Abstract:
The faith in financial reporting quality and the corresponding auditing process has suffered a lot within the last decade, due to significant accounting scandals (e.g. Enron, WorldCom, Parmalat, etc.). As an answer to these accounting scandals, the law-makers in Germany and the European Union, respectively, have strengthened audit regulations in order to improve the quality of the conducted audits. The aim of this cumulative dissertation is to provide empirical evidence on the effects of intended and already implemented regulative audit requirements in Germany. In order to consider the wide range of different audit requirements, the dissertation is based on four different study manuscripts, highlighting various perspectives with regard to the appointment, duration, and remuneration of a statutory auditor in the German audit environment. Besides the empirical evidence for separate auditing issues, this dissertation is also aimed to provide a solid theoretical background and critical suggestions for future research.


**Preface**

The present cumulative dissertation paper was written according to the graduate academic regulations of the HHL Leipzig Graduate School of Management of December 3, 2009. In September 2009, recommendations for the regulation of cumulative graduation papers were decreed by the graduate committee. Due to the specifics of a cumulative paper, this dissertation contains different, yet thematically interrelated articles, some of which have already been published in professional journals, some of which are currently being assessed for publication. The following notes have to be made about the different chapters of this dissertation:

**I. Chapter**

This chapter offers an overview of the cumulative dissertation and illustrates the thematic interrelation of the individual specialized articles. The chapter also contains a tabular overview of the various articles and the state of their publication. All articles of this cumulative dissertation were created with co-authors. The table thus also shows the specific contribution of the graduate candidate to the individual research projects. Furthermore, this first chapter also presents the different research questions and a summary of the individual research results.

**II. - V. Chapter**

This main part of the dissertation consists of four specialized research articles.
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I. Audit Services, Non-Audit Services, and Audit Firm Tenure – Three Perspectives on Audit Quality

Introduction and Comprehensive Summary of the Cumulative Dissertation
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1 INTRODUCTION

The faith in financial reporting quality and the corresponding auditing process has suffered a lot within the last decade, due to significant accounting scandals particularly in the United States (e.g. Enron and WorldCom) and Europe (e.g. Parmalat and Flowtex).\footnote{As an answer to these accounting scandals, the law-makers in the United States and the European Union have strengthened audit regulations by means of the Sarbanes Oxley Act (2002), respectively the 8th European Directive (European Commission, 2006) in the past (Pott et al., 2009, p. 209). More recently, the European Commission has discussed and published the ‘Proposal for a regulation of the European Parliament and the Council on specific requirements regarding statutory audit of public-interest entities’ (European Commission, 2011a). This proposal is intended to provide an appropriate answer to the 2008 financial crisis, which highlighted considerable weaknesses in the auditing practices in Europe (European Commission, 2011a, p. 2).}

Internal Market and Service Commissioner of the European Commission, Michael Barnier stated in this context: ‘Investor confidence in audit has been shaken by the crisis and I believe changes in this sector are necessary: we need to restore confidence in the financial statements of companies. Today's proposals address the current weaknesses in the EU audit market, by eliminating conflicts of interest, ensuring independence and robust supervision and by facilitating more diversity in what is an overly concentrated market, especially at the top-end’ (Barnier, 2011). The primary goal of all these audit regulations is to regain public confidence in the corporate financial reporting and audit quality (European Commission, 2011a; Sarbanes-Oxley-Act, 2002).

Prior theoretical audit quality research argues that the quality of an audit mainly depends on two significant factors (DeAngelo, 1981, p. 186).\footnote{First, the auditor’s ability to examine the client’s financial statement in order to identify inappropriate accounting figures or mistakes in the accounting system (i.e. auditor expertise or technical competence). Second, the auditor’s objectivity and willingness to disclose the accounting failure in the audit report, respectively qualified audit opinion (i.e. auditor independence; Watts and Zimmermann, 1986, p. 8). In this context, prior audit research expects that auditor expertise is above all ensured through the requirements of the National Institutes of Public Auditors (e.g. IDW in Germany), professional exams and further education, as well as by other guidelines from global audit organizations (e.g. International Federation of Accountants). As a consequence of the given auditor expertise attributes, the law-makers in particular focus on strengthening auditor independence in order to improve audit quality (Stefani, 2002, p. 91).}

Prior theoretical audit quality research argues that the quality of an audit mainly depends on two significant factors (DeAngelo, 1981, p. 186). First, the auditor’s ability to examine the client’s financial statement in order to identify inappropriate accounting figures or mistakes in the accounting system (i.e. auditor expertise or technical competence). Second, the auditor’s objectivity and willingness to disclose the accounting failure in the audit report, respectively qualified audit opinion (i.e. auditor independence; Watts and Zimmermann, 1986, p. 8). In this context, prior audit research expects that auditor expertise is above all ensured through the requirements of the National Institutes of Public Auditors (e.g. IDW in Germany), professional exams and further education, as well as by other guidelines from global audit organizations (e.g. International Federation of Accountants). As a consequence of the given auditor expertise attributes, the law-makers in particular focus on strengthening auditor independence in order to improve audit quality (Stefani, 2002, p. 91).

Besides other regulatory aspects, requirements regarding the appointment, duration, and remuneration of statutory auditors have been considered and implemented by regulators within the last decade in order to increase auditor independence, hence audit quality. However, the adoption of such audit regulations always implies that more restrictive audit requirements are able to prevent or correct erroneous developments in the auditing practices. In this context, empirical audit research can help to better understand the consequences and effectiveness of such regulative audit requirements with respect to the quality of the conducted audits (Pott et al., 2009, p. 209). Despite the considerable empirical audit research in the United States and other Anglo-Saxon countries, the empirical research for the European audit market in general, respectively the German audit market in particular, still lacks of quantitative and qualitative empirical results (Quick and Warming-Rasmussen, 2009, p. 143; Bigus and Zimmermann, 2008, p. 160).

The aim of this dissertation is to provide empirical evidence on the effects of intended and already implemented regulative audit requirements in Germany. The existing German literature in this research field is primarily based on different empirical descriptive or normative research approaches. In order to consider the wide range of different audit requirements, the dissertation is based on four different study manuscripts conducted by the author and other...
co-authors, highlighting various perspectives with regard to the appointment, duration, and remuneration of a statutory auditor in the German audit environment. Besides the empirical evidence for separate auditing issues, the dissertation is also aimed to provide a solid theoretical background and critical suggestions for future research.

As can be seen in Figure 1, the four main manuscripts of this dissertation are subdivided into three main categories, namely audit services, non-audit services, and audit firm tenure. The main categories are based on latest regulative developments in the European Union, respectively Germany, as well as the key requirements pronounced by the decision makers (e.g. European Commission, 2011b). Moreover, previous German and international empirical auditing research is used to identify the recent key audit regulation issues that will influence auditing practices worldwide in the near future. As mentioned above, for all three categories we find a substantial lack of empirical evidence for the European, respectively German audit market.

Figure 1: Structure of Dissertation Manuscripts
2 OVERVIEW DISSERTATION MANUSCRIPTS

The first column of the dissertation structure as presented in Figure 1 contains the research studies concerning the pricing of audit services by the statutory auditor. The category includes two research studies in order to distinguish between two important research questions. First, how does abnormal audit engagement pricing affect audit quality? Second, how do low-balling practices, respectively audit fee discounts affect the quality of a conducted financial statement audit? The study ‘Abnormal Audit Fees and Audit Quality in German Audit Market: Initial Evidence on Association of Audit Fee Premiums and Audit Fee Discounts with Earnings Management’ investigates the economic auditor-client dependency issue by examining the association between abnormally high, respectively low audit fees and audit quality. The study aims to provide a deeper understanding about audit pricing practices of German audit firms. Moreover, to the best of the author’s knowledge, the empirical study is the first one that examines the effects of abnormal audit fees on audit quality in Germany. The research paper has been submitted to the Journal of Business Economics (ISSN 0044-2372). After a double blind review by two anonymous reviewers, an overall revised version of the study has been re-submitted to the journal and is currently under review with the status ‘revised to resubmit’. Before the research study was submitted to the Journal of Business Economics, the empirical findings were presented at several research conferences and workshops, such as the Workshop on Empirical Research in Financial Accounting 2011 at the University of Seville, the Finance-Accounting Research Seminar at Humboldt University Berlin, the 6th EARNet Symposium 2011 in Bergen, the annual European Accounting Association (EAA) Conference 2011 in Rome, and finally the 2010 Business and Research (BuR) Conference at the University of Mannheim. The co-authors of the study are Paul Pronobis and Henning Zülch.

The study ‘Effects of Initial Audit Fee Discounts on Audit Quality: Evidence from Germany’ examines the presence and magnitude of initial audit engagement fee discounts in Germany and their potential impact on audit quality. The study also aims to provide a deeper understanding about competitive audit pricing practices among German auditors. Further, to the best of the author’s knowledge, it is the first empirical study - besides the first manuscript of this dissertation - that examines the effects of audit fee discounts on audit quality in Germany. The research study has been submitted and accepted by the International Journal of Auditing (ISSN 1099-1123). The study is targeted for publication in a forthcoming journal issue. Before the empirical study was submitted to the International Journal of Auditing, the empirical findings of the study were presented at the 3rd Accounting Doctorial Seminar East at the Leipzig Graduate School of Management (HHL) in 2011. The co-authors of the study are Benedikt Quosigk and Henning Zülch.

The study ‘Non-Audit Services and Audit Quality: Blessing or Curse?’ investigates whether and how audit quality is associated with the simultaneous provision of audit and non-audit services by the statutory auditor. The study is intended to provide a solid empirical background on potential knowledge spillover and auditor independence effects by provided non-audit services in Germany. The research study was accepted for publication by the Journal of Applied Business Research (ISSN 0892-7626). The study is published in the March/April 2013 issue of the journal (Vol. 29, Issue 2, pp. 305-326). The co-author of the study is Henning Zülch.

The study ‘Relationship of Auditor Tenure to Audit Quality: Empirical Evidence from the German Audit Market’ examines whether and how audit quality is associated with the length of an auditor-client relationship. The research goal of the study is to gain a better understanding of audit engagement tenure effects on audit quality in the German audit market. The research study was accepted for publication by the Journal of Governance and Regulation.
The study is published in the first journal issue of 2013 (Vol. 2, Issue 1, pp. 27-43). The co-author of the study is Henning Zülch.

Table 1 provides a detailed overview over the four dissertation manuscripts. In addition to Figure 1, the table contains information about the co-authors, the contribution of the graduate candidate, target journals, and publication status of the studies.

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<td>Henning Zülch</td>
<td>50%</td>
<td>Journal of Governance and Regulation</td>
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Table 1: Overview Dissertation Manuscripts

Overall, the dissertation covers the major audit regulation issues within the last decade, in the course of which the German legislator had already implemented several audit requirements. With regard to the pricing of audit services, the German legislator adopted audit fee disclosure requirements by means of the ‘Accounting Law Reform Act’ (‘Bilanzrechtsreformgesetz’ or ‘BilReG’) of December 4, 2004. Further, the German Commercial Code (GCC) contains auditing rules in order to restrict audit partner tenure, audit engagement revenues, and certain non-audit services. On the other hand, the law-makers in Germany have neither applied requirements regarding the remuneration of audit services nor introduced the complete prohibition of provided non-audit services by the statutory auditor. Moreover, the German legislator has not demanded the restriction of external audit firm tenure in the GCC. However, the European Commission set these auditing issues on its future agenda by publishing the green paper ‘Audit policy: Lessons from the crisis’ in 2010 (European Commission, 2010) and the ‘Proposal for a regulation of the European Parliament and the Council on specific requirements regarding statutory audit of public-interest entities’ in 2011 (European Commission, 2011a).
3 CONCLUSION OF DISSERTATION

The main purpose of the dissertation is to provide empirical evidence on the effectiveness of potential and already applied audit regulations in Germany. Overall, the results of the four dissertation manuscripts show that increased audit requirements, with the exception of external audit firm tenure regulative requirements, could be an appropriate instrument to increase audit quality, hence financial reporting quality in Germany. The following section summarizes the main results of the four cumulative dissertation manuscripts and provides concrete suggestions regarding the effectiveness of current and potential future audit regulations.

The study ‘Abnormal Audit Fees and Audit Quality in German Audit Market: Initial Evidence on Association of Audit Fee Premiums and Audit Fee Discounts with Earnings Management’ is based on a sample of 841 German firm observations for the sample period of 2004 to 2010. The study results show that paid audit fee premiums are negatively associated with audit quality, while audit fee discounts are generally an insignificant factor in this context. These results imply that unexpectedly high audit fees are a significant indicator with regard to compromised auditor independence and economic auditor-client bonding which needs to be tackled by law-makers in order to improve audit quality. From a regulative point of view, the GCC contains two major audit regulation paragraphs that are intended to curb abnormal audit pricing. First, according to the GCC section 285 No. 17 (financial statements) and section 314 paragraph 1 No. 9 (consolidated financial statements), large and/or capital-market orientated firms have to disclose the fees paid to the statutory auditor. Second, according to the GCC section 319 paragraph 3 No. 5 (non-publicly traded companies) and section 319a paragraph 1 No. 1 (publicly traded companies), an audit firm is not allowed as statutory auditor when certain audit fee revenue benchmarks of 30, respectively 15 percent were exceeded within the last five consecutive audit engagement years. The results of the first dissertation manuscript provide empirical evidence that neither audit fee disclosure requirements nor audit fee revenue restriction caps are an appropriate instrument to enhance auditor independence, hence audit quality. Nevertheless, the regulators in the European Commission identified the potential threat of auditor remuneration in the published green paper ‘Audit policy: Lessons from the crisis’ in 2010 (European Commission, 2010, p. 11). In this green paper, the law-makers proposed a scenario where audit fees are determined by a third independent party (e.g. governmental or independent private institution). Even though this scenario was not taken into account in the final proposal for the European Parliament and the European Council (European Commission, 2011a), the proposed requirement could play a significant role in future audit regulation debates regarding the pricing of annual financial statement audits, in particular when further front page audit scandals occur.

The study ‘Effects of Initial Audit Fee Discounts on Audit Quality: Evidence from Germany’ is based on a sample of 992 German firm observations for the sample period of 2005 to 2011. The research study provides two substantial contributions to the existing German and international audit pricing literature. First, the empirical results show that Germany has a highly competitive audit market, leading in particular to audit fee discounts in the first year(s) of an audit engagement. Second, despite these audit fee discounts, the empirical findings imply that audit quality is not impaired by those low levels of audit fees. In this context, the empirical evidence is robust with regard to the audit fee discount effects on audit quality in the first dissertation manuscript. In the wake of the continuing discussions in the European Union regarding the remuneration of audit engagements, our findings do not support the implementation of audit market price controls through governmental regulators as proposed by the European Commission in 2010 (European Commission, 2010, p. 11). However, due to the results of the first dissertation manuscript, it can be suggested that the implementation of a governmental institution in order to regulate audit pricing is an appropriate instrument to prevent excessively high audit fee payments by clients, while the setting of a minimum audit fee
rate is neither efficient nor necessary with regard to the quality of the conducted financial statement audits in Germany.

The study ‘Non-Audit Services and Audit Quality: Blessing or Curse?’ is based on 1,008 firm-year observations of German companies belonging to the German major stock exchange indices DAX, MDAX, SDAX, and TecDAX of the Frankfurt Stock Exchange between 2005 and 2011. The study results show that provided non-audit services by the statutory auditor have a significant negative impact on audit quality in Germany. Moreover, the study provides empirical evidence that especially audit-related services are negatively associated with audit quality, while provided tax and other advisory services are an insignificant factor in this context. It can be assumed that the results for the provision of non-audit services generally and audit-related services particularly are mainly based on the existence of a persistent economic auditor-client bonding relationship. As a consequence of such a dependent auditor-client relationship, the client receives more opportunities to conduct opportunistic earnings management. From a regulative point of view, the GCC already contains an audit requirement with regard to the restriction of provided non-audit services by the statutory auditor. In this context, the rule in section 319 paragraph 3 No. 3 GCC prohibits the statutory auditor to be involved in keeping the client’s firm accounting records, preparing the annual financial statement, holding significant internal audit functions, performing corporate management and financial services, as well as preparing valuation reports which could have a material impact on the annual financial statement. Moreover, section 319a paragraph 1 No. 1 of the GCC names specific non-audit services that are exclusively prohibited for the statutory auditor of a capital-market orientated company in Germany. The regulation mainly comprises the provision of specific legal and tax advisory services as well as services in connection with the internal accounting information system. The results of the third dissertation manuscript imply that existing restrictions in the GCC are inappropriate, respectively not strict enough to strengthen auditor independence, hence improve audit quality. However, independent from the regulations in the GCC, the European Commission recognized that the existing non-audit service requirements within the European Union need to be altered. In the ‘Proposal for a regulation of the European Parliament and the Council on specific requirements regarding statutory audit of public-interest entities’ the European Commission suggests that the simultaneous provision of audit and non-audit services by the statutory auditor should be prohibited entirely (European Commission, 2011a, p. 6). Considering the results of this dissertation manuscript, a more restrictive audit regulation as suggested by the European Commission seems to be a suitable instrument to improve auditing practices in the German audit market.

The study ‘Relationship of Auditor Tenure to Audit Quality: Empirical Evidence from the German Audit Market’ used a sample of 1,071 firm-year observations for the sample period of 2005 to 2011 in order to investigate audit tenure effects in the German audit market. The study provides empirical evidence that neither short term nor long term audit tenure affects audit quality. Therefore, it can be assumed that audit tenure is a subordinate factor with regard to the quality of the conducted audits in the German audit market. In accordance with these results, the GCC does not contain mandatory audit firm requirements in order to limit audit tenure. However, the German regulators implemented a key audit partner rotation rule into the GCC by means of the Accounting Law Reform Act in 2004. According to section 319a paragraph 1 No. 4 GCC, an audit partner, respectively the lead and review audit partners, have to rotate every seven years as an auditor of a listed client firm with a cooling-off period of three years. The audit requirements became binding for certain large publicly traded companies for the fiscal years from 2007 onward. In addition, the European Commission suggested in their ‘Proposal for a regulation of the European Parliament and the Council on specific requirements regarding statutory audit of public-interest entities’ (European Commission, 2011a) a more restrictive mandatory external audit firm rotation rule in order to enhance auditor independence in the European audit markets. Considering the recent results of the fourth
dissertation manuscript, it can be assumed that the existing mandatory audit partner rotation requirements are sufficient to assure an appropriate audit quality over the entire audit engagement period. Moreover, it can be argued that a more restrictive audit tenure regulatory requirement, as suggested by the regulators of the European Commission, would be inefficient or in the worst case even have a negative impact on audit quality in Germany.
Notes

1 A detailed overview of audit scandals in the United States and Europe is provided by Peemöller and Hofmann (2005).

2 The study of Duff (2004) provides a deeper and more detailed discussion about the determinants of audit quality.

3 In the context of consistent auditor expertise, Stefani (2002, p. 91) refers to the studies of Lennox (1999) and Kida (1980). With respect to international audit guidelines, the International Auditing and Assurance Standards Board (IAASB) of the International Federation of Accountants (IFAC) provides high quality standards concerning auditing, review, other assurance, quality control, and other related services (ISAs). Moreover, the IFAC enables the convergence of national and international audit standards.

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5 Henning Zülch is a full professor and chair of the accounting and auditing department at the HHL Leipzig Graduate School of Management.

6 Benedikt Quosigk is a research associate and doctoral student at the University of Texas in San Antonio.

7 In 2009, the audit partner rotation requirements were adjusted through the ‘Accounting Law Modernization Act’ (‘Bilanzrechtsmodernisierungsgesetz’ or ‘BilMoG’). This act reduces the cooling-off period for audit partners from three to two years.
Bibliography


MANUSCRIPT A

II. ABNORMAL AUDIT FEES AND AUDIT QUALITY IN GERMAN AUDIT MARKET: INITIAL EVIDENCE ON ASSOCIATION OF AUDIT FEE PREMIUMS AND AUDIT FEE DISCOUNTS WITH EARNINGS MANAGEMENT

Patrick Krauß, Paul Pronobis and Henning Zülch*

* Patrick Krauß is a research associate and doctoral student at the HHL Leipzig Graduate School of Management. Paul Pronobis is an assistant professor at the Freie Universität Berlin. Henning Zülch is a chair professor at the HHL Leipzig Graduate School of Management. An overall modified version of this article is currently in the state of being „revised to resubmit“ by the Journal of Business Economics (ISSN 0044-2372). It is as yet uncertain if the article will be published by the time this dissertation is completed.
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ABSTRACT

This study investigates the economic auditor-client dependency issue by analyzing the association between abnormal audit fee pricing and earnings management, hence also audit quality. Our study is the first to thoroughly analyze this phenomenon empirically for the institutional setting of German IFRS firms by using a sample of 841 firm observations for the sample period from 2004 to 2010. Our empirical results demonstrate that positive abnormal audit fees are negatively associated with audit quality, whereas negative abnormal audit fees have an insignificant or, at best, statistically weak positive effect on audit quality. Overall, our results imply that audit fee premiums are a significant factor with regard to compromised auditor independence and economic auditor-client bonding in the German context, whereas audit fee discounts seem to neither impair auditor independence nor result in a reduction in audit effort.

Keywords: Abnormal Audit Fees, Auditor Independence, Auditor-Client Economic Bonding, Audit Quality, Earnings Management.
1 INTRODUCTION

On 13 October 2010, the European Commission published the green paper, ‘Audit policy: Lessons from the crisis’ (European Commission, 2010). The purpose of this regulatory proposal is to provide improved requirements with regard to statutory audits in the European Union. As one of its key requirements for strengthening auditor independence, the green paper proposes a regulatory change for the audit market where the assignment, remuneration, and duration of the audit engagement should be determined by a third party, for example, a governmental regulator or institution (European Commission, 2010, p. 11). Although this proposed regulatory change was not considered in the final proposal for the European Parliament and the European Council (European Commission, 2011), the European Commission put this audit issue on its future agenda.

Almost concurrently with these developments, the accounting research profession started to investigate the effects and consequences of abnormal audit fee pricing. In general and according to prior literature, auditors who receive abnormally high audit fees are assumed to have an incentive to allow clients to engage in opportunistic earnings management. In this context, economic theory suggests that this relationship remains consistent as long as the expected net benefits of the audit engagement outweigh the expected audit and litigation costs (e.g. Choi et al., 2010, p. 118; Kinney and Libby, 2002, pp. 109-111).

Nevertheless, a knowledge gap remains with regard to the actual empirical association of excessive audit fee payments and audit quality. Prior empirical evidence is primarily inconsistent and inconclusive (e.g. Blankley et al., 2012; Choi et al., 2010; Mitra et al., 2009), focuses on the audit market in the United States and is, in addition, greatly under-explored in the European context in general and in the German context in particular.

Thus, using a sample of 841 firm observations of listed German companies for the sample period 2004–2010, our study is the first to thoroughly analyze the effect of abnormal audit fee pricing on audit quality for the German audit market. Over and above the great amount of empirical evidence with regard to the consequences of non-audit services (e.g. Quick and Sattler, 2011; Srinidhi and Gul, 2007; Ferguson et al., 2004; Kinney et al., 2004; Reynolds et al., 2004), we assume that an empirical investigation of the association between abnormal audit fees and audit quality is worthwhile, as excessively high audit fees might also erode audit quality to a great extent (e.g. Choi et al., 2010, pp. 118-119; Dye, 1991, pp. 349-350). This fact might have been especially amplified by the changes in audit regulation in Germany in 2005 by the Accounting Law Reform Act that restricted many non-audit services in order to strengthen auditor independence. Consequently, opportunities for clients to economically bond auditors to accept aggressive and questionable accounting practices were reduced (Blankley et al., 2012, p. 82) or possibly reallocated from non-audit services to audit services. Although we do not examine a possible reallocation of economic bonding instruments, investigating the actual auditor-client dependency situation through excessive audit fee payments is certainly of similar importance to further shed light on this auditing issue.

Our results show that positive abnormal audit fees are significantly negatively associated with audit quality, whereas negative abnormal audit fees have more or less an insignificant effect on audit quality. On the one hand, these findings imply that audit fee premiums are a potential threat to auditor independence attributable to economic auditor-client bonding, which can result in lower audit quality. On the other hand, our empirical results also imply that audit fee discounts are a negligible factor with regard to auditor independence and to a potential reduction in audit effort.

This research study is structured as follows. Section 2 discusses the theory and prior literature and further presents the research hypotheses. Section 3 sets up the research design. Section 4 discusses the sample and presents the respective descriptive statistics. Section 5 shows the empirical results of our study, while the final section contains our conclusions.
2 PRIOR LITERATURE AND HYPOTHESES DEVELOPMENT

2.1 Prior Literature

According to prior literature, audit firms that receive abnormally high audit fees have the incentive to allow clients to conduct opportunistic earnings management (e.g. Choi et al., 2010, pp. 118-119; Kinney and Libby, 2002, pp. 109-111; Dye, 1991, pp. 349-350). The reason for this behavior is usually referred to as auditor incentives, which are traded off between the desire to maintain a profitable audit engagement with (abnormally) high audit fee payments and to avoid potential litigation risks or reputational damages. If the expected net benefits of the audit engagement are greater than the expected audit engagements costs, the economic auditor-client bonding increases and audit quality simultaneously decreases (Choi et al., 2010, p. 118; Cahan et al., 2008, pp. 185-186; Johnson et al., 2002, p. 642). Consistent with this assumption, DeFond et al. (2002, p. 1252) and Dye (1991, p. 349) argued that fee rents paid might impair audit quality.

In addition to the existence of audit fee premiums, clients may pay less than the expected level of audit fees, namely audit fee discounts. When auditors receive abnormally negative audit fees, they have fewer incentives to lower audit quality, as the net benefits from the audit engagement do not outweigh the potential expenses for substandard reporting (e.g. litigation and reputation risks; Choi et al., 2010, p. 118). However, prior studies such as Blankley et al. (2012, p. 82) and Gupta et al. (2009, p. 3) argued that audit quality can be impaired by audit fee discounts because audit firms adjust downward their audit effort and their audit procedures, such as decreasing audit hours and assigning less experienced staff (Gregory and Collier, 1996, p. 14).

Overall, prior empirical findings with regard to abnormal audit fee pricing and audit quality show mixed results. While some studies reported a negative association between positive abnormal audit fees and audit quality, other studies found the opposite relation or insignificant results. For instance, the study results of Choi et al. (2010) provided evidence that audit quality decreases as the magnitude of abnormal positive audit fees increases. But then, the authors are not able to find a statistically significant association between negative abnormal audit fees and the quality of the conducted audits. In contrast to Choi et al. (2010), the study of Blankley et al. (2012) illustrated that positive abnormal audit fees have a positive effect on audit quality. Five other studies that analyze the association between unusual audit fee pricing and audit quality were conducted by Xie et al. (2010), Mitra et al. (2009), Hoitash et al. (2007), Hribar et al. (2010), and Gupta et al. (2009). Xie et al. (2010) found that audit fee premiums are generally not associated with audit quality, while there are significant correlations between abnormal audit fees and audit opinion shopping in cases in which the audited companies meet predefined high profitability benchmarks. Mitra et al. (2009) found that both normal and abnormal audit fees are inversely related with discretionary accrual management. The study of Hoitash et al. (2007) provided evidence that audit quality is negatively associated with abnormal total fees. However, the authors are unable to find statistically robust results for abnormal audit and non-audit fees. In addition, Hribar et al. (2010) showed that unexpected audit fees are negatively associated with audit quality. Finally, Gupta et al. (2009) found that negative abnormal audit fees are negatively associated with audit quality while positive abnormal audit fees are not significantly associated with audit quality.

Table 1 presents additional details on the sample period, the sample size, and the country of investigation of the previous literature on the audit quality effects of abnormal audit fee pricing. As can be seen there, the majority of prior research studies were conducted in the United States. More specifically, 6 out of the 7 studies of our literature review examined the audit market in the United States. The remaining study by Xie et al. (2010) provides initial empirical evidence for the Chinese audit market. Hence, there is yet no empirical evidence for the European or German audit market, respectively.
Table 1: Results of Empirical Studies Investigating the Association between Abnormal Audit Fees and Audit Quality

<table>
<thead>
<tr>
<th>Study (by year)</th>
<th>Country</th>
<th>Sample Period</th>
<th>Sample Size</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Journal Publications</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Choi et al. (2010)</td>
<td>United States</td>
<td>2000-2003</td>
<td>9,815</td>
<td>Positive abnormal audit fees are negatively associated with audit quality. Negative abnormal audit fees are not significantly associated with audit quality.</td>
</tr>
<tr>
<td>Xie et al. (2010)</td>
<td>China</td>
<td>2002-2008</td>
<td>7,028</td>
<td>Abnormal audit fees are only significantly associated with audit opinion shopping when the auditee meets specific profitability benchmarks.</td>
</tr>
<tr>
<td>Mitra et al. (2009)</td>
<td>United States</td>
<td>2000-2005</td>
<td>6,852</td>
<td>Both expected and unexpected audit fees are inversely associated with discretionary accrual management.</td>
</tr>
<tr>
<td>Hoitash et al. (2007)</td>
<td>United States</td>
<td>2000-2003</td>
<td>7,968</td>
<td>Using performance-adjusted discretionary accruals as a measure for audit quality, the authors find evidence that clients with positive abnormal audit fees are more likely to influence auditors' decisions.</td>
</tr>
<tr>
<td>Working Papers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gupta et al. (2009)</td>
<td>United States</td>
<td>2000-2006</td>
<td>23,372</td>
<td>Audit quality is lower when unexpected audit fees are negative. Further, there is no evidence that audit quality is impaired when unexpected audit fees are positive.</td>
</tr>
</tbody>
</table>

2.2 Hypotheses Development

Consistent with the arguments mentioned in the previous section, we expect that positive abnormal audit fees have a negative effect on audit quality because such audit fee premiums create an economic auditor-client bonding. Consequently, auditors are more likely to accept aggressive earnings management behavior than in cases in which they receive normal or abnormally negative audit fees. In contrast, audit fee discounts are assumed to have an insignificant effect on audit quality because the economic benefits from an audit engagement with unusually low audit fees are generally not high enough to cover the potential audit costs for substandard reporting. To provide empirical evidence for these predictions, we test the following related hypotheses:

**Hypothesis (1):** Positive abnormal audit fees are associated with lower audit quality.

**Hypothesis (2):** Negative abnormal audit fees are not associated with lower audit quality.
3 RESEARCH DESIGN

3.1 Model of Abnormal Audit Fees

Following Simunic (1980), the recent audit fee literature (e.g. Choi et al., 2010; Hay et al., 2006; Craswell et al., 1995) confirms that audit fees are a positive function of the following three audit engagement factors: (1) client size, (2) client complexity, and (3) audit engagement-specific risk. Based on the empirical results of the aforementioned studies, we calculate the audit fee estimation model as presented in Equation (1), in which the estimated coefficients of the independent variables are used to compute the normal audit fees as the fitted values of the model. Then, the abnormal audit fees are determined by taking the difference between the actual audit fees paid and the estimated normal audit fees. The variables used in Equation (1) are defined in the Appendix.

\[
\text{LNFEE} = \beta_0 + \beta_1 (\text{LNTA}) + \beta_2 (\text{LNSEG}) + \beta_3 (\text{INVREC}) + \beta_4 (\text{LOSSLAG}) + \beta_5 (\text{ZSCORE}) \\
+ \beta_6 (\text{BTM}) + \beta_7 (\text{BIG4}) + \beta_8 (\text{INITIAL}) + \beta_9 (\text{TENURE}) + \beta_{10} (\text{NASRATIO}) \\
+ \beta_{11} (\text{REPORTLAG}) + \text{year and industry dummies} + \epsilon_i
\]

Equation (1): Audit Fee Estimation Model

We first include LNTA in Equation (1) to proxy for client size. The results of prior empirical audit fee studies (e.g. Choi et al., 2010; Hay et al., 2006; Simunic, 1980) provide evidence that the degree for audit services is positively associated with the size of the audited company. In addition, prior research suggested that the demand for audit services generally increases when the audit engagement environment is complex. To proxy for client complexity, we include the independent control variables LNSEG and INVREC (Choi et al., 2010; Simunic, 1980).

We further include the control variables LOSSLAG, ZSCORE, BTM, BIG4, INITIAL, TENURE, NASRATIO, and REPORTLAG to control for audit engagement-specific risks in Equation (1). If firms face substantial financial problems, the litigation risks for auditors in cases of bankruptcy and misstated accounting figures are perceived as higher than for profitable clients. Therefore, auditors can be assumed to charge higher fees for financial distress mandates (Simunic and Stein, 1996; Pratt and Stice, 1994; Simunic, 1980). To capture this fact, we add the dependent variables LOSSLAG and ZSCORE to Equation (1). Furthermore, we assume that the demand for audit services differs between high, fast-growing firms and companies with low economic growth rates (Choi et al., 2010; Choi and Wong, 2007). To capture these economic growth effects, we add BTM as an inverse measure of growth potential into our estimation model (Choi et al., 2010).

To control for audit firm size characteristics, we include the binary variable BIG4 in our model. Audit fee premiums should be expected when an auditor has gained a certain reputational status and is considered to deliver superior audit quality (Choi et al., 2010; Hay et al., 2006; Craswell et al., 1995; Palmrose, 1986a; DeAngelo, 1981). Furthermore, the INITIAL and TENURE variables are included in Equation (1) to control for different audit pricing properties during the engagement period (Hay et al., 2006; Turpen, 1990; Simon and Francis, 1988). Another important controlling variable included in our estimation model is NASRATIO (Whisenant et al., 2003; Palmrose, 1986b; Simunic, 1984). With regard to provided non-audit services, knowledge spillover effects in the auditing process can be argued to result in lower levels of audit fees (Quick and Warming-Rasmussen, 2009; Joe and Vandervelde, 2007; Hay et al., 2006). In contrast, prior empirical studies provided evidence that non-audit services could also be positively associated with audit fees (Hay et al., 2006; Turpen, 1990; Simunic, 1984). Next, and in accordance with Hay et al. (2006), we extend Equation (1) using the continuous variable REPORTLAG. We expect that an increase in the reporting lag between fiscal year-end and the auditor opinion date indicates auditing issues that might result in higher audit fee rates. Finally, we include 15 industry indicator variables based on the two-digit SIC code as well as year indicator variables to control for unobserved industry and year effects.
Consistent with prior studies, we also consider a variety of alternative complexity and audit engagement risk variables in Equation (1). In particular, we control for the presence of foreign operations, number of geographic segments, error announcements, busy season, and first-time IFRS adoption effects. Moreover, we add performance-related variables such as revenue growth, return on assets, and operating cash flows. Because none of these control variables is found to be statistically significant nor to change the overall study conclusions, these results are not tabulated.

3.2 Earnings Management Models

For our study, we estimate two popular discretionary accrual measures to proxy for audit quality: (1) discretionary accruals as measured by the estimation model of Ball and Shivakumar (2006) and (2) discretionary accruals as measured by the modified Jones model (Dechow et al., 1995). Both models are widely used in audit and accounting research studies (e.g. Choi et al., 2010). As suggested by Kothari et al. (2005), we also control for firm performance in both estimation models by adding the independent variable ROA to the regressions. In this context, non-discretionary accruals are assumed to be particularly associated with firm performance. Moreover, we include industry and year indicator variables to isolate year and industry-specific effects in the estimation models.

The performance-adjusted Ball and Shivakumar (2006) model and the performance-adjusted modified Jones model (Dechow et al., 1995) are illustrated in Equation (2) and Equation (3), respectively. The variables of both estimation models are defined in the Appendix.

Equation (2): Earnings Management Estimation Model by Ball and Shivakumar

\[
TACC_{it}/TA_{it-1} = \beta_0 + \beta_1 (1/TA_{it-1}) + \beta_2 (\Delta RE_{it} - \Delta RE_{it-1})/TA_{it-1} + \beta_3 (PPE_{it}/TA_{it-1}) \\
+ \beta_4 (CFO_{it}/TA_{it-1}) + \beta_5 (DCFO) + \beta_6 ([CFO_{it}/TA_{it-1}] * DCFO) + \beta_7 (ROA_{it}) \\
+ \text{year and industry dummies} + \epsilon_i
\]

Equation (3): Performance-Adjusted Modified Jones Earnings Management Estimation Model

\[
TACC_{it}/TA_{it-1} = \beta_0 + \beta_1 (1/TA_{it-1}) + \beta_2 (\Delta RE_{it} - \Delta RE_{it-1})/TA_{it-1} + \beta_3 (PPE_{it}/TA_{it-1}) \\
+ \beta_4 (ROA_{it}) + \text{year and industry dummies} + \epsilon_i
\]

where for client firm \( i \) in year \( t \) (or \( t-1 \)). Our discretionary accrual measures (i.e. \(|DA_1|\) and \(|DA_2|\)) are derived from the absolute value of the estimated residuals (\( \epsilon_i \)).

3.3 Measuring the Association between Abnormal Audit Fees and Discretionary Accruals

To test our two hypotheses described in section 2.2, we posit the following estimation model in Equation (4), linking the magnitude of \(|DA_1|\) and \(|DA_2|\) with our abnormal audit fee variable (ABAFEE) and other independent control variables. To technically distinguish between abnormal positive and negative audit fee effects, we additionally use the indicator variable PABAFEE and the multiplicative interaction term ABAFFE*PABAFEE. Overall, the research design follows the one of Choi et al. (2010). The variables used in Equation (4) are defined in the Appendix.

Equation (4): Model for the Association between Abnormal Audit Fees and Discretionary Accruals

\[
|DA_1| \text{or} |DA_2| = \beta_0 + \beta_1 (ABAFEE) + \beta_2 (PABAFEE) + \beta_3 (ABAFEE \times PABAFEE) + \beta_4 (LNTA) + \beta_5 (AGE) + \beta_6 (LOSS) + \beta_7 (BTM) + \text{year and industry dummies} + \epsilon_i
\]

Consistent with prior empirical studies, a number of independent control variables are added to the estimation model. The control variables are LNTA, AGE, LOSS, and BTM. First, LNTA is added to the model to capture any firm size effects that might be correlated with our earnings management measures (Choi et al., 2010). Moreover, we add AGE to Equation (4) because long-time existing firms are expected to have more sophisticated business processes and financial reporting systems in place, which can result in lower levels of earnings management (Johnson et al., 2002). LOSS is also added to the model as a dummy variable to control for different discretionary accrual levels between loss-making and profit-making firms (Choi et al., 2010; Dechow and Dichev, 2002). Finally, we also include BTM to determine potential firm growth effects on \(|DA_1|\) and \(|DA_2|\), respectively (Choi et al., 2010; Frankel et al., 2002).
In accordance with prior studies in this research field, we also consider a variety of additional control variables in our estimation models. In particular, we control for profitability and firm growth effects through return on equity, cash flow from operations, revenue growth, and equity offering variables. Over and above, we control for internal and external corporate governance structures through audit firm tenure, auditor size, and coded corporate governance codex declaration variables. All of these control variables were found to be statistically insignificant and are therefore not included in Equation (4).
4 Sample Selection and Description

4.1 Sample Selection

Our analyses use data from German companies belonging to the major stock exchange indices DAX, MDAX, SDAX, and TecDAX of the Frankfurt Stock Exchange. The indices include the largest (in terms of market capitalization) and most actively traded capital market-oriented firms which are closely monitored by analysts and often serve as a benchmark for many smaller firms with regard to IFRS and/or German Commercial Code (GCC) accounting issues.

The original sample for the analysis of abnormal audit fees consists of 1,680 firm observations. For our study approach, we only consider audit fee observations according to category (a) of section 285 No. 17 or section 314 paragraph 1 No. 9 in the GCC. The audit fee data were manually collected from the publicly available annual financial reports of the sample companies. From the original sample, we have to separate the audit fee disclosure of financial service companies (273 firm observations) given their unique asset structure and special accounting requirements. Moreover, we must exclude 219 firm observations from our study sample because appropriate IFRS and audit fee data are not publicly available for these companies. For the fiscal year 2004, the majority of the listed companies (148 firm observations) did not publish audit fee figures because the disclosure requirements were not effective before fiscal year 2005. Furthermore, we are unable to use annual reports of foreign issuers on the Frankfurt Stock Exchange (133 firm observations) because these companies are not obliged to follow the regulations of the GCC, particularly the audit fee disclosure requirements. We also reduce the sample because of biased audit fee data resulting from significant changes in the legal form of the respective audit firm (50 firm observations). Finally, we exclude several firms with a cross-listing in Germany and the United States (16 firm observations) because only US GAAP accounting figures are publicly available for these firm observations.

The accounting data are either gathered from the Hoppenstedt Database or hand-collected from the annual reports. Table 2 provides an overview of the sample composition used to estimate normal (positive/negative) or abnormal audit fees, respectively.

<table>
<thead>
<tr>
<th>Sample Composition</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Original Sample</td>
<td>1,680</td>
</tr>
<tr>
<td>./. Bank, Insurance and Financial Service Companies</td>
<td>273</td>
</tr>
<tr>
<td>./. Missing Data</td>
<td>219</td>
</tr>
<tr>
<td>./. Non-Mandatory Audit Fee Publication 2004</td>
<td>148</td>
</tr>
<tr>
<td>./. Foreign Issuer</td>
<td>133</td>
</tr>
<tr>
<td>./. Organizational Changes Audit Firm</td>
<td>50</td>
</tr>
<tr>
<td>./. US-GAAP Financial Statement</td>
<td>16</td>
</tr>
<tr>
<td>Total</td>
<td>841</td>
</tr>
</tbody>
</table>

Table 2: Sample Composition

4.2 Sample Description

The descriptive statistics of the variables used in Equations (1) and (4) are presented in Table 3. Delogging the variables shows that the median company pays audit fees of €459,000 for the financial statement audit, while 32 percent of total fees are based on non-audit services. Further, the median value for the total assets in our sample is €1,071,100,000, while the average company operates with three business segments. Other noteworthy figures are a median value of six years for audit firm tenure and an average audit reporting period of 70 days between fiscal year-end and the auditor opinion date.

Our sample shows a plausible distribution of our binary variables (PABAFEE, LOSS, LOSSLAG, BIG4, and INITIAL). The indicator variable for audit fee premiums (PABAFEE) equals 53 percent. Moreover, 18 percent of our sample firms report a negative net income in
the sample period. Finally, 7 percent of the audit engagements in our sample are initial engagements, while 78 percent are audited by Big 4 auditors.

With respect to our earnings management regression, note that the mean values of $|DA1|$ and $|DA2|$ are significantly higher than the median values, suggesting that our dependent variable distributions are skewed. As expected, the mean value of signed discretionary accruals for both measures is close to zero.

### Table 3: Descriptive Statistics - Distribution of Variables

<table>
<thead>
<tr>
<th>Cont. Variables</th>
<th>25th Percent.</th>
<th>Mean</th>
<th>Median</th>
<th>75th Percent.</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>LNSEG</td>
<td>1.3863</td>
<td>1.4456</td>
<td>1.3863</td>
<td>1.4094</td>
<td>0.3683</td>
<td>0.6931</td>
<td>2.1972</td>
</tr>
<tr>
<td>INVREC</td>
<td>0.1816</td>
<td>0.3538</td>
<td>0.3481</td>
<td>0.4795</td>
<td>0.2201</td>
<td>0.0009</td>
<td>1.1885</td>
</tr>
<tr>
<td>ZSCORE</td>
<td>-1.8360</td>
<td>-1.1110</td>
<td>-1.0778</td>
<td>-0.3909</td>
<td>1.3193</td>
<td>-4.1100</td>
<td>4.9493</td>
</tr>
<tr>
<td>TENURE</td>
<td>4.0000</td>
<td>5.9227</td>
<td>6.0000</td>
<td>8.0000</td>
<td>2.5746</td>
<td>1.0000</td>
<td>10.0000</td>
</tr>
<tr>
<td>BTM</td>
<td>0.3472</td>
<td>0.6727</td>
<td>0.5439</td>
<td>0.8389</td>
<td>0.5132</td>
<td>0.0575</td>
<td>3.0045</td>
</tr>
<tr>
<td>NASRATIO</td>
<td>0.1434</td>
<td>0.3265</td>
<td>0.3171</td>
<td>0.4781</td>
<td>0.2117</td>
<td>0.0000</td>
<td>0.8024</td>
</tr>
<tr>
<td>REPORTLAG</td>
<td>57.0000</td>
<td>70.0131</td>
<td>66.0000</td>
<td>79.0000</td>
<td>26.8655</td>
<td>25.0000</td>
<td>391.0000</td>
</tr>
<tr>
<td>DA1</td>
<td>-0.0083</td>
<td>0.0000</td>
<td>-0.0025</td>
<td>0.0033</td>
<td>0.0327</td>
<td>-0.3649</td>
<td>0.3277</td>
</tr>
<tr>
<td>[DA1]</td>
<td>0.0028</td>
<td>0.0132</td>
<td>0.0062</td>
<td>0.0133</td>
<td>0.0234</td>
<td>0.0001</td>
<td>0.1617</td>
</tr>
<tr>
<td>DA2</td>
<td>-0.0379</td>
<td>0.0000</td>
<td>-0.0022</td>
<td>0.0313</td>
<td>0.0961</td>
<td>-0.5791</td>
<td>0.5047</td>
</tr>
<tr>
<td>[DA2]</td>
<td>0.0169</td>
<td>0.0601</td>
<td>0.0336</td>
<td>0.0767</td>
<td>0.0705</td>
<td>0.0006</td>
<td>0.3778</td>
</tr>
<tr>
<td>CFO</td>
<td>0.0490</td>
<td>0.0918</td>
<td>0.0893</td>
<td>0.1322</td>
<td>0.1099</td>
<td>-0.3065</td>
<td>0.4838</td>
</tr>
<tr>
<td>ROA</td>
<td>0.0144</td>
<td>0.0415</td>
<td>0.0433</td>
<td>0.0846</td>
<td>0.1045</td>
<td>-0.3923</td>
<td>0.3665</td>
</tr>
<tr>
<td>AGE</td>
<td>12.0000</td>
<td>60.9465</td>
<td>35.0000</td>
<td>110.0000</td>
<td>57.3149</td>
<td>0</td>
<td>263</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Binary Variables</th>
<th>Mean</th>
<th>0</th>
<th>1</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PABAFFEE</td>
<td>0.5303</td>
<td>395</td>
<td>446</td>
<td>0.4994</td>
</tr>
<tr>
<td>LOSS</td>
<td>0.1831</td>
<td>687</td>
<td>154</td>
<td>0.3870</td>
</tr>
<tr>
<td>LOSSLAG</td>
<td>0.1653</td>
<td>702</td>
<td>139</td>
<td>0.3717</td>
</tr>
<tr>
<td>BIG4</td>
<td>0.7776</td>
<td>187</td>
<td>654</td>
<td>0.4161</td>
</tr>
<tr>
<td>INITIAL</td>
<td>0.0690</td>
<td>783</td>
<td>58</td>
<td>0.2535</td>
</tr>
</tbody>
</table>

See the Appendix for the definition of variables.
5 EMPIRICAL RESULTS

5.1 Results for the Abnormal Audit Fee Model

Table 4 presents the empirical results of our audit fee estimation model. The model is estimated using a pooled sample of 841 firm observations over a seven-year period (2004–2010). The computation of Equation (1) results in an adjusted $R^2$ of 85 percent. As expected and consistent with prior studies, the audit fees are significantly positively associated at p-value < 0.01 with LNTA ($\rho = 0.5195$), LNSEG ($\rho = 0.3240$), ZSCORE ($\rho = 0.0601$), and at p-value < 0.05 with TENURE ($\rho = 0.0319$) and REPORTLAG ($\rho = 0.0017$). Table 4 also shows that audit fees are significantly negatively associated with NASRATIO ($\rho = -0.5865$, p-value < 0.01). This empirical finding can most likely be attributed to knowledge spillover effects between the assurance and advisory department within an audit firm. Furthermore, the independent variables LOSSLAG ($\rho = 0.0850$, p-value < 0.10), BTM ($\rho = -0.0752$, p-value < 0.10), and INITIAL ($\rho = -0.1193$, p-value < 0.10) also show a significant and predicted effect on audit fees.

Contrary to the majority of prior studies and our prediction, INVREC ($\rho = -0.3023$, p-value < 0.05) – as a proxy for client complexity – shows a significantly negative coefficient in the relationship with LNFE. A closer examination of our sample data reveals that 45 of our firm observations (mostly software service companies) have no material inventory files, which systematically affects our proxy variable. We assume that this factor primarily contributes to the negative sign of INVREC. Finally, we are unable to find significant results for the binary control variable BIG4.

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Expected Sign</th>
<th>Coefficient</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td></td>
<td>-2.0989</td>
<td>-6.86</td>
<td>0.000</td>
</tr>
<tr>
<td>LNTA</td>
<td>(+)</td>
<td>0.5195</td>
<td>23.64</td>
<td>0.000</td>
</tr>
<tr>
<td>LNSEG</td>
<td>(+)</td>
<td>0.3240</td>
<td>4.28</td>
<td>0.000</td>
</tr>
<tr>
<td>INVREC</td>
<td>(+)</td>
<td>-0.3023</td>
<td>-2.52</td>
<td>0.012</td>
</tr>
<tr>
<td>LOSSLAG</td>
<td>(+)</td>
<td>0.0850</td>
<td>1.91</td>
<td>0.056</td>
</tr>
<tr>
<td>ZSCORE</td>
<td>(+)</td>
<td>0.0601</td>
<td>3.34</td>
<td>0.001</td>
</tr>
<tr>
<td>BTM</td>
<td>(-)</td>
<td>-0.0752</td>
<td>-1.92</td>
<td>0.055</td>
</tr>
<tr>
<td>BIG4</td>
<td>(+)</td>
<td>0.1086</td>
<td>1.44</td>
<td>0.149</td>
</tr>
<tr>
<td>INITIAL</td>
<td>(-)</td>
<td>-0.1193</td>
<td>-1.91</td>
<td>0.056</td>
</tr>
<tr>
<td>TENURE</td>
<td>(+)</td>
<td>0.0319</td>
<td>2.40</td>
<td>0.016</td>
</tr>
<tr>
<td>NASRATIO</td>
<td>(-)</td>
<td>-0.5865</td>
<td>-5.39</td>
<td>0.000</td>
</tr>
<tr>
<td>REPORTLAG</td>
<td>(+)</td>
<td>0.0017</td>
<td>2.08</td>
<td>0.038</td>
</tr>
<tr>
<td>Year and industry dummies</td>
<td>Included</td>
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</tr>
<tr>
<td>Adjusted $R^2$</td>
<td></td>
<td>0.8467</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
<td>841</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

All t-statistics are on an adjusted basis, using robust standard errors corrected for heteroscedasticity and firm-level as well as time clustering (Petersen 2009). See the Appendix for the definition of variables.

Table 5 provides the results of testing the association between abnormal audit fees and earnings management, where $|DA1|$ and $|DA2|$ are used as the dependent variables. As previously explained, we add the variables ABAFEE and PABAFEE as well as the multiplicative interaction term of ABAFEE*PABAFEE to distinguish between the effects of positive and negative abnormal audit fees. The overall effect of positive abnormal audit fees on earnings management is captured by the sum of the two coefficients of PABAFEE and ABAFEE*PABAFEE, whereas the single coefficient of ABAFEE represents the effect of negative abnormal audit fees. The regression is based on the same seven-year pooled sample used in Equation (1).

The results for both of our accrual measures show qualitatively similar results for positive abnormal audit fees, whereas the results for negative abnormal audit fees are inconsistent. For $|DA1|$, the results in Table 5 show an insignificant association between audit fee discounts and the level of discretionary accruals, hence also audit quality. For $|DA2|$ the coefficient of nega-
tive abnormal audit fees (ABAFEE) is significantly negatively associated ($p = -0.1916$, p-value < 0.05), indicating that auditors are able to provide an appropriate level of audit quality even when audit fees are below the normal fee level. These results also imply that low audit fee rates are not necessarily compensated through a reduction in audit effort but can, in contrast, have a marginally positive effect on auditors’ ability to report an accounting breach. This finding can most likely be attributed to an increase in auditor independence. In contrast, the coefficient of ABAFEE*PABAFFEE ($p_1 = 0.1050$; $p_2 = 0.2639$) is significantly positive at p-value < 0.10 for $|DA1|$ and $|DA2|$. Moreover, the sum of the coefficients of PABAFFEE and ABAFEE*PABAFFEE is also positive and statistically significant ($p_1 = 0.1026$, p-value < 0.10; $p_2 = 0.2658$, p-value < 0.10). These results support our developed Hypothesis (1) because excessive audit fee payments are seen as important incentives for auditors to allow their clients to engage in opportunistic earnings management, thus decreasing the explanatory power of the reported financial statements. Conversely, we provide no sustainable empirical evidence that audit fee discounts negatively influence audit quality through a reduction in audit effort. Our results support the empirical evidence of Choi et al. (2010), whose empirical results were described in the literature review in section 2.1 of this paper.

In addition to our variables of interest, Table 5 shows that almost all of our control variables are significantly associated with the dependent variables. As expected and consistent with prior audit studies, discretionary accruals are significantly negatively associated with LNTA ($p_1 = -0.0021$, p-value <0.01; $p_2 = -0.0082$, p-value < 0.01), AGE ($p_1 = -0.0001$, p-value < 0.01; $p_2 = -0.0001$, p-value < 0.05), and BTM ($p_1 = -0.0027$, p-value < 0.05; $p_2 = -0.0100$, p-value < 0.01). Moreover, our results for $|DA1|$ indicate that loss firms tend to report higher levels of discretionary accruals than profitable firms.

Table 5: Results on the Association of Abnormal Audit Fees and Discretionary Accruals

| Independent variables | Expected Sign | $|DA1|$ Coefficient t-value p-value | $|DA2|$ Coefficient t-value p-value |
|-----------------------|--------------|----------------------------------|----------------------------------|
| Constant              |              | 0.0445 5.69 0.000               | 0.1803 7.70 0.000               |
| ABAFEE                | (?)          | -0.0167 -0.89 0.372             | -0.1916 -2.52 0.012             |
| PABAFFEE              | (?)          | -0.0024 -0.68 0.494             | 0.0019 0.21 0.832               |
| ABAFEE*PABAFFEE       | (+)          | 0.1050 1.73 0.084               | 0.2639 1.93 0.054               |
| LNTA                  | (-)          | -0.0021 -3.61 0.000             | -0.0082 -5.09 0.000             |
| AGE                   | (-)          | -0.0001 -3.34 0.001             | -0.0001 -2.51 0.012             |
| LOSS                  | (+)          | 0.0041 3.45 0.001               | 0.0086 1.36 0.174               |
| BTM                   | (-)          | -0.0027 -2.44 0.015             | -0.0100 -3.02 0.003             |
| Year and industry dummies | Included | Included                   |                                      |
| Adjusted R²           |              | 0.0893 0.0948                  |                                    |

All t-statistics are on an adjusted basis, using robust standard errors corrected for heteroscedasticity and firm-level as well as time clustering (Petersen 2009). See the Appendix for the definition of variables.

Table 5: Results on the Association between Abnormal Audit Fees and Discretionary Accruals
6 Conclusion

This study analyzed the empirical association between abnormal audit fees and audit quality as proxied by discretionary accruals. Consistent with the recent literature on audit pricing, we separate abnormal audit fees into positive and negative components to better capture the different economic effects of the two fee constructs on audit quality. Using a sample of 841 firm observations of major German listed companies for the sample period 2004–2010, our empirical results demonstrate that positive abnormal audit fees are negatively associated with audit quality, whereas negative abnormal audit fees have an insignificant or at best slightly positive effect on audit quality. Our results imply that audit fee premiums are a significant factor in the context of compromised auditor independence and economic auditor-client bonding. Furthermore, we provide evidence that audit fee discounts neither result in a reduction in audit effort nor negatively affect auditor independence.

Our study adds empirical evidence to the inconsistent and comprehensible range of existing abnormal audit pricing literature. Moreover, to the best of our knowledge, this study is the first to empirically analyze the effects of abnormal audit pricing on audit quality for a sample of German listed companies. From a regulatory perspective, our study provides useful insights into the recent debates regarding the economic auditor-client dependency issue. The latest developments in audit regulations within the European Union demonstrate that European Commission regulators primarily focus on the joint provision of audit and non-audit services by engaged auditors. In this context, our empirical results imply that law-makers in the European Commission and Germany should also consider debating the pricing of original audit services.
## Appendix: Definition of Variables

The following table summarizes the variables used in Equations (1) to (4).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABAFEE</td>
<td>abnormal audit fees estimated from Equation (1).</td>
<td>Continuous</td>
</tr>
<tr>
<td>AGE</td>
<td>age of the company measured in years.</td>
<td>Continuous</td>
</tr>
<tr>
<td>BIG4</td>
<td>binary variable, equal to 1 if auditor is a Big 4 audit firm</td>
<td>Binary</td>
</tr>
<tr>
<td>BTM</td>
<td>book-to-market ratio (equity divided by market capitalization), winsorized</td>
<td>Continuous</td>
</tr>
<tr>
<td>CFO</td>
<td>cash flow from operations scaled by lagged total assets, winsorized at the</td>
<td>Continuous</td>
</tr>
<tr>
<td>[DA1]</td>
<td>absolute value of discretionary accruals measured by the Ball and Shivakum</td>
<td>Continuous</td>
</tr>
<tr>
<td>[DA2]</td>
<td>absolute value of discretionary accruals measured by the performance-adjust</td>
<td>Continuous</td>
</tr>
<tr>
<td>DCFO</td>
<td>binary variable, equal to 1 if cash flow from operations is negative, and</td>
<td>Binary</td>
</tr>
<tr>
<td>INITIAL</td>
<td>binary variable, equal to 1 if first year audit engagement, and 0 otherwise.</td>
<td>Binary</td>
</tr>
<tr>
<td>INVREC</td>
<td>inventory and receivables scaled by lagged total assets, winsorized at the</td>
<td>Continuous</td>
</tr>
<tr>
<td>LNFEE</td>
<td>natural log of audit fees, winsorized at the 2%-level.</td>
<td>Continuous</td>
</tr>
<tr>
<td>LNSEG</td>
<td>natural log of the number of business segments, winsorized at the 2%-level.</td>
<td>Continuous</td>
</tr>
<tr>
<td>LNTA</td>
<td>natural log of total assets, winsorized at the 2%-level.</td>
<td>Continuous</td>
</tr>
<tr>
<td>LOSS</td>
<td>binary variable, equal to 1 if net income is negative, and 0 otherwise.</td>
<td>Binary</td>
</tr>
<tr>
<td>LOSSLAG</td>
<td>binary variable, equal to 1 if prior year net income is negative, and 0</td>
<td>Binary</td>
</tr>
<tr>
<td>NASRATIO</td>
<td>non-audit fees divided by total fees, winsorized at the 2%-level.</td>
<td>Continuous</td>
</tr>
<tr>
<td>PABAFAEE</td>
<td>binary variable, equal to 1 if auditor received positive abnormal audit fees</td>
<td>Binary</td>
</tr>
<tr>
<td>PPE</td>
<td>total net value of property, plant and equipment, winsorized at the 2%-level.</td>
<td>Continuous</td>
</tr>
<tr>
<td>REC</td>
<td>accounts receivables, winsorized at the 2%-level.</td>
<td>Continuous</td>
</tr>
<tr>
<td>REPORTLAG</td>
<td>number of days between fiscal year-end and the audit opinion date.</td>
<td>Continuous</td>
</tr>
<tr>
<td>REV</td>
<td>total revenue, winsorized at the 2%-level.</td>
<td>Continuous</td>
</tr>
<tr>
<td>ROA</td>
<td>return on assets (net income divided by average total assets), winsorized</td>
<td>Continuous</td>
</tr>
<tr>
<td>TA</td>
<td>total assets at the end of fiscal year, winsorized at the 2%-level.</td>
<td>Continuous</td>
</tr>
<tr>
<td>TENURE</td>
<td>consecutive audit engagement years by the same audit firm.</td>
<td>Continuous</td>
</tr>
<tr>
<td>ZSCORE</td>
<td>Zmijewski's (1984) financial condition index, winsorized at the 2%-level.</td>
<td>Continuous</td>
</tr>
</tbody>
</table>
Notes

1 The Arthur Anderson-Enron case is a prime example of the trade-off between economic benefits and the desire to protect a firm’s reputation. Arthur Andersen, a large international audit company with a 90-year firm history and total revenues of $9 billion, had to shut down its business within three months after state attorneys detected irregular auditing practices within the Enron audit engagement (Alexander et al., 2002). Kinney and Libby (2002, pp. 109-110) noted that Enron’s actual audit fees paid in fiscal year 2000 were 250 percent of the estimated normal audit fees.

2 Throughout this paper, Big 4 auditor always refers to Deloitte, Ernst & Young, KPMG, and PricewaterhouseCoopers.

3 Dechow et al. (2012) and Dechow et al. (1995) provided a more detailed overview of existing earnings management estimation models and their functions. With regard to the association between audit quality and earnings management, we refer to the study by Becker et al. (1998).

4 The audit fee date for the fiscal year 2004 (16 firm observations) was derived from the audit fee disclosure in the annual reports for the fiscal year 2005. As some firms want to provide their stakeholders with comparative figures for the previous fiscal year, the audit fees for 2004 are also voluntarily disclosed in the annual reports 2005.

5 The organizational change is primarily related to the reorganization of KPMG and KPMG Europe LLP.

6 Audit firm tenure is defined as the number of consecutive years a client firm has engaged a particular audit firm. The calculation of auditor tenure starts in the fiscal year 2002.

7 We use a cross-sectional estimation approach in which we cluster heteroscedasticity-adjusted standard errors at the firm level as well as based on time. The cross-sectional estimation approach follows the prior literature, such as Blankley et al. (2012) and Choi et al. (2010). Please note that firm-fixed effect estimation models could result in an understatement of the true standard error when the residuals of a given firm are correlated across years (Petersen, 2009). In addition, a pooled estimation approach generally increases statistical power in comparison with firm-fixed effect computations.

8 In comparison, other German audit market studies from Köhler et al. (2010), Wild (2010), and Bigus and Zimmermann (2009) showed a similar adjusted $R^2$ of approximately 80 percent for their audit fee estimation models.

9 In fact, we find a positive significant association for BIG4 at p-value < 0.10 before we add the industry and year indicator variables to Equation (1).
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EFFECTS OF INITIAL AUDIT FEE DISCOUNTS ON AUDIT QUALITY:
EVIDENCE FROM GERMANY

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Patrick Krauß and Henning Zülch*

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