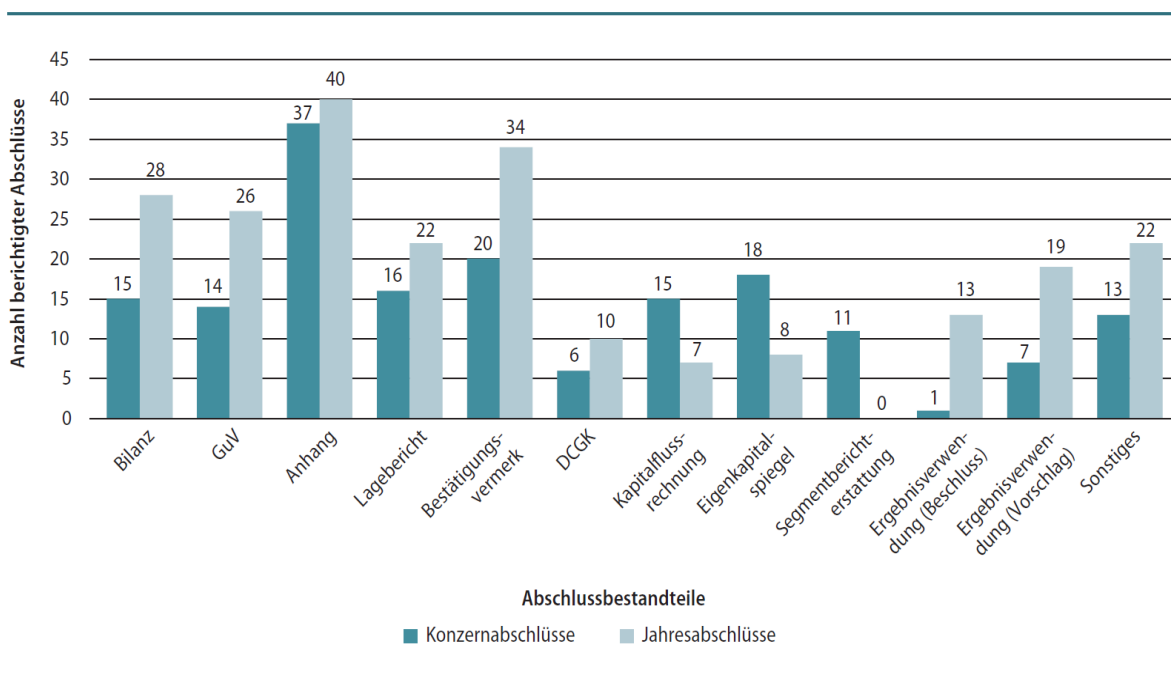


Abbildung 2 stellt einen Überblick über die betroffenen Bestandteile der Konzern- bzw. Jahresabschlüsse dar, die inhaltlich berichtet worden sind. Von den 92 berichtigten Konzernabschlüssen wurden 63,04% (58), zumindest in Teilen, inhaltlich berichtet, wobei es sich bei 36,21% (21) der Fälle um reine inhaltliche Berichtigungen<sup>130</sup> handelt. Von den 104 berichtigten Jahresabschlüssen wurden 78,85% (82) inhaltlich berichtet, wobei es sich davon bei 39,02% (32) der Fälle um reine inhaltliche Berichtigungen handelt.

Bei Konzernabschlüssen wird am häufigsten der Anhang (37) inhaltlich berichtet, gefolgt vom Bestätigungsvermerk (20). Am seltensten wird dagegen der Ergebnisverwendungsbeschluss (1) inhaltlich berichtet. Bei Jahresabschlüssen, vergleichbar zu Konzernabschlüssen, wird am häufigsten der Anhang (40) inhaltlich berichtet, gefolgt vom Bestätigungsvermerk (34). Die Bestandteile Kapitalflussrechnung,

<sup>130</sup> Inhaltliche Berichtigungen, die keine formellen Berichtigungen enthalten.

Eigenkapitalspiegel und Segmentberichterstattung ausgenommen wird am seltensten die Entsprechenserklärung zum DCGK (10) inhaltlich berichtet.

Durchschnittlich werden pro Konzernabschluss 1,88 Bestandteile inhaltlich berichtet, bei Jahresabschlüssen dagegen 2,2. Die Spanne der Anzahl inhaltlich berichtigter Bestandteile erstreckt sich beim Konzernabschluss von 1 (29) bis 10 (2), beim Jahresabschluss dagegen von 1 (41) bis 9 (1).

Es kann festgehalten werden, dass mehr inhaltliche als formelle Berichtigungen vorliegen und dass sowohl beim Konzern- als auch beim Jahresabschluss die meisten inhaltlichen Berichtigungen im Anhang stattfinden.

### 3.5.3 Gegenüberstellung inhaltliche und formelle Berichtigungen

Im nächsten Schritt werden die inhaltlichen Berichtigungen mit formellen Berichtigungen verglichen. Dabei liegt der Schwerpunkt auf den Charakteristika der Berichtigungen und nicht bei Abschlussbestandteilen, sodass im Weiteren nicht zwischen Konzern- und Jahresabschlüssen differenziert wird. Die Ergebnisse sind in Tabelle 20<sup>131</sup> dargestellt.

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<sup>131</sup> Es treten Abweichungen in Bezug auf die Anzahl der jeweiligen Beobachtungen auf, da teilweise Angaben aus dem Bestätigungsvermerk bspw. im erst veröffentlichten Abschluss fehlen. Des Weiteren fehlen teilweise Angaben zum Jahresüberschuss/-fehlbetrag, da bspw. im zuerst veröffentlichten Abschluss diese Angaben fehlen bzw. im Abschluss stattdessen Bilanzgewinn bzw. Bilanzverlust angegeben worden ist.

Tabelle 20: Gegenüberstellung der inhaltlichen sowie formellen Berichtigungen

<i>Variablen</i>	<b>inhaltliche Berichtigungen</b>			
	<i>N</i>	<i>Median</i>	<i>Mittelwert</i>	<i>Standard- abweichung</i>
Summe der Berichtigungen [Anzahl]	140	1.5	2.87	2.65
Veröffentlichungsdauer (Bundesanzeiger) [in Tagen]	140	303	403.02	271.49
Prüfungsdauer [in Tagen]	131	88	188.31	225.83
Differenz Testatdatum [in Tagen]	117	0	93.76	218.88
Differenz Bilanzsumme [Mio. €]	140	0	2.54	14.06
Differenz ROA [Prozentpunkt]	64	0	5.62	23.91
	<b>formelle Berichtigungen</b>			
	<i>N</i>	<i>Median</i>	<i>Mittelwert</i>	<i>Standard- abweichung</i>
Summe der Berichtigungen [Anzahl]	56	1	2.21	1.98
Veröffentlichungsdauer (Bundesanzeiger) [in Tagen]	56	248	279.14	137.53
Prüfungsdauer [in Tagen]	54	79	92.63	72.82

Für inhaltliche Berichtigungen beträgt die Veröffentlichungsdauer im elektronischen Bundesanzeiger im Durchschnitt 403,02 Tage (Median = 303 Tage), wobei durchschnittlich 2,87 (Median = 1,5) Abschlussbestandteile korrigiert werden. Für formelle Berichtigungen beträgt die durchschnittliche Veröffentlichungsdauer im elektronischen Bundesanzeiger 279,14 Tage (Median = 248 Tage), wobei im Durchschnitt 2,21 (Median = 1) Abschlussbestandteile berichtigt werden. Die Streuung der Veröffentlichungsdauer im elektronischen Bundesanzeiger ist für inhaltliche Berichtigungen mit 271,49 Tagen größer als für formelle Berichtigungen mit 137,53 Tagen, was ein Indiz für die größere Verschiedenartigkeit von inhaltlichen Berichtigungen sowie dem damit verbundenen Zeitaufwand im Vergleich zu formellen Berichtigungen ist. Die Prüfungsdauer, definiert als die Differenz zwischen dem letzten Testatdatum und dem jeweiligen Bilanzstichtag, erstreckt sich für inhaltliche Berichtigungen im Durchschnitt auf 188,31 Tage (Median = 88 Tage) im Vergleich zu formellen Berichtigungen mit 92,63 Tagen (Median = 79 Tage).

Im Gegensatz zu formellen Berichtigungen zeigt sich eine längere Veröffentlichungsdauer sowie Prüfungsdauer bei inhaltlichen Berichtigungen, was u.a. auf die darauffolgenden Nachtragsprüfungen bei inhaltlich berichtigten Abschlüssen zurückzuführen ist. Diese Abweichung ist nicht nur ökonomisch deutlich, sondern auch statistisch signifikant zu einem Niveau von 1%. Ein weiterer Unterschied zwischen inhaltlichen und formellen Berichtigungen ergibt sich in Bezug auf die betroffenen berichtigten Abschlussbestandteile (2,87 vs. 2,21), allerdings ist dieser Unterschied statistisch nur zu einem Niveau von 10% signifikant.<sup>132</sup>

Aufgrund der Nachtragsprüfung, die primär inhaltlich berichtigte Abschlüsse betrifft, werden im Weiteren die Differenzen des Testatdatums, der Bilanzsumme sowie dem ROA genauer betrachtet.<sup>133</sup> Dabei beträgt die Differenz des Testatdatums, definiert als die Anzahl der Tage zwischen dem zuerst und zuletzt ausgestellten Bestätigungsvermerk des jeweiligen Abschlusses zu einem Bilanzstichtag, im Durchschnitt 93,76 Tage. Es ist zu erkennen, dass mehrheitlich der Bestätigungsvermerk nicht neu ausgestellt worden ist, da sich das Testatdatum nach der Berichtigung nicht verändert hat. Abschließend wird für inhaltliche Berichtigungen die absolute Veränderung der Bilanzsumme bzw. die absolute Veränderung des ROA im Hinblick auf die betrachteten Kriterien der Wesentlichkeit (vgl. Abschn. 3.4) untersucht. Dabei beträgt die Veränderung der Bilanzsumme bzw. des ROA im Durchschnitt 2,54 Mio. € bzw. 5,62 Prozentpunkte. Anhand des Medians ist zu erkennen, dass mehrheitlich sowohl die Bilanzsumme als auch der ROA nicht berichtigt worden sind.

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<sup>132</sup> Die statistische Signifikanz wurde im Rahmen eines T-Tests festgestellt.

<sup>133</sup> Für die Betrachtung der Differenzen ist vorausgesetzt, dass die jeweiligen Angaben im zuerst veröffentlichten sowie im zuletzt berichtigten veröffentlichten Abschluss vorhanden sind.



#### 3.5.4 Wesentliche Berichtigungen

Erwartungsgemäß kann davon ausgegangen werden, dass die Folgen (vgl. Abschn. 3.3) von wesentlichen Berichtigungen größer sind als die Folgen von unwesentlichen Berichtigungen. Entsprechend werden anhand bestimmter Charakteristika (vgl. Abschn. 3.5.3) die wesentlichen Berichtigungen den unwesentlichen gegenübergestellt. Es werden ausschließlich inhaltliche Berichtigungen berücksichtigt, da aufgrund der Definition der Wesentlichkeit (vgl. Abschn. 3.4) formelle Berichtigungen als unwesentlich gelten.

Von den 140 inhaltlichen Berichtigungen sind 16,43% (n = 23) der Berichtigungen als wesentlich einzustufen. Im Zusammenhang mit dem deutschen Enforcementverfahren gibt es 11 veröffentlichte inhaltliche Berichtigungen, wobei davon 5 als wesentlich einzustufen sind.

Aus Tabelle 21 ist ersichtlich, dass wesentliche Berichtigungen im Durchschnitt eine Veröffentlichungsdauer von 494,91 Tagen (Median = 483 Tage) aufweisen, wobei durchschnittlich 6,35 (7) Abschlussbestandteile berichtigt werden. Die Prüfungsdauer bzw. die Differenz des Testatdatums beträgt im Durchschnitt 405,19 Tage (425 Tage) bzw. 280,65 Tage (186 Tage).

Tabelle 21: Deskriptive Statistik ausgewählter metrischer Variablen bzgl. der Wesentlichkeit von Berichtigungen

<i>Variablen</i>	<b>wesentliche Berichtigungen</b>			
	<i>N</i>	<i>Median</i>	<i>Mittelwert</i>	<i>Standard-abweichung</i>
Summe der Berichtigungen [Anzahl]	23	7	6.35	2.31
Veröffentlichungsdauer (Bundesanzeiger) [in Tagen]	23	483	494.91	277.77
Prüfungsdauer [in Tagen]	21	425	405.19	287.10
Differenz Testatdatum [in Tagen]	17	186	280.65	303.39
	<b>unwesentliche Berichtigungen</b>			
	<i>N</i>	<i>Median</i>	<i>Mittelwert</i>	<i>Standard-abweichung</i>
Summe der Berichtigungen [Anzahl]	117	1	2.19	2.13
Veröffentlichungsdauer (Bundesanzeiger) [in Tagen]	117	284	384.96	267.74
Prüfungsdauer [in Tagen]	110	82	146.91	186.84
Differenz Testatdatum [in Tagen]	100	0	61.99	185.04

Im Vergleich zu unwesentlichen Berichtigungen ist die durchschnittliche Anzahl an berichtigten Abschlussbestandteilen höher (wesentlich: 6,35 vs. unwesentlich: 2,19) und die Veröffentlichungsdauer (494,91 Tage vs. 384,96 Tage) sowie die Prüfungsdauer (405,19 Tage vs. 146,91 Tage) länger. Zudem ist im Durchschnitt die Differenz des Testatdatums (280,65 Tage vs. 61,99 Tage) für wesentliche Berichtigungen größer. Die höhere Anzahl der berichtigten Bestandteile hängt mit der gegenseitigen Abhängigkeit der jeweiligen Bestandteile zusammen. Bspw. kann eine Berichtigung des Konzernjahresüberschusses/-fehlbetrags Auswirkungen auf die Bilanz, GuV, Kapitalflussrechnung, Eigenkapitalpiegel sowie auch auf den Anhang, indem die jeweiligen Posten der Bilanz und der GuV erörtert werden, haben. Die längere Veröffentlichungsdauer einer wesentlichen Berichtigung kann mit einem erhöhten Berichtigungsaufwand des Fehlers zusammenhängen. Die längere Prüfungsdauer sowie die größere Differenz der Testatdaten ist u.a. auf eine entsprechende

Nachtragsprüfung, falls eine erforderliche Änderung vorliegt<sup>134</sup>, gem. § 316 Abs. 3 HGB zurückzuführen.

### 3.5.5 Abschlussprüfung

Abschließend werden mögliche Änderungen des Bestätigungsvermerks nach einer Berichtigung genauer untersucht, um mögliche Indikationen für etwaige Fehler auf Basis der Abschlussprüfung zu ergründen.

Die 196 berichtigten Abschlüsse wurden insgesamt von 42 verschiedenen Wirtschaftsprüfungsgesellschaften bzw. 291 verschiedenen Wirtschaftsprüfern testiert. Dabei sind 61,96% der ausgestellten Bestätigungsvermerke auf die Big4-Wirtschaftsprüfungsgesellschaften, sowie die BDO AG zurückzuführen.

Die weiterführende Analyse beschränkt sich auf inhaltliche Berichtigungen, wobei nur Fälle betrachtet werden, für die sowohl im nicht berichtigten als auch im berichtigten Konzern- bzw. Jahresabschluss ein Bestätigungsvermerk vorhanden ist, um mögliche Änderungen im Bestätigungsvermerk aufgrund der inhaltlichen Berichtigung identifizieren zu können, wobei sich daraus 118 Berichtigungen ergeben.

Von den 118 Fällen liegen vor der Berichtigung 105 uneingeschränkte, sechs ergänzte und sieben eingeschränkte Bestätigungsvermerke vor. Nach der erfolgten Berichtigung ist ausschließlich eine Änderung des Bestätigungsvermerks von einem uneingeschränkten auf einen ergänzten festzustellen. Dabei handelte es sich um eine angepasste Angabe bzgl. der Unternehmensfortführung. Die Anzahl der Nachtragsprüfungen beträgt insgesamt 27, wobei davon 44% auf wesentliche Berichtigungen zurückgehen. Wechsel von

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<sup>134</sup> Vgl. IDW RS HFA 6. Dabei wird von einem fehlerhaften Jahresabschluss gesprochen, falls „[...] der Kaufmann den Gesetzesverstoß spätestens im Zeitpunkt der Feststellung bei pflichtgemäßer und gewissenhafter Prüfung hätte erkennen können.“ (IDW RS HFA 6, Rn. 14 Satz 3).

Wirtschaftsprüfungsgesellschaften sind nicht vorgekommen, allerdings ergeben sich in vier Fällen Änderungen bzgl. der Person des Wirtschaftsprüfers.

Es kann festgehalten werden, dass mehrheitlich keine Indikationen für mögliche Fehler vor der Berichtigung vorhanden waren. Für die Qualität der Abschlussprüfung können hieraus keine pauschalen Aussagen abgeleitet werden, da die Prüfungsqualität von einer Vielzahl von Einflussfaktoren abhängt.

### 3.6 Diskussion

Auf Grundlage der empirischen Auswertung ist festzuhalten, dass aus den 196 identifizierten Berichtigungen die inhaltlichen Berichtigungen mit 140 Beobachtungen die Mehrheit darstellen. Die 196 identifizierten Berichtigungen stellen allerdings nur 3,41%<sup>135</sup> der veröffentlichten Konzern- bzw. Jahresabschlüsse dar. Hierbei ist allerdings zu beachten, dass nicht jeder Fehler aufgedeckt wird und zum anderen nicht jeder aufgedeckte Fehler zu einer Berichtigung führt wie z.B. im Rahmen des deutschen Enforcementverfahrens (vgl. Abschn. 3.2.1 und 3.5.4) mit einem Anteil an berichtigten Konzern- bzw. Jahresabschlüssen von 5,56%<sup>136</sup>.

Von den Berichtigungen ist am häufigsten der Anhang betroffen und zwar sowohl für Konzernabschlüsse als auch für Jahresabschlüsse. Dies ist teilweise durch die Verflechtung mit den anderen Abschlussbestandteilen bedingt. 16,43% der inhaltlichen Berichtigungen sind gem. dem definierten Wesentlichkeitskriterium als wesentlich einzustufen. Allerdings sind wesentliche Berichtigungen unterrepräsentiert, da das definierte Wesentlichkeitskriterium nur einen Teil quantitativer Aspekte beinhaltet. Zudem werden

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<sup>135</sup> Anhand des Daily Weighting File bzw. Index Composition Report der Deutschen Börse bzw. der STOXX Ltd. werden für die Geschäftsjahre von 2005-2014 5.756 Unternehmensjahre identifiziert.

<sup>136</sup> Als Grundlage werden alle Fehlerbekanntmachungen im Rahmen des Enforcementverfahrens betroffenen Konzern- bzw. Jahresabschlüsse einschließlich zum Bilanzstichtag 30.06.2014 aus dem elektronischen Bundesanzeiger betrachtet. Durch Ausschluss aller betroffenen Konzernzwischenabschlüsse ergeben sich dabei 198 Unternehmensjahre.

weitere qualitative Aspekte nicht berücksichtigt. Darüber hinaus ist zu beachten, dass i. S. der normativ erörterten Bilanzberichtigung in Abschn. 3.2 sich bei der identifizierten Menge an Berichtigungen allenfalls teilweise um Bilanzberichtigungen handelt, da bspw. Darstellungsfehler von Abschlüssen, die im elektronischen Bundesanzeiger veröffentlicht worden sind, nachträglich berichtigt werden. Neben den Darstellungsfehlern werden vereinzelt Berichtigungen aufgrund nicht vorhandener offenlegungspflichtiger Bestandteile im veröffentlichten Konzern- bzw. Jahresabschluss durchgeführt.

Ein möglicher Grund der freiwilligen Veröffentlichung berichtigter Abschlüsse kann das Bestreben der Unternehmen zur Schaffung von Transparenz gegenüber ihren jeweiligen Abschlussadressaten sein. Im speziellen Bezug zu berichtigten Abschlüssen nach HGB konnten keine Hinweise auf eine vorausgehende Nichtigkeit des entsprechenden Abschlusses identifiziert werden. Rückschlüsse auf mögliche Fehler im Rahmen der Abschlussprüfung sind nicht möglich, da aufgrund der Komplexität der Abschlussprüfung die Aufdeckungsmöglichkeit der entsprechenden Fehler nicht analysiert werden kann. Allerdings kann festgehalten werden, dass Bestätigungsvermerke überwiegend keiner Änderung aufgrund der Berichtigung unterliegen.

Im Rahmen der identifizierten Berichtigungen von Konzern- bzw. Jahresabschlüssen ist darauf hinzuweisen, dass teilweise eine synonymhafte Verwendung der Begrifflichkeiten „Berichtigung“ sowie „Ergänzung“ bzgl. bestimmter Sachverhalte wie der Veröffentlichung nachträglicher Beschlüsse der Hauptversammlung im elektronischen Bundesanzeiger aufgetreten sind. Somit kann es möglich sein, dass die untersuchte Anzahl der Berichtigungen insgesamt unterrepräsentiert ist.

### 3.7 Zusammenfassung

Dieser Beitrag analysiert die Berichtigungen von Konzern- bzw. Jahresabschlüssen deutscher CDAX-Unternehmen im Zeitraum von 2005-2014. Neben der normativen Erörterung von Bilanzberichtigungen nach HGB und nach IFRS, liefert dieser Beitrag erste empirische Evidenz zur Berichtigung von Konzern- bzw. Jahresabschlüssen durch deutsche CDAX-Unternehmen. Das ist insoweit von Relevanz, da die bisherigen Forschungsergebnisse US-amerikanischer Studien nicht notwendigerweise übertragbar sind. Die Erkenntnisse dieses Beitrags können somit als Grundlage für weitergehende Analysen dienen.

Es wird aufgezeigt, dass von den identifizierten 196 berichtigten Abschlüssen 71,43% inhaltlich berichtigt worden sind. Sowohl für Konzernabschlüsse als auch für Jahresabschlüsse ist am häufigsten der Anhang berichtigt worden. Bezugnehmend auf das deutsche Enforcementverfahren als vorausgehende Ursache können lediglich 11 Berichtigungen identifiziert werden. Ein Großteil der vorgenommenen Berichtigungen im elektronischen Bundesanzeiger sind Korrekturen von Darstellungsfehlern sowie vereinzelt nachveröffentlichte offenlegungspflichtige Bestandteile des Konzern- bzw. Jahresabschlusses.

## 4 Zur Marktsituation von Prüfungsverbänden deutscher Kreditgenossenschaften<sup>137</sup>

### **Abstract:**

Prüfungsverbände werden von außen oft als Einheit wahrgenommen und in der Prüfungsforschung nur selten behandelt. Prüfungsverbände sind allerdings von zahlreichen aktuellen Vorschriften, bspw. von der Pflicht zur internen und externen Rotation, ausgenommen. Der vorliegende Beitrag befasst sich mit den Prüfungsverbänden der Kreditgenossenschaften. Im Rahmen einer Analyse für den Zeitraum von 2006 bis 2016 zeigen sich deutliche Unterschiede in Bezug auf die Zahl der Mandate pro Prüfungsverband und Prüfer, die Prüferrotation sowie die Prüfungsdauer bei den einzelnen Prüfungsverbänden der Kreditgenossenschaften.

**Keywords:** Kreditgenossenschaft, Prüfungsverband, Marktstruktur, externe Rotation, interne Rotation

**Co-authors:** Benedikt Downar

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<sup>137</sup> Es wird darauf hingewiesen, dass im Vergleich zur veröffentlichten Version des Beitrages in *Die Wirtschaftsprüfung* 71 (22): 1395-1402 die Nummerierung der Tabellen bzw. Abbildungen fortlaufend angepasst worden sind. Dabei ist der Begriff „Übersicht“ in Abhängigkeit davon, ob es sich um eine Tabelle oder eine Abbildung handelt, ersetzt worden durch die Begriffe „Tabelle“ oder „Abbildung“, um bzgl. des Abbildungs- sowie des Tabellenverzeichnisses eine einheitliche Darstellung sicherzustellen. Des Weiteren ist der Zitationsstil innerhalb des Beitrages, soweit möglich, angepasst worden, um innerhalb der vorliegenden Dissertation eine einheitliche Darstellung sicherzustellen. Die in der vorliegenden Dissertation jeweils aktuellste Gesetzestextfassung wird ohne Jahresangabe zitiert. Aus Konsistenzgründen wurden teilweise Abkürzungen entfernt und ausgeschrieben bzw. eingeführt. Die Abbildung wurde aus der veröffentlichten Fassung entnommen. Zudem wird darauf hingewiesen, dass nur die veröffentlichte Fassung des Beitrages in *Die Wirtschaftsprüfung* 71 (22): 1395-1402 zitiert werden soll.

**Publication details:**

Published in: *Die Wirtschaftsprüfung* 71 (22): 1395-1402.



Please note that the following pages 122 to 140 (section 4.1 to section 4.5) are not available in this version. For further information, please see the publication details provided on the previous page.

## 5 Conclusion

Various accounting scandals since the beginning of the 21st century like Enron or WorldCom have shaken the public trust in capital markets, and amongst others, the credibility of financial statements also related to the trust in the auditing profession (Eilifsen and Willekens 2008; DeFond and Francis 2005). As a result, auditing regulations like the Sarbanes-Oxley Act in the US were introduced, aiming to restore the trust in the auditing profession as well as in the credibility of financial statements. According to DeFond and Zhang (2014), higher audit quality increases the credibility of financial statements, thus audit quality research being an important field in audit research. Audit research aiming at providing guidance for practitioners as well as regulators may help to prevent future major accounting scandals from happening.

My doctoral thesis, thus, focuses on important research questions related to audit quality. The first essay examines the consequences of low audit quality for lead and concurring auditors. The second essay focuses on the restated financial statement being a proxy for financial reporting quality which captures audit quality as well (DeFond and Zhang 2014). Finally, the third essay focuses on the particular audit market of credit cooperatives, which is potentially less influenced by low audit quality due to their specific audit structure.

The first essay examines the personal consequences of audit failures for lead and concurring auditors. The personal consequences are investigated by examining auditors' client portfolio structure, career development and the learning effect of lead and concurring auditors following audit failures. Examining personal consequences following from instances of low audit quality may improve the understanding of preventive and corrective effects resulting from audit failures. On the one hand, negative personal consequences may serve as a negative example for other individual auditors, thus incentivizing them to provide

a high level of audit quality (preventive effect). On the other hand, publicly known audit failures may provide an incentive for individual auditors involved in audit failures to learn from them (Salterio 1994), thus, enhancing the audit quality of the respective individual auditor in the future (corrective effect).

Overall, the first essay contributes to three fields of research literature. First, it contributes to the literature on the role of individual auditors by distinguishing between lead and concurring auditors following the call for more research on the role of individual auditors (Simnett et al. 2016). Second, it contributes to the literature on the consequences of low audit quality further expanding on the study by Sundgren and Svanström (2017), thus providing new insights into the personal consequences for lead and concurring auditors following audit failures. Third, it contributes to the literature on individual auditor's career development by examining the likelihood of leaving the audit firm or even the auditing profession after audit failures. The following results provide some clues about the existence of self-regulating mechanisms ensuring high quality audits.

To examine the personal consequences of lead and concurring auditors following audit failures, this essay uses a German setting looking over a time period from 2005 to 2013. Using a difference-in-differences design this essay documents that lead and concurring auditors lose audit fees, public clients as well as prestigious clients following audit failures. However, this essay does not find robust evidence that lead and concurring auditors experience a higher likelihood of employment change (termination) following an audit failure. Further, this study does not find robust evidence of a learning effect for lead and concurring auditors following audit failures by examining changes in audit quality.

Overall, the previous findings suggest that lead and concurring auditors face some negative personal consequences after audit failures, thus potentially providing an incentive for individual auditors to conduct high quality audits.

The second essay shifts its perspective from an individual auditor's point of view towards the perspective of a company. Companies involved in an enforcement error might be interested in publishing a revised financial statement to avoid future confusion among the users of financial statements, especially shareholders, as uncertainty might have negative consequences, for instance, on the company's stock returns (Zhang 2006).

Thus, the second essay of my doctoral thesis examines the disclosure of restated financial statements of German CDAX-companies. In detail, it examines the disclosure of restated annual financial statements of German CDAX-companies regardless of their reason of restatement. One possible reason for the publication of a restated financial statement might be the announcement of an enforcement error. However, according to IDW RS HFA 6 paragraph 20, it is not mandatory to publish such a restated financial statement. The main objectives of the study are to examine the relevance of the disclosure of restated financial statements in Germany and to provide a better understanding referring to the type and extent of those restatements using content analysis. Moreover, it presents a comprehensive overview of the legal regulations of restatements according to the HGB as well as to the IFRS. Restatements are of particular importance in the US.<sup>182</sup> For Germany, there is virtually no research on published restated financial statements<sup>183</sup>.

This essay contributes to narrowing of this gap by examining the disclosure of restated financial statements in Germany. The identified setting of restated financial statements may serve as a basis for future research contributing to the accounting literature. Further, this essay contributes to the literature on financial disclosure by examining the disclosure of restated financial statements.

Examining the time period from 2005 to 2014, this essay is able to identify 196 published restated financial statements accounting for 3.41% of published financial statements for the

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<sup>182</sup> See, for example, Palmrose et al. (2004); Desai et al. (2006); Arthaud-Day et al. (2006); Hennes et al. (2014).

<sup>183</sup> See, for example, the study by Hitz et al. (2012) examining enforcement actions in Germany.

fiscal period from 2005 to 2014. In particular, looking at companies involved in an enforcement error this essay is able to identify 5.56% of restated financial statements.<sup>184</sup> With respect to the content analysis, this essay finds that the notes of the financial statements are most frequently restated. Out of the 196 identified restated financial statements 140 observations can be classified as content-related restatements. Out of these 140 content-related restatements, 16.43% can be classified as material restatements. Focusing on the auditor's report there is virtually no change between the disclosed financial statement before the restatement and the respective disclosed financial statement after the restatement.

For future research purposes, the identified number of 196 restated financial statements in Germany may serve as a good starting point for further contribution to the accounting literature.

So far, there has been a strong focus on public companies and their respective auditors. Audit literature as well has been steadily contributing to a better understanding of the audit of public companies (Knechel and Vanstraelen 2007). However, in Germany there is a specific group of companies called cooperatives, which have a unique audit structure. One of its intriguing characteristics is the quasi-permanent mandate between cooperatives and its respective auditors (Kaya et al. 2018). Specifically, looking at credit cooperatives the impact of the financial crisis was less pronounced in comparison to German private credit banks (Neumann and Reichel 2006; Reichel 2011; Ott 2012b) arguing that this particular stability of credit cooperatives may be due to their legal structure and/or their unique audit structure (Ott 2012b). Therefore, a closer look at the audit of credit cooperatives may provide useful indications for the general improvement of audit quality.

Thus, the third essay of my doctoral thesis examines the audit structure of cooperatives as well as the audit market of credit cooperatives. In detail, using quantitative analysis on

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<sup>184</sup> For further details on the calculation of the respective ratios see section 3.6.

the audit market of credit cooperatives the essay examines the audit market structure of the respective auditing associations, and in particular external rotations as well as auditor tenure. In addition, this essay examines the role of individual auditors and internal rotations within auditing associations. Further, the following results are addressed to important incidents with respect to the legal environment like the introduction of BilMoG or AReG.

As there is little empirical evidence on the audit market of credit cooperatives<sup>185</sup>, this essay contributes to the audit literature on cooperatives.

Examining the time period from 2006 to 2016, the essay documents a high concentration of a few auditing associations on the credit cooperative audit market. Over time the market share of auditing associations does not virtually change. Further, there is virtually no external auditor rotation during our examination period. Relating to the internal auditor rotation, individual auditors rotated below the maximum individual auditor tenure before AReG as internal auditor rotation was mandatory. Moreover, the dependence on certified accountants has increased since BilMoG as certified accountants are required to sign the auditor's report (Bundesgesetzblatt 2009).

With respect to the audit structure of credit cooperatives, one result is the virtual non-existence of external auditor rotation of auditing associations. Even though the audit structure of credit cooperatives is different from the audit structure of public companies, the absence of voluntarily external auditor rotation may provide general indications to the questionability of the external auditor rotation.

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<sup>185</sup> See, for example, Kaya et al. (2018).

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Please note that the following pages 163 to 165 (Appendix - Contribution to Working Paper and Articles) are not available in this version due to sensitive data (signatures).