Ökonomische Analyse ausgewählter Reformen der Rechnungslegung und Wirtschaftsprüfung

Von der Wirtschaftswissenschaftlichen Fakultät der
Gottfried Wilhelm Leibniz Universität Hannover
zur Erlangung des akademischen Grades

Doktorin der Wirtschaftswissenschaften
– Doctor rerum politicarum –

genehmigte Dissertation

von

M. Sc. Michelle Muraz

geboren am 15. März 1988 in Starnberg

2016

Betreuer und Gutachter:	Prof. Dr. Stefan Wielenberg
Weiterer Gutachter:	Prof. Dr. Jens Robert Schöndube
Vorsitzender der Prüfungskommission:	Prof. Dr. Kay Blaufus
Weiteres Mitglied (beratend):	Dr. Karola Friedrici
Tag der Promotion:	16. Dezember 2016

Meiner Familie.

Zusammenfassung

Vor dem Hintergrund von Bilanzskandalen, der Finanzmarktkrise sowie der Harmonisierung der Rechnungslegung haben nationale und internationale Entscheidungsträger in jüngster Vergangenheit zahlreiche Reformen der Rechnungslegung und Wirtschaftsprüfung diskutiert. Die folgenden Beiträge untersuchen ausgewählte Reformvorschläge sowie bereits umgesetzte Reformen im Hinblick auf ihre Zielwirkung und optimale Ausgestaltung. Analysiert wird dabei insbesondere

- ob Joint Audits geeignet sind, die Marktposition kleinerer Wirtschaftsprüfungsgesellschaften bei gleichzeitig hoher Prüfungsqualität zu stärken sowie die optimale Ausgestaltung von Joint Audits,

- wie in der Praxis Wirtschaftsprüfungsgesellschaften in einem Joint Audit die Prüfungshandlungen aufteilen und welchen Einfluss diese Aufteilung auf die Prüfungsqualität und die Prüfungskosten ausübt,

- wie eine interne Qualitätskontrolle durch einen Engagement Quality Review (EQR) das strategische Verhalten von Partnern in Wirtschaftsprüfungsgesellschaften beeinflusst sowie welche Auswirkungen sich auf die Unabhängigkeit des Abschlussprüfers, den Erfolg der Wirtschaftsprüfungsgesellschaft sowie auf die Akquisition prüfungsnaher Dienstleistungen ergeben,

- wie sich die Anhebung der monetären Schwellenwerte des HGB im Rahmen des BilMoG auf die Prüfungspflicht deutscher Kapitalgesellschaften auswirkte und welche Faktoren kleine Kapitalgesellschaften zu einer freiwilligen Abschlussprüfung veranlassen,

- ob Unternehmen die im Rahmen des BilMoG geschaffenen Übergangswahlrechte zur Bilanzierung von Pensionsrückstellungen für eine gezielte Bilanzpolitik nutzen.

Abstract

Against the background of accounting scandals, the recent financial crisis and the harmonization of accounting standards, standard setters have discussed in recent years several reform projects concerning the audit and accounting regulatory environment. The following papers examine selected reform proposals and reforms that have been already implemented with regard to their target achievements and their optimal designs. In particular, the papers analyze

- whether joint audits are a suitable measure to strengthen the market position of smaller audit firms under the condition of a high audit quality and how joint audits are optimally designed,

- how audit firms in a joint audit setting share their audit work and how the allocation affects the audit quality and audit costs,

- how an engagement quality review affects the strategic behavior of audit firm partners, the reporting bias, the expected payoff and the acquisition of audit-related service projects,

- how the increase of the thresholds of § 267 HGB due to the BilMoG affects the auditing duty of German corporations and which factors cause corporations to decide for annual audits voluntarily,

- how German corporations use the transitional options of BilMoG pension accounting for a targeted accounting policy.

Schlagwörter / Keywords

- Joint Audits, Verteilung der Prüfungshandlungen, Prüfungsqualität, Prüfungskosten, Cosmetic Earnings Management (CEM), Ökonomische Regulierung, Interne Qualitätskontrolle, Wirtschaftsprüfungsgesellschaft als Partnerschaft, Kosten- und Honorarverteilungsregelung, Bilanzpolitik, Bilanzrechtsmodernisierungsgesetz (BilMoG), Übergangswahlrechte, Bilanzierung von Pensionsrückstellungen, Bilanzrichtlinie Umsetzungsgesetz (BilRUG), § 267 HGB, freiwillige Jahresabschlussprüfungen.

- Joint audits, allocation of audit work, audit quality, audit costs, economic regulation, cosmetic earnings management (CEM), engagement quality review, audit partnerships, cost and fee sharing rules, earnings management, Accounting Law Modernization Act (BilMoG), transitional regulations, pension accounting, Accounting Directive Implementation Act (BilRUG), § 267 HGB, voluntary annual audits.

Inhaltsverzeichnis

Vorwort

Bilanzskandale, Finanzmarktkrisen sowie der Wunsch nach einem harmonisierten Regelwerk für Rechnungslegung und Wirtschaftsprüfung veranlassten nationale und internationale Regulatoren in der jüngsten Vergangenheit zur Diskussion und Umsetzung zahlreicher Reformen in diesem Bereich. Die vorliegende kumulative Dissertation untersucht ausgewählte Reformvorschläge und bereits umgesetzte Reformen der Rechnungslegung und Wirtschaftsprüfung im Hinblick auf ihre (Ziel-) Wirkung und optimale Ausgestaltung. Nachfolgend wird ein kurzer Überblick über die analysierten Reformen und deren Hintergrund gegeben:

Ab dem Jahr 2007 führte die Finanzmarktkrise als Teil der Weltwirtschaftskrise zu umfangreichen Regulierungen, wobei zunächst eine Fokussierung auf die Stabilisierung des Finanzsystems erfolgte. Nachdem die Rolle, die Banken, Hedgefonds, Ratingagenturen, Aufsichtsbehörden und Zentralbanken bei der Finanzmarktkrise gespielt hatten, analysiert worden war, beschäftigte sich die EU-Kommission im Rahmen eines Grünbuchs[1] mit der Frage, wie die Abschlussprüfung verbessert werden könnte, um zu einer erhöhten Finanzmarktstabilität beizutragen. Dabei ging es der EU-Kommission nicht nur um einen unabhängigen Bestätigungsvermerk der Abschlussprüfer, sondern auch darum, inwieweit der bestehende regulatorische Rahmen für Jahresabschlussprüfungen als angemessen zu betrachten ist. Eine zentrale Rolle spielte hierbei die Frage, ob die zunehmende Konsolidierung von Wirtschaftsprüfungsgesellschaften auf dem Markt für Jahresabschlussprüfungen kapitalmarktorientierter Unternehmen begrenzt werden sollte, um das Risiko von Marktstörungen durch Ausfälle einzelner Wirtschaftsprüfungsgesellschaften zu minimieren. Um die Markteintrittsbarrieren für kleinere Wirtschaftsprüfungsgesellschaften zu reduzieren, stellte die Europäische Kommission in diesem Zusammenhang verbindliche *Gemeinsame Prüfungen* (sog. Joint Audits) zur Diskussion. Bei einem Joint Audit teilen sich mindestens zwei unabhängige Wirtschaftsprüfungsgesellschaften die Prüfungshandlungen und unterzeichnen anschließend den Bestätigungsvermerk gemeinsam. Ziel ist es, hierdurch die Unabhängigkeit des Abschlussprüfers sowie die Prüfungsqualität durch sich gegenseitig kontrollierende Wirtschaftsprüfungsgesellschaften zu erhöhen. Durch die Beteiligung mindestens einer systemunrelevanten Wirtschaftsprüfungsgesellschaft sollen kleinere Wirtschaftsprüfungsgesellschaften zudem zu aktiven Marktteilneh-

[1] Vgl. Europäische Kommission (2010): Grünbuch: Weiteres Vorgehen im Bereich der Abschlussprüfung: Lehren aus der Krise, Brüssel.

mern werden und wachsen.[2] In diesem Zusammenhang stellt sich die Frage, ob obligatorische Joint Audits mit Beteiligung einer systemunrelevanten Wirtschaftsprüfungsgesellschaft diesem Ziel gerecht werden können, wenn zeitgleich eine hohe Prüfungsqualität vorausgesetzt wird.

Beitrag 1 untersucht mit Hilfe eines analytischen Modells das strategische Verhalten von Wirtschaftsprüfungsgesellschaften unterschiedlicher Größe in einem Joint Audit. Es wird gezeigt, dass eine höhere Prüfungsqualität entsteht, wenn die größere Wirtschaftsprüfungsgesellschaft den Großteil der Prüfungsarbeit übernimmt. Dies steht jedoch dem Ziel entgegen, die Marktposition kleinerer Wirtschaftsprüfungsgesellschaften zu stärken, da sich diese nur dann in einem Prüfungsmarkt etablieren und wachsen können, wenn Mandanten sie als qualifizierte und gleichberechtigte Prüfungspartner wahrnehmen. Dies sollte insbesondere dann der Fall sein, wenn die Arbeitsteilung der Wirtschaftsprüfungsgesellschaften in einem Joint Audit gleichmäßig erfolgt. Die Ergebnisse der Modellanalyse zeigen, dass im Fall einer gleichmäßigen Arbeitsteilung die Qualität der Abschlussprüfung sinkt. Dementsprechend führen obligatorische Joint Audits zu einem Zielkonflikt, da die Stärkung kleinerer Wirtschaftsprüfungsgesellschaften durch eine umfangreiche Beteiligung an der Prüfungsarbeit in einem Joint Audit zu einer verringerten Prüfungsqualität führt.

Seit 1966 ist es für börsennotierte Unternehmen in Frankreich verpflichtend, ihren Abschluss von mindestens zwei Wirtschaftsprüfungsgesellschaften gemeinsam prüfen zu lassen (Joint Audit).[3] Da der französische Markt für Jahresabschlussprüfungen mit dieser Regelung eine Ausnahme im europäischen Binnenmarkt darstellt, diente er häufig als Datengrundlage empirischer Untersuchungen von Fragestellungen rund um das Thema Joint Audit.

Beitrag 2 nutzt ebenfalls den französischen Prüfungsmarkt börsennotierter Unternehmen als Datengrundlage für die empirische Analyse der Fragestellung, wie sich die Verteilung der Prüfungsarbeit auf die Prüfungsqualität und die Prüfungskosten in einem Joint Audit auswirkt. Die Ergebnisse verschiedener multivariater Regressionen zeigen, dass die Prüfungsqualität steigt und die Prüfungskosten sinken, wenn eine Wirtschaftsprüfungsgesellschaft einen Großteil der Prüfungsarbeit übernimmt. Auch wenn in dieser Analyse nicht zwischen kleinen und großen Wirtschaftsprüfungsgesellschaften unterschieden wird, stützen die Ergebnisse zur Prüfungsqualität die Ergebnisse der modelltheoretischen Analyse aus Beitrag 1, wonach die

[2] Vgl. Europäische Kommission (2010): Grünbuch: Weiteres Vorgehen im Bereich der Abschlussprüfung: Lehren aus der Krise, Brüssel, S. 3-5 sowie S. 18.

[3] Vgl. French Code of Commerce, Artikel L823-2.

Prüfungsqualität steigt, wenn eine Gesellschaft (die größere Gesellschaft) einen Großteil der Prüfungsarbeit übernimmt. Die Ergebnisse der empirischen Analyse bestätigen ebenfalls, dass die Prüfungsqualität sinkt, wenn die Prüfungsarbeit gleichmäßiger verteilt wird. Da Prüfungsqualität nicht direkt zu messen ist, nutzt die empirische Studie das Ausmaß der buchmäßigen Bilanzpolitik als Surrogat für Prüfungsqualität. Wie in den meisten empirischen Studien zur Prüfungsqualität werden dabei Hinweise auf das Vorliegen einer derartigen Bilanzpolitik mittels des Betrages an *diskretionären* Periodenabgrenzungen zu erfassen gesucht. Problematisch ist hierbei die Trennung der diskretionären Periodenabgrenzungen von den normalen Periodenabgrenzungen, weshalb dieses Konzept häufig in der Kritik steht. Um die Robustheit der vorliegenden Ergebnisse zu überprüfen, wird deshalb neben den diskretionären Periodenabgrenzung das Konzept des *Cosmetic Earnings Managements* (CEM) zur Identifizierung von Bilanzpolitik herangezogen. Die Ergebnisse dieser Analyse zeigen, dass ergebniserhöhende Bilanzpolitik bei Joint Audits, in denen die Prüfungsarbeit weniger gleich verteilt ist, seltener vorkommt als bei gleichmäßigerer Verteilung der Prüfungsarbeit. Dieses Ergebnis bestätigt das Ergebnis der Analyse der diskretionären Periodenabgrenzungen.

Neben der Finanzmarktkrise gaben in der Vergangenheit zahlreiche Bilanzskandale Anlass zur Regulierung des Markts für Jahresabschlussprüfungen. So nahm die Anzahl nachträglicher Bilanzkorrekturen börsennotierter Unternehmen seit den 90er Jahren deutlich zu. Bis zum Jahr 2002 war in den USA jede der ehemals Big Five Wirtschaftsprüfungsgesellschaften[4] in mindestens einen Fall von Bilanzfälschung verwickelt.[5] Nach diversen aufsehenerregenden Bilanzskandalen in den Jahren 1999 bis 2002 (u. a. Enron, Tyco, Worldcom, Adelphia und Xerox) reagierte der Kongress der Vereinigten Staaten von Amerika mit der Verabschiedung des *Sarbanes-Oxley Act 2002* (SOX). Ziel dieses Gesetzes war es, das Vertrauen der Anleger durch die Sicherstellung der Richtigkeit und Verlässlichkeit der veröffentlichten Finanzdaten von Unternehmen wieder herzustellen. Neben Regelungen, die den Bereich Corporate Governance, Compliance sowie die Berichterstattungspflichten von Publikumsgesellschaften betrafen, schuf das Gesetz mit dem *Public Company Accounting Oversight Board* (PCAOB) erstmals eine unabhängige Aufsichtsbehörde für Wirtschaftsprüfungsgesellschaften. Der SOX machte es der PCAOB zur Aufgabe, Prüfer börsennotierter Unternehmen zu beaufsichtigen sowie die Erstellung informativer, angemessener und unabhängiger Prüfungsberichte zu si-

[4] Zu den ehemals Big Five Wirtschaftsprüfungsgesellschaften zählten Pricewaterhouse Coopers, KPMG, Deloitte & Touche, Ernst & Young und Arthur Andersen.

[5] Vgl. GAO (United States Government Accountability Office) (2002): Financial Statement Restatements – Trends, Market Impacts, Regulatory Responses, and Remaining Challenges, Report GAO-03-138, Washington sowie GAO (2006): Financial Restatements – Update of Public Company Trends, Market Impacts, and Regulatory Enforcement Activities, Report GAO-06-678, Washington.

chern. Wie das PCAOB diese Aufgabe erledigen sollte, regelte der SOX in insgesamt neun Sektionen.[6] Eine Aufgabe, die der SOX dem PCAOB dabei auftrug, war es, einen Prüfungsstandard zu entwickeln, der die verpflichtende interne Qualitätskontrolle durch einen sog. *Second Partner Review* sicherstellt.[7] Das PCAOB setzte diese Forderung im Jahr 2009 um und veröffentliche den Prüfungsstandard Nr. 7 mit dem Titel *Engagement Quality Review*. Demnach soll bei Abschlussprüfungen börsennotierter Unternehmen eine auftragsbegleitende Qualitätsnachschau durch prozessunabhängige Personen stattfinden, welche die wesentlichen Entscheidungen sowie den Bestätigungsvermerk des Abschlussprüfers im Hinblick auf die Angemessenheit und Unabhängigkeit beurteilen.[8] Fraglich ist, ob ein Engagement Quality Review tatsächlich die Unabhängigkeit von Wirtschaftsprüfungsgesellschaften und damit die Qualität der Berichterstattung erhöhen kann und ob ein derartiger Review für die Wirtschaftsprüfungsgesellschaft einen Nutzen hat oder nur mit Kosten verbunden ist.

Beitrag 3 untersucht in einem analytischen Modell, wie sich das strategische Verhalten von Partnern in Wirtschaftsprüfungsgesellschaften ändert, wenn ein Engagement Quality Review (EQR) durch einen von der Abschlussprüfung unabhängigen Partner durchgeführt wird. Die Ergebnisse zeigen, dass ein EQR die Unabhängigkeit des Bestätigungsvermerks erhöhen und damit das Haftungsrisiko der Prüfungsgesellschaft senken kann. Weiterhin kann ein EQR die Bereitschaft des Prüfungspartners zur Akquisition von für die Gesellschaft profitablen prüfungsnahen Dienstleistungsprojekten erhöhen. In diesem Fall führt ein EQR zu einem Mehrwert für die Wirtschaftsprüfungsgesellschaft. Übersteigt dieser Mehrwert die Kosten, die durch die Arbeitsleistung des Reviewers entstehen, führt der EQR insgesamt zu einem Nutzen für die Wirtschaftsprüfungsgesellschaft, sodass sich diese unter Umständen sogar freiwillig für einen EQR entscheiden sollte. Zusammenfassend lässt sich festhalten, dass sich ein u. a. von dem PCAOB geforderter EQR positiv auf die Unabhängigkeit der Berichterstattung von Wirtschaftsprüfungsgesellschaften auswirken kann und dass Wirtschaftsprüfungsgesellschaften trotz der mit einem EQR verbundenen Kosten von einem EQR profitieren können.

Neben Regulierungen, die den Wirtschaftsprüfungsmarkt betrafen, prägten in den vergangenen Jahren zahlreiche Reformen der Rechnungslegungsstandards das regulatorische Umfeld. Ein Grund für derartige Reformen ist u. a., dass die Kapitalmarktberichterstattung auf Basis

---

6 Vgl. U. S. House of Representatives (2002): Sarbanes-Oxley Act of 2002. Public Law 107–204, Washington D.C., Sec. 101 – 109.

7 Vgl. ebd., Sec. 103.

8 Der International Standard on Auditing 220 (ISA 220) sowie § 24d der Berufssatzung für Wirtschaftsprüfer / vereidigte Buchprüfer in Deutschland enthält ähnliche Regelungen und verpflichtet zu einem Engagement Quality Review (auch als auftragsbezogene Qualitätssicherung bezeichnet) für die Prüfung börsennotierter Unternehmen.

nationaler Rechnungslegungsnormen von fremden Staaten für die Börsenzulassung häufig nicht oder nur bedingt anerkannt wird. Da Unternehmen zunehmend international agieren und Kapital auf internationalen Kapitalmärkten beschaffen, sind sie so häufig gezwungen, neben Abschlüssen nach nationalem Recht zusätzlich solche nach ausländischem Recht, wie US-GAAP, zu erstellen. Um die Doppelarbeit zu ersparen und grenzüberschreitenden Geschäftsverkehr sowie eine effiziente Kapitalbeschaffung zu sichern, erscheint die Bereitstellung vergleichbarer Informationen durch eine vereinheitlichte Rechnungslegung sinnvoll. Im Europäischen Binnenmarkt treibt die Europäische Kommission und das Europäische Parlament die Vereinheitlichung der Rechnungslegung stückweise voran. Durch die Verordnung (EG) Nr. 1606/2002 des Europäischen Parlaments und des Rates vom 19. Juli 2002 betreffend internationale Rechnungslegungsstandards (sog. IAS-Verordnung) wurden so Unternehmen, deren Wertpapiere in einem Mitgliedstaat zum Handel an einem organisierten Markt zugelassen sind (kapitalmarktorientierte Unternehmen), bereits im Jahr 2002 verpflichtet, ihren Konzernabschluss nach IFRS aufzustellen. Darüber hinaus räumte die Verordnung Mitgliedstaaten das Recht ein, zu gestatten oder zu verordnen, dass kapitalmarktorientierte Unternehmen auch ihre Jahresabschlüsse und nicht-kapitalmarktorientierte Unternehmen ihre Jahres- und / oder Konzernabschlüsse nach IFRS aufstellen. Da die bloße Übernahme internationaler Standards für Mitgliedstaaten angesichts historisch gewachsener nationaler gesellschafts- und steuerrechtlicher Gegebenheiten häufig nicht in Betracht kommt,[9] ist die EU durch von den Mitgliedstaaten in nationales Recht umzusetzende Richtlinien bestrebt, eine moderate Annäherung nationaler Bilanzrechte an die IFRS umzusetzen. Die EU-Richtlinie 2006/46/EG des Europäischen Parlamentes und Rates vom 14. Juni 2006 ist hierfür ein Beispiel. Sie diente dem Ziel, Regelungen zu schaffen, die die unionsweite Vergleichbarkeit der Kapitalmarktberichterstattung verbessern und damit grenzüberschreitende Investitionen erleichtern sollen.[10] Mit dem Bilanzrechtsmodernisierungsgesetz (BilMoG) setzte der deutsche Gesetzgeber im Jahr 2009 diese EU-Richtlinie in nationales Recht um. In diesem Zusammenhang erhöhte der deutsche Gesetzgeber auch die monetären Schwellenwerte nach § 267 HGB für mittelgroße und große Kapitalgesellschaften. Durch die Anhebung der Schwellenwerte waren rund 7.000 der ehemals mittelgroßen Kapitalgesellschaften fortan als kleine Kapitalgesellschaften einzustufen und profitierten dadurch von größenabhängigen Erleichterungen. Eine der wesentlichen Erleichterungen war dabei der Wegfall der Pflicht zur Prüfung des handelsrechtlichen Jahresabschlusses (§ 316 Abs. 1 HGB) für die betroffenen Unternehmen.

---

[9] Vgl. Freidank, C.-C. (2004): Reform der Rechnungslegung und Corporate Governance in Deutschland und Europa, Deutscher Universitätsverlag, S. 3.

[10] Vgl. EU-Richtline 2006/46/EG, L224 /3.

Beitrag 4 untersucht die Entwicklung des Prüfungsmarkts für deutsche Kapitalgesellschaften, die durch die Anhebung der monetären Schwellenwerte im Rahmen der BilMoG die größenabhängigen Erleichterungen für kleine Kapitalgesellschaften in Anspruch nehmen konnten und dadurch ab dem Umstellungszeitpunkt nicht mehr prüfungspflichtig waren. Die Ergebnisse der Analyse der Abschlussdaten von 1.223 betroffenen Kapitalgesellschaften zeigen, dass Wirtschaftsprüfungsgesellschaften die Mehrheit der betroffenen Mandate in den Jahren nach der BilMoG-Umstellung nicht verloren. So entschied sich der Großteil der Unternehmen für eine freiwillige Abschlussprüfung oder wurde in den Jahren nach der BilMoG-Umstellung aufgrund von Größenwachstum erneut prüfungspflichtig. Weiterhin analysiert der Beitrag welche Einflussfaktoren betroffene Kapitalgesellschaften dazu veranlassten, sich für eine freiwillige Jahresabschlussprüfung zu entscheiden. Die Ergebnisse zeigen, dass die Wahrscheinlichkeit für eine freiwillige Abschlussprüfung mit steigender Unternehmensgröße und -performance sowie bei Konzernzugehörigkeit zunahm. Mit dem Bilanzrichtlinie-Umsetzungsgesetz (BilRUG) setzte der deutsche Gesetzgeber im Jahr 2015 eine weitere EU-Richtline[11] in nationales Recht um und erhöhte dabei erneut die monetären Schwellenwerte des § 267 HGB. Die Ergebnisse der Analyse der Prüfungsentscheidungen der Unternehmen, die durch die BilMoG-Umstellungen nicht mehr prüfungspflichtig waren, werden am Ende des Beitrages für eine Prognose der Prüfungsmarktauswirkungen durch die erneute Anhebung der Schwellenwerte im Rahmen des BilRUG herangezogen.

Neben der Erhöhung der monetären Schwellenwerte nach § 267 HGB reformierte der deutsche Gesetzgeber im Rahmen des BilMoG auch die Bilanzierung der Rückstellungen für Pensionen und ähnliche Verpflichtungen (nachfolgend als Pensionsrückstellungen bezeichnet). Hintergrund war, dass im internationalen Umfeld vor der Reform insbesondere die umfassenden Möglichkeiten von Über- und Unterdotierungen von Pensionsrückstellungen als „Schwachpunkt der deutschen Rechnungslegung“[12] angesehen wurden. Mit der Umsetzung des BilMoG schaffte der deutsche Gesetzgeber bestehende Bilanzierungswahlrechte ab. Unternehmen, bei denen hierdurch ein Zuführungsbedarf zu den Pensionsrückstellungen entstand, wurde im Rahmen von Übergangsregelungen das Wahlrecht eingeräumt, den Unterschiedsbetrag sofort in voller Höhe oder alternativ über maximal 15 Jahre (zu mindestens 1/15 p.a.) ratierlich zuzuführen (nachfolgend als 1/15-Zuführung bezeichnet). Da eine etwaige

[11] Durch das BilRUG wurde die Richtlinie 2013/34/EU des Europäischen Parlaments und des Rates vom 23.01.2015 in deutsches Recht umgesetzt.

[12] Bundesministerium der Justiz und für Verbraucherschutz (BMJ) (2008): Gesetzentwurf der Bundesregierung eines Gesetzes zur Modernisierung des Bilanzrechts (Bilanzrechtsmodernisierungsgesetz - BilMoG) vom 30.07. 2008, S. 52.

Zuführung zu den Pensionsrückstellungen aufwandswirksam zu erfassen ist, beeinflusst die Bilanzierungsentscheidung Finanz- und Performancekennzahlen der betroffenen Unternehmen über einen Zeitraum von bis zu 15 Jahren.

Beitrag 5 untersucht anhand von Abschlussdaten deutscher großer Kapitalgesellschaften der Geschäftsjahre 2009 und 2010, welche Faktoren Unternehmen, für die sich durch die BilMoG-Umstellung ein Zuführungsbedarf zu den Pensionsrückstellungen ergab, dazu veranlassten, im Umstellungszeitpunkt die 1/15-Zuführung zu wählen. Die Ergebnisse einer multivariaten Regressionsanalyse zeigen, dass Unternehmen die Zuführungsentscheidung gezielt von ihren Finanz- und Performancekennzahlen sowie von dem Erreichen prognostizierter Ergebnisse abhängig machten. In diesem Zusammenhang wählten Unternehmen mit höheren Umstellungseffekten und / oder schlechteren Finanz- und Performancekennzahlen im Umstellungszeitpunkt häufiger eine 1/15-Zuführung zu den Pensionsrückstellungen als Unternehmen mit niedrigeren Umstellungseffekten und / oder besseren Finanz- und Performancekennzahlen. Auch Unternehmen, deren Jahresergebnis negativ von einem aus Vorjahreszahlen prognostizierten Jahresergebnis abwich, entschieden sich häufiger für diese Zuführungsvariante und milderten dadurch im Umstellungszeitpunkt die zusätzliche Verschlechterung ihres Jahresergebnisses im Vergleich zu einer höheren Zuführung. Diese Erkenntnisse stützen die Vermutung, dass Unternehmen bestehende Bilanzierungswahlrechte für eine gezielte Bilanzpolitik nutzen.

Insgesamt liefern die Beiträge folgende Erkenntnisse:

1. Obligatorische Joint Audits scheinen nicht geeignet, um die Marktposition kleinerer Wirtschaftsprüfungsgesellschaften durch eine Gleichverteilung der Prüfungsarbeit zu stärken, wenn gleichzeitig eine hohe Prüfungsqualität erzielt werden soll. So steigt die Prüfungsqualität in einem Joint Audit, wenn eine Wirtschaftsprüfungsgesellschaft einen Großteil der Prüfungsarbeit übernimmt. Dieses führt gleichzeitig zu sinkenden Prüfungskosten.

2. Eine auftragsbezogene interne Qualitätskontrolle durch einen nicht an der Prüfung beteiligten Partner kann die Unabhängigkeit des Bestätigungsvermerks erhöhen. Zudem kann die auftragsbezogene interne Qualitätskontrolle die Anreize des Prüfungspartners zur Akquisition prüfungsnaher Dienstleistungsprojekte erhöhen, wodurch die Qualitätskontrolle trotz

der damit verbundenen Kosten zu einem Mehrwert für die Wirtschaftsprüfungsgesellschaft führen kann.

3. Obwohl die Prüfungspflicht mit der BilMoG-Umstellung durch die Erhöhung der monetären Schwellenwerte des § 267 HGB für zahlreiche ehemals mittelgroße Unternehmen entfiel, entschied sich der Großteil dieser Unternehmen für eine freiwillige Abschlussprüfung oder wurde in den Jahren nach der BilMoG-Umstellung aufgrund von Größenwachstum erneut prüfungspflichtig. Die Wahrscheinlichkeit für eine freiwillige Abschlussprüfung nahm mit steigender Unternehmensgröße und -performance sowie bei Konzernzugehörigkeit zu.

4. Abschlussersteller nutzen Bilanzierungswahlrechte für eine gezielte Bilanzpolitik. So nutzten Unternehmen das im Rahmen des BilMoG geschaffene Übergangswahlrechts zur Bilanzierung von Pensionsrückstellungen systematisch zur Steuerung von Finanz- und Performancekennzahlen sowie zur Glättung von Ergebnissen.

Beitrag 1

Titel

Audit Quality and Work Allocation in Joint Audit Settings

Prüfungsqualität und Verteilung der Prüfungsarbeit in Joint Audits

Koautor

Dr. Roland Zieseniß

Audit Quality and Work Allocation in Joint Audit Settings

ABSTRACT

Even before the recent discussions on the European Commission's Green Paper of 2010, obligatory joint audits of different sized audit firms have been a frequently discussed measure to strengthen smaller audit firms' market position. As joint audits of different sized audit firms seem to reduce audit quality, the question of the optimal joint audit design arises: One the one hand, such an optimal design has to ensure a sufficient audit involvement of smaller audit firms; on the other hand, the audit quality loss should be as small as possible. This study develops a model theoretic approach analyzing the behavior of audit firms in joint audit settings to determine the optimal design. We show that the way audit work is allocated as well as the competence exercised in allocating potential liability payments influences the audit quality and the audit involvement of smaller audit firms. We ascertain that there is no joint audit design that is able to optimally achieve both the objectives of a high audit quality and strengthening the position of smaller audit firms.

1 Introduction

Against the background of the recent global financial crisis, the European Commission (EC) released a Green Paper for the European audit market in 2010 where the suitability and adequacy of the current legislative framework was challenged and where several regulatory proposals were brought into discussion. The objective was to enhance the audit function and thereby to increase financial stability and market confidence. The proposals essentially focused on raising audit firm independence, reducing audit market concentration, and enhancing audit quality. Among other measures, the implementation of mandatory joint audits was proposed for discussion. Joint audits mean that at least two independent audit firms are appointed for an annual audit whereby they share their tasks to provide an audit opinion and to sign an audit report for which they are both liable. Advantages are seen in the potential reinforcement of the auditor's independence[1] and in strengthening the market position of the non-Big Four audit firms due to the participation in joint audits. The measure is assumed to contribute to higher competition in the audit market and to diminish the potential systemic relevance of particular audit firms.[2] Furthermore, it is often argued that two or more audit firms produce a higher audit quality because of the reciprocal control.[3] The main objection is seen in the audit costs, which may be higher than for a single audit case.

Joint audits are not unusual; for example, in France, they are mandatory for all companies preparing consolidated financial statements.[4] In Denmark, listed and state-owned companies also had to be audited by at least two audit firms until the new Danish Financial Statement Act[5] was adopted abolishing the obligation with effect for the financial year beginning on 1 January 2005. In many other countries joint audits may be voluntarily chosen or are mandatory for special groups like financial institutions[6].

Previous joint audit research analyzed mainly empirically the impact of joint audits on market concentration[7] as well as audit cost and audit quality consequences of joint audits in comparison with single audits. The results of the studies analyzing the impact of joint audits on the audit costs are mixed; for example, Zerni, Haapamäki, Järvinen and Niemi (2012), André, Broye, Pong and Schatt (2016), Holm and Thinggaard (2014) and

1 See Piot/Janin (2007).
2 See European Commission (2010).
3 See, for example, Piot (2007) or Francis/Richard/Vanstraelen (2009).
4 French Code of Commerce, Article L 823-2.
5 Danish Act no. 448 of 7 June 2001.
6 For example, in Algeria, Canada, Morocco, Tunisia, and Saudi Arabia joint audits are mandatory for listed banks.
7 See, for example, Ballas/Fafaliou (2008); Broye (2007) or Piot (2007).

Lesage, Ratzinger-Sakel and Kettunen (2012) found a positive impact of joint audits on the audit fees whereas Ittonen and Peni (2012) as well as Thinggaard and Kiertzner (2008), for example, found the exact opposite. The results of previous empirical research on the impact of joint audits on the audit quality are also mixed; Zerni, Kallunki and Nilsson (2010) and Zerni, Haapamäki, Järvinen and Niemi (2012) found a positive impact of joint audits on the audit quality whereas Lesage et al. (2012) and Holm and Thinggaard (2010), for example, could not confirm these results. Deng, Lu, Simunic and Ye (2014) also investigated the impact of joint audits on the audit quality and audit costs but, in contrast to the previously mentioned studies, they used a model-theoretic approach. They showed that the impact of joint audits on the audit costs depend on the size and technology efficiency of the audit firms as well as on the allocation of misstatement costs between the audit firms. Furthermore they found that in a joint audit consisting of one big and one small audit firm the audit evidence precision is smaller than in a single audit by one big audit firm because of a free-riding problem in the joint audit.[8] For this reason, making joint audits of different sized audit firms obligatory may not, as often assumed, enhance audit quality.

Nevertheless, besides the argument of enhancing audit quality there is another argument that may justify the demand for obligatory joint audits: The main reason for the EC's proposal of making them obligatory was to strengthen the market position of smaller audit firms in the audit market for large clients. The idea is that due to the involvement of smaller audit firms they may benefit from knowledge spillovers reducing the system relevance of the Big Four audit firms. To ensure that these knowledge spillovers can take place, an important precondition is that smaller audit firms are involved in the audits in an appropriate way. Otherwise; for example if they are just involved in a minority share of the overall audit, the knowledge spillover will not be sufficient to enable smaller audit firms being an adequate alternative for large clients choosing an audit firm. So, if a regulator decides for obligatory joint audits to strengthen the market position of smaller audit firms he has to ensure that they are much involved in the audits. In addition, he has to take into account that the loss of audit quality due to the involvement of smaller audit firms[9] should be as small as possible.

[8] See Deng et al. (2014), p. 1043.
[9] See Deng et al. (2014), p. 1043.

This paper deals with the question of the optimal regulatory environment of joint audits, which ensures a sufficient audit involvement of smaller audit firms on the one hand, and, on the other hand, an audit quality that is as high as possible.

In an analytical model we analyze the strategic behavior of the audit firms in several joint audit designs that differ in the way they allocate work and liability payments. We assume a joint audit constellation of one Big Four and one mid-tier audit firm, with both having the capacity for the joint audit. The audit firms are interested in minimizing audit costs, which consist of effort costs and expected misstatement costs. We measure audit quality as the level of audit assurance, which we presume is directly generated from audit effort.[10] Furthermore, we assume that a balanced audit work allocation is optimal for strengthening the position of smaller audit firms as in this case they are involved comprehensively in the audit but can also benefit from knowledge spillovers.

We found out that there is no joint audit design that is able to optimally achieve both the objectives of a high audit quality and an equal allocation of audit work. If a high audit quality is the main objective, the audit firms should determine their audit efforts cooperatively. This could be achieved if the audit firms could submit a joint proposal. In this case, the audit firms may have the incentive to choose audit efforts that minimize the total audit costs to be competitive. However, a cooperative decision of the audit firms does not lead to a very balanced allocation of audit work, which is contrary to the objective of strengthening the position of smaller audit firms. Against the background of this objective, a non-cooperative effort decision in combination with allocating potential liability payments optimally is more expedient but leads to a lower audit quality. These main results illustrate a conflict of objectives: In looking for the optimal joint audit design one has to decide which of the objectives, a high audit quality or a balanced allocation of audit work, is more relevant. There is no joint audit design that optimally satisfies both objectives.

Our research makes the following contributions. First, we extend the existing theoretical literature by identifying new strategic interactions in an audit game. Second, to the best of our knowledge, there is no existing analytical study analyzing the optimal design of joint audits against the background of a high audit quality and an appropriate audit involvement of both audit firms. The results may help regulators who stipulate joint audit settings to achieve their objectives. Furthermore, our study gives a greater understand-

[10] See Knechel/Rouse/Schelleman (2009), p. 1612.

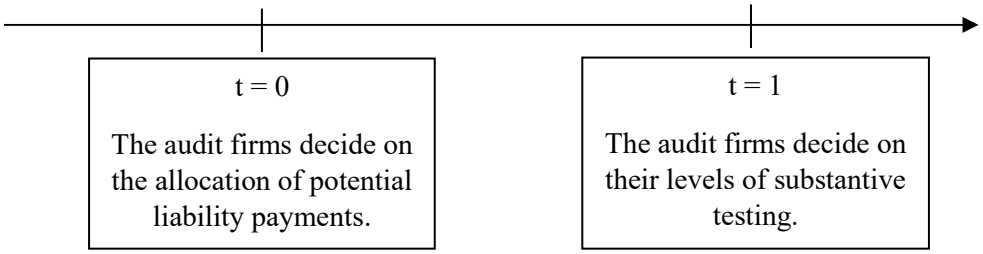
ing of the mixed evidence on the quality consequences of joint audits that is provided by the existing empirical research.[11]

Our paper is structured as follows. Section 2 provides the structure and elements of the analytical model under several possible joint audit designs. Section 3 presents an overview of the results and identifies recommendations for a regulator to achieve its objectives. Section 4 presents our conclusions.

2 The Model

In our model we analyze various joint audit designs with respect to their audit quality consequences and the allocation of audit work between the audit firms. We distinguish therein between several cases that differ in their approach to allocating audit work and potential liability payments. In all cases we consider a setting where two independent audit firms (audit firm 1 and audit firm 2) are appointed to audit an undisclosed financial report. We assume that audit evidence is directly related to audit effort; it follows that increased effort enhances the overall level of assurance[12], thereby raising the level of audit quality and, as a consequence, reducing the likelihood of liability cases. As the liability one audit firm has to bear for undetected material errors may influence its own level of audit effort we assume that the allocation of potential liability payments is determined before the audit firms decide on their levels of substantive testing. The sequence of events is summarized in *Figure 1*.

Figure 1: Timeline



We assume that the levels of substantive testing are unobservable and, therefore, that an optimal level cannot be enforced through a regulation. Instead, we presume that the audit firms decide on their levels of substantive testing on their own by minimizing audit

[11] For an overview of the mixed empirical results, see Ratzinger-Sakel/Audousset-Coulier/Kettunen/Lesage (2013).

[12] See Knechel et al. (2009), p. 1612.

costs. Accordingly, the audit costs of each audit firm consist of several components: First, there are direct effort costs, which are represented by:

$$k \cdot a_j \tag{1}$$

where $i, j \in 1,2$ and $i \neq j$.

Thus, k reflects the marginal costs per unit of audit effort a_j. In addition to the direct audit costs, the audit costs of each audit firm consist of the expected costs of liability payments and the reputational damage that arise in the case of undetected material errors. The probability of undetected material errors is obtained by multiplying the inherent risk of material errors p with the probability that both audit firms do not detect them (detection risk). We presume that the inherent risk p does not reflect a strategic behavior in the meaning of fraud. Instead, it reflects the inherent risk of faults resulting through gaps in the client's internal control system or through human errors occurring in the preparation of the financial statements. We presume that the detection risk of each audit firm is represented by the convex function of its audit effort $e^{-\mu a_j}$ assuming diminishing marginal detection probabilities[13]. $\mu \geq 0$ represents the effectiveness of substantive testing in identifying material errors. Consequently, in the joint audit the audit risk is determined by $p \cdot e^{-\mu a_1} \cdot e^{-\mu a_2}$ and, presuming remaining errors are definitely disclosed by an enforcement procedure, the joint audit firms have to make liability payments in the amount of $M > 0$ for that risk. M is divided between the audit firms whereby audit firm 1 takes a share of $s_1 = \alpha$ and audit firm 2 takes the remaining share of $s_2 = 1 - \alpha$ with $0 \leq \alpha \leq 1$. In addition, we assume that the audit firms face *external* reputational damage $R_j^{ex} > 0$ whenever the audited financial statements contain material errors. This external reputational damage can be interpreted as a loss of future quasi rents[14] as in the case of undetected material errors (prospective) clients may conclude the existence of a low audit quality and hire another audit firm. Thus, the audit firms' expected costs of liability payments and reputational damage that arise in the case of undetected material errors in the audited financial statements can be summarized as follows:

$$p \cdot e^{-\mu a_j} \cdot e^{-\mu a_i} \cdot (s_j \cdot M + R_j^{ex}) \tag{2}$$

where $i, j \in 1,2$ and $i \neq j$.

[13] Detection functions of this type are commonly used in the audit literature; for example, by Finley (1994), Newman/Park/Smith (1998); Smith/Tiras/Vichitlekarn (2000).

[14] For the *quasi rent theory* see DeAngelo (1981a,b).

In a joint audit, the audit firms have to share the audit tasks. After each audit firm has finished its part of the audit, cross reviews and mutual quality controls follow as each of the audit firms has to obtain enough audit evidence to provide a basis for the overall opinion.[15] If one of the audit firms takes the view that the review of the other's audit work does not obtain reasonable assurance about whether the financial statements as a whole are free from material misstatements, it has to obtain further audit evidence.[16] That is why besides the case where both audit firms overlook material errors it is possible that only one of the two audit firms fail to detect an error that is subsequently detected by the audit partner. Also this unilateral non-detection of material errors does not lead to a liability case and therefore does not result in *external* reputational damages, we assume that there are unilateral reputational damages for the non-detecting audit firm: On the one hand, the audited client may become aware of the fault resulting in dissatisfaction and enhancing the probability that he hires another audit firm for future audits. On the other hand, the detecting audit partner's view of the lapse in diligence may lead to a loss of confidence and reduce its willingness to cooperate in further audits. Therefore, in the case of a unilateral non-detection the non-detecting audit firm faces a loss of reputational damages in the way of future quasi rents. The detecting audit firm is not affected. We call these reputational damages *internal* reputational damages; it is represented by $R_j^{in} > 0$ and occurs with the probability of a unilateral non-detection; that is $e^{-\mu a_j} \cdot (1 - e^{-\mu a_i})$. Thus, the third component of the audit firms' audit costs is given by the expected internal reputational damage, which is as follows:

$$p \cdot e^{-\mu a_j} \cdot (1 - e^{-\mu a_i}) \cdot R_j^{in} \tag{3}$$

where $i, j \in 1,2$ and $i \neq j$.

Taking into account the three components of the audit costs of each audit firm, being the direct audit costs (1), the expected costs of liability payments and external reputational damage (2), and the expected costs of internal reputational damage (3), the individual cost functions can be expressed as follows:

$$C_j = \underbrace{p \cdot (e^{-\mu a_j} \cdot (1 - e^{-\mu a_i}) \cdot R_j^{in} + e^{-\mu a_j} \cdot e^{-\mu a_i} \cdot (s_j \cdot M + R_j^{ex}))}_{\text{Expected reputational damages and liability payments}} + \underbrace{k \cdot a_j}_{\text{Effort costs}} \tag{4}$$

where $i, j \in 1,2$ and $i \neq j$.

[15] See Ratzinger-Sakel et al. (2013), p. 176.
[16] See, for example, IDW (1999), p. 709.

Following the lead of the EC in its Green Paper of 2010, we analyze the optimal design of joint audits consisting of different sized audit firms. We assume a situation where one Big Four audit firm (audit firm 1) builds a joint audit with a mid-tier audit firm (audit firm 2). We assume that both audit firms have enough capacity and knowledge to carry out the joint audit, which is why the per-unit costs of effort ($k > 0$) are assumed to be equal for both audit firms. As the larger audit firm has a stronger public presence, it is at greater risk of losing (potential) clients in a liability case due to external reputational damage ($R_1^{ex} > R_2^{ex}$). Furthermore, we assume that the potential internal reputational damage to an audit firm is smaller than the external damage ($R_j^D = R_j^{ex} - R_j^{in} > 0$) since it is only the external damage that comes with a liability case and this damage is widely recognized and causes a public stir.

To analyze the audit quality consequences of several joint audit designs we assume that the audit quality equals the probability of detecting all material errors during the audit. Therefore, we use a detection function to measure audit quality, which is as follows:

$$d(a_1, a_2) = 1 - \mathrm{e}^{-\mu a_1} \cdot \mathrm{e}^{-\mu a_2} \tag{5}$$

In addition to enhancing the audit quality, a further often-mentioned objective is to strengthen the market position of smaller audit firms due to their involvement in joint audits. A crucial prerequisite for the effectiveness of the measure is not only that smaller audit firms are appointed but also that they are fully involved in the audit work. For this reason we investigate how the joint audit firms share their audit work in several joint audit designs. We presume that a balanced audit work allocation is optimal to strengthen the position of smaller audit firms, as in this case they are involved comprehensively in the audit but can also benefit from knowledge spillovers. To measure the equality of work allocation in several joint audit designs we use the difference of audit efforts, which is as follows:

$$\Delta = a_1 - a_2 \tag{6}$$

In the following, we analyze the audit quality consequences as well as the equality of work allocation of several joint audit designs.

2.1 First Case: Non-Cooperative Effort Decision

In the first case we investigate the situation where two independent audit firms are appointed for an annual audit. Choosing its audit effort, each of the audit firms is interested in minimizing its individual audit costs. We analyze below the resulting audit quality consequences and the equality of work allocation whereby we distinguish several settings that differ in the way potential liability payments are allocated.

2.1.1 Cooperative Decision on the Liability Allocation by the Audit Firms

In the first setting we assume that there is no regulation concerning the allocation of potential liability payments that appear in the case of a misstatement. Instead, we assume that the audit firms choose the allocation on their own, what means that they conclude a contract that regulates the liability allocation in the case of a misstatement. As the audit costs are one of the main decision-making factors of the client when choosing auditors, we assume that the audit firms decide on the liability allocation cooperatively by minimizing the total audit costs. After determining the liability allocation the audit firms decide on their levels of substantive testing. We presume that in the first setting both audit firms are interested in minimizing their individual audit costs when choosing audit efforts. Using backward induction we deduce the optimal strategies of the audit firms beginning with the derivation of the equilibrium audit efforts. In the equilibrium, each audit firm chooses its cost-minimizing audit effort, taking the effort level choice of the audit partner as a given. The strategies of the audit firms given the audit partner's audit effort are determined from the following:[17]

$$\min_{a_j} \quad C_j(a_j, a_i) = \underbrace{p \cdot \mathrm{e}^{-\mu a_j}\left(R_j^{in} + \mathrm{e}^{-\mu a_i} \cdot (s_j \cdot M + R_j^D)\right)}_{\text{Expected reputational damages and liability payments}} + \underbrace{k \cdot a_j}_{\text{Effort costs}} \tag{7}$$

where $i, j \in 1,2$ and $i \neq j$.

The resulting cost minimizing equilibrium audit efforts $(a_{1,nc}^*, a_{2,nc}^*)$ are summarized in Lemma 1.

[17] The objective function (7) equals the cost function (4) whereby $R_j^{ex} - R_j^{in}$ is replaced by R_j^D.

LEMMA 1: *If the joint audit firms decide on their levels of substantive testing non-cooperatively they choose:*

$$a^*_{j,nc}(\alpha, M) = \frac{1}{\mu} \cdot Ln\,[\frac{g_1 + g_2 + \sqrt{4 \cdot k \cdot (M \cdot s_i + R_i^D) \cdot g_2 + (g_1 + g_2)^2}}{2 \cdot k \cdot R_i^{in}}] \qquad (8)$$

with $g_1 = k \cdot (M \cdot (1 - 2 \cdot s_j) - R_i^D + R_j^D)$

$g_2 = p \cdot \mu \cdot R_j^{in} \cdot R_i^{in}$

where $i, j \in 1,2$ *and* $i \neq j$.

Proof: See Appendix.

To ensure that the equilibrium audit efforts are non-negative, we make the technical assumption that $p \cdot R_j^{in} > 2k$. This implies that the costs per unit of effort k must not be too large in comparison to the inherent risk of internal reputational damage to each audit firm ($p \cdot R_j^{in}$). As the internal reputational damage represents the loss of future quasi rents in the case of a unilateral non-detection of material errors and as it should be much greater than the per-unit costs of effort, the technical assumption is not very strong.

The following step in the backward induction procedure is to calculate how the audit firms share the liability payments in the case of a misstatement. As described above, we assume in the setting being considered that the appointed audit firms carry out the allocation of expected liabilities cooperatively by minimizing the total audit costs $C_T = C_1 + C_2$.

The resulting first-order condition is:

$$\frac{d}{d\alpha} C_T(\alpha, a^*_{1,nc}(\alpha), a^*_{2,nc}(\alpha)) \overset{!}{=} 0 \qquad (9)$$

Inserting the equilibrium audit efforts (8) and solving the first-order condition according to the optimal liability allocation reveals:

$$\alpha^* = \frac{1}{2} + \frac{R_2^D - R_1^D}{2M} \quad \text{and} \quad 1 - \alpha^* = \frac{1}{2} - \frac{R_2^D - R_1^D}{2M} \qquad (10)$$

Inserting the optimal liability allocation (10) in the second order derivation $\frac{d^2}{d\alpha^2} C_T$ leads to a positive term; therefore, the liability allocation (10) is a minimum of the total cost

function C_T. Equation (10) shows that the cost-optimal allocation of liabilities depends on the amount of potential liabilities (M) as well as on the gap of the audit firms' differences in reputational damage $(R_2^D - R_1^D)$. We expect the latter to be negative ($R_2^D - R_1^D < 0$) as the external reputational damage of a Big Four audit firm should be much larger than that of mid-tier audit firms whereas the internal reputational damage should vary to a lesser extent. Thus, (10) shows that in the equilibrium the larger audit firm bears a smaller part of the liability than the smaller audit firm ($\alpha^* < 0.5,\ 1-\alpha^* > 0.5$). Raising the liability (M) reduces the impact of the differences in size of the audit firms. For a very high liability (M), the allocation approaches an equal allocation $(\alpha^* = 1-\alpha^* = 0.5)$. As α is defined to be between zero and one, the optimal allocation is a boundary point and, thus, one audit firm bears the entire liability if $\frac{R_2^D - R_1^D}{2M} \geq \frac{1}{2}$ or if $\frac{R_2^D - R_1^D}{2M} \leq -\frac{1}{2}$.

As we have determined the equilibrium audit efforts in Lemma 1 and the equilibrium allocation of audit work (10), we can analyze the audit quality and the allocation of audit work of the first setting in the following. The results are summarized in Proposition 1.

PROPOSITION 1: *If the audit firms decide on their levels of substantive testing non-cooperatively, a cooperative liability allocation by the audit firms leads to the minimum detection probability and, therefore, to the minimum audit quality:*

$$\alpha^* = \arg\min_{\alpha} \ \{d(a_{1,nc}^*(\alpha), a_{2,nc}^*(\alpha))\} \tag{11}$$

A cooperative decision on the liability allocation by the audit firms leads to the following allocation of audit work:

$$a_{1,nc}^*(\alpha^*) - a_{2,nc}^*(\alpha^*) \ = \ \frac{1}{\mu} \cdot Ln\,[\frac{R_1^{in}}{R_2^{in}}] \ > \ 0 \tag{12}$$

Proof: See Appendix.

The reason for the resulting minimum audit quality lies in the following free-rider problem. When deciding on their audit efforts non-cooperatively, each audit firm assumes that the other audit firm will find a potential material error, thereby reducing the probability of a liability case. As a consequence, each audit firm tries to save audit costs by reducing its level of substantive testing and assumes to take advantage of the other audit

firm's high level of substantive testing. Determining the allocation of liability payments cooperatively by the audit firms partly compensates their differences in potential reputational damage. Therefore, the audit firms' misstatement costs converge, which leads to the maximum utilization of the free-riding possibilities. As we assume that the potential internal reputational damage of the larger audit firm (R_1^{in}) is larger than that of the smaller audit firm (R_2^{in}), the difference in equilibrium audit efforts (12) is positive and the larger audit firm works more than the smaller audit firm. The reason is that the larger audit firm faces greater reputational damage in the case of undetected material errors. This positive effect on the larger audit firm's audit effort is not overcompensated by the negative effect of the liability allocation ($\alpha^* < 1-\alpha^*$). The comparative statics show that the difference in equilibrium audit efforts increases if the internal reputational damage of the larger audit firm (R_1^{in}) increases in relation to that of the smaller audit firm (R_2^{in}).

2.1.2 Decision on the Liability Allocation by a Regulator

Financial statement stakeholders benefit from a high audit quality and it is seen as an important requirement for market confidence. Therefore, a regulator may be interested in controlling for audit quality. As he cannot observe the level of substantive testing his remaining options to influence the audit quality are to determine liability payments (M) and their allocation between the audit firms ($\alpha,\ 1-\alpha$) optimally. In looking for the optimal amount of liability payments (M) a regulator has to consider two opposing effects influencing economic welfare: On the one hand, enhancing liability payments leads to increasing levels of substantive testing and therefore enhances audit quality. On the other hand, the resulting additional audit costs will be recharged to the companies that are audited, which may lead to an important financial burden for them. Eventually, the end consumer will carry the additional costs. In our model we assume that the optimal amount of liability payments is exogenous, presuming that the regulator has already decided on it by balancing out the opposing effects. The remaining regulative objective is the allocation of liability payments ($\alpha,\ 1-\alpha$). Presuming that a regulator is interested in maximizing audit quality, its strategy is determined from:

$$\max_{\alpha\in[0,1]} d(\alpha) = 1 - \mathrm{e}^{-\mu a_{1,nc}^*(\alpha)} \cdot \mathrm{e}^{-\mu a_{2,nc}^*(\alpha)} \tag{13}$$

As the detection function (13) is convex in α the only extreme point in the definition area is a minimum, which is determined in the appendix (see (27)). Therefore, the liabil-

ity allocation that maximizes the detection function lies in a boundary point. The boundary points are determined through the definition area and are $\alpha = 0$ and $\alpha = 1$. A comparison of the detection probabilities at the boundary points shows that the following allocation of liability payments maximizes the detection function and, therefore, leads to the highest audit quality:

$$\alpha^{+} = \begin{cases} 1 & \text{if} \quad R_1^D > R_2^D \\ 1 \vee 0 & \text{if} \quad R_1^D = R_2^D \\ 0 & \text{if} \quad R_1^D < R_2^D \end{cases} \tag{14}$$

As described above, we assume that the Big Four audit firm's external reputational damage should be much larger than that of mid-tier audit firms whereas the internal reputational damage should vary to a lesser extent. Therefore, the gap in the differences of reputational damage should be positive ($R_1^D - R_2^D > 0$).

PROPOSITION 2: *In the case where the audit firms decide on their levels of substantive testing non-cooperatively, the audit quality is at its maximum if the larger audit firm bears the entire liability ($\alpha^{+} = 1$). Such a quality optimal liability allocation leads to a reduced equality of work allocation in comparison to the case of a cooperative liability allocation by the audit firms.*

Proof: See Appendix.

Determining that the larger audit firm should bear the entire liability leads to high misstatement costs for the larger audit firm, which reduces its incentives for free riding in comparison to the case of sharing liability payments. In contrast to this, the incentives for free riding by the smaller audit firm increase because of its reduced level of misstatement costs. As the latter effect is less strong than the first-mentioned, determining that the larger audit firm should bear the entire liability leads to the highest total audit effort and therefore maximizes the audit quality in non-cooperative effort decision settings. The drawback of such a quality optimal regulation ($\alpha^{+} = 1$) in non-cooperative effort decision settings is that it leads to a reduced level of equality of work allocation in comparison to the case of a cooperative decision on the allocation of liability payments by the audit firms. The reason is that the larger audit firm faces greater adverse consequences if material errors are revealed than in the first mentioned case (2.1.1). Therefore, the larger audit firm enhances its level of substantive testing whereas the smaller

firm anticipates the increased engagement of the larger audit firm and, as a consequence, reduces its own level of substantive testing. Thus, the larger audit firm enhances its audit effort further and, as the larger audit firm has already worked more than its smaller audit partner, the gap between the audit efforts increases.

Determining that the smaller audit firm should bear the entire liability ($\alpha = 0$) also leads to a higher audit quality than in the case where the audit firms decide on the liability allocation cooperatively on their own. Additionally, determining that the smaller audit firm should bear the entire liability leads to a more equal allocation of work. The reason for this is that in the case where the audit firms decide on the work allocation cooperatively on their own or in the case where the larger audit firm bears the entire liability, the larger audit firm's audit effort is greater than that of the smaller audit firm. As $\frac{\partial a_{2,nc}^{*}}{\partial \alpha}$ is negative, the smaller audit firm enhances its level of substantive testing because it has been determined that it should bear the entire liability. In contrast to this, the larger audit firm reduces its audit effort as $\frac{\partial a_{1,nc}^{*}}{\partial \alpha}$ and $\frac{\partial a_1}{\partial a_2}$ are positive. Therefore, the allocation of audit work is more equal than in the abovementioned cases. A necessary prerequisite for this effect is that the liability payments (M) are not too large. The reason for this is that if the liability payments are very high, the smaller audit firm works more than its larger audit partner because it bears the entire amount of the liability payments. The level of liability payments where the audit efforts of the audit firms are equal ($a_{1,nc}^{*} = a_{2,nc}^{*}$) in the case where the smaller audit firm bears the entire amount ($\alpha = 0$) is determined from:

$$M = \frac{\sqrt{p\mu}(\sqrt{p\mu}R_1^{in} + \sqrt{p\mu R_1^{in2} + 4kR_1^{D}})(R_1^{in} - R_2^{in}) + 2k(R_1^{D} - R_2^{D})}{2k} \qquad (15)$$

If the liability payments exceed this level the smaller audit firm works more than its larger audit partner. When the liability payments are too high, the allocation of work can be more unequal than in the case where the larger audit firm bears the entire liability payments.

2.2 Second Case: Cooperative Effort Decision

Apart from the case where each joint audit firm decides on its level of substantive testing individually and non-cooperatively, it is also conceivable that they could make a cooperative decision. This could be the case if two audit firms compete for the audit of the financial statements of a prospective client but they have competitors. To prevent

their competitors from undercutting the audit fee und thus capturing the mandate, the audit firms have an incentive to offer the smallest fee and to thereby minimize the total audit costs by determining their audit efforts cooperatively. The objective function is

$$\min_{a_1,\, a_2>0} \; C_T = C_1 + C_2 \tag{16}$$

The resulting equilibrium audit efforts ($a^*_{1,c}$, $a^*_{2,c}$) are summarized in Lemma 2.

LEMMA 2: *If the joint audit firms decide on their levels of substantive testing cooperatively they choose:*

$$a^*_{j,c} = \frac{1}{\mu} \cdot Ln\,[\frac{1}{2k}(p\mu R^{in}_j + \frac{\sqrt{p\mu R^{in}_j (p\mu R^{in}_j R^{in}_i + 4k(M + R^D_i + R^D_j))}}{\sqrt{R^{in}_i}})] \tag{17}$$

where $i, j \in 1,2$ *and* $i \neq j$.

Proof: See Appendix.

Lemma 2 shows that the equilibrium audit efforts are independent from the allocation of potential liability payments (α,$1-\alpha$). The analysis of the resulting audit quality and allocation of audit work is summarized in Proposition 3.

PROPOSITION 3: *The audit quality is always higher if the audit firms decide on their levels of substantive testing cooperatively instead of making a non-cooperative decision:*

$$d(a^*_{1,c}, a^*_{2,c}) \;>\; d(a^*_{1,nc}, a^*_{2,nc}) \tag{18}$$

This result is independent from the allocation of liability payments.

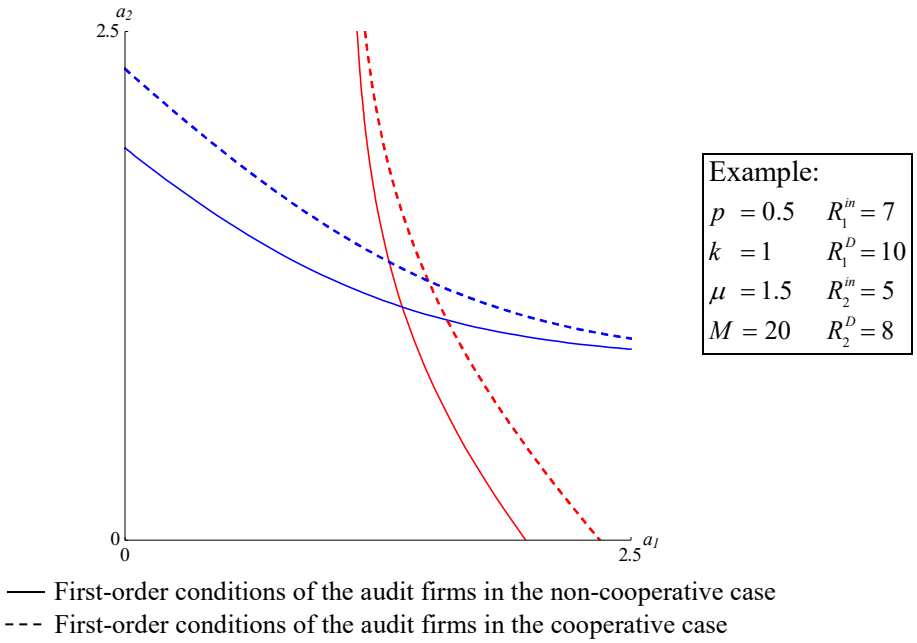
The allocation of audit work in the cooperative case equals the allocation that results if the audit firms decide on their audit efforts non-cooperatively and on the allocation of liability payments cooperatively. It is

$$a^*_{1,c} - a^*_{2,c} \;=\; \frac{1}{\mu} \cdot Ln\,[\frac{R^{in}_1}{R^{in}_2}] \;>\; 0 \tag{19}$$

Proof: See Appendix.

Figure 2 illustrates exemplary first-order condition functions for the two joint audit firms and compares the cases of a cooperative and a non-cooperative effort decision. The intersections of the first-order condition functions determine the equilibrium audit efforts in the two cases. It is obvious that both audit firms enhance their audit efforts in the case of cooperation and a higher audit quality is achieved thereby than in the non-cooperative case, as described in Proposition 3. This is because both audit firms have the same objective of minimizing total audit costs. There are no incentives for free riding, which makes the audit firms enhance their audit efforts.

Figure 2: Equilibrium Audit Efforts – Cooperative vs. Non-Cooperative Case



As we assume that larger audit firms face greater internal reputational damage than smaller ones ($R_1^{in} > R_2^{in}$), the difference in the equilibrium audit efforts is greater than zero and the larger joint audit firm carries a larger amount of audit work than its smaller audit partner. This is because the larger audit firm faces greater reputational damage if material errors are revealed, which induces a greater amount of audit effort by them. A comparison of the results shows that the equality of work allocation in the cooperative case equals the equality of the work allocation in the case where the audit firms make their decisions on their audit efforts non-cooperatively and on the allocation of potential liability payments cooperatively (see(12)).

3 Summary of Results

Looking for a favorable design of joint audits we come to the following results: As the levels of substantive testing cannot be observed, the remaining options to influence the audit quality and the allocation of audit work are to determine liability payments and their allocation between the audit firms optimally and to support joint audit designs that are favorable for reaching the objectives. In determining the optimal amount of liability payments two opposing effects influencing economic welfare have to be considered: On the one hand, enhancing liability payments leads to increasing levels of substantive testing and therefore enhances the audit quality. On the other hand, the resulting additional audit costs will be recharged to the companies that are audited, which may lead to an important financial burden for them. Eventually, the end consumer will carry the resulting additional costs. When making decisions on the optimal amount of liability payments, these effects have to be balanced out. Besides determining the optimal liability amount also its allocation between the audit firms influences the audit quality and the allocation of audit work. Analyzing joint audit settings that differ in the way audit work and liability payments are allocated shows, that there is no joint audit setting that is optimal for reaching both objectives of a high audit quality and strengthening the position of smaller audit firms. If a high audit quality is the main objective one should make the audit firms to choose their levels of substantive testing cooperatively. This result is surprising as cooperative arrangements between competitors are normally expected to have negative effects due to the absence of competition. However, in this model a mutual agreement and cooperative decision lead to a reduction of the following free-riding problem: If the joint audit partners decide on their audit efforts non-cooperatively, each audit partner hopes and assumes that the other audit firm will find a potential material error, thereby reducing the probability of a liability case. For this reason, each audit firm reduces its own level of substantive testing, thereby leading to a smaller amount of total effort and consequently to a reduced level of audit quality. In contrast to this, if the audit firms cooperate they can no longer assume that the audit partner will balance out their own reduced level of audit effort. Therefore, both audit firms increase their levels of substantive testing, which results in a higher audit quality in the case of cooperation. A cooperative decision of the audit firms may be achieved by regulating that a team of two audit firms has to submit a proposal for the joint audit of the financial statements of a prospective client. In this case the team of audit firms competes with other audit firm teams. As the clients' main decision making factor is usually the audit cost, the competing audit teams will choose levels of substantive testing that minimize the total audit

costs. The disadvantage of a cooperative decision is that the work allocation in the joint audit is not very balanced. As the effort decision in the cooperative case is independent from the liability allocation between the audit firms, this problem cannot be prevented or mitigated by regulating the liability allocation optimally. If it is not sure that the audit firms choose their audit efforts cooperatively, determining that the larger audit firm to bear the entire liability could be quality optimal. Such a regulation does not reduce the audit quality in the case of a cooperative decision but leads to the maximum audit quality if the audit firms decide non-cooperatively on their levels of substantive testing. A drawback is that requiring the larger audit firm to bear the entire liability in the case of a non-cooperative effort decision leads to a less balanced allocation of audit work than a cooperative decision. A middle way could be to determine that the smaller audit firm must bear the entire liability as the audit quality is also in the case of a non-cooperative effort decision relatively high, and the allocation of audit work is more balanced than in the case of a cooperative decision. In determining that the smaller audit firm must bear the entire liability, a prerequisite for the relatively balanced allocation of audit work is that the liability payments are not too high. Otherwise, the smaller audit firm enhances its level of substantive testing so much that it works much more than its larger audit partner, which counteracts a balanced work allocation. Without a regulation on the allocation of liability payments the audit firms decide on it cooperatively on their own by minimizing the total audit costs. In the case of a non-cooperative decision on the levels of substantive testing, this always leads to a lower audit quality compared to the situation where it is determined that one audit firm must bear the entire liability. The work allocation equals the allocation in the case where the audit firms decide cooperatively on their audit efforts. *Figure 3* shows a numeric example that illustrates the results.

Figure 3: Audit Quality and Work Allocation – Numeric Example

$p = 0.5;\ \mu = 0.8;\ M = 50;\ k = 2;\ R_1^{in} = 20;\ R_2^{in} = 10;\ R_1^{D} = 70;\ R_2^{D} = 60$

4 Conclusions

In its Green Paper of 2010, the European Commission proposed obligatory joint audits of different sized audit firms to strengthen the position of smaller audit firms reducing the system relevance of the Big Four audit firms in the audit market for large clients. In addition, joint audits are a frequently discussed measure to enhance audit quality due to a reciprocal control process during the audit. In an analytical study, Deng et al. (2014) showed that joint audits consisting of different sized audit firms lead to lower audit evidence precision; therefore, they may reduce audit quality in comparison to single audits because of a free-rider problem. For this reason, a regulator who is thinking about im-

plementing obligatory joint audits faces a conflict of objectives, as he has to decide whether he wants to strengthen the position of smaller audit firms by this measure for the price of lower audit quality. If the regulator decides for obligatory joint audits the question of the optimal regulatory design arises: On the one hand, the optimal regulatory environment should ensure that the audit quality in a joint audit is as high as possible, and, on the other hand, it should ensure that the smaller audit firms are sufficiently involved in the audit to strengthen their market position.

This is the first study dealing with the question of the optimal design of joint audits to achieve the abovementioned objectives. We investigated a joint audit of one big and one mid-tier audit firm and analyzed the audit quality and audit work allocation consequences of several regulatory settings. We found that if the main objective is a high audit quality, joint audits where the audit firms decide on their levels of substantive testing cooperatively are favorable. If a cooperative decision cannot be enforced with certainty, determining that the larger audit firm must bear the entire potential liability is quality optimal. However, these measures do not lead to a balanced work allocation that strengthens the position of smaller audit firms. If the dual objectives of a high audit quality and a relatively balanced work allocation should be satisfied, it is optimal to stipulate that the smaller audit firm must bear a high proportion of liability payments. This results in a medium audit quality and a high equality of work allocation provided that the potential liability payments are not too high.

The results show that there is a conflict of objectives as there is no joint audit design that is optimal for reaching a high audit quality and a very balanced allocation of audit work. Our paper extends the joint audit literature as it is the first analytical study dealing with the optimal design of joint audits. The findings could provide implications for a regulator pursuing its objectives and help to explain diverse empirical results.

Appendix

Proof of Lemma 1

The strategies of the audit firms are determined from (7). The first-order conditions are:

$$\frac{\partial C_j}{\partial a_j} = k - \mathrm{e}^{-\mu a_j} p \cdot \mu \cdot (R_j^{in} + \mathrm{e}^{-\mu a_i}(s_j \cdot M + R_j^D)) \overset{!}{=} 0 \tag{20}$$

where $i, j \in 1,2$ and $i \neq j$.

Solving the first-order conditions to the optimal audit efforts leads to the following reaction functions:

$$a_{j,nc}^{*} = -\frac{1}{\mu} \cdot Ln\,[\frac{k}{p \cdot \mu \cdot (R_j^{in} + \mathrm{e}^{-\mu a_i} \cdot (s_j \cdot M + R_j^D))}] \tag{21}$$

where $i, j \in 1,2$ and $i \neq j$.

The equilibrium $(a_{1,nc}^{*}, a_{2,nc}^{*})$ is such that the first-order conditions (20) for both audit firms hold simultaneously. This leads to the following pairs of equilibrium efforts:

$$a_{j,nc}^{*1} = \frac{1}{\mu} \cdot Ln\,[\frac{g_1 + g_2 + \sqrt{4 \cdot k \cdot (M \cdot s_i + R_i^D) \cdot g_2 + (g_1 + g_2)^2}}{2 \cdot k \cdot R_i^{in}}] \tag{22}$$

and

$$a_{j,nc}^{*2} = \frac{1}{\mu} \cdot Ln\,[\frac{g_1 + g_2 - \sqrt{4 \cdot k \cdot (M \cdot s_i + R_i^D) \cdot g_2 + (g_1 + g_2)^2}}{2 \cdot k \cdot R_i^{in}}] \tag{23}$$

with $g_1 = k \cdot (M \cdot (1 - 2 \cdot s_j) - R_i^D + R_j^D)$ and $g_2 = p \cdot \mu \cdot R_j^{in} \cdot R_i^{in}$

where $i, j \in 1,2$ and $i \neq j$.

The equilibrium effort pair $(a_{1,nc}^{*2}, a_{2,nc}^{*2})$ leads to no feasible solution as the inner bracket of (23) is negative. Therefore, we only consider the equilibrium $(a_{1,nc}^{*1}, a_{2,nc}^{*1})$ in the following and call it $(a_{1,nc}^{*}, a_{2,nc}^{*})$.

To ensure that the equilibrium audit efforts (22) are not negative, we make the following technical assumption:

$$p \cdot R_j^{in} > 2k \tag{24}$$

where $i, j \in 1,2$ and $i \neq j$.

The second-order derivations of (7) at the point of equilibrium audit efforts are:

$$\frac{\partial^2}{\partial a_j^{\,2}} C_j(a_j = a_{j,nc}^*, a_i = a_{i,nc}^*) = k\mu > 0 \tag{25}$$

where $i, j \in 1,2$ and $i \neq j$.

As the second derivations (25) are positive, the equilibrium audit efforts $(a_{1,nc}^*, a_{1,nc}^*)$ minimize the cost functions.

Proof of Proposition 1

The detection function is determined in (5). Under the assumption of optimal audit efforts $(a_{1,nc}^*, a_{1,nc}^*)$ determined in (8), an optimization of the detection function leads to the following first-order condition:

$$\begin{aligned} &\frac{d}{d\alpha} d(a_{1,nc}^*(\alpha), a_{2,nc}^*(\alpha)) \\ &= \frac{Mp\mu(M(2\alpha-1) + R_1^D - R_2^D)}{\sqrt{4kp\mu R_1^{in} R_2^{in}(M\alpha + R_1^D) + (p\mu R_1^{in} R_2^{in} + k(M(1-2\alpha) - R_1^D + R_2^D))^2}} \overset{!}{=} 0 \end{aligned} \tag{26}$$

Solving the first-order condition (26) with regard to the liability allocation α reveals:

$$\alpha^* = \frac{1}{2} + \frac{R_2^D - R_1^D}{2M} \tag{27}$$

Calculating the second derivation of the detection function (5) and inserting the optimal allocation $(s_1^* = \alpha^*, s_2^* = 1 - \alpha^*)$ leads to:

$$\frac{\partial^2}{\partial \alpha^2} d(\alpha = \alpha^*) = \frac{2M^2 p\mu}{\sqrt{p\mu R_1^{in} R_2^{in}(p\mu R_1^{in} R_2^{in} + 2k(M + R_1^D + R_2^D))}} \tag{28}$$

As all parameters are defined to be positive, the second derivation (28) is greater than zero; thus, the optimal allocation $(\alpha^*, 1-\alpha^*)$ minimizes the detection function (5). The allocation chosen by the audit firms by minimizing their total audit costs (10) equals the allocation that minimizes the detection function (27) representing the audit quality.

Proof of Proposition 2

Optimizing the audit quality, which is represented by the detection function (5), leads to the first-order condition determined in (26). Solving the first-order condition with regard to the liability allocation leads to the minimum determined in (27). An analysis of the first derivation $\frac{d}{d\alpha} d(a^*_{1,nc}(\alpha), a^*_{2,nc}(\alpha))$ shows that it is negative for $\alpha < \alpha^* = \frac{1}{2} + \frac{R_2^D - R_1^D}{2M}$ and positive for $\alpha > \alpha^* = \frac{1}{2} + \frac{R_2^D - R_1^D}{2M}$. For this reason the detection function decreases monotonically in the left and increases monotonically in the right of the minimum (27). Therefore, the allocation of liability payments that maximizes the audit quality lies in one of the boundary points determined from the definition area $0 \le \alpha \le 1$. To calculate which of the boundary points ($\alpha = 0$ or $\alpha = 1$) maximizes the audit quality, the detection probability of the boundary points has to be compared. This leads to:

$$\begin{aligned} d(\alpha=1) &> d(\alpha=0) \quad \text{if} \quad R_1^D > R_2^D \\ d(\alpha=1) &< d(\alpha=0) \quad \text{if} \quad R_1^D < R_2^D \\ d(\alpha=1) &= d(\alpha=0) \quad \text{if} \quad R_1^D = R_2^D \end{aligned} \tag{29}$$

Thus, a regulator that is interested in maximizing audit quality has to stipulate that the audit firm with a greater difference in reputational damage (the larger audit firm) must bear the entire liability.

In the case where the audit firms decide on their allocation of liability payments cooperatively on their own, the larger audit firm works more than its smaller audit partner (see (12)). As $\frac{d}{d\alpha} a_1^* > 0$ and $\frac{d}{d\alpha} a_2^* < 0$, a redistribution of liability payments at the expense of the larger audit firm by determining that it must bear the entire liability payments leads to a more unequal allocation of audit work.

Instead, determining that the smaller audit firm must bear the entire liability ($\alpha = 0$) leads to a more equal allocation of audit work. This is because in the case where the

audit firms decide on the work allocation on their own or in the case where the larger audit firm bears the entire liability, the larger audit firm's audit effort is greater than that of the smaller audit firm ($a^*_{1,nc}(\alpha = 1 \vee \alpha = \frac{R_2^D - R_1^D}{2M}) > a^*_{2,nc}(\alpha = 1 \vee \alpha = \frac{R_2^D - R_1^D}{2M})$). As $\frac{\partial a^*_{2,nc}}{\partial \alpha} < 0$ the smaller audit firm enhances its level of substantive testing because it has been advised that it must bear the entire liability. The larger audit firm reduces its audit effort as $\frac{\partial a^*_{1,nc}}{\partial \alpha} > 0$ and $\frac{\partial a_1}{\partial a_2} > 0$. Therefore, the allocation of audit work is more equal on the condition that the liability payments (*M*) are not too high.

Proof of Lemma 2

The objective function is determined in (16). The first-order conditions are:

$$\frac{\partial C_T}{\partial a_j} = k - e^{-\mu(a_j + a_i)} p\mu(M + e^{\mu a_i} R_j^{in} + R_j^D + R_i^D) \overset{!}{=} 0 \tag{30}$$

where $i, j \in 1,2$ and $i \neq j$.

Solving this condition to the optimal audit efforts a_j^* leads to:

$$a^*_{j,c} = -\frac{1}{\mu} \cdot Ln\,[\frac{k}{p\mu(e^{-\mu a_i}(M + R_j^D + R_i^D) + R_j^{in})}] \tag{31}$$

where $i, j \in 1,2$ and $i \neq j$.

To ensure that $a^*_{j,c}$ determines a minimum of C_T we need to have regard to the Hessian matrix in the following. It is determined by:

$$H_{C_T}(a_1, a_2) = \begin{pmatrix} \frac{\partial^2 C_T}{\partial {a_1}^2} & \frac{\partial^2 C_T}{\partial a_1, a_2} \\ \frac{\partial^2 C_T}{\partial a_2, a_1} & \frac{\partial^2 C_T}{\partial {a_2}^2} \end{pmatrix} \tag{32}$$

To test for positive definiteness we need to have regard to the leading principal minors of H_{C_T}:

$$\left| \frac{\partial^2 C_T}{\partial {a_1}^2} \right| = \mathrm{e}^{-\mu(a_1 + a_2)} p\mu^2 (M + R_1^D + R_2^D + \mathrm{e}^{\mu a_2} R_1^{in}) > 0 \tag{33}$$

and

$$\begin{vmatrix} \frac{\partial^2 C_T}{\partial a_1^{\,2}} & \frac{\partial^2 C_T}{\partial a_1, a_2} \\ \frac{\partial^2 C_T}{\partial a_2, a_1} & \frac{\partial^2 C_T}{\partial a_2^{\,2}} \end{vmatrix} = (\mathrm{e}^{-2\mu(a_1+a_2)} p^2 \mu^4 (\mathrm{e}^{\mu a_1} R_2^{in} (M + R_1^D + R_2^D) + \mathrm{e}^{\mu a_2} R_1^{in} (M + \mathrm{e}^{\mu a_1} R_1^{in} + R_1^D + R_2^D))) > 0 \quad (34)$$

As the leading principal minors are greater than zero, the Hessian matrix is positive definite, which means that the audit efforts $a_{j,c}^*$ minimize the total cost function C_T.

Proof of Proposition 3

The reaction functions are:

$$\text{non-cooperative case:} \quad a_{j,nc} = -\frac{1}{\mu} \cdot Ln\,[\frac{k}{p \cdot \mu \cdot (R_j^{in} + \mathrm{e}^{-\mu \cdot a_i}\,(M \cdot s_j + R_j^D))}]$$

$$\text{cooperative case:} \quad a_{j,c} = -\frac{1}{\mu} \cdot Ln\,[\frac{k}{p \cdot \mu \cdot (R_j^{in} + \mathrm{e}^{-\mu \cdot a_i}\,(M + R_j^D + R_i^D))}] \quad (35)$$

where $i, j \in 1,2$ and $i \neq j$.

It is obvious that the reaction functions of the cooperative case always lie above the reaction functions of the non-cooperative case. Therefore, both audit efforts in the cooperative case are higher than in the non-cooperative case. For this reason, the detection probability and, therefore, the audit quality, are always higher in the case of a cooperative decision.

References

André, P., Broye, G., Pong, C. & Schatt, A. (2016): Are Joint Audits Associated with Higher Audit Fees?. European Accounting Review, Vol. 2, pp. 245–274.

Ballas, A. & Fafaliou, I. (2008): Market Shares and Concentration in the EU Auditing Industry: The Effect of Andersen's Demise. International Advances in Economic Research, Vol. 14, pp. 485–497.

Broye, G. (2007): Concentration du Marché de l'Audit: Un État des Lieux [Audit Market Concentration in France: A State of the Art]. Revue Francaise de Comptabilité, Vol. 399, pp. 34–37.

Danish Financial Statement Act (2001): The Proposal to the Danish Financial Statement Act, §135.

DeAngelo, L. E. (1981a): Auditor Independence, 'Low Balling' and Disclosure Regulation. Journal of Accounting and Economics, Vol. 3, pp. 113–127.

DeAngelo, L. E. (1981b): Audit Firm Size and Audit Quality. Journal of Accounting and Economics, Vol. 3, pp. 183–199

Deng, M., Tong, L., Simunic, D. A. & Ye, M. (2014): Do Joint Audits Improve or Impair Audit Quality?. Journal of Accounting Research, Vol. 52, pp. 1029–1060.

European Commission (2010): Green Paper – Audit Policy: Lessons from the Crisis. European Commission, Brussels.

Finley, D. (1994): Game Theoretic Analysis of Discovery Sampling for Internal Fraud Control Auditing. Contemporary Accounting Research, Vol. 11, pp. 91–114.

Francis, J. R., Chrystelle, R. & Vanstraelen, A. (2009): Assessing France's Joint Audit Requirement: Are Two Heads Better than One?. Auditing: A Journal of Practice and Theory, Vol. 28, pp. 35–63.

Holm, C. & Thinggaard, F. (2010): Joint Audits – Benefit or Burden?. Working Paper, University of Aarhus.

Holm, C. & Thinggaard, F. (2014): Leaving a Joint Audit System: Conditional Fee Reductions. Managerial Auditing Journal, Vol. 29, pp. 131–152.

Institut der Wirtschaftsprüfer in Deutschland e.V. [Institute of Public Auditors in Germany, Incorporated Association] (1999): IDW Prüfungsstandard: Zur Durchfüh-

rung von Gemeinschaftsprüfungen (Joint Audits) (IDW PS 208) [German Auditing Standard 208: Implementation of Joint Audits]. Die Wirtschaftsprüfung, Vol. 17, pp. 707–710.

Ittonen, K. & Peni, E. (2012): Auditor's Gender and Audit Fees. The International Journal of Auditing, Vol. 16, pp. 1–18.

Knechel, R. W., Rouse, P. & Schelleman, C. (2009): A Modified Audit Production Framework: Evaluating the Relative Efficiency of Audit Engagements. The Accounting Review, Vol. 84, pp. 1607–1638.

Lesage, C., Ratzinger-Sakel, N. V. S. & Kettunen, J. M. (2012): Struggle over Joint Audit: On Behalf of Public Interest?. Working Paper, HEC School of Management, Paris and Ulm University, University of Jyväskylä.

Newman, D. P., Park, J. & Smith, J. R. (1998): Allocating Internal Audit Resources to Minimize Detection Risk Due to Theft. Auditing: A Journal of Practice and Theory, Vol. 17, pp. 69–82.

Piot, C. (2007): Auditor Concentration in a Joint-Auditing Environment: The French Market 1997–2003. Managerial Auditing Journal, Vol. 22, pp. 161–176.

Piot, C. & Janin, R. (2007): External Auditors, Audit Committees and Earnings Management in France. European Accounting Review, Vol. 16, pp. 429–454.

Ratzinger-Sakel, N. V. S., Audousset-Coulier, S., Kettunen, J. & Lesage, C. (2013): Joint Audit: Issues and Challenges for Researchers and Policy Makers. Accounting in Europe, Vol. 10, pp. 175–195.

Smith, J. R., Tiras, S. L. & Vichitlekarn, S. S. (2000): The Interaction Between Internal Control Assessment and Substantive Testing in Audits for Fraud. Contemporary Accounting Research, Vol. 17, pp. 327–356.

Thinggaard, F. & Kiertzner, L. (2008): Determinants of Audit Fees: Evidence from a Small Capital Market with a Joint Audit Requirement. International Journal of Auditing, Vol. 12, pp. 141–158.

Zerni, M., Haapamäki, E., Järvinen, T. & Niemi, L. (2012): Do Joint Audits Improve Audit Quality? Evidence from Voluntary Joint Audits. European Accounting Review, Vol. 21, pp. 731–765.

Zerni, M., Kallunki, J.-P. & Nilsson, H. (2010): The Entrenchment Problem, Corporate Governance Mechanisms, and Firm Value. Contemporary Accounting Research, Vol. 27, pp. 1169–1206.

Beitrag 2

Titel

Joint Audits: Does the Allocation of Audit Work Affect Audit Quality and Audit Costs?

Joint Audits: Beeinflusst die Verteilung der Prüfungsarbeit die Prüfungsqualität und die Prüfungskosten?

Koautoren

M.Sc. Marcel Haak, Dr. Roland Zieseniß

Anmerkungen

Dieser Beitrag wurde bei der Fachzeitschrift *Accounting in Europe* (Taylor & Francis Group) eingereicht und befindet sich in der zweiten Begutachtungsrunde.

Joint Audits: Does the Allocation of Audit Work Affect Audit Quality and Audit Costs?

ABSTRACT

The audit quality and cost consequences of joint audits as well as their optimal design have been continually discussed, especially since the publication of the European Commission's Green Paper in 2010. This study provides new empirical evidence for the French audit market and shows that the allocation of audit work in a joint audit systematically affects the audit quality and costs. We found that a more balanced allocation of audit work (represented by the allocation of audit fees) reduces the audit quality and enhances the audit costs as compared to an unbalanced allocation of work. Thereby, we measured the quality effects following the concept of abnormal accruals. Because its ability to detect earnings management has often been criticized in the literature, we checked for the robustness of our results using the concept of cosmetic earnings management (CEM). This is the first time this has appeared in the joint audit literature. The CEM results confirmed the results of the analysis of abnormal accruals, providing support for its credibility. Because joint audits have parallels to single audits when the audit work allocation is unbalanced, these results may also be of interest to those debating the benefits and costs of joint audits as compared to single audits.

1 Introduction

In 2010, the European Commission (EC) released a Green Paper for the European audit market in which several regulatory proposals were discussed. The aim of the proposals was to enhance the audit function in order to increase financial stability, since the recent global financial crises had resulted in a loss of market confidence. One important suggestion made in this Green Paper was for the implementation of mandatory joint audits. In these audits, at least two independent audit firms share their audit tasks to provide an audit opinion and sign an audit report for which they are both liable. The advantages are the potential reinforcement of the auditor's independence[1] and the strengthening of the market position of the non-Big Four audit firms due to their participation in joint audits. The measure has been assumed to contribute to higher levels of competition in the audit market and diminish the potential systemic relevance of particular audit firms.[2] Furthermore, it has often been argued that two or more audit firms produce a higher level of audit quality through their reciprocal control of one another.[3] To ensure an efficient dual control mechanism,[4] regulators require a balanced allocation of audit work between the audit firms.[5] The main objection to joint audits is the potential enhancement of audit costs as compared those in single audits.

This study empirically analyzes how the allocation of audit work (represented by the allocation of audit fees) affects the audit quality and costs in a joint audit setting. The main research question asked is whether a balanced audit work allocation enhances the audit quality and affects the audit fees.

To investigate the influence of the allocation of audit work on the audit quality and fees, we analyze the French audit market and include CAC60 and CACMid60 data for the fiscal years 2009 to 2012. The French audit market is highly regulated and, unlike other European countries, its most specific characteristic is that mandatory joints audits for listed firms have been required since 1966 (Law 66-537 of 24 July 1966, Article L823-2 of the French Code of Commerce). In addition to the joint audit requirement, the French audit market is characterized by the strict separation between audit and consulting services. Another special feature of the French audit market is that the audit firms are appointed for a six-year period rather than a one-year period, which is usual in other European countries.

1 See Piot/Janin (2007).
2 See European Commission (2011).
3 See, for example, Piot (2007) or Francis/Richard/Vanstraelen (2009).
4 See Gonthier-Besacier/Schatt (2007), p. 141.
5 See, for example, the French professional practice standards NEP-100 (2011).

In the first step of our study, we analyze the impact of the allocation of audit work on the total amount of audit fees representing the audit costs. In the second step, the impact of the allocation of audit work on the audit quality is analyzed. The analysis method that we use is a multivariate regression whereby international, well-established control variables are used, supplemented by variables that control for the special characteristics of the French audit market. To analyze the effects on audit quality, we use abnormal accruals as a surrogate for audit quality. This concept is often criticized, especially because the model demonstrates a poor ability to separate discretionary accruals from the normal (not subject to manipulation) accrual component of earnings. Furthermore, tests that use abnormal accruals to measure earnings managements are susceptible to misspecification because they do not consider correlated variables.[6] For that reason, we apply the concept of cosmetic earnings management (CEM) to check the robustness of our results. CEM was introduced by Carslaw (1988) and Thomas (1989) as a special type of earnings management to fine-tune reported results by rounding them up or down.

The regression results show that the allocation of audit work systematically influences the total amount of audit fees and the audit quality. The investigation of audit fees shows that the total amount of audit fees is smaller when one audit firm has a large stake in the audit work (hereafter referred to as *unbalanced joint audit*). This result could be influenced by the fact that additional cooperation and coordination costs could result when a balanced work allocation takes place. Furthermore, fewer abnormal accruals are observed in the case of an unbalanced joint audit. The CEM-investigation confirms these results, indicating that less rounding up behavior occurs in unbalanced joint audits. For this reason, the audit quality seems to be higher in unbalanced joint audits as compared to joint audits with a balanced work allocation (hereafter referred to as *balanced joint audit*). This result might be due to a free rider effect that should be greater in balanced than in unbalanced joint audits.

Our study is closely linked to that of Thinggaard and Kiertzner (2008), in which the Danish audit market for the year 2002 was analyzed. Thinggaard and Kiertzner (2008) distinguished between *de facto* joint audits (i.e., where both audit firms have a fraction of at least 20% of the audit fees) and *de facto* single audits (i.e., where one audit firm has less than 20% of the audit fees). Their regression results showed that de facto joint audits are less expensive than

[6] See Dechow/Hutton/Kim/Sloan (2012).

de facto single audits.[7] Another related study is that of Holm and Thinggaard (2015) who analyzed the cost effects of different joint audit constellations (two big four audit firms vs. one big four and one mid-tier audit firm). They showed that no joint audit constellation leads to lower audit fees than a single audit, but joint audits with at least one Big Four audit firm are not more expensive than single audits performed by one Big Four audit firm alone. Gonthier-Besacier and Schatt (2007) also investigated the influence of the audit fee allocation on the total amount of audit fees. They analyzed the French audit market for the year 2002 and used voluntarily disclosed fee information. Unlike Thinggaard and Kiertzner (2008), Gonthier-Besacier and Schatt (2007) did not use the *de facto* argument, but instead introduced a continuous variable for the share of audit fees, which were paid to the main auditor. Because we also introduce a continuous variable to describe the share of audit fees paid to the main auditor in our study, the study of Gonthier-Besacier and Schatt (2007) is relevant to our fee investigation. Their results showed that the allocation of audit fees between the joint auditors does not affect the audit fees. Therefore, their results differ from our results in that we find a correlation between the allocation of audit work and audit costs (audit fees). The different outcomes of our study and that of Gonthier-Besacier and Schatt (2007) may be due to the fact that different years are considered.

The question of the effects of audit work allocation on the audit quality and fee is closely linked to that of whether joint audits lead to higher audit fees or a higher audit quality than single audits. An unbalanced joint audit should more similar results to a single audit than a balanced joint audit. The empirical results of studies in which the effects of joint audits and single audits were analyzed are highly variable. For example, Holm and Thinggaard (2014), Lesage, Ratzinger-Sakel and Kettunen (2012) as well as André, Broye, Pong, and Schatt (2016) cited positive influences of joint audits on the audit fees. In contrast, for example, Ittonen and Peni (2012) as well as Thinggaard and Kiertzner (2008) found the exact opposite. In terms of audit quality effects, Zerni, Kallunki, and Nilsson (2010) and Zerni, Haapamäki, Järvinen, and Niemi (2012) cited positive impacts of joint audits on the audit quality, whereas Lesage et al. (2012) and Holm and Thinggaard (2010) could not confirm these results.

Our results contribute to the joint audit literature in that the impact of the allocation of audit work on the audit costs during a more recent period is analyzed. Furthermore, this is – to the

[7] See Thinggaard/Kiertzner (2008), p. 152. Thinggaard and Kiertzner (2008) note that their findings could be the result of the special competitive situation in Denmark, where the audit firms might compete for position as the preferred audit firm after the abolition of the joint audit requirement in Denmark.

best of our knowledge - the first study in which the impact of the audit work allocation on the audit quality is analyzed empirically. Also a robustness check using the concept of CEM is new in the joint audit literature. Our results are important for the regulation process, legislators and clients that are considering appointing more than one audit firm to audit their financial statements.

The remainder of this paper is organized as follows: In section two, we develop hypotheses with regard to the influence of the audit work allocation on the audit fees and costs. In sections three and four, we present the model assumptions and empirical results. In section five, the results are summarized conclusions are drawn.

2 Hypotheses Development and Database

2.1 Audit Costs

In the first step of our study, we analyze the effects of the allocation of audit work (represented by the allocation of audit fees)[8] on the audit costs (represented by the total amount of audit fees). The expected effects are ambiguous: On one hand, we assume that cost savings result from a balanced work allocation, since efficiency improvements are possible when audit firms can specialize according to their expertise. In addition, geographical divisions could lead to cost savings, for example, if the client has subsidiaries that are audited by a geographically closer audit firm. Furthermore, competition between the audit firms may lead to a reduction in audit fees in the case of balanced work allocation. If there is one dominant auditor, its bargaining power and the client's dependence should be larger than when a balanced work allocation is made. This could make the main auditor charge higher audit fees in the case of an unbalanced work allocation.[9] Furthermore, it is possible that companies assign a greater proportion of audit work to an audit firm that offers higher audit quality and, therefore, charges a higher audit fee.[10] On the other hand, effects exist that lead to rising costs when a balanced work allocation is made. This hypothesis is supported by the assumption that companies that want to save audit costs may assign a greater proportion of audit work to an audit firm that offers audit work for a lower fee. Furthermore, in the case of balanced work allocation, more coordination and incorporation costs are incurred than when unbalanced work al-

[8] As we assume that the allocation of audit fees is closely related with the allocation of audit work, we use these terms as equivalents in the following study.
[9] See Thinggaard/Kiertzner (2008), p. 144.
[10] See Gonthier-Besacier/Schatt (2007), p. 146.

location occurs. The efficiency of audit procedures should also be higher if one auditor has a larger proportion of the audit work, because knowledge acquired in one audit field could be applied in other audit fields. Although the effects are ambiguous, we do not expect that the efficiency improvements that result from balanced work allocation outweigh the additional cooperation and coordination costs. Furthermore, we do not assume that a fee-reducing competition effect between the audit firms is very large in the French regulatory environment, because French audit firms are appointed for a period of six years, which should reduce competition.[11] For these reasons, we expect that the more unbalanced the allocation of audit work, the lower the total amount of audit fees paid by a client. Consequently, the hypothesis H1 is:

H1: Unbalanced joint audits lead to lower audit costs (audit fees) than balanced joint audits.

2.2 Audit Quality

In the second step of our study, we analyze the effects of the allocation of audit work on the audit quality. The expected effects are as ambiguous as the expected fee effects: On the one hand, one might assume that balanced work allocation leads to higher audit quality because, for example, in the case of an audit firm rotation, existing knowledge is not lost.[12] Furthermore, balanced work allocation should lead to greater independence as each audit firm has a lower stake in the total audit fee.[13] On the other hand, several effects support the hypothesis that a balanced audit work allocation reduces the audit quality. One argument is that one could expect a free rider problem if the audit firms allocate their audit work more evenly. The reason for this is that, in a liability case, both audit firms[14] bear a smaller fraction of liabilities than when one main auditor is involved. Therefore, both audit firms could be more willing to reduce audit resource costs by reducing their own audit work, profiting from the other audit firms' work.[15] In contrast, if one audit firm has a large stake in the audit work, it may face larger liabilities in a liability case, which may lead to a more careful approach taken during the audit process, enhancing audit quality. Difficulties in the communication and coordination processes may also lead to reduced audit quality in the case of balanced audit work allo-

[11] See Thinggaard/Kiertzner (2008), p. 145.
[12] See Zerni et al. (2012), p. 733.
[13] See DeAngelo (1981b).
[14] In a joint audit it could be the case, that more than two audit firms are engaged. In this study, we just consider the two audit firms that have the highest and the second highest stake on the audit fees (the two main auditors). So, if it is said *both* audit firms or *the engaged* audit firms we always mean these two main audit firms.
[15] See Deng/Lu/Simunic/Ye (2015), p. 1042.

cation. Furthermore, competition between the auditors for the client may distract them from their audit work, reducing audit quality.[16] Although the effects are ambiguous, we do not expect that the enhancement of independence through a balanced work allocation outweighs the compensation effect and quality losses due to communication and coordination difficulties. For this reason, our second hypothesis H2 is:

H2: Unbalanced joint audits lead to higher audit quality than balanced joint audits.

2.3 Database Description

We test our hypothesis H1 and H2 using a four-year database from France that includes data for the financial years of 2009 to 2012. We use CAC60 and CACMid60 data. The data are manually collected from the consolidated financial statements and the database *diane.*[17] We reduced the sample of financial institutions as their decisions may be not comparable with those of the other companies. After accounting for the missing values, we include panel data with 133 units over about four years, or 532 observations overall.

3 Multivariate Analysis: Audit Costs

3.1 Model Design

Before we present our regression results, a description of the model design and variables that are used to test hypothesis H1 is necessary. The dependent variable *Ln_AUDFEE* represents the sum of audit fees paid by the client. To test hypothesis H1, we use the variable *%MAINAUD*. The variable gives the fraction of audit fees, which is paid to the main auditor who is the auditor who receives the largest proportion of the audit fees in our setting. Therefore, this variable represents the allocation of audit fees between the joint auditors. If the fraction the main auditor receives is very large, the distribution of audit fees between the auditors is very uneven. If the fraction is small, each joint audit firm receives a small proportion of audit fees and the allocation is therefore, more even.

[16] See Quick/Schmidt/Simons (2016).
[17] See Bureau van Dijk (2016).

In addition to the allocation of audit work, other factors such as complexity, audit risk, client size and country-specific factors could potentially influence the total amount of audit fees.[18] We control for the influence of several effects by including control variables, which are described in the following section. The first factor, which is assumed to influence the audit fee, is the client size. Large companies normally perform a higher number of transactions, which requires more audit work.[19] We control for it with the natural logarithm of the total assets (*Ln* (*TA*)). The use of a natural logarithm is necessary because the scope of the audit process is not a linear function of the client size.[20] The complexity of a firm may also influence the audit intensity and, therefore, the audit fee: More complex company organizations need more audit work, resulting in higher audit fees. For this reason, we control for the complexity of the company with the square root of the number of its subsidiaries (*Sq* (*SUBS*)).[21] Furthermore, the complexity of the different balance sheet positions may influence the intensity of audit work. As risky and audit-intensive balance sheet positions may enhance the fees, we control for this influence with the sum of receivables and inventories divided by the total assets (*INVR*).[22] The financial problems of a client also enhance the audit risk and, therefore, may enhance the audit fees. We control for their influence by introducing the dummy variable *LOSS*. If a client reports a loss, the dummy variable assumes the value 1 and, if not, 0. Simunic (1980) used this variable to model the sole auditor liability.[23] As an audit reduces agency conflicts between the creditors and the shareholders of the client, another control variable is the leverage ratio (*LEV*), which is defined as the ratio of debt to total assets. The demand for audit services is assumed to increase with a rising leverage ratio.[24] A high leverage ratio may also increase the probability of the sole liability of the auditor and, therefore, the audit risk. Thus, the leverage ratio is also a factor that can be used to control for auditor liability.[25] Furthermore, we control for the influence of shareholders by introducing the dummy variable *BLOCKH*. This variable is coded 1 if one shareholder holds more than 25% percent of the client's shares. It is assumed that a blockholder has the power to control the management. Thus, the value of an audit decreases for the blockholder[26], reducing the audit fee. In

[18] A review of audit fee research studies and the used control variables with a high explanatory power can be found by Hay/Knechel/Wong (2006) and Hay (2012).
[19] See, for example, Hay/Knechel/Li (2006).
[20] See, for example, Simunic (1980), p. 172 or Ferguson/Francis/Stokes (2006), p. 101.
[21] See André et al. (2016), p. 256.
[22] See Francis/Stoke (1986), p. 386.
[23] See Simunic (1980), pp. 173.
[24] See Ashbaugh/Warfield (2003), p. 15.
[25] See, for example, Gist (1992), p. 80 or Hay/Knechel/Wong (2006), p. 171.
[26] See Chan/Ezzamel/Gwilliam (1993), p. 770.

contrast, it is assumed that a small shareholder has no incentives to control the management, but might be exploited by a blockholder, whereby the value of an audit increases, which reduces agency conflicts.

The influence of the auditors' busy seasons is also considered. Normally, the fiscal year ends on December 31st, and an audit is more expensive in January and February because many firms must be audited at this time. We control for the influence of the busy season on the fees by introducing the dummy variable *NONPEAK* that is coded 1 if a client has a deviant fiscal year and, if not, 0.[27] Furthermore, we need to control for auditor changes as an auditor change is assumed to reduce the audit fees.[28] For this reason, we introduce the dummy variables *SWITCH_B4* and *SWITCH_NB4*, whereby *SWITCH_B4* is coded 1 in the year of the initial audit if the new auditor is a Big Four audit firm[29], and *SWITCH_NB4* is coded 1 in the year of the initial audit if the new auditor is a non-Big Four audit firm. We differentiate between a switch to a Big Four audit firm and a switch to a non-Big Four audit firm, because we assume that Big Four and non-Big Four audit firms have diverse low-balling potentials. The reduction in the audit fees can be discerned from the regression coefficient.[30] Past empirical results have shown a strong positive relationship between audit and non-audit fees.[31] A meta-analysis reveales that the positive relationship is significant and, therefore, a cross-subsidization between both services cannot be supported.[32] We control for the influence of non-audit services on the audit fees with the natural logarithm of the non-audit fees (*Ln* (*NAF*)). The international Big Four audit firms have a better reputation than other audit firms. Thus, the Big Four audit firms could potentially charge an audit fee premium. For this reason, we control for the auditors' size. Thereby, we distinguish whether one of the joint audit firms is a Big Four auditor or both audit firms are Big Four auditors. The reason for this is that, besides the size of the auditor, the audit pair choice could also influence the audit fee.[33] We use the dummy variable *ONEBIG4* (*TWOBIG4*), which is coded 1 if one Big Four auditor is (two Big Four auditors are) engaged. Some clients are listed on the US or UK stock market, which requires specific financial disclosures and may lead to higher audit fees.[34] We control

---

27 See Hay et al. (2006), pp. 177.
28 See DeAngelo (1981a).
29 The Big Four audit firms are Deloitte Touche Tohmatsu, PricewaterhouseCoopers (PwC), Ernst & Young and KPMG.
30 See, for example, Simon/Francis (1988), p. 263, Gregory/Collier (1996), p. 27 or Craswell/Francis (1999), p. 206.
31 See, for example, Hay/Knechel/Li (2006), p. 724 or Antle/Gordon/Narayanamoorthy/Zhou (2006), pp. 251.
32 See Hay (2012), p. 173.
33 See, for example, Brinn/Peel/Roberts (1994), Deng et al. (2014) or Audousset-Coulier (2015).
34 See Piot/Janin (2007).

for listing on the US or UK stock market with the dummy variable *CROSSLIST*. It is expected that clients with a cross-listing on the US or UK stock market would have to pay higher audit fees.[35] As we discovered fixed effects[36], we estimate the following industry fixed-effect regression model:

$$\begin{aligned} Ln\_AUDFEE = {} & \beta_0 + \beta_1 \cdot \%MAINAUD + \beta_2 \cdot Ln(TA) + \beta_3 \cdot Sq(SUBS) + \beta_4 \cdot INVR \\ & + \beta_5 \cdot Dummy\ LOSS + \beta_6 \cdot LEV + \beta_7 \cdot Dummy\ BLOCKH \\ & + \beta_8 \cdot Dummy\ NONPEAK + \beta_9 \cdot Dummy\ SWITCH\_B4 \\ & + \beta_{10} \cdot Dummy\ SWITCH\_NB4 + \beta_{11} \cdot Ln(NAF) \\ & + \beta_{12} \cdot Dummy\ ONEBIG4 + \beta_{13} \cdot Dummy\ TWOBIG4 \\ & + \beta_{14} \cdot Dummy\ CROSSLIST + fixed\ effects + \varepsilon \end{aligned}$$

3.2 Descriptive Analysis

Table 1 contains sample descriptive statistics. In our dataset, we identify that over 90% of the firms are audited by at least one Big Four audit firm. The mean of the main auditor's audit fee share is over 69%. The minimum share of the main auditor is nearly 31%, which is due to the fact that firms can have more than two statutory auditors. The highest share of the main auditor is nearly 95%. Only 5.67% of the audited firms changed one or two auditors. 2.46% of these firms switched to a non-Big Four audit firm.

[35] See Choi/Kim/Liu/Simunic (2008), p. 92.

[36] The Hausman-Test supports the choice of the fixed effect model for the audit fee model. The audit fee model faces in the Hausman-Test a prob = 0.0004 and a Chi² = 38.95. Thus, the fixed effect model is the right specification for our empirical analysis. Random effects and pooled OLS estimators would be inconsistent. See Cameron/Trivedi (2010), p. 266.

Table 1: Descriptive Statistics

	N	Mean	S.D.	Min	Median	Max
Ln_AUDFEE	532	7.7684	1.3517	4.3105	7.7581	10.6666
%MAINAUD	532	0.6169	0.1321	0.3146	0.5795	0.9545
Ln (TA)	532	15.3131	1.6437	11.3321	15.2393	19.3374
Sq (SUBS)	532	11.5645	8.6125	0.0000	9.3808	53.2541
INVR	532	0.0838	0.1026	0.0000	0.0577	0.6696
LOSS	532	0.1353	0.3424	0.0000	0.0000	1.0000
LEV	532	0.5989	0.1821	0.0307	0.6075	1.0000
BLOCKH	532	0.6015	0.4900	0.0000	1.0000	1.0000
NONPEAK	532	0.1447	0.3522	0.0000	0.0000	1.0000
Ln (NAF)	532	5.0774	2.5411	0.0000	5.5451	9.4010
CROSSLIST	532	0.0658	0.2481	0.0000	0.0000	1.0000
ONEBIG4	532	0.5075	0.5004	0.0000	1.0000	1.0000
TWOBIG4	532	0.3985	0.4900	0.0000	0.0000	1.0000
SWITCH_B4	532	0.0321	0.1765	0.0000	0.0000	1.0000
SWITCH_NB4	532	0.0246	0.1550	0.0000	0.0000	1.0000

A correlation is observed between some of our control variables. This might not be problematic because some correlations can be explained on the basis of economics. For example, total assets and the number of subsidiaries are expected to have a high degree of correlation. A high correlation between audit fees and non-audit fees is also expected. The high negative correlation between the *ONEBIG4* and *TWOBIG4* is observed because these two dummy variables include more than 90% of the data set, and a company can belong to only one variable. We address the correlation problem by using auxiliary regressions. The results of the Variance Inflation Factor (VIF) analysis are promising because the VIF does not exceed 3.587 and, thus, is always under the critical limit of 5.[37] Therefore, we believe that the observed correlation does not negatively affect our regression results. *Table 2* shows the Pearson correlation matrix.

[37] See Menard (1995), p. 66.

Table 2: Pearson correlation matrix

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Ln_AUDFEE	(1)	1														
%MAINAUD	(2)	-0.2294*	1													
Ln (TA)	(3)	0.8840*	-0.2827*	1												
Sq (SUBS)	(4)	0.5991*	-0.0987*	0.5612*	1											
INVR	(5)	-0.1266*	0.0048	-0.1118*	-0.0741	1										
LOSS	(6)	-0.0447	-0.0392	-0.0792	-0.0936*	-0.0976*	1									
LEV	(7)	0.4810*	-0.1236*	0.4812*	0.3141*	-0.0719	0.0308	1								
BLOCKH	(8)	-0.2721*	0.0410	-0.1734*	-0.1532*	0.1901*	-0.1381*	-0.0145	1							
NONPEAK	(9)	-0.1121*	0.1595*	-0.1252*	-0.1253*	0.2189*	0.0403	0.0237	0.0948*	1						
Ln(NAF)	(10)	0.7348*	-0.1151*	0.6578*	0.4066*	-0.1221*	-0.0035	0.3042*	-0.2654*	-0.1324*	1					
CROSSLIST	(11)	0.3673*	-0.1239*	0.3095*	0.1969*	-0.1046*	0.1610*	0.1146*	-0.3260*	-0.1092*	0.2689*	1				
ONEBIG4	(12)	-0.1695*	0.1950*	-0.2077*	-0.1514*	0.0649	0.0490	0.0260	0.0583	0.2877*	-0.1788*	-0.1481*	1			
TWOBIG4	(13)	0.3416*	-0.2937*	0.3611*	0.2173*	-0.0143	0.0035	-0.0056	-0.1217*	-0.2148*	0.3393*	0.2021*	-0.8186*	1		
SWITCH_B4	(14)	-0.0467	0.0649	-0.0219	-0.0284	0.0335	-0.0098	-0.0641	-0.0041	-0.0117	-0.0466	-0.0054	0.0083	0.0267	1	
SWITCH_NB4	(15)	-0.0930*	0.1084*	-0.0800	-0.0301	-0.0639	-0.0274	-0.0004	-0.0446	0.0416	-0.0529	-0.0422	0.0345	-0.1044*	-0.0289	1

3.3 Regression Results

Table 3 presents the results of the audit fee analysis:

Table 3: Regressions results for audit fees

Ln_AUDFEE	Exp. Sign	Coef.	Prob.
%MAINAUD		-0.3605*	0.0630
Ln (TA)	+	0.4987***	0.0000
Sq (SUBS)	+	0.0245***	0.0000
INVR	+	-0.2839	0.2810
LOSS	-	-0.0518	0.4340
LEV	+	0.4852***	0.0010
BLOCKH	-	-0.0968*	0.0530
NONPEAK	-	-0.0008	0.9910
Ln (NAF)	+	0.0922***	0.0000
CROSSLIST	+	0.5635***	0.0000
ONEBIG4	+	0.2665***	0.0010
TWOBIG4	+	0.1689*	0.0610
SWITCH_B4	-	-0.0635	0.6000
SWITCH_NB4	-	-0.1340	0.3460
Intercept		-0.9890***	0.0060
Annual fixed effects?		Yes	
Industry fixed effects?		Yes	
R^2		0.8742	

The results show that the variables that control for size (*Ln* (*TA*)) and complexity (*Sq* (*SUBS*)) are significantly positive, which is consistent with results from a variety of other audit fee studies. Our assumptions are not supported, because we cannot find a significant connection between the audit fee and the control variables for the inherent risk and profitability (*INVR* and *LOSS)*. The influence of the variable leverage ratio (*LEV)* is significantly positive (p-value < 0.01), which is intuitive because a high leverage ratio is assumed to lead to a higher level of audit risk, which enhances audit fees. If a major shareholder (*BLOCKH*) is present, the audit fees are smaller. The variable *NONPEAK* is insignificant, but we expected that a statutory audit would be less expensive when it is not performed in the busy season, which is confirmed by the results. An interesting result is that the non-audit fees (*Ln* (*NAF*)) have a positive influence on the audit fees. This is consistent with our predictions and does not support the argument that a cross-subsidization exists between non-audit and audit fees. As expected, we find that listing on the US or UK stock market has a significant positive influence.

We find a Big Four premium in our sample. Because the coefficient of the *ONEBIG4* dummy is a bit greater than the coefficient of the *TWOBIG4* dummy, one could assume that the coordination costs between one Big Four and one non-Big Four audit firm are greater than between two Big Four audit firms. We cannot identify an influence of an auditor change on the audit fees as both dummies *SWITCH_B4* and *SWITCH_NB4* are insignificant. Therefore, there are no indications for low balling in our sample.

Our main variable to test hypothesis H1 is *%MAINAUD*. It is significantly negatively associated with the audit fees with a p-value less than 0.07. Thus, our regression results show that unbalanced joint audits lead to lower audit costs (total audit fees) than balanced joint audits. As a consequence, it can be advantageous for a client to choose an unbalanced joint audit if it wants to reduce audit costs. If the client chooses one or two Big Four audit firms, it must pay a Big Four premium. This result is in line that reported by Audousset-Culier (2015). Audousset-Culier (2015) found that the premium paid for two Big Four audit firms was not significantly higher than the premium paid for only one Big Four audit firm.[38] Interestingly, our results actually show that the premium is slightly lower when two, rather than one of the Big Four audit firms is appointed.

4 Multivariate Analysis: Audit Quality

4.1 Model Design

To test the hypothesis H2, we use abnormal working capital accruals as dependent variable and as a surrogate for audit quality. In our regression model, we analyze whether abnormal working capital accruals are systematically different for companies for which the auditors decided for a balanced joint audit instead of an unbalanced joint audit:

Abnormal accruals = f (fraction of the main auditor on the audit fees, control variables)

Thereby, working capital accruals (*WA*) are defined as the change in current assets (subtracting the change in cash and cash equivalents) from the prior year, minus the change in current liabilities (subtracting the change in short-term debt and current portion of long-term debt). We define abnormal working capital accruals (*AWCA*) as the actual working capital accruals minus the expected working capital accruals. To determine the expected working capital ac-

[38] See Audousset-Coulier (2015), p. 371.

cruals, we use the linear model described in DeFond and Park (2001), Francis, Richard and Vanstraelen (2009) and Zerni et al. (2012).[39] In this model, the firm's expected accruals are calculated by the linear relationship between sales and working capital accruals in the firm during the previous year:

$$\text{Expected accruals}_t = SALES_t \cdot \left(\frac{WA_{t-1}}{SALES_{t-1}} \right)$$

To test the hypothesis H2, we use the variable *%MAINAUD*. The variable describes the fraction of the fees paid to the main auditor who is, in our setting, the auditor that receives the largest proportion of the audit fees. It represents the allocation of audit work between the joint auditors.

In addition to the allocation of audit work, other factors potentially influence the audit quality. We control for the influence of several effects by introducing variables on the basis of prior research.[40] The control variables are described in the following section.

The first factor that is assumed to influence the audit quality is the client size. Large companies have more stable revenues and income streams as well as more negotiating power in the case of financial difficulties than small companies.[41] For this reason, we expect a negative relationship to exist between the size of a firm and the amount of its abnormal working capital accruals and control for this influence by introducing the natural logarithm of the total assets (*Ln* (*TA*)). Our second control variable is the natural logarithm of the age of the company in years (*LOGAGE*), because we expect that older companies are at less risk to go bankrupt. We also control for the price to book ratio (*P/B*) and the sales growth over the previous year (*SALESGR*), since firms with relatively higher growth prospects are more likely to avoid a negative earnings surprise.[42] As estimated discretional accruals seems to be higher for companies that show better performance,[43] we control for the performance of a company with the ratio of the operating cash flow to total assets (*OCF*). As companies that have negative earnings or high debt levels have greater incentives to manage accruals to avoid debt default or

[39] We do not use the model of Jones (1991) and its extensions as it requires more data and would cause a large reduction in the number of observations. In contrast, the model of DeFond and Park (2001) needs fewer observations and has been employed in several recent studies.

[40] See, for example, Zerni et al. (2012), Teoh/Welch/Wong (1998) or Becker/DeFond/Jiambalvo/ Subramanyam (1998).

[41] See, for example, Zerni et al. (2012), p. 746.

[42] See Matsumoto (2002).

[43] See Kothari/Leone/Wasley (2005).

reporting losses,[44] we use the dummy variable *LOSS* and the leverage ratio (*LEV*) to control for these influences. The dummy variable *LOSS* takes the value 1 if a client reports a loss and 0 if not. The variable *OVAR* represents the standard deviation of sales over the years t-3 to t. We control for this standard deviation, because errors could be introduced into the estimation of abnormal accruals due to cross-firm differences in operating variability.[45] As in, for example, Zerni et al. (2012), we also control for reversal accruals by including one-year lagged accruals (*LAGWA*). As this variable is likely to capture time invariant influences that are omitted in the expectation model of DeFond and Park (2011), we expect the variable to have a positive influence on the abnormal working capital accruals. To control for cross-sectional differences in liquidity, we also include the cash to cash equivalent ratio (*CASH*). Because both the size of the auditor and the audit pair choice may influence the audit quality,[46] we use the dummy variable *ONEBIG4* (*TWOBIG4*), which is coded 1 if one Big Four audit firm is (two Big Four audit firms are) engaged. As a result, we use the following model to test for hypothesis H2:

$$
\begin{aligned}
|AWCA| = \quad & \beta_0 + \beta_1 \cdot \%MAINAUD + \beta_2 \cdot Ln(TA) + \beta_3 \cdot LOGAGE + \beta_4 \cdot P/B \\
& + \beta_5 \cdot SALESGR + \beta_6 \cdot OCF + \beta_7 \cdot Dummy\ LOSS + \beta_8 \cdot LEV \\
& + \beta_9 \cdot OVAR + \beta_{10} \cdot LAGWA + \beta_{11} \cdot CASH + \beta_{12} \cdot Dummy\ ONEBIG4 \\
& + \beta_{13} \cdot Dummy\ TWOBIG4 + fixed\ effects + \varepsilon
\end{aligned}
$$

4.2 Descriptive Analysis

The descriptive statistics are presented in *Table 4*. The mean (median) amount of absolute abnormal accruals among the samples is 0.0671 (0.0438).

[44] See Becker et al. (1998).
[45] See Hribar/Nichols (2012).
[46] See, for example, Deng et al. (2014).

Table 4: Descriptive Statistics

	N	Mean	S.D.	Min	Median	Max
|AWCA|	532	0.0671	0.0842	0.0000	0.0438	0.6643
%MAINAUD	532	0.6169	0.1321	0.3146	0.5795	0.9545
Ln (TA)	532	15.3131	1.6437	11.3321	15.2393	19.3374
LOGAGE	532	3.4065	0.6417	1.0986	3.5264	4.5109
P/B	532	2.3882	1.7229	0.1942	1.9585	21.0208
SALESGR	532	1.0975	0.6387	-0.4029	1.0554	12.5818
OCF	532	0.0769	0.0691	-0.4322	0.0727	0.4466
LOSS	532	0.1353	0.3424	0.0000	0.0000	1.0000
LEV	532	0.5989	0.1821	0.0307	0.6075	1.0000
LAGWA	532	0.0425	0.9863	-8.4690	0.0087	8.6650
OVAR	532	0.8889	2.6767	0.0001	0.1743	27.5011
CASH	532	0.1237	0.1191	0.0001	0.0939	0.9719
ONEBIG4	532	0.5075	0.5004	0.0000	1.0000	1.0000
TWOBIG4	532	0.3985	0.4900	0.0000	0.0000	1.0000

The correlation matrix shows that no highly critical correlation exists between the control variables, with the exception of the correlation between ONEBIG4 and TWOBIG4. As mentioned before, these two dummy variables include more than 90% of the dataset, and a company can belong to only one variable. The magnitude of all other correlations is usually below 0.50. The results of the Variance Inflation Factor (VIF) analysis are promising because the VIF is not higher than 3.86.[47]

[47] Thus, it is always under the critical limit of 5 (see Menard (1995), p. 66).

Table 5: Pearson correlation matrix

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
|AWCA|	(1)	1													
%MAINAUD	(2)	0.0217	1												
Ln (TA)	(3)	-0.2030*	-0.2827*	1											
LOGAGE	(4)	-0.1222*	-0.1239*	0.2600*	1										
P/B	(5)	0.0399	0.0947*	0.0768	-0.0482	1									
SALESGR	(6)	0.3263*	0.0210	-0.0987*	-0.0737	-0.0336	1								
OCF	(7)	-0.0125	0.0802	-0.0203	0.0152	0.0882*	-0.0925*	1							
LOSS	(8)	0.1346*	-0.0392	-0.0792	0.0044	-0.0175	0.0991*	-0.4535*	1						
LEV	(9)	0.0447	-0.1236*	0.4812*	0.0670	0.2999*	-0.0705	-0.1721*	0.0308	1					
LAGWA	(10)	-0.0359	0.0008	0.0809	0.0487	-0.0389	0.0170	-0.0006	-0.0121	0.0408	1				
OVAR	(11)	-0.0671	-0.1644*	0.4559*	0.1569*	-0.0538	0.0181	0.0255	-0.0449	0.1285*	0.0657	1			
CASH	(12)	0.0820	0.1774*	-0.3157*	-0.1347*	-0.1000*	0.2061*	-0.3196*	0.2873*	-0.2369*	-0.0184	-0.0480	1		
ONEBIG4	(13)	0.0503	0.1950*	-0.2077*	0.0036	0.1298*	-0.0504	0.0323	0.0490	0.0260	0.0145	-0.1969*	-0.0556	1	
TWOBIG4	(14)	-0.1213*	-0.2937*	0.3611*	0.0516	-0.1118*	0.0374	-0.0583	0.0035	-0.0056	-0.0028	0.2421*	0.0817	-0.8186*	1

4.3 Regression Results

To test hypothesis H2, we use the regression model mentioned above. The estimated coefficients and results are shown in *Table 6*.

Table 6: Regression results for audit quality

AWCA	Exp. Sign	Coef.	Prob.
%MAINAUD	-	-0.0514*	0.0790
Ln (TA)	-	-0.0101***	0.0020
LOGAGE	+	-0.0101*	0.0800
P/B	+	0.0006	0.7910
SALESGR	+	0.0420***	0.0000
OCF	-	0.1207*	0.0660
LOSS	+	0.0281**	0.0150
LEV	+	0.0832***	0.0010
LAGWA	+	-0.0008	0.8190
OVAR	-	0.0008	0.5990
CASH	+	0.0375	0.3010
ONEBIG4	-	-0.0218*	0.0860
TWOBIG4	-	-0.0341**	0.0170
Intercept		0.1898***	0.0010
Annual fixed effects?		Yes	
Industry fixed effects?		Yes	
R^2		0.2286	

The results show that the control variable for size (*Ln* (*TA*)) is significantly negative. These findings are consistent with our prediction, since large firms are assumed to have stable revenues and income streams as well as more negotiating power in the case of financial difficulties. Therefore, less abnormal working capital accruals are expected for larger firms. The variable *LOGAGE* is significantly negative at a p-value of 0.1. The growth in sales over the previous year (*SAESGR*) has a positive influence on the abnormal accruals as expected. The price to book ratio, however, has no positive influence on the abnormal working capital accruals. As expected, a higher operating cash flow reduces and a higher leverage ratio enhances the abnormal working capital accruals and, therefore, the audit quality. Furthermore, a deficit (LOSS) reduces the audit quality at a p-value of 0.15. A higher audit quality is observed when Big Four audit firms are engaged as the *ONEBIG4* dummy, and the *TWOBIG4*

dummy has a negative influence as expected. If a firm has two Big Four auditors as statutory auditors, the quality is higher than when only one Big Four auditor is involved.

The main variable to test hypothesis H2 is %*MAINAUD*. It is significantly negatively associated with the audit quality at a p-value less than 0.1. Thus, our regression results show that unbalanced joint audits lead to a higher audit quality (less abnormal working capital accruals) than balanced joint audits. This result confirms hypothesis H2.

4.4 Robustness Check: The Concept of CEM

4.4.1 CEM as an Alternative Approach to Measure Audit Quality

As described above, applying the concept of abnormal accruals to measure audit quality has often been criticized. The main point of criticism has been that the prediction of the normal (not subject to manipulation) accrual component of earnings is often biased and imprecise, so the ability of the model to separate discretionary accruals from the normal accruals is poor.[48] Furthermore, tests using abnormal accruals to measure earnings managements are susceptible to misspecification because correlated variables are not considered.[49]

To test our empirical results for robustness, we apply the concept of *cosmetic earnings management* (CEM). In financial reporting, CEM means a special type of earnings management and can be described as being used to fine tune the reported results of a company. The reported results are adjusted through rounding. For example, profits are rounded up above a psychological threshold, which is recognized to be considerably higher by potential users of financial statements. The same reasoning can be used for losses, but in the other way round. The idea behind this is that a user of financial statements judges a profit of, for example, 497 million to be abnormally lower than a profit of 502 million. That is why the management may tend to round up the second-from-the-left digit to make the first digit increase by one.[50]

The first investigation of CEM in financial reporting was the study of Carslaw (1988) who found that managers in New Zealand rounded up their profits.[51] This result was confirmed for a sample of US companies by Thomas (1989) who found out that the earnings per share result

[48] See, for example, Dechow/Sloan/Sweeney (1995), Kang/Sivaramakrishnan (1995), Peasnell/Pope/Young (2000) or Thomas/Zhang (2000).
[49] See, for example, Dechow/Hutton/Kim/Sloan (2012).
[50] See, for example, Carslaw (1988), Thomas (1989), Niskanen/Keloharju (2000) or Van Caneghem (2002).
[51] See Carslaw (1988), pp. 325–327.

were rounded up for profits and down for losses.[52] Many other studies followed, proving the applicability of CEM in financial reporting.[53] Assuming that auditors with a high audit quality are able to constrain earnings management, the frequency of CEM can be used to measure audit quality.

The study of Guan, He and Yang (2006) was the first one to use the frequency of CEM as a surrogate for audit quality. They investigated US company data from 1993 to 2003 and the occurrence frequency of CEM during the four quarters of the financial year. They showed that CEM occurs in all four quarters, but a comparison of frequency showed that in the fourth quarter, the CEM was far smaller than in the other three quarters. Thus, Guan et al. (2006) concluded that the habit of manipulating earnings figures by rounding them up could be mitigated by audit firms.[54] The first attempt to explicitly investigate CEM as a surrogate for audit quality was the investigation of Van Caneghem (2004). Including a sample of 1,256 companies from the UK, Van Caneghem (2004) showed that CEM was only constrained by the industry specialist, Big Five audit firms.[55] Möller (2009) also used CEM to measure the influence of auditor size on audit quality. While proving a positive influence, she concluded that the analysis of the digits is a suitable method to measure audit quality.[56] As a result of these studies, audit firms are able to mitigate or reduce CEM.

4.4.2 Characterization of the Test Procedure and Database

Applying the concept of CEM to check the robustness of our data and assuming that high-quality audits are able to constrain earnings management, we expect that unbalanced joint audits are able to constrain CEM more effectively than balanced joint audits.

As in former research using the concept of CEM as a proxy for audit quality, we analyze the evidence for CEM by investigating the second number of the reported results with the *Benford's Law*.[57] If there is a deviation of the reported results from the Benford distribution,

[52] See Thomas (1989), p. 787.
[53] See, for example, Niskanen/Keloharju (2000), Van Caneghem (2002), Quick/Wolz (2003) as well as Skousen/Guan/ Wetzel (2004).
[54] See Guan et al. (2006), p. 574.
[55] See Van Caneghem (2004), p. 776.
[56] See Möller (2009), p. 20.
[57] Newcomb (1881) was the first researcher who identified the different frequencies of numbers. However, Benford (1938) rediscovered this law, and it was named after Frank Benford.

which means a significant deficit of the number nine or eight and a significant overhang of the number zero, then CEM cannot be ruled out for that sample.[58]

The Benford distribution follows a logarithmic pattern and the formulas for the expected frequencies for the first (D_1) and second digits (D_2) are:

$$P(D_1 = d_1) = \log\left(1 + \left(\frac{1}{d_1}\right)\right) ; d_1 \in \{1,2,...,9\}$$
$$P(D_2 = d_2) = \sum_{d_1=1}^{9} \log\left(1 + \left(\frac{1}{d_1 d_2}\right)\right) ; d_2 \in \{0,1,...,9\} \quad (1)$$

It is important to point out that the term d_1d_2 is not a product of the first and the second digit, but rather the digit d_1, and d_2 has only been inserted. Using these formulas to calculate the expected frequencies results in the frequencies shown in *Table 7*.

Table 7: Expected digital frequencies of the Benford distribution

Digit		0	1	2	3	4	5	6	7	8	9
Position	1st	–	0.3010	0.1761	0.1249	0.0969	0.0792	0.0670	0.0580	0.0512	0.0458
in number	2nd	0.1197	0.1139	0.1088	0.1043	0.1003	0.0967	0.0934	0.0904	0.0876	0.0850

Nigrini and Mittermaier (1997) developed a set of tests to analyze deviations from the Benford distribution. One of their suggestions was the use of the z-value statistic, which was also used by Van Caneghem (2004) and many other researchers in their analyses. Thus, we also use the z-value. It is calculated as follows:

$$z = \frac{p - p_0}{\sqrt{\frac{p_0(1-p_0)}{n}}} \quad (2)$$

where p is the observed proportion, p_0, the expected proportion and n, the number of observations. In addition to this test, we also use the chi-square-test to verify the results from the z-value.[59]

To conduct the analysis, we split the whole data sample into two subsamples. In the first subsample, all companies are included where the allocation of audit fees is relatively even. We assume that this is the case if each of the engaged audit firms has at least a certain percentage

[58] See, for example, Carslaw (1988), Thomas (1989) or et al. (2004). For details regarding the applicability of the Benford's Law to reported earnings figures, see Van Caneghem (2004).

[59] Also Van Caneghem (2004) used the use the chi-square-test to verify the results from the z-value-test.

of the audit fees. Thereby, we vary this percentage and make the analysis for the thresholds of 40%, 30% and 20%. In the second subsample, all companies are included where the allocation of audit fees is more uneven, such that the threshold is not reached or exceeded by one of the engaged audit firms. After the specification of the subsamples, we analyze whether differences between the subsamples with regard to the frequency of CEM can be found.

To find indications for CEM in each subsample, we analyze the second number of the net income. We exclude all companies with a net income of less than two numbers. We only analyze positive net income because the number of observations with negative net income is too low for an analysis. Therefore, we analyze the rounding up behavior, but not the rounding down behavior. The subsamples of the more equal allocation between both audit firms and less equal allocation between both audit firms created appears in *Table 8*.

Table 8: Subsamples of the Dataset

	20 %	30 %	40 %
Subsample one:			
Both audit firms reach or exceed the threshold of …%	419	364	266
Subsample two:			
One of the audit firms does not reach the threshold of …%	111	166	264
	530	530	530

4.4.3 Empirical Results

The results of our assessment of the second-from-the-left digits of the clients' net income and their deviations from the Benford distribution are summarized in *Tables 9*, *10* and *11*, which present results for the three different thresholds (20%, 30%, 40%).

Table 9: The frequency of second digits in the clients' net incomes (threshold 20%)

		Subsample 1 one audit firm has less than 20% of the audit fees			Subsample 2 both audit firms have at least 20% of the audit fees		
Second Digit	Expected frequency	Observed frequency	Deviation (in absolute terms)	z-value	Observed frequency	Deviation (in absolute terms)	z-value
0	0.1197	0.0541	0.0656	2.1306**	0.1527	0.0330	2.0837**
1	0.1139	0.1081	0.0058	0.1921	0.0883	0.0256	1.6491*
2	0.1088	0.1171	0.0083	0.2814	0.1097	0.0009	0.0648
3	0.1043	0.1081	0.0038	0.1313	0.1146	0.0103	0.6870
4	0.1003	0.1081	0.0078	0.2738	0.1074	0.0071	0.4837
5	0.0967	0.0991	0.0024	0.0855	0.0740	0.0227	1.5732
6	0.0934	0.0901	0.0033	0.1198	0.1289	0.0355	2.4957**
7	0.0904	0.0991	0.0087	0.3196	0.0716	0.0189	1.3421
8	0.0876	0.0901	0.0025	0.0928	0.0644	0.0232	1.6769*
9	0.0850	0.1261	0.0411	1.5537	0.0883	0.0033	0.2426
		N = 111 χ^2 = 6.51 (< 16.92)			N = 419 χ^2 = 19.01 (> 16.92)		

The results show that no indications for CEM are observed in subsample 1 where the allocation of audit fees is highly uneven so that one audit firm has less than 20% of the total audit fees. However, there are far too few zeroes, which is significant at the 5% level. Too many nines are also present, which is not significant. In particular, far too few zeroes could be a sign of rounding down rather than rounding up. So, it looks like a more conservative behavior if the smaller audit partner has a stake of less than 20 % on the audit fees. The results are otherwise in the second subsample, whereby both of the joint audit firms have at least 20% of the total audit fees and the allocation is more even. In this subsample, significantly too many zeroes are present (at the 5% level) and significantly too few eights (at the 10% level). This is an indication for CEM.[60] However, significantly too many ones and sixes are also present. A comparison between both distributions reveals a significant difference between both subsamples for zero. This is an indication for less CEM and, therefore, a higher audit quality in the subsample where the allocation of audit fees is more uneven (so that one audit firm has less than 20% of the fees).

To analyze whether the whole distribution differs from the Benford distribution, the chi-square-test is applied. The chi-square-test must exceed 16.92 to be significant at the 5% level

[60] See, for example, Carslaw (1988), Thomas (1989), Niskanen/Keloharju (2000), Van Caneghem (2002) or Skousen et al. (2004).

with 9 degrees of freedom. This threshold is only reached for the subsample where both audit firms have more than 20% of the total audit fee. However, this does not disrupt our initial conclusion. If the chi-square-test is significant, it only means that the observed distribution as a whole significantly deviates from the expected distribution.[61] Such a deviation is not necessary to detect CEM. For the other two thresholds of 30% and 40%, the chi-square-test never exceeds a critical value and is not significant.

Table 10: The frequency of second digits in the clients' net incomes (threshold 30%)

		Subsample 2 one audit firm has less than 30% of the audit fees			Subsample 2 both audit firms have at least 30% of the audit fees		
Second Digit	Expected frequency	Observed frequency	Deviation (in absolute terms)	z-value	Observed frequency	Deviation (in absolute terms)	z-value
0	0.1197	0.0904	0.0293	1.1645	0.1511	0.0314	1.8455*
1	0.1139	0.0904	0.0235	0.9546	0.0934	0.0205	1.2307
2	0.1088	0.1024	0.0064	0.2644	0.1154	0.0066	0.4034
3	0.1043	0.1205	0.0161	0.6821	0.1099	0.0056	0.3489
4	0.1003	0.0964	0.0039	0.16798	0.1126	0.0123	0.7836
5	0.0967	0.0843	0.0124	0.5389	0.0769	0.0198	1.2767
6	0.0934	0.1446	0.0512	2.2660**	0.1099	0.0165	1.0812
7	0.0904	0.0723	0.0181	0.8137	0.0797	0.0107	0.7139
8	0.0876	0.0843	0.0033	0.1487	0.0632	0.0244	1.6475*
9	0.0850	0.1145	0.0295	1.3609	0.0879	0.0029	0.1992
		N = 166 $\chi^2 = 9.74$ (< 16.92)			N = 364 $\chi^2 = 10.65$ (< 16.92)		

At the threshold of 30%, the results show that if both audit firms have a stake of more than 30% of the audit fees, signs of CEM can be detected. Significantly too many zeroes and significantly too few eights are observed (both on the 10% level). The other subsample, where only one audit firm has a stake of more than 30%, no sign of CEM can be detected, but significantly too many sixes are observed. A comparison between both distributions reveals a significant difference between both subsamples for zero. This is an indication for less CEM and, therefore, a higher audit quality in the subsample where the allocation of audit fees is more uneven (so that one audit firm has less than 30% of the fees).

[61] See Carslaw (1988), p. 324.

Table 11: The frequency of second digits in the clients' net incomes (threshold 40%)

		Subsample 2 one audit firm has less than 40% of the audit fees			Subsample 2 both audit firms have at least 40% of the audit fees		
Second Digit	Expected frequency	Observed frequency	Deviation (in absolute terms)	z-value	Observed frequency	Deviation (in absolute terms)	z-value
0	0.1197	0.1023	0.0174	0.8723	0.1617	0.0420	2.1079**
1	0.1139	0.0871	0.0268	1.3696	0.0977	0.0162	0.8294
2	0.1088	0.1250	0.0162	0.8453	0.0977	0.0111	0.5791
3	0.1043	0.1288	0.0245	1.3018	0.0977	0.0066	0.3498
4	0.1003	0.0947	0.0056	0.3031	0.1203	0.0200	1.0859
5	0.0967	0.0833	0.0133	0.7348	0.0752	0.0215	1.1871
6	0.0934	0.1402	0.0468	2.6105***	0.1015	0.0081	0.4542
7	0.0904	0.0758	0.0146	0.8297	0.0789	0.0115	0.6514
8	0.0876	0.0720	0.0156	0.8983	0.0677	0.0199	1.1498
9	0.0850	0.0909	0.0059	0.3443	0.1015	0.0165	0.9652
		N = 264 χ^2 = 12.71 (< 16.92)			N = 266 χ^2 = 9,89 (< 16.92)		

The subsample with a less equal allocation (threshold: now 40%) still does not show any sign of CEM because the deviation of the relevant numbers between the observed and the expected frequencies are not significant. The deviation of the number six is still significant (on the 1% level). Thus, CEM can be ruled out for this subsample. In the subsample 2, with a more equal allocation of the audit fees, the effect of CEM is reduced. Significantly too many zeroes are still observed (on the 5% level), but the number eight no longer has significance. This result is due to the fact that, in comparison to the 30% analysis (*Table 10*), 98 observations drop out between subsample 2 and subsample 1. The reason for this is that one of the audit firms in these observations has a stake in the audit fees between 30% and 40%. Therefore, they move into the subsample with a less equal allocation of audit fees by enhancing the threshold from 30% to 40%. A comparison between both distributions reveals a significant difference between both subsamples for zero. This is an indication for less CEM taking place in the case of an unbalanced joint audit.

While interpreting the results, we feel it is important to note that the CEM-analysis is a univariate analysis. Consequently, it is not clear whether the effects are driven by the allocation of audit work or by other influences that are not considered in this study. Nevertheless, if we assume that less CEM indicates a higher audit quality, the results indicate that an unbalanced

joint audit results in higher audit quality than a balanced joint audit. Therefore, our results support the results of the accruals-study and, therefore hypothesis H2.

5 Summary and Conclusion

This study addressed joint audits and analyzed the question of the impact of the allocation of audit work between the engaged audit firms on the total amount of audit fees and quality. We included data from the French audit market for listed companies over the financial years 2009 to 2012 in the analysis. With regard to the effects on the audit fees, our empirical testing revealed that joint audits where one main auditor has a large stake in the audit work (unbalanced joint audits) lead to smaller audit costs than joint audits where the audit work is shared more evenly (balanced joint audit). We also uncovered a Big Four premium, which is a bit greater for joint audits appointing one Big Four rather than two Big Four audit firms.

The second analysis addressed the question of the influence of the audit work allocation on audit quality. We, therefore, analyzed whether abnormal working capital accruals were systematically different for companies where the joint audit firms allocated work in a more balanced way. To predict the working capital accruals, we used the linear model of DeFond and Park (2001). The results showed that there are fewer abnormal working capital accruals for unbalanced joint audits than for balanced joint audits. This leads us to the conclusion that less balanced audit work allocations enhance the audit quality in a joint audit. This result is attributable to the free rider effect, which should be greater in a joint audit with a balanced audit work allocation than in a joint audit where the audit work is allocated more unevenly. Difficulties in the communication and coordination process may also lead to reduced audit quality in the case of balanced audit work allocation.

Measuring audit quality by applying the concept of abnormal working capital accruals has often been criticized in the literature because the model demonstrates a poor ability to separate the normal component from the abnormal component of earnings. Therefore, we checked our results for robustness applying the concept of cosmetic earnings management (CEM). In financial reporting, CEM means a special type of earnings management and can be described as a way of fine tuning the reported results of a company. Former research has shown that an auditor can influence the total amount of CEM, and it can be used as a surrogate for audit quality. In our various investigations, we found no indications for CEM in the subsample of

companies audited by an unbalanced joint audit. Instead, we found indications for the existence of CEM in the subsample of companies where the audit firms shared their audit work more evenly. These results indicate that companies audited by an unbalanced joint audit have a lower tendency to round up reported results. Although the concept of CEM has not been sufficiently tested and proven to measure audit quality until now, the results of our CEM-analysis confirm the findings of the abnormal accruals analysis and, therefore, indicate its robustness.

In conclusion, our audit fee and audit quality analyses have shown that unbalanced joint audits lead to smaller audit costs and higher audit quality. In contrast, joint audits where the audit work is allocated more evenly lead to higher audit costs and lower audit quality. As unbalanced joint audits have parallels to single audits, the results suggest that single audits may lead to higher audit quality and lower audit costs as compared with joint audits, at least in the audit market and period considered.

The empirical evidence presented here should be of interest for companies that are considering choosing more than one auditor to audit their financial statements. Furthermore, it should be of interest to regulators who are debating the costs and benefits of joint audits. Our results contribute to the joint audit literature on analyses of the optimal design of joint audits.

References

André, P., Broye, G., Pong, C. & Schatt, A. (2016): Are Joint Audits Associated with Higher Audit Fees?. European Accounting Review, Vol. 2, pp. 245–274.

Antle, R., Gordon, E., Narayanamoorthy, G. & Zhou, L. (2006): The Joint Determination of Audit Fees, Non-audit Fees, and Abnormal Accruals. Review of Quantitative Finance and Accounting, Vol. 27, pp. 235–266.

Ashbaugh, H. & Warfield, T. D. (2003): Audits as a Corporate Governance Mechanism: Evidence from the German Market. Journal of International Accounting Research, Vol. 2, pp. 1–21.

Audousset-Coulier, S. (2015): Audit Fees in a Joint Audit Setting. European Accounting Review, Vol. 24, pp. 347–377.

Becker, C., DeFond, M., Jiambalvo, J. & Subramanyam, K. R. (1998): The Effect of Audit Quality on Earnings Management. Contemporary Accounting Research, Vol. 15, pp. 1–24.

Benford, F. (1938): The Law of Anomalous Numbers. Proceedings of the American Philosophical Society, Vol. 78, pp. 551–572.

Brinn, T., Peel, M. J. & Roberts, R. (1994): Audit Fee Determinants of Independent & Subsidiary Unquoted Companies in the UK – An Exploratory Study. British Accounting Review, Vol. 26, pp. 101–121.

Bureau van Dijk (2016): Diane, URL: https://diane.bvdep.com/. Downloaded on 15.02.2016.

Cameron, A. C. & Trivedi, P. K. (2010): Microeconometrics Using Stata. (rev. edn) Collage Texas: Stata Press.

Carslaw, C. A. P. N. (1988): Anomalies in Income Numbers: Evidence of Goal Oriented Behavior. The Accounting Review, Vol. 63, pp. 321–327.

Chan, P., Ezzamel, M. & Gwilliam, D. (1993): Determinants of Audit Fees for Quoted UK Companies. Journal of Business Finance & Accounting, Vol. 20, pp. 765–786.

Choi, J.-H., Kim, J. B., Liu, X. & Simunic, D. A. (2008): Audit Pricing, Legal Liability Regimes, and Big 4 Premiums: Theory and Cross-Country Evidence. Contemporary Accounting Research, Vol. 25, pp. 55–99.

Craswell, A. T. & Francis, J. R. (1999): Pricing Initial Audit Engagements: A Test of Competing Theories. The Accounting Review, Vol. 74, pp. 201–216.

DeAngelo, L. E. (1981a): Auditor Independence, 'Low Balling', and Disclosure Regulation. Journal of Accounting and Economics, Vol. 3, pp. 113–127.

DeAngelo, L. E. (1981b): Auditor Size and Audit Quality. Journal of Accounting and Economics, Vol. 3, pp. 183–199.

Dechow, P. M., Hutton, A. P., Kim, J. H. & Sloan, R. G. (2012): Detecting Earnings Management: A New Approach. Journal of Accounting Research, Vol. 50, pp. 275–334.

Dechow, P. M., Sloan, R. G. & Sweeney, A. P. (1995): Detecting Earnings Management. The Accounting Review, Vol. 70, pp. 193–225.

DeFond, M. & Park, C. (2001): The Reversal of Abnormal Accruals and the Market Valuation of Earnings Surprises. The Accounting Review, Vol. 76, pp. 375–404.

Deng, M., Lu, T., Simunic, D. A. & Ye, M. (2014): Do Joint Audits Improve or Impair Audit Quality?. Journal of Accounting Research, Vol. 52, pp. 1029–1060.

European Commission (2010): Green Paper – Audit Policy: Lessons from the Crisis. European Commission, Brussels.

Ferguson, A. C., Francis, J. R. & Stokes, D. J. (2006): What Matters in Audit Pricing: Industry Specialization or Overall Market Leadership?. Accounting and Finance, Vol. 46, pp. 97–106.

Francis, J. R., Richard, C. & Vanstraelen, A. (2009): Assessing France's Joint Audits Requirement: Are Two Heads Better than One?. Auditing: A Journal of Practice and Theory, Vol. 28, pp. 35–63.

Francis, J. R. & Stokes, D. J. (1986): Audit Prices, Product Differentiation, and Scale Economies: Further Evidence from the Australian Market. Journal of Accounting Research, Vol. 24, pp. 383–393.

French Professional Standards NEP-100 (2011): Audit des Comptes Réalisés par Plusieurs Commissaires aux Comptes [Auditing Financial Statements with More than One Auditor]. Journal Officiel de la République Francaise.

Gist, W. E. (1992): Explaining Variability in External Audit Fees. Accounting & Business Research, Vol. 23, pp. 79–84.

Gonthier-Besacier, N. & Schatt, A. (2007): Determinants of Audit Fees for French Quoted Firms. Managerial Auditing Journal, Vol. 22, pp. 139–160.

Gregory, A. & Collier, P. (1996): Audit Fees and Auditor Change: An Investigation of the Persistence of Fee Reduction by Type of Change. Journal of Business Finance & Accounting, Vol. 23, pp. 141–191.

Guan, L., He, D. & Yang, D. (2006): Auditing, Integral Approach to Quarterly Reporting, and Cosmetic Earnings Management. Managerial Auditing Journal, Vol. 21, pp. 569–581.

Hay, D. C. (2012): Further Evidence from Meta-Analysis of Audit Fee Research. International Journal of Auditing, Vol. 17, pp. 162–176.

Hay, D. C., Knechel, W. R. & Li, V. (2006): Non-Audit Services and Auditor Independence: New Zealand Evidence. Journal of Business Finance & Accounting, Vol. 33, pp. 715–734.

Hay, D. C., Knechel, W. R. & Wong, N. (2006): Audit Fees: A Meta-Analysis of the Effect of Supply and Demand Attributes. Contemporary Accounting Research, Vol. 23, pp. 141–191.

Holm, C. & Thinggaard, F. (2015): Paying for Joint or Single Audits? The Impact of Auditor Pairings and Differences in Technology Efficiency. International Journal of Auditing, Vol. 20, pp. 1–16.

Holm, C. & Thinggaard, F. (2014): Leaving a Joint Audit System: Conditional Fee Reductions. Managerial Auditing Journal, Vol. 29, pp. 131–152.

Holm, C. & Thinggaard, F. (2010): Joint Audits – Benefit or Burden?. Working Paper. Denmark: Aaarhus University.

Hribar, P. & Nichols., C. (2007): The Use of Unsigned Earnings Quality Measures in Tests of Earnings Management. Journal of Accounting Research, Vol. 45, pp. 1017–1053.

Ittonen, K. & Peni, E. (2012): Auditor's Gender and Auditor Fees. International Journal of Auditing, Vol. 16, pp. 1–18.

Jones, J. (1991): Earnings Management During Import Relief Investigations. Journal of Accounting Research, Vol. 29, pp. 193–228.

Kang, S.-H. & Sivaramakrishnan, K. (1995): Issues in Testing Earnings Management and an Instrumental Variable Approach. Journal of Accounting Research, Vol. 33, pp. 353–367.

Kothari, S. P., Leone, A. & Wasley, C. (2005): Performance Matched Discretionary Accrual Measures. Journal of Accounting and Economics, Vol. 39, pp. 163–197.

Lesage, C., Ratzinger-Sakel, N. & Kettunen, J. (2012): Struggle over Joint Audit: On Behalf of Public Interest?. Working Paper. France: HEC Paris, Germany: Ulm University, and Finland: University of Jyväskylä.

Matsumoto, D. A. (2002): Management's Incentives to Avoid Negative Earnings Surprises. The Accounting Review, Vol. 77, pp. 483–514.

Menard, S. (1995): Applied Logistic Regression Analysis: Sage University Series on Quantitative Applications in the Social Sciences. (2nd edn) Thousand Oaks: Sage Publications.

Möller, M. (2009): Measuring the Quality of Auditing Services with the Help of Benford's Law? – An Empirical Analysis and Discussion of this Methodical Approach. Working Paper. Switzerland: University of Zurich.

Newcomb, S. (1881): Note on the Frequencies of Use of the Different Digits in Natural Numbers. American Journal of Mathematics, Vol. 44, pp. 39–40.

Nigrini, M. J. & Mittermaier, L. J. (1997): The Use of Benford's Law as an Aid in Analytical Procedures. Auditing: A Journal of Practice & Theory, Vol. 16, pp. 52–67.

Niskanen, J. & Keloharju, M. (2000): Earnings Cosmetics in a Tax-Driven Accounting Environment: Evidence from Finnish Public Firms. The European Accounting Review, Vol. 9, pp. 443–452.

Peasnell, K. V., Pope, P. F. & Young, S. (2000): Detecting Earnings Management Using Cross-Sectional Abnormal Accruals Models. Accounting and Business Research, Vol. 30, pp. 313–326.

Piot, C. (2007): Auditor Concentration in a Joint Auditing Environment: The French Market 1997-2003. Managerial Auditing Journal, Vol. 22, pp. 161–176.

Piot, C. & Janin, R. (2007): External Auditors, Audit Committees and Earnings Management in France. European Accounting Review, Vol. 16, pp. 429–454.

Quick, R., Schmidt, F. & Simons, D. (2016): Sind Joint Audits sinnvoll? [Are Joint Audits Useful?]. Die Wirtschaftsprüfung, Vol. 69, pp. 11–21.

Quick, R. & Wolz, M. (2003): Benford's Law in deutschen Rechnungslegungsdaten [Benford's Law in German Accounting Data]. Betriebswirtschaftliche Forschung und Praxis, Vol. 57, pp. 208–224.

Simon, D. T. & Francis, J. R. (1988): The Effect of Auditor Change on Audit Fees: Test of Price Cutting and Price Recovery. The Accounting Review, Vol. 63, pp. 255–269.

Simunic, D. A. (1980): The Pricing of Audit Services: Theory and Evidence. Journal of Accounting Research, Vol. 18, pp. 161–190.

Skousen, C. J., Guan, L. & Wetzel, T. S. (2004): Anomalies and Unusual Patterns in Reported Earnings: Japanese Managers Round Earnings. Journal of International Financial Management and Accounting, Vol. 15, pp. 212–234.

Teoh, S., Welch, I. & Wong, T. J. (1998): Earnings Management and the Long-Run Market Performance of Initial Public Offerings. Journal of Finance, Vol. 53, pp. 1935–1974.

Thinggaard, F. & Kiertzner, L. (2008): Determinants of Audit Fees: Evidence from a Small Capital Market with a Joint Audit Requirement. International Journal of Auditing, Vol. 12, pp. 141–158.

Thomas, J. K. (1989): Unusual Patterns in Reported Earnings. The Accounting Review, Vol. 64, pp. 773–787.

Thomas, J. & Zhang, X.-J. (2000): Identifying Unexpected Accruals: A Comparison of Current Approaches. Journal of Accounting and Public Policy, Vol. 19, pp. 347–376.

Van Caneghem, T. (2004): The Impact of Audit Quality on Earnings Rounding-Up Behavior: Some UK Evidence. European Accounting Review, Vol. 13, pp. 771–786.

Van Caneghem, T. (2002): Earnings Management Induced by Cognitive Reference Points. British Accounting Review, Vol. 34, pp. 167–178.

Zerni, M., Haapamäki, E., Järvinen, T. & Niemi, L. (2012): Do Joint Audits Improve Audit Quality? Evidence from Voluntary Joint Audits. European Accounting Review, Vol. 21, pp. 731–765.

Zerni, M., Kallunki, J. P. & Nilsson, H. (2010): The Entrenchment Problem, Corporate Governance Mechanisms, and Firm Value. Contemporary Accounting Research, Vol. 27, pp. 1169–1206.

Beitrag 3

Titel

How Engagement Quality Reviews Enhance Incentives for Audit-Related Services

Wie eine prüfungsbegleitende interne Qualitätskontrolle die Anreize zur Akquise prüfungsnaher Dienstleistungen erhöht

How Engagement Quality Reviews Enhance Incentives for Audit-Related Services

ABSTRACT

Engagement Quality Reviews (EQRs) are an important element of the audit quality control process as they take place before expressing the opinion and may be the auditor's last defense in preventing an audit failure. This study analyzes in a stylized analytical model the effects of EQRs on the sharing rules of audit partnerships as well as on their expected payoffs. It is shown that EQRs can enhance the engagement partner's incentives to provide audit-related services so that the audit firm's expected payoff rises compared to the case that no EQR takes place. For this reason, there could be an endogenous incentive for audit partnerships to invest in EQRs whenever the review costs are not too great. It is furthermore shown, that the reporting threshold can be greater but also smaller in the case of an EQR.

1 Introduction

An Engagement Quality Review[1] (hereafter referred to as EQR) means that a second partner who is not in charge with the engagement reviews the engagement partner's audit and its documentation to examine and resolve audit, accounting and financial reporting matters.[2] It is known as an important element of the audit quality control process. In contrast to peer reviews, which occur after providing the audit opinion and involve only some clients, EQRs take place before expressing the opinion and may be the auditor's last defense in preventing an audit failure.[3]

In 1978, the Security Exchange Commission (SEC) Practice Section of the American Institute of Certified Public Accountants (AICPA) was formed and made EQRs obligatory for all members in audits of public listed companies.[4] Before the SEC's requirements, EQRs were common practice for many public accounting firms.[5] As the responsibilities of the EQR were not concretized in the early regulations and as the Public Oversight Board had identified a lack of objectivity in the review process, the SEC revised its guidance in the 1990's to overcome some concerns about the effectiveness of EQR.[6] The Sarbanes-Oxley Act of 2002 emphasized the importance of EQRs again as it instructed the Public Company Accounting Oversight Board (PCAOB) to develop an auditing standard addressing EQRs.[7] In 2009, the PCAOB presented the new audit standard (AS) No. 7 called *Engagement Quality Reviews* which was adopted by the SEC in January 2010. The new AS states that a review partner has to evaluate the significant judgments and the conclusions made by the engagement team.[8] It furthermore states that the review partner must not have a previous connection with the engagement and that he has to maintain integrity and objectivity in performing the engagement quality review. The International Federation of Accountants (IFAC) has an equivalent rule for its members: The International Standard on Auditing (ISA) No. 220 undertakes audit firms to perform an engagement quality control review "to provide an objective evaluation, on or be-

1 In the literature, EQR is also known as a *second* or *concurring* partner review. The International Auditing and Assurance Standards Board (IAASB) as well as the PCAOP decided to use the term *Engagement Quality Review* in their audit standards and literature. See PCAOB (2009).
2 See U. S. House of Representatives (2002).
3 See Tucker/Matsumara (1997), p. 79.
4 See AICPA (1986).
5 See Mautz/Matusiak (1988).
6 See Public Oversight Board (1993), p. 48. See for an overview of the new responsibilities Epps/Messier (2007), table 1.
7 See U. S. House of Representatives (2002).
8 See PCAOB (2009).

fore the date of the auditor's report, of the significant judgments the engagement team made and the conclusions it reached in formulating the auditor's report"[9].

The purpose of this study is to examine whether the audit firm's expected payoff from an audit project can be greater with than without an EQR as an EQR may enhance the engagement partner's incentives to provide audit related services. Furthermore, it is analyzed whether the reporting threshold and, therefore, the amount of truthful reporting is greater in the case of an EQR.

To answer these research questions, a stylized analytical model is developed in which audit firms consist of several individual partners. The engagement partner of an audit firm is always interested in maximizing his individual payoff when he decides for a qualified or an unqualified audit report and the optimal amount of audit-related services. In a basic variant of the model, the engagement partner's optimal report decision, his optimal level of audit-related services as well as the audit firm's equilibrium sharing rule concerning fees and liabilities are analyzed. At determining the equilibrium sharing rule I assume that the partners are interested in maximizing the overall payoff of the firm which depends on direct audit costs, expected liability damages and a payoff resulting from the engagement partner's acquisition of audit-related service projects. In an extended version of the model, it is analyzed how the results of the basic model variant change in the case that an EQR takes place. After the review process, the review partner can thereby decide whether to agree with the engagements partner's report decision or to disagree to it by proposing a dissenting opinion. I assume that the EQR partner has no previous connection with the engagement and that he is also interested in maximizing his individual payoff making his decisions.

The main findings are the following: Without an EQR taking place, the engagement partner's report and service decisions are not optimal from the firm's point of view. The reason is that in the event of a liability case, each of the audit firm's partners is affected by liability damages so that the engagement partner does not bear the sum of damages alone. Consequently, his incentives to report truthfully are too small from the audit firm's point of view. The audit firm reacts by limiting the engagement partner's share on audit related service payoffs to enhance his incentives to report truthfully. This results in less service return so that the audit firm's expected payoff decreases. In the presence of an EQR, the audit firm changes its equilibrium sharing rule what makes the engagement partner also changing his individual decisions. In the

[9] See ISA 220, § 7. In Germany, e.g., ISA 220 was implemented by the German Chamber of Public Accountants (Wirtschaftsprüferkammer) in § 24d BS WP/vBP.

equilibrium, the resulting audit firm's expected payoff can therefore be greater in the presence than in the absence of an EQR. One reason is that due to an EQR there are cases where the audit firm can provide greater incentives for audit related services resulting in a higher service return as the review partner ensures truthful reporting. Therefore, a greater expected payoff for the audit firm results if this is the case. Consequently, there can be an endogenous incentive for an audit partnership (hereafter referred to as audit firm) to decide for an EQR voluntarily. A comparison of the report decisions shows that the amount of truthful reporting is normally greater in the presence of an EQR, but it can be also smaller compared to the case where no EQR takes place. The latter will be the case, if the audit firm is very small and / or the reputational damages that each partner bears in the event of an audit failure are great.

The above mentioned results regarding the influence of an EQR on the audit quality are in line with the results of prior research that shows that an EQR can reduce the audit risk. Matsumura and Tucker (1995) analyze in an analytical model how the engagement partner's incentives to bias the audit report change in the presence of an EQR. Thereby, they assume that the engagement partner's incentives for biasing the audit report result from client pressure (opinion shopping). The results show that an EQR can induce the engagement partner to report with greater independence and to plan higher levels of audit testing. In contrast to the study of Matsumura and Tucker (1995), the present analyses show that the engagement partner's incentives to bias the report can also result from the presence of profitable service projects. In this case, the review partner is not only able to enhance the reporting threshold but leads also to greater incentives for acquiring service projects resulting in a higher expected payoff for the audit firm. In an experimental study, Matsumura and Tucker (1997) show that EQRs can lead to less reporting bias. This result confirms the result of their analytical study described above. Ayers and Kaplan (2003) also confirm these results in their experimental study as they show that audit risk assessments are improved in the presence of an EQR. Further related studies analyze the impact of the design of EQRs or the influence of the competence of the review partners on the effectiveness of EQRs:[10] Favere-Marchesi and Emby (2005), for example, show in an experimental study that a rotation of review partners improves their judgments. Owhoso, Messier and Lynch (2002) analyze the influence of industry specialization; Luehlfing, Copley and Shockley (1995) the influence of the experience of re-

[10] Schneider and Messier (2007) as well as Bedard, Deis, Curtis and Jenkins (2008) provide a detailed review of prior research on EQRs. Since the review of Schneider and Messier (2007) and Bedard, Deis, Curtis and Jenkins (2008) I am only aware of the survey study of Emby and Favere-Marchesi (2010) analyzing the interaction between review and engagement partners and of the study of Messier, Kozloski and Kochetova-Kozloski (2010) analyzing empirically SEC and PCAOB enforcement actions against EQRs.

view partners; and Bedard, Deis, Curtis and Jenkins (2008) the influence of the review approach itself on the effectiveness of EQRs.

The methodology and approach I use this study is closely related to that of Liu and Simunic (2005) and to that of Liu and Chan (2012) although both studies do not analyze an EQR topic. Liu and Simunic (2005) use, for the first time, an analytical model to analyze the effects of profit sharing rules on individual partners' decisions in audit firms. They show that under certain conditions firms strategically choose different profit sharing rules to specialize in different types of clients whereby they earn positive economic profits. Liu and Chan (2012) also analyze profit sharing rules in audit partnerships. They examine how audit firms choose profit sharing rules optimally when besides an engagement partner there is also a consulting partner providing consulting services to the auditor's client. They furthermore examine how the equilibrium sharing rule changes when a participation of the engagement partner in the consulting profits is prohibited.

To the best of my knowledge, there is no prior theoretical research dealing with the question of the influence of an EQR on the audit firm's incentives to perform audit-related services as well as analyzing the audit firm's incentives to decide voluntarily for an EQR in this context.

The remainder of this paper is organized as follows: Section 2 presents the basic variant of the analytical model. In this basic variant, the equilibrium sharing rule and the resulting effects on the audit firm's expected payoffs, reporting threshold and incentives to provide audit-related services are analyzed under the assumption that no EQR takes place. In section 3, an EQR is introduced and it is examined how the results change in comparison to the results of section 3. Section 4 summarizes and concludes.

2 The Basic Model

The basic model assumptions made in this study are very similar to those reported in Liu and Chan (2012). The model is a one-period model that includes two identical audit firms and $m > 0$ identical companies. In the model, the companies are mandated to hire an audit firm that verifies the credibility of their financial reports. Each audit firm is a partnership and consists of $n \geq 2$ identical partners. The audit firms compete for a client and the company chooses the audit firm whose engagement partner bids the lowest audit fee f^A. As in Liu and Chan (2012) several assumptions regarding the bidding strategy are made: The first assumption is

that the engagement partner does not bid a fee that is lower than his breakeven price and that the audit firm (the partnership) does not accept a fee which is lower than its breakeven price.[11] Secondly, when both audit firms bid the same audit fee, I assume that the audit firm with the lower breakeven price wins the bid. If both audit firms bid the same audit fee and have the same breakeven price I assume that both audit firms have an equal chance of winning the bid.[12] All parties in the model are risk neutral and interested in maximizing their individual payoffs. The interest rate is normalized to zero.

2.1 Basic Model Assumptions and Sequence of Events

2.1.1 Audit Process, Audit Opinion and Audit-Related Services

I assume a situation in which an audit firm is engaged to audit the financial statements of a client.[13] The audit process itself is not modeled explicitly, but instead I assume that the engagement partner finds evidence of misstatements wherever the financial statements are misstated. This means that the detection risk is equal to zero. Furthermore, during the audit process the engagement partner observes the level of materiality of the misstatements ($\mu \in [0,1]$) and learns where the client's operations and accounting systems have improvement potential for the future. The costs of the audit process are represented by K^A. These costs are assumed to be private costs of the engagement partner.

After the audit process has taken place, the engagement partner decides whether to issue an unqualified opinion ($r = 1$) or a qualified opinion ($r = 0$). In the case of a qualified opinion, the audited company is liquidated and the game is over. Otherwise, if the engagement partner decides for an unqualified opinion the company will not be liquidated.

When the company is not liquidated ($r = 1$), the engagement partner is able to provide audit-related services to the client. The reason is that he observes the improvement potential of the client's operations and accounting systems during the audit process. The engagement partner's audit-related service effort is represented by $s \geq 0$. The service effort costs are represented by

---

[11] This assumption is made to avoid *incredible threats* discussed by Grossman (1981) and Hurter/Lederer (1986).

[12] These technical assumption are made to avoid dealing with an ε - equilibrium. See Tirole (2002), p. 234.

[13] As the audit firms are identical and independent, the optimal decisions of each audit firm are the same so that the game is only considered for one audit firm.

$$\frac{k}{2} \cdot s^2 \tag{1}$$

with $k > 0$. I assume that audit-related services improve the profitability and therefore results in a positive cash flow for the client in the amount of $s \cdot A$. For simplicity, the marginal service return A is set equal to one in the subsequent analyses. As only the engagement partner discovers the service potential during the audit process, he is the only party who is able to provide audit-related services to the client. Therefore, no competing (audit) firms for the service project are present.[14]

If the engagement partner decides to issue an unqualified opinion even though the financial statements are misstated, the materiality $\mu > 0$ gives the probability that an external enforcement decides in favor for an audit failure, resulting in a liability case. If this is the case, the audit firm will bear damages in the amount of $M > 0$. I assume that these damages include legal liabilities as well as damages due to reputational losses.[15]

2.1.2 Linear Sharing Rule

As described above, each audit firm is a partnership and consists of $n \geq 2$ identical partners. I assume that the partners decide how to share the total amount of the audit fee (f^A), the audit-related service fee (f^S) and the damages that arise in the event of a liability case (M) by applying a linear sharing rule before submitting an audit proposal.

By choosing the optimal sharing rule, the partnership (hereafter referred to as the audit firm) indicates its interests in maximizing its expected overall payoff. Thereby, the expected overall payoff of the audit firm is defined by the sum of all individual payoffs of its partners. The engagement partner's compensation received from a client is represented by F_{EP} and is determined as follows:[16]

$$F_{EP} = \theta_{EP} \cdot f^A + \beta_{EP} \cdot f^S - \gamma_{EP} \cdot M \tag{2}$$

---

[14] Alternatively, one can assume that an outside competitive audit firm is also able to provide audit-related services for the client. In this case, it can be assumed that the engagement partner has cost advantages over an outside audit firm as there are expected knowledge spillovers from the audit process. For this reason, the notation would be more complicated, but the qualitative results of the analyses should not change.

[15] In the case of reputational damages, losses of future quasi rents are assumed as, in the case of an audit failure, prospective clients may conclude a poor audit quality, weakening the audit firm's reputation and its competitiveness.

[16] The index *EP* stands for the engagement partner.

$\theta_{EP} \in [0,1]$ represents the engagement partner's share in the audit fee (f^A) and $\beta_{EP} \in [0,1]$ the engagement partner's share in audit-related service fee (f^S). As the audit firm cannot allocate more than the total amount of fees to their partners, β_{EP} and θ_{EP} are limited to one. The remaining fee shares of $1-\theta_{EP}$ and $1-\beta_{EP}$ are allocated to the remaining $n-1$ partners. Regarding the audit fee I assume that the audit partnership allocates the fee in a way that ensures that each of the partners earns at least its reservation wage which is normalized to zero for simplicity. Regarding the audit-related service fee, I assume that the remaining $n-1$ partners[17] share the (after the engagements partner's remuneration) remaining fee evenly. Consequently, each of the remaining partners bears an equal service fee share of $\beta_i = \frac{1-\beta_{EP}}{n-1}$ where $i \neq EP$. γ_{EP} represents the engagement partner's share in damages that result in the event of a liability case (M). Like the audit-related service fee, I assume that the remaining $n-1$ partners share the remaining liability damages evenly, so that $\gamma_i = \frac{1-\gamma_{EP}}{n-1}$ where $i \neq EP$. Furthermore, I assume that the liability damages M contain legal liability payments as well as reputational damages and that in the event of an audit failure, the reputational damages affect the firm as a whole and, therefore, all of its partners. Consequently, I assume that each of the n partners bears a minimum share of M which is represented by $\overline{\gamma} > 0$ and where $n \cdot \overline{\gamma} \leq 1$.[18] For this reason, the share of liability damages that can be allocated to the engagement partner is limited so that $\gamma_{EP} \in [\overline{\gamma}, 1-(n-1)\cdot\overline{\gamma}]$.

2.1.3 Summary of the Sequence of Events

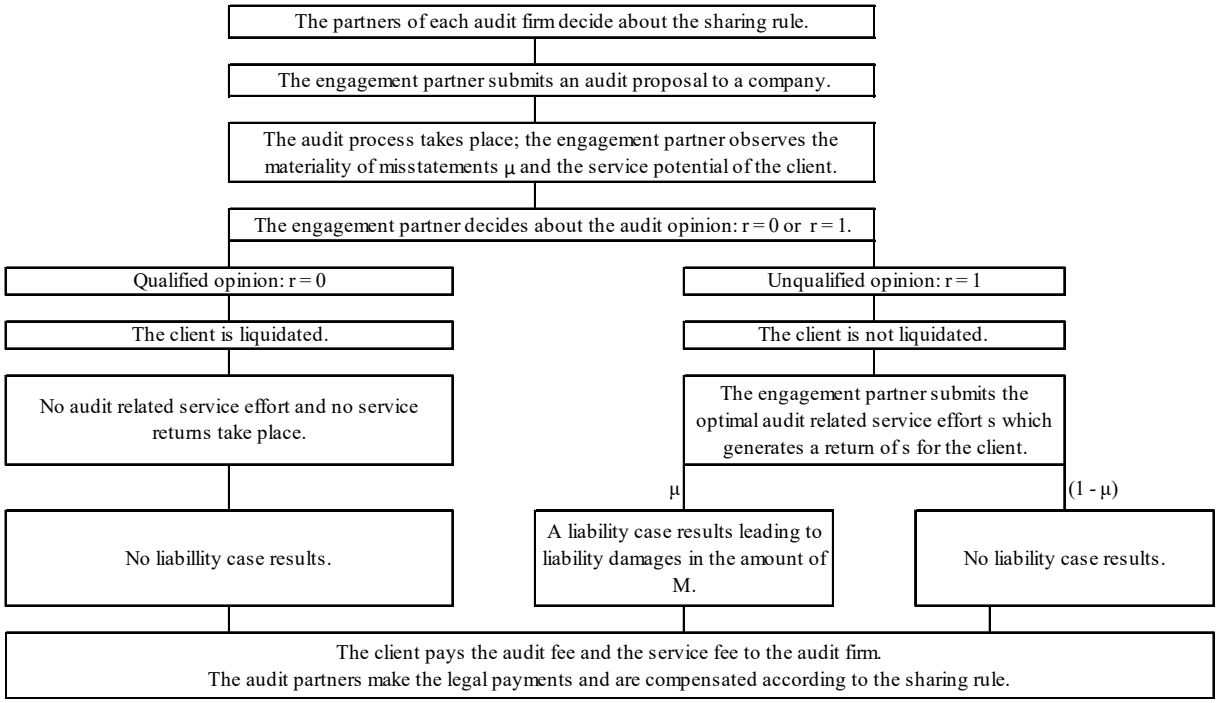
At the beginning of the game, both audit firms make decisions related to the partners' compensations and determine the linear sharing rule (θ_{EP}, β_{EP}, γ_{EP}). It is presumed that the sharing rule cannot be changed at a later time. In the second stage of the game, the two audit firms compete for an audit client. In the model, the client chooses the audit firm that offers the lowest audit fee, whereby the engagement partner submits the proposal. After the client has chosen an audit firm, the engagement partner audits the financial statements of the client. The engagement partner finds certain misstatements and observes the materiality μ of the misstatements, which represents the probability that in the case of suppressing the evidence an

[17] The *remaining* (*n-1*) *partners* are all partners without the engagement partner.

[18] This assumption is based upon the fact that media rarely report on the failure of single engagement teams, but often report on the involvement of audit firms in accounting scandals. Therefore, it is difficult for shareholders and prospective clients to assign responsibility for an audit failure to individual partners. As a consequence, all of the audit firm's partners suffer from losses of reputation due to the audit failure. A prominent example is the loss of reputation experienced by the Big Five audit firm Arthur Andersen after the Enron-scandal. The damages to their reputation led to the collapse of the auditing network and, therefore affected all of its partners.

external enforcement decides in favor for an audit failure resulting in a liability case. In addition to finding misstatements, the engagement partner also observes the service potential of the client. After the audit process has been completed, the engagement partner chooses the audit opinion. In the case that a qualified opinion is made, the client is liquidated, no audit-related services take place and the client pays the audit fee f^A to the audit firm. The audit firm shares the audit fee according to the sharing rule determined in the beginning of the period. In the case that an unqualified opinion is made, the client is not liquidated and the engagement partner invests service effort in the amount of s, which leads to returns for the client in the amount of s. Thereafter, the client pays the audit and service fees to the audit firm. In the event of an audit failure, liability payments take place. The audit firm shares the audit and service fees according to the sharing rule determined in the beginning of the game. *Figure 1* summarizes the sequence of events:

Figure 1: Sequence of events



2.2 Benchmark Case: Optimal Decisions from the Firm's Point of View

2.2.1 The Service Effort Decision

Before analyzing the optimal partner compensation and the effects of an EQR, the benchmark case is analyzed where I assume that the audit firm only consists of one auditor (no partnership).[19]

Using the technique of backward induction, the analysis begins with the optimal audit-related service effort *s*. While making its decisions, the audit firm is interested in maximizing its service payoff P^S, which is

$$P^S = f^S - \underbrace{\tfrac{k}{2} \cdot s^2}_{\substack{\text{Service} \\ \text{effort costs}}} \tag{3}$$

In contrast to the audit fee, the service fee f^S is not determined by competition as only the engaged audit firm observes the service potential of the client. Therefore, to maximize its service payoff, the audit firm bills the maximum service fee that the client is willing to pay. It equals the client's service return and is determined by

$$f^S = s \tag{4}$$

Because the audit firm is interested in maximizing the service payoff P^S, its objective function to choose the optimal service effort is

$$\max_{s} \quad P^S(s) = \underbrace{s}_{\text{Service fee}} - \underbrace{\tfrac{k}{2} \cdot s^2}_{\substack{\text{Service} \\ \text{effort costs}}} \tag{5}$$

The resulting optimal audit-related service effort is

$$s^+ = \frac{1}{k} \tag{6}$$

If the audit firm chooses the optimal amount of service effort (6), its service payoff will be

$$P^S(s^+) = s^+ - \tfrac{k}{2} \cdot s^{+2} = \frac{1}{2 \cdot k} > 0 \tag{7}$$

[19] In the following, the terms *auditor* and *audit firm* are used synonymously as there is only one audit partner who represents the whole audit firm.

2.2.2 The Audit Firm's Report Decision

After determining the optimal audit-related service effort, the next step in the backward induction procedure is to analyze the report decision of the audit firm.

If the client's financial statements are misstated ($\mu > 0$), the audit firm decides whether to report or suppress the evidence. As the audit firm can only provide audit-related services to generate a positive service return (7) in the case of an unqualified report, it chooses to suppress the evidence whenever its service payoff is greater than the expected liability damages:

$$r = 1 \quad \text{if } P^S(s^+) < \mu \cdot M \tag{8}$$

Inserting (7) in (8) and rearranging the terms leads to the following critical reporting threshold of the audit firm:

$$\bar{\mu} = \frac{P^S(s^+)}{M} = \frac{1}{2 \cdot k \cdot M} \tag{9}$$

To ensure that the resulting reporting threshold $\bar{\mu}$ is never greater than one, the following technical assumption is made for subsequent analyses:

$$k \cdot M \geq 1 \tag{10}$$

Whenever the audit firm observes a materiality μ that is greater than its reporting threshold $\bar{\mu}$ during the audit process, its expected liability damages from biasing the report[20] are greater than the payoff from the service project. Therefore, the firm never chooses the option of issuing an unqualified opinion in this case. In the other case, where the audit firm observes a materiality μ that is smaller than the critical threshold $\bar{\mu}$, its expected liability damages from biasing the report are smaller than the payoff resulting from the service project and the firm chooses therefore to issue a (biased) unqualified opinion. In the case that the observed materiality μ is equal to the reporting threshold $\bar{\mu}$, the audit firm is indifferent in its report decision. I assume that the audit firm chooses to create an (unbiased) qualified report in this case. The report decisions of the audit firm can be summarized as follows:

$$\mu \begin{cases} < \bar{\mu} & \rightarrow r^+ = 1 \\ \geq \bar{\mu} & \rightarrow r^+ = 0 \end{cases} \tag{11}$$

where $\bar{\mu} = \frac{P^S(s^+)}{M}$.

[20] A report is defined as *biased* whenever the opinion is unqualified although the financial statements contain material misstatements so that $\mu > 0$.

As

$$\frac{\partial}{\partial M}\bar{\mu} = -\frac{1}{2 \cdot k \cdot M^2} < 0 \qquad \text{and} \qquad \frac{\partial}{\partial k}\bar{\mu} = -\frac{1}{2 \cdot M \cdot k^2} < 0 \tag{12}$$

less reporting bias exists for larger liability damages M and / or larger marginal service effort costs k.

Assuming that the materiality μ is uniformly distributed in the interval $\mu \in (0,1)$,[21] the audit firm's expected payoff from the report and service decisions is

$$P^T = \int_0^{\bar{\mu}} (P^S(s^+) - \mu \cdot M)\, \partial\mu \quad = \frac{1}{8 \cdot M \cdot k^2} > 0 \tag{13}$$

As the firm's expected payoff from the report and service decision is greater than zero (13), the audit firm's expected net costs are

$$C^T = K^A - P^T \tag{14}$$

As described above, the audit firms compete for the client and the client chooses the audit firm that offers the lowest audit fee (f^A). To win the bid, each audit firm tries to undercut the rival firm's proposal. The lowest audit fee that one audit firm is willing to bid equals its breakeven price (14), which is also the firm's optimal proposal. The reason is the following: The audit firm never accepts a proposal that is lower than its breakeven price, since this would result in a negative overall payoff from the audit engagement. If the proposed audit fee is higher than the firm's breakeven price, the rival audit firm will undercut the proposal by bidding a fee that is closer to its breakeven price and will win the bid. Consequently, bidding an audit fee that equals the firm's breakeven price is the dominant strategy, because it is the most competitive (winning) proposal. In the case that both audit firms bid the same audit fee, the audit firm with the lower breakeven price wins the bid. Consequently, the dominant strategy is furthermore to make decisions that minimize the firm's expected net costs (its breakeven price). Otherwise, if the audit firm makes decisions that do not minimize its breakeven price, the rival audit firm will win the bid by submitting a proposal closer to the breakeven price. Consequently, the resulting dominant strategy which is the best response to any sharing rule of the other audit firm is to bid the following audit fee:

$$f^A = C^T = K^A - P^T(s^+) \tag{15}$$

[21] Also for further analyses it is assumed that the materiality μ is uniformly distributed in the interval $\mu \in (0,1)$.

As both audit firms are assumed to be identical, both make the same decisions, have the same breakeven price and bid the same audit fee. Therefore, in the equilibrium, each audit firm has the same chance of winning the bid and gains an equal share of the audit market, which is $\frac{1}{2}$.

2.3 The Audit Firm as a Partnership

2.3.1 Optimal Service Effort and Report Decisions

In contrast to the benchmark case, I now assume that the audit firm consists of $n \geq 2$ identical partners. The basic assumptions are the same as described in the benchmark case, but now it is the engagement partner who makes the audit proposal and takes the report and service decision. Thereby, the engagement partner is not interested in maximizing the expected payoff of the audit firm (partnership), but instead in maximizing his individual expected payoff. Assuming that the engagement partner's service effort costs are represented by $\frac{k}{2} \cdot s_{EP}^2$ with $k > 0$, his objective function in choosing the optimal service effort (s_{EP}) is

$$\max_{s_{EP}} \quad P_{EP}^S(s_{EP}) = \underbrace{\beta_{EP} \cdot s_{EP}}_{\substack{\text{EP's share} \\ \text{of service fees}}} - \underbrace{\tfrac{k}{2} \cdot s_{EP}^2}_{\substack{\text{EP's service} \\ \text{effort costs}}} \tag{16}$$

The resulting engagement partner's optimal service effort is

$$s_{EP}^* = \frac{\beta_{EP}}{k} \tag{17}$$

and his individual service payoff choosing the optimal service effort (17) is

$$P_{EP}^S(s_{EP}^*) = \underbrace{\beta_{EP} \cdot s_{EP}^*}_{\substack{\text{EP's share} \\ \text{of service fee}}} - \underbrace{\tfrac{k}{2} \cdot s_{EP}^{*2}}_{\substack{\text{EP's service} \\ \text{effort costs}}} = \frac{\beta_{EP}^2}{2 \cdot k} \quad > 0 \text{ if } \beta_{EP} > 0 \tag{18}$$

The audit firm's service payoff from the service effort of the engagement partner is[22]

$$P_{AF}^S(s_{EP}^*) = \underbrace{s_{EP}^*}_{\text{Service fee}} - \underbrace{\tfrac{k}{2} \cdot s_{EP}^{*2}}_{\substack{\text{EP's service} \\ \text{effort costs}}} = \frac{(1-\beta_{EP}) \cdot \beta_{EP}}{2 \cdot k} \quad > 0 \text{ if } \beta_{EP} > 0 \tag{19}$$

Assuming that the financial statements contain evidence of misstatements ($\mu > 0$), the engagement partner decides whether to report the evidence ($r = 0$) or to suppress the evidence by issuing an unqualified (biased) opinion ($r = 1$). The engagement partner chooses an un-

[22] The index *AF* stands for the audit firm.

qualified (biased) report, whenever his individual service payoff exceeds his expected individual liability damages:

$$r_{EP} = 1 \quad \text{if} \quad P_{EP}^{S}(s_{EP}^{*}) > \mu \cdot \gamma_{EP} \cdot M \tag{20}$$

Rearranging (20) leads to the following critical reporting threshold of the engagement partner:

$$\overline{\mu_{EP}} = \frac{P_{EP}^{S}(s_{EP}^{*})}{\gamma_{EP} \cdot M} = \frac{\beta_{EP}^{2}}{2 \cdot k \cdot \gamma_{EP} \cdot M} \tag{21}$$

The report decisions of the engagement partner can be summarized as follows:

$$\mu \begin{cases} < \overline{\mu_{EP}} & \rightarrow r_{EP}^{*} = 1 \\ \geq \overline{\mu_{EP}} & \rightarrow r_{EP}^{*} = 0 \end{cases} \tag{22}$$

where $\overline{\mu_{EP}} = \frac{P_{EP}^{S}(s_{EP}^{*})}{\gamma_{EP} \cdot M}$.

As

$$\begin{aligned} \frac{\partial}{\partial M}\overline{\mu_{EP}} &= -\frac{\beta_{EP}^{2}}{2 \cdot \gamma_{EP} \cdot k \cdot M^{2}} < 0, \\ \frac{\partial}{\partial \gamma_{EP}}\overline{\mu_{EP}} &= -\frac{\beta_{EP}^{2}}{2 \cdot M \cdot k \cdot \gamma_{EP}^{2}} < 0, \\ \frac{\partial}{\partial k}\overline{\mu_{EP}} &= -\frac{\beta_{EP}^{2}}{2 \cdot M \cdot \gamma_{EP} \cdot k^{2}} < 0 \end{aligned} \tag{23}$$

there is less reporting bias if the engagement partner's individual damages as a result of a liability case increase ($\gamma_{EP} \cdot M$) and / or if the marginal service effort costs k increase. If the engagement partner's share of the service return (β_{EP}) increases, there is more reporting bias as

$$\frac{\partial}{\partial \beta_{EP}}\overline{\mu_{EP}} = \frac{\beta_{EP}}{M \cdot k \cdot \gamma_{EP}} > 0 \tag{24}$$

The reason is straightforward: Biasing the report will be more attractive for the engagement partner if his expected damages that result from the bias decrease or his payoff increases.

2.3.2 The Equilibrium Sharing Rule

In the audit partnership, the engagement partner makes decisions that maximize his individual expected payoff instead of that of the audit firm. For this reason, all audit firm partners decide upon a sharing rule in the beginning of the game that encourages the partners to choose the firm's desired decisions. Under the assumption that the engagement partner submits the audit proposal and that the client chooses the audit firm that bids the lowest audit fee, Proposition 1 characterizes the audit firm's equilibrium decisions and the outcome:

PROPOSITION 1: *In the equilibrium, ...*

a) … each audit firm chooses a sharing rule SR that is dominant with respect to the rival audit firm. It is:

$$SR = \begin{cases} \beta_{EP}^{*} = \dfrac{4 \cdot \gamma^{MAX}}{1 + 3 \cdot \gamma^{MAX}} \\ \gamma_{EP}^{*} = \gamma^{MAX} \\ \theta_{EP}^{*} = 1 \end{cases} \qquad \text{where} \quad \gamma^{MAX} = 1 - (n-1) \cdot \bar{\gamma} \tag{25}$$

b) ... each engagement partner bids an audit fee that is equal to the firm's break-even price

$$f^{A*}(SR) = C_{AF}^{T}(SR) \tag{26}$$

and each audit firm gains an equal expected share of the audit market.

Proof: See Appendix.

Proposition 1 shows the firm's dominant sharing rule as it is favored over any other sharing rule for the following reasons:

Firstly, the sharing rule θ_{EP}^{*} equates the engagement partner's individual breakeven price to the firm's net costs, representing the firm's breakeven price:

$$\underbrace{\frac{C_{EP}^{T}(\beta_{EP}^{*}, \gamma_{EP}^{*})}{\theta_{EP}^{*}}}_{\text{EP's breakeven price}} = \underbrace{C_{AF}^{T}(\beta_{EP}^{*}, \gamma_{EP}^{*})}_{\text{AF's breakeven price}} \tag{27}$$

Therefore, the engagement partner is induced to bid an audit fee that is equal to the firm's breakeven price.

Secondly, the sharing rule SR induces the engagement partner to make decisions that minimize the firm's expected net costs so that $C_{AF}^{T}(\beta_{EP}^{*}, \gamma_{EP}^{*}) = C_{AF}^{T\,MIN}$. In the equilibrium, the engagement partner's expected net costs equal the audit firm's expected net costs as $\theta_{EP}^{*} = 1$ (see (27)).

To summarize, the equilibrium sharing rule SR forces the engagement partner to make decisions that minimize the audit firm's expected net costs in order to maximize his own (and the audit firm's) expected payoff. Furthermore, it induces the engagement partner to bid an audit fee that is equal to the firm's breakeven price. For the reasons described in the benchmark case, it follows that the sharing rule SR induces the engagement partner to bid the most competitive (winning) proposal. It is the audit firm's dominant sharing rule as it is the best response to any sharing rule of the other audit firm.

The resulting audit firm's and engagement partner's expected overall payoffs from the audit project are equal to zero as

$$\underbrace{f^{A}}_{\text{Audit fee}} = \underbrace{C_{AF}^{T}(\beta_{EP}^{*}, \gamma_{EP}^{*})}_{\text{AF's expected net costs}} \tag{28}$$

and as

$$\underbrace{\theta_{EP}^{*} \cdot f^{A}}_{\substack{\text{EP's share on} \\ \text{the audit fee}}} = \underbrace{C_{EP}^{T}(\beta_{EP}^{*}, \gamma_{EP}^{*})}_{\text{EP's expected net costs}} \tag{29}$$

As it is assumed that the competing audit firms are identical, in the equilibrium, each audit firm chooses the same dominant sharing rule, has therefore the same breakeven price and bids the same audit fee $f^{A^{*}}(SR)$. Due to the tie-breaking rule mentioned above, each of the audit firms has an equal chance of winning the bid and, therefore, gains an equal expected share of the audit market, which is $\frac{1}{2}$.

Analyzing the engagement partner's equilibrium share of service fee shows that it increases whenever the engagement partner's share on the liability damages increases:

$$\frac{\partial}{\partial \gamma^{MAX}} \beta_{EP}^{*}(\gamma_{EP}^{*} = \gamma^{MAX}) = \frac{4}{(1 + 3 \cdot \gamma^{MAX})^{2}} > 0 \tag{30}$$

The intuition is straightforward: If the audit firm can allocate a larger share of the liability damages to the engagement partner, his incentives for biasing the report decrease. Consequently, the audit firm allocates more of the service fee to the engagement partner enhancing

his incentives to provide audit-related service effort and increasing the audit firm's service payoff.

Analyzing the maximum share of liability damages that can be allocated to the engagement partner (γ^{MAX}) shows that it decreases whenever the number of the audit firm's partners (n) and / or the minimum share of (reputational) damages that affects each partner in the event of a liability case ($\bar{\gamma}$) increases:

$$\frac{\partial}{\partial n}\gamma^{MAX} = -\bar{\gamma} < 0 \tag{31}$$

$$\frac{\partial}{\partial \bar{\gamma}}\gamma^{MAX} = (1-n) < 0 \tag{32}$$

Consequently, the engagement partner's incentives to perform audit-related services (β_{EP}^{*}) increase (decrease) whenever the number of the firm's partner decrease (increase) and / or when the minimum share of liability damages that affects each partner in the event of a liability case decreases (increases) (see (30)).

To analyze how the engagement partner's reporting threshold ($\overline{\mu_{EP}}$) will change if he bears a greater share of the liability damages, two opposing effects have to be considered: On one hand, it is intuitive that the engagement partner's incentives for biasing the report will decrease if his share on the liability damages increases as he expects greater damages resulting from biasing the report in this case (direct effect, see (23)). On the other hand, the audit firm allocates a greater share of the service fee to the engagement partner when his share on the liability damages increases (see (30)). Consequently, the engagement partner's incentives to bias the report increase as he expects a greater share of the service payoff what makes biasing the report more attractive (indirect effect, see (24)). Whether the engagement partner enhances or reduces his reporting threshold when his share on the liability damages increases depends on which of the two described effects is dominant. (33) shows that if the engagement partner's share on the liability damages is large, his reporting threshold decreases in the case that his share on the liability damages increases so that the direct effect outweighs the indirect effect. In contrast, if the engagement partner's share on the liability damages is small, his reporting threshold increases when his share on the liability damages increases so that the indirect effect outweighs the direct effect:

$$\frac{\partial}{\partial \gamma^{MAX}}\overline{\mu_{EP}}(\beta_{EP}^{*}(\gamma^{MAX}), \gamma_{EP}^{*} = \gamma^{MAX}) = \frac{8 - 24\cdot\gamma^{MAX}}{k\cdot M\cdot(1+3\cdot\gamma^{MAX})^{3}} \quad \begin{cases} > 0 & \text{if } \gamma^{MAX} < \frac{1}{3} \\ < 0 & \text{if } \gamma^{MAX} > \frac{1}{3} \end{cases} \tag{33}$$

The comparison of the engagement partner's reporting threshold to the firm's desired reporting threshold (deduced in the benchmark case) is made in the following:

$$\begin{aligned} \overline{\mu} &< \overline{\mu_{EP}}(\beta_{EP}^*, \gamma_{EP}^*) \quad \text{if} \quad \gamma^{MAX} > \tfrac{1}{9} \text{ and } k, M > 0 \\ \overline{\mu} &> \overline{\mu_{EP}}(\beta_{EP}^*, \gamma_{EP}^*) \quad \text{if} \quad \gamma^{MAX} < \tfrac{1}{9} \text{ and } k, M > 0 \end{aligned} \tag{34}$$

The comparison of the reporting thresholds shows that the engagement partner is less strict in his report decision than desired by the audit firm whenever the audit firm and / or the minimum share of reputational damages each partner bears in the event of a liability case are not too large (so that $\gamma^{MAX} > \frac{1}{9}$). The reason is the following: Allocating the entire amount of the service fee to the engagement partner inducing an optimal service effort (as $s^*(\beta_{EP} = 1) = s^+$) leads to report decisions that are not sufficiently strict from the firm's point of view as the engagement partner bears only a share of the liability damages. Reducing the engagement partner's share in the service fee enhances the firm's payoff as the incentives of biasing the report decrease. In the optimum, the audit firm accepts a less strict report decision as the expected liability damages are compensated by the service payoff. If the audit firm further reduces the engagement partner's share on the service fee, the savings of expected liability damages will be smaller than the loss of additional service payoff. In contrast, if the audit firm is large and / or the minimum share of reputational damages each partner bears in the event of a liability case are large (so that $\gamma^{MAX} < \frac{1}{9}$), the engagement partner is stricter in his report decision than desired by the audit firm. The reason is that the audit firm allocates only a little share on the service fee to the engagement partner if his share on the liability damages is small (see(30)). As the engagement partner bears besides his share of the expected liability damages (which is also small) also the entire amount of service effort costs ($\frac{k}{2} \cdot s_{EP}^{*\,2}$), his incentives for biasing the report are small. If the audit firm enhances the engagement partner's share on the service fee, the additional expected liability damages will be greater than the additional service payoff.

As a result from the service effort and / or the report decision being not optimal from the firm's point of view, additional analyses show that the firm's expected payoff from the service and report decision is always smaller in the case of a partnership than when no partnership exists:

$$P_{AF}^T(\beta_{EP}^*, \gamma_{EP}^*) = \frac{32 \cdot \gamma^{MAX\,3}}{k^2 \cdot M \cdot (1 + 3 \cdot \gamma^{MAX})^4} < \frac{1}{8 \cdot M \cdot k^2} = P^T \qquad \text{if } \gamma^{MAX} \in (0,1) \tag{35}$$

The resulting additional costs counteract the cost savings that may result in partnerships due to sharing the fixed costs.

In the following it is analyzed how the results change if an engagement quality review (EQR) takes place.

3 The Extended Model: Engagement Quality Review (EQR)

3.1 Optimal Service Effort and Report Decisions of the Review Partner

As described in the introduction, an EQR conducted by a second partner who is not involved in the audit process is an important element of the audit quality control process and, therefore, is required by law for the audit of listed companies in many counties. In the following section, it is analyzed how the results reported in chapter 2 change if a second partner of the audit firm (a review partner) reviews the engagement partner's decisions. As the audit process, the review process is not modeled explicitly. Instead, I assume that the review partner observes the same information about the materiality of misstatements as the engagement partner. Furthermore, in the model the review partner has access to the engagement partner's report decision, and can decide whether to agree or to disagree with it. The review effort costs are represented by K^R and are assumed to be private costs of the review partner.

As the audit firm is a partnership, the review partner participates in both fees and liability damages arising in the event of a liability case. The review partner's compensation received from a client is represented by F_{RP} and is determined as follows:[23]

$$F_{RP} = \theta_{RP} \cdot f^A + \beta_{RP} \cdot f^S - \gamma_{RP} \cdot M \tag{36}$$

Thereby, $\theta_{RP} \in [0, 1-\theta_{EP}]$ represents the review partner's share in the audit fee. Under the assumption that the engagement partner receives a share of θ_{EP} and that the audit firm cannot allocate more than the total amount of audit fees, it is straightforward that the review partner's share on the audit fee is limited to $1-\theta_{EP}$. The variable β_{RP} represents the review partner's share in the audit-related service fee. As described in the basic model assumptions, the engagement partner receives a share of β_{EP} and each of the remaining partners, also the review partner, receives a share of $\beta_i = \beta_{RP} = \frac{1-\beta_{EP}}{n-1}$ where $i \neq EP$. The variable γ_{RP} represents the

[23] The index *RP* stands for the review partner.

review partner's share of damages that result in a liability case. Like all other remaining partners, the review partner bears a share of $\gamma_i = \gamma_{RP} = \frac{1-\gamma_{EP}}{n-1} \geq \overline{\gamma}$ of these damages.

The engagement partner's service effort decision takes place after the report decision, and the engagement partner bears the service effort costs ($\frac{k}{2} \cdot s_{EP}^2$). Consequently, the optimal service effort does not alter whether an EQR is present or not. It is determined in (17). As the review partner does not participate in the service effort costs, his individual service payoff $P_{RP}^S(s_{EP})$ equals his share in the service fee:

$$\begin{aligned} \widetilde{P_{RP}^S}(s_{EP}^*) &= \beta_{RP} \cdot f^S = \beta_{RP} \cdot s_{EP}^* \\ &= \beta_{RP} \cdot \frac{\beta_{EP}}{k} \qquad > 0 \text{ if } \beta_{EP}, \beta_{RP} > 0 \end{aligned} \tag{37}$$

Assuming that the financial statements of the client are misstated ($\mu > 0$), the review partner can decide whether to agree or to disagree with the engagement partner's report decision. Like the engagement partner, the review partner chooses an unqualified (biased) opinion whenever his individual expected liability damages are less than his individual payoff received as a result of the engagement partner's service effort:

$$r_{RP} = 1 \qquad \text{if} \qquad \widetilde{P_{RP}^S}(s_{EP}^*) > \mu \cdot \gamma_{RP} \cdot M \tag{38}$$

Rearranging (38) leads to the following critical reporting threshold of the review partner:

$$\overline{\mu_{RP}} = \frac{\widetilde{P_{RP}^S}(s_{EP}^*)}{\gamma_{RP} \cdot M} = \frac{\beta_{RP} \cdot \beta_{EP}}{k \cdot \gamma_{RP} \cdot M} \tag{39}$$

To maximize his individual reporting payoff, the review partner chooses the report decisions characterized in (40). The underlying intuition is the same as described in the benchmark case as well as in the case without an EQR.

$$\mu \begin{cases} < \overline{\mu_{RP}} & \rightarrow r_{RP}^* = 1 \\ \geq \overline{\mu_{RP}} & \rightarrow r_{RP}^* = 0 \end{cases} \tag{40}$$

where $\overline{\mu_{RP}} = \frac{\widetilde{P_{RP}^S}(s_{EP}^*)}{\gamma_{RP} \cdot M}$.

3.2 The Equilibrium Sharing Rule

In the following section, the audit firm's equilibrium sharing rule is analyzed for the case that an EQR takes place. If the review partner's and engagement partner's report decisions do not correspond with one another, I assume that the audit firm always agrees the stricter report decision. The reason for this assumption is that ignoring the stricter report decision should be the least difficult to justify to the audit firm in the event of an external enforcement procedure. Also, liability losses or consequences that affect the practitioner's approbation and accreditation could be possible.

In the case, that the review partner's report decision is stricter than that of the engagement partner ($\overline{\mu_{RP}} < \overline{\mu_{EP}}$), the engagement partner anticipates that the audit firm will follow the report decision of the review partner. For this reason, he takes the review partner's reporting threshold as a given when making his individual decisions. As a consequence, the engagement partner's expected payoff is determined by

$$\widetilde{P_{EP}^{T}}(\beta_{EP},\gamma_{EP}) = \int_{0}^{\overline{\mu_{RP}}(\beta_{EP},\gamma_{EP})} (\widetilde{P_{EP}^{S}}(s_{EP}^{*}(\beta_{EP})) - \mu\cdot\gamma_{EP}\cdot M)\ \partial\mu \tag{41}$$

The audit firm's expected payoff is characterized by

$$\widetilde{P_{AF}^{T}}(\beta_{EP},\gamma_{EP}) = \int_{0}^{\overline{\mu_{RP}}(\beta_{EP},\gamma_{EP})} (\widetilde{P_{AF}^{S}}(s_{EP}^{*}(\beta_{EP})) - \mu\cdot M)\ \partial\mu \tag{42}$$

and the review partner's expected payoff (which is the same as that of any other partner except of the engagement partner) is characterized by

$$\begin{aligned}\widetilde{P_{i\neq EP}^{T}}(\beta_{EP},\gamma_{EP}) &= \widetilde{P_{RP}^{T}}(\beta_{EP},\gamma_{EP}) \\ &= \int_{0}^{\overline{\mu_{RP}}(\beta_{EP},\gamma_{EP})} (\widetilde{P_{i\neq EP}^{S}}(s^{*}(\beta_{EP}) - \mu\cdot\gamma_{i\neq EP}\cdot M)\ \partial\mu \\ &= -\frac{(1-\beta_{EP})^{2}\cdot\beta_{EP}^{\ 2}}{2\cdot k^{2}\cdot M\cdot(1-\gamma_{EP})\cdot(n-1)} \qquad < 0 \text{ if } n \geq 2\end{aligned} \tag{43}$$

As described in chapter 2, in the absence of an EQR the engagement partner's decisions are not optimal from the firm's point of view: The engagement partner's incentives to provide service effort are too small and his report decisions are not strict enough (too strict) whenever his share on the liability damages is large (small). In the presence of a review partner, the audit firm engagement partner's report decision must not be binding any more as described

above. Proposition 2 characterizes the equilibrium sharing rule, the equilibrium audit fee and the market shares that result in the case of an EQR.

PROPOSITION 2: *In the case of an EQR, in the equilibrium, ...*

a) ... each audit firm chooses a sharing rule $\widetilde{SR}$ *that is dominant with respect to the rival audit firm. It is*

$$\widetilde{SR} = \begin{cases} \beta_{EP}^{\#} = \dfrac{3\cdot(3\cdot\gamma^{MAX}-1)+\sqrt{9+\gamma^{MAX}\cdot(17\cdot\gamma^{MAX}-22)}}{8\cdot\gamma^{MAX}} \\ \gamma_{EP}^{\#} = \gamma^{MAX} \\ \theta_{EP}^{\#} = \dfrac{K^{A}-\widetilde{P_{EP}^{T}}}{K^{A}+K^{R}-\widetilde{P_{AF}^{T}}} \end{cases} \tag{44}$$

where $\gamma^{MAX} = 1-(n-1)\cdot\bar{\gamma}$

b) ...each engagement partner bids an audit fee that is equal to the firm's breake-ven price

$$f^{A\#}(\widetilde{SR}) = \widetilde{C_{AF}^{T}}(\widetilde{SR}) \tag{45}$$

and each audit firm gains an equal expected share of the audit market.

Proof: See Appendix.

Proposition 2 shows that the audit firm reacts to the EQR by changing its optimal sharing rule. The reason is the following: As shown in the Appendix, to maximize its expected payoff the audit firm always chooses a sharing rule that induces the review partner to be stricter in his report decision than the engagement partner:

$$\overline{\mu_{RP}} < \overline{\mu_{EP}} \tag{46}$$

The engagement partner anticipates that the audit firm will follow the review partner's report decision and, therefore, alters his individual decisions. As a consequence, the sharing rule characterized in Proposition 1 no longer induces the engagement partner to make decisions that are optimal for the firm.

The underlying intuition of the new equilibrium sharing rule characterized in Proposition 2 is the same as that described in the analysis of Proposition 1: Firstly, the equilibrium sharing rule makes the engagement partner to choose decisions that minimize the audit firm's expected net costs and, therefore, its breakeven price:

$$\begin{aligned} \widetilde{C_{AF}^{T}}(\widetilde{SR}) &= \widetilde{C_{AF}^{T}}^{MIN} \\ &= \underbrace{K^{A}}_{\substack{\text{Direct} \\ \text{audit costs}}} + \underbrace{K^{R}}_{\substack{\text{Direct} \\ \text{review costs}}} - \underbrace{\widetilde{P_{AF}^{T}}^{MAX}(\widetilde{SR})}_{\substack{\text{AF's expected (maximum) payoff} \\ \text{from the report and service decision}}} \end{aligned} \tag{47}$$

Secondly, the sharing rule described in Proposition 2 equates the engagement partner's individual breakeven price to the firm's net costs representing the firm's breakeven price:

$$\underbrace{\frac{\widetilde{C_{EP}^{T}}(\beta_{EP}^{\#}, \gamma_{EP}^{\#})}{\theta_{EP}^{\#}}}_{\substack{\text{EP's breakeven price}}} = \underbrace{\widetilde{C_{AF}^{T}}(\beta_{EP}^{\#}, \gamma_{EP}^{\#})}_{\substack{\text{AF's breakeven price}}} \tag{48}$$

Therefore, the engagement partner bids an audit fee that is equal to the firm's breakeven price. To ensure that the engagement partner's equilibrium share on the audit fee is not greater than one ($\theta_{EP}^{\#} \leq 1$) the following technical assumption is made:

$$K^{R} \cdot k^{2} \cdot M > 1 \tag{49}$$

Remembering that the marginal service return A is set equal to one for simplicity, the assumption that the product of the liability damages, the review costs and the squared marginal service effort costs are greater than one should be not very strong, at least if k is not very small.[24]

In summary, the sharing rule $\widetilde{SR}$ ensures that the engagement partner chooses decisions that minimize the firm's expected net costs and that he bids an audit fee that is equal to the firm's breakeven price. For the same reasons as described above, this sharing rule is dominant with respect to any other sharing rule as it is the best response to any sharing rule of the other audit firm. It ensures that the engagement partner submits the most competitive (winning) proposal, which is

$$f^{A\#}(\widetilde{SR}) = \widetilde{C_{AF}^{T}}(\widetilde{SR}) \tag{50}$$

Consequently, the audit firm's overall expected payoff from the audit and service project is equal to zero in the equilibrium as the equilibrium audit fee equals the audit firm's net costs

[24] How this technical assumption ensures that the engagement partner's share in the audit fee is not greater than one is shown in the proof of Proposition 2 in the Appendix.

(see (50)). Also the engagement partner's share on the equilibrium audit fee equals his individual net costs:

$$\underbrace{\theta_{EP}^{\#} \cdot \underbrace{f^{A\#}}_{=\widetilde{C_{AF}^{T}}(\beta_{EP}^{\#},\gamma_{EP}^{\#})}}_{\text{EP's share in the audit fee}} = \underbrace{\widetilde{C_{EP}^{T}}(\beta_{EP}^{\#},\gamma_{EP}^{\#})}_{\text{EP's net costs}} \tag{51}$$

For this reason the engagement partner's overall expected payoff from the audit and service project is equal to zero.

Because of the condition of participation (each partner has to earn at least its reservation wage which is equal to zero), the review partner's share on the audit fee equals his expected net costs

$$\begin{aligned} & \theta_{RP}^{\#} \cdot f^{A\#} = \widetilde{C_{RP}^{T}} = K^{R} - \widetilde{P_{RP}^{T}}(\beta_{EP}^{\#},\gamma_{EP}^{\#}) \\ \leftrightarrow \quad & \theta_{RP}^{\#} = \frac{K^{R} - \widetilde{P_{RP}^{T}}(\beta_{EP}^{\#},\gamma_{EP}^{\#})}{K^{A} + K^{R} - \widetilde{P_{AF}^{T}}(\beta_{EP}^{\#},\gamma_{EP}^{\#})} \end{aligned} \tag{52}$$

and the other $n-2$ partners' share on the audit fee equals their net costs so that

$$\begin{aligned} & \theta_{i\neq EP,RP}^{\#} \cdot f^{A\#} = \widetilde{C_{i\neq EP,RP}^{T}} = -\widetilde{P_{i\neq EP}^{T}}(\beta_{EP}^{\#},\gamma_{EP}^{\#}) \\ \leftrightarrow \quad & \theta_{i\neq EP,RP}^{\#} = \frac{-\widetilde{P_{i\neq EP}^{T}}(\beta_{EP}^{\#},\gamma_{EP}^{\#})}{K^{A} + K^{R} - \widetilde{P_{AF}^{T}}(\beta_{EP}^{\#},\gamma_{EP}^{\#})} \end{aligned} \tag{53}$$

where $\widetilde{P_{i\neq EP}^{T}}(\beta_{EP}^{\#},\gamma_{EP}^{\#}) = \widetilde{P_{RP}^{T}}(\beta_{EP}^{\#},\gamma_{EP}^{\#}) < 0$ as shown in (43).

Consequently, each of the audit firm's partners earns exactly his reservation wage in the equilibrium.

As it is assumed that the competing audit firms are identical, in the equilibrium, both audit firms choose the same equilibrium sharing rule, have the same breakeven price and bid the same audit fee. As a consequence of the tie-breaking rule mentioned above, each of the audit firms has an equal chance of winning the bid and, therefore, gains an equal expected share of the audit market, which is $\frac{1}{2}$.

Analyzing the equilibrium engagement partner's share on the service fee shows that it increases whenever the maximum share of liability damages that can be allocated to him increases:

$$\frac{\partial}{\partial \gamma^{MAX}} \beta_{EP}^{\#}(\gamma^{MAX}) = \frac{11 \cdot \gamma^{MAX} + 3 \cdot X - 9}{8 \cdot \gamma^{MAX2} \cdot X} > 0 \quad \text{if} \quad \gamma^{MAX} \in (0,1)$$

$$\text{where} \quad X = \sqrt{9 + \gamma^{MAX} \cdot (17 \cdot \gamma^{MAX} - 22)} \tag{54}$$

The intuition is the same as in the case without an EQR.

Differentiating the review partner's reporting threshold[25] with respect to γ^{MAX} leads to:

$$\begin{aligned} & \frac{\partial}{\partial \gamma^{MAX}} \overline{\mu_{RP}}(\beta_{EP}^{\#}(\gamma^{MAX}), \gamma_{EP}^{\#}) \\ = & \frac{18 \cdot (X-3) + \gamma^{MAX} \cdot (225 - 53 \cdot X + \gamma^{MAX} \cdot (52 \cdot X - 361 + \gamma^{MAX} \cdot (267 - 85 \cdot \gamma^{MAX} - 13X)))}{32 \cdot k \cdot R \cdot (1-\gamma^{MAX})^2 \cdot \gamma^{MAX3} \cdot X} \\ > & \ 0 \quad \text{if} \quad \gamma^{MAX} \in (0,1) \ \text{and} \ k, M > 0 \end{aligned} \tag{55}$$

$$\text{where} \quad X = \sqrt{9 + \gamma^{MAX} \cdot (17 \cdot \gamma^{MAX} - 22)}$$

(55) shows that the review partner's reporting threshold increases whenever the engagement partner's share on the liability damages increases which is the case if the number of the audit firm's partners (n) and / or the minimum share of reputational damages that each partner bears in the event of a liability case decreases $(\bar{\gamma})$. The intuition is straightforward: If the engagement partner's share on the liability damages increases, the review partner's share on the liability damages will decrease as $\gamma_{RP} = \frac{1-\gamma_{EP}}{n-1}$. As a consequence of the decreased share of reputational damages, the review partner's incentives for biasing the report increase.

3.3 Comparison of Results and Discussion

As shown in the proof of Proposition 2, the equilibrium sharing rule induces the review partner to report always stricter than the engagement partner, so that the review partner's report decision is binding for the audit firm. Whether this report decision is stricter than that resulting in the absence of an EQR is analyzed in Proposition 3. If this is the case, an EQR will enhance the amount of truthful reporting. Furthermore, it is analyzed in Proposition 3 whether there could be an endogenous incentive for audit firms to decide for an EQR voluntarily. This is the case if the audit firm's expected payoff from the report and service decision is greater in

[25] This is the relevant one as it is smaller than the engagement partner's reporting threshold so that the audit firm decides for it.

the presence than in the absence of an EQR. The reason is that if this payoff surplus overcompensates the additional review costs, the audit firm's expected net costs are greater in the absence than in the presence of an EQR. If the audit firm does not decide for an EQR in this case, the competing audit firm undercuts the audit proposal by deciding for an EQR as it leads to a lower breakeven price. Proposition 3 also analyzes how the engagement partner's service effort changes in the presence of an EQR.

PROPOSITION 3: a) *In the presence of an EQR, the audit firm's expected payoff from the report and service decision can be smaller or greater than in the absence of an EQR:*

$$\widetilde{P_{AF}^{T}}(\beta_{EP}^{\#},\gamma_{EP}^{\#}) \begin{cases} > P_{AF}^{T}(\beta_{EP}^{*},\gamma_{EP}^{*}) & \text{if} \quad \gamma^{MAX} < 0.588 \\ < P_{AF}^{T}(\beta_{EP}^{*},\gamma_{EP}^{*}) & \text{if} \quad \gamma^{MAX} > 0.588 \end{cases} \tag{56}$$

where the value of 0.588 is approximated.

b) The review partner's reporting threshold can be smaller or greater than that of the engagement partner resulting if no EQR takes place:

$$\overline{\mu_{RP}}(\beta_{EP}^{\#},\gamma_{EP}^{\#}) \begin{cases} > \overline{\mu_{EP}}(\beta_{EP}^{*},\gamma_{EP}^{*}) & \text{if} \quad \gamma^{MAX} < 0.035 \\ < \overline{\mu_{EP}}(\beta_{EP}^{*},\gamma_{EP}^{*}) & \text{if} \quad \gamma^{MAX} > 0.035 \end{cases} \tag{57}$$

where the value of 0.035 is approximated.

c) In the presence of an EQR, the engagement partner's service effort can be smaller or greater than in the absence of an EQR:

$$s_{EP}^{\#} \begin{cases} > s_{EP}^{*} & \text{if} \quad \gamma^{MAX} < 0.390 \\ < s_{EP}^{*} & \text{if} \quad \gamma^{MAX} > 0.390 \end{cases} \tag{58}$$

where the value of 0.390 is approximated.

Proof: See Appendix.

The results show that the audit firm's expected payoff, the (relevant) reporting threshold and the engagement partner's service effort (s_{EP}) can be smaller or greater in the presence than in the absence of an EQR. Whether the mentioned factors will be smaller or greater if an EQR takes place depends on the size of the audit firm (n) and / or on the reputational damages that each partner bears in the event of an audit failure ($\bar{\gamma}$):

i. The audit firm is large and / or the reputational damages each partner bears in the event of an audit failure are large (so that γ^{MAX} is small)

If the audit firm is (medium) large and / or the reputational damages each partner bears in the event of an audit failure are (medium) large (so that γ^{MAX} is small), without an EQR the engagement partner's incentives to bias the report will be small as described in chapter 2. The reason is that he only receives a small share of the service payoff (see (30)) but bears liability damages and the service effort costs in this case. If an EQR takes place, the audit firm will decide for a sharing rule that will make the review partner's reporting threshold relevant for its report decision. Whenever the audit firm is not too large and / or the reputational damages affecting each partner in the event of an audit failure are not too large, the review partner's reporting threshold is smaller than that resulting when no EQR takes place (see (57)). Therefore, there is more truthful reporting with an EQR in this case. Consequently, the audit firm can enhance the engagement partner's share in the service fee without fearing larger liability payments. Consequently, the engagement partner enhances his service effort. This leads to a higher service payoff. It is straightforward, that the audit firm's expected payoff from the service and report decision is greater with an EQR compared to that resulting when no EQR takes place. Consequently, there is an endogenous incentive for the audit firm to decide for an EQR whenever the review costs are not too large.

If the audit firm is very large and / or the reputational damages that each partner bears in the event of an audit failure are very large (so that γ^{MAX} is very small) the results change a bit: The engagement partner's service effort is still greater in the presence than in the absence of an EQR, but unlike in the case mentioned above the review partner's reporting threshold is greater than that resulting in the absence of an EQR.[26] Therefore, an EQR does not enhance the amount of truthful reporting in this case. The reason is that in the absence of an EQR, the engagement partner's reporting threshold is too small from the firm's point of view (see (34) or *Figure 3*). Consequently, the review partner's (higher) reporting threshold is closer to the

[26] Nevertheless, the review partner's reporting threshold is still smaller than that of the engagement partner resulting in the presence of an EQR.

audit firm's desired reporting threshold. Therefore, there is an endogenous incentive for the audit firm to decide for an EQR voluntarily whenever the review costs are not too large. The reason is that the expected additional liability damages resulting from the higher reporting threshold are smaller than the additional service payoff resulting from the larger service effort of the engagement partner. Consequently, the audit firm's expected payoff from the service and report decision is larger in the presence than in the absence of an EQR.

ii. The audit firm is small and / or the reputational damages each partner bears in the event of an audit failure are small (so that γ^{MAX} is large)

If the audit firm is small and / or the reputational damages each partner bears in the event of an audit failure are small (so that γ^{MAX} is large), the results change: In the case that no EQR takes place, the incentives of the engagement partner to provide audit related services are high (see(30)) resulting in a high service payoff for the client. Because the engagement partner's share in the service fee and expected liability damages are high, the remaining shares are small so that also the review partner participates in the service fee and the expected liabilities in a small amount. Thereby, the firm's dominant sharing rule makes that the review partner's share in the liability damages is large in comparison to his share in the service payoff. Consequently, he is really strict in his report decision. To ensure that the review partner is not too strict in his report decision, the audit firm reallocates service fee from the engagement partner to the review partner. Consequently, the engagement partner's incentives to provide audit related services decrease leading to a decrease of the service payoff. This decrease of the service payoff is not compensated by the savings of expected damages resulting from the smaller reporting threshold so that the audit firm's expected payoff is smaller in the presence than in the absence of an EQR.

Figure 2 illustrates the audit firm's expected payoff from the service and report decision for the case with and without an EQR for the example of $k = 0.5$ and $M = 2$. Furthermore, the audit firm's expected payoff is illustrated for the case that the audit firm only consists of one auditor (no partnership). It is shown, that in the case of a partnership, the audit firm's expected payoff from the service and report decision is always smaller than if there is no partnership. These additional costs resulting from the incentive problem in a partnership counteract cost savings due to sharing fixed costs in partnerships.

Figure 2: Comparison of the audit firm's expected payoff from the service and report decision

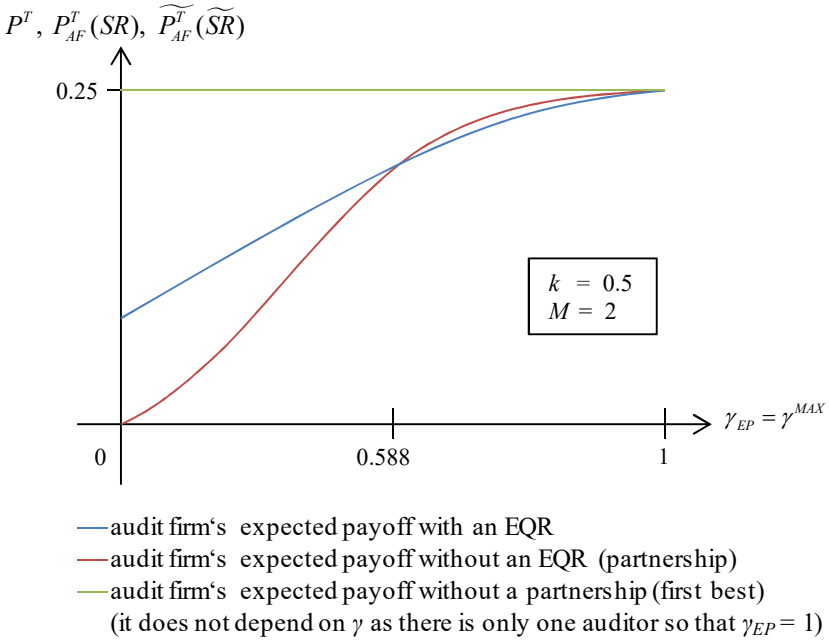


Figure 3 illustrates the reporting threshold for the case with and without an EQR for the example of $k = 0.5$ and $M = 2$. Furthermore, the audit firm's optimal reporting threshold that results if the audit firm only consists of one auditor (no partnership) is illustrated. The figure shows that the reporting threshold of the review partner is always smaller than in the benchmark case so that an EQR enhances the amount of truthful reporting compared to the report decision that is optimal from the firm's point of view. Instead, the engagement partner's reporting threshold that results if no EQR takes place can be smaller or greater than the reporting threshold that is optimal from the firm's point of view.

Figure 3: Comparison of the reporting thresholds

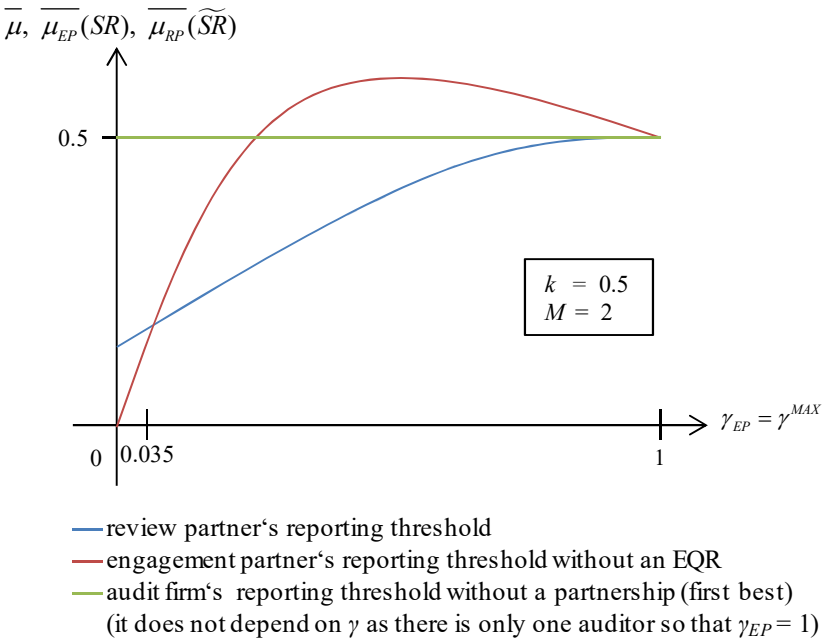
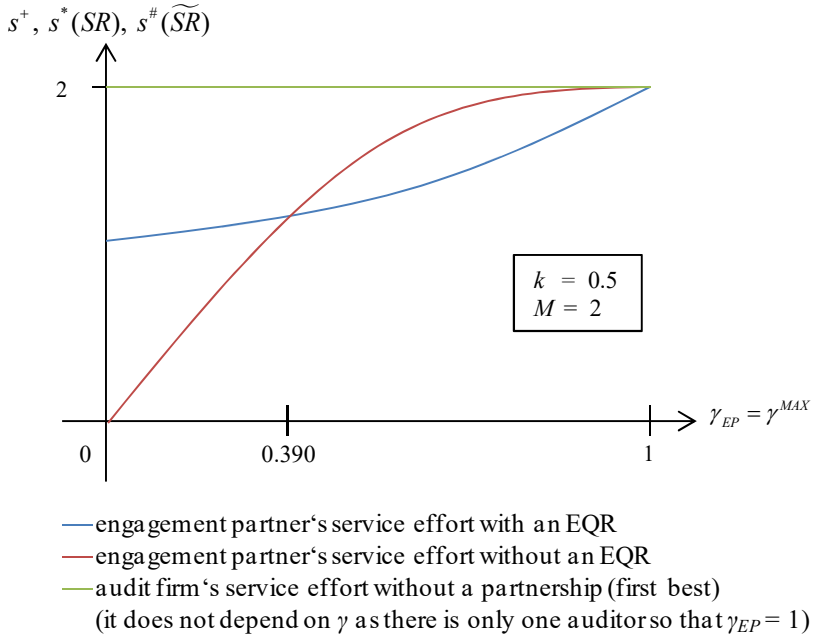


Figure 4 illustrates the engagement partner's incentives to provide audit related service effort for the example of $k = 0.5$ and $M = 2$. It is shown that in both cases, with and without an EQR, the engagement partner's service effort is smaller than it is optimal from the firm's point of view.

Figure 4: Comparison of the service effort



4 Summary of Results and Conclusion

An engagement quality review (EQR) is an important element of the audit quality control process because it takes place before an opinion is expressed, and it may be the auditor's last defense in preventing an audit failure. Under the assumption that an audit firm consists of several partners, this study analyzes the influence of an EQR on the audit firm's equilibrium sharing rule, its report decisions, expected payoffs and incentives to provide audit-related services. The results of the analytical study show that the reporting threshold as well as the engagement partner's incentives to provide audit-audit related services can be smaller or greater in the presence of an EQR. Whenever the audit firm is large and / or the reputational damages resulting in the event of a liability case are large, the engagement partner's incentives to provide audit related services are too small from the firm's point of view. The audit firm cannot provide stronger incentives as this would make the engagement partner to enhance his reporting threshold enhancing expected liability damages. In the presence of an EQR, the audit firm follows the stricter report decision of the review partner so that the audit firm can provide stronger incentives for the engagement partner to perform audit-related services without fearing (a much) greater amount of liability damages. Consequently, the audit firm's expected payoff is greater in this case than in the absence of an EQR. In contrast, if the audit firm is small and / or the reputational damages resulting in the event of an audit failure are small, the engagement partner's incentives to provide audit related services are large. As the review partner only receives a part of the remaining share, his incentives to report truthfully are large. To ensure, that the review partner's incentives for a truthful report are not too large from the firm's point of view, the firm reallocates a share of the service fee from the engagement partner to the review partner. Consequently, the engagement partner's incentives to provide audit related services decrease resulting in a smaller audit firm's payoff in the presence than in the absence of an EQR.

As the audit firm's expected payoff can be greater with an EQR than in the absence of an EQR, there can be an endogenous incentive for audit firms to perform an EQR voluntarily when the review costs are not too large.

Summarizing the results, the main findings of this analytical study have implications for regulators as they show that

- an EQRs can, but, does not have to support truthful reporting and
- an EQR can enhance the audit firm's incentives to perform audit-related services and reduce its expected net costs.

Furthermore, this study brings new insights to the audit firms' optimal compensation strategies in the presence of an EQR. As the results show that EQRs can increase the firm's expected payoff, they are also at interest for those debating about the cost effects of EQRs.

Appendix

Proof of Proposition 1

As described above, the sharing rule that is dominant against any other sharing rule induces the engagement partner to make decisions that minimize the audit firm's breakeven price and to bid an audit fee that is equal to the audit firm's breakeven price.

The following sharing rule induces the engagement partner to bid an audit fee that is equal to the audit firm's breakeven price, as it equates the engagement partner's breakeven price to the firm's one:

$$\underbrace{C_{AF}^{T}(\beta_{EP}^{*},\gamma_{EP}^{*})}_{\text{AF's breakeven price}} \overset{!}{=} \underbrace{\frac{C_{EP}^{T}(\beta_{EP}^{*},\gamma_{EP}^{*})}{\theta_{EP}^{*}}}_{\text{AF's breakeven price}} \tag{59}$$

Rearranging (59) leads to

$$\theta_{EP}^{*} \overset{!}{=} \frac{C_{EP}^{T}(\beta_{EP}^{*},\gamma_{EP}^{*})}{C_{AF}^{T}(\beta_{EP}^{*},\gamma_{EP}^{*})} = \frac{K^{A} - P_{EP}^{T}(\beta_{EP}^{*},\gamma_{EP}^{*})}{K^{A} - P_{AF}^{T}(\beta_{EP}^{*},\gamma_{EP}^{*})} \tag{60}$$

The firm's expected net costs are determined by

$$C_{AF}^{T}(\beta_{EP},\gamma_{EP}) \;=\; \underbrace{K^{A}}_{\substack{\text{Direct}\\ \text{Audit Costs}}} \;-\; \underbrace{P_{AF}^{T}(\beta_{EP},\gamma_{EP})}_{\substack{\text{AF's expected payoff from the}\\ \text{report and service decision}}} \tag{61}$$

Consequently, choosing the sharing rule that minimizes its expected net costs which represent its breakeven price, the firm's objective function is

$$\underbrace{\max!}_{\beta_{EP},\gamma_{EP}} \quad \underbrace{P_{AF}^{T}(\beta_{EP},\gamma_{EP})}_{\substack{\text{AF's expected payoff from the}\\ \text{report and service decision}}} \tag{62}$$

As the engagement partner's share on the audit fee is limited to one ($\theta_{EP}^{*} \leq 1$), condition (60) shows that the engagement partner's expected payoff $P_{EP}^{T}(\beta_{EP},\gamma_{EP})$ describes the upper limit of the audit firm's expected payoff. Consequently, there is the following constraint for choosing the optimal sharing rule (62):

$$P_{EP}^{T}(\beta_{EP}^{*},\gamma_{EP}^{*}) - P_{AF}^{T}(\beta_{EP}^{*},\gamma_{EP}^{*}) \overset{!}{\geq} 0 \tag{63}$$

Thereby, the audit firm's expected payoff is

$$\begin{aligned} P_{AF}^{T}(\beta_{EP},\gamma_{EP}) &= \int_{0}^{\overline{\mu_{EP}}(\beta_{EP},\gamma_{EP})} (P_{AF}^{S}(s^{*}(\beta_{EP})) - \mu \cdot M)\, \partial\mu \\ &= \frac{\beta_{EP}^{3} \cdot (4 \cdot \gamma_{EP} - \beta_{EP} \cdot (1 + 2 \cdot \gamma_{EP}))}{8 \cdot k^{2} \cdot M \cdot \gamma_{EP}^{2}} \end{aligned} \tag{64}$$

and the engagement partner's expected payoff is

$$\begin{aligned} P_{EP}^{T}(\beta_{EP},\gamma_{EP}) &= \int_{0}^{\overline{\mu_{EP}}(\beta_{EP},\gamma_{EP})} (P_{EP}^{S}(s^{*}(\beta_{EP})) - \mu \cdot \gamma_{EP} \cdot M)\, \partial\mu \\ &= \frac{\beta_{EP}^{4}}{8 \cdot k^{2} \cdot M \cdot \gamma_{EP}} \end{aligned} \tag{65}$$

Inserting (64) and (65) in (63) leads to

$$P_{EP}^{T}(\beta_{EP},\gamma_{EP}) - P_{AF}^{T}(\beta_{EP},\gamma_{EP}) = \frac{\beta_{EP}^{3} \cdot (\beta_{EP} - 4 \cdot \gamma_{EP} + 3 \cdot \beta_{EP} \cdot \gamma_{EP})}{8 \cdot k^{2} \cdot M \cdot \gamma_{EP}^{2}} \overset{!}{\geq} 0 \tag{66}$$

Rearranging (66) leads to

$$\beta_{EP} \overset{!}{\geq} \frac{4 \cdot \gamma_{EP}}{(1 + 3 \cdot \gamma_{EP})} \tag{67}$$

(67) determines the lower level for the optimal engagement partner's share on the service fee that ensures that the engagement partner's optimal share on the audit fee is smaller than one.

Differentiating the firm's expected payoff (64) with respect to the engagement partner's share on the audit fee leads to

$$\frac{\partial}{\partial \beta_{EP}} P_{AF}^{T}(\beta_{EP},\gamma_{EP}) = \frac{\beta_{EP}^{2} \cdot (3 \cdot \gamma_{EP} - \beta_{EP} \cdot (1 + 2 \cdot \gamma_{EP}))}{2 \cdot k^{2} \cdot M \cdot \gamma_{EP}^{2}} \begin{cases} < 0 & \text{if } \beta_{EP} > \frac{3 \cdot \gamma_{EP}}{1 + 2 \cdot \gamma_{EP}} \\ > 0 & \text{if } \beta_{EP} < \frac{3 \cdot \gamma_{EP}}{1 + 2 \cdot \gamma_{EP}} \end{cases} \tag{68}$$

As

$$\frac{3 \cdot \gamma_{EP}}{(1 + 2 \cdot \gamma_{EP})} - \underbrace{\frac{4 \cdot \gamma_{EP}}{(1 + 3 \cdot \gamma_{EP})}}_{=\beta_{EP}^{MIN}} = -\frac{(1 - \gamma_{EP}) \cdot \gamma_{EP}}{1 + \gamma_{EP} \cdot (5 + 6 \cdot \gamma_{EP})} < 0 \tag{69}$$

the audit firm's expected payoff decreases in β_{EP} whenever inequality (67) is fulfilled:

$$\frac{\partial}{\partial \beta_{EP}} P_{AF}^{T}(\beta_{EP}, \gamma_{EP}) < 0 \quad \text{if} \quad \beta_{EP} \geq \frac{4 \cdot \gamma_{EP}}{1+3 \cdot \gamma_{EP}} \tag{70}$$

Consequently, the audit firm's expected payoff is under the restriction of (67) at its maximum if

$$\beta_{EP}^{*} = \frac{4 \cdot \gamma_{EP}}{(1+3 \cdot \gamma_{EP})} < 1 \quad \text{if} \quad \gamma_{EP} \in (0,1) \tag{71}$$

Differentiating the firm's expected payoff (64) with respect to the engagement partner's share on the liability damages leads to

$$\frac{\partial}{\partial \gamma_{EP}} P_{AF}^{T}(\beta_{EP}, \gamma_{EP}) = \frac{\beta_{EP}^{3} \cdot (\beta_{EP} \cdot (1+\gamma_{EP}) - 2 \cdot \gamma_{EP})}{4 \cdot k^{2} \cdot M \cdot \gamma_{EP}^{3}} \quad \begin{cases} > 0 & \text{if } \beta_{EP} > \frac{2 \cdot \gamma_{EP}}{1+\gamma_{EP}} \\ < 0 & \text{if } \beta_{EP} < \frac{2 \cdot \gamma_{EP}}{1+\gamma_{EP}} \end{cases} \tag{72}$$

As

$$\frac{2 \cdot \gamma_{EP}}{(1+\gamma_{EP})} - \underbrace{\frac{4 \cdot \gamma_{EP}}{(1+3 \cdot \gamma_{EP})}}_{=\beta_{EP}^{*}} = -\frac{(1-\gamma_{EP}) \cdot 2 \cdot \gamma_{EP}}{(1+\gamma_{EP}) \cdot (1+3 \cdot \gamma_{EP})} < 0 \tag{73}$$

the audit firm's expected payoff increases with γ_{EP} whenever inequality (67) is fulfilled:

$$\frac{\partial}{\partial \gamma_{EP}} P_{AF}^{T}(\beta_{EP}, \gamma_{EP}) > 0 \quad \text{if} \quad \beta_{EP} \geq \frac{4 \cdot \gamma_{EP}}{1+3 \cdot \gamma_{EP}} \tag{74}$$

Consequently, the engagement partner's optimal share on the liability damages is as high as possible and, therefore

$$\gamma_{EP}^{*} = \gamma^{MAX} = 1 - (n-1) \cdot \overline{\gamma} \tag{75}$$

As the optimal engagement partner's share on the service fee equates the engagement partner's expected payoff to the firm's expected payoff ($P_{T}^{AF} = P_{T}^{EP}(\beta_{EP}^{*})$), the engagement partner's optimal share on the audit fee is

$$\theta_{EP}^{*} = \frac{K^{A} - P_{EP}^{T}(\beta_{EP}^{*}, \gamma_{EP}^{*})}{K^{A} - P_{AF}^{T}(\beta_{EP}^{*}, \gamma_{EP}^{*})} = \frac{K^{A} - P_{AF}^{T}(\beta_{EP}^{*}, \gamma_{EP}^{*})}{K^{A} - P_{AF}^{T}(\beta_{EP}^{*}, \gamma_{EP}^{*})} = 1 \tag{76}$$

The reciprocal insertion of (75) and (71) leads to the equilibrium sharing rule given in Proposition 1. This sharing rule induces the engagement partner to minimize the audit firm's ex-

pected net costs (its breakeven price) and to bid an audit fee that is equal to it. As no audit firm is willing to bid an audit fee which is lower than its breakeven price and as the sharing rule ensures that the breakeven price is minimized, the equilibrium sharing rule leads to the most competitive (winning) bid. It is the audit firm's dominant sharing rule as it is the best response to any sharing rule of the other audit firm.

Proof of Proposition 2

The intuition of the dominant sharing rule is the same as described in the case that no EQR takes place:

Firstly, the equilibrium sharing rule equates the engagement partner's breakeven price to the firm's one to ensure that the engagement partner bids an audit fee that is competitive:

$$\underbrace{\widetilde{C_{AF}^{T}}(\beta_{EP}^{\#},\gamma_{EP}^{\#})}_{\text{AF's breakeven price}} \overset{!}{=} \underbrace{\frac{\widetilde{C_{EP}^{T}}(\beta_{EP}^{\#},\gamma_{EP}^{\#})}{\theta_{EP}^{\#}}}_{\text{EP's breakeven price}} \tag{77}$$

Rearranging (77) leads to

$$\theta_{EP}^{\#} \overset{!}{=} \frac{\widetilde{C_{EP}^{T}}(\beta_{EP}^{\#},\gamma_{EP}^{\#})}{\widetilde{C_{AF}^{T}}(\beta_{EP}^{\#},\gamma_{EP}^{\#})} = \frac{K^{A} - \widetilde{P_{EP}^{T}}(\beta_{EP}^{\#},\gamma_{EP}^{\#})}{K^{A} + K^{R} - \widetilde{P_{AF}^{T}}(\beta_{EP}^{\#},\gamma_{EP}^{\#})} \tag{78}$$

Choosing the engagement partner's optimal share on the service fee and on the liability damages, the audit firm's objective function is:

$$\underbrace{\min!}_{\beta_{EP},\gamma_{EP}} \quad \widetilde{C_{AF}^{T}}(\beta_{EP},\gamma_{EP}) = \underbrace{K^{A}}_{\substack{\text{Direct}\\ \text{audit costs}}} + \underbrace{K^{R}}_{\substack{\text{Direct}\\ \text{review costs}}} - \underbrace{\widetilde{P_{AF}^{T}}(\beta_{EP},\gamma_{EP})}_{\substack{\text{AF's expected payoff from the}\\ \text{report and service decision}}} \tag{79}$$

Rearranging (79) leads to

$$\underbrace{\max!}_{\beta_{EP},\gamma_{EP}} \quad \underbrace{\widetilde{P_{AF}^{T}}(\beta_{EP},\gamma_{EP})}_{\substack{\text{AF's expected payoff from the}\\ \text{report and service decision}}} \tag{80}$$

The audit firm always follows the stricter report decision. Under the assumption that the review partner's reporting threshold is not greater than the engagement partner's one ($\overline{\mu_{RP}} \leq \overline{\mu_{EP}}$), the engagement partner anticipates that the audit firm decides for the review partner's reporting threshold. Consequently, he takes the review partner's reporting threshold for given choosing his individual decisions. The audit firm's expected payoff is in this case:

$$\begin{aligned}\widetilde{P_{AF}^{T}}(\beta_{EP},\gamma_{EP}) &= \int_{0}^{\overline{\mu_{RP}}(\beta_{EP},\gamma_{EP})} (P_{AF}^{S}(s^{*}(\beta_{EP})) - \mu \cdot M)\, \partial\mu \\ &= \frac{(1-\beta_{EP}) \cdot {\beta_{EP}}^{2} \cdot (1-(2-\beta_{EP}) \cdot \gamma_{EP})}{2 \cdot k^{2} \cdot M \cdot (1-\gamma_{EP})^{2}}\end{aligned} \tag{81}$$

Maximizing the audit firm's expected payoff with respect to β_{EP} and γ_{EP} leads to the following first order conditions:

$$\frac{\partial}{\partial \beta_{EP}} \widetilde{P_{AF}^{T}}(\beta_{EP},\gamma_{EP}) = \frac{\beta_{EP} \cdot (2-(3-9 \cdot \gamma_{EP}) - \gamma_{EP} \cdot (4+4 \cdot {\beta_{EP}}^{2}))}{2 \cdot k^{2} \cdot M \cdot (1-\gamma_{EP})^{2}} \stackrel{!}{=} 0 \tag{82}$$

$$\frac{\partial}{\partial \gamma_{EP}} \widetilde{P_{AF}^{T}}(\beta_{EP},\gamma_{EP}) = \frac{(1-\beta_{EP}) \cdot {\beta_{EP}}^{2} \cdot (\beta_{EP} - \gamma_{EP} \cdot (2-\beta_{EP}))}{2 \cdot k^{2} \cdot R \cdot (1-\gamma_{EP})^{3}} \stackrel{!}{=} 0 \tag{83}$$

Solving the equation system with respect to β_{EP} and γ_{EP} shows that it is only fulfilled for (the boundary point) $\beta_{EP} = 0$. It is easy to see that the audit firm's expected payoff is equal to zero in this case and also in the case where $\beta_{EP} = 1$. Consequently, the payoff maximizing engagement partner's share on the service fee is unequal to zero or one whenever there exists a $\widehat{\beta_{EP}}$ so that $\widetilde{P_{AF}^{T}}(\widehat{\beta_{EP}},\gamma_{EP}) > 0$.

Looking for the global maximum of the firm's expected payoff in the definition area $\beta_{EP} \in [0,1]$ and $\gamma_{EP} \in [\underline{\gamma}, 1-(n-1) \cdot \underline{\gamma}]$, also the other borders of the payoff function have to be analyzed.

Rearranging (82) with respect to the engagement partner's share on the service fee (β_{EP}) leads to

$$\begin{aligned} &i) \quad \beta_{EP}^{*} = 0 \\ &ii) \quad \beta_{EP}^{**} = \frac{3 \cdot (3 \cdot \gamma_{EP} - 1) - \sqrt{9 + \gamma_{EP} \cdot (17 \cdot \gamma_{EP} - 22)}}{8 \cdot \gamma_{EP}} \quad \begin{cases} > 0 & \text{if } \gamma_{EP} > 0.5 \\ < 0 & \text{if } \gamma_{EP} < 0.5 \end{cases} \\ &iii) \quad \beta_{EP}^{***} = \frac{3 \cdot (3 \cdot \gamma_{EP} - 1) + \sqrt{9 + \gamma_{EP} \cdot (17 \cdot \gamma_{EP} - 22)}}{8 \cdot \gamma_{EP}} \quad \{ \in (0,1) \text{ if } \gamma_{EP}(0,1) \end{aligned} \tag{84}$$

Calculating the second deviations of $\widetilde{P_{AF}^{T}}(\beta_{EP},\gamma_{EP})$ with respect to β_{EP} leads to

$$i)\ \frac{\partial^2}{\partial\beta_{EP}{}^2}\widetilde{P_{AF}^{T}}(\beta_{EP}=\beta^{**})=-\frac{17\cdot\gamma_{EP}{}^2+3\cdot(3+X)-\gamma_{EP}\cdot(22+9\cdot X)}{16\cdot k^2\cdot M\cdot(1-\gamma_{EP})^2\cdot\gamma_{EP}}\quad\begin{cases}>0 & \text{if}\ \ \gamma_{EP}>0.5\\ <0 & \text{if}\ \ \gamma_{EP}<0.5\end{cases}$$

$$\text{where}\ \ X=\sqrt{9+\gamma_{EP}\cdot(17\cdot\gamma_{EP}-22)} \tag{85}$$

$$ii)\ \frac{\partial^2}{\partial\beta_{EP}{}^2}\widetilde{P_{AF}^{T}}(\beta_{EP}=\beta^{***})=\frac{\gamma_{EP}\cdot(22-17\cdot\gamma_{EP}-9\cdot X)+3\cdot(X-3)}{16\cdot k^2\cdot M\cdot(1-\gamma_{EP})^2\cdot\gamma_{EP}}\quad\{<0\ \ \text{if}\ \ \gamma_{EP}\in(0,1)$$

$$\text{where}\ \ X=\sqrt{9+\gamma_{EP}\cdot(17\cdot\gamma_{EP}-22)}$$

The results only apply for $k,\ M>0$, which is in line with the basic model assumptions.

(84) *ii)* shows that β_{EP}^{**} is only in the definition area ($\beta_{EP}\in[0,1]$) if $\gamma_{EP}\geq 0.5$. For $\gamma_{EP}\geq 0.5$ (85) *i)* shows that $\frac{\partial^2}{\partial\beta_{EP}{}^2}\widetilde{P_{AF}^{T}}(\beta_{EP}=\beta_{EP}^{**})$ is not smaller than zero so that β_{EP}^{**} cannot be a local maximum of the audit firm's expected payoff in the definition area.

As $\frac{\partial^2}{\partial\beta_{EP}{}^2}\widetilde{P_{AF}^{T}}(\beta_{EP}=\beta_{EP}^{***})$ is smaller than zero for $\gamma_{EP}\in(0,1)$, β^{***} comes into question for the global maximum. The resulting audit firm's expected payoff is

$$\widetilde{P_{AF}^{T}}(\beta_{EP}=\beta_{EP}^{***}(\gamma_{EP}),\gamma_{EP})\ =\frac{(5-7\cdot\gamma_{EP}+X)\cdot(3-\gamma_{EP}-X)\cdot(-3+9\cdot\gamma_{EP}+X)^2}{8192\cdot k^2\cdot M\cdot(1-\gamma_{EP})^2\cdot\gamma_{EP}{}^3}$$

$$>0\ \ \text{if}\ \ \gamma_{EP}\in(0,1)\ \text{and}\ k,M>0 \tag{86}$$

$$\text{where}\ \ X=\sqrt{9+\gamma_{EP}\cdot(17\cdot\gamma_{EP}-22)}$$

As β_{EP}^{***} leads to a positive expected payoff in the definition area ($\gamma_{EP}\in(0,1)$ and $k,M>0$), the resulting audit firm's expected payoff is always greater than when it chooses $\beta_{EP}=0\vee 1$. Consequently, the engagement partner's share on the service fee that maximizes the audit firm's expected payoff is

$$\beta_{EP}^{\#}=\beta_{EP}^{***}=\frac{3\cdot(3\cdot\gamma_{EP}-1)+\sqrt{9+\gamma_{EP}\cdot(17\cdot\gamma_{EP}-22)}}{8\cdot\gamma_{EP}} \tag{87}$$

Differentiating (86) with respect to γ_{EP} leads to

$$\begin{aligned}\frac{\partial}{\partial\gamma_{EP}}\widetilde{P_{AF}^{T}}(\beta_{EP}=\beta_{EP}^{\#}(\gamma_{EP}),\gamma_{EP}) \;=\; & -\frac{1}{1024\cdot k^{2}\cdot M\cdot(1-\gamma_{EP})^{3}\cdot\gamma_{EP}^{\;4}}\cdot(27\cdot(3-X)+\gamma_{EP}\cdot \\ & (33\cdot(4\cdot X-15)+\gamma_{EP}\cdot(1154-218\cdot X+\gamma_{EP}\cdot(\gamma_{EP}\cdot \\ & (701-107\cdot\gamma_{EP}-51\cdot X)-2\cdot(651-74\cdot X))))) \\ > \; & 0 \quad \text{if} \quad \gamma_{EP}\in(0,1) \text{ and } k,M>0\end{aligned} \tag{88}$$

where $X=\sqrt{9+\gamma_{EP}\cdot(17\cdot\gamma_{EP}-22)}$

As $\frac{\partial}{\partial\gamma_{EP}}\widetilde{P_{AF}^{T}}(\beta_{EP}=\beta_{EP}^{\#}(\gamma_{EP}),\gamma_{EP})$ is greater than zero in the definition area ($\gamma_{EP}\in(0,1)$ and $k,\ M>0$), the audit firm's expected payoff increases when the engagement partner's share on the liability damages increases. Therefore, the audit firm's payoff maximizing engagement partner's share on the liability damages equals the maximum share that can be allocated to one partner. It is

$$\gamma_{EP}^{\#} \;=\gamma^{MAX}=1-(n-1)\cdot\overline{\gamma} \tag{89}$$

Consequently, each of the $(n-1)$ remaining partners bears the minimum share so that $\gamma_i=\overline{\gamma}$ where $i\neq EP$.

Inserting (89) in (87) leads to the optimal engagement partner's share on the audit fee ($\theta_{EP}^{\#}$) shown in Proposition 2.

To ensure that $\theta_{EP}^{\#}$ is not greater than one (see (78)) the following condition has to be fulfilled:

$$\underbrace{\widetilde{P_{AF}^{T}}(\beta_{EP}^{\#},\gamma_{EP}^{\#})-\widetilde{P_{EP}^{T}}(\beta_{EP}^{\#},\gamma_{EP}^{\#})}_{\substack{\text{Difference of the AF's and the EP's}\\ \text{expected payoffs}}}\leq K^{A} \tag{90}$$

Analyzing the difference between the audit firm's and the engagement partner's expected payoffs leads to:

$$\begin{aligned}\widetilde{P_{AF}^{T}}(\beta_{EP}^{\#},\gamma_{EP}^{\#})-\widetilde{P_{EP}^{T}}(\beta_{EP}^{\#},\gamma_{EP}^{\#}) \;=\; & \frac{(\gamma^{MAX}+X-3)^{2}\cdot(9\cdot\gamma^{MAX}+X-3)^{2}}{8192\cdot k^{2}\cdot M\cdot(1-\gamma^{MAX})\cdot s^{4}} \\ > \; & 0 \quad \text{if} \quad \gamma_{EP}\in(0,1) \text{ and } k,M>0\end{aligned} \tag{91}$$

where $X=\sqrt{9+\gamma^{MAX}\cdot(17\cdot\gamma^{MAX}-22)}$

Inserting (91) in (90) and rearranging leads to

$$K^A \cdot k^2 \cdot M \geq \frac{(\gamma^{MAX} + X - 3)^2 \cdot (9 \cdot \gamma^{MAX} + X - 3)^2}{8192 \cdot (1 - \gamma^{MAX}) \cdot s^4} \overset{!}{=} Z \quad \{\in (0,1) \text{ if } \gamma^{MAX} \in (0,1)$$
$$\text{where } X = \sqrt{9 + \gamma^{MAX} \cdot (17 \cdot \gamma^{MAX} - 22)} \tag{92}$$

As Z is smaller than one in the definition area ($\gamma^{MAX} \in (0,1)$), the product $K^A \cdot k^2 \cdot M$ will be always greater than Z (so that condition (92) is fulfilled) if following the technical assumption is fulfilled:

$$K^A \cdot k^2 \cdot M > 1 \tag{93}$$

Consequently, this technical assumption ensures that $\theta_{EP}^{\#}$ is not greater than one.

Calculating the difference of the engagement partner's and the review partner's reporting thresholds leads to

$$\overline{\mu_{EP}}(\beta_{EP}^{\#}, \gamma_{EP}^{\#}) - \overline{\mu_{RP}}(\beta_{EP}^{\#}, \gamma_{EP}^{\#}) = \frac{(9 \cdot \gamma^{MAX} + X - 3) \cdot (X + \gamma^{MAX} \cdot (6 + X - 7 \cdot \gamma^{MAX}) - 3)}{128 \cdot k \cdot M \cdot (1 - \gamma^{MAX}) \cdot \gamma^{MAX3}}$$
$$> 0 \quad \text{if } \gamma^{MAX} \in (0,1) \text{ and } k, M > 0 \tag{94}$$
$$\text{where } X = \sqrt{9 + \gamma^{MAX} \cdot (17 \cdot \gamma^{MAX} - 22)}$$

Consequently, if the audit firm chooses $\beta_{EP} = \beta_{EP}^{\#}$ and $\gamma_{EP} = \gamma_{EP}^{\#}$ the engagement partner's reporting threshold will be always greater than the review partner's reporting threshold. Therefore, the above mentioned assumption that the audit firm decides for the review partner's reporting threshold is correct for this sharing rule. The resulting audit firm's expected payoff is

$$\widetilde{P_{AF}^T}(\beta_{EP}^{\#}, \gamma_{EP}^{\#}) = \frac{(3 - \gamma^{MAX} - X)(9 \cdot \gamma^{MAX} + X - 3)(X + \gamma^{MAX} \cdot (22 - 23 \cdot \gamma^{MAX} + X) - 3)}{4096 \cdot k^2 \cdot M \cdot (1 - \gamma^{MAX})^2 \cdot \gamma^{MAX3}}$$
$$\text{where } X = \sqrt{9 + \gamma^{MAX} \cdot (17 \cdot \gamma^{MAX} - 22)} \tag{95}$$

The firm's decision:

Until now, the optimal sharing rule was analyzed for the assumption that the audit firm always follows the report decision of the review partner. In the overall context, this sharing rule is only the optimal one if there is no other sharing rule that leads to a higher expected payoff for the audit firm by making the engagement partner stricter in his report decision than the review partner. Therefore, in the following section, it is analyzed how the audit firm's expected payoff will change if it decides for a (optimal) sharing rule that induces the engagement partner to be stricter than the review partner so that the engagement partner's report decision is relevant for the audit firm.

To ensure that the audit firm can decide for the report decision of the engagement partner, this partner's reporting threshold must not be greater than that of the review partner:

$$\overline{\mu_{EP}}(\beta_{EP},\gamma_{EP}) = \frac{\beta_{EP}^2}{2\cdot k\cdot\gamma_{EP}\cdot M} \overset{!}{\leq} \overline{\mu_{RP}}(\beta_{EP},\gamma_{EP}) = \frac{\beta_{EP}\cdot(1-\beta_{EP})}{k\cdot M\cdot(1-\gamma_{EP})} \tag{96}$$

Rearranging (96) leads to

$$\beta_{EP} \overset{!}{\leq} \frac{2\cdot\gamma_{EP}}{1+\gamma_{EP}} \tag{97}$$

Consequently, the audit firm's objective function choosing the optimal sharing rule is:

$$\begin{aligned} \max_{\beta_{EP},\gamma_{EP}}! \quad \widetilde{P_{AF}^{T}}(\beta_{EP},\gamma_{EP}) &= \int_0^{\overline{\mu_{EP}}(\beta_{EP},\gamma_{EP})} (P_{AF}^{S}(s^*(\beta_{EP})) - \mu\cdot M)\,\partial\mu \\ &= -\frac{{\beta_{EP}}^3\cdot(\beta_{EP}+\gamma_{EP}\cdot(2\cdot\beta_{EP}-4))}{8\cdot k^2\cdot M\cdot{\gamma_{EP}}^2} \end{aligned} \tag{98}$$

whereby the condition shown in (97) has to be fulfilled.

The first order conditions are

$$\frac{\partial}{\partial\beta_{EP}}\widetilde{P_{AF}^{T}}(\beta_{EP},\gamma_{EP}) = -\frac{{\beta_{EP}}^2\cdot(\beta_{EP}+\gamma_{EP}\cdot(2\cdot\beta_{EP}-3))}{2\cdot k^2\cdot M\cdot{\gamma_{EP}}^2} \overset{!}{=} 0 \tag{99}$$

$$\frac{\partial}{\partial\gamma_{EP}}\widetilde{P_{AF}^{T}}(\beta_{EP},\gamma_{EP}) = \frac{{\beta_{EP}}^3\cdot(\beta_{EP}+\gamma_{EP}\cdot(\beta_{EP}-2))}{4\cdot k^2\cdot M\cdot{\gamma_{EP}}^3} \overset{!}{=} 0 \tag{100}$$

Solving the equation system with respect to γ_{EP} and β_{EP} leads to

$$\begin{aligned} &i)\ \ \beta_{EP} = 1, \quad \gamma_{EP} = 1 \\ &ii)\ \beta_{EP} = 0 \end{aligned} \tag{101}$$

As $\gamma_{EP} = 1$ is not in the definition area, the payoff maximizing sharing rule is a boundary point. Testing all boundary points with respect to the resulting expected payoffs shows that the following boundary point maximizes the audit firm's expected payoff under the condition that the engagement partner's reporting threshold is smaller than that of the review partner:

$$\begin{aligned} \tilde{\beta_{EP}} &= \frac{2 \cdot \gamma_{EP}}{1 + \gamma_{EP}} \\ \tilde{\gamma_{EP}} &= \gamma^{MAX} \end{aligned} \tag{102}$$

Calculating the related audit firm's expected payoff leads to

$$\widetilde{P_{AF}^{T}}(\tilde{\beta_{EP}}, \tilde{\gamma_{EP}}) = \frac{27 \cdot \gamma^{MAX\,2}}{8 \cdot k^2 \cdot M \cdot (1 + 2 \cdot \gamma^{MAX})^3} \tag{103}$$

Comparing this payoff to the payoff that results when the audit firm chooses the (optimal) sharing rule that makes the review partner being stricter in his report decision than the engagement partner (given in (95)) leads to:

$$\widetilde{P_{AF}^{T}}(\tilde{\beta_{EP}}, \tilde{\gamma_{EP}}) < \widetilde{P_{AF}^{T}}(\beta_{EP}^{\#}, \gamma_{EP}^{\#}) \qquad \text{if} \quad \gamma^{MAX} \in (0,1) \tag{104}$$

As the audit firm's expected payoff is always greater if it decides for the (optimal) sharing rule that induces the review partner to be stricter in his report decision than the engagement partner, the sharing rule given in Proposition 2 maximizes the audit firm's expected payoff in the case that an EQR takes place.

In summary, the sharing rule shown in Proposition 2 induces the engagement partner to bid an audit fee that is equal to the firm's breakeven price (its net costs) and to choose decisions that minimize this breakeven price. Consequently, he submits the most competitive (winning) bid as no rival (identical) audit firm is able to undercut the proposal. It is the audit firm's dominant sharing rule as it is the best response to any sharing rule of the other audit firm.

Proof of Proposition 3

a) In the case that the audit firm is a partnership and an EQR takes place, the audit firm's expected payoff is shown in (95).

If no EQR takes place, the audit firm's expected payoff is

$$P_{AF}^{T}(SR) = \frac{32 \cdot \gamma^{MAX\,3}}{k^2 \cdot R \cdot (1+3 \cdot \gamma^{MAX})^4} \tag{105}$$

Consequently, the audit firm's expected payoff is greater in the presence than in the absence of an EQR whenever the following condition is fulfilled:

$$\underbrace{\frac{32 \cdot \gamma^{MAX\,3}}{k^2 \cdot R \cdot (1+3 \cdot \gamma^{MAX})^4}}_{=P_{AF}^{T}(SR)} > \underbrace{\frac{(3-\gamma^{MAX}-X)(9 \cdot \gamma^{MAX}+X-3)(X+\gamma^{MAX} \cdot (22-23 \cdot \gamma^{MAX}+X)-3)}{4096 \cdot k^2 \cdot M \cdot (1-\gamma^{MAX})^2 \cdot \gamma^{MAX\,3}}}_{=\widetilde{P_{AF}^{T}}(\widetilde{SR})} \tag{106}$$

where $X = \sqrt{9+\gamma^{MAX} \cdot (17 \cdot \gamma^{MAX}-22)}$

Rearranging (106) leads to

$$\begin{aligned} &\widetilde{P_{AF}^{T}}(\widetilde{SR}) > P_{AF}^{T}(SR) \qquad \text{if} \quad \gamma^{MAX} \in (0, 0.588) \\ &\widetilde{P_{AF}^{T}}(\widetilde{SR}) < P_{AF}^{T}(SR) \qquad \text{if} \quad \gamma^{MAX} \in (0.588, 1) \end{aligned} \tag{107}$$

Thereby, the value of 0.588 is approximated.

Consequently, the audit firm's expected payoff from the service and report decision is greater with an EQR than in the absence of an EQR whenever γ^{MAX} is smaller than 0.0588. In the case that γ^{MAX} is greater than 0.588, the audit firm's expected payoff is smaller when an EQR takes place than when no EQR takes place.

b) In the case that the audit firm is a partnership and an EQR takes place, the review partner's reporting threshold (which is the relevant one as shown in the proof of Proposition 2) is

$$\begin{aligned}\overline{\mu_{RP}}(\beta_{EP}^{\#},\gamma_{EP}^{\#}) &= \frac{P_{RP}^{S}(s_{EP}^{*}(\beta_{EP}^{\#}))}{\gamma_{RP}(\gamma_{EP}^{\#})\cdot M} \\ &= \frac{(3-\gamma^{MAX}-X)\cdot(9\cdot\gamma^{MAX}+X-3)}{64\cdot k\cdot M\cdot(1-\gamma^{MAX})\cdot\gamma^{MAX\,2}} \qquad (108)\end{aligned}$$

where $X=\sqrt{9+\gamma^{MAX}\cdot(17\cdot\gamma^{MAX}-22)}$

The engagement partner's reporting threshold in the case that no EQR takes place is

$$\overline{\mu_{EP}}(\beta_{EP}^{*},\gamma_{EP}^{*}) = \frac{P_{EP}^{S}(s_{EP}^{*}(\beta_{EP}^{*}))}{\gamma_{EP}^{*}\cdot M} = \frac{8\cdot\gamma^{MAX}}{k\cdot M\cdot(1+3\cdot\gamma^{MAX})^{2}} \qquad (109)$$

Consequently, the review partner's reporting threshold is smaller than the engagement partner's reporting threshold (resulting in the case that no EQR takes place) whenever the following condition is fulfilled:

$$\underbrace{\frac{(3-\gamma^{MAX}-X)\cdot(9\cdot\gamma^{MAX}+X-3)}{64\cdot k\cdot M\cdot(1-\gamma^{MAX})\cdot\gamma^{MAX\,2}}}_{=\overline{\mu_{RP}}(\beta_{EP}^{\#},\gamma_{EP}^{\#})} < \underbrace{\frac{8\cdot\gamma^{MAX}}{k\cdot M\cdot(1+3\cdot\gamma^{MAX})^{2}}}_{=\overline{\mu_{EP}}(\beta_{EP}^{*},\gamma_{EP}^{*})} \qquad (110)$$

where $X=\sqrt{9+\gamma^{MAX}\cdot(17\cdot\gamma^{MAX}-22)}$

Rearranging (110) leads to

$$\begin{aligned}&\overline{\mu_{RP}}(\beta_{EP}^{\#},\gamma_{EP}^{\#}) > \overline{\mu_{EP}}(\beta_{EP}^{*},\gamma_{EP}^{*}) \quad \text{if} \quad \gamma^{MAX}\in(0,0.035) \\ &\overline{\mu_{RP}}(\beta_{EP}^{\#},\gamma_{EP}^{\#}) < \overline{\mu_{EP}}(\beta_{EP}^{*},\gamma_{EP}^{*}) \quad \text{if} \quad \gamma^{MAX}\in(0.035,1)\end{aligned} \qquad (111)$$

Thereby, the value of 0.035 is approximated.

Consequently, the review partner's reporting threshold is smaller than that of the the engagement partner (resulting in the case that no EQR takes place) whenever γ^{MAX} is greater than 0.035. In the case that γ^{MAX} is smaller than 0.035, the engagement partner's reporting threshold (resulting in the case that no EQR takes place) is greater than that of the review partner.

c) In the case that the audit firm is a partnership and an EQR takes place, the engagement partner's equilibrium service effort is

$$s\ (\beta_{EP}^{\#}) = s^{\#} = \frac{\beta^{\#}}{k} = \frac{3\cdot(3\cdot\gamma^{MAX}-1)+\sqrt{9+\gamma^{MAX}\cdot(17\cdot\gamma^{MAX}-22)}}{8\cdot\gamma^{MAX}\cdot k} \tag{112}$$

If no EQR takes place, the engagement partner's equilibrium service effort is

$$s\ (\beta_{EP}^{*}) = s^{*} = \frac{\beta^{*}}{k} = \frac{4\cdot\gamma^{MAX}}{k\cdot(1+3\cdot\gamma^{MAX})} \tag{113}$$

Consequently, the engagement partner's equilibrium service effort is greater in the presence than in the absence of an EQR whenever the following condition is fulfilled:

$$\underbrace{\frac{3\cdot(3\cdot\gamma^{MAX}-1)+\sqrt{9+\gamma^{MAX}\cdot(17\cdot\gamma^{MAX}-22)}}{8\cdot\gamma^{MAX}\cdot k}}_{=s^{\#}} \quad > \quad \underbrace{\frac{4\cdot\gamma^{MAX}}{k\cdot(1+3\cdot\gamma^{MAX})}}_{=s^{*}} \tag{114}$$

Rearranging (114) leads to

$$\begin{aligned} s^{\#} > s^{*} \quad &\text{if} \quad \gamma^{MAX} \in (0, 0.390) \\ s^{\#} < s^{*} \quad &\text{if} \quad \gamma^{MAX} \in (0.390, 1) \end{aligned} \tag{115}$$

Thereby, the value of 0.390 is approximated.

Consequently, the engagement partner's incentives for providing audit related services are greater with an EQR than when no EQR takes place whenever γ^{MAX} is smaller than 0.390. In the case that γ^{MAX} is greater than 0.390, the engagement partner's incentives for providing audit related services are smaller when an EQR takes place than when no EQR takes place.

References

American Institute of Certified Public Accountants [AICPA], Division for CPA Firms SEC Practice Section (1986): SECPS Manual. New York.

Ayers, S. & Kaplan, S. E. (2003): Review Partners' Reactions to Contact Partner Risk Judgments of Prospective Clients. Auditing: A Journal of Practice & Theory, Vol. 22, pp. 29–45.

Bedard, J. C., Deis, D. R., Curtis, M. B. & Jenkins, J. G. (2007): Risk Monitoring and Control in Audit Firms: A Research Synthesis. Auditing: A Journal of Practice & Theory, Vol. 27, pp. 187–218.

Burrows, G. & Black, C. (1198): Profit Sharing in Australian Big 6 Accounting Firms: An Exploratory Study. Accounting, Organizations, and Society, Vol. 23, pp. 517–530.

Carcello, J., Hermanson, D. & Huss, H. (2000): Going-Concern Opinions: The Effects of Partner Compensation Plans and Client Size. Auditing: A Journal of Theory & Practice, Vol. 19, pp. 67–77.

Emby, C. & Favere-Marchesi, M. (2010): Review Partners and Engagement Partners: The Interaction Process in Engagement Quality Review. Auditing: A Journal of Practice & Theory, Vol. 29, pp. 215–232.

Epps, K. & Messier, W. F. (2007): Engagement Quality Reviews: A Comparison of Audit Firm Practices. Auditing: A Journal of Practice & Theory, Vol. 26, pp. 167–181.

Favere-Marchesi, M. & Emby, C. (2005): The Impact of Continuity on Concurring Partner Reviews: An Exploratory Study. Accounting Horizons, Vol. 19, pp. 1–10.

Grossman, S. J. (1981): Nash Equilibrium and the Industrial Organization of Markets with Large Fixed Costs. Econometrica, Vol. 49, pp. 1149–1172.

Hurter, A. P. & Lederer, P. (1986): Competition of Firms: Discriminatory Pricing and Location. Econometrica, Vol. 54, pp. 623–640.

Liu, X. & Chan, D. K. (2012): Consulting Revenue Sharing, Auditor Effort and Independence, and the Regulation of Auditor Compensation. Journal of Accounting and Public Policy, Vol. 31, pp. 139–160.

Liu, X. & Simunic, D. A. (2005): Profit Sharing in an Auditing Oligopoly. The Accounting Review, Vol. 80, pp. 677–702.

Luehlfing, M. S., Copley, P. A. & Shockley, R. A. (1995): An Examination of the Relationship between Audit-Related Risks and the Second Partner Review. Journal of Accounting, Auditing and Finance, Vol. 10, pp. 43–50.

Matsumura, E. M. & Tucker, R. R. (1995): Second Partner Review: An Analytical Model. Journal of Accounting, Auditing and Finance, Vol. 10, pp. 173–200.

Mautz, R. K. & Matusiak, L. W. (1988): Concurring Partner Review Revisited. Journal of Accounting Research, Vol. 35, pp. 279–293.

Messier, W. F., Kozloski, T. & Kochetova-Kozloski, N. (2010): An Analysis of SEC and PCAOB Enforcement Actions against Engagement Quality Reviewers. Auditing: A Journal of Practice & Theory, Vol. 29, pp. 233–252.

Owhoso, V. E., Messier, W. F. & Lynch, J. G. (2002): Error Detection by Industry-Specialized Teams During Sequential Audit Review. Journal of Accounting Research, Vol. 40, pp. 883–900.

Public Company Accounting Oversight Board [PCAOB] (2009): Engagement Quality Review. Auditing Standard No. 7. PCAOB Release No. 2009-004, Washington, D.C.

Public Oversight Board (1993): A Special Report by the Public Oversight Board of SEC Practice Section, AICPA. Stamford.

Schneider, A. & Messier, W. F. (2007): Engagement Quality Review: Insights from the Academic Literature. Managerial Auditing Journal, Vol. 22, pp. 823–839.

Tirole, J. (2002): The Theory of Industrial Organization. The MIT Press. Cambridge MA, London.

Trompeter, G. (1994): The Effect of Partner Compensation Schemes and Generally Accepted Accounting Principles on Engagement Partner Judgment. Auditing: A Journal of Theory & Practice, Vol. 13, pp. 56–68.

Tucker, R. R. & Matsumura, E. M. (1997): Second-Partner Review: An Experimental Economics Investigation. Auditing: A Journal of Practice & Theory, Vol. 16, pp. 79–98.

U. S. House of Representatives (2002): Sarbanes-Oxley Act of 2002. Public Law 107–204, Washingto D.C.

Beitrag 4

Titel

Höhere Schwellenwerte nach § 267 HGB – Auswirkungen auf den Prüfungsmarkt

Higher Thresholds in § 267 HGB – Implications for the Audit Market

Hinweise zur Erstveröffentlichung

Dieser Beitrag wurde in der Fachzeitschrift *Die Wirtschaftsprüfung* (*WPg*, IDW Verlag GmbH, Düsseldorf) veröffentlicht (2016, Heft 18, S. 1023 – 1029).
© IDW Verlag GmbH. Mit freundlicher Genehmigung.

Höhere Schwellenwerte nach § 267 HGB – Auswirkungen auf den Prüfungsmarkt

ZUSAMMENFASSUNG

Im Rahmen des BilMoG wurden die monetären Schwellenwerte in § 267 HGB erhöht, was für mehrere tausend Unternehmen zu einem Entfallen der Prüfungspflicht führte. Die vorliegende Untersuchung zeigt, dass die Mehrzahl dieser Unternehmen in den Folgejahren gleichwohl eine Abschlussprüfung durchführte – entweder freiwillig oder pflichtgemäß aufgrund von Größenwachstum. Dabei nimmt die Wahrscheinlichkeit für eine freiwillige Abschlussprüfung mit steigender Unternehmensgröße und -performance sowie bei Konzernzugehörigkeit zu. Im Rahmen des BilRUG wurden die Schwellenwerte erneut angehoben. Die Untersuchungsergebnisse werden daher für eine Prognose der Auswirkungen auf den Prüfungsmarkt herangezogen.

Higher Thresholds in § 267 HGB – Implications for the Audit Market

ABSTRACT

The Accounting Law Modernization Act (BilMoG) of 2009 increased the thresholds of § 267 HGB. For this reason, many of the formerly medium-sized undertakings did not exceed the relevant thresholds anymore and, therefore, enjoyed size-dependent accounting reliefs. One of the main facilitations was that there is no obligation for annual audits for small undertakings. Nevertheless, this study shows that the majority of the small undertakings which were medium-sized before BilMoG decided for an audit of their financial statements in the years after the implementation – either on a voluntary basis or obligatory because of corporate growth. Thereby, the probability of voluntary audits was greater for larger undertakings, for undertakings with a good performance and for undertakings which were integrated in a group. Based on these findings, the audit market effects of the renewed enhancement of thresholds due to the Accounting Directive Implementation Act (BilRUG) are forecasted in the end of the study.

1 Einleitung

Mit der Umsetzung der EU-Bilanzrichtlinie 2013/34/EU durch das Bilanzrichtlinie-Umsetzungsgesetz (BilRUG)[1] erhöhte der Gesetzgeber die monetären Schwellenwerte für die Aufstellung des handelsrechtlichen Jahresabschlusses (§ 267 HGB). Aufgrund dieser Anhebung sind laut Gesetzesbegründung rund 7.000 bisher mittelgroße Unternehmen als klein einzustufen,[2] was zu größenabhängigen Erleichterungen bei der Rechnungslegung führt. Eine der wesentlichen Erleichterungen ist der Wegfall der Pflicht zur Prüfung des handelsrechtlichen Jahresabschlusses (§ 316 Abs. 1 HGB). Zuvor kam es bereits im Jahr 2009 mit dem Bilanzrechtsmodernisierungsgesetz (BilMoG)[3] zu einer Anhebung der Schwellenwerte, wodurch das BMJ mit einem Wegfall der Prüfungspflicht für rund 7.400 Kapitalgesellschaften rechnete.[4] Dieser Beitrag untersucht für das BilMoG die Entwicklung des Prüfungsmarkts für Kapitalgesellschaften, die im Umstellungszeitpunkt nicht mehr prüfungspflichtig waren. Analysiert wird auch, warum die Unternehmen sich ggf. freiwillig prüfen ließen. Abschließend wird eine grobe Prognose darüber versucht, wie sich die Anhebung der Schwellenwerte gemäß BilRUG auf den Prüfungsmarkt auswirken könnte.

2 Erhöhung der Schwellenwerte

Im Rahmen des in 2009 in Kraft getretenen BilMoG hatte der Gesetzgeber die Schwellenwerte der Größenmerkmale *Bilanzsumme* und *Umsatzerlöse* um rund 20% erhöht. Durch das BilRUG erhöhte der Gesetzgeber die genannten Schwellenwerte erneut und nahm dabei die von der EU eingeräumten Spielräume vollumfänglich in Anspruch. Anders als beim BilMoG kam es dabei nicht zu einer einheitlichen prozentualen Steigerung: Die Erhöhung für die Größenklasse *klein* fiel mit ca. 24% besonders deutlich aus, wohingegen die Obergrenze der Größenmerkmale der Klasse *mittelgroß* nur um knapp 4% angehoben wurde. Dies entspricht der Intention des Gesetzgebers, wonach insbesondere kleine Unternehmen von größenabhängigen Erleichterungen profitieren sollen.[5] Das Größenmerkmal *Anzahl der Mitarbeiter* blieb wie auch beim BilMoG unberührt. *Tabelle 1* zeigt die Entwicklung der monetären Schwellenwerte des § 267 HGB.

---

1 Vgl. Bundesgesetzplatt Jahrgang 2015 Teil I Nr. 30.
2 Vgl. BR-Drucksache 23/15 (2015), S. 61.
3 Vgl. Bundesgesetzplatt Jahrgang 2009 Teil I Nr. 27.
4 Vgl. BMJ (2007).
5 Vgl. BR-Drucksache 23/15 (2015), S. 55.

Tabelle 1: Entwicklung der Schwellenwerte nach § 267 HGB

	Klein			Mittelgroß			Groß		
	vor BilMoG	nach BilMoG	nach BilRUG	vor BilMoG	nach BilMoG	nach BilRUG	vor BilMoG	nach BilMoG	nach BilRUG
Bilanzsumme in Mio. Euro	4,015	4,48	6	16,06	19,25	20	>16,06	>19,25	>20
Umsatz in Mio. Euro	8,03	9,68	12	32,12	38,5	40	>32,12	>38,5	>40
Mitarbeiter	50			250			>250		

An den Voraussetzungen für das Eintreten der an eine Größenklasse geknüpften Rechtsfolgen hat weder das BilMoG noch das BilRUG etwas geändert: So dürfen für das Eintreten der Rechtsfolgen der Größenklasse *klein* oder *mittelgroß* zwei der für die jeweilige Größenklasse maßgeblichen Schwellenwerte an zwei aufeinanderfolgenden Stichtagen nicht überschritten werden (§ 267 Abs. 1 und 2 i.V. m. Abs. 4 HGB).

3 Empirische Analyse der Auswirkungen auf den Prüfungsmarkt

3.1 Stichprobe und Beschreibung der Datengrundlage

Die empirische Untersuchung umfasst veröffentlichte Einzelabschlüsse von 1.223 Kapitalgesellschaften der Geschäftsjahre 2006 bis 2013.[6] Allen Unternehmen ist gemein, dass sie im Geschäftsjahr 2008 die größenabhängigen Erleichterungen für kleine Kapitalgesellschaften in Anspruch nehmen konnten, wohingegen sie ohne BilMoG-Umstellung die Rechtsfolgen für eine mittelgroße Kapitalgesellschaft hätten tragen müssen. Es handelt sich somit um im Geschäftsjahr 2008 nicht prüfungspflichtige Unternehmen, wobei die Prüfungspflicht ausschließlich aufgrund der BilMoG-Umstellung entfiel.[7] In der Stichprobe befinden sich keine Kredit- bzw. Finanzdienstleistungsinstitute und keine Versicherungsunternehmen, die aufgrund besonderer Vorschriften unabhängig von ihrer Größe prüfungspflichtig sind.[8] Außerdem wurden

[6] In der vorliegenden Studie werden ausschließlich GmbH betrachtet. Die Daten stammen aus der Dafne Datenbank (Vgl. Bureau van Dijk (2015)).

[7] Gemäß § 316 Abs. 1 HGB sind kleine Kapitalgesellschaften von der Prüfungspflicht ausgenommen.

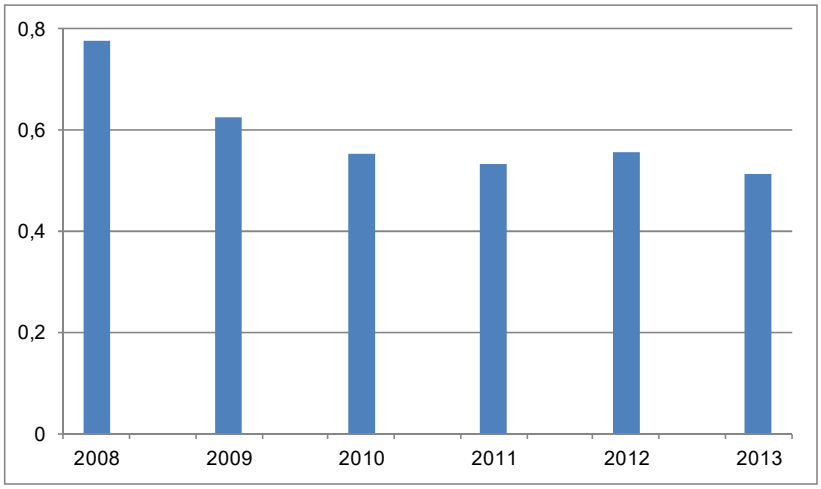
[8] Vgl. für Versicherungen § 341k HGB und §§ 57–60, 64 VAG sowie für Banken § 340k HGB und §§ 28, 29 KWG.

Unternehmen, deren Wirtschaftsjahr vom Kalenderjahr abwich, ausgeschlossen, da für sie die BilMoG-Vorschriften zum Abschlussstichtag 31.12.2008 noch keine Anwendung fanden.[9]

3.2 Entwicklung des Prüfungsmarkts

Obwohl die hier betrachteten 1.223 Unternehmen nach der BilMoG-Umstellung im Geschäftsjahr 2008 nicht prüfungspflichtig waren, ließen 948 Unternehmen (77,51%) ihren Abschluss freiwillig prüfen. 275 Unternehmen (22,49%) verzichteten auf eine Abschlussprüfung oder gaben die Durchführung einer Abschlussprüfung nicht an. Im Jahr nach der BilMoG-Umstellung verwiesen noch 765 Unternehmen (62,55%), in den Folgejahren 2009 bis 2013 durchschnittlich noch 659 (53,84%) auf eine Abschlussprüfung. *Abbildung (Abb.) 1* zeigt, dass der Anteil der geprüften Unternehmen in den Jahren nach der BilMoG-Umstellung zwar abnahm, jedoch in jedem Jahr noch über 50% betrug.

Abb. 1: Anteil der Unternehmen mit Abschlussprüfer



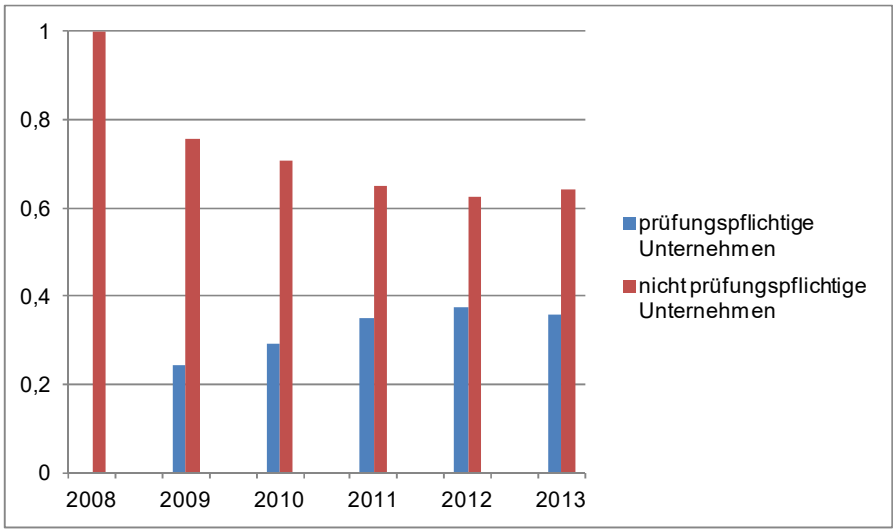
Bei der Interpretation dieser Ergebnisse ist zu beachten, dass Unternehmen, die sich freiwillig prüfen lassen, keinen Hinweis darauf veröffentlichen müssen. Daher befinden sich in der Stichprobe u. U. Unternehmen mit freiwilliger Abschlussprüfung, die als solche nicht zu erkennen waren. So wird die Zahl der geprüften Unternehmen eventuell unterschätzt. Gleichwohl scheint die Entwicklung des Prüfungsmarkts für die betrachteten Unternehmen zu zei-

[9] Gemäß Art. 66 Abs. 1 EGHGB fanden die neuen Größenkriterien erstmals für nach dem 31.12.2007 beginnende Geschäftsjahre Anwendung.

gen, dass Abschlussprüfer die Mehrheit der durch die BilMoG-Umstellung im Geschäftsjahr 2008 nicht mehr prüfungspflichtigen Mandate in den Folgejahren nicht verloren.

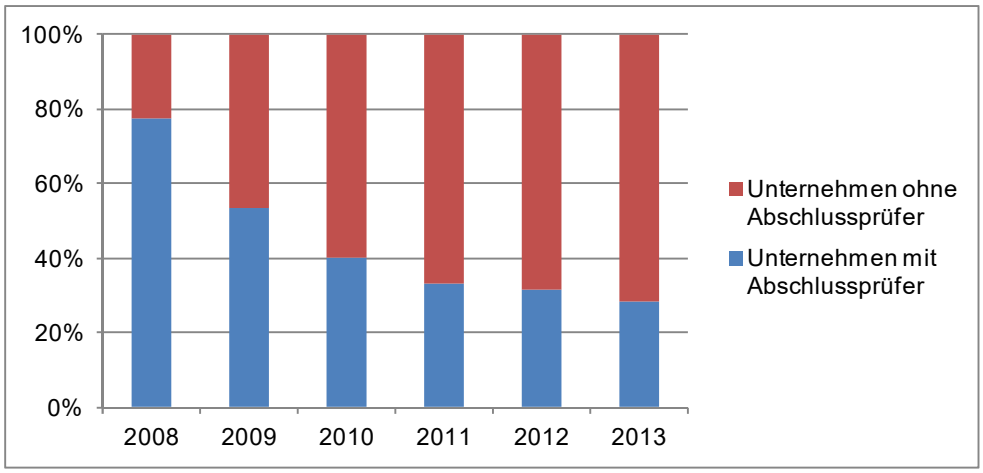
Für die Geschäftsjahre 2009 bis 2013 wurde bislang nicht unterschieden zwischen Unternehmen mit freiwilliger Abschlussprüfung und solchen, die aufgrund von Größenwachstum wieder prüfungspflichtig wurden. *Abb. 2* zeigt, dass der Anteil der größenbedingt wieder prüfungspflichtigen Unternehmen in den Jahren nach der BilMoG-Umstellung tendenziell zunahm. So waren von den im Geschäftsjahr 2008 1.223 nicht prüfungspflichtigen Unternehmen im Geschäftsjahr 2013 439 Unternehmen (35,90%) wieder prüfungspflichtig, da sie die erhöhten Schwellenwerte für kleine Kapitalgesellschaften an zwei aufeinanderfolgenden Abschlussstichtagen überschritten.

Abb. 2: Anteil der prüfungspflichtigen und nicht prüfungspflichtigen Unternehmen



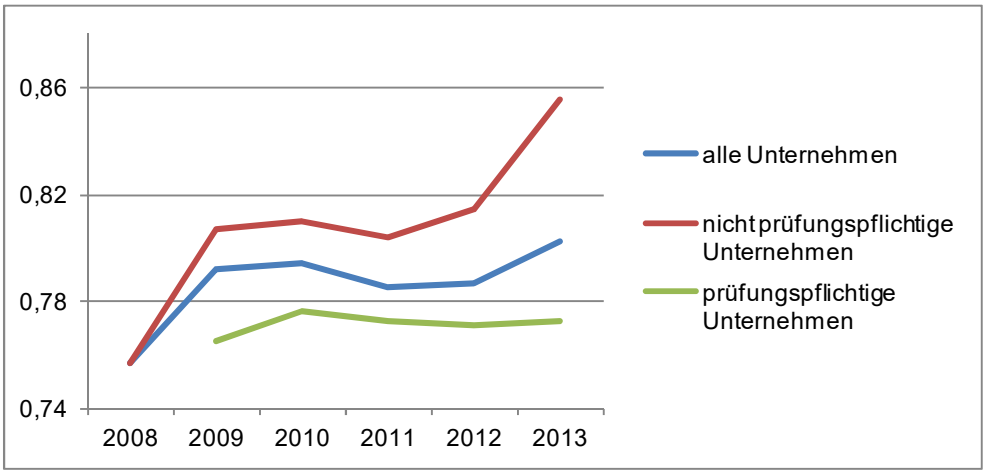
77,51% der nicht prüfungspflichtigen Unternehmen ließen ihren Jahresabschluss 2008 freiwillig prüfen. Die verbleibenden 22,49% der Unternehmen verzichteten auf eine Abschlussprüfung oder gaben diese nicht an. In den Folgejahren nahm die Zahl der Unternehmen mit freiwilliger Abschlussprüfung stetig ab. So gaben im Jahr 2013 noch 28,32% der nicht prüfungspflichtigen Unternehmen einen Abschlussprüfer an. Der besonders hohe Anteil von Unternehmen mit freiwilliger Abschlussprüfung im Jahr 2008 dürfte darauf zurückzuführen sein, dass das BilMoG erst am 25.05.2009 verkündet wurde. Zu diesem Zeitpunkt hatten vermutlich viele Unternehmen schon einen Prüfungsvertrag abgeschlossen. *Abb. 3* veranschaulicht die Entwicklung des Prüfungsmarkts für nicht prüfungspflichtige Unternehmen.

Abb. 3: Entwicklung des Prüfungsmarkts nicht prüfungspflichtiger Unternehmen



Unternehmen, die ihren Abschluss prüfen ließen, wählten mit durchschnittlich 79,63% eine Non-Big Four Prüfungsgesellschaft[10]. Dabei war der Anteil bei Unternehmen mit freiwilliger Abschlussprüfung mit durchschnittlich 80,82% etwas höher als bei Unternehmen, die einer Prüfungspflicht unterlagen (77,17%). *Abb. 4* veranschaulicht die höhere Konzentration auf Non-Big Four Prüfungsgesellschaften bei mittelständischen Unternehmen.

Abb. 4: Anteil der Unternehmen, die eine Non-Big Four Prüfungsgesellschaft wählten



[10] Zu den Big Four Prüfungsgesellschaften zählen KPMG AG, PwC AG, Deloitte & Touche GmbH sowie Ernst & Young GmbH. Als Non-Big Four Prüfungsgesellschaften werden alle Prüfungsgesellschaften bezeichnet, welche nicht zu den Big Four Prüfungsgesellschaften zählen.

3.3 Motive für eine freiwillige Abschlussprüferwahl

Die bisherigen Ergebnisse zeigen, dass sich eine Reihe von Unternehmen prüfen ließ, obwohl aufgrund ihrer Größenmerkmale keine gesetzliche Prüfungspflicht bestand. Dabei können die Motive für eine nicht gesetzlich geforderte Abschlussprüfung vielfältig sein. So werden Abschlussprüfungen regelmäßig in Gesellschafts-, Kredit- oder Lizenzverträgen vereinbart und sind dabei eine wesentliche Voraussetzung für deren Abschluss. Ferner kommt die Vorbereitung eines Unternehmensverkaufs oder einer Unternehmensspaltung als Anlass für eine freiwillige Abschlussprüfung in Betracht. Zu denken ist auch an eine von den Gesellschaftern veranlasste Abschlussprüfung zur Kontrolle der Geschäftsführung oder anderer Mitarbeiter. Im Folgenden wird empirisch untersucht, ob weitere Faktoren – z.B. die Unternehmensgröße, -performance, Finanzierungsstruktur und Konzernzugehörigkeit – die Entscheidung für eine freiwillige Abschlussprüfung beeinflussen.

3.3.1 Einfluss der Größe des Unternehmens

Beim Vergleich *kleiner* Unternehmen liegt die Erwartung homogener Ausprägungen der Größenmerkmale nahe. Für die Einstufung in eine Größenkategorie reicht es jedoch, wenn nur zwei der drei Größenmerkmale nicht über den Schwellenwerten gemäß § 267 HGB liegen. Daher kann ein einzelnes Größenmerkmal einer kleinen Kapitalgesellschaft beliebig groß sein. Da kleine Kapitalgesellschaften mit höheren Ausprägungen der Größenmerkmale eher prüfungspflichtig werden können, ist zu erwarten, dass sie sich auch eher für eine freiwillige Abschlussprüfung entscheiden. Kostenüberlegungen stützen diese Vermutung, da die Grenzkosten der Abschlussprüfung mit steigender Unternehmensgröße sinken, wenn man davon ausgeht, dass ein Teil der Prüfungskosten fix ist.[11]

Die Analyse des Größenmerkmals *Umsatzerlöse* bestätigt diese Vermutung. So wiesen Unternehmen, die sich freiwillig prüfen ließen und ihre Umsatzerlöse veröffentlichten, in den Jahren nach der BilMoG-Umstellung durchschnittlich höhere Umsatzerlöse aus als Unternehmen, die keinen Abschlussprüfer angaben. Dabei fielen die durchschnittlichen Umsatzerlöse der geprüften und nicht geprüften Unternehmen in den Jahren 2008 und 2009 noch relativ homogen aus, wobei die Umsatzerlöse der geprüften Unternehmen geringfügig negativ abwichen. In den Folgejahren 2010 bis 2013 wiesen Unternehmen mit freiwilliger Abschlussprüfung

[11] Vgl. Lenz/Verleysdonk (1998), S. 856 ff. sowie Chow (1982), S. 276.

hingegen durchschnittlich um 36,05% höhere Umsatzerlöse aus als Unternehmen, die keinen Abschlussprüfer angaben.

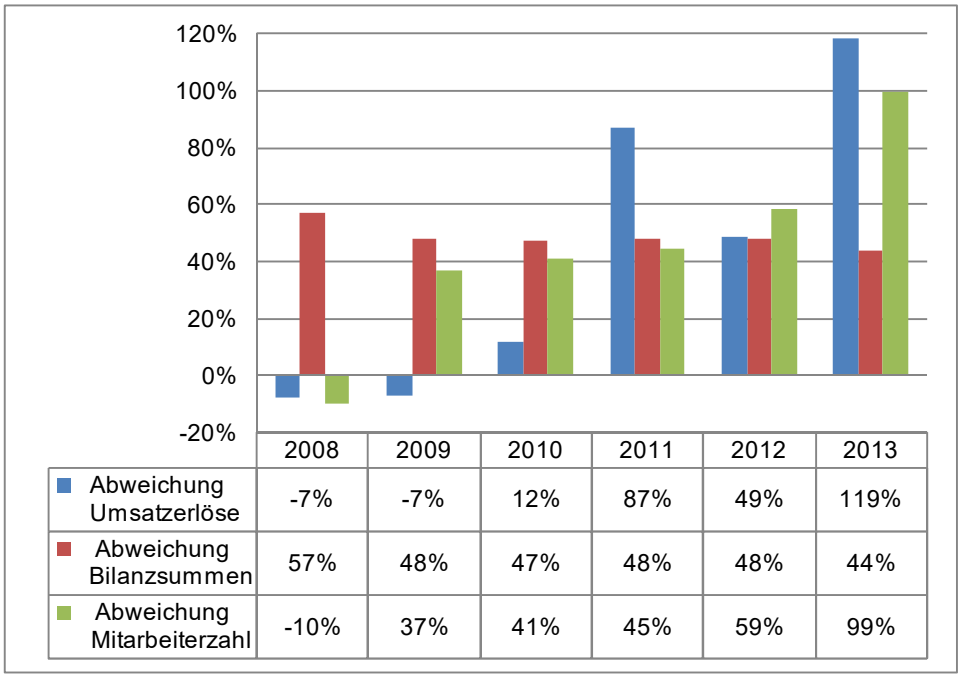
Auch die Bilanzsummen der Unternehmen mit freiwilliger Abschlussprüfung waren durchschnittlich um 15,20% höher als die Bilanzsummen der Unternehmen, die keinen Abschlussprüfer angaben. Dabei lagen die Bilanzsummen bei durchschnittlich 60,67% der Unternehmen, die sich freiwillig prüfen ließen, über dem Schwellenwert für kleine Kapitalgesellschaften (4,48 Mio. Euro). In der Gruppe der Unternehmen ohne Angabe eines Abschlussprüfers lag die Bilanzsumme nur in durchschnittlich 35,22% der Fälle über dem genannten Schwellenwert.

Die Analyse der Mitarbeiterzahlen zeigt ein ähnliches Bild. Im Umstellungsjahr 2008 waren die Mitarbeiterzahlen der Unternehmen mit und ohne Abschlussprüfer noch vergleichsweise ähnlich. In den Folgejahren beschäftigten Unternehmen mit freiwilliger Abschlussprüfung hingegen durchschnittlich wesentlich mehr Mitarbeiter als Unternehmen, die keinen Abschlussprüfer angaben (positive Abweichung durchschnittlich: 34,76%). Dabei beschäftigten durchschnittlich 63,53% der Unternehmen mit freiwilliger Abschlussprüfung eine Zahl von Mitarbeitern, die über dem Schwellenwert von 50 Mitarbeitern für kleine Kapitalgesellschaften lag. In der Gruppe der Unternehmen ohne Abschlussprüferangabe lag die durchschnittliche Mitarbeiterzahl nur in 15,53% der Fälle über dem genannten Schwellenwert.

Abb. 5 zeigt die prozentualen Abweichungen der durchschnittlichen Umsatzerlöse, Bilanzsummen und Mitarbeiterzahlen von Unternehmen mit freiwilliger Abschlussprüfung im Vergleich zu Unternehmen ohne Abschlussprüferangabe.

Die Ergebnisse zeigen, dass sich Unternehmen mit höheren Mitarbeiterzahlen, höheren Umsatzerlösen und höheren Bilanzsummen tendenziell häufiger freiwillig prüfen ließen als Unternehmen, deren Größenmerkmale geringer ausfielen. Dabei lag bei Unternehmen mit freiwilliger Abschlussprüfung wesentlich häufiger mindestens ein Größenmerkmal über dem Schwellenwert für kleine Kapitalgesellschaften als bei Unternehmen ohne Abschlussprüferangabe.

Abb. 5: Prozentuale Abweichungen der Größenausprägungen von geprüften Unternehmen im Vergleich zu Unternehmen ohne Abschlussprüferangabe

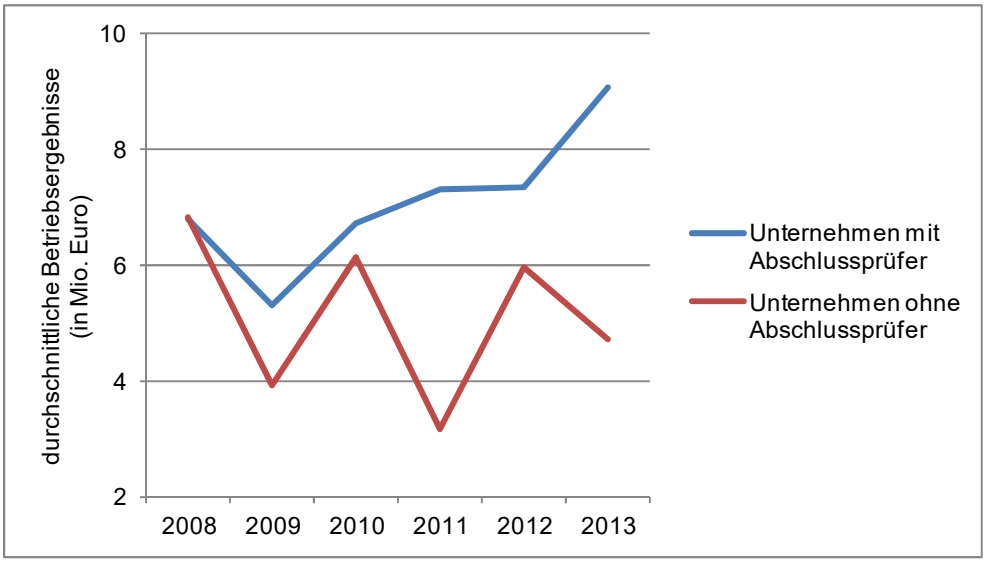


	2008	2009	2010	2011	2012	2013
Abweichung Umsatzerlöse	-7%	-7%	12%	87%	49%	119%
Abweichung Bilanzsummen	57%	48%	47%	48%	48%	44%
Abweichung Mitarbeiterzahl	-10%	37%	41%	45%	59%	99%

3.3.2 Einfluss der Performance eines Unternehmens

Die Analyse des Einflusses der Performance eines Unternehmens anhand der Kennzahl *Betriebsergebnis* zeigt, dass Unternehmen mit höheren Betriebsergebnissen ihren Jahresabschluss eher freiwillig prüfen ließen als Unternehmen mit niedrigeren Betriebsergebnissen. So waren die Betriebsergebnisse der Unternehmen mit Abschlussprüfer durchschnittlich um 31,67% höher als die Betriebsergebnisse der Unternehmen ohne Abschlussprüfer. Die Vermutung liegt nahe, dass Unternehmen mit höheren Betriebsergebnissen eher mit Größenwachstum und einer daraus resultierenden Prüfungsflicht in den Folgejahren rechnen. Dies könnte sie dazu veranlassen, schon in den Vorjahren nicht auf einen Abschlussprüfer zu verzichten. *Abb. 6* veranschaulicht die Ergebnisse des Einflusses des Betriebsergebnisses auf die Prüfungsentscheidung.

Abb. 6: Durchschnittliche Betriebsergebnisse nicht prüfungspflichtiger Unternehmen



3.3.3 Einfluss der Finanzierung des Unternehmens

Gläubiger setzen bei Kreditvergabeentscheidungen regelmäßig einen geprüften Jahresabschluss voraus oder werten diese zumindest als positiv.[12] Daher ist anzunehmen, dass stärker fremdfinanzierte Unternehmen ihren Abschluss eher freiwillig prüfen lassen als Unternehmen mit einem höheren Anteil des Eigenkapitals an der Bilanzsumme. Die Analyse der entsprechenden Fremdkapitalquoten bestätigt diesen Zusammenhang indes nicht eindeutig: In den Jahren 2010 bis 2013 lag die durchschnittliche Fremdkapitalquote der Unternehmen mit freiwilliger Abschlussprüfung zwar geringfügig unter der durchschnittlichen Fremdkapitalquote nicht geprüfter Unternehmen (mittlere negative Abweichung: 0,96%). In den Jahren 2008 und 2009 ist hingegen ein gegenteiliger Zusammenhang zu beobachten (mittlere positive Abweichung: 1,62%).

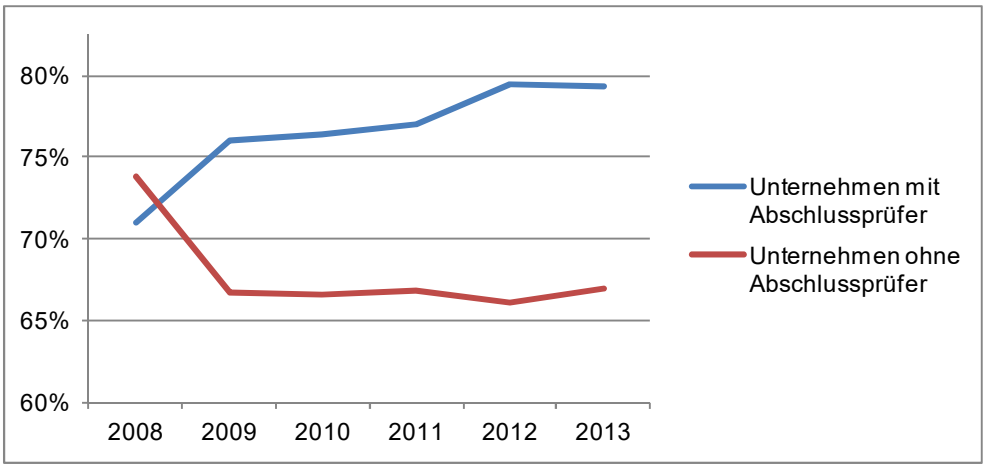
3.3.4 Einfluss der Konzernzugehörigkeit

Gemäß § 317 Abs. 3 HGB hat ein Konzernabschlussprüfer neben dem Konzernabschluss auch zu prüfen, ob die in dem Konzernabschluss zusammengefassten Jahresabschlüsse den gesetzlichen Vorschriften entsprechen. Ist ein solcher Jahresabschluss bereits geprüft, entstehen Kostenvorteile für die Konzernabschlussprüfung. Daher ist zu erwarten, dass konzerngebundene Unternehmen ihren Abschluss häufiger freiwillig prüfen lassen als Unternehmen ohne

[12] Vgl. zum Einfluss der Abschlussprüfung auf die Kreditvergabeentscheidung z.B. Bamber/Stratton (1997), S. 1 ff. sowie Allee/Yohn (2009), S. 1 ff.

Konzernzugehörigkeit. Die Analyse bestätigt diese Vermutung. So waren in den Jahren 2009 bis 2013 durchschnittlich 77,64% der Unternehmen mit freiwilliger Abschlussprüfung zu mehr als 50% konzerngebunden. Für Unternehmen ohne Abschlussprüferangabe war dies hingegen nur zu durchschnittlich 66,65% der Fall. *Abb. 7* veranschaulicht die Ergebnisse.

Abb. 7: Anteil der zu mehr als 50% in einen Konzern eingebundenen nicht-prüfungspflichtigen Unternehmen



4 Zusammenfassung der Ergebnisse und Ausblick

Mit dem BilMoG wurden die zur Einordnung in eine Größenklasse relevanten monetären Schwellenwerte (§ 267 HGB) erhöht, woraus ein Wegfall der Prüfungspflicht für etwa 7.400 Unternehmen resultierte. Die Analyse der Prüfungsentscheidungen von 1.223 Kapitalgesellschaften zeigt, dass Prüfungsgesellschaften die Mehrheit der betroffenen Mandate in den Folgejahren nicht verloren. So entschied sich der Großteil der Unternehmen für eine freiwillige Abschlussprüfung oder wurde in den Jahren nach der BilMoG-Umstellung aufgrund von Größenwachstum erneut prüfungspflichtig. Der Anteil der Unternehmen, der sich freiwillig prüfen ließ, nahm stetig ab und betrug im Jahr 2013 noch rund 28%. Die Analyse der Einflussfaktoren für eine freiwillige Abschlussprüfung der Unternehmen zeigt, dass größere Unternehmen, Unternehmen mit einer besseren Performance sowie Unternehmen, die in einen Konzern eingebunden waren, ihren Abschluss häufiger freiwillig prüfen ließen als Vergleichsunternehmen. Der Einfluss der Finanzierungsstruktur ist hingegen weniger eindeutig als erwartet.

Im Rahmen des BilRUG erhöhte der Gesetzgeber die monetären Schwellenwerte erneut, wodurch die Prüfungspflicht für etwa 7.000 Unternehmen entfallen dürfte. Drei bis fünf Jahre nach der BilMoG-Umstellung ließen durchschnittlich 45% der im Umstellungszeitpunkt nicht mehr prüfungspflichtigen Unternehmen ihren Jahresabschluss prüfen.[13] Geht man davon aus, dass ein ähnlicher Anteil der etwa 7.000 mit dem BilRUG wohl nicht mehr prüfungspflichtigen Unternehmen langfristig einen Abschlussprüfer beauftragt, verlören Prüfungsgesellschaften jährlich ca. 3.850 Mandate. Der daraus resultierende jährliche Honorarverlust dürfte im mittleren zweistelligen Millionenbereich liegen.

Wie sich der Honorarverlust auf die Prüfungsgesellschaften verteilen könnte, zeigt die folgende Analyse: Untersucht wurden die Abschlussdaten von 3.840 mittelgroßen Kapitalgesellschaften der Geschäftsjahre 2008 bis 2013.[14] Ihnen ist gemein, dass sie im betrachteten Geschäftsjahr als kleine Kapitalgesellschaften einzustufen gewesen wären, wenn die durch das BilRUG erhöhten Schwellenwerte bereits Anwendung gefunden hätten. Es handelt sich somit um mittelgroße Kapitalgesellschaften, für die die Prüfungspflicht durch eine vorzeitige Erhöhung der Schwellenwerte entfallen wäre. Die Auswertung der Abschlussprüferinformationen zeigt, dass durchschnittlich knapp 80% dieser Unternehmen eine Non-Big Four Prüfungsgesellschaft als Abschlussprüfer bestellten. Geht man davon aus, dass dieser Anteil repräsentativ ist, würden rund 5.500 der 7.000 nach dem BilRUG wohl nicht mehr prüfungspflichtigen Unternehmen von Non-Big Four Prüfungsgesellschaften geprüft. Somit wäre bei einem Wegfall der Prüfungspflicht damit zu rechnen, dass Non-Big Four Prüfungsgesellschaften einen Großteil des Honorarverlusts tragen und die Konzentration auf dem Markt für Abschlussprüfungen ansteigt.

[13] Durchschnittlicher Anteil der in Kapitel 3 untersuchten Unternehmen mit Abschlussprüferangabe in den Geschäftsjahren 2010 bis 2013.

[14] Die Daten stammen aus der Dafne Datenbank (Vgl. Bureau van Dijk (2016)).

Literatur

Allee, K. D. & Yohn, T. L. (2009): The Demand for Financial Statements in an Unregulated Environment: An Examination of the Production and Use of Financial Statements by Privately Held Small Businesses. The Accounting Review, Jg. 84, S. 1–25.

Bamber, E. M. & Stratton, R. A. (1997): The Information Content of the Uncertainty-Modified Audit Report: Evidence from Bank Loan Officers. Accounting Horizons, Jg.11, S. 1–11.

Bundesministerium der Justiz (BMJ) (2007): Pressemitteilung vom 16.10.2007: Eckpunkte der Reform des Bilanzrechts. URL: http://www.gmbhr.de/heft/22_07/BilMoG_ Eckpunkte_BMJ.pdf. Abgerufen am 25.01.2016.

Bundesrat (BR) (2015): Bundesrat-Drucksache 23/15 (2015): Entwurf eines Gesetzes zur Umsetzung der Richtlinie 2013/34/EU des Europäischen Parlaments und des Rates vom 23.01.2015 (Bilanzrichtlinie-Umsetzungsgesetz - BilRUG).

Bureau van Dijk (2016): Dafne Datenbank, URL: https://dafne.bvdep.com/, Abgerufen am 18.01.2016.

Bureau van Dijk (2015): Dafne Datenbank, URL: https://dafne.bvdep.com/. Abgerufen am 08.09.2015.

Chow, C. W. (1982): The Demand for External Auditing: Size, Dept and Ownership Influences. The Accounting Review, Jg. 57, S. 272–291.

Lenz, H. & Verleysdonk, J. (1998): Eine empirische Analyse der Wahl des Abschlussprüfers bei kleinen Aktiengesellschaften. Zeitschrift für Betriebswirtschaft, Jg. 68, S. 851–869.

Beitrag 5

Titel

(Übergangs-) Wahlrechte als Grundlage für eine gezielte Bilanzpolitik? Eine Analyse am Beispiel von Pensionsrückstellungen

Accounting (Transitional) Options as a Basis for a Targeted Accounting Policy? An Analysis Based on the Example of Pension Accounting

Koautor

Dr. Roland Zieseniß

(Übergangs-) Wahlrechte als Grundlage für eine gezielte Bilanzpolitik? Eine Analyse am Beispiel von Pensionsrückstellungen

ZUSAMMENFASSUNG

In den Übergangsvorschriften zum Bilanzrechtsmodernisierungsgesetz (BilMoG) führte der Gesetzgeber Bilanzierungswahlrechte ein, welche die Abschlüsse von deutschen Unternehmen bis zu 15 Jahre lang beeinflussen. Der vorliegende Beitrag untersucht empirisch am Beispiel von Pensionsrückstellungen deutscher Unternehmen, welche Faktoren Abschlussersteller bei der Wahlrechtsausübung beeinflussen. Es wird gezeigt, dass Unternehmen Wahlrechte systematisch zur Glättung ihrer Jahresergebnisse sowie zur Steuerung ihrer Finanz- und Performancekennzahlen verwenden. Bei der Schaffung neuer Bilanzierungswahlrechte sollte sich ein Regulator deshalb bewusst sein, dass Abschlussersteller diese für eine zielgerichtete Bilanzpolitik nutzen. Zudem zeigen die Ergebnisse, dass die Übergangsregelungen den Zielen des BilMoG, einer höheren Transparenz und einem gesteigerten Informationsgehalt der Abschlüsse, zumindest kurzfristig entgegenwirken.

Accounting (Transitional) Options as a Basis for a Targeted Accounting Policy? An Analysis Based on the Example of Pension Accounting

ABSTRACT

With the Accounting Law Modernization Act (BilMoG) and the corresponding transitional regulations an extensive reform of the German accounting law was implemented to enhance the transparency and the information content of financial statements. Using the example of the new pension accounting regulations, we investigate in an empirical analysis how German companies decide in the case of transitional options. We show that the companies use transitional options to smooth their results and achieve specific financial indicators. Consequently, a regulator who thinks about implementing new accounting options should take into consideration that preparers of financial statements use them for a targeted accounting policy. Furthermore, the results show that the BilMoG-transitional options counteract the aims of more transparency and information content – at least temporarily.

1 Einleitung

Mit dem Bilanzrechtsmodernisierungsgesetz (BilMoG)[1] vom 25. Mai 2009 hat der Gesetzgeber das deutsche Bilanzrecht umfassend reformiert, wobei er das Ziel verfolgte, eine einfache, vollwertige, dauerhafte und kostengünstige Alternative zu den International Financial Reporting Standards (IFRS) für deutsche Unternehmen zu schaffen.[2] Neben der Erhöhung der Transparenz sowie der Stärkung der Informationsfunktion des Abschlusses stand dabei die Reduzierung von bilanzpolitischen Spielräumen im Mittelpunkt.[3] In diesem Zusammenhang regelte der Gesetzgeber u. a. den Ansatz und die Bewertung von Pensionen und ähnlichen Verpflichtungen (im Folgenden als Pensionsrückstellungen bezeichnet) umfassend neu und schaffte dabei bestehende Bilanzierungswahlrechte ab. Hintergrund war, dass im internationalen Umfeld die zahlreichen Möglichkeiten von Über- und Unterdotierungen von Pensionsrückstellungen nach altem Recht als „Schwachpunkt der deutschen Rechnungslegung“[4] galten.

Für viele Unternehmen führten die neuen Bewertungsregelungen zu einer Unterdotierung ihrer bisherigen Pensionsrückstellungen und somit zu einem Zuführungsbedarf im Umstellungszeitpunkt. Durch ein Übergangswahlrecht stellte der Gesetzgeber es Unternehmen dabei frei, den Zuführungsbetrag entweder im Umstellungszeitpunkt in voller Höhe aufwandswirksam zu erfassen oder ihn über einen Zeitraum von bis zu 15 Jahren ratierlich zuzuführen (nachfolgend als 1/15-Zuführung bezeichnet). Die letztere Variante ermöglichte es Unternehmen, die Umstellungseffekte im Umstellungszeitpunkt durch die Verschiebung von Aufwand in spätere Perioden zu mildern.

In der Literatur wird vielfach über das bilanzpolitische Potential der neuen Bewertungsregelungen im Bereich der Pensionsrückstellungen sowie der in Kraft getretenen Übergangsvorschriften diskutiert.[5] Bisherige Forschungsergebnisse zeigten erste Evidenz über die Auswirkungen der neuen Regelungen auf den Ausweis und die Höhe von Pensionsrückstellungen.[6] Bezüglich der Entscheidung, das Übergangswahlrecht in Anspruch zu nehmen und nur 1/15 des Zuführungsbetrages im Umstellungszeitpunkt zuzu-

1 Vgl. Bundesgesetzplatt Jahrgang 2009 Teil I Nr. 27.
2 Vgl. BMJ (2008), S. 1.
3 Vgl. Göllert (2008), S. 1165.
4 BMJ (2008), S. 52.
5 Vgl. z. B. Fink/Kunath (2010) oder Drinhausen/Ramsauer (2009).
6 Vgl. u. a. Pierk/Weil (2012) für die Auswirkungen der neuen Bilanzierungsregeln auf die Jahresabschlüsse kapitalmarktorientierter Unternehmen sowie Schmidtmeier/Eisenhardt/Bellert (2012) für die Auswirkungen auf die Jahresabschlüsse mittelständischer Konzerne.

führen, zeigten Gassen, Pierk und Weil (2011), dass Frühanwender[7] des BilMoG diese Entscheidung von ihrer Finanzierungsstruktur und ihrer Profitabilität abhängig machten.[8] Da die Bilanzierungsentscheidungen der Frühanwender nicht auf die Bilanzierungsentscheidungen der Pflichtanwender übertragen werden können,[9] bleibt die Frage offen, ob Unternehmen die geschaffenen (Übergangs-) Wahlrechte für eine gezielte Bilanzpolitik im Umstellungszeitpunkt nutzten. Zur Beantwortung dieser Fragestellung, werden in der vorliegenden Studie Abschlussdaten von 261 deutschen Kapitalgesellschaften[10] für die Jahre 2009 und 2010 untersucht. Mit Hilfe einer Regressionsanalyse wird eruiert, ob und ggf. welche Faktoren Unternehmen dazu veranlassten, im Umstellungszeitpunkt nur 1/15 des gesamten Zuführungsbetrages zu den Pensionsrückstellungen zuzuführen und damit keine höhere Zuführung zu wählen.

Die Ergebnisse der Regressionsanalyse zeigen, dass sich Unternehmen mit höheren Fremdkapitalquoten und / oder niedrigeren operativen Renditen häufiger für eine 1/15 Zuführung entschieden als Unternehmen mit niedrigeren Fremdkapitalquoten und / oder höheren operativen Renditen.[11] Auch Unternehmen, deren Jahresergebnis ein aus Vorjahreszahlen prognostiziertes Jahresergebnis unterschritt, entschieden sich häufiger für diese Bilanzierungsvariante als Unternehmen, welche das prognostizierte Jahresergebnis erreichten oder überschritten. Die Ergebnisse zeigen, dass Unternehmen (Übergangs-) Wahlrechte als gezieltes bilanzpolitisches Instrument nutzen, indem sie ihre Finanz- und Performancekennzahlen durch die Wahlrechtsausübung systematisch steuern. Dieses Resultat liefert eine wichtige Erkenntnis für Regulatoren, die über die Schaffung neuer Wahlrechte und Ermessensspielräume nachdenken.

Im folgenden Kapitel 2 werden die durch das BilMoG eingeführten neuen Regelungen zur Bilanzierung von Pensionsrückstellungen theoretisch erörtert. In dem daran anschließenden Kapitel 3 werden Hypothesen darüber abgeleitet, welche Faktoren Unternehmen dazu veranlasst haben könnten, sich für eine bestimmte Wahlrechtsausübung zu entscheiden. In Kapitel 4 erfolgen die empirische Analyse sowie die Darstellung der Ergebnisse. In Kapitel 5 schließt der Beitrag mit einem Fazit.

---

7 Als Frühanwender werden hier Unternehmen bezeichnet, die die Änderungen des BilMoG freiwillig bereits vor dem verpflichtenden Umstellungszeitpunkt angewandt haben.

8 Vgl. Gassen/Pierk/Weil (2011), S. 1065 sowie Endnote 28.

9 Vgl. Gassen/Pierk/Weil (2011), S. 1062 sowie zu dem hier entstehenden Selektionsproblem Heckman (1979), S. 153ff.

10 Es werden ausschließlich Pflichtanwender (keine Frühanwender) betrachtet.

11 Dieses Ergebnis bestätigt die Erkenntnisse von Gassen/Pierk/Weil (2011), die zu dem ähnlichen Ergebnis für BilMoG-Frühanwender gekommen sind.

2 Pensionsrückstellungen nach neuer Rechtslage

Vor der BilMoG-Umstellung waren Pensionsrückstellungen gemäß § 253 Abs. 1 S. 2 HGB a. F. zu einem Betrag anzusetzen, „der nach vernünftiger kaufmännischer Beurteilung notwendig“ war. Der Gesetzgeber stellte dabei auf den *Rückzahlungsbetrag* ab. Nach neuer Rechtslage sind Rückstellungen in Höhe des nach vernünftiger kaufmännischer Beurteilung notwendigen *Erfüllungsbetrages* anzusetzen (§ 253 Abs. 1 S. 2 HGB n. F.). Als Berechnungsmethoden bleiben dabei bisherige Methoden wie das Anwartschaftsbarwertverfahren (Projected Unit Credit Method) und das Teilwertverfahren grundsätzlich anwendbar, der Begriff des Erfüllungsbetrages verdeutlicht jedoch, dass unternehmensindividuelle Lohn-, Gehalts- und Rententrends zu berücksichtigen sind.[12] Darüber hinaus sind Pensionsrückstellungen als langfristige Rückstellungen nach neuer Rechtslage mit dem laufzeitäquivalenten durchschnittlichen Marktzinssatz der vergangenen sieben Geschäftsjahre abzuzinsen.[13] Aus Vereinfachungsgründen darf eine pauschale Laufzeit von 15 Jahren unterstellt werden (§ 253 Abs. 2 S. 2 HGB n. F.). Der maßgebliche Zinssatz wird von der Deutschen Bundesbank ermittelt und regelmäßig veröffentlicht. Vor dem BilMoG wurde die Verwendung eines Zinssatzes zwischen 3% und 6% als zulässig angesehen,[14] wobei viele Unternehmen aus Vereinfachungsgründen eine Diskontierung mit dem steuerlichen Zinssatz von 6% wählten (§ 6a Abs. 3 Satz 2 EStG). Eine Einheitsbilanz für den Bereich der Pensionsrückstellungen ist nach neuem Recht allenfalls zufällig möglich.

Führten die neuen Bewertungsregeln im Umstellungszeitpunkt zu einem höheren Barwert der Pensionsrückstellungen, hatten Bilanzierende durch Übergangregelungen verschiedene Möglichkeiten, den Zuführungsbetrag zuzuführen: Gemäß Art. 67 Abs. 1 S. 1 EGHGB durfte der Betrag entweder in voller Höhe im Umstellungszeitpunkt aufwandswirksam zugeführt oder alternativ über maximal 15 Jahre (zu mindestens 1/15 p. a.) ratierlich zugeführt (1/15-Zuführung) werden. Falls sich durch die Neubewertung der Pensionsrückstellungen im Umstellungszeitpunkt eine Überdotierung und ein damit verbundener Auflösungsbedarf ergab, bestand für Bilanzierende nach Art. 67 Abs. 2 EGHGB ein Beibehaltungswahlrecht, sofern der Betrag bis zum

[12] Vgl. u. a. Gassen/Pierk/Weil (2011), S. 1061.

[13] Diese Regelung galt zum Untersuchungszeitpunkt. Mit dem *Gesetz zur Umsetzung der Wohnimmobilienkreditrichtlinie und zur Änderung handelsrechtlicher Vorschriften* vom 11.03.2016 verlängerte der deutsche Gesetzgeber den Betrachtungszeitraum von sieben auf zehn Jahre, wobei diese Regelung erstmals für nach dem 31.12.2015 endende Geschäftsjahre anzuwenden ist. Vgl. Bundesgesetzblatt Jahrgang 2016 Teil I Nr. 12, Artikel 7.

[14] Vgl. IDW, HFA 2/1988, S. 403.

31. Dezember 2024 wieder zugeführt werden müsste. Andernfalls musste der überschüssige Rückstellungsbetrag aufgelöst und erfolgsneutral in die Gewinnrücklagen eingestellt werden.

Neben den Bewertungsneuerungen ergaben sich durch das BilMoG auch Änderungen im Bereich des Ausweises von Pensionsrückstellungen. So hat der Gesetzgeber in § 246 Abs. 2 S. 2 HGB n. F. ein Saldierungsgebot eingeführt, wonach Vermögensgegenstände, die ausschließlich zur Erfüllung von Altersversorgungsverpflichtungen dienen und die dem Zugriff übriger Gläubiger entzogen sind (nachfolgend als Deckungsvermögen bezeichnet), mit den Pensionsrückstellungen zu verrechnen sind. Übersteigt der Barwert der Pensionsrückstellungen das mit dem beizulegenden Zeitwert bewertete Deckungsvermögen, sind die Pensionsrückstellungen ausschließlich in Höhe des das Deckungsvermögen übersteigenden Betrages zu passivieren. Weist das Deckungsvermögen hingegen einen höheren Wert als die Pensionsrückstellung aus, ist ausschließlich der Unterschiedsbetrag gemäß § 246 Abs. 2 S. 3 HGB n. F. in einem gesonderten Posten zu aktivieren.

3 Hypothesenherleitung

Gassen/Pierk/Weil (2011) zeigten in ihrer Studie, dass sich durch die BilMoG-Umstellung für viele Unternehmen ein Zuführungsbedarf zu den Pensionsrückstellungen in Höhe von 20% bis 30% relativ zu den Pensionsrückstellungen des Vorjahres ergab. Da eine Zuführung gem. Art. 67 Abs. 7 EGHGB im außerordentlichen Ergebnis zu erfassen ist, resultierte aus einer etwaigen Zuführung im Umstellungszeitpunkt keine Belastung des Ergebnisses der gewöhnlichen Geschäftstätigkeit, sondern ausschließlich eine Verringerung des Jahresergebnisses. Hinzu kam eine Verschlechterung sämtlicher Bilanzkennzahlen, die als Bezugsgröße die Bilanzsumme verwendeten.[15] Durch das in den Übergangsregelungen vom Gesetzgeber eingeführte Wahlrecht und die damit einhergehende Möglichkeit zur Streckung einer etwaigen Zuführung konnte insbesondere im Umstellungszeitpunkt im Vergleich zu einer höheren Zuführung eine Verbesserung von Kennzahlen und Jahresergebnissen erreicht werden. Vor dem Hintergrund des hohen Ausmaßes des Umstellungseffektes ist deshalb zu erwarten, dass Unternehmen bei

[15] Vgl. Fink/Kunath (2010), S. 2352.

der Entscheidung, das Übergangswahlrecht in Anspruch zu nehmen, Bilanzpolitik betrieben und somit Unternehmenskennzahlen gezielt gesteuert haben.[16]

Insbesondere Ratingagenturen, aber auch Fremdkapitalgeber greifen bei ihren Analysen und Entscheidungen häufig auf Unternehmenskennzahlen zurück. So enthalten beispielsweise Kreditverträge häufig Financial Covenants, die bei einem Verstoß regelmäßig zu höheren Finanzierungskosten führen.[17] Viele Kreditvertragsklauseln greifen dabei insbesondere auf Kennzahlen zur Verschuldung des Unternehmens wie z. B. auf die Fremdkapitalquote zurück.[18] Basierend auf diesen Überlegungen ist zu vermuten, dass Abschlussersteller eher von dem Übergangswahlrecht Gebrauch gemacht und im Umstellungszeitpunkt eine 1/15-Zuführung gewählt haben, wenn sie im Umstellungszeitpunkt über hohe Fremdkapitalquoten verfügten. Hypothese H1 lautet daher wie folgt:

H1: *Unternehmen mit höheren Fremdkapitalquoten wählten häufiger die 1/15-Zuführung als Unternehmen mit niedrigeren Fremdkapitalquoten.*

Neben der Steuerung von Finanzkennzahlen ist es auch denkbar, dass Unternehmen bei der Wahlrechtsausübung gezielt Performance-Kennzahlen wie das Jahresergebnis gesteuert haben. So ist zu vermuten, dass sich Unternehmen mit niedrigen Jahresergebnissen häufiger für eine Streckung der Zuführung zu den Pensionsrückstellungen entschieden als Unternehmen mit hohen Jahresergebnissen. Der Grund hierfür ist, dass Unternehmen durch die Streckung der Zuführung die zusätzliche Verschlechterung des Jahresergebnisses im Umstellungsjahr mindern konnten. Damit könnte, abhängig von der Höhe des Umstellungseffektes, die Aussendung eines negativen Signals an die Abschlussadressaten verhindert worden sein[19] – zumindest dann, wenn die Abschlussadressaten keine korrigierenden Analysen vorgenommen haben. Bilanzierende Unternehmen konnten in diesem Fall durch die Streckung der Zuführung u. U. negative Reaktionen der Abschlussadressaten verhindern. Da ein etwaiger Zuführungsbetrag zu den Pensionsrückstellungen als außerordentlicher Aufwand zu bilanzieren war, belastete er zwar das Jahresergebnis, jedoch nicht das Ergebnis der gewöhnlichen Geschäftstätigkeit. Geht man davon aus, dass Unternehmen ihr Jahresergebnis bei der Wahlrechtsausübung

[16] Da ein etwaiger Zuführungsbetrag zu den Pensionsrückstellungen über bis zu 15 Jahre angesammelt werden kann, beeinflusst die jährliche Zuführungsentscheidung auch heute noch die Abschlüsse der betroffenen Unternehmen.

[17] Vgl. Watts/Zimmerman (1986), S. 216 sowie allgemein zu den Möglichkeiten der Bilanzpolitik bei Kreditvergabeentscheidungen Obermann (2011).

[18] Vgl. Dichev/Skinner (2002), S. 1101.

[19] Vgl. Stolowy/Breton (2004), S. 16.

gezielt steuerten, ist zu erwarten, dass sie im Fall niedrigerer operativen Renditen[20] häufiger eine 1/15 Zuführung wählten als im Fall hoher operativer Renditen. Die Hypothese H2 lautet somit wie folgt:

H2: *Unternehmen mit niedrigeren operativen Renditen wählten häufiger die 1/15-Zuführung als Unternehmen mit höheren operativen Renditen.*

Neben der Verschiebung von Belastungen in eine spätere Periode kann Bilanzpolitik auch zum Erreichen erwarteter Zielgrößen verwendet werden. Burgstahler und Eames (2006) zeigten in ihrer Studie, dass Unternehmen gezielt Bilanzpolitik betreiben, um möglichst wenig von den Erwartungen von Analysten abzuweichen. Zu ähnlichen Ergebnissen kamen auch Abarbanell und Lehavy (2002). Begründet werden kann diese Form der Bilanzpolitik mit der Tatsache, dass das Nichterreichen bestimmter erwarteter Größen wie zum Beispiel ein Abweichen von dem prognostizierten Jahresergebnis zu negativen Reaktionen der Bilanzadressaten führen kann. So scheinen geringere Ergebnisvolatilitäten Abschlussadressaten ein geringeres Geschäftsrisiko anzuzeigen.[21] Hohe Abweichungen von erwarteten Größen können hingegen Kurseinbußen[22] oder verschlechterte Kreditkonditionen[23] zur Folge haben. Bezogen auf die Zuführungsentscheidung zu den Pensionsrückstellungen ist deshalb zu erwarten, dass Unternehmen, welche das prognostizierte Jahresergebnis im Umstellungszeitpunkt nicht erreicht haben, häufiger eine 1/15-Zuführung wählten als Unternehmen, die das prognostizierte Ergebnis erreichten oder überschritten. Hierdurch erzielten sie ggf., dass sich die Abweichung ihres Jahresergebnisses von dem prognostizierten Jahresergebnis durch die BilMoG-Umstellung nur um 1/15 des Zuführungsbetrages erhöhte. Die Hypothese H3 lautet somit wie folgt:

H3: *Unternehmen, die das prognostizierte Jahresergebnis nicht erreichten, wählten häufiger die 1/15-Zuführung als Unternehmen, die das prognostizierte Jahresergebnis erreichten oder überschritten.*

[20] Vgl. zu der Berechnung der operativen Rendite Abschnitt 4.2.
[21] Vgl. u. a. Beidleman (1973).
[22] Vgl. u. a. Degeorge/Patel/Zeckhauser (1999) sowie Brown (2001).
[23] Vgl. Trueman/Titman (1988).

Im folgenden Kapitel wird mit Hilfe einer multivariaten Regressionsanalyse untersucht, welche Faktoren bilanzierende Unternehmen dazu veranlassten, sich im Umstellungszeitpunkt für eine 1/15-Zuführung zu entscheiden.

4 Empirische Untersuchung

4.1 Stichprobe

Die empirische Analyse basiert auf den Jahresabschlüssen und Geschäftsberichten der Geschäftsjahre 2009 und 2010 von deutschen großen Kapitalgesellschaften, die einen Einzelabschluss (gegebenenfalls zusätzlich zu einem Konzernabschluss) nach HGB erstellten. Für Unternehmen mit einem abweichenden Geschäftsjahr wurden die Jahre 2009/2010 und 2010/2011 herangezogen, da die auslaufenden Regelungen letztmalig für vor dem 1. Januar 2010 beginnende Geschäftsjahre anzuwenden waren. Die verwendeten Daten basieren auf einer Auswertung der Jahresabschlüsse und Informationen bezogen aus dem Bundesanzeiger[24] und der Online Datenbank Dafne[25]. Die Definition großer Kapitalgesellschaften orientiert sich an den Größenklassen des HGB, wobei jeweils mindestens zwei der drei in § 267 Abs. 2 HGB genannten Merkmale (19,25 Mio. Euro Bilanzsumme; 38,5 Mio. Euro Umsatzerlöse; 250 Mitarbeiter)[26] in dem im Jahr 2010 endenden Geschäftsjahr überschritten sein mussten. Für die empirische Analyse war es notwendig, die Stichprobe auf Unternehmen, welche in den Jahren 2005 bis 2009 ein Jahresergebnis veröffentlichten, zu begrenzen.[27] Um zu vermeiden, dass sich Unternehmen in der Stichprobe befinden, die sich bei ihrer Bilanzierung an einem anderen Unternehmen orientierten oder von einem anderen Unternehmen beeinflusst wurden, wurden Unternehmen ausgeschlossen, welche einem Konzern mit einem Anteilsbesitz von mehr als 50% angehörten und somit davon auszugehen war, dass diese auch im Einzelabschluss nicht unabhängig bilanziert haben. Reduziert wurde die Stichprobe weiterhin um Unternehmen mit dem

[24] Vgl. BMJ (2014).
[25] Vgl. Bureau van Dijk (2014).
[26] Die herangezogenen Größenmerkmale galten zum Untersuchungszeitpunkt. Mit dem Bilanzrichtlinie-Umsetzungsgesetz (BilRUG) vom 17. Juli 2015 erhöhte der deutsche Gesetzgeber die maßgeblichen Schwellenwerte für große Kapitalgesellschaften auf 20 Mio. Euro Bilanzsumme und 40 Mio. Euro Umsatzerlöse. Der Schwellenwert für Mitarbeiter blieb unverändert bei 250. Die neuen Schwellenwerte sind verpflichtend für nach dem 31.12.2015 beginnende Geschäftsjahre anzuwenden. Vgl. Bundesgesetzblatt Jahrgang 2015 Teil I Nr. 30.
[27] Für die Prognose der Jahresergebnisse wurden Unternehmensdaten dieser Geschäftsjahre benötigt (Vgl. Beschreibung der Variablen in Abschnitt 4.2).

Hauptbranchencode *Erbringung von Finanz- und Versicherungsdienstleistungen*, da anzunehmen ist, dass diese nicht mit Unternehmen anderer Branchen vergleichbar sind. Des Weiteren wurden 16 Unternehmen ausgeschlossen, die Frühanwender des BilMoG im Jahr 2009 waren, da diese Unternehmen divergierende Bilanzierungsmotive gehabt haben könnten. Ebenso wurden Unternehmen mit fehlenden Daten und Unternehmen mit einer Überdotierung der bilanzierten Pensionsrückstellungen ausgeschlossen. In dem resultierenden Datensatz befinden sich somit ausschließlich Unternehmen mit einem Zuführungsbedarf zu den Pensionsrückstellungen im Umstellungszeitpunkt. Er umfasst insgesamt 261 Unternehmen.

4.2 Herleitung des Modells

Ob und ggf. wie die Unternehmen der Stichprobe die eingeführten Übergangswahlrechte für eine gezielte Bilanzpolitik genutzt haben, wird im Folgenden untersucht. Dazu werden die in Kapitel 3 hergeleiteten Hypothesen H1 und H2 mittels einer Regressionsanalyse und den Variablen *korrigierte Fremdkapitalquote* (*FQ*) und *Operative Rendite* (*OR*) überprüft. Die korrigierte Fremdkapitalquote (*FQ*) errechnet sich aus dem um den Umstellungseffekt korrigierten Fremdkapital des Umstellungsjahres geteilt durch die Bilanzsumme des Umstellungsjahres. Zur Berechnung der operativen Rendite (*OR*) wurde das Ergebnis der gewöhnlichen Geschäftstätigkeit, welches unabhängig von der Ausübung des Übergangswahlrechts ist, ins Verhältnis zu der Summe aus Anlagevermögen, Umlaufvermögen und Aktiven Rechnungsabgrenzungsposten (ARAP) gesetzt:

$$OR = \frac{Ergebnis\ der\ gewöhnlichen\ Geschäftstätigkeit\ 2010}{Anlagevermögen\ 2010\ +\ Umlaufvermögen\ 2010\ +\ ARAP\ 2010}$$

Die Hypothese H3 wird mit Hilfe einer Variablen, die das Unter- bzw. Überschreiten des prognostizierten Verhältnisses des Jahresergebnisses zur Bilanzsumme anzeigt, getestet. Basierend auf Brown (2001) errechnet sich diese Variable (*DJ*) aus der Differenz des prognostizierten Verhältnisses des Jahresergebnisses zur Bilanzsumme und des Verhältnisses des (um den Umstellungseffekten korrigierten) beobachteten Jahresergebnisses zur Bilanzsumme.[28] Die Prognose des Jahresergebnisses erfolgt dabei

[28] Vgl. Brown (2001), S. 226.

mittels einer linearen Trendanalyse auf Basis der Geschäftsjahre 2005 bis 2009.[29] Zur Robustheitsüberprüfung der Ergebnisse werden zwei weitere Logit-Modelle geschätzt, bei denen folgende Verfahren zur Berechnung des prognostizierten Verhältnisses des Jahresergebnisses zur Bilanzsumme verwendet werden: Zum einen wird der Mittelwert der Verhältnisse der Jahresergebnisse zu den Bilanzsummen 2005 bis 2009 (*DJ_DU*), zum anderen ein gewichteter Durchschnitt der Verhältnisse (*DJ_GD*)[30] mit einer höheren Gewichtung aktuellerer Jahre herangezogen.

Neben den zentralen Variablen des Modells (*OR*, *FQ* und *DJ* bzw. *DJ_DU, DJ_GD*) ist zu erwarten, dass auch die Tatsache, ob neben einem HGB-Abschluss ein IFRS-Abschluss erstellt wurde, einen Einfluss auf die Wahlrechtsausübung hatte: Wurde zusätzlich zu dem HGB-Abschluss ein IFRS-Abschluss erstellt, konnten Abschlussersteller davon ausgehen, dass Abschlussadressaten den IFRS-Abschluss als weitere informative Quelle genutzt haben. Bilanzpolitik durch die gezielte Nutzung des Übergangswahlrechts im HGB-Abschluss hätte in diesem Fall einen geringeren Nutzen gehabt. Der Einfluss der zusätzlichen Aufstellung eines IFRS-Abschlusses auf die Wahlrechtsentscheidung wird mit Hilfe der Dummy Variablen *IFRS* kontrolliert. Diese nimmt den Wert eins an, wenn neben dem HGB-Abschluss ein IFRS-Abschluss erstellt wurde.

Weiterhin ist zu vermuten, dass die Größe des Umstellungseffektes die Wahlrechtsausübung beeinflusst hat. Überprüft wird der Einfluss der Größe des Umstellungseffektes mit Hilfe der Variablen *UB,* welche das Verhältnis des gesamten Zuführungsbetrages zur Bilanzsumme im Umstellungszeitpunkt widerspiegelt.

Des Weiteren könnte auch die Unternehmensgröße einen Einfluss auf die bilanzpolitisch motivierte Wahlrechtsausübung gehabt haben.[31] Die Auswirkungen der Unternehmensgröße auf die Entscheidung, Bilanzpolitik zu betreiben, ist dabei unklar: Albrecht und Richardson (1990) sowie Lee und Choi (2002) wiesen in ihren Studien zwar nach, dass größere Unternehmen weniger Bilanzpolitik betreiben, Moses (1987) sowie Michelson, James und Charles (1995) kamen hingegen zu gegensätzlichen Ergebnissen. Ursächlich für die unterschiedlichen Ergebnisse könnten die folgenden Effekte sein: Auf der einen Seite haben größere Unternehmen u. U. einen höheren Anreiz

[29] Brown (2001) verwendete zur Bestimmung des Prognosewertes Schätzungen von Analysten, welche jedoch für den hier verwendeten Datensatz nicht vollständig zur Verfügung stehen.

[30] Die Berechnung des prognostizierten Verhältnisses des Jahresergebnisses zur Bilanzsumme erfolgt in dieser Modellvariante anhand der Formel: (5* Jahresergebnis/Bilanzsumme 2009 + 4* Jahresergebnis /Bilanzsumme 2008 + 3* Jahresergebnis/Bilanzsumme 2007 + 2* Jahresergebnis/Bilanzsumme 2006 + Jahresergebnis/Bilanzsumme 2005) / (5 + 4 + 3 + 2 + 1).

[31] Vgl. u. a. Siregar/Utama (2008), S. 7.

Bilanzpolitik zu betreiben, da sie mehr im Fokus der Öffentlichkeit stehen und vermeintlich schlechtere Ergebnisse deshalb stärker wahrgenommen werden. Auch der größere Umfang an für das Rechnungswesen zur Verfügung stehenden finanziellen Mitteln könnte Bilanzpolitik wahrscheinlicher machen. Auf der anderen Seite ist davon auszugehen, dass das große öffentliche Interesse umfangreichere und detailliertere Abschlussanalysen von Adressaten hervorruft, weshalb eine Aufdeckung von Bilanzpolitik wahrscheinlicher ist. Dies könnte dazu führen, dass große Unternehmen eher auf Bilanzpolitik verzichten. Welcher Effekt überwiegt, ist unklar. Kontrolliert wird der Einfluss der Größe des Unternehmens auf die Wahlrechtsentscheidung mit Hilfe des natürlichen Logarithmus der Bilanzsumme (*Ln_BL*).

Vorhergehende Analysen wiesen zudem einen Zusammenhang zwischen Bilanzpolitik und der Art des Abschlussprüfers nach.[32] Die Prüfung durch eine Big Four Prüfungsgesellschaft[33] führt demnach tendenziell zu einer höheren Prüfungsqualität, weshalb vermutet wird, dass Big Four Prüfungsgesellschaften Bilanzpolitik effizienter unterbinden. Der Einfluss der Art des Abschlussprüfers auf die Wahlrechtsentscheidung wird mit der Dummy-Variable *BIG4* kontrolliert. Diese nimmt den Wert eins an, wenn der Abschluss durch eine Big Four Prüfungsgesellschaft geprüft wurde.

Darüber hinaus wurde in der Literatur ein Zusammenhang zwischen Bilanzpolitik und dem Vorhandensein von großen Anteilseignern nachgewiesen.[34] Begründet wird dies mit der Annahme, dass große Anteilseigner das Management effizienter kontrollieren, wodurch Bilanzpolitik reduziert wird. Der Einfluss großer Anteilseigner auf die Wahlrechtsausübung wird mit der Variablen *BLOCKHOLDER*, die den Wert eins annimmt, wenn ein Anteilseigner im Umstellungszeitpunkt mindestens 25% der Anteile an einem Unternehmen hielt, kontrolliert.

Weiterhin zeigten vorangegangene Analysen einen Zusammenhang zwischen einem Geschäftsführer- bzw. Vorstandswechsel[35] und der Ausnutzung von bilanzpolitischen Spielräumen.[36] Der Einfluss eines Wechsels der Geschäftsleitung auf die Entscheidung, im Umstellungszeitpunkt die 1/15-Zuführung zu wählen, wird mit Hilfe der Dummy-Variablen *CHANGE_2010*, *CHANGE_2011*, *CHANGE_2012* und *CHANGE_2013* kon-

[32] Vgl. u. a. Francis/Maydew/Sparks (1999).
[33] Zu den Big Four Prüfungsgesellschaften zählen Deloitte Touche Tohmatsu, PricewaterhouseCoopers (PwC), Ernst & Young und KPMG.
[34] Vgl. u. a. Hadani/Goranova/Khan (2011), S. 1354.
[35] Geschäftsführung und Vorstand werden nachfolgend einheitlich als Geschäftsleitung bezeichnet.
[36] Vgl. u. a. Wagenhofer/Ewert (2015), S. 273.

trolliert. Die Variablen nehmen den Wert eins an, sofern ein Wechsel in der Geschäftsleitung in dem jeweiligen Geschäftsjahr stattgefunden hat. Dabei vermuten wir für die Dummy-Variable *CHANGE_2010* einen negativen Einfluss. Grund hierfür ist, dass die Abschlusserstellung für das Geschäftsjahr 2010 im Geschäftsjahr 2011 und damit durch die neue Geschäftsleitung erfolgte. Für die neue Geschäftsleitung könnte der Anreiz bestanden haben, den vollen Zuführungsaufwand im Geschäftsjahr 2010 zu erfassen, um diesen der vorherigen Geschäftsleitung anzulasten (Big Bath Accounting).[37] Für die drei anderen Variablen *CHANGE_2011*, *CHANGE_2012* und *CHANGE_2013* wird ein positiver Einfluss vermutet. Der Grund ist, dass die in 2010 tätig gewesene Geschäftsleitung einen Anreiz gehabt haben könnte, Aufwendungen in zukünftige Geschäftsjahre zu verschieben, für die sie u. U. erwartet hat, nicht mehr verantwortlich zu sein.[38]

Ausgehend von den beschriebenen unabhängigen Variablen schätzen wir im Folgenden ein Logit-Modell, wobei die abhängige Variable binär ist und den Wert eins annimmt, wenn das Unternehmen im Umstellungsjahr (2010) eine 1/15-Zuführung wählte (*Dummy*_1/15). Wählte das Unternehmen eine abweichende Zuführung, nimmt die abhängige Variable den Wert null an. Zusammenfassend lässt sich das Modell wie folgt beschreiben:[39]

$$\begin{aligned}\text{Prob}(Dummy\_1/15=1) = \text{logit}\,(&\beta_0+\beta_1 FQ+\beta_2 OR+\beta_3 DJ+\beta_4 IFRS+\beta_5 UB+\beta_6 Ln\_BS\\&+\beta_7 BIG4+\beta_8 BLOCKHOLDER+\beta_9 CHANGE\_2010\\&+\beta_{10} CHANGE\_2011+\beta_{11} CHANGE\_2012\\&+\beta_{12} CHANGE\_2013)\end{aligned}$$

4.3 Deskriptive Statistik

Tabelle 1 fasst die deskriptiven Merkmale der im Modell verwendeten Variablen für die Stichprobe zusammen. Dabei wird im oberen Teil der Tabelle die gesamte Stichprobe (N = 261) betrachtet, wohingegen im unteren Teil eine Aufteilung der Stichprobe in Abhängigkeit von der Wahlrechtsentscheidung der Unternehmen erfolgt. 81 Unternehmen entschieden sich für eine 1/15-Zuführung im Umstellungszeitpunkt (Gruppe 1). Die verbleibenden 180 Unternehmen entschieden sich für eine höhere Zuführung (Gruppe 2).

---

37 Vgl. u. a. Healy (1985).
38 Vgl. u. a. Pourciau (1993).
39 Insgesamt werden drei verschiedene Modelle geschätzt, bei denen das Verfahren für die Prognose des Verhältnisses des Jahresergebnisses zur Bilanzsumme variiert (*DJ* vs. *DJ_DU* vs. *DJ_GD*).

Tabelle 1: Deskriptive Statistik

Gesamte Stichprobe

Variable	*N*	*MW*	*Median*	*St.Abw.*	*Min*	*Max*
Dummy_1/15	261	0,3103	0,0000	0,4635	0,0000	1,0000
FQ	261	0,6197	0,6298	0,1903	0,1552	1,0000
OR	261	0,0740	0,0588	0,1169	-0,2839	0,9000
DJ	261	0,0077	0,0017	0,1113	-0,7334	0,6852
DJ_DU	261	-0,0018	-0,0021	0,0947	-0,6949	0,5079
DJ_GD	261	-0,0050	-0,0038	0,0971	-0,6821	0,6506
IFRS	261	0,2605	0,0000	0,4398	0,0000	1,0000
UB	261	0,0181	0,0071	0,0278	0,0000	0,1727
Ln_BL	261	11,8702	11,4156	1,6649	9,2320	18,4215
BIG4	261	0,5402	1,0000	0,4993	0,0000	1,0000
BLOCKHOLDER	261	0,7318	1,0000	0,4439	0,0000	1,0000
CHANGE_2010	261	0,1686	0,0000	0,3751	0,0000	1,0000
CHANGE_2011	261	0,1801	0,0000	0,3850	0,0000	1,0000
CHANGE_2012	261	0,1724	0,0000	0,3785	0,0000	1,0000
CHANGE_2013	261	0,0766	0,0000	0,2665	0,0000	1,0000

Gruppe 1: Unternehmen, die nur 1/15 des Zuführungsbetrages zuführten

Variable	*N*	*MW*	*Median*	*St.Abw.*	*Min*	*Max*
Dummy_1/15	81	1,0000	1,0000	0,0000	1,0000	1,0000
FQ	81	0,6703	0,6896	0,1703	0,2673	1,0000
OR	81	0,0525	0,0448	0,0925	-0,2400	0,3467
DJ	81	0,0274	0,0199	0,0879	-0,3308	0,2429
DJ_DU	81	0,0128	0,0062	0,0725	-0,3224	0,2455
DJ_GD	81	0,0079	0,0032	0,0727	-0,3196	0,2508
IFRS	81	0,1728	0,0000	0,3805	0,0000	1,0000
UB	81	0,0323	0,0187	0,0380	0,0000	0,1727
Ln_BL	81	11,6616	11,2696	1,6076	9,2320	18,4215
BIG4	81	0,5062	1,0000	0,5031	0,0000	1,0000
BLOCKHOLDER	81	0,7160	1,0000	0,4537	0,0000	1,0000
CHANGE_2010	81	0,0864	0,0000	0,2827	0,0000	1,0000
CHANGE_2011	81	0,1852	0,0000	0,3909	0,0000	1,0000
CHANGE_2012	81	0,1605	0,0000	0,3694	0,0000	1,0000
CHANGE_2013	81	0,1111	0,0000	0,3162	0,0000	1,0000

Gruppe 2: Unternehmen, die mehr als 1/15 des Zuführungsbetrages zuführten

Variable	*N*	*MW*	*Median*	*St.Abw.*	*Min*	*Max*
Dummy_1/15	180	0,0000	0,0000	0,0000	0,0000	0,0000
FQ	180	0,5970	0,5924	0,1948	0,1552	1,0000
OR	180	0,0836	0,0622	0,1254	-0,2839	0,9000
DJ	180	-0,0012	-0,0057	0,1195	-0,7334	0,6852
DJ_DU	180	-0,0084	-0,0065	0,1026	-0,6949	0,5079
DJ_GD	180	-0,0107	-0,0073	0,1060	-0,6821	0,6506
IFRS	180	0,3000	0,0000	0,4595	0,0000	1,0000
UB	180	0,0117	0,0048	0,0185	0,0000	0,1199
Ln_BL	180	11,9640	11,4980	1,6860	9,9027	17,9090
BIG4	180	0,5556	1,0000	0,4983	0,0000	1,0000
BLOCKHOLDER	180	0,7389	1,0000	0,4405	0,0000	1,0000
CHANGE_2010	180	0,2056	0,0000	0,4052	0,0000	1,0000
CHANGE_2011	180	0,1778	0,0000	0,3834	0,0000	1,0000
CHANGE_2012	180	0,1678	0,0000	0,3753	0,0000	1,0000
CHANGE_2013	180	0,0611	0,0000	0,2402	0,0000	1,0000

Diese Tabelle beinhaltet die Anzahl der Beobachtungen, Mittelwerte, Mediane, Standardabweichungen, Minima und Maxima der Variablen.

Die Vermutung, dass Unternehmen häufiger die 1/15-Zuführung wählten, wenn ihr Jahresergebnis unter dem prognostizierten Ergebnis lag, wird durch die vorliegenden Ergebnisse verstärkt: So unterschritt das Verhältnis des Jahresergebnisses zur Bilanzsumme bei Unternehmen der Gruppe 1 im Mittelwert und im Median das Verhältnis des prognostizierten Jahresergebnisses zur Bilanzsumme (unabhängig vom Prognoseverfahren). Vergleicht man die prognostizierten Verhältnisse der Jahresergebnisse zu den Bilanzsummen mit den tatsächlich eingetretenen Verhältnissen für die Gesamtstichprobe (N = 261), so wird deutlich, dass 135 Unternehmen das prognostizierte Ergebnis nicht erreichten. Dabei scheint ein statistischer Zusammenhang dieser 135 Unternehmen und der Gruppe 1 vorzuliegen: Führt man eine Dummy-Variable für die 135 Unternehmen ein, existiert eine positive Korrelation (Pearson: 0,2172; zweiseitige Irrtumswahrscheinlichkeit unter 0,01%) mit der Dummy-Variablen für die 1/15-Zuführung. Dieses Ergebnis deutet auf eine bilanzpolitisch motivierte Wahlrechtsausübung hin.

Eine Betrachtung der Variable *IFRS* offenbart, dass in der Gesamtstichprobe 26,05% der Unternehmen neben dem HGB-Abschluss einen IFRS-Abschluss erstellten, wobei die Quote in Gruppe 1 (17,28%) deutlich geringer war als in Gruppe 2 (30,00%). Dieses Ergebnis verstärkt die Vermutung, dass sich Unternehmen, die zusätzlich zu einem HGB-Abschluss einen IFRS-Abschluss erstellten, seltener für eine 1/15-Zuführung entschieden.

Die Unterdotierung der Pensionsrückstellungen im Verhältnis zu der 2009 ausgewiesenen Bilanzsumme betrug bei den betrachteten Unternehmen im Durchschnitt 1,75%. Ein Vergleich der Mittelwerte der Gruppen verdeutlicht, dass die relative Höhe des Umstellungseffektes bei Unternehmen, die die 1/15-Zuführung wählten, mit 3,23% höher ausfiel als in der Vergleichsgruppe 2 (Mittelwert 1,17%). Eine tiefergehende Analyse mit Hilfe des Wilcoxon-Rangsummentests zeigt, dass dieser Zusammenhang nicht zufällig ist.[40]

Auffällig ist zudem, dass im Jahr 2010 in der Gruppe 1 weniger Geschäftsleitungswechsel (8,64%) stattfanden als in Gruppe 2 (20,56%).

[40] Die vergleichende Analyse der Mittelwerte von Unternehmen, die sich für eine 1/15-Zuführung entschieden, und denen der restlichen Unternehmen führt zu folgenden Ergebnissen: Unterschiede bei dem Anteil des Umstellungseffektes an der Bilanzsumme 2009: Wilcoxon-Rangsummentest: $Z = -5{,}431$ und $\alpha = 0{,}0000$.

Hinsichtlich der Variablen *Ln_BL*, *BIG4*, *BLOCKHOLDER*, *CHANGE_2011* und *CHANGE_2012* lassen sich keine wesentlichen Unterschiede zwischen den beiden Gruppen erkennen. Lediglich bei der Variablen *CHANGE_2013* weist Gruppe 1 (11,11%) gegenüber Gruppe 2 (6,11%) einen deutlich höheren Wert auf.

Tabelle 2 zeigt die Korrelationen der unabhängigen und abhängigen Variablen des Modells. Obgleich viele der Korrelationen signifikant sind, wird deutlich, dass keine hohe Korrelation zwischen den unabhängigen Variablen des Modells bestehen. Die hohen Korrelationen zwischen den Variablen *DJ*, *DJ_DU* und *DJ_GD* sind unschädlich für die Analyse, da immer nur eine Variable im jeweiligen Modell verwendet wird.

Tabelle 2: Korrelationen

	Dummy 1/15	*FQ*	*OR*	*DJ*	*DJ_DU*	*DJ_GD*	*IFRS*	*UB*	*Ln_BL*	*BIG4*	*BLOCK-HOLDER*	*CHANGE 2010*	*CHANGE 2011*	*CHANGE 2012*	*CHANGE 2013*
Dummy_1/15		0,1786*	-0,1234*	0,1191	0,1034	0,0889	-0,1340*	0,3446*	-0,0842	-0,0458	-0,0239	-0,1472*	0,0089	-0,0212	0,0870
FQ	0,1792*		-0,1560*	0,0204	-0,0353	-0,0538	-0,1627*	0,1062	0,0779	-0,0893	0,0324	-0,0152	0,1009	0,1038	-0,0326
OR	-0,1129	-0,1413*		0,1466*	0,1864*	0,1877*	-0,2024*	0,1014	-0,1933*	-0,094	0,0675	0,007	-0,1008	-0,0549	-0,1264*
DJ	0,1979*	0,0401	-0,0871		0,8555*	0,7366*	-0,042	0,0463	-0,0737	-0,0327	-0,1177*	-0,036	-0,0273	-0,0288	0,1973*
DJ_DU	0,1933*	0,0324	-0,04	0,8262*		0,9804*	-0,0189	0,0286	-0,0605	-0,0428	-0,0769	0,0232	-0,0154	-0,0275	0,2236*
DJ_GD	0,1694*	0,0104	-0,042	0,6550*	0,9458*		-0,0087	0,0195	-0,051	-0,0434	-0,0557	0,044	-0,0097	-0,025	0,2170*
IFRS	-0,1340*	-0,1837*	-0,2310*	-0,0918	-0,0994	-0,0725		-0,086	0,4705*	0,2903*	-0,0102	-0,0527	0,0032	-0,0012	0,088
UB	0,3368*	0,0463	0,1937*	0,0536	0,0182	-0,0406	-0,1002		-0,1098	0,1281*	0,0105	-0,0249	0,0077	0,006	-0,0334
Ln_BL	-0,0913	0,0658	-0,2752*	-0,1166	-0,0934	-0,0646	0,4193*	-0,1416*		0,3743*	-0,1082	0,0769	0,0445	0,1226*	0,0186
BIG4	-0,0458	-0,1041	-0,0853	0,0373	-0,0061	-0,0133	0,2674*	0,0705	0,4067*		0,0123	0,0466	-0,1066	0,0673	0,0192
BLOCKHOL-DER	-0,0239	-0,0046	0,1268*	-0,0894	-0,0629	-0,0675	-0,015	-0,011	0,0425	0,0315		0,0928	-0,0805	-0,0792	0,0087
CHANGE_2010	-0,1472*	-0,0686	-0,0129	-0,0387	-0,0281	-0,0114	-0,0341	0,0071	0,0822	0,0869	0,0878		0,0123	0,0016	0,074
CHANGE_2011	0,0089	0,1083	-0,0641	-0,0115	-0,0361	-0,0246	0,0399	-0,0061	0,0446	-0,0678	-0,0539	-0,0246		0,0683	0,0395
CHANGE_2012	-0,0212	0,0972	-0,0534	-0,0673	-0,0528	-0,0324	0,0295	0,0359	0,1260*	0,0751	-0,0442	0,0112	0,0501		-0,0788
CHANGE_2013	0,0870	-0,0682	-0,0962	0,1420*	0,1273*	0,1321*	0,0587	0,0271	0,0489	0,0056	0,0443	0,1396*	0,0524	-0,0934	

Diese Tabelle zeigt die Korrelationskoeffizienten für sämtliche in die Regression eingehenden Variablen. Pearson Korrelationskoeffizienten werden oberhalb, Spearman Rangkorrelationskoeffizienten unterhalb der Diagonalen dargestellt. Statistische Signifikanz ab dem 5%-Niveau wird durch * an den Koeffizienten angezeigt.

4.4 Ergebnisse der Regressionsanalyse

In der folgenden *Tabelle 3* sind die Ergebnisse der Logit-Regressionen der beschriebenen Modelle dargestellt.[41]

Tabelle 3: Ergebnisse der Logit-Regressionen

		Modell 1 (DJ)		*Modell 2 (DJ_DU)*		*Modell 3 (DJ_GD)*	
Variable	*Erwarteter Einfluss*	*Koeffizient*	*Signifikanz*	*Koeffizient*	*Signifikanz*	*Koeffizient*	*Signifikanz*
FQ	+	1,4690	0,090	1,5170	0,082	1,5369	0,078
OR	-	-5,7870	0,001	-6,0927	0,002	-6,1144	0,002
DJ	+	3,1796	0,033				
DJ_DU	+			3,9971	0,024		
DJ_GD	+					3,7675	0,025
IFRS	-	-0,9469	0,041	-0,9368	0,043	-0,9304	0,044
UB	+	37,6469	0,000	37,7456	0,000	37,6768	0,000
Ln_BL	?	0,0500	0,685	0,0300	0,809	0,0219	0,860
BIG4	-	-0,3090	0,374	-0,2751	0,429	-0,2676	0,442
BLOCKHOLDER	-	0,1221	0,729	0,1193	0,735	0,1044	0,766
CHANGE_2010	-	-1,2620	0,014	-1,2720	0,012	-1,2755	0,012
CHANGE_2011	+	-0,2396	0,560	-0,2273	0,579	-0,2339	0,568
CHANGE_2012	+	-0,1921	0,648	-0,2118	0,616	-0,2170	0,608
CHANGE_2013	+	0,8071	0,157	0,7658	0,182	0,7843	0,170
Konstante		-2,2026	0,131	-1,9511	0,184	-1,8461	0,210
Pseudo R²		0,2017		0,2038		0,2026	
Chi² Statistik		65,20	0,000	65,89	0,000	65,50	0,000

Ein Vergleich der drei Modelle verdeutlicht, dass die Ergebnisse hinsichtlich des Einflusses und der Signifikanz der Variablen nicht stark divergieren. Die Betrachtung der Fremdkapitalquote (*FQ*) zeigt, dass diese einen signifikant positiven Einfluss auf die Wahl der 1/15-Zuführung hatte, womit Hypothese H1 Unterstützung findet (Signifikanz $\alpha < 0{,}1$). So entschieden sich Unternehmen mit höheren Fremdkapitalquoten häufiger für eine 1/15-Zuführung als Unternehmen mit geringeren Fremdkapitalquoten. Dieses Ergebnis belegt, dass Unternehmen das bilanzpolitische Potential des Übergangswahlrechts genutzt und durch die Wahlrechtsentscheidung ihre Fremdkapitalquoten gezielt gesteuert haben. Dies kann als Indiz für die Verschuldungsgradhypothese von Watts/Zimmermann (1986) angesehen werden, wonach Unternehmen bilanzpolitisch motiviert gezielt ihre Finanzkennzahlen steuern um z. B. kennzahlengebundene Konditionen von Kreditverträgen zu erfüllen.

[41] Zur Überprüfung auf Multikollinearität wurde der Variance Inflation Factor (VIF) berechnet, der maximal den Wert 1,59 (Modell 1, 2 und 3) annimmt und somit unter dem kritischen Level von 5 liegt, weshalb Multikollinearität ausgeschlossen werden kann (Vgl. Menard (1995), S. 66). Zudem wurde als Robustheitsanalyse ein Logit-Modell mit fixen Brancheneffekten (siehe Tabelle A1 im Anhang) und ein Probit-Modell geschätzt, wodurch sich keine wesentlichen Unterschiede zu den vorgestellten Modellen ergaben.

Auch die Operative Rendite (*OR*) hatte wie vermutet einen signifikant negativen Einfluss auf die Wahl des Zuführungsbetrages im Umstellungszeitpunkt, womit Hypothese H2 Unterstützung findet (Signifikanz $\alpha < 0{,}01$). Dies zeigt, dass Unternehmen das Übergangswahlrecht gezielt genutzt haben, um ihre Performance Kennzahlen wie das Jahresergebnis zu steuern. Unternehmen mit einer schlechteren Performance wählten so häufiger die 1/15-Zuführung und milderten dadurch die aus der BilMoG-Umstellung resultierende zusätzliche Verschlechterung ihres Jahresergebnisses.

Die positiven Koeffizienten der Variablen *DJ*, *DJ_DU* und *DJ_GD* (Signifikanz $\alpha < 0{,}05$) unterstützen die Hypothese H3: Sofern Unternehmen das prognostizierte Jahresergebnis nicht erreichten, wählten sie häufiger die 1/15-Zuführung als Unternehmen, die das prognostizierte Jahresergebnis erreichten oder überschritten.[42] Dies ist mit dem bilanzpolitischen Ziel der Ergebnisglättung zu begründen, wonach Unternehmen versuchen, nicht zu stark von ihren Vorjahresergebnissen oder einem Ergebnistrend abzuweichen.

Eine Betrachtung der Kontrollvariablen offenbart, dass Unternehmen, die zusätzlich zum HGB-Abschluss einen IFRS-Abschluss erstellten, seltener die 1/15-Zuführung wählten als Unternehmen, die ausschließlich einen HGB-Abschluss erstellten (Signifikanz $\alpha < 0{,}05$). Dieses Ergebnis verdeutlicht, dass die Ausnutzung bilanzpolitischer Spielräume bei Unternehmen geringer war, die zusätzlich einen IFRS-Abschluss erstellten. Ursächlich hierfür könnte eine reduzierte Signalwirkung des HGB-Abschlusses sein, da den Abschlussadressaten eine weitere Informationsquelle zur Verfügung stand.

Weiterhin zeigen die Ergebnisse, dass auch die Größe des Umstellungseffektes in Relation zur Bilanzsumme des Vorjahres (*UB*) einen signifikant positiven ($\alpha < 0{,}01$) Einfluss auf die Entscheidung, die 1/15-Zuführung zu wählen, hatte. Der hohe Koeffizient der Variable (*UB*) verdeutlicht deren hohen Einfluss auf die Zuführungsentscheidung der Unternehmen.

Für die absolute Größe der Unternehmen (*Ln_BS*) kann kein statistischer Einfluss auf die Höhe des Zuführungsbetrages aus dem Modell nachgewiesen werden. Gleiches gilt für die Variablen *BIG4* und *BLOCKHOLDER*.

[42] Das Ergebnis ist unabhängig von der gewählten Berechnungsmethode des Verhältnisses des prognostizierten Jahresüberschusses zur Bilanzsumme. Eine Schätzung der Modelle unter Verwendung einer Dummy-Variablen für das Unterschreiten des jeweils prognostizierten Jahresüberschusses bestätigt den hoch signifikanten Einfluss.

Für die Variable *CHANGE_2010* kann in allen Modellen ein signifikant negativer Einfluss nachgewiesen werden ($\alpha < 0{,}05$). Dies könnte ein Hinweis auf Big Bath Accounting sein, wonach die neue Geschäftsleitung versuchte, künftige Aufwendungen vorzuziehen und im Jahr des Geschäftsleitungswechsels bilanziell zu erfassen. Hierdurch könnte für Bilanzadressaten der Eindruck entstanden sein, dass sämtliche Aufwendungen der alten Geschäftsleitung anzulasten waren. Für die neue Geschäftsleitung resultierte in diesem Fall u. U. eine bessere Reputation.

Alle anderen Dummy-Variablen zum Geschäftsleitungswechsel *CHANGE_2011*, *CHANGE_2012* bzw. *CHANGE_2013* hatten keinen signifikanten Einfluss auf die Ausübung des Wahlrechtes.

Zusammenfassend lassen sich zwei wesentliche Ergebnisse festhalten: Die betrachteten Unternehmen machten die Entscheidung, im Umstellungszeitpunkt nur 1/15 des gesamten Zuführungsbetrages zu den Pensionsrückstellungen zuzuführen, gezielt von der Höhe ihrer Finanz- und Performancekennzahlen abhängig. Daneben hatte die Höhe der erforderlichen Zuführung im Verhältnis zur Bilanzsumme einen maßgeblichen Einfluss auf die Wahl des Zuführungsbetrages. Die Ergebnisse belegen, dass Abschlussersteller (Übergangs-) Wahlrechte für eine gezielte Bilanzpolitik nutzen.

5 Fazit

Mit dem Bilanzrechtsmodernisierungsgesetz (BilMoG) verfolgte der Gesetzgeber unter anderem die Ziele einer Transparenzerhöhung, einer Stärkung der Informationsfunktion des Abschlusses sowie einer Reduzierung von bilanzpolitischen Spielräumen. Neben der Abschaffung bestehender Bilanzierungswahlrechte schaffte er dabei in Übergangsvorschriften neue Wahlrechte, welche die Bilanzierungsentscheidungen von Unternehmen 15 Jahre lang beeinflussen. Der vorliegende Beitrag untersucht, ob und ggf. wie Unternehmen diese Wahlrechte für eine gezielte Bilanzpolitik im Umstellungszeitpunkt nutzten.

Die Ergebnisse der Analyse von 261 Unternehmensdaten belegen, dass Unternehmen bei der Wahlrechtsausübung im Umstellungszeitpunkt gezielt Bilanz- und Performancekennzahlen steuerten und somit Bilanzpolitik betrieben. In diesem Zusammenhang wählten Unternehmen mit hohen Umstellungseffekten und / oder schlechteren

Finanz- und Performancekennzahlen im Umstellungszeitpunkt häufiger eine 1/15-Zuführung zu den Pensionsrückstellungen als Unternehmen mit niedrigeren Umstellungseffekten und / oder besseren Finanz- und Performancekennzahlen. Auch Unternehmen, deren Jahresergebnis negativ von einem aus Vorjahreszahlen prognostizierten Jahresergebnis abwich, entschieden sich häufiger für diese Zuführungsvariante und milderten dadurch im Umstellungszeitpunkt die zusätzliche Verschlechterung ihres Jahresergebnisses im Vergleich zu einer höheren Zuführung. Bei der Schaffung neuer Wahlrechte sollten sich Regulatoren deshalb bewusst sein, dass Unternehmen diese für eine gezielte Steuerung der Jahresabschlussinformationen verwenden.[43]

Hinsichtlich des BilMoG bleibt festzuhalten, dass die Vereinheitlichung von Bewertungsmaßstäben die Ziele des Gesetzgebers zwar unterstützen, das in dem vorliegenden Beitrag untersuchte Übergangswahlrecht auf Grund des bilanzpolitischen Potentials einer höheren Transparenz jedoch zumindest vorübergehend entgegenwirkt. Da Unternehmen im Anhang Auskunft über die Wahlrechtsausübung geben müssen (Art. 67 Abs. 2 EGHGB), ist eine Neutralisierung der Auswirkungen der Wahlrechtsentscheidung im Rahmen eines Unternehmensvergleichs zwar grundsätzlich möglich, jedoch mit einem hohen Aufwand verbunden. Zudem belegen Studien, dass Informationen, welche im Anhang bereit gestellt werden, von Jahresabschlussadressaten häufig nicht berücksichtigt werden.[44] Aus diesem Grund kann das geschickte Ausnutzen der im Rahmen der Übergangsvorschriften eingeführten bilanzpolitischen Spielräume für das bilanzierende Unternehmen zu positiven realwirtschaftlichen Auswirkungen führen.

[43] Dabei ist zu berücksichtigen, dass der HGB-Abschluss im Gegensatz zum IFRS-Abschluss nicht ausschließlich eine Informationsfunktion, sondern auch eine Ausschüttungsbemessungsfunktion hat und dass die bilanzielle Überschuldung bei negativer Fortbestehensprognose gemäß § 19 InsO ein Eröffnungsgrund für das Insolvenzverfahren ist.

[44] Vgl. u. a. Aboody (1996) oder Imhoff/Lipe/Wright (1995).

Literatur

Abarbanell, J. S. & Lehavy, R. (2002): Can Stock Recommendations Predict Earnings Management and Analysts' Earnings Forecast Errors?. Working Paper, University of North Carolina and Michigan.

Aboody, D. (1996): Recognition versus Disclosure in the Oil and Gas Industry. Journal of Accounting Research, Jg. 34, S. 21–32.

Albrecht, W. D. & Richardson, F. M. (1990): Income Smoothing by Economy Sector. Journal of Business Finance & Accounting, Jg. 17, S. 713–730.

Beidleman, C. R. (1973): Income Smoothing: The Role of Management. The Accounting Review, Jg. 48, S. 653-668.

Brown, L. D. (2001): A Temporal Analysis of Earnings Surprises: Profits versus Losses. Journal of Accounting Research, Jg. 39, S. 221–241.

Bundesministerium der Justiz und für Verbraucherschutz (BMJ) (2008): Gesetzentwurf der Bundesregierung eines Gesetzes zur Modernisierung des Bilanzrechts (Bilanzrechtsmodernisierungsgesetz - BilMoG) vom 30.07. 2008.

Bundesministerium der Justiz und für Verbraucherschutz (BMJ) (2014): Bundesanzeiger, URL: https://www.bundesanzeiger.de. Abgerufen in der Zeit vom 15.01.2014 bis zum 30.01.2014.

Bureau van Dijk (2014): Dafne, URL: https://dafne.bvdep.com/. Abgerufen am 07.01.2014.

Burgstahler, D. & Eames, M. (2006): Management of Earnings and Analysts' Forecasts to Achieve Zero and Small Positive Earnings Surprises. Journal of Business Finance & Accounting, Jg. 33, S. 633–652.

Degeorge, F., Patel, J. & Zeckhauser, R. (1999): Earnings Management to Exceed Thresholds. The Journal of Business, Jg. 72, S. 1–33.

Dichev, I. D. & Skinner, D. J. (2002): Large-Sample Evidence on the Debt Covenant Hypothesis. Journal of Accounting Research, Jg. 40, S. 1091–1123.

Drinhausen, A. & Ramsauer, J. (2009): Zur Umsetzung der HGB-Modernisierung durch das BilMoG: Ansatz und Bewertung von Rückstellungen. Der Betrieb, Jg. 62, S. 46–53.

Fink, C. & Kunath, O. (2010): Bilanzpolitisches Potential bei der Rückstellungsbildung und -bewertung nach neuem Handelsrecht. Der Betrieb, Jg. 63, S. 2345–2352.

Francis, J. R., Maydew, E. L. & Sparks, H. C. (1999): The Role of Big 6 Auditors in the Credible Reporting of Accruals. Auditing: A Journal of Practice & Theory, Jg. 18, S. 17–34.

Gassen, J., Pierk, J. & Weil, M. (2011): Pensionsrückstellungen nach dem BilMoG - Erste empirische Evidenz. Der Betrieb, Jg. 64, S. 1061–1067.

Göllert, K. (2008): Auswirkungen des Bilanzrechtsmodernisierungsgesetzes (BilMoG) auf die Bilanzpolitik. Der Betrieb, Jg. 64, S. 1165–1171.

Hadani, M., Goranova, M. & Khan, R. (2011): Institutional Investors, Shareholder Activism, and Earnings Management. Journal of Business Research, Jg. 64, S. 1352–1360.

Healy, P. M. (1985): The Effect of Bonus Schemes on Accounting Decisions. Journal of Accounting and Economics, Jg. 7, S. 85–107.

Heckman, J. (1979): Sample Bias as a Specification Error. Econometrica, Jg. 47, S. 153–162.

Imhoff, E. A., Lipe, R. C., Wright, D. W. (1995): Is Footnote Disclosure an Adequate Alternative to Financial Statement Recognition?. The Journal of Financial Statement Analysis, S. 70–81.

Institut der Wirtschaftsprüfer (IDW) (1988): HFA Stellungnahme 2/1988: Pensionsverpflichtungen im Jahresabschluss. Die Wirtschaftsprüfung, Jg. 41, S. 403–405.

Lee, B. B. & Choi, B. (2002): Company Size, Auditor Type, and Earnings Management. Journal of Forensic Accounting, Jg. 3, S. 27–50.

Menard, S. (1995): Applied Logistic Regression Analysis: Sage University Series on Quantitative Applications in the Social Sciences. 2. Aufl., Thousand Oaks: Sage Publications.

Michelson, S. E., Jordan-Wagner, J. & Wootton, C. W. (1995): A Market Based Analysis of Income Smoothing. Journal of Business Finance & Accounting, Jg. 22, S. 1179–1193.

Moses, D. O. (1987): Income Smoothing and Incentives: Empirical Using Accounting Changes. The Accounting Review, Jg. 62, S. 259–377.

Obermann, M.-O. (2011): Bilanzpolitik und Kreditvergabeentscheidungen: Auswirkung von Kreditvergabeentscheidungen auf das rechnungslegungspolitische Verhalten von mittelständischen Unternehmen. Springer, Wiesbaden.

Petersen, K., Zwirner, C. & Künkele, K. P. (2010): Bilanzanalyse und Bilanzpolitik nach BilMoG: Einzelabschluss, Konzernabschluss und Steuerbilanz. 2. Aufl., Verl. Neue Wirtschafts-Briefe, Herne.

Pierk, J. & Weil, M. (2012): Konvergenz von IFRS und HGB am Beispiel der Pensionsrückstellungen kapitalmarktorientierter Unternehmen. Zeitschrift für internationale und kapitalmarktorientierte Rechnungslegung (KoR), Jg. 12, S. 516–521.

Pourciau, S. (1993): Earnings Management and Nonroutine Executive Changes. Journal of Accounting and Economics, Jg. 16, S. 317–336.

Schmidtmeier, S., Eisenhardt, P. & Bellert, S. (2012): Pensionsrückstellungen in der Bilanzierungspraxis mittelständischer Konzerne. Der Betrieb, Jg. 65, S. 2053–2059.

Siregar, S. V. & Utama, S. (2008): Type of Earnings Management and the Effect of Ownership Structure, Firm Size, and Corporate-Governance Practices: Evidence from Indonesia. The International Journal of Accounting, Jg. 43, S. 1–27.

Stolowy, H. & Breton, G. (2004): Accounts Manipulation: A Literature Review and Proposed Conceptual Framework. Review of Accounting and Finance, Jg. 3, S. 5–65.

Trueman, B. & Titman, S. (1988): An Explanation of Accounting Income Smoothing. Journal of Accounting Research, Jg. 26, S. 127–139.

Wagenhofer, A. & Ewert, R. (2007): Externe Unternehmensrechnung. 2. Aufl., Springer, Berlin, Heidelberg und New York.

Watts, R. L. & Zimmermann, J. L. (1986): Positive Accounting Theory. Prentice-Hall, Englewood Cliffs, New Jersey.

Anhang

Tabelle A1: Ergebnisse der Logit-Regression mit fixen Brancheneffekten

		Modell 4 (DJ)		*Modell 5 (DJ_DU)*		*Modell 6 (DJ_GD)*	
Variable	*Erwarteter Einfluss*	*Koeffi-zient*	*Signifi-kanz*	*Koeffi-zient*	*Signifi-kanz*	*Koeffi-zient*	*Signifi-kanz*
FQ	+	1,9131	0,043	2,0296	0,033	2,0820	0,030
OR	-	-6,2586	0,001	-6,7411	0,001	-6,8375	0,001
DJ	+	3,0252	0,047				
DJ_DU	+			4,4186	0,018		
DJ_GD	+					4,3157	0,015
IFRS	-	-1,1401	0,018	-1,1460	0,018	-1,1456	0,018
UB	+	35,1935	0,000	35,4574	0,000	35,3942	0,000
Ln_BL	?	0,0748	0,593	0,0630	0,657	0,0565	0,692
BIG4	-	-0,2199	0,543	-0,1970	0,587	-0,1886	0,603
BLOCKHOLDER	-	0,2330	0,528	0,2600	0,485	0,2524	0,498
CHANGE_2010	-	-1,4096	0,009	-1,4362	0,008	-1,4513	0,008
CHANGE_2011	+	-0,2841	0,504	-0,2745	0,520	-0,2846	0,504
CHANGE_2012	+	-0,1007	0,820	-0,1306	0,770	-0,1355	0,762
CHANGE_2013	+	0,8656	0,142	0,8020	0,177	0,8150	0,168
Konstante		-2,1732	0,335	-2,0979	0,358	-2,0469	0,372
Pseudo R²		0,2357		0,2418		0,2420	
Chi² Statistik		76,21	0,000	78,19	0,000	78,24	0,000