

Essays on Experimental Audit Research: Auditor-Client Negotiation and Auditor Rotation

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List of Abbreviations

ACM	Auditor-client management
AEA	American Economic Association
AICPA	American Institute of Chartered Public Accountants
AIV	Additional investor value
AReG	Abschlussprüfungsreformgesetz (engl.: German Audit Reform Law)
Art.	Article
BE	Belgium
CFI	Comparative Fit Index
CFO	Chief Financial Officer
CGAA	Coordinating Group on Audit and Accounting Issues
DAX	Deutscher Aktienindex (engl.: German Stock Index)
DPR	Deutsche Prüfstelle für Rechnungslegung (engl.: German Financial Reporting Enforcement)
EEA	European Economic Area
EU	European Union
EUR	Euro
EV	Expected value
FLEX	Frankfurt Laboratory for Experimental Economic Research
FR	France
GAAP	Generally Accepted Accounting Principles
GAO	U.S. Government Accountability Office
GSW	Gibbins, Salterio, and Webb (2001)
H	Hypothesis
HGB	Handelsgesetzbuch (engl.: German Commercial Law)
H.R.	House of Representatives
IAG	Investor Advisory Group
IAS	International Accounting Standards
IDW	Institut der Wirtschaftsprüfer (engl.: Institute of Public Auditors in Germany)
IESBA	International Ethics Standards Board for Accountants
IPP	Interdisciplinary Public Policy
ISA	International Standards on Auditing
JDM	Judgment and decision making
mLab	Mannheim Laboratory for Experimental Economic
No.	Number
ORSEE	Online Recruitment System for Economic Experiments
PCAOB	Public Company Accounting Oversight Board
PEQ	Post-experimental questionnaire
PIE	Public-interest entities
Q&A	Questions and answers
Reg.	Regression

RMSEA	Root Mean Square Error Approximation
Rn.	Randnummer (engl.: Recital)
ROCI-II	Rahim Organizational Conflict Inventory II
SEC	Securities and Exchange Commission
SEM	Structural equation modeling
SOX	Sarbanes-Oxley Act
Std.	Standard deviation
TLI	Tucker-Lewis index
U.S.	United States
UK	United Kingdom
US\$	US-Dollar
z-Tree	Zurich Toolbox for Readymade Economic Experiments

List of Symbols

A	Fix audit-fee
β	Regression coefficient
E	Initial investor endowment
δ	Rejection factor
f	Rejection fee
γ	Regression coefficient
M	Manager allowance
n	Randomly drawn multiplier
\hat{n}	Auditor's signal about multiplier
ω	Size of resource pie
ϕ	Power index
π	Payoff
r	Relationship index
x	Invested amount
y	Final investor return
\hat{y}	Proposed investor return
ζ	Error term

Introduction

Auditors play a central role in securing the good corporate governance of firms. As external supervising bodies, auditors are often referred to as public watchdogs or gatekeepers who monitor firms on behalf of third parties (PCAOB Release 2011). Auditors mitigate the information asymmetry between better-informed managers and less-informed third parties, such as investors or shareholders. The particular function of the auditor is to ensure the quality of their clients' financial reporting. An unqualified audit opinion provides third parties with reasonable assurance that the audited financial statement is free from material misstatements and that it is prepared in line with the applicable accounting framework (ISA 200). Other examples of external gatekeepers - in the broader sense - include public oversight boards (e.g. PCAOB, DPR) and supervisory boards in countries with two-tier board systems. Given their central role for the corporate governance of firms, gatekeepers are often subject to questions of policy and regulation. Legislators as well as private standard setters aim to increase the quality of supervision, and to strengthen the independence of the supervising body from the supervised firm.

My thesis focuses on one relevant and recent regulation of the audit profession. In 2014, the European Union adopted an external rotation requirement for audit firms of public-interest entities (EU Regulation 2014/537, Art. 17). The EU audit reform mandates public-interest entities to appoint a new statutory audit firm after a maximum engagement period of ten consecutive years. The ten-year rotation rule may only be extended under certain stringent circumstances. The external rotation requirement is directly applicable to all EU Member States from its effective date June 17th, 2016 onwards. The new rule amends an existing internal rotation requirement from 2006 that prohibits the lead audit partners - in contrast to the whole audit firm under external rotation - to conduct the statutory audit of an entity for more than seven consecutive years (EU Directive 2006/43, Art. 42). As of now, both the ten-year external rotation rule and the seven-year internal rotation rule are mandatory in the EU. Prior to the audit reform, the maximum engagement period for audit firms was not limited in time. In Germany, for instance, 24 out of the 30 companies listed at the

German Stock Index DAX have appointed the same audit firm for at least 16 years prior to the reform (Köhler and Herbers, 2014), some even considerably longer.

The EU introduced external audit firm rotation as a response to a series of accounting scandals in 2001/2002 (e.g. Enron, Worldcom) and the financial crisis in 2007/2008 (e.g. Lehman Brothers). In its 2010 Green Paper, the European Commission “[...] focussed on the urgent need to stabilise the financial system [...]” (EU Green Paper 2010/561, Nr. 1), and saw statutory audits as “[...] a key contributor to financial stability as it provides assurance on the veracity of the financial health of all companies.” (EU Green Paper 2010/561, Nr. 1). A challenge, however, was that stakeholders have lost their confidence in the quality of financial statements and auditors were publicly accused of a lack of independence from their clients. Regulators and researchers feared that auditors could get (1) financially too dependent on their clients and (2) personally too aligned with their clients during long-term audit engagements. In 2014, the EU introduced the ten-year external rotation rule in order to increase the financial and personal autonomy of auditors, and to reinforce the independence of auditors (EU Regulation 2014/537). Whether external rotation can achieve these objectives is still subject to a controversial discussion.

The primary objective of this thesis is to investigate the effects of external rotation on the behavior of gatekeepers. In more detail, I focus on the behavior of auditors in accounting negotiations with their clients. Negotiations over accounting issues are a common part of most statutory audits (Gibbins et al., 2001, 2005, 2007). They arise because unclear accounting standards or judgmental financial statement items might leave some room for interpretation of the appropriate financial reporting. To give one example, the goodwill impairment test requires client-management to estimate future cash-flows (IAS 36) and auditors to evaluate the reasonableness of these estimates (ISA 540). Auditors may disagree with the client-preferred cash-flow estimate and enter a negotiation with the client. The outcome of such negotiations, that is the content of the financial statement or the auditor’s opinion on it, determines the quality of financial statements (e.g. Brown and Wright, 2008; McCracken et al., 2008). A low quality is usually implied, if auditors agree to aggressive reporting practices that benefit the client but are inconsistent with GAAP. In these cases, the negotiated outcome does no longer provide third parties an adequate picture of the entity. Thus, the behavior of auditors in accounting negotiations is important to the quality of the financial statement audit.

The main contribution of my thesis is a thematic and methodological extension of prior research. In terms of content, I combine two fields of research - external rotation and accounting negotiations - that each separately received much attention in the audit literature. In its combination, however, less research has been conducted to understand how external rotation influences the behavior of gatekeepers in negotiations. The few experimental studies in this field mostly focus on the economic effects of external rotation (Dopuch et al., 2001; Wang and Tuttle, 2009). My research takes on an additional perspective and analyzes the implications of rotation beyond the purely economic dimension. The central research question is how external rotation affects the personal relationship between auditors and clients, and whether strong personal ties affect the gatekeeper function of auditors in negotiations negatively. In terms of methodology, I implement a novel experimental economics research design - I refer to it as gatekeeper game - that combines elements of the trust game (Berg et al., 1995) and ultimatum game (Güth et al., 1982) with communication among subjects. My gatekeeper game is a three-player, multi-period game that includes the auditor as an independent gatekeeper. The task of the auditor is to negotiate with managers on behalf of and in the best interests of investors. The experimental design addresses some important limitations of prior negotiation studies in auditing and provides future research a sound framework to study accounting negotiations inside the campus laboratory and with students as participants.

I address the research objective in three main chapters. Chapter A introduces the reader to the negotiation research in auditing. The aim of this chapter is to elaborate the specific characteristics of accounting negotiations, and to assess the applicability of prior research methods. It deals with the general question how auditor-client negotiations can appropriately be studied experimentally. The clear focus of this thesis is on experimental and not on archival methods, since the negotiation research in auditing mainly is a behavioral science with little archival evidence to refer to. I identify the specific characteristics that distinguish accounting negotiations from negotiations outside the audit context. This step is important, because it allows me to compare prior research designs against a clear benchmark. The experimental negotiation research in auditing can be divided into two broad groups, psychology-based case study experiments (e.g. Gibbins et al., 2010; McCracken et al., 2011) and economics-based laboratory experiments (e.g. Dopuch et al., 2001; Wang and Tuttle, 2009). I present both research directions in detail and discuss

their opportunities and limitations critically. My results suggest that psychology-based experiments are prevalent and well-developed in the audit literature, but these experiments struggle to account for important characteristics of auditor-client negotiations. In contrast thereto, economics-based experiments are rather uncommon and less-developed in the audit literature. These experiments offer the potential to capture the key influences that auditors face in practice, but prior designs do not take full advantage of this potential. I propose and show ways to further integrate the less developed laboratory experiments in the accounting negotiation literature.

Chapter B concentrates on the new external rotation rule and its implications. The aim of this chapter is to introduce the EU rotation provisions, to conceptualize the common arguments in favor and against rotation, and to elaborate whether and how these different arguments have been tested experimentally. European legislators consider external rotation as sound means to enhance the quality of financial statement audits (EU Regulation 2014/537). The effectiveness of the rotation rule, however, is subject to controversial discussion on a political and academic level. I structure the current debate over rotation and provide a more differentiated view on it. I suggest that rotation influences audit quality (see DeAngelo, 1981) through two different channels: (1) it lowers the auditor's ability to detect errors in the financial statement (detection ability), but (2) improves the auditor's independence to report about detected misstatements (auditor independence). Based on this conceptualization, I review the experimental rotation literature and point out directions for future research. My findings show that few prior studies directly manipulate audit firm rotation as independent variable. Instead, many experiments relate to rotation indirectly and reproduce the key incentives auditors face under rotation. In addition, I observe that the non-economic implications of external rotation (e.g. psychological, cognitive view) compared to the economic implication are underrepresented in the experimental rotation literature and less often focus of study.

Chapter C combines both prior research directions. In particular, the chapter investigates how external rotation affects the negotiation behavior of auditors. One common argument in favor of rotation is that the reduced financial dependency of auditors strengthens their independence in negotiations with clients. I go beyond the purely economic perspective on rotation and consider its non-economic effects on auditors and clients. My hypotheses are based on the assumption that audit firm rotation leads to a weaker personal relationship

between both parties, because auditors and clients have less time available to become familiar with one another and to build a personal affiliation. I use the dual-concern model of negotiation (Pruitt, 1983) to predict that a weaker personal relationship due to the rotation requirement can hinder effective auditor-client negotiations. In contrast, the personal relationship that develops when the auditor does not rotate but is retained for several periods strengthens the gatekeeper function of the auditor. I argue that the positive effects of a personal relationship can especially be realized when the auditor has sufficient statutory power relative to the client. To test my hypotheses, I employ a fully crossed 2×2 factorial design with the independent variables rotation regime and auditor power manipulated between subjects.¹

My experimental results offer a new perspective on audit firm rotation. Across 16 experimental sessions, a total of 240 student-subjects participated in the laboratory gatekeeper game. In line with my expectations, I observe a stronger personal relationship when the auditor is retained for several rounds and a weaker personal relationship when rotation is mandated. Contrary to the argument that personal ties bias the judgment of auditors (Bazerman et al., 2002; Moore et al., 2006) and may compromise auditor independence (Gibbins et al., 2010; Brown-Liburd and Wright, 2011; Koch and Salterio, 2017), I find that a close relationship actually improves negotiations and raises the investor orientation of auditors. Auditors negotiate more integrative and are more willing to disapprove of the negotiation outcome in the long-term retention setting. These positive effects vanish in settings that provide the auditor insufficient power over clients. The study has important implications to our perception of the personal relationship between auditors and clients. While regulators still aim to increase the personal autonomy of the auditor through external rotation, I find that the investors in the experiment are best protected in the long-term retention setting. Overall, my results suggest that a stronger personal relationship in the retention setting does not necessarily counteract the gatekeeper role of the auditor.

¹ I presented earlier versions of that paper at the EARNet (European Auditing Research Network) Ph.D. workshop in Leuven (09/2017), at the annual conference of the GfW (Gesellschaft für experimentelle Wirtschaftsforschung) in Gießen (09/2016), at the ENEAR (European Network for Experimental Accounting Research) summer school in Amsterdam (07/2015), at the workshop on experimental research in accounting, auditing and corporate governance of the Johannes Gutenberg University of Mainz (07/2015), at the brown bag seminar of the Johannes Gutenberg University of Mainz (11/2014), at the experimental economics seminar of the ZEW (Zentrum für Europäische Wirtschaftsforschung) in Mannheim (09/2014), and at the 9th workshop on audit research of the University of Potsdam (06/2014).

CHAPTER A

Auditor-client negotiations: Opportunities and limitations of experimental research designs

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Abstract

Auditors often negotiate with their clients about the correct treatment of accounting issues. The behavior of auditors in such negotiations directly influences the quality of financial statements and allows conclusions about their gatekeeper role. Thus, it is important to understand how auditors negotiate accounting issues with their clients. Since the interaction between both parties usually is unobservable to outsiders, the negotiation literature in auditing mainly uses experimental research methods. These studies borrow their methodology from other social sciences, such as economics or psychology. Despite the broad field of literature, prior research does not raise the questions how accounting negotiations can appropriately be studied experimentally. To address this question, I first elaborate the key characteristics of accounting negotiations. Subsequently, I discuss the opportunities and limitations of prior economics-based and psychology-based research designs. This study provides a methodological perspective on auditor-client negotiations and shows new directions for future experiments.

1. Introduction

A common part of most statutory audits are accounting negotiations between auditors and client-management ("ACM negotiations"). It often happens that auditors and client-management ("clients" or "managers") disagree over the treatment of an accounting issue and jointly discuss about the appropriate financial reporting (Gibbins et al., 2001). These accounting negotiations are important, because the negotiated outcome - that is the content of the financial statement or the audit opinion on it - directly influences the quality of an audit (e.g. Gibbins et al., 2001; Beattie et al., 2004; Gibbins et al., 2005). The role of the auditor in negotiations is to ensure a high quality outcome. Auditors should prevent overly aggressive accounting practices and provide external third parties (e.g. shareholders, investors) reasonable assurance that the negotiated outcome is acceptable under the respective GAAP. Thus, the key to high-quality financial statement audits lies in the behavior of auditors in accounting negotiations.

Accounting negotiations are a broad research field in the audit literature. One challenge researchers face is that the interaction between auditors and clients usually takes place behind closed doors and is unobservable for outsiders (Gibbins et al., 2005). Accounting negotiations "[...] do not normally provide any type of publicly available archival data (i.e., the results of these negotiations are embedded in the final figures published in the financial reports)." (Hatfield et al., 2008, p. 1205). The analysis of these financial reports provides little informational value about the negotiation process and about the behavior of both negotiating parties. The lack of archival evidence makes the ACM negotiation research predominantly a behavioral science which strongly relies on experimental methods or field research as primary approaches (Brown and Wright, 2008; Salterio, 2012).

The behavioral research in auditing comprises a tool-kit of different research methods, which Malsch and Salterio (2016) and Salterio and Gondowijoyo (2016) divide into three main categories:

- field studies,
- psychology-based case study experiments, and
- economics-based laboratory experiments.

All three methods are commonly applied in the context of ACM negotiation research. Field researchers usually conduct personal interviews or questionnaires with professional

auditors. These studies give firsthand insight into the self-reported negotiation experience of auditors (Malsch and Salterio, 2016). Psychology-based studies (sometimes referred to as “judgment and decision making” JDM studies) are conducted outside the campus laboratory with subjects other than students (e.g. auditors, financial directors). In the ACM negotiation context, these experiments use case studies to simulate real-world accounting negotiations and elicit the planned behavior of professional auditors via questionnaires (Kachelmeier and King, 2002).² Economics-based studies are conducted in the campus laboratory with student-subjects as participants. These experiments allow researchers to reproduce the key features of an audit environment in an artificial setting and to study the negotiation behavior of subjects using audit-like games (Kachelmeier and King, 2002; Croson and Gächter, 2010; Charness et al., 2013).

Prior reviews of the ACM negotiation literature mainly provide new research directions in terms of unexplored content. Brown and Wright (2008), for instance, “[...] identify the major findings of this emerging body of work, recommend promising avenues for future research, and suggest implications for practice.” (Brown and Wright, 2008, p. 91). Likewise, Salterio (2012) shows “[...] where research has been carried out and where important matters [...] have received less research interest than their importance may warrant.” (Salterio, 2012, p. 233f.). My work sets a different priority and reviews the ACM literature from a methodological perspective. Central question is not *what* has been studied so far, but *how* accounting negotiations have been examined in psychology-based and economics-based experiments. I elaborate new research directions in terms of methodology, and not in terms of content.

The methodological perspective is very important as scholars have engaged in long and arduous debates about the appropriate way to study interactions between auditors and clients. Psychology-based case studies are often criticized that “[...] they lack the richness of strategic interaction, often infer behavior from hypothetical judgments rather than actions, and might raise questions about incentives.” (Kachelmeier and King, 2002, p. 228). Economics-based laboratory studies, on the other hand, are accused of their “[...] stylized

² A different terminology to refer to these kind of experiments is used by Harrison and List (2004) or more recently by Floyd and List (2016). They use the term framed field experiment to describe an experiment that “[...] mimics a laboratory experiment, except that it uses nonstandard subjects [...] with field context in the commodity, task, stakes, or information set that the subjects can use.” (Floyd and List, 2016, p. 434-444).

tasks that are abstracted from the real-world environment." (Kachelmeier and King, 2002, p. 220). Prior textbooks (e.g. Shadish et al., 2002; Friedman and Cassar, 2004; Smith, 2017) and peer-reviewed articles (e.g. Nelson, 2004; Alexander et al., 2006; Croson, 2005; Croson and Gächter, 2010; Charness et al., 2013) compare psychological and economic experiments from a general and context-neutral perspective. As an extension thereto, I elaborate the applicability of both research directions for the ACM negotiation study.

My review is guided by the question how accounting negotiations can be studied appropriately in an experiment. To make progress on this empirical question, I first identify the special characteristics (or "key cornerstones") of ACM negotiations and describe the audit-specific negotiation framework. Accounting negotiations differ from other negotiations in various ways. Accounting negotiations, for example, usually involve qualified experts, cover judgmental negotiation issues, show an ethical perspective, and are embedded in long-term audit engagements (Beattie et al., 2000, 2004; Gibbins et al., 2001, 2005). Research must consider these special characteristics of ACM negotiations in order to assess the applicability of psychology-based and economics-based experimental research designs. The identified cornerstones provide a sound benchmark against I compare prior experimental designs.

I observe that psychology-based experiments are prevalent and well-developed in the ACM negotiation literature. The main benefit of psychology-based experiments is that the involvement of professional auditors as participants allows researchers to simulate real-world accounting conflicts via case studies. On the downside, these experiments struggle to account for important characteristics of accounting negotiations, since they do not allow an interactive negotiation setting. Moreover, these experiments also rely on the self-reported intentions of auditors rather than on decisions during actual negotiations. The economics-based research direction, on the other hand, does not take full advantage of its potential. My review shows that economic experiments are less commonly used in the context of accounting negotiations. Despite some disadvantages, economic methods offer the potential to design negotiation frameworks in the laboratory that capture the key influences auditors face in practice. Since prior research designs show challenges in relation to this matter, I propose to further integrate experimental economics methods in the ACM negotiation literature, and point out ways to improve the less-developed laboratory experiments.

The remainder of this chapter is structured as follows. The second section reviews the field literature in auditing and elaborates the special characteristics of ACM negotiations. The third section presents different psychology-based research designs and discusses their applicability in the context of accounting negotiations. The fourth section describes different economics-based laboratory methods and assesses their benefits and drawbacks for the ACM negotiation research. The fifth section concludes with a discussion of my methodological review and points out future research directions.

2. Auditor-client negotiation characteristics

2.1 Negotiation frameworks in other fields

2.1.1 The dual-concern model of negotiation

The generic negotiation literature - outside the audit context - defines negotiation as “[...] a form of decision making in which two or more parties talk with one another in an effort to resolve their opposing interests.” (Pruitt, 1981, p. xi). This definition describes a rather general negotiation framework in three brief terms. First, negotiations involve at least two individuals or groups that interact with each other. The focus is usually on the interaction between individuals, between groups, or within groups. Second, any negotiation begins with a conflict of interest between the negotiators. This conflict of interest arises, for example, due to opposing preferences about the negotiation outcome or due to different incentives of the negotiators. Third, all parties are willing to resolve the conflict. Negotiation is a voluntary process in which subjects prefer an agreement over an impasse (Lewicki et al., 2010).

The way how people handle conflicts, that is how they negotiate with their counterparty, is considered a key aspect of the negotiation process (Lewicki et al., 1992, 2010). In the 1950s and 1960s, early studies on interpersonal conflict have reduced negotiation strategies (or “conflict-handling styles”) to being either cooperative or competitive. In other words, the negotiation behavior was seen as dichotomous and one-dimensional variable. This cooperative-competitive classification scheme has soon proved to be insufficient to properly describe interpersonal conflict-handling and to account for the complexity of peoples’ choices (Ruble and Thomas, 1976). In the following, I introduce a two-dimensional classification scheme from the generic negotiation literature, the dual-concern model. The

model is commonly used not only in social psychology, but also found its way into the ACM negotiation literature.

The dual-concern model provides a more systematic framework for the classification of negotiation strategies (Rahim, 1983; Pruitt, 1983; Pruitt and Rubin, 1986; Pruitt and Carneval, 1993).³ In contrast to the one-dimensional classification of interpersonal conflict, the dual-concern model suggests that negotiation strategies vary across two dimensions. The first dimension is called assertiveness and reflects the degree towards which people try to satisfy their own concerns. The second dimension is called cooperativeness and reflects the degree towards which people try to satisfy the concerns of others (Lewicki et al., 1992; Thomas, 1992). In an economic context, these two dimensions are sometimes termed differently. For example, Savage et al. (1989) suggest that the primary motivators in an interpersonal conflict are the concern for the substantive outcome and the concern for the relationship, as two alternative dimensions of the dual-concern model.

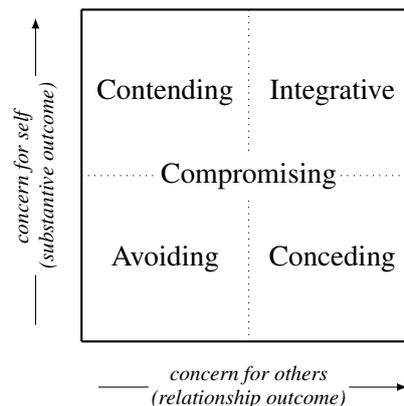


Figure A.1: The dual-concern model of negotiation

(Source: Pruitt, 1983; Savage et al., 1989)

³ The model is based on the original and largely normative work by Blake and Mouton (1964), and on early studies by Lawrence and Lorsch (1967), Burke (1970), and Ruble and Thomas (1976). The descriptive, early version of the dual-concern model has undergone substantial experimental and empirical validation in the literature (e.g. Rahim and Bonoma, 1979; Cosier and Ruble, 1981; Rahim, 1983; Pruitt, 1983; Pruitt and Rubin, 1986; Pruitt and Carneval, 1993). See Lewicki et al. (1992) or Thomas (1992) for an overview about the history of the dual-concern model and its experimental or empirical examination. It is now considered one of the most important models of interpersonal conflict-handling in contemporary research (Lewicki et al., 2010). Albeit the long history of the model, the work by Pruitt (1983; 1986; 1993) is often considered as main contribution in this field, because his work has "[...] been particularly helpful in disseminating the model into the social psychological literature." (Thomas, 1992, p. 269).

The dual-concern model defines five different negotiation strategies alongside the two dimensions: the concern for others ("cooperativeness" or "relationship dimension") and the concern for self ("assertiveness" or "outcome dimension") (Lewicki et al., 1992, 2010). In other words, the model traces people's choices in negotiations to the relative importance they place on their own and the counterparty's outcome (Pruitt, 1983). In terms of Savage et al. (1989), the model traces people's choices to the relative importance subjects place on the relationship with the other party and on the substantive outcome. Figure A.1 displays the five conflict-handling styles in the two-dimensional space: Avoiding strategies (unassertive, uncooperative), conceding strategies (unassertive, cooperative), contending strategies (assertive, uncooperative), compromising strategies (intermediate in assertiveness and cooperativeness), and integrative strategies (assertive, cooperative).⁴ To give one example, a high concern about the negotiation outcome combined with a low concern for the relationship with the negotiating party encourages contentious strategies. These negotiators are rather assertive on their own-preferred outcome, but uncooperative towards the interests of the other party.

2.1.2 *Distributive vs. integrative types*

The generic negotiation literature further clusters negotiation strategies into two groups of conflict-handling: distributive and integrative types (e.g. Lewicki et al., 1992; Pruitt and Carneval, 1993; Lewicki et al., 2010). The difference between both is commonly illustrated metaphorically based on a pie of resources. The way how negotiators perceive the negotiation object - that is the available resource pie - varies between distributive and integrative types of conflict handling. Distributive negotiators show a fix perception of the available resource pie. Distributive types of conflict-handling are used to distribute a fix resource among the negotiators or to divide a fixed-sum payoff between the involved parties. Examples of distributive types include contending or conceding negotiation strategies. Integrative negotiators, in contrast, show a rather flexible perception of the negotiation object. Integrative strategies search for potential to expand the size of the

⁴ Note that the wording of these strategies varies across different studies. Equivalents common in the negotiation literature are:

- (1) avoiding = withdrawing, or inacting;
- (2) conceding = obliging, smoothing, subordinating, accommodating, or yielding;
- (3) contending = forcing, dominating, or competing;
- (4) compromising = sharing;
- (5) integrative = integrating, problem solving, or collaborating.

resource pie and to yield mutually beneficial solutions (Lewicki et al., 2010). Thus, one factor that distinguishes both types of conflict-handling is the *division of the resource pie* in distributive negotiation and the *expansion of the resource pie* in integrative negotiation.

The metaphorical representation leads to another important difference between distributive and integrative types, the value criterion. Distributive types are associated with a strong win-lose orientation of subjects. Since distributive negotiators attempt to divide a fixed resource pie, a gain of one party always comes at the expense of the counterpart. The involved parties claim value of the fixed pie and yield an in-between solution. Integrative types, on the other hand, are equated with a win-win orientation of subjects. Integrative negotiators aim to create value for both parties by expanding the resource pie. Lewicki et al. (2010) describe integrative negotiation as “[...] the process of identifying Pareto efficient solutions. [...] The goal of creating value is to push the potential negotiation solution toward [...] the Pareto efficient frontier.” (Lewicki et al., 2010, p. 75). Thus, another distinction between both types is the *claiming of value* in distributive negotiation and the *creation of value* in integrative negotiation (e.g. Fisher et al., 1987; Bazerman and Moore, 2008).

I draw on one well-known negotiation example by Kolb (1995) and Fisher et al. (2011) to argue that these two criteria are not precise enough to distinguish between distributive and integrative types of conflict-handling. Consider two sisters who find an orange on the kitchen table and who discuss how to best share this orange. Since the sisters cannot agree who of them should get the orange, they end up cutting the orange in half. One sister then squeezes her half of the orange to make a fresh juice and throws the peel away. The other sister uses the peel of her half orange to cook marmalade but throws the fruit away. This leaves both with half of what they actually wanted, a distributive solution. If the sisters had found out about the other sister’s interests, the two would have been better off with an integrative solution: giving all the peel to one sister and the whole inner fruit to the other sister (Kolb, 1995; Fisher et al., 2011).

The tale of the two sisters illustrates that the pie of resources criterion is not specific enough to distinguish between both types of conflict-handling. The sisters negotiate over the distribution of a fixed pie of scarce resources, the single orange. In the distributive case, each negotiator claims value from a fixed-sum pie. In the integrative case, the pie of resources remains unchanged, but the negotiators find another way to split the orange.

The expansion of the resource pie is thus no necessity for integrative solutions (Kersten, 2001). The tale also demonstrates that the efficiency criterion cannot be sufficient to differentiate between both types of conflict handling. In the example, both distributive and integrative strategies can produce an efficient outcome. Any distributive in-between solution is efficient, because the additional gain of one party always comes at the expense of the counterparty.

Alternatively, Kersten (2001) proposes to differentiate distributive and integrative types based on the outcome space and the subjects' knowledge thereof. Distributive negotiators find solutions to a problem within a fixed outcome space that is initial and common knowledge to both negotiators. Any distributive solution, efficient or not, reflects a compromise for both parties. Integrative negotiators aim to identify a larger outcome space which scope and limit is initially unknown to both negotiating parties. The idea behind integrative negotiation is to find a new solution that is beyond the initial set of alternatives and that increases the utility of both negotiators. Kersten (2001) suggests that subjects can restructure the outcome space by (1) changing the dimensionality of the decision alternatives ("new attributes"), or by (2) adding new decision alternatives that expand the initial outcome space ("new alternatives"). In the tale, the two sisters can restructure the outcome space through identification of the other's interest in the negotiation object and through decomposition of the orange into a fruit part and a peel part. In this chapter, I use the terms distributive and integrative based on Kersten's (2001) differentiation.

It is important to note that integrative conflict-handling styles ultimately have distributive character, too. Once the outcome space is explored and new decision alternatives have been identified, the negotiation may take on distributive forms again. For example, the two sisters might have identified their different interests in the orange (fruit vs. peel) as an integrative first step. This knowledge provides them an increased outcome space beyond the mere allocation of the orange. Any subsequent decision how to split the orange fruit and orange peel among each other is a distributive second step. Thus, it is the process of restructuring the initial outcome space and identifying new solutions that makes a negotiation integrative, not the final distributive decision about the outcome.

2.2 Negotiation frameworks in auditing

2.2.1 Negotiation process model

In an audit context, the negotiation framework by Gibbins, Salterio and Webb (2001, hereafter “GSW”) is an important model that motivated extensive research to investigate accounting negotiations experimentally (Salterio, 2012). The GSW model describes accounting negotiations as a three-element process, displayed in panel A at the top of figure A.2 (Gibbins et al., 2001). The three main elements of the model are the accounting issue, the negotiation itself, and the accounting outcome. (1) The negotiation process begins with the emergence of an accounting issue over which auditors and clients might disagree. The accounting issue represents the object of the adjacent negotiation. The issue needs to be viewed in the context of the auditor-client history and the prior interaction between both parties. (2) Upon emergence of an accounting issue, auditors and clients interact with each other and negotiate possible solutions of the issue. Central element of this stage is the negotiation strategy of either one party that can be conceptualized according to the dual-concern model. (3) The negotiated result constitutes the accounting outcome, such as the content of the financial statement or the audit opinion on the financial statement. The three-element process initiates the next interaction between auditors and clients (Gibbins et al., 2001).

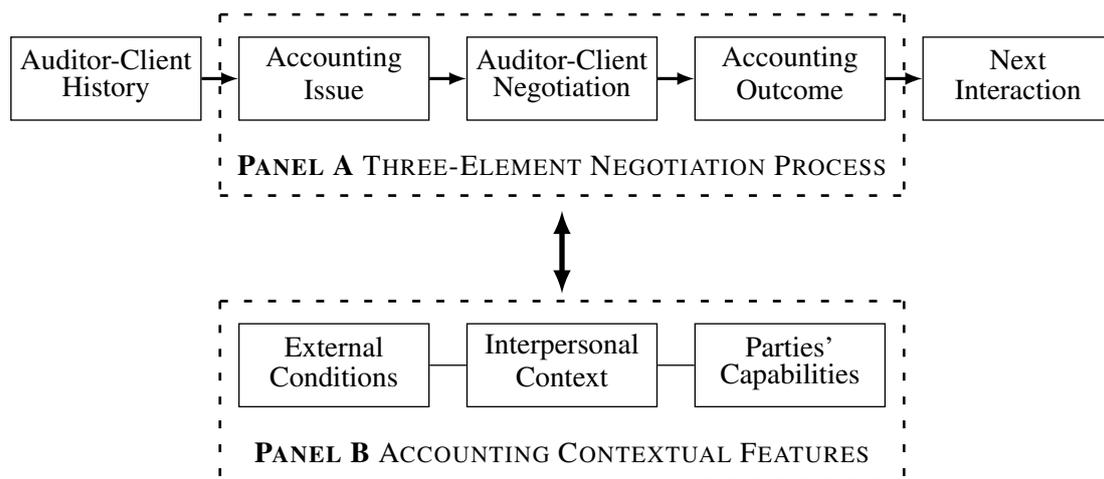


Figure A.2: GSW negotiation process model

(Source: Gibbins et al., 2001)

Another important feature of the GSW negotiation model is the context in which the negotiation takes place, displayed in panel B at the bottom of figure A.2. GSW identify three groups of contextual features that potentially influence the negotiation process: external conditions, interpersonal conditions, and the parties' capabilities. The first group refers to external contextual features that are beyond the control of auditors or clients, such as accounting standards, legal constraints, implementation deadlines, or statutory requirements. The second group comprises the interpersonal context of the ACM relationship and its components, such as joint interests, the roles of each party, and the reputation or risk of the client. The third group covers the parties' capabilities, including the set of knowledge, skills, and expertise of auditors and clients. GSW assume and find that all three groups of contextual features play an important role in ACM negotiations and affect the negotiation process (Gibbins et al., 2001).

The model links to the experimental research in an explicit way: the contextual features of the model (panel B) usually represent the independent variables in experimental studies, and the negotiation process elements (panel A) the dependent variables. For example, researchers often manipulate two or more environmental features and study the impact of the negotiation context on the negotiation strategy or the negotiation outcome (for an overview see Salterio, 2012). My study focuses less on the negotiation context, but more on the audit-specific characteristics or key cornerstones of the negotiation process. For each process element in the GSW model - the accounting issue, the negotiation, the accounting outcome, and the auditor-client history - section 2.4 highlights the main audit-specific characteristics. These characteristics help me to better assess the opportunities and limitations of psychology-based and economics-based experiments against a clear benchmark.

2.2.2 Additional negotiation framework

Beattie et al. (2004) develop another negotiation model. The model is similar to the GSW negotiation framework, it embeds the personal interaction into a larger context. Central element in the negotiation model is the interaction between auditors and their clients. The interaction includes three main elements: the negotiation event, the negotiation strategy, and the negotiation outcome. Starting point of the ACM interaction is a negotiation event, such as the occurrence of an accounting issue. The event triggers the negotiation strategy of auditors and clients. In the model, the strategy adopted by each party is of major

importance to the outcome. Last, the negotiation outcome is evaluated by the quality of the accounting solution and the ease of agreement. These elements largely coincide with the process model elements in GSW.

The model incorporates four categories of contextual features (or contextual climates) that differ in their degree of influence on the interaction (Beattie et al., 2004). The global regulatory climate includes international accounting or auditing policies and is thought to have the weakest and most indirect influence on the interaction. The external national context encompasses the economic and regulatory climate which has a remote influence on the interaction. The firm context includes all company (audited entity) and audit firm circumstances that have a direct influence on the negotiation. Finally, the specific negotiation context has a strong moderating effect on the interaction. The specific environment is context-dependent and varies across negotiations (Beattie et al., 2004).

Since the Beattie model receives less attention in the ACM literature and also largely corresponds to the GSW model, I identify the key audit-specific negotiation characteristics alongside the GSW model and its nomenclature. The characteristics are mainly derived from the field research in auditing, which I introduce briefly next.

2.3 Overview over field research

An important source for the identification of audit-specific negotiation characteristics is field research. It provides a firsthand insight into audit practices through the collection of information in natural settings, outside a controlled experimental or laboratory environment. Malsch and Salterio (2016) define field research in auditing as set of qualitative methods used to study audit practices in its respective context. This set of methods includes experience-based surveys and interviews, observation of organizational actors, participation in the work life, or collective group discussions (Malsch and Salterio, 2016; Salterio and Gondowijoyo, 2016). Since accounting negotiations usually take place behind closed doors (Gibbins et al., 2005), the field studies in the ACM negotiation context commonly employ experienced-based surveys or interviews. Experienced-based instruments require respondents to recall a certain incident that they have experienced in practice and to answer a set of questions about that incident.

Experienced-based studies are sometimes referred to as descriptive stories from the field with simply anecdotal character. What this criticism fails to consider, however, is the

exploratory and explanatory power of this research instrument (Malsch and Salterio, 2016). Field studies often follow an inductive reasoning approach, which is also called bottom-up approach. Researchers observe audit practices in its context in order to induce theories from their observations (Holland et al., 1989; Malsch and Salterio, 2016; Salterio and Gondowijoyo, 2016). In the ACM negotiation context, the field research builds on the practical experience of auditors and financial directors to induce negotiation frameworks or to validate prior negotiation models. The inductive reasoning approach can enrich the audit literature and expose new research questions for experimental researchers. "In other words, it can be in the best interest of the non-field study researcher to have a robust set of authoritative field literature to refer to." (Malsch and Salterio, 2016, p. 17).

One of the first experienced-based surveys in the context of ACM negotiation is the GSW study (Gibbins et al., 2001). Their study consists of two steps. As a first step, GSW develop an auditor-client negotiation model that is based on the behavioral negotiation and auditing literature. I presented the model in the previous section 2.2.1. As a second step, GSW conduct an experienced-based survey in the field to verify the validity of the negotiation model (Gibbins et al., 2001). They distribute structured research questionnaires across six large accounting firms in Canada and recruit 93 experienced audit partners to participate. GSW apply the critical incident technique (Andersson and Stig-Göran, 1964; Ronan and Latham, 1974), a technique that requires audit partner participants to recall and describe one self-chosen negotiation example that they had experienced in practice. The audit partners in GSW have to answer a series of questions about their negotiation example in writing. The questionnaire is designed to verify the previously defined negotiation model.

Given that accounting negotiations involve at least two parties - auditors and client-management - Gibbins et al. (2005 and 2007) raise the question whether audit partners and CFOs differ in their negotiation experience. To address this question, they conduct the GSW survey with 101 CFOs of Canadian companies. The study, too, uses the critical incident technique that requires CFOs participants to describe one self-chosen accounting negotiation example that they had experienced in practice. The questionnaire consists of two main parts, published separately in Gibbins et al. (2005) and two years later in Gibbins et al. (2007). The first part of the questionnaire provides a comparison of how audit partners and CFOs differ in their perception of accounting negotiations. The study uses the audit partner questionnaire of GSW, but adjusts the wording and adapts its content

to a CFO setting (Gibbins et al., 2005). The second part of questionnaire delves deeper into the negotiation process and elicits detailed descriptions of the subjects' negotiation experience using open-ended responses (Gibbins et al., 2007). The responses are used to further validate the GSW negotiation model from the perspective of the CFO.

In a similar field questionnaire study, Beattie et al. (2000) aim to present "[...] direct evidence concerning the extent, nature, and outcome of interactions between [...]" (Beattie et al., 2000, p. 177) audit partners and financial directors. They recruit auditors of UK audit firms as well as financial directors of UK listed companies as participants. The questionnaire requires auditors to respond with reference to their largest client in terms of generated fees, and financial directors to respond with reference to their current audit engagement partner. Beattie et al. (2000) use a questionnaire instrument containing closed and open-ended questions. The closed part comprises a comprehensive list of different accounting issues, and requires subjects to indicate the frequency with which they have negotiated these issues in practice. The open-ended part requires subjects to freely describe their experience in interacting with the other party during accounting negotiations. Their study places the focus not a single negotiation example, but on the general experience of auditors and financial directors in negotiations.

Based on their field questionnaire, the same authors later conduct personal interviews for a deeper understanding of ACM negotiations. Beattie et al. (2004) approach the financial directors, who previously completed the questionnaire and who indicated frequent accounting negotiations, and ask them whether they are willing to participate in a personal interview. During the interview, the financial directors are asked to report about their experience and to explain the responses previously given in the questionnaire. Afterwards, Beattie et al. (2004) ask for permission to also contact and interview the designated audit partner to whom the financial directors referred to in their interview. Six financial directors agreed, enabling personal interviews with matching audit partners about a joint negotiation experience. The study uses the grounded theory technique (Strauss and Corbin, 1990; Smith, 2017) to derive an ACM negotiation model that is grounded on a systematic analysis of the interview protocols (introduced in the previous section). This approach is in contrast to GSW, who first set up a negotiation model and test the model afterwards.

Last, McCracken et al. (2008) conduct another experience-based interview study with dyads of CFOs and their audit partner. The focus of their study is on the distribution of

roles between auditors and clients, on the relationship between both parties, and on the social positioning of the negotiators in ACM negotiations. The recruitment process of the CFO-audit partner dyads is similar to Beattie et al. (2004). The authors gain permission from nine Canadian companies to conduct a personal interview with each company's CFO. At the end of the interview, McCracken et al. (2008) obtain approval to also contact and interview the designated audit partner. Eight out of nine CFOs agreed to that request, yielding eight dyads of CFOs and their audit partner for personal interviews about a joint negotiation experience. In the first part of the interview, McCracken et al. (2008) apply the critical incident technique and ask the dyads to recall a specific accounting issue and to describe how it arose and how it was resolved. In the second part of the interview, they ask more specific questions about the relationship and positioning in roles between both parties. The interviews are taped, transcribed, and coded independently by two research assistants according to few key themes.

The next section elaborates the key characteristics of auditor-client negotiations. These characteristics are derived from the field research in auditing and structured alongside the GSW negotiation process model elements.



Figure A.3: GSW negotiation process model elements (short version)

(Source: Gibbins et al., 2001)

2.4 Audit-specific negotiation characteristics

2.4.1 Accounting issue

(a) *Judgmental task.* Auditors negotiate with their clients about a broad range of accounting issues. The audit partners and financial directors in Beattie et al. (2000) report that they have experienced negotiations about accounting principles and practices, about the disclosure of information, and about other compliance or audit-related matters. Frequent issues of negotiation, for example, include the valuation of provisions or the fair value measurement. ACM negotiations often require the judgment of subjects (Gibbins et al., 2005), because some financial statement items cannot be measured but must be estimated, or because

ambiguous accounting standards leave some room for interpretation of the appropriate reporting. To give one example, the goodwill impairment test requires client-management to estimate future cash-flows (IAS 36) and auditors to evaluate the reasonableness of these estimates (ISA 540). The task itself is judgmental and may incorporate a certain range of acceptable solutions, which is an important feature of accounting negotiations.

(b) Involvement of experts. Closely linked to the judgmental negotiation task is the involvement of qualified personnel. Negotiations over accounting issues require subjects to have specific knowledge of the applicable accounting standards and guidelines. Gibbins et al. (2001) and Gibbins et al. (2005, 2007) report that most negotiations over material issues indeed involve well-qualified personnel, and nearly always include the CFO as well as the audit engagement partner. The participants in these field studies have several years of experience in public accounting or in business. The involvement of experts raises the question about the appropriate subject pool for experimental studies. Libby et al. (2002) advice “[...] to match subjects to the goals of the experiment, but to avoid using more sophisticated subjects than is necessary to achieve those goals.” (Libby et al., 2002, p. 802). Student-subjects are preferable if the experimenter focuses on the cognitive abilities of the negotiators, and if the task itself does not require specific knowledge. Auditor-subjects are necessary if researchers focus on the real-world experience of auditors, or if the task itself requires specific accounting knowledge (e.g. Libby et al., 2002; Mayhew and Murphy, 2014).

(c) Information asymmetry. The negotiating parties usually have unequal information available about the subject of negotiation. For one reason, auditors and client-management may have different levels of accounting knowledge or varying industry-specific experience. The different knowledge may lead to skewed information about the accounting issue (Gibbins et al., 2001). For another reason, the preparer of the financial statement further has company-internal or industry-specific information available that the auditor cannot access. These company-internal information about the accounting issue provide the audited entities an informational advantage over auditors. Information asymmetry is important, because it “[...] allows for different initial beliefs and differing preferences.” (Gibbins et al., 2001, p. 538). It thus creates a negotiation framework with tension between auditors and clients, an important key characteristic of ACM negotiations.

2.4.2 Auditor-client negotiation

(a) *Distributive bargaining.* Accounting negotiations are often considered as a distributive bargaining task. At the beginning of negotiations, auditors and client-management mostly anticipate a distributive solution that lies in-between the auditor-preferred and the client-preferred outcome. Both parties also consider it their role to convince the other party of their own accounting solution (Gibbins et al., 2001, 2005, 2007). This behavior is in line with the definition of distributive negotiation according to the generic literature. Distributive negotiators aim to find solutions to a problem within a fixed and initially known outcome space. The gain of one party comes at the expense of the other party (Kersten, 2001; Lewicki et al., 2010). The experimental ACM research finds further evidence that auditors indeed employ distributive types of conflict-handling often during accounting negotiations, e.g. contending strategies or conceding strategies (e.g. Wang and Tuttle, 2009; Gibbins et al., 2010; McCracken et al., 2011).

(b) *Integrative potential.* Despite its distributive character, ACM negotiations also have integrative potential. In their field studies, Gibbins et al. (2001) and Gibbins et al. (2005) find that 14% of the audit partners and 17% of the CFO participants enter negotiations with the aim to develop integrative "out of the box" solutions. This result is also in line with the personal interviews in Beattie et al. (2004) and McCracken et al. (2008), who show that auditor-client dyads often elaborate new solutions jointly and employ a range of different negotiation strategies including cooperation and integration. Practical examples of integrative strategies - in line with the generic literature - would be if auditors expanded the problem agenda (new attributes) or suggested new solutions (new alternatives) to the accounting problem (see Bame-Aldred and Kida, 2007; Gibbins et al., 2010; McCracken et al., 2011). The important implication to my study is that experimental ACM negotiation research should not reduce the action space to purely distributive solutions, but also allow for integrative types to occur.

2.4.3 Accounting outcome

(a) *Ethical perspective.* The role of the auditor in negotiations is to prevent overly aggressive accounting policies (Beattie et al., 2004) and to provide reasonable assurance that the accounting outcome is free from material misstatements (ISA 200). Auditors care for the negotiation outcome out of their statutory responsibilities (Gibbins et al., 2001),

and due to the liability risk for damages caused by erroneous financial statements (Tan and Trotman, 2010). Importantly, auditors also care for the accounting outcome out of a moral obligation towards third parties, such as investors of the entity. Auditors have a moral obligation to ensure the informational function of financial statements and to provide investors with an objective basis for decision making. Accordingly, the auditors in Gibbins et al. (2001) consider ethical considerations as an important contextual feature to their self-chosen negotiation example. This ethical perspective is a distinctive feature in the ACM negotiation context and should be considered in experimental studies.

(b) *Gatekeeper function.* The gatekeeper function of the auditor is closely related to the ethical perspective. In practice, investors entrust resources to companies but have little means available to oversee the actions of managers (principal-agent conflict). Investors may fear misappropriation of their investment. In this respect, auditors can be seen as mitigating gatekeepers who oversee the actions of managers and who reduce the conflict of interest between companies and investors. "The auditor gathers information [...] during his audit and issues a report to investors to help them in their investment decisions." (Koch and Schmidt, 2010, p. 98). Gibbins et al. (2001) further argue that auditors have statutory and ethical responsibility to protect third parties in negotiations and are thus "[...] negotiating to a degree on behalf of others' interests in addition to their own direct interests." (Gibbins et al., 2001, p. 540). In their function as gatekeeper, auditors negotiate accounting outcomes in the interest of or on behalf of third parties. Experimental studies should take this third party perspective (gatekeeper role) into consideration when studying ACM negotiations.

2.4.4 *History and next interaction*

(a) *Dynamic process.* The GSW model indicates that the negotiation process is embedded between the prior history and the next interaction of subjects. As such, an important characteristic of ACM negotiations is the dynamic process. Accounting negotiations are dynamic, because auditors and client-management often negotiate over longer periods and over several negotiation rounds. This lengthy process allows both parties to act and counteract, and to adopt different negotiation approaches earlier vs. later in the process (Beattie et al., 2000; Gibbins et al., 2001, 2005; McCracken et al., 2008). Accounting negotiations are also dynamic, since they occur frequently and are a natural part of the everyday business in auditing. Auditors and client-management consider face-to-face discussions over accounting issues and the frequent exchange of such information as

an inherent property of statutory audits (Gibbins et al., 2001, 2005). Taken together, I conclude that ACM negotiations are not static, but highly interactive and dynamic.

(b) Repeated interaction. Another key feature of accounting negotiations is the repeated interaction between auditors and client-management over a longer period, and not just a one-shot interaction. As indicated by the GSW negotiation model, both parties often have a substantial history of interaction. In Gibbins et al. (2001) and Gibbins et al. (2005), over 80% of the auditor participants indicate an average engagement tenure with their clients of more than three years. The length of the relationship allows both parties to familiarize themselves with one another and to experience a joint history of negotiations. Accordingly, auditors and client-management consider the interpersonal relationship between both parties as an important contextual influence to ACM negotiations (Gibbins et al., 2001, 2005; Beattie et al., 2004).

3. Psychology-based experiments in auditing

3.1 Overview over research method

The experimental negotiation research in auditing adopts its research methodology mainly from economics and from psychology (Libby et al., 2002). Both disciplines are social sciences who explore human judgment and decision-making, but with different experimental methods (e.g. Rabin, 1998; Bazerman et al., 2000; Camerer et al., 2011). Unlike field studies, who often apply inductive reasoning (bottom-up), experimental studies usually follow a deductive reasoning approach (Salterio and Gondowijoyo, 2016). In deductive reasoning, researchers deduce theories or hypotheses from normative assumptions (top down) before they test them experimentally (Malsch and Salterio, 2016). The role of theory is central in experimental research, but differs between economic and psychological experiments.

Both disciplines show a different theoretical foundation. Economic experiments, on the one hand, usually address theories that are “[...] supposed to be general and to apply to anyone facing a decision [...]” (Croson, 2005, p. 138). These general theories are often tested in simple experimental games that require a high degree of internal validity. Psychological experiments, on the other hand, address descriptive theories that “[...] explain outcomes in a relatively small set of situations.” (Croson and Gächter, 2010, p. 128) and “[...] behavior in a somewhat narrow setting.” (p. 128). The theories in psychology often describe more

qualitative patterns of human behavior that may not be portable from a specific situation to a general context. Thus, the role of theory is quite different in economics and psychology.

The distinct role of theory has led to a divergence of methodological techniques in economics and psychology (Friedman and Cassar, 2004). Experiments in both disciplines differ alongside various features. Hertwig and Ortmann (2001), Friedman and Cassar (2004), or Croson (2005), for example, provide an extensive review of the different practices in economic and psychological experiments. In this section, I shortly introduce psychology-based experiments and their methodological characteristics with respect to: understanding of negotiation, subject pool and venue, incentives and repetition, context and script enactment, as well as role of communication. Economics-based experiments are introduced separately in the subsequent section 4.

In (social) psychology, the term negotiation is used in a broad context. Negotiation refers to any situation in which subjects make decisions to settle differences in interests, evaluative problems, or intellectual problems. It does not only refer to a give-and-take bargaining task, but also to conflicts with integrative negotiation potential (e.g. Pruitt, 1983; Harinck et al., 2000; Lewicki et al., 2010). The psychological study of negotiation has a long-standing history with different thematic focuses and disparate research methods (see Bazerman et al., 2000; DeDreu and Carnevale, 2005, for an overview). Laboratory “experiments that entail coding of behavior, and self-report data using surveys are especially popular [...]” (DeDreu and Carnevale, 2005, p. 359). The experimental venue is usually a controlled laboratory, but in-class questionnaire experiments are also common. Psychological studies mainly recruit student-subjects for experimental participation or use a convenient sample of students from psychology classes (Croson, 2005). These studies are further characterized through a one-time conduct of the experimental task without repetition of trials, which does not allow subjects to gain experience in the task. As we will see later, economic experiments show quite different features.

The role of context is very important in psychological experiments, since these experiments test theories that aim to describe human behavior more qualitatively and in specific situations (Croson, 2005; Croson and Gächter, 2010). Participants are usually placed in a contextually rich environment with realistic stimuli. They receive detailed information about a real-world negotiation example and about the negotiation context (Libby et al., 2002; Croson, 2005). For example, Harinck et al. (2000) and Harinck and DeDreu (2004)

ask student-subjects to assume the role of an attorney or of a lawyer. The subjects receive detailed information about five criminal cases and about the possible penalties for each case. Such a setting places participants in a realistic negotiation context. Psychological studies of negotiation provide much context, but “[...] seldom use written instructions and usually are quite casual about describing the task to subjects.” (Friedman and Cassar, 2004, p. 18). A more casual task description leaves participants leeway in the way a solution is obtained and allows subjects to develop their own interpretation of the situation (Hertwig and Ortmann, 2001). For example, in the attorney-lawyer experiment, the subjects have a certain time frame available to agree on an appropriate penalty for each criminal case in a face-to-face discussion (Harinck and DeDreu, 2004). Importantly, subjects are not paid a performance related compensation, but receive a flat participation fee, earn extra credits for their psychology courses, or do not receive a compensation at all (Croson, 2005).

The communication between subjects plays a central role in psychological negotiation studies, both in laboratory as well as in questionnaire-based experiments. In many laboratory experiments, the communication is not limited to quantifying offers and counteroffers as it is common in economic games. The communication is more unstructured in a sense that subjects can communicate face-to-face, through a chat module, or by means of passing written notes (Carnevale and DeDreu, 2005). In Harinck et al. (2000) and Harinck and DeDreu (2004), for example, the face-to-face communication between the attorney and lawyer subjects is coded in integrative and distributive behavior and is used as dependent variable in the study. In more questionnaire-based psychological studies, researchers elicit the planned negotiation strategy of subjects via questionnaires. The participants are introduced to an hypothetical conflict scenario and asked to indicate how they would behave in such a situation. In particular, subjects usually rate their likelihood of employing certain strategies that are presented to them in a communication catalogue or inventory of strategies. This approach does not allow for actual communication between dyads, but places the negotiation strategy in focus of the study (Nauta and Kluwer, 2004). A prominent example is the Rahim Organizational Conflict Handling Inventory (Rahim, 1983), that I present in more detail in an audit context. Table A.1 summarizes the key features of psychological negotiation studies.

The ACM negotiation research does not implement all practices common in (social) psychology, but adopts certain features from it. Experiments in auditing are usually

Table A.1: Psychology-based negotiation research

	Negotiation experiments in (social) psychology	Psychology-based negotiation experiments in auditing
Venue	Campus laboratory / classroom	Outside campus /audit firms' offices
Method	Role-playing / questionnaire-based	Case-study based questionnaires
Subject-pool	(Psychology) students / multi-player	Professional auditors / single-player
Trial repetition	One-time conduct	One-time conduct
Role of context	Important role of context	Important role of (accounting) context
Script enactment	Casual task description	Detailed task description
Incentives	Flat fee / university credits / no pay	No compensation
Communication	Face-to-face / unstructured chat	No communication / structured bargaining

Source: partly based on Hertwig and Ortmann, 2001; Friedman and Cassar, 2004; Croson, 2005.

referred to as *psychology-based*, because the instructions provide subjects with much context and background information about a real-world negotiation example. Researchers elicit “[...] the hypothetical questionnaire-based judgments of experimental participants in a single-person setting using realistic case materials.” (Kachelmeier and King, 2002, p. 221). The adoption of a contextual-rich environment is the key similarity between psychological negotiation studies and psychology-based studies in auditing. An important difference, however, is that accounting negotiations are often complex and require the involvement of experts. Therefore, psychology-based experiments in auditing do not use students as participants, but recruit professional auditors or CFOs as participants. The subjects receive no monetary compensation. Since it is challenging to gather both parties (simultaneously) for participation in a laboratory experiment, the psychology-based studies usually entail venues outside the campus laboratory and employ more case study based questionnaires (Libby et al., 2002; Croson and Gächter, 2010; Charness et al., 2013).

In the following, I present three psychology-based approaches that are common in the ACM negotiation literature and elaborate their opportunities and limitations (see figure A.4 for an overview).

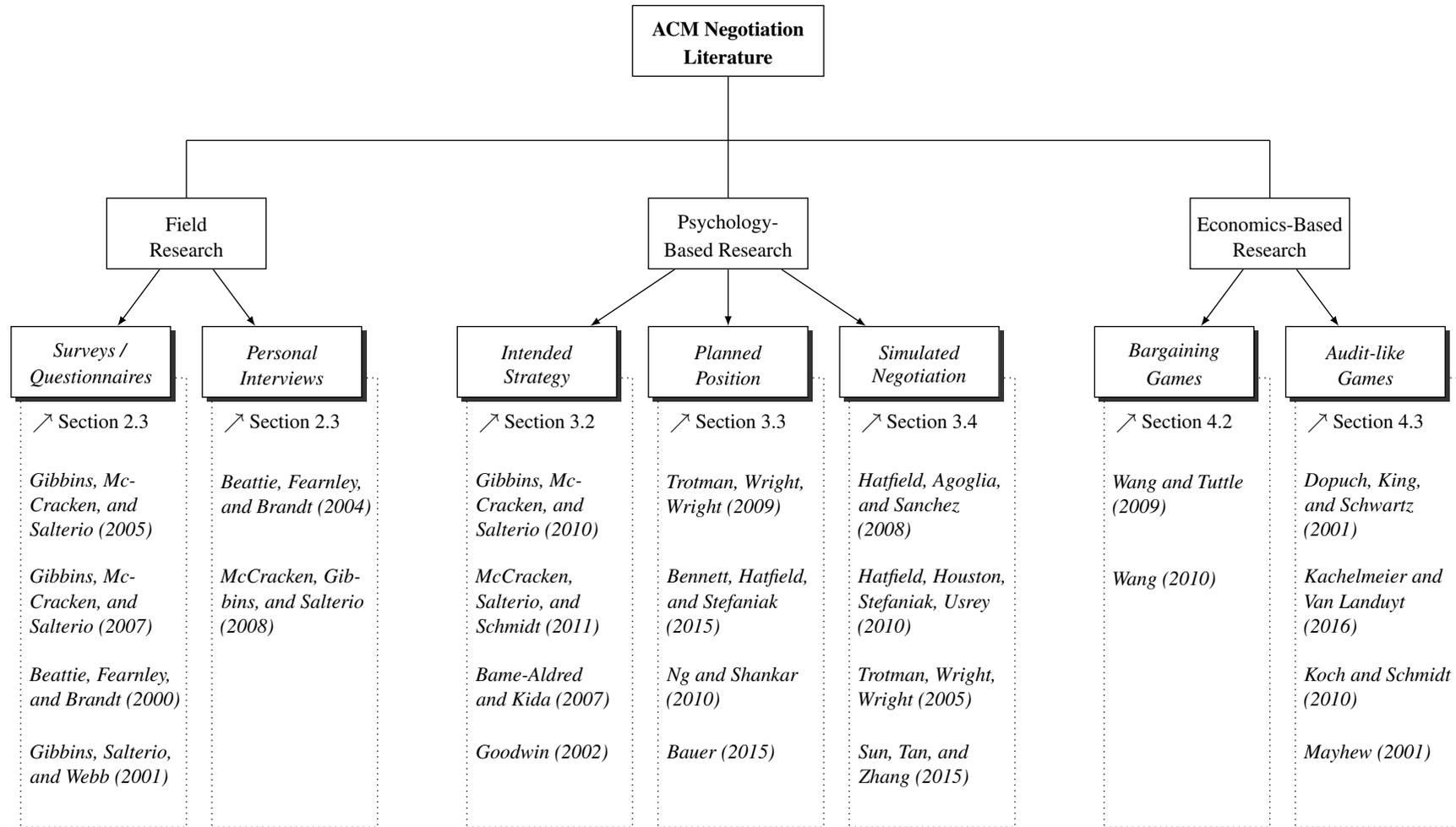


Figure A.4: Accounting negotiation research methods

(Source: own source)

3.2 Intended negotiation strategies

3.2.1 Method

In the intended strategy method, auditors are presented a realistic accounting conflict scenario and are asked to indicate how likely they would apply certain strategies in an upcoming (hypothetical) negotiation about that issue. In more detail, these psychology-based experiments commonly conduct a pen-and-pencil case study with professional auditors as participants. The research instrument, comprised of a case study with adjacent questionnaire, is dispatched by mail (Goodwin, 2002; Bame-Aldred and Kida, 2007) or distributed at the accounting firm annual partners' meeting (Gibbins et al., 2010; McCracken et al., 2011). The case materials introduce auditors to an hypothetical client and provide auditors with background information about the entity. Auditors are asked to assume the role of the audit partner in charge of conducting the statutory audit of that entity.

Each case creates an artificial representation on an accounting conflict. Auditors usually learn about a dispute between client-management and the audit team that arises over a material and subjective accounting issue (e.g. management estimates). A case may explain that the disagreement over the accounting issue leads the audit team to believe that the net-income of the firm is materially overstated. An income-adjusting entry, however, would be potentially problematic since client-management receives a performance-based bonus and is reluctant to record an adjustment. The case materials create conflict scenarios around different estimates, including inventory obsolescence write-downs (Goodwin, 2002), allowances for doubtful accounts (Gibbins et al., 2010; McCracken et al., 2011), or revenue recognition methods (Bame-Aldred and Kida, 2007).

Auditors are then asked to assume an upcoming meeting with client-management in which both parties aim to elaborate the appropriate treatment of the accounting issue and to resolve the differences. A questionnaire instrument is used to capture the self-reported intentions of auditors. Goodwin (2002), Gibbins et al. (2010), or McCracken et al. (2011) ask auditors to rate their likelihood of employing certain strategies in the upcoming (hypothetical) negotiation. The available strategy options are presented in a catalogue of different statements (often referred to as inventory of statements). Each statement in the inventory relates to one strategy of the dual-concern model, e.g. a statement representing

contending strategies ("I would use my ability to qualify JEL's (*author's note: the client*) financial statements to obtain a resolution in my favor" Gibbins et al. (2010, p. 585)) or conceding strategies ("I would make concessions from my position to JEL management" Gibbins et al. (2010, p. 585)).

The inventory of messages has originally been developed with a large sample of business executives to measure interpersonal conflict-handling styles within organizations (Rahim, 1983). Aim was "[...] to construct factorially independent scales to measure the five styles of handling conflict [...]" (Rahim, 1983, p. 369) described in the dual-concern model. The scale is often referred to as Rahim Organizational Conflict Inventory-II or ROCI-II. It comprises 35 different statements that each relate to one of the five negotiation strategies.⁵ Soon after its introduction, the ROCI-II found its way out of the organizational research and has since been applied in various different fields, including social psychology and auditing. For example, Goodwin (2002), Gibbins et al. (2010), and McCracken et al. (2011) use the Rahim inventory to measure the five styles of conflict handling (avoiding, conceding, contending, compromising, integrative). The original inventory of tactics is slightly modified such that the wording applies to an ACM negotiation context.

3.2.2 Opportunities

- Auditor participants enable realistic negotiation task
- Consideration of distributive and integrative strategies
- Case primes allow consideration of third parties

One salient benefit of this research instrument is the opportunity to include realistic accounting conflict scenarios. An important characteristic of ACM negotiations is the judgmental and often complex accounting issue (Beattie et al., 2000; Gibbins et al., 2005) that requires task-specific knowledge and well-qualified personnel. If researchers are interested in "[...] how subjects' use of some type of knowledge learned in the real-world causes treatment effects, they must use subjects with requisite knowledge." (Libby et al., 2002, p. 802). The auditor participants in the respective studies match these requirements and represent an appropriate subject pool given the research aim. The involvement of

⁵ Example statements include "I try to find a middle course to resolve an impasse" (compromising), "I often go along with the suggestions of my superior" (conceding), "I use my authority to make a decision in my favor" (contending), "I try to stay away from disagreement" (avoiding), or "I try to integrate my ideas with those of my superior to come up with a decision jointly" (integrating) (Rahim, 1983, p. 371-372).

experts allows researchers to reproduce a realistic conflict scenario and to learn from the real-world negotiation experience of professional subjects. The case materials therefore usually introduce a practical accounting issue that requires the judgment of auditors and leaves scope for a range of acceptable outcomes. For example, the case in Gibbins et al. (2010) informs auditors that the accounting staff of the client estimates the amount of doubtful accounts differently than the audit team does, and that these different estimates may result in a material overstatement of the net income.

Another advantage of this research instrument is that the inventory of strategies allows for distributive and integrative types of conflict-handling. A broad action space is important, since ACM negotiations often have distributive character, but also show integrative potential (e.g. Gibbins et al., 2001, 2005; McCracken et al., 2011). The ROCI-II inventory measures the auditor's intended use of the five negotiation strategies according to the dual-concern model. The questionnaires in Gibbins et al. (2010) and McCracken et al. (2011) include distributive items (contending, conceding, compromising) as well as several integrative items (e.g. problem solving, expanding the problem agenda). These integrative items are in line with Kersten (2001), such that they expand the initial outcome space through new attributes or new alternatives. For example, auditors can choose integrative messages: "I would collaborate with JEL management to come up with a new solution acceptable to both of us" (Gibbins et al., 2010, p. 585) or "I would try to work with JEL management to develop a proper understanding of this issue in the context of other issues" (Gibbins et al., 2010, p. 585). Auditors are asked to rate how likely they would employ each of these different strategies in an upcoming negotiation with client-management.

Accounting case studies also have the potential to integrate the third party perspective through case primes. The third party perspective is a distinctive feature of ACM negotiations. The auditor must be seen as an independent gatekeeper who has a statutory and ethical responsibility to protect the interests of third parties (e.g. shareholders or investors) in accounting negotiations (Gibbins et al., 2001). Case studies provide researchers the opportunity to prime the auditor's moral obligation to negotiate on behalf of third parties. For example, the case instructions could explicitly ask auditors to ensure a high quality outcome for investors and to mitigate the conflict of interest between investors and the audited entity. Importantly, this technique has not been used in prior studies, who often create an one-dimensional conflict of interest between auditors and the hypothetical client,

but who do not prime the third party perspective (Gibbins et al., 2010; McCracken et al., 2011). Although priming experiments are quite common in psychology, they are also associated with certain disadvantages (e.g. demand effects, replication issues, several stimuli required). These disadvantages limit the potential to induce mental frames on auditors.

3.2.3 *Limitations*

- Potential bias in the self-reported intentions
- Symmetric disclosure of information
- Lack of interchange between auditors, clients (and third parties)
- History of interaction relies on case primes

The use of conflict-handling inventories has some considerable limitations, too. This research method elicits the self-reported intentions of auditors in an hypothetical negotiation setting. Auditors do not actually participate in accounting negotiations, but need to imagine how they would behave in a given conflict scenario. On the one hand, the planned usage of negotiation strategies may be a sound indicator for the actual choices auditors would make in real negotiations (McCracken et al., 2011). On the other hand, the disclosures may also suffer from a potential self-serving bias and from the experimenter demand effect (Goodwin, 2002). The auditor participants may have clues which negotiation strategies constitute seemingly appropriate choices and respond in an overly favorable manner. Especially integrative strategies “[...] appear to be more agreeable in an auditing context.” (Goodwin, 2002, p. 387). Integrative strategies may also stand out as salient option in Gibbins et al. (2010) and McCracken et al. (2011), since the majority of messages in their conflict-handling inventories (10 out of 25) are integrative strategies.

The symmetric disclosure of information is an additional limitation of that research instrument. The case descriptions often provide auditors with comprehensive background information about the hypothetical audit client and with detailed information about the underlying accounting issue. Auditors are usually informed about the preferred accounting treatment of their clients and about the proper financial reporting under the applicable standards (Gibbins et al., 2010; McCracken et al., 2011). Although the case descriptions cannot cover all possible details about the accounting issue, the auditor is not given the impression that the client has an informational advantage or internal information available

that the auditor cannot access. Information asymmetry, however, is an important feature of ACM negotiation that increases the tension between the negotiators and allows for different beliefs (Gibbins et al., 2001). Since the implementation of information asymmetry in a single-player case study is challenging, researchers may find other ways to increase the tension in such settings. For example, a complex and judgmental accounting issue might likewise lead to different beliefs about the proper solution of that issue, which yields a similar tension between the negotiators without an asymmetry in information.

Another important limitation of this research approach is the lack of interchange between subjects. A key feature of ACM negotiation is the dynamic process of conflict-resolution. Accounting negotiations occur frequently, often last over longer periods, or include several rounds of negotiations. Auditors and client-management act and counteract, and they directly experience the consequences of their actions (Gibbins et al., 2001; Beattie et al., 2004). A questionnaire instrument does not allow for any interaction between subjects. It includes the auditor as single participant and elicits the hypothetical judgments of auditors. This research approach creates an artificial and static negotiation framework, but does not consider the dynamic and interactive environment of ACM negotiations (Bame-Aldred and Kida, 2007; Gibbins et al., 2010). The lack of interchange in questionnaire studies is also problematic, because auditors do not experience the consequences of their actions. Potential consequences for managers and third parties (such as investors) remain hypothetical and are likely to be unrecognized or disregarded by the auditor.

A case study instrument also prevents auditors and clients to experience a joint history of interaction. In practice, both parties usually repeatedly interact over a longer period and share a substantial history (Gibbins et al., 2001, 2005; Beattie et al., 2004). Accounting case studies do not facilitate any interpersonal interaction and do not allow subjects to experience a common history. Some studies aim to simulate a prior history between auditors and clients through case study primes. These case primes describe the nature of the prior relationship between both parties. For example, Goodwin (2002) asks auditors "[...] to assume that they had been the partner in charge of the audit for the last five years and that they had had a good working relationship with the finance director up to the present." (Goodwin, 2002, p. 388). This technique induces a common history between auditor participants and hypothetical clients. Given the disadvantages of case primes, it

is questionable whether this approach creates equally strong incentives compared to an experienced joint history.

3.3 Planned negotiation position

3.3.1 Method

Other psychology-based studies analyze the negotiation position that auditors plan on taking during an upcoming (hypothetical) negotiation (e.g. Trotman et al., 2009; Hatfield et al., 2011; Bennett et al., 2015; Backhof et al., 2016). These experiments do not capture the intended negotiation strategy of auditors, but emphasize a more quantitative aspect of the negotiation process. The research focus is on how auditors plan on approaching their clients' pre-negotiation (e.g. initial negotiation offer, negotiation goal) and how auditors assess the accounting outcome post-negotiation (e.g. acceptance of client-preferred method, audit adjustments). While these experimental studies differ in details, they all have characteristics in common: the case materials introduce an hypothetical audit client, create an artificial representation of an accounting conflict, and elicit the quantitative position of auditors through an adjacent questionnaire.

The procedure is similar to the procedure in the intended strategy approach (see previous section) and most easily explained using one accounting case as example. The case in Bennett et al. (2015), for instance, asks professional auditor participants to assume the role of an audit manager in charge of conducting the statutory audit of an hypothetical client. The materials contain background information regarding the audit firm as well as the audited entity. Auditors learn about a judgmental accounting issue that arose during the current year audit. In particular, the case explains that the audit team made an independent assessment of the allowances for obsolete inventory and now believes that the client-reported earnings are overstated by a material amount. Given the disagreement, auditors are informed that there would be a meeting with the client-management to discuss the issue and to convince the client of an income-decreasing adjustment (Bennett et al., 2015). In scenarios like this, auditors are then asked to complete different questionnaire instruments, described as follows.

(a) *Goal, offer, and limit.* Trotman et al. (2009), Brown-Liburd and Wright (2011), or Bennett et al. (2015) capture the planned negotiation position of the auditor through different pre-negotiation measures. In particular, the case instructions require auditors

to define a negotiation goal, to set a negotiation limit, and to quantify an initial offer in preparation for the upcoming negotiation. The negotiation goal reflects the amount of the income-adjusting entry that auditors hope to convince the client to accept. The negotiation limit defines the lowest threshold of the adjustment that the auditor is willing to issue an unqualified audit opinion for. The initial offer represents the first counteroffer that auditors intend to open the negotiation with if they were to negotiate with clients (Bennett et al., 2015). These pre-negotiation measures serve as dependent variables in the experiment.

(b) Proposed audit adjustments. Ng and Tan (2003), Fu et al. (2011), Hatfield et al. (2011), or Bauer (2015) elicit the final position of auditors - that is the position that auditors plan on taking on towards the end of negotiations - through certain post-negotiation measures. These experiments likewise introduce an accounting conflict, but ask auditors to assume that they already "[...] had few rounds of discussion and negotiations with the client's manager." (Fu et al., 2011, p. 232) or "[...] that after a few rounds of discussions and negotiations, [...] management has reiterated its strong reservations about the proposed audit adjustment [...]" (Ng and Tan, 2003, p. 803). The case materials then require auditors to quantify an audit adjustment that they believe will be booked as an outcome of the negotiation. The proposed audit adjustments are post-negotiation measures that reflect the final position of the auditor.

(c) Acceptance of client-preferred reporting. Chang and Hwang (2003), Kadous et al. (2003), Ng and Shankar (2010), or Backhof et al. (2016) measure the planned negotiation position of auditors differently. Their case studies introduce conflict scenarios that usually center around the appropriate treatment of an accounting issue, such as a questionable lease classification or a controversial revenue-recognition method. Auditors are informed that the client prefers the rather aggressive, income-increasing treatment of the accounting issue over the conservative, income-decreasing reporting alternative. Following the case description, auditors are asked to make a binary decision whether they would accept or oppose an aggressive reporting strategy during an upcoming negotiation. Auditors also need to rate the appropriateness of the client-preferred treatment under GAAP (e.g. in Kadous et al., 2003) on a multi-point Likert scale.

3.3.2 Opportunities

This research instrument shows structural similarities to the “intended strategy” approach presented previously. It likewise uses professional auditors as participants and creates an artificial representation of an accounting conflict in a case study. Given these similarities, some opportunities and limitations identified in the previous section also apply in this context. I list the items again to provide a comprehensive overview, but do not go into further detail to avoid repetition:

- Auditor participants enable realistic negotiation task (refer to section 3.2)
- Case primes allow consideration of third parties (refer to section 3.2)
- Focus on distributive bargaining character of negotiations

One salient benefit of the approach is that the quantitative negotiation position of the auditor allows a narrow focus on the distributive bargaining character of accounting negotiations. An important feature of ACM negotiations is that auditors and client-management often anticipate an in-between negotiation solution and tend to view negotiations as a distributive task (Gibbins et al., 2001, 2005). Distributive negotiators aim to find solutions to a problem within a fixed and pre-defined outcome space. In the present case studies, auditors are asked to quantify their negotiation position within a tight scope. They must decide to accept or to oppose the client-preferred reporting, or are asked to propose an audit adjustment within a pre-defined range of possible adjustments. In other words, the auditor is required to find a distributive negotiation solution in a fix outcome space that is defined by the experimenter. Although these studies prevent integrative solutions (see limitations), they emphasize the distributive character of negotiations (Gibbins et al., 2001, 2005, 2007).

3.3.3 Limitations

- Symmetric disclosure of information (refer to section 3.2)
- Lack of interchange between auditors and clients (refer to section 3.2)
- Distributive character reduces integrative potential
- Sensitivity of self-reports to experimenter demand effects
- Measures inadequately reflect the dynamics of negotiations

Closely related to the distributive character of the research instrument is the lack of integrative potential. An important implication of my literature review is that ACM

negotiation research should not reduce the action space to purely distributive solutions, but also allow for integrative types of conflict-handling. This suggestion is based on Beattie et al. (2000, 2004) and Gibbins et al. (2001, 2005), who find that auditor-client dyads often elaborate solutions jointly and look for new solutions. The outcome space in the respective studies is pre-defined and leaves no room for alternative "out of the box" solutions. Auditors cannot restructure the outcome space by changing the dimensionality of the decision alternatives or by adding new decision alternatives. This limitation is also described in a similar way by Backhof et al. (2016), who emphasize that "[...] when there are only two ways to account for a transaction, it is likely that auditors will encounter settings where more than two reasonable alternatives exist." (Backhof et al., 2016, p. 10) in practice.

In addition, the self-reported negotiation positions are sensitive to potential demand effects. Planned behavioral measures are potentially biased, because auditors may identify seemingly appropriate choices and respond accordingly. Many case descriptions associate negotiation positions that are close to the client-preferred reporting with negative connotations. For example, if a case description includes "[...] an explicit recommendation that the client should use the most appropriate method, this should further tighten the reasonableness [...] to accept a less appropriate client-preferred method [...]" (Ng and Shankar, 2010, p. 1747). These negative connotations increase the experimenter demand effect further and may bias the judgment of auditors to the more salient and less aggressive financial reporting option. The criticism is similarly described in the previous section, where integrative strategies in the inventory of messages may appear more appropriate compared to other strategies (Goodwin, 2002).

The planned negotiation position of auditors also inadequately reflects the dynamic and interactive aspect of ACM negotiations. As noted before, accounting negotiations are characterized through a frequent exchange between auditors and clients. During the negotiation process, both parties may change their negotiation position in response to the action of their counterparty (Gibbins et al., 2001; Beattie et al., 2004). A drawback of the research instrument is that it often elicits a single negotiation position (e.g. quantification of an audit adjustment). Such static measures do not consider that auditors may change their negotiation approach over time, and do not properly account for the iterative character of negotiations. Another limitation of the research instrument is that it relies on hypothetical

judgments of auditors. "Measuring actual negotiation outcomes would be an improvement." (Fu et al., 2011, p. 236) to the ACM negotiation literature.

3.4 Simulated negotiation process

3.4.1 Method

The two research methods that I introduced so far are both questionnaire instruments that capture the intended strategy or quantify the planned position of auditors. In this section, I introduce a different and more dynamic approach. This approach, too, uses professional auditors as participants in accounting case studies. However, it does not elicit hypothetical judgments through questionnaires, but simulates an actual negotiation. Auditors first receive an accounting conflict scenario similar to the ones presented in previous sections, and are then asked to resolve the issue virtual with a computer-operated client (e.g. Hatfield et al., 2008), face-to-face with a confederate (Trotman et al., 2005), or via e-mail with the researcher in the role of a client (Sun et al., 2015). I describe the different approaches in more detail as follow.

(a) *Computer-operated client.* One way to simulate ACM negotiations experimentally is the use of a computer-operated client. This approach is followed by Hatfield et al. (2008), Hatfield et al. (2010), and Brown and Johnstone (2009), who simulate negotiations via the internet or offline using a software application. A common starting point in these studies is a case script that informs auditors about a subjective accounting issue which they are about to discuss with client-management. Before the negotiation begins, auditors are asked to provide their expectations regarding the negotiation outcome and to indicate their own preferences (e.g. goal, limit). Subsequently, auditors engage in a maximum of two (Hatfield et al., 2008), five (Hatfield et al., 2010), or ten (Brown and Johnstone, 2009) rounds of negotiation with a computer-simulated client. Each round begins with a monetary proposal by the computer-operated client (e.g. amount of an adjusting entry), which the auditor can either accept or which the auditor can reject and propose an alternative amount. The procedure is illustrated in the following example.

In Hatfield et al. (2008), for example, auditors are informed about an adjusting entry of the warranty expenses that the audit team has suggested to the client. The participants are then asked to convince the client of the audit team's position and to engage in two rounds of negotiation with a computer-simulated client who is referred to as "difficult and

protracted" (Hatfield et al., 2008, p. 1199). The first negotiation round begins with an offer of the computer-simulated client, who is only willing to post a very small adjustment in the warranty expenses. The auditor can either accept that offer or make a first counteroffer by quantifying an alternative adjustment. In the second negotiation round, the client starts another attempt to gain concessions from the auditor and to lower the audit adjustment. The client is programmed to always meet the auditor halfway. Again, the auditor can either accept the offer or propose a second counteroffer which will ultimately be posted in the books. The dependent variables in the experiment are the counteroffers in both negotiation rounds as well as the pre-negotiations measures.

(b) *Communication via e-mail.* Sun et al. (2015) employ another approach to simulate ACM negotiations experimentally. In their study, auditor participants resolve an accounting issue with an hypothetical audit client via e-mail. At the beginning of the experiment, the researchers e-mail the case materials to the auditors at an agreed upon time. The case informs auditors about a disagreement with an hypothetical client regarding the provision for impairment of fixed assets. Aim of the auditor is to convince the client of a certain incoming-decreasing audit adjustment. The auditors are asked to enter into exactly four rounds of negotiation with the client. In each of the four negotiation rounds, the researchers (in the role of the client) propose an audit adjustment to the auditor via e-mail. The auditors respond to these offers by quantifying a counterproposal. The concession strategy by the client is pre-defined and does not vary between participants. The primary dependent variables are the counterproposals of the auditor and the final concession of the auditor in the last round.

(c) *Face-to-face.* A more unstructured way to simulate negotiations is a face-to-face discussion between auditors and a confederate playing the role of a CFO. This approach is used by Trotman et al. (2005). The case material briefly introduces an hypothetical audit client whose raw material is potentially obsolete. Aim of the auditor is to ensure that the financial statement of the client is free from material misstatements. The auditors are instructed to negotiate with the client about an appropriate amount of inventory write-down. Two different confederates slip into the role of the client. The first confederate is a senior business analyst who has extensive experience as an audit manager. The second confederate is a student with first experience in auditing. Both confederates are instructed to "[...] negotiate a writedown that was as low as possible [...]" (Trotman et al., 2005,

p. 357). Each auditor negotiates face-to-face with the first confederate in a 20 minute session, and negotiates the same issue afterwards again with the second confederate in a similar session. The agreed-upon inventory writedown serves as main dependent variable in the experiment.

3.4.2 *Opportunities*

- Auditor participants enable realistic negotiation task (refer to section 3.2)
- Case primes allow consideration of third parties (refer to section 3.2)
- Simulations account for the dynamic aspect of ACM negotiations
- Auditors engage in an actual negotiation with a counterparty

Simulating ACM negotiations virtually with a computer simulated client, personally with a confederate, or electronically via e-mail has some considerable opportunities and limitations. A main criticism that I previously raised against questionnaire instruments is the lack of interaction among subjects. Simulating negotiations has the potential to address this concern. The research instruments take into account that auditor-client interactions are “[...] iterative strategic endeavors [...]” (Fu et al., 2011, p. 236). In particular, the interactive settings allow auditors to negotiate with their counterpart over several rounds. Both parties can adopt different positions during the negotiation process and react to the decision of the other party. For example, Hatfield et al. (2010) simulate ACM negotiations across five rounds which allows auditors to propose different counteroffers throughout the negotiation process. Such a dynamic process is an important characteristic of accounting negotiations.

Another opportunity of this research instrument is the implementation of an actual negotiation. Questionnaire-based studies require auditors to assume an upcoming negotiation with client-management and they only elicit the hypothetical judgments of auditors. In contrast thereto, experiments that simulate ACM negotiations include the client as a physical (Trotman et al., 2005) or electronic (Hatfield et al., 2008; Brown and Johnstone, 2009) second player. Auditors negotiate with their counterparty and actual make decisions during the negotiation process. A benefit of this approach is that auditors experience the consequences of their actions since their decisions directly affect the negotiation outcome. For example, the auditors in Hatfield et al. (2008) ultimately decide what amount of warranty expenses will be posted in the client’s books. Actual negotiations, compared to the questionnaire-based approaches, better capture the strategic richness of ACM negotiations.

3.4.3 Limitations

- Symmetric disclosure of information (refer to section 3.2)
- Controlled framework without repetition of trials
- Distributive character reduces integrative potential

A limitation of the research instrument is that the interaction between auditors and client-management is embedded in a controlled framework. The framework is controlled, because the (programmed) client responds with pre-defined counteroffers (Brown and Johnstone, 2009; Sun et al., 2015) or adapts a fix concession strategy (Hatfield et al., 2008, 2010). For example, the computer operated client in Hatfield et al. (2008) always meets the auditor halfway between both parties' positions. Each auditor in Sun et al. (2015) receives the same pre-defined concessions from their clients, independent of the auditors' choices. These uniform actions increase experimental control, but they also make the negotiation more mechanistic. In practice, both parties are more flexible and may "[...] vary their negotiation approaches as a function of the strategies used by the counter-party." (Sun et al., 2015, p. 1505). The framework is also controlled, because "[...] the mechanistic nature of simulated negotiations." (Hatfield et al., 2010, p. 1664) leaves no room for repeated interaction. The negotiation ends with an agreed-upon value or upon completion of the last negotiation round. These experiments are one-shot games, which do not allow for a repeated interaction or for a joint history between subjects - important features of ACM negotiation (Gibbins et al., 2001, 2005).

Another drawback is the reduced potential for integrative solutions. The experimental instructions define a distributive negotiation task for auditors and clients. In these studies, both parties negotiate over a single accounting issue and have opposing preferences for the outcome. Trotman et al. (2005) for example, instruct auditors to negotiate conservative solutions (high write-downs) and clients to achieve an aggressive accounting treatment (low write-downs). Such settings do "[...] not allow for consideration of multiple issues that would enable integrative solutions." (Brown and Johnstone, 2009, p. 86). In addition, the experimental framework also dictates a distributive negotiation approach. Auditors are asked to quantify a proposal within a pre-defined range of possible outcomes (Hatfield et al., 2008; Brown and Johnstone, 2009; Sun et al., 2015). These specifications leave

no room to explore alternative solutions or to add new attributes of the conflict, but force auditors to negotiate distributive solutions in a fixed outcome space.

4. Economics-based experiments in auditing

4.1 Overview over research method

The negotiation research in auditing also borrows its research methodology from economics. In economics, the term negotiation usually refers to a distributive bargaining problem in which “two players have to reach an agreement on the partition of a pie of size [...]” (Rubinstein, 1982, p. 97). Prominent bargaining games include the ultimatum game (Güth et al., 1982), dictator game (Forsythe et al., 1994), or trust game (Berg et al., 1995), and multiple variants of them (see Camerer, 2003 or Kagel and Roth, 2016 for an overview). In the two-player ultimatum game, for instance, a proposer first receives a fix endowment and offers a certain share of the pie to an anonymous responder, who then decides to accept or reject the ultimatum. These bargaining games are usually conducted in a controlled laboratory venue and with student-subjects as participants. Another characteristic of economic games is the repetition of trials that allows subjects to gain experience in the bargaining task.

The role of context is less important in economic bargaining games compared to its role in psychological studies. Since economists test theories that are “[...] supposed to be general and to apply to anyone facing a decision [...]” (Croson, 2005, p. 138), they use little context to avoid potential demand effects and to hinder subjects from associating the laboratory game with a certain real-world task outside. A context-neutral frame provides subjects with less rich information and does not include realistic stimuli in the operationalization (Libby et al., 2002; Croson, 2005). In contrast to psychological experiments, economic bargaining games include less context, but more detailed instructions about the experimental procedures. These instructions explain subjects the experimental task, explicitly state the action choices, and inform subjects about the monetary consequences of their actions (Hertwig and Ortmann, 2001; Friedman and Cassar, 2004). The latter is important, since economic bargaining games commonly include a salient incentive structure that associates the decisions of subjects with certain monetary consequences. In other words, the participants usually receive a performance-related compensation in cash (Hertwig and Ortmann, 2001; Shadish et al., 2002; Friedman and Cassar, 2004; Croson, 2005).

In early bargaining games, the communication between subjects is limited to proposing an offer, accepting or rejecting the ultimatum, or making a counteroffer (e.g. Güth et al., 1982; Binmore et al., 1985). Economists, however, soon extended these tacit games by a more explicit communication between subjects (Crawford, 1998). In some games, subjects may engage in cheap talk “[...] by sending nonbinding messages either before or during the exchange of binding offers and counteroffers.” (Crawford, 1990, p. 216) and with no direct payoff implication of the message. For example, Charness and Dufwenberg (2006) employ a one-shot trust game in which the second-movers may communicate their non-binding intended actions to the first-mover. In bargaining, these messages have two different roles: they allow subjects to signal private information to the other party, or help subjects to coordinate their expectations (Crawford, 1990). The focus in economics, however, is often not on the bargaining process and not on the communication between subjects (see Roth, 1995 and more recently Kagel and Roth, 2016 for an overview), but on “[...] the efficiency and distribution properties of the outcome of bargaining.” (Muthoo, 1999, p. 2). Thus, the role of communication is less important than in psychological studies. Table A.2 summarizes the key features of experimental economics studies.

Table A.2: Economics-based negotiation research

	Negotiation experiments in economics	Economics-based negotiation experiments in auditing
Venue	Campus laboratory	Campus laboratory
Method	Bargaining games	(Abstract) audit-like games
Subject-pool	Students / multi-player	Students / multi-player
Trial repetition	Repetition of task	Repetition of task
Role of context	Minor role of context	Minor role of (accounting) context
Script enactment	Detailed task description	Detailed task description
Incentives	Salient and performance-related pay	More complex audit-specific payoffs
Communication	Offers and counteroffers / cheap talk	Structured and unstructured chat

Source: partly based on Hertwig and Ortmann, 2001; Friedman and Cassar, 2004; Croson, 2005.

The economics-based negotiation studies in auditing are usually conducted inside the campus laboratory and with student-subjects as participants. The experiments are framed context-neutral and allow subjects to earn a performance-based compensation in a stylized negotiation task (Libby et al., 2002; Croson and Gächter, 2010; Charness et al., 2013).

One difference between the bargaining games in economics and the ones in auditing is the focus of research. While economic experiments focus strongly on the bargaining outcome, an additional focus of the ACM negotiation literature lies on the negotiation strategy of subjects, as in Wang and Tuttle (2009). Another difference between both lies in the incentive structure. The economics-based negotiation studies in auditing usually have a more complex incentive structure than the bargaining games in economics. The payoffs in auditing aim to capture various influences that auditors face in practice, e.g. litigation risk, financial dependency, audit costs (Kachelmeier and King, 2002). In the following, I review the experimental economics negotiation literature in auditing and elaborate the key opportunities and challenges for the ACM negotiation research. I discuss two different experimental approaches, accounting bargaining games and audit-like games.

4.2 Accounting bargaining games

4.2.1 Method

Economics-based laboratory experiments are a common research method in auditing, however, prior literature seldom uses them to study ACM negotiations. Two notable exceptions hereto are Wang and Tuttle (2009) and Wang (2010), who directly investigate accounting negotiations via laboratory bargaining games. In their experiments, student-subjects are randomly assigned to either one role as auditor or as client. In pairs of two, auditor and client dyads bargain over the fair value of an asset. The fair value is defined as the subjects' best estimate of the actual asset value. The actual asset value is drawn from a certain range of possible values following a probability distribution. In Wang and Tuttle (2009), the probability distribution of the asset is common knowledge to both parties but the exact asset value remains unknown. In Wang (2010), the probability distribution is not communicated, but auditors and clients are informed about the actual asset value upon completion of each negotiation period. Thus, the participants in both experiments have incomplete but symmetric information about the bargaining object.

The experimental procedures include multiple rounds of negotiation. In each negotiation round, the client moves first and proposes a fair value to the auditor. The auditor moves next and can either accept the submitted proposal or can negotiate another fair value with the client. In contrast to the traditional bargaining games in economics, the communication in Wang and Tuttle (2009) and Wang (2010) is not limited to proposing an offer and making

a counteroffer. Both parties can engage in unstructured communication, which means they are allowed to communicate freely with one another by typing text messages back and forth through a chat module. Clients can revise their original proposals and submit a new asset value at any point. Each negotiation round, however, is limited in time. A round ends with a mutual agreement when the auditor accepts an asset value proposed by the client, but results in a negotiation impasse when the auditor does not accept any submitted value before the time runs out. In case the negotiation fails, the client is paired with a new auditor in the subsequent round (Wang and Tuttle, 2009; Wang, 2010).

Auditors and clients receive a different performance related compensation. The payoff of the client depends on whether or not the auditor accepts a fair value before the time runs out. In case the round ends with a mutual agreement, clients receive the negotiated fair value. If the round ends in an impasse, clients receive a mere fraction of the actual asset value. Thus, clients have a monetary interest to reach an agreement on a high asset value. Auditors, in turn, receive a flat audit fee in each negotiation round independent of whether the negotiation fails (impasse) or succeeds (agreement). However, if the agreed-upon fair value is lower than the actual value of the asset, a penalty is imposed on the auditor. The penalty reduces the flat audit fee proportional to the difference between the accepted fair value and the actual asset value (Wang and Tuttle, 2009; Wang, 2010). Auditors have an interest to negotiate a value close to the underlying fair value.

The payoff structure has another twist for auditors. The negotiated outcome in one round also affects the payoff in the subsequent negotiation round. If the negotiation succeeds, auditors remain employed and continue to negotiate with the same client in the following round. In case the negotiation fails with an impasse, however, new auditor-client dyads are formed in the following round and auditors face the risk of being unemployed. Wang and Tuttle (2009) and Wang (2010) implement an experimental setting with competition among auditors, such that there is an excess of one auditor in each negotiation round who is not assigned to a client and who remains unemployed. Unemployed auditors receive no payoff. Thus, if the negotiation fails, auditors still receive their audit fee in the current round, but they face the risk of being unemployed at zero pay in the subsequent round.

The dependent measures differ between both studies. Wang (2010) focuses on the agreed-upon asset values as well as on the number of agreements reached between auditors and clients. These two dependent variables reflect post-negotiation measures of the

negotiation outcome. Wang and Tuttle (2009) place a stronger focus on the negotiation process itself. Their primary dependent variable is the negotiation strategy of auditors and clients. The communication transcripts are coded and each written message is assigned to one negotiation strategy. The coding scheme is based on the dual-concern framework for conceptualizing conflict-handling styles. The compromising negotiation strategy is dropped in this scheme, such that each message is assigned to one of the four remaining strategies according to the dual-concern model: avoiding, conceding, contending, and integrative.

4.2.2 *Opportunities*

- Dynamic negotiation process and repeated interaction
- Unrestricted communication enables integrative negotiation
- Two-player game allows for information asymmetry

The economics-based bargaining games by Wang and Tuttle (2009) and Wang (2010) provide some opportunities for the ACM negotiation research. One benefit of their research approaches is the dynamic and multi-period negotiation framework. Auditors and clients exchange messages, information, and asset values freely through a chat module. This setting allows them to apply different negotiation strategies within one negotiation round and to react to the proposal of their counterpart. It creates a dynamic negotiation process, which is an important feature of ACM negotiations (Gibbins et al., 2001, 2005). In addition, the bargaining games also allow for repeated interaction among subjects. Depending on the experimental condition, auditors and clients may remain in the same group throughout several rounds and negotiate with another repeatedly. The maximum number of rounds is 18 and 20 in Wang and Tuttle (2009) and Wang (2010) respectively. The repeated interaction allows subjects to experience a joint history of negotiation. It embeds the negotiation process between the prior interaction and next interaction, as in the GSW negotiation model (Gibbins et al., 2001).

Another benefit of this research instrument is the distributive and integrative negotiation potential (Wang and Tuttle, 2009; Wang, 2010). Auditor-client dyads (pairs) can negotiate freely with one another by typing messages set and forth. "The rich message-space and the real-time nature of unstructured negotiation create a larger set of strategies." (Wang and Tuttle, 2009 p. 223; see also Davis and Holt, 1993) and allow both parties to apply

distributive and integrative negotiation strategies. Although the negotiation outcome is limited to a fix range of asset values, the unrestricted communication allows auditors and clients to jointly elaborate mutually beneficial solutions. Both parties can identify and exchange their different interests in the negotiation and restructure the outcome space according to Kersten (2001). Wang and Tuttle (2009) observe both the use of integrative strategies (e.g. integrative client: “we should try to get the right value so we both win” p. 241) as well as distributive strategies (e.g. contentious auditor: “in your dream! I’m not going to accept” p. 241). A potential restraint of that research instrument, as discussed below, is that the unrestricted communication requires coding of the negotiation transcripts.

A two-player negotiation task further enables researchers to implement information asymmetry between subjects. Importantly, this potential is not used by Wang and Tuttle (2009) and Wang (2010). Their auditor-client dyads have incomplete information about the actual value of the negotiation object, but there is no information asymmetry between the two negotiating parties. The authors assume that auditors have already performed “[...] additional audit tests to reduce uncertainty.” (Wang and Tuttle, 2009, p. 240) and have collected further audit evidence “[...] so that the client has no private information.” (Wang and Tuttle, 2009, p. 240). Information asymmetry, however, is important, because it leads to different beliefs among subjects and prevents the negotiation task from becoming a pure guessing game (Gibbins et al., 2001). Recall that psychology-based experiments can induce different beliefs among subjects more indirectly through a complex and judgmental accounting issue. Economics-based experiments do not have this option available, since they create an artificial and simple bargaining task. The research instrument, however, provides the opportunity to directly implement information asymmetry in the bargaining task. Researchers could provide both parties with different information about the true asset value and thereby yield different believes among subjects.

4.2.3 *Limitations*

- Interactive and unstructured setting adds heterogeneity
- Message-coding challenges the integrative negotiation potential
- Incentive structure neglects third party perspective

A limitation of the research instrument is the unstructured experimental setting. The term unstructured does not imply a lack of control over the experimental manipulations, but

refers to a negotiation process with only few limitations on the subjects' actions (Wang, 2010). Auditor-client dyads can communicate freely through a chat module and may exchange new proposals or revise their proposals at any point during the negotiation. On the one hand, the unrestricted communication allows for an individual set of distributive and integrative negotiation strategies. This autonomy also fosters a highly interactive and more natural negotiation setting (Wang and Tuttle, 2009; Wang, 2010). On the other hand, the unstructured setting also adds heterogeneity to the setting. Carryover or learning effects might compound the experimental results and are a potential threat to the internal validity of the experiment (Charness et al., 2012). Taken together, the unstructured setting has its benefits but also its limitations in the context of ACM negotiation.

Another drawback of Wang and Tuttle (2009) and Wang (2010) is that the free communication requires coding of the negotiation transcripts. Each message sent is assigned to one negotiation strategy based on a pre-defined coding scheme. The coding of messages has two important limitations. First, it is a factor of uncertainty to the experimental results since the coding includes judgment and is difficult to reproduce. Second, the coding scheme in Wang and Tuttle (2009) does not differentiate between compromising and integrative negotiation strategies but merges both strategies into a single category. The authors describe integrative strategies as "[...] 'win-win' solution to the negotiation [...]" (Wang and Tuttle, 2009, p. 226) but also as "[...] mutually compromising, 'fair' agreement that is somewhere between the two opposing initial positions." (Wang and Tuttle, 2009, p. 226). The coding instructions also associate integrative strategies with the terms compromise, mutual concessions, and middle ground. These attributes, according to the dual-concern model, do not describe the nature of integrative strategies properly, but are more representative of compromising strategies. The lack of discrimination between compromising and integrative strategies is a limitation not of the research approach itself, but of the implementation through Wang and Tuttle (2009).

The incentive structure of the bargaining games also encourages pro-self behavior of auditors, but does not take third parties into consideration. The negotiation task in Wang and Tuttle (2009) requires auditors and clients to negotiate over the fair value of an asset, that it defined as their "[...] best estimate of the actual value of the asset for the period." (Wang, 2010, p. 112). Auditors have a financial interest to avoid an overstatement of the asset (risk of penalty), but they also have a financial interest to reach an agreement

with the client (risk of unemployment). When taking an action, auditors face a purely economic trade-off that requires them to balance one financial risk against the other. This conflict of interest does not reflect the complexity of real-world incentives. In practice, auditors also have a statutory and moral obligation to ensure the proper financial reporting and to protect third parties. The presence of key third parties, such as investors, creates a multi-dimensional conflict of interest that Wang and Tuttle (2009) and Wang (2010) do not account for. Again, this limitation is not an issue of the research approach but of the implementation practice. The bargaining games offer the potential to adopt a more balanced payoff structure that would take third parties into consideration. To go one step further, these game also offer the opportunity to integrate investors as third parties in the setting.

4.3 Audit-like games

4.3.1 Method

The economics-based literature further operationalizes auditors-client interactions in audit-like games. An “[...] audit-like task [...] captures incentives relevant to the setting, but uses contextually abstract terminology [...]” (Kachelmeier and Van Landuyt, 2017, p. 970). These studies focus on the exchange of information between auditors and clients, and on the verification of information through the auditor. In the following, I explain how such an approach relates to ACM negotiations and elaborate the main benefits and drawbacks. Conceptually, the audit-like games build on the Crawford and Sobel (1982) model of information transmission (figure A.5).

The Crawford and Sobel (1982) model of information transmission includes two agents, an information provider and an information receiver. The information sender is the better-informed agent, who has private information available. The information receiver is the less-informed agent, who has no access to these private information. The sender provides a potentially noisy signal to the receiver, who then takes an action that determines the payoffs of both parties. In the model, the sender will provide full and truthful disclosure of information if both parties have aligned incentives. The larger the conflict of interest between both parties gets, however, the more information will be kept from the receiver (Crawford and Sobel, 1982). While the model originates from the information economics

research, the setting fits the relationship (1) between auditors and client-management, as well as the relationship (2) between auditors and investors.

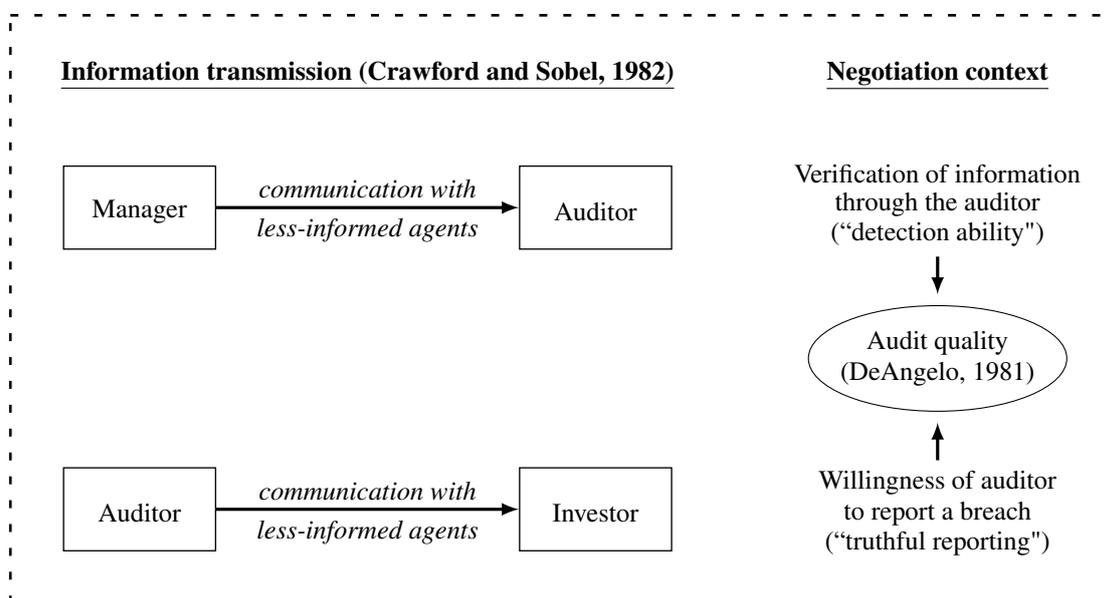


Figure A.5: Information transmission and verification scheme

(Source: own source)

First, the model captures the relationship between auditors and managers. In practice, managers often are the better-informed agents who have company-internal information available that auditors cannot access. They provide auditors possibly erroneous information, e.g. through the financial reporting. The auditor takes an action based on the information provided to him, e.g. the verification of these information or the issuance of an audit report. Some audit-like games in the experimental economics literature relate to this setting. In King (2002) or Kachelmeier et al. (2014), for instance, managers have private information available and report these information truthfully or untruthfully to the auditor. The auditor then selects a costly audit level to verify these information. The higher the audit level, the more likely is the auditor to verify information and to detect misstatements (detection ability). It can be equated with the competence of the auditor that directly affects the accounting issue in ACM negotiations.

Second, the model also describes the general relationship between auditors and investors. The distribution of roles is reversed: the auditor is the better-informed agent who gained private information throughout the audit, and who provides information to the less-informed

investors, e.g. through the audit report. The investors rely on these information and use it as basis for their investment decisions. In the economics-based literature, King and Schwartz (1999) or Koch and Schmidt (2010) relate to this setting. The auditor-subjects in their audit-like games receive private information that are valuable to both parties, and may decide to send a noisy signal to the investor. This setting relates to auditing, when the auditor discovers a breach in the financial statement and decides whether or not to disclosure the misstatement in the audit report. The willingness to disclose misstatements is another key driver of audit quality that describes the auditor's ability to withstand pressure from the manager during negotiations (DeAngelo, 1981). It reflects the formal outcome of a negotiation, such as the audit opinion on the financial statement or the content of the audit report (Gibbins et al., 2001). In the following, I present such audit-like games in more depth.

(a) *Verification of information.* Audit-like games that center around the verification of information through the auditor are usually designed as a sequential-move game. The better-informed manager moves first and takes a hidden action, while the less-informed auditor responds to the action and verifies the information provided by the manager. The payoff structures create the following conflict of interest: Managers benefit from untruthful reports, as long as auditors do not verify the information. Auditors, on the other hand, face a loss due to misreports but incur significant costs for a strict audit (e.g. King, 2002; Kachelmeier et al., 2014). In Kachelmeier et al. (2014), for example, the manager-subject is informed about the true value of an asset and decides to report that value consistent or inconsistent with his private information. Given the reported value, auditor-subjects can choose to pay for the verification of that information, while higher verification fees increase the likelihood that misstatements are detected. The study uses the strategy method to elicit verification fees for different reported asset values. These games relate to ACM negotiation in a sense that a high audit effort (e.g. high verification fees) increases the detection ability and the competence of auditors, an important contextual feature of negotiations.

Similar detection games are employed by Bowlin (2011) and Kachelmeier and Van Landuyt (2017). These studies use contextually different tasks and more abstract terminologies. The task in Kachelmeier and Van Landuyt (2017), for example, requires students in the role of a manager to add five marbles of two different colors to a bag. Managers receive a fix payoff for each red marble, but zero for each white marble they add. Their earnings, however, are

also reduced proportional to the number of red marbles the auditor-subjects subsequently remove from the bag. In negotiation terms: managers benefit from aggressive practices, as long as auditors do not force an adjustment. In the second stage of the experiment, auditors receive incomplete information about the content of the bag. Each red marble in the bag increases the probability of a sanction imposed on the auditor. To avoid this sanction, auditors can remove some of the red marbles, while each removal reduces the fix payoff of the auditor by a small amount. In negotiation terms: auditors face penalties for unadjusted aggressive reporting practices, but negotiating adjustments is costly.

(b) *Reporting of information.* Dopuch et al. (2001), Hobson and Kachelmeier (2005) and Koch and Schmidt (2010) focus on the reporting behavior of auditors. Common element of these studies is a two-player sequential-move game with students as participants. The auditor is the better-informed agent who provides information to a less-informed third party. In Koch and Schmidt (2010), auditors first decide to report their private information about an asset value truthfully or coarsely to an investor. The task of the less-informed investor is to guess the actual value of that asset. Each subjects participates in nine experimental rounds. The incentives of both parties are misaligned. Auditors benefit from overestimated asset values, and investors benefit from correct estimates. "This incentive scheme corresponds to an environment in which auditors feel financial pressure to cooperate with the audited company in managing earnings." (Koch and Schmidt, 2010, p. 99). The incentive scheme also relates to ACM negotiations in a way that auditors may give-in to the client-preferred financial reporting during negotiations out of an economic interest to retain the client.

Dopuch et al. (2001) analyze the information transmission of better-informed auditors to less-informed managers. In a first stage, managers invest into a risky asset which generates high or low profit. Its actual profitability is unknown to the manager, but the auditor receives a private signal about it. In a second stage, auditors submit a report about the profitability of the investment to the manager. Auditors can issue the report consistent or inconsistent with their private signal. The incentive structure is designed to create the following conflict of interest. Managers benefit if auditors confirm a high profitability of the investment to the manager. Auditors are automatically retained for another period when they issue a report that favors the manager, but they also face a penalty if the report is untruthful. An additional burden to the auditor is that managers can decide

to dismiss the auditor if the report indicates a low profitability. Thus, auditors have a strong incentive to report in favor of the manager on the one hand, but they also face a penalty for misstatements on the other hand. The reporting framework relates to ACM negotiations in a sense that a true reporting through the auditor reflects the ability to withstand (financial) pressure from the manager during negotiation and to negotiate high quality outcomes.

(c) *Verification and reporting.* Some studies combine both elements: auditors first verify the information they receive from the manager, and subsequently report their audit results to an investor (Dopuch et al., 1994; King and Schwartz, 1999, 2000; Mayhew, 2001). For example, the managers in Mayhew (2001) issue a potentially biased report to their investors. The role of the auditor is to mitigate the information asymmetry between the better-informed manager and the less-informed investors. Auditors issue a second report to the investors in which they signal their agreement or disagreement with the manager's information. The auditor may pay for the verification of the information, but he may also decide not to investigate at all. The investigation decision is a hidden and unobservable action. Thus, auditors may agree with the manager's report although they did not verify the information. The experiment is a multi-period game in which the auditor faces the trade-off between short-term gain (no investigation costs) and long-term reputation.

4.3.2 Opportunities

- Dynamic process and repeated interaction (refer to section 4.2)
- Reporting context parallels the negotiation framework
- Information asymmetry is a central element

The role of the auditor in ACM negotiations is to ensure the proper informational function of financial statements and to provide reasonable assurance to third parties that the accounting outcome is free from material misstatements. In other words, the auditor should guarantee a high audit quality. DeAngelo (1981) define audit quality "[...] as the conditional probability that, given a breach has been discovered, the auditor will report the breach." (DeAngelo, 1981, p. 116). The audit-like games relate to the detection-ability-dimension of the definition, since they focus on the verification of information through the auditor (King, 2002; Kachelmeier et al., 2014). The audit-like games also relate to the truthful-reporting-dimension of the definition, since they investigate on the reporting behavior of the auditor to third parties (Dopuch et al., 2001; Koch and Schmidt, 2010). A high detection ability

and the truthful reporting about detected errors equates high-quality negotiation outcomes. This research method can be understood as a less direct, but supplemental way to study the behavior of auditors in interactions with client-management.

The information asymmetry in the experimental settings is another benefit of this research approach. While information asymmetry is an important feature of ACM negotiations (Gibbins et al., 2001), most negotiation studies do not consider it. The audit-like games demonstrate different ways how information asymmetry can be implemented in settings with interaction between auditors and managers, or interaction between auditors and investors. The Crawford and Sobel (1982) model of strategic information transmission provides the theoretical foundation hereto, while King (2002), Koch and Schmidt (2010), Kachelmeier et al. (2014) and others give valuable practical guidance. Information asymmetry could be adapted to an ACM negotiation setting in a way that the manager is the better-informed agent who negotiates with the less-informed auditor. The bargaining task in Wang and Tuttle (2009), for example, could provide auditors an erroneous or noisy signal about the true asset value, while managers remain fully informed.

4.3.3 *Limitations*

- No ethical perspective despite inclusion of investors
- Strategy method reduces dynamic potential of setting

The audit-like games are “[...] subject to the usual limitations of a stylized experiment in the traditions of experimental economics.” (Kachelmeier and Van Landuyt, 2017, p. 989), but they also show specific limitations in the ACM negotiation context. One drawback is that auditors face a purely financial trade-off in their decisions. A strict audit is costly, but an undetected misstatement increases the litigation risk (e.g. King, 2002). Auditors benefit from manager-preferred reports, but also face a penalty for misreports (e.g. Dopuch et al., 2001). Such conflict of interests do not reflect the complexity of real-world incentives. The decision of the auditor - that is the issuance of a report or the selection of an audit-level - is motivated through financial pressure. In practice, auditors receive a fix audit-fee and have a statutory as well as a moral obligation to ensure the proper financial reporting and to protect investors. Although some audit-like games include investors as information receiver in the experiment (e.g. King and Schwartz, 2000; Mayhew, 2001; Koch and Schmidt, 2010), the main incentive auditors have in approaching the task remains their own economic benefit.

The negligence of the moral component is not a limitation of the research approach itself, but more an issue of the experimental implementation in prior studies and should be seen as an opportunity for future research.

One benefit of economics-based experiments in the negotiation context is its potential to implement repeated interaction among subjects, as in Dopuch et al. (2001), Mayhew (2001) or Koch and Schmidt (2010) for instance. Some studies in this area, however, design the interaction between auditors and clients as one-shot game or use the strategy method (Selten, 1965). Again, this limitation is less an issue of the research approach itself, but more of the individual implementation practice. Kachelmeier et al. (2014) and Kachelmeier and Van Landuyt (2017), for example, employ a strategy method that requires auditor subjects to make decisions conditional on each possible signal they receive. This approach prevents auditors to interact with clients and prevents them to react to the decision of the other player. Similar to psychology-based studies, the strategy method elicits the judgments of participants through questionnaires. The one-shot design in combination with the strategy method might be appropriate in some circumstances (Kachelmeier and Van Landuyt, 2017), but it also shows that economic experiments might easily lose their competitive edge. In the context of ACM negotiation research, these games would require adjustments to make them more interactive, e.g. replacing the strategy method and allowing for an actual interaction.

5. Conclusion

The methodological perspective on ACM negotiation has received less attention in the prior audit literature. Given the important role of accounting negotiations to the quality of financial statements, I raise the question how such negotiations can appropriately be studied experimentally. One challenge researchers face is that the interaction between auditors and their clients usually takes place behind closed doors and is unobservable to outsiders (Gibbins et al., 2005). The lack of archival evidence makes the negotiation research mainly a behavioral science, with a tool-kit of different field methods and experimental methods. The field research in auditing is an experienced-based approach, in which professional auditors are asked to recall an accounting negotiation that they have experienced in practice and to answer a set of questions about that incident (Malsch and Salterio, 2016; Salterio and Gondowijoyo, 2016). Although such studies are sometimes negatively associated with

anecdotal character, they also enable a firsthand insight into ACM negotiations, motivate extensive experimental accounting research, and provide my study valuable methodological guidance. I build on the field literature and its negotiation frameworks to elaborate the audit-specific characteristics of ACM negotiations.

The experimental negotiation research borrows its methodology from economics and psychology (Libby et al., 2002). Economics-based research is an “[...] incentive-driven style of experimentation [...] which includes laboratory markets and other designs involving strategic interaction among participants.” (Kachelmeier and King, 2002, p. 221). Researchers usually build an artificial negotiation setting with less realistic stimuli in the operationalization of their experimental games (Libby et al., 2002; Kachelmeier and King, 2002). Psychology-based negotiation studies, in contrast to economic experiments, usually elicit “[...] the hypothetical questionnaire-based judgments of experimental participants in a single-person setting using realistic case materials.” (Kachelmeier and King, 2002, p. 221). These experiments are mainly conducted with experienced auditors as participants. Since the role of context is very important in psychology-based experiments, researchers use detailed case materials to describe a realistic accounting conflict scenario. Both research directions place a different focus and incorporate distinct characteristics of ACM negotiations. Figure A.6 summarizes the key opportunities and limitations of economics-based and psychology-based experiments that I elaborated.

The methodological limitations of both approaches lead me to raise the question how future research can improve on prior designs and how future studies can strike out new directions in terms of methodology. Psychology-based experiments benefit mainly from their professional subject pool that allows researchers to simulate real-world accounting conflict scenarios. A goal of many negotiation studies, however, is to explore the general behavior of subjects in response to certain economic or contextual influences. Experienced auditors are no necessity to reaching this goal, in fact Libby et al. (2002) advice “[...] to avoid using more sophisticated subjects than is necessary [...]” (Libby et al., 2002, p. 802) in a certain context. Accounting negotiations also show several interesting features - such as the ethical perspective, the dynamic process, and the distributive as well as integrative potential - that do not require the use of professionals in experiments. In fact, psychology-based studies often cannot account for these important characteristics since they “[...] lack the richness of strategic interaction [...]” (Kachelmeier and King, 2002, p. 228) and rely

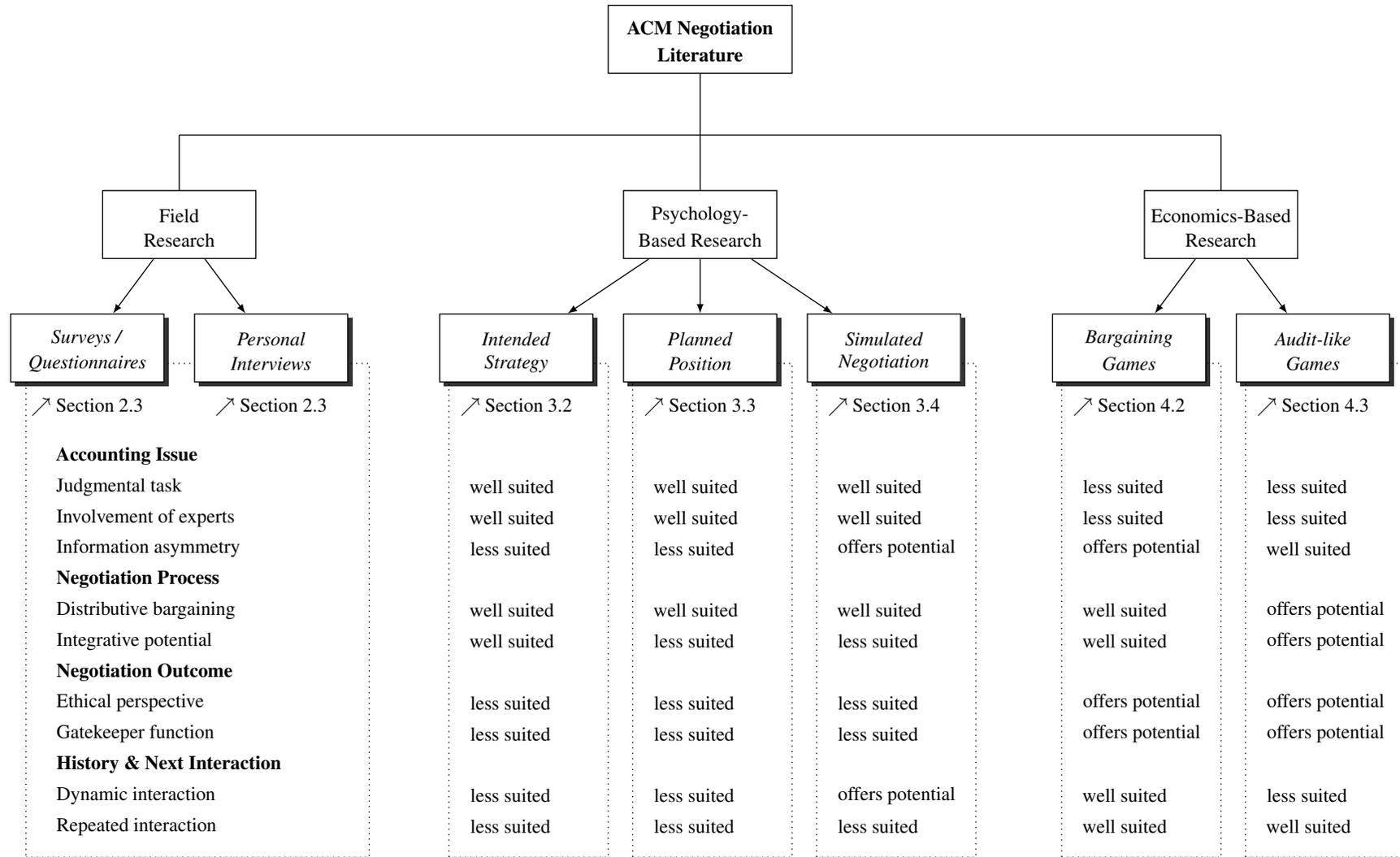


Figure A.6: Comparison of experimental research designs

(Source: own source)

on the self-reported intentions of auditors. Although psychology-based experiments are well-developed and seem to be the prevalent research approach in the negotiation literature, they are also associated with many drawbacks. Possible opportunities to incorporating more audit-specific characteristics (e.g. simulating negotiations, priming experiments) yet still suffer from practical obstacles (e.g. recruiting auditors and CFOs simultaneously for negotiation) and are subject to the limitations of a static case study based approach.

The economics-based research direction, on the other hand, does not yet take full advantage of its potential. My review shows that economic experiments are less commonly used in the accounting negotiation context compared to psychology-based experiments. A reason for this development might be that economics-based experiments are often accused of their lack of realism and of their artificial tasks (Kachelmeier and King, 2002). To alleviate this criticism, researchers must design an abstract and yet properly incentivized negotiation setting that captures the key influences auditors face in practice. Designing such a framework is the main opportunity, but also the main challenge of the economics-based research. Prior studies still leave room for further improvement in this respect. Although these studies do incorporate audit-specific characteristics (e.g. dynamic and repeated interaction, distributive and integrative potential), they mainly use one-dimensional incentive structures with symmetric information between subjects (e.g. Wang and Tuttle, 2009). Such a structure motivates pro-self bargaining of auditors and neglects the role of third parties in ACM negotiations. The limitations that I discussed in the context of economic bargaining games and audit-like games are often issues of the practical implementation and less of the research instruments themselves. Importantly, my review shows that economics-based experiments do have the untapped potential to address these concerns.

A promising experimental design to address the limitations of prior research is the gatekeeper game.⁶ The gatekeeper game is a novel experimental-economics approach that incorporates most audit-specific negotiation characteristics that I identified and discussed in this chapter. Consider a standard two-player trust game (Berg et al., 1995) between manager and investor-subjects. The trust game relates to practice in a way that investors usually entrust their capital to companies, whose representatives manage the investment

⁶ The gatekeeper game partly bases on the unpublished working paper by Choy et al. (2008), who play a modified version of the ultimatum game that incorporates the auditor as an additional third player.

and return a certain share to the investors, e.g. through dividends. The gatekeeper game extends the trust game by an additional third player. In its role as auditor or gatekeeper, the additional third player oversees the interaction between managers and investors. The task of the gatekeeper is to protect the investor and to negotiate with the manager about an appropriate return of the investment. Importantly, auditors and managers have asymmetric information available about the negotiation issue. Auditors also have a moral obligation to negotiate on behalf of investors. I discuss and present the gatekeeper game in more depth in chapter C.

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CHAPTER B

External audit firm rotation: Regulation, theory, and experimental evidence

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Abstract

The European Union recently introduced an external rotation rule for audit firms of public-interest entities. The aim of the new legislation is to enhance the financial and personal autonomy of the auditor, and to improve the quality of financial statement audits. The effectiveness of the rotation rule, however, is subject to controversial discussion on a political and academic level. This study contributes to the current debate over external rotation. My review gathers the common arguments in favor and against rotation, and provides a more differentiated view on the subject. I suggest that rotation influences audit quality through two different channels of influence: It lowers the auditor's ability to detect misstatements, but improves the auditor's independence to report about detected breaches. In addition, the study also investigates whether and how these different channels of influence have been tested in the experimental literature before. I assess the validity of prior research designs and point out directions for future research both in terms of content as well as methodology.

1. Introduction

In the course of the 2014 audit reform, the European Union (EU) introduced an external rotation requirement for audit firms of public-interest entities ("external rotation" or "audit firm rotation"). The reform limits the maximum engagement tenure to ten consecutive years after which the audited entity has to appoint a new audit firm. The EU Member States may opt to define an even shorter rotation rule of less than ten years, but they may also provide entities the opportunity to extend the rotation period further (EU Regulation 2014/537, Art. 17). Prior to the legislation, an internal rotation requirement was in place that prohibited the lead audit partners - in contrast to the whole audit firm under external rotation - to conduct the statutory audit of an entity for more than seven consecutive years ("internal rotation" or "audit partner rotation"). After seven years, the audit partners in charge needed to rotate off a client and another auditor of the same firm could take over (EU Directive 2006/43, Art. 42). Importantly, the external audit firm rotation rule now amends the internal audit partner rotation rule, such that both requirements are in place in the EU (for an overview of the rotation provisions see Köhler and Herbers, 2014; Velte, 2014; Weber et al., 2016).

European legislators aim to improve the quality of financial statement audits through audit firm rotation (EU Regulation 2014/537, EU Directive 2014/56).⁷ Whether or not external rotation may achieve this objective is subject to controversial discussion on a political level as well as in the academic audit literature. Proponents argue that external rotation improves audit quality, because auditors are less financially dependent on the client and have less economic incentives to compromise their independence (PCAOB Release 2011; EU Regulation 2014/537). Opponents assume a negative effect on the quality of financial statement audits, because frequent auditor switches lead to loss of client-specific knowledge and to a lack of familiarity between auditors and clients (GAO Report 2003, AICPA Comment 2011). These contrasting views are also reflected in the archival literature which finds mixed evidence on the effects of rotation. Some archival studies observe a

⁷ Other important objectives of European legislators are to increase "[...] the degree of confidence of the public in the annual and consolidated financial statement [...]" (EU Regulation 2014/537, Recital 1), to "[...] enhance the integrity, independence, objectivity, responsibility, transparency and reliability of statutory auditors [...]" (Recital 5), to "[...] facilitate the development of the capacity of such firms (*author's note: smaller audit firms*), thus broadening the choice of statutory auditors and audit firms for public-interest entities [...]" (Recital 20), and to "[...] address the familiarity threat and therefore reinforce the independence of statutory auditors [...]" (Recital 22).

positive effect of external rotation on audit quality, but some find a negative association between rotation and quality (see Stefaniak et al., 2009; Casterella and Johnston, 2013; Cameran et al., 2016 for a review of the literature).

The controversial discussion over external rotation and the mixed evidence in the archival literature call for a more differentiated analysis of the effects of rotation. In particular, I raise the question through which channels audit firm rotation may influence audit quality (figure B.1). To address this question, I collect different arguments brought forward against or in favor of rotation. I structure these arguments based on DeAngelo (1981a), who defines audit quality as the ability of the auditor to detect misstatements in the financial reporting of the client (detection ability) and the independence of the auditor to also truthfully report about the discovered breaches (auditor independence). My review suggests that external rotation is predominantly thought to strengthen auditor independence, but to weaken the detection ability of the auditor. These two opposing effects on audit quality may be the reason the archival literature finds mixed evidence on the effects of rotation. In contrast to prior discussions, which are often directed solely towards the economic implications of rotation, I also discuss non-economic implications and provide a more differentiated view on the theoretical effects of rotation. The non-economic view (e.g. cognitive or psychological view) is important, because prior audit research shows that auditors are not purely rational agents but also sensitive to behavioral heuristics.

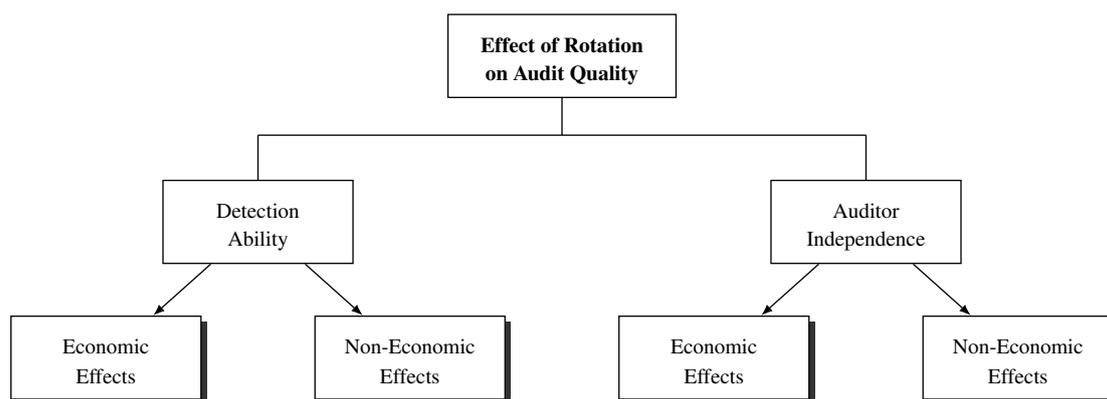


Figure B.1: Components of audit quality

(Source: based on DeAngelo, 1981a)

The archival literature faces two key challenges that make it difficult for researchers to test the effects of rotation. The first challenge is a lack of international experience with external

rotation. Before the EU introduced a rotation requirement, only few regulators have mandated audit firm rotation.⁸ Accordingly, only few researchers could gather archival evidence in a real-world rotation setting, e.g. Cameran et al. (2015b) in Italy, Kwon et al. (2010) in Korea, or Ruiz-Barbadillo et al. (2009) in Spain. The limited data availability lead some researchers to analyze the association between audit quality and tenure in general. These studies investigate how the audit engagement tenure (e.g. Myers et al., 2003; Gosh and Moon, 2005; Knechel and Vanstraelen, 2007; Jenkins and Velury, 2008; Cameran et al., 2016) or the audit partner tenure (e.g. Chen et al., 2008; Chi et al., 2009) affects audit quality in settings where rotation is not regulated. Others investigate how forced auditor switches following the collapse of Arthur Andersen affect audit quality (e.g. Nagy, 2005; Blouin et al., 2007; Kealey et al., 2007).

The second challenge to the archival literature is the inference about audit quality based on publicly available data. The quality of an audit strongly depends on the behavior of auditors, whether they detect misstatements in their client's financial reporting, and whether they truthfully report about detected misstatements (DeAngelo, 1981a). The audit process, however, usually remains a black-box for researchers as it takes place behind closed doors and is unobservable to third parties (Gibbins et al., 2001, 2005). As a result of the limited availability of behavioral data, the archival literature draws inferences about audit quality based on publicly available measures (see Knechel et al., 2013 for an overview). Common indicators of audit quality are discretionary accruals (e.g. Myers et al., 2003; Cameran et al., 2016; Cassell et al., 2016), going-concern opinions (e.g. Knechel and Vanstraelen, 2007; Ruiz-Barbadillo et al., 2009), financial statement conservatism (e.g. Jenkins and Velury, 2008; Li, 2010), audit failures (e.g. Geiger and Raghunandan, 2002), or audit firm size (e.g. Geiger and Rama, 2006; Francis and Yu, 2009; Lin and Hwang, 2010). The mixed evidence about external rotation, however, shows that different indicators seem to yield different results and highlight the challenge for researchers to select an appropriate proxy for audit quality (Cameran et al., 2016).

⁸ Only few policymakers outside the EU introduced mandatory audit firm rotation (e.g. Costa Rica, Indonesia) or partial rotation for banks (e.g. India, Singapore). Other countries abandoned or loosened their rotation requirements soon after its introduction (e.g. Brazil, Canada). See Lennox, 2014 for an overview of the audit firm and audit partner rotation rules by country. See also GAO Report 2003; Ewelt-Knauer et al., 2012; Harris and Whisenant, 2012; Hess and Stefanie, 2012; or Cameran et al., 2015a for further overviews.

Given the limitations of the archival research, my study places a clear focus on the experimental audit literature on rotation. Experiments allow researchers to mitigate both challenges that archival researchers face. Experiments can mitigate the lack of experience with audit firm rotation. Experimental studies allow researchers to reproduce the unique economic and non-economic features of an external rotation environment in a controlled setting (e.g. Shadish et al., 2002; Smith, 2017; Friedman and Cassar, 2004). Subjects “[...] assuming the role of auditors and managers can interact repeatedly in a real micro-economic world that captures the key economic and strategic forces at play in the natural setting.” (Bowlin et al., 2015, p. 1365). Researchers can directly manipulate audit firm rotation as independent variable and gather information in an artificial rotation environment. Experimental studies also allow researchers to directly observe the interaction between the participants. The task-specific decision making of auditors serves as dependent measure and allows conclusions about the quality of an audit task performed. In experiments, audit quality must not be approximated through indicators derived from publicly available data.

My study follows three main questions regarding to (1) the theory, (2) the external validity, and (3) the construct validity of experiments. First, I investigate whether the different arguments in favor or against rotation have also been tested in the prior audit research. Aim of my review is to identify where research has been conducted and which channels of influence have yet received less attention in the experimental literature (theory). Second, I elaborate how external rotation is reproduced in a controlled experimental environment. This methodological perspective discusses whether prior manipulations in fact reproduce the key incentives auditors face in practice, and whether causal relationships can be generalized to settings outside the experiment (external validity, see Shadish et al., 2002). Third, I elaborate the opportunities and limitations of the different experimental constructs used to measure audit quality. My review raises the question whether the theoretical construct audit quality is appropriately captured by the measurement construct (construct validity, see Shadish et al., 2002).

My findings provide new directions for future rotation studies in terms of content and methodology. With regard to methodology, my review shows that few studies directly manipulate audit firm rotation as independent variable. Instead, many experiments relate to external rotation indirectly and reproduce the incentives auditors face under rotation through case studies or in the laboratory. I further identify different constructs that are

used to measure audit quality outside the rotation context, and suggest that these measures can be adopted in the context of my study. With regard to content - and following the audit quality definition by DeAngelo (1981a) - I observe that more research is conducted on auditor independence, but less experiments on the detection ability of auditors. Importantly, I find that the non-economic implications of external rotation are underrepresented in the experimental rotation literature compared to the economic view on rotation. I highlight interesting opportunities for future studies and propose ways to integrate experimental designs outside the rotation context to address the lack of research in some areas.

The remainder of this chapter is structured as follows. The second section summarizes the historical debate over rotation in the EU and in the U.S. I focus on these two geographical areas, since its legislators triggered a heated debate over rotation around the world. The third section elaborates the economic and non-economic implications of external rotation on auditor independence. I assess whether and how these effects have been studied in the experimental literature. The fourth section discusses the economic and non-economic implications of external rotation on the detection ability of the auditor. Again, I discuss how these effects have been tested experimentally. The fifth section concludes.

2. Regulation of external rotation

2.1 The debate over external rotation

2.1.1 U.S. history

In the U.S., the debate about mandatory audit firm rotation dates back to the 1970s. Representatives of the government and the audit profession expressed quite different viewpoints about rotation. Senator Lee Metcalf - chair of the former U.S. governmental accounting subcommittee - criticized the accounting profession and accused auditors of a lack of independence. His opinion formed in response to “[...] previously unreported wrongdoing by major corporations, as well as a series of corporate failures and financial difficulties.” (Metcalf Report 1976, p. III). The Metcalf report suggested that a maximum engagement tenure could increase auditor independence and reduce the familiarity between auditors and the corporation. In contrast, the American Institute of Certified Public Accountants (AICPA) formed a Commission on Auditors’ Responsibilities chaired by Manuel Cohen. The Cohen Report opposed mandatory audit firm rotation, because the associated costs of rotation would outweigh the benefits of such a rule (Cohen Report

1978). Years later, the Securities and Exchange Commission (SEC) temporarily ended the discussion about mandatory audit firm rotation. The SEC raised strong concerns about external rotation and advocated the opinion that internal rotation would provide sufficient safeguards to maintain auditor independence (SEC Staff Report 1994). At that time, the lead audit partner was required to rotate off a client after seven consecutive years (internal rotation rule).

The U.S. Congress passed the Sarbanes-Oxley Act (SOX) in 2002. The SOX legislation tightened up existing regulations on internal rotation and stimulated the debate about mandatory external rotation once again. SOX Sec. 203 cut the seven-year rotation rule for the lead audit partner to a maximum of five years. The section also introduced a five-year internal rotation requirement for the second auditor in charge, the reviewing audit partner.⁹ Besides introducing internal audit partner rotation, the Congress also directed the U.S. Government Accountability Office (GAO) to conduct a survey on potential implications of mandatory audit firm rotation. The 2003 GAO report advised against an external rotation requirement, since “[...] audit firm rotation may not be the most efficient way to enhance auditor independence and audit quality [...]” (GAO Report 2003, p. 8). Instead, the report suggested to first gain some experience with the new rules under SOX before evaluating whether further regulations would be necessary to increase auditor independence (see also PCAOB Release 2011). For example, the SEC and PCAOB should gain practical experiences with the stricter internal rotation rules and with the increased reporting requirements under SOX, and then re-evaluate the need for external rotation.

In 2011, following the financial crisis, audit firm rotation again received significant attention by U.S. policymakers. The PCAOB Investor Advisory Group (IAG) claimed that users of annual financial statements have lost their confidence in statutory audits. They considered long-term engagement tenures between audit firms and audited companies as major threat to auditor independence (PCAOB Meeting 2011). The IAG urged the PCAOB to issue a concept release on external audit firm rotation and to solicit public comments on the topic (PCAOB Release 2011). The PCAOB received over 700 comment letters from various interest groups who expressed their opinion on audit firm rotation. Proponents

⁹ The lead audit partner corresponds to the German “Rechtsunterzeichner”, and the reviewing audit partner to the German “Linksunterzeichner”. The EU subsumes both under the term “key audit partners” (EU Directive 2006/43, Art. 2).

considered mandatory rotation as sound means to increase audit quality and to strengthen auditor independence. Opponents argued that rotation would have adverse effects on audit quality and that it might result in even more audit failures. The fierce resistance against mandatory audit firm rotation, especially put up by representatives of the audit and accounting profession (e.g. AICPA), ultimately lead the government to reject such a rotation requirement. The U.S. House of Representatives passed a bill in 2013 (referred to as Audit Integrity and Job Protection Act, US H.R. 2013/1564) that “[...] could prevent the nation’s audit watchdog (*author’s note: PCAOB*) from ever forcing public companies to periodically rotate their auditors.” (Chasan, 09.07.2013, p. 1). To date, the Audit Integrity and Job Protection Act has not yet been passed in the Senate.

2.1.2 EU history

Similar to the U.S., audit firm rotation has been of interest to European regulators since the 1970s. Some countries introduced an external rotation requirement individually at the federal state level, but there was no single European solution. In 1974, for example, Italy mandated external rotation for statutory audit firms of listed companies, of insurers, and of investment houses. The engagement period was limited to a total of nine years, followed by a three-year cooling-off period. Aim of this regulation was to strengthen the independence of auditors and to increase public confidence in financial statement audits. Spain likewise adopted a nine-year rotation requirement for audit firms in 1989 in order to lower the market concentration and to allow smaller audit firms to gain higher market shares. Six years after its introduction, Spain abolished the rotation rule before the first audit firms reached the nine-year threshold and before the first audit firms were required to rotate off a client (GAO Report 2003). The German Central Bank voluntarily obliged themselves to appoint a new statutory auditor every five years. They introduced the rotation rule in 1996, shortly after a large German industrial company (Metallgesellschaft AG, now GEA AG) reported losses over one billion US\$ over dubious oil derivate contracts. The Central Bank aimed to set a good example for others and to encourage more companies to self impose a voluntary rotation requirement (Catanach and Walker, 1999). Besides the few external rotation settings, most European countries adopted an internal rotation rule, as described next.

As a response to a series of corporate scandals in the early 2000s (e.g. Enron, Worldcom, Tyco), many European legislators introduced internal audit partner rotation or tightened

their internal rotation requirements in order to increase auditor independence and audit quality. Most prominent examples include Germany, the Netherlands, and the United Kingdom, whose legislators triggered a vigorous debate over audit firm rotation, but concluded that audit partner rotation is a sufficient safeguard to ensure auditor independence. In 2003, the U.K. and Netherlands followed recommendations of the Coordinating Group on Audit and Accounting Issues (CGAA Report 2003) and reduced the maximum engagement period of the lead audit partner to five years. After Spain abolished the external audit firm rotation rule, they introduced a seven-year rotation requirement for the whole audit team in 2002. The French government introduced a different safeguard, when they limited the maximum number of reports that auditors could sign to six in one year (GAO Report 2003). These individual regulations at the federal state level resulted in a single European solution in 2006, when the European Parliament and the European Council introduced an internal rotation rule for auditors of public-interest entities. The EU Directive 2006/43 Art. 42 forced the lead audit partners to rotate off their clients after a maximum of seven years, followed by a two-year cooling-off period. Lead audit partners are “[...] the statutory auditor(s) designated by an audit firm for a particular audit engagement as being primarily responsible for carrying out the statutory audit on behalf of the audit firm.” (EU Directive 2006/43, Art. 2, No. 16). The seven-year internal rotation rule is still binding to all Member States.

In the course of the financial crisis in 2007/2008, the audit profession again was publicly accused of a lack of independence and critical calls for audit firm rotation became louder. The European Commission (EC) issued a Green Paper soliciting public comments on the pros and cons of mandatory audit firm rotation (EU Green Paper 2010/561). Albeit the EC received almost 700 responses on the issue from representatives of the audit profession, company stakeholders, and the broader public, the European Parliament saw “[...] yet no sufficient basis for a final assessment [...]” (EU Parliament 2011/0359, No. 4) of the Green Paper and urged the EC to “[...] undertake an impact assessment covering a range of options, in particular external rotation [...]” (EU Parliament 2011/0359, No. 26). In 2011, the EC made a proposal for the regulation of the statutory audit of public-interest entities. The EC suggested to limit the maximum engagement period to six consecutive years in order to address “[...] the threat of familiarity that results from the audited undertaking often appointing and re-appointing the same audit firm for decades [...]” (EU Commission

2011/0359, No. 3.3.3). The European Parliament and the Council finally issued a new EU legislation in 2014 - referred to as EU audit reform - that includes a milder external rotation requirement. The new legislation limits the maximum engagement period to ten years. Member states can prolong that period under certain circumstances (EU Regulation 2014/537, Art. 17; see also Köhler and Herbers, 2014 or Velte, 2014 for a representation of the audit reform history).

2.2 Regulatory requirements in the EU

2.2.1 Scope of legislation

The EU audit reform mandates public-interest entities (PIEs) to change their statutory audit firm after a maximum engagement period of ten consecutive years, if no exceptions apply. The scope of the external rotation rule is limited to PIEs and to audit firms carrying out the financial statement audit of such entities (EU Regulation 2014/537, Art. 2.1). PIEs comprise those companies who gained permission to trade their transferable securities (e.g. shares or securitized debt) on a regulated market of any EU Member State. Some credit institutions and insurance companies also fall within the scope of the legislation. The Member States may opt to expand the scope further and to designate certain entities to be of public-interest when its business or its size is thought to be of particular public relevance (Art. 2.3). The Member States may also opt to restrict the scope and to exclude non-profit-making savings banks or European Cooperative Societies from the rotation requirement. Such a restriction requires regulators to demonstrate sound reasons that justify a non-application of the legislation (Art. 2.3-2.5; see also Petersen et al., 2016).

The rotation requirement is also applicable to some PIEs that are incorporated outside the EU. In particular, the scope of the EU legislation is limited to public-interest "[...] entities governed by the law of a Member State [...]" (EU Directive 2014/56, Art. 2.13). The term Member State covers members of the EU, but also members of the European Economic Area (EEA) - namely Iceland, Liechtenstein, and Norway (EU Commission Q&A 2016/02). The term governed by the law refers to entities that are incorporated under the law of a Member State. In the narrow sense, this definition excludes PIEs that are incorporated in non-EU or non-EEA countries from the scope of application. In some EU countries, however, the corporate law is also applicable to entities that have their operational head-quarter within that country despite being incorporated in another country (e.g. in France,

Belgium). Under these domestic provisions, PIEs are also subject to an external rotation requirement when they are incorporated in a non-EU country, but listed on a regulated market inside these countries. Similarly, legally independent subsidiaries inside the EU formed by a non-EU parent may fall within the scope of the definition (EU Commission Q&A 2016/02; IDW Position Paper 2017, No. 3.6).

2.2.2 *Key rotation provisions*

External rotation is regulated in article 17 of the EU Regulation 2014/537. The EU audit reform limits the engagement tenure to a maximum of ten years, after which PIEs have to appoint a new audit firm. Neither the period of the initial audit mandate nor the combination with any renewed engagement may exceed ten consecutive years (Art. 17.1). In many European countries, audit firms are appointed for a one-year mandate and the engagement is renewed on a yearly basis. In these cases, the initial engagement may be renewed nine times before the maximum tenure is reached and before audit firms need to rotate off a client. Some Member States, however, also require minimum audit mandates of more than one year. In Belgium and France, for example, audit firms are not appointed on a yearly basis but for a three-year (BE) or six-year (FR) mandate during which the audit firm is retained. The maximum engagement period in Belgium is nine years, given that the three-year mandate may be renewed twice before the maximum period of ten years is reached. Subsequent to the terminal year of an engagement, neither the auditor nor the audit firm or auditors of the firms' network may conduct the statutory audit of that entity within a four-year cooling-off period (Art. 17.3). The engagement tenure is calculated from the start of the first financial year in which the audit firm has been appointed as statutory auditor and applies only during the period the audited entity falls within the scope of a PIE (Art. 17.8; EU Commission Q&A 2016/05; IDW Position Paper 2017, No. 3.3).

The Member States have certain options available to shorten and to extend the maximum engagement period. On the one hand, Member States may opt to implement an even shorter rotation rule with a maximum engagement period of less than ten years (Art. 17.2). For example, Italy maintains its nine-year rotation rule that regulators implemented in 1974. On the other hand, the EU also provides Member States two options to further extend the engagement through tender or joint audit (EU Regulation 2014/537, Art. 17.4; see also IDW Position Paper 2017, No. 3.4). First, Member States may grant PIEs the option to extend the maximum engagement period up to a total of 20 years. If PIEs want to

exercise the option, they have to meet certain requirements. This extension requires PIEs to undertake a public tendering process once after the initial rotation period is reached (Art. 17.4a). The tendering process needs to be conducted in accordance with strict criteria set forth in article 16 (see Kelm and Naumann, 2016 for a detailed discussion of the tendering process). Second, Member States may also grant PIEs the option to extend the engagement tenure up to a total of 24 years. In order to qualify for this extension, PIEs need to appoint more than one statutory audit firm simultaneously after the initial rotation period is reached (Art. 17.4b; see also Schorse and Morfeld, 2017, Rn. 19-21). For example, PIEs may keep their statutory audit firm for 24 consecutive years, if they adopt a joint audit continuously from the eleventh year onwards (given an initial ten-year rotation rule). The entity will need to conduct a public tendering process in order to select the joint auditor (EU Commission Q&A 2016/05).

The EU audit reform also tightens the rules for the internal audit partner rotation (EU Regulation 2014/537, Art. 17.7). Prior to the reform, the EU Directive 2006/43 required key audit partners to rotate off a client after a maximum period of seven years followed by a two-year cooling-off period (EU Directive 2006/43, Art. 42.2). The new legislation lays down stricter rules and extends the cooling-off period to three years within the key audit partners must not participate in the statutory audit of the PIE. Member States may also opt to implement a shorter internal audit partner rotation period of less than seven years (EU Regulation 2014/537, Art. 17.7). In addition to the rotation of the key audit partners, the EU also requires audit firms to establish a gradual rotation regime for registered statutory auditors and the senior audit personnel involved in the audit of a PIE. Thereby, the audit firm must gradually rotate not only audit partners but also members of the engagement team under consideration of the scale and the complexity of the audit client. The gradual rotation requirement for senior audit personnel is a new provision of the EU audit reform (Art. 17.7; Schorse and Morfeld, 2017, Rn. 31; IDW Position Paper 2017, No. 5.3).

2.2.3 Transitional provisions

The EU audit reform comprises an Audit Directive (EU Directive 2014/56) and an Audit Regulation (EU Regulation 2014/537). The first component, the Audit Directive amends the existing Directive of 2006 (EU Directive 2006/43). The new directive further harmonizes a series of rules governing statutory audits of all financial statement audits in the EU. Member States must transpose the directive and comply with the requirements latest on June 17th,

2016. The second component, the Audit Regulation, specifies the requirements with respect to statutory audits of public-interest entities. The regulation sets forth the internal and external rotation requirements. It entered into force on the June 17th, 2014 and is directly applicable to all Member States from its effective date June 17th, 2016 onwards (EU Regulation 2014/537). In contrast to the directive, the regulation must not be transposed into national law but is binding in its entirety. Member States, however, may exercise their choice options and implement these options individually in their national law. German legislators, for instance, follow the ten-year rotation rule of the EU regulation and do not define a shorter maximum engagement period. The "Abschlussprüfungsreformgesetz (AReG)" transposes other choice options into German law (Blöink and Kumm, 2015; Schüppen, 2016). The new §318 Abs. 1a HGB grants PIEs the option to further extend the ten-year rotation period up to a total of 20 years if tender is undertaken, or up to a total of 24 years if joint audit is adopted (Schorse and Morfeld, 2017, Rn. 17-21).

The EU also establishes transitional measures to gradually implement audit firm rotation (EU Regulation 2014/537, Art. 41; Kelm and Naumann, 2016; IDW Position Paper 2017, No. 4.1-4.2). A stepwise introduction of external rotation provides companies reasonable time to prepare for the new requirements and prevents an excessive demand for audit services since not all PIEs have to switch audit firms simultaneously at once (EU Commission Q&A 2016/05). The EU Regulation sets forth three transitional provisions for mandatory audit firm rotation that depend on the duration of the engagement at the date of entry into force June 17th, 2014. For example, when the audit firm has been conducting the statutory audit for at least 20 consecutive years as of June 17th, 2014, a six-year transition period applies after which a new audit firm must be appointed. If the audit firm has been conducting the audit for less than 20 years, shorter transition periods apply (EU Regulation 2014/537, Art. 41.2/ 41.3, see also Weber et al., 2016 and IDW Position Paper 2017, No. 4.1-4.2 for an overview of the transitional provisions).¹⁰

¹⁰ The three transitional measures are as follows: First, PIEs may not renew an engagement with the incumbent audit firm from June 17th, 2020 onwards when the firm has been conducting the audit for at least 20 consecutive years as of June 17th, 2014 (six-year transition period). Second, PIEs may not renew the engagement from June 17th, 2023 onwards when the firm has been conducting the audit for at least 11 but less than 20 consecutive years as of June 17th, 2014 (nine-year transition period). Third, PIEs may not renew the engagement upon expiry of the maximum period defined by the Member State when the firm has been conducting the audit for less than 11 years as of June 17th, 2014 (no transition period) (EU Regulation 2014/537, Art. 41).

3. The effect of external rotation on auditor independence

3.1 Economic effect

3.1.1 Theory

An important aim of the EU audit reform is to increase the quality of financial statement audits. Audit quality, as defined by regulators and researchers (e.g. DeAngelo, 1981a; PCAOB Release 2011; EU Regulation 2014/537), is driven by two key factors:

- The ability of the auditor to detect material misstatements, and
- The independence of the auditor to report detected misstatements truthfully.

The latter component of audit quality is “[...] the conditional probability that, given a breach has been discovered, the auditor will report the breach.” (DeAngelo, 1981a, p. 116). In other words, audit quality requires the independence of auditors to truthfully report detected misstatements. Importantly, the reporting addresses “[...] consumers of audit services [...]” (DeAngelo, 1981a, p. 115), such as investors or owners. The role of the auditor is to ensure that these consumers of audit services receive truthful information that are free from material misstatements. Standard setters and the academic literature usually distinguish between two forms of auditor independence. The first form, independence in mind (or independence in fact), describes the ability to make reasonable and unbiased decisions. It requires auditors to express conclusions without conflicts of interest created by a financial or personal relationship between the auditor and the audited entity. This state of mind comprises attributes such as objectivity, professional conduct, integrity, or professional scepticism. The second form, independence in appearance (or perceived independence), describes how third parties perceive the independence of auditors. Independence in appearance requires auditors to avoid any circumstances that would lead reasonable third parties to conclude that the auditor’s independence had been compromised (e.g. EU Directive 2014/56, AICPA Conduct 2014, IFAC Code of Ethics 2015). In the following, I use the term auditor independence to refer to the auditor’s independence in mind as one important driver of audit quality. I elaborate the economic and non-economic effects of audit firm rotation on auditor independence.¹¹

¹¹ The independence in appearance is also subject to investigation in the audit literature (e.g. Jennings et al., 2006; Kaplan and Mauldin, 2008; Reid and Carcello, 2017), but not focus of my study.

According to economic theory (e.g. DeAngelo, 1981a; Antle, 1982; Watts and Zimmermann, 1983; Antle, 1984; Hackenbrack and Nelson, 1996), auditors can be seen as rational agents who aim to maximize the quasi-rents they earn from an audit engagement. Each engagement generates a certain revenue depending on the audit fee paid by the client, but is also associated with start-up costs (e.g. client-specific investments, acquisition costs) and running costs (e.g. personnel and staffing costs). Auditors earn quasi-rents to the extent that the revenue of an engagement exceeds the running costs. The initial start-up costs are considered to be sunk costs that cannot be recovered once they incurred. Thus, the term quasi-rent describes the income auditors earn on their sunk costs, that is after their client-specific investments. Rational auditors also consider the opportunity costs of an engagement, defined as current income subtracted by the income available from auditing the next best client. Auditors will only continue an engagement and conduct the statutory audit if the expected revenue exceeds or equals the expected costs, such that the quasi-rents are positive (DeAngelo, 1981a).

Economic incentives are a potential threat to the independence of auditors. Given a profitable engagement, auditors have an economic interest to be reappointed as statutory auditor and to protect their future stream of quasi-rents (e.g. DeAngelo, 1981a; Antle, 1982; Watts and Zimmermann, 1983; Antle, 1984; Hackenbrack and Nelson, 1996). The hire and fire mechanism makes the auditor financially dependent on the client and creates a conflict of interest. On the one hand, auditors are obliged to their professional standards and should maintain their independence in mind. On the other hand, auditors also experience a financial pressure to retain a client and to renew the audit engagement. "An auditor who suspects questionable accounting must thus choose [...] between potentially harming his client (and himself) by challenging a company's accounts or harming faceless investors by failing to object to the possibly skewed numbers." (Bazerman et al., 2002, p. 5). In other words, auditors must decide to either oppose an aggressive financial reporting (heightened independence), or to concede towards the client-preferred position (low independence). The financial dependency is often seen as primary threat to the independence and to the professional conduct of auditors (e.g. Imhoff, 2003; Nagy, 2005; Jackson et al., 2008; Kaplan and Mauldin, 2008; Cameran et al., 2016). Standard setters, too, fear that auditors could compromise their independence in order to maintain a long-term relationship with

the client out of an economic interest (e.g. EU Commission 2011; PCAOB Release 2011; EU Regulation 2014/537).

The role of audit firm rotation - as it is suggested in the literature and in debates over rotation - is to mitigate this financial conflict of interest. A rotation requirement limits the maximum engagement period to a certain number of years. Upon expiration of this period, the engagement may not be renewed and the audit firm may not be reappointed. External rotation thus limits the auditor's future stream of revenue and withdraws the opportunity to earn long-term audit-rents from subsequent engagements. With rotation, the quasi-rents auditors may earn are lower compared to the quasi-rents auditors may earn from a similar engagement that is unlimited in tenure (e.g. GAO Report 2003, Wang and Tuttle, 2009, PCAOB Release 2011). A rational auditor anticipates that the audit firm is required to rotate off the client at some point in time and expects a reduced future benefit. Rotation decreases the financial dependency of the auditor on the client. In the final year before rotation is mandated the financial dependency is outright eliminated. A common argument in favor of audit firm rotation is that it strengthens auditor independence, because auditors are less financially dependent and experience less financial pressure to retain the client (e.g. GAO Report 2003, Communale and Sexton, 2005, Wang and Tuttle, 2009, PCAOB Release 2011). Regulators, too, argue that auditors are more likely to maintain their independence and to report detected misstatements with mandatory rotation (e.g. EU Commission 2011; EU Regulation 2014/537).

Another predicted effect of rotation is that the increased engagement risk associated with a new client strengthens auditor independence. "Engagement risk is the risk that the audit firm will suffer a loss via litigation [...]" (Brown and Johnstone, 2009, p. 70) or "[...] that the audit could result in fines, censure, litigation, loss of reputation, etc." (Hackenbrack and Nelson, 1996, p. 44). Given the reduced engagement tenure, auditor switches occur more frequently and earlier in time with rotation than without a rotation requirement. For example, 24 out of the 30 companies listed at the German Stock Index DAX have appointed the same audit firm for at least 16 years prior to the EU reform (Köhler and Herbers, 2014). With rotation, the average engagement tenure drops and leads to more auditor switches. During a first-time audit, the incoming auditor is less familiar with the new client and has less client-specific knowledge compared to auditors that have been in place for several years (see also chapter 4.). In addition, the new auditor also attracts

the attention of capital markets and receives more public attention. Both factors lead to an increased engagement risk with rotation, since the loss of knowledge might lead to lower quality audits and the public attention increases reputation concerns. To counter the engagement risk, the incoming auditor may show an heightened independence in mind. A common argument in favor of audit firm rotation is that the new auditor requires more conservative financial reporting from the client and is more willing to truthfully report detected misstatements to reduce the engagement risk (e.g. litigation, fines) upon rotation (Hackenbrack and Nelson, 1996; Brown and Johnstone, 2009).

3.1.2 *Experimental evidence*

The economic dimension of audit firm rotation is subject to investigation in many experimental studies. I conceptualize the broad field of literature according to the three main effects of rotation that I discussed above: (a) reduced financial dependency (Dopuch et al., 2001; Wang and Tuttle, 2009), (b) lower retention incentives (Chang and Hwang, 2003; Hatfield et al., 2008), and (c) higher engagement risk (Hackenbrack and Nelson, 1996; Brown and Johnstone, 2009). Table B.1 summarizes the predicted effects. A thematic priority of my review is on those studies that show a direct link to external rotation and that directly manipulate audit firm rotation as independent variable. In particular, I discuss the first mentioned studies by Dopuch et al. (2001) and Wang and Tuttle (2009) quite detailed. My review follows three main lead questions set forth in the introduction:

- What channels of external rotation have been tested experimentally (“theory”)?
- How is rotation reproduced in a controlled environment (“external validity”)?
- Which constructs are used to measure audit quality (“construct validity”)?

(a) *Financial dependency.* A prominent experiment in the rotation context is conducted by Dopuch et al. (2001). The study places a strong focus on the economic implications of audit firm rotation and raises the question whether mandatory rotation reinforces auditor independence. The theoretical foundation is build on the assumption that auditors are rational agents who maximize their own expected payoff. As rational agents, auditors would compromise their independence and seek cooperation with the manager in order to gain future economic benefits from subsequent engagements. Dopuch et al. (2001) test the hypothesis that auditors compromise their independence most often in settings where they can be dismissed by the manager (financial dependency). Overall, the experimental

results support the economic prediction and confirm the hypothesis. The benefit of this research question is the clear separation between economic and non-economic influences of rotation. The study follows the reasoning of regulators and entails a narrow economic view on audit firm rotation. On the downside, the reasoning seems rather straightforward and does not come as a surprise given the rationality assumption under standard economic theory. It does not discuss potential behavioral heuristics or influences beyond financial incentives.

Table B.1: Economic effects of rotation on auditor independence

Dimension	Predicted effect of rotation	Sign*	Experimental literature (e.g.)
a) Economic	Reduced financial dependency	+	Dopuch, King and Schwartz (2001); Wang and Tuttle (2009)
b) Economic	Lower retention incentives	+	Chang and Hwang (2003); Hatfield, Agoglia and Sanchez (2008)
c) Economic	Higher engagement risk	+	Hackenbrack and Nelson (1996); Brown and Johnstone (2009)

* + indicates a positive effect of audit firm rotation on auditor independence (heightened independence).

– indicates a negative effect of audit firm rotation on auditor independence (reduced independence).

Source: own source.

Dopuch et al. (2001) use an experimental economics approach to study the effect of audit firm rotation on auditor independence. The laboratory experiment directly manipulates rotation as independent variable by varying the economic dependency of the auditor on the manager across two conditions. In the first baseline setting, student-subjects in pairs of two engage in 25 rounds of a laboratory decision making task. In each round, managers may decide to dismiss or to retain the incumbent auditor. Employed auditors receive a fix audit fee, but dismissed auditors earn zero for at least one round. The hire and fire mechanism makes the auditor financially dependent on the manager. The setting is comparable to the financial dependency in an ongoing relationship without rotation, where managers have an incentive to dismiss non-compliant auditors. In the second experimental rotation condition, the number of rounds students may interact with one another is limited to a maximum of four periods. Upon completion of the fourth round, the auditor is automatically assigned to a new manager. The rotation manipulation reflects an audit engagement with tenure limited to a maximum of four years. Similar to practice, auditors are financial independent in the final period before rotation is mandated, but experience an economic dependency in

the ongoing engagement. Overall, the experimental framework captures the key economic incentives auditors face in a real rotation setting.

The experiment approximates auditor independence based on the reporting behavior of auditors, described as follows. In each round of the game, auditors receive private information about the profitability of an investment made by the manager (high vs. low profitability). The task of the auditor is to issue a report to the manager about the state of that investment. Managers benefit from reports that signal high profits. Auditors, too, have a financial interest to report in favor of the manager. They receive a flat audit fee in each round and are automatically reappointed when they confirm high profits, but may be dismissed if they report low profits. Auditors face a conflict of interest, because they are fined if they issue reports inconsistent with their private information - a behavior that indicates a reduced independence of auditors. This approximation is in line with DeAngelo (1981a), who defines auditor independence as the ability to "[...] withstand client pressures to disclose selectively in the event a breach is discovered." (DeAngelo, 1981a, p. 115). In the experiment, the truthful reporting of auditors reflects an independent mind-set to withstand financial opportunities (e.g. reappointment) and to avoid financial risks (e.g. fine, litigation). On the downside, the reporting in Dopuch et al. (2001) is addressed only to managers and not to external third parties. A truthful report does not necessarily reflect the auditor's will to ensure the informational value of audit reports, but could be the result of a calculative act to avoid economic disadvantages. In sum, the construct is a sound measure for auditor independence, with few limitations.

In another prominent experimental economics study, Wang and Tuttle (2009) focus on the economic implications of audit firm rotation. They test the hypothesis that auditors, in accounting negotiations with their clients, negotiate more outcome oriented and less in favor of the client when rotation is mandated. The theory is derived from the dual-concern model, which suggests that the way auditors approach negotiations depends on the relative importance they place on two dimensions, the negotiated accounting outcome and the ongoing relationship with the client. The model associates a strong concern for maintaining a relationship with more cooperative strategies, and a reduced concern for the relationship with more rigid negotiation strategies. Cooperative strategies are considered to be less desirable, since these strategies reflect auditors who may fail to object the clients' reporting and who do not challenge an erroneous financial account. Wang and Tuttle (2009) argue

that audit firm rotation reduces the concern for maintaining a relationship with the client, which in turn leads to more rigid negotiation. The experimental results indicate that audit firm rotation indeed leads to less cooperation by the auditor in accounting negotiations. The drawback of their reasoning is that it builds on different effects of rotation. They argue that audit firm rotation reduces the concern for the relationship, because it withdraws financial incentives from future engagements and because it increases the demand for audit services. Thereby, Wang and Tuttle (2009) refer to the reduced financial dependency of the auditor and to the effect of rotation on the audit market. The authors mix both influences, which is also reflected in the incentive structure of the experimental design as described in the following.

Wang and Tuttle (2009) manipulate the independent variable audit firm rotation in a competitive audit market. In their laboratory study, student-subjects in pairs of two participate in multiple rounds of a bargaining task that can result in a negotiation agreement or in an impasse. The experimental setting includes competition among auditors, such that there is an excess of one auditor per round who is not assigned to a client and who remains unemployed at zero pay. In the baseline setting without rotation, the dyads may interact over 20 experimental rounds as long as the negotiation ends with an agreement. In case the negotiation yields an impasse, auditors are assigned to the next available client in the subsequent round, thus face the risk of being unemployed since the market is competitive. In the external rotation condition, the interaction is restricted to a maximum of three rounds, after which rotation is mandated and after which the auditor is assigned to the next available client. Wang and Tuttle (2009) aim to create two settings with different economic incentives. The manipulation, however, shows some weaknesses that lower its external validity. First, the experimental market for audit services is not competitive enough. As a result, almost no auditor remained unemployed for more than one round and auditors experienced little incentives to retain the client. The manipulation does not capture the key economic incentives auditors face in practice, but places the auditor in a rather strong economic position in the rotation as well as in the no-rotation baseline condition. Second, the experimental manipulation appears to be complex and confounds the key research questions due to the different influences reproduced experimentally: competition among auditors, hire-and-fire mechanism, litigation risk, and multi-period interaction.

The study investigates how rotation affects the negotiation behavior of auditors, the primary dependent variable. The laboratory bargaining task in Wang and Tuttle (2009) requires student-subjects in pairs of two to negotiate over the fair value of an asset. The actual asset value is unknown to both and is drawn from a range of possible values following a probability distribution. Auditors and clients may communicate freely through a chat module by typing messages to each other. An experimental round ends with a mutual agreement when the auditor accepts an asset value proposed by the client, but results in an impasse when the auditor does not accept any value before the time runs out. Clients benefit from high agreed-upon assets values. Auditors receive a fix audit fee for each round they are employed, but face the risk of unemployment at zero pay in case of an impasse. The fix payoff is only reduced when the agreed upon asset value exceeds the actual value of the asset. The dependent measures in Wang and Tuttle (2009) are the negotiation strategy of the auditor and the negotiated asset values. These measures only limitedly allow conclusions about the independence of auditors according to the definition in this paper. On the one hand, a tough negotiation strategy reflects an auditor who withstands financial pressure and who remains independent despite financial incentives. On the other hand, the study does not provide a benchmark of appropriate behavior that would allow conclusions about whether or not audit firm rotation improves the independent mind set. A rigid auditor in the setting does not necessarily reflect an heightened sense of independence, but could also imply an aversion towards financial losses.

(b) *Retention incentives.* Other studies do not directly manipulate audit firm rotation as independent variable, but reproduce the economic conditions under rotation, e.g. different incentives for retaining a client. Chang and Hwang (2003), for example, argue and find that high retention incentives compromise the independence of auditors. The research instrument is an accounting case study conducted with professional auditors. The participants receive background information about an hypothetical audit client and are asked to assume the role of the statutory auditor of that client. As independent variable, the retention incentives of the auditor are manipulated across two conditions via a case study prime. In the high-retention incentive condition, the case materials highlight the financial importance of the hypothetical client to the local office and to the auditor. In the low-retention incentive condition, the client is described as being of minor economic importance. Despite the usual limitations of case-prime manipulations discussed in the

literature (e.g. weak manipulation, demand effects, replication issues), Chang and Hwang (2003) reproduce the key economic features of audit firm rotation. In practice, auditors have reduced incentives to retain a client when rotation is mandated, but higher incentives to retain a client in an ongoing relationship. Thus, the manipulation creates an experimental setting comparable to a rotation setting.

The dependent measure in Chang and Hwang (2003) also allows conclusions about the independence of auditors. The case materials create an artificial representation of an accounting conflict scenario and ask auditors whether they would adjust or waive an aggressive financial reporting of their hypothetical client. An approval of the aggressive financial reporting option (waive the reporting) indicates a reduced independent mind-set of auditors, since it leads to overstated accounts and materially misstated reports. An opposition of the client's reporting (adjust the reporting) indicates a heightened sense of independence, since it shows the ability to withstand retention incentives and to focus on the informational value of financial statements instead. On the downside, the measure only elicits the questionnaire-based intentions of auditors given an accounting case scenario. The reported intentions of auditors might be prone to a potential self-serving bias, such that the auditor chooses seemingly appropriate options. Overall, the study shows some confounding factors that could potentially impair the validity of the experimental results in the context of my discussion.

Using a different experimental method, Hatfield et al. (2008) study how retention incentives affect the negotiation behavior of auditors. The theoretical foundation is based on the assumption that financial pressure leads auditors to please their clients and to compromise their independence in negotiations. The case materials manipulate retention risk across two conditions. In the high-retention risk condition, auditors are informed that their client had issued a public invitation to tender for the next-year's audit. In the low-retention risk condition, the experimental materials contain no such statement and provide auditors no reason to believe they could potentially lose the client. The manipulations in Hatfield et al. (2008) do not directly relate to a rotation context, but they create two conditions with varying incentives to retain a client. Especially the high-risk condition confronts the auditor with incentives comparable to the ones they face in an ongoing relationship where a competitive market increases the risk of losing the client.

Following the written instructions, Hatfield et al. (2008) employ a computer-based instrument to simulate interaction between professional auditors and a computer-operated client. Each auditor receives a list of eight audit differences that need to be discussed with an hypothetical and computer-operated client, of which four are material and four are immaterial items. These audit differences can be understood as detected breaches in the accounting system of the client. For each of the eight items, the task of the auditors is to indicate whether they want to waive the item (not discuss it with management) or bring the item to the attention of the manager in an upcoming negotiation. Not bringing a material item to the attention of management yields erroneous financial statements and indicates a reduced independence of the auditor. The measure allows inferences whether auditors express independent conclusions without conflicts of interest created through retention incentives. The results show that auditors bring less accounting issues to the attention of the manager during negotiations (e.g. waiving issues instead of discussing them with management) when they face the risk of losing the client.

(c) *Engagement risk.* Hackenbrack and Nelson (1996) and later Brown and Johnstone (2009) investigate how engagement risk impacts the behavior of auditors in interactions with clients. Both studies do not directly manipulate audit firm rotation as independent variable, but reproduce an important economic effect of rotation - higher risk in early stages of a new engagement - in their experiment. The theoretical foundation in Hackenbrack and Nelson (1996) is in line with the argument that auditors show an heightened independence upon rotation to avoid a financial loss, e.g. due to litigation. They conduct an experimental case study with experienced auditors and manipulate risk across two conditions in the case. The case in the high-risk condition describes an hypothetical client as first-year audit client who has financial pressure and who is about to go public. The case in the moderate risk condition describes the company as long-term audit client with little financial pressure. The experimental setting reflects practice in a way that first-year auditors attract more attention of capital markets (go public) and face higher financial risks (financial pressure), compared to auditors in long-term relationships.

The case material in Hackenbrack and Nelson (1996) creates an accounting conflict scenario around an hypothetical audit client. The task of the auditors is to assume the role of the statutory auditor of that client and to indicate their own-preferred reporting position that was either aggressive or conservative. In the study, a conservative position

indicates heightened independence since such a position provides potential stakeholders a more appropriate picture of the entity. It ensures the informational value for consumers of an audit and shows that auditors do not give-in to a client-preferred aggressive position. Despite the usual downsides of accounting case studies (e.g. case priming, elicitation of hypothetical judgments), the research instrument allows inferences about the impact of engagement risk on the independence of auditors. In line with their reasoning, Hackenbrack and Nelson (1996) find that auditors in the high-risk condition are less likely than auditors under moderate risk to permit aggressive financial reporting. These findings suggest that the higher engagement risk upon rotation can improve auditor independence.

Brown and Johnstone (2009) implement another experimental setting to study the impact of engagement risk on the accounting negotiation behavior of auditors. The theoretical foundation provides a more differentiated view on the economic prediction that auditors respond to engagement risk with increased independence. They argue that experienced auditors better withstand the pressure of a risky client (higher independence), but inexperienced auditors respond strongly to risk (lower independence). The study manipulates engagement risk through a case prime. High-risk clients are described as first-year clients with public-trading status and a weak financial condition. Low-risk clients are described as long-term audit clients, that are privately held and that show sound financial ratios. Again, this manipulation captures the relevant economic features auditors face upon rotation in practice (e.g. higher financial risk and capital market attention during first-year audits).

In the experiment, public accountant participants negotiate with a computer-simulated client over the disclosure of a complex revenue recognition issue. The main dependent variables in Brown and Johnstone (2009) are the final agreed-upon amount of recognized revenue as well as the concessions made by the auditor. In line with the prediction, the study finds that inexperienced auditors negotiate less conservative outcomes in favor of the client when they encounter high-risk clients. Such a position reflects a reduced independence, because auditors do not oppose the aggressive reporting of their clients but concede towards their clients. The negotiated result yields to an overstated income and to an improper picture of the entity's financial viability. Although Hackenbrack and Nelson (1996) and Brown and Johnstone (2009) show no direct link to audit firm rotation, the high external validity and construct validity in both studies allow inferences about the engagement risk effect in a rotation setting.

3.2 Non-economic effect

3.2.1 Theory

External rotation also affects auditor independence beyond the purely financial dimension. In this chapter, I present arguments in favor or against rotation from a non-economic view (e.g. psychological effects, cognitive implications, behavioral heuristics). Prior research shows that auditors are prone to an escalation behavior, also referred to as “escalation of commitment” bias (Staw, 1981; Bazerman et al., 1984, 2002; Brockner, 1992). It describes the tendency of auditors “[...] not to correct previously waived immaterial audit adjustments that have grown over time into larger quantitatively or qualitatively material adjustments.” (Hatfield et al., 2011, p. 119). The bias refers to auditors who commit to their prior decisions, even if this commitment means that the improper accounting may escalate at some point in time and become a material issue. Such a behavior helps auditors to maintain their self-identity, since the correction of the financial statement would reveal that auditors made errors in the past (Bazerman et al., 2002; Hatfield et al., 2011). The commitment to prior decisions is a potential threat to the independence of auditors, when it escalates and auditors do not truthfully report detected misstatements in order to maintain their standing. Audit firm rotation can mitigate such an escalation behavior, because it reduces the maximum engagement tenure and makes auditor switches occur more often. Upon rotation, auditors are less involved in prior-year decisions compared to auditors in ongoing engagements. As such, one argument in favor of audit firm rotation is that it improves auditor independence due to the reduced escalation of commitment bias.

Another non-financial effect is that external rotation may strengthen the independence of auditors over reputation concerns. A rotation requirement has two distinct reputation effects. First, leaving auditors usually fear a review through their successors. The new incoming auditor might find undetected misstatements and might challenge the audited prior-year’s financial statement, for which the leaving auditor bears responsibility. A potential loss of reputation may motivate the leaving auditor to report independently, e.g. avoid erroneous financial statements. With rotation, auditor switches occur more frequently which leads to stronger reputation concerns of the leaving auditor. In this case, the increased reputation concerns due to rotation have a positive effect on auditor independence (e.g. GAO Report 2003, Imhoff, 2003, EU Commission 2011, PCAOB Release 2011).

Second, audit firm rotation also mitigates negative reputation effects that a voluntary auditor switch might be associated with. When clients decide to appoint a new auditor although rotation is not required, this voluntary switch sends negative signals to the capital market and questions the reputation of the leaving auditor. Without rotation, auditors are under psychological pressure to retain the client in order to avoid such negative reputation effects. Under these conditions, reputation concerns have negative effects on the independence of auditors, who might be willing to compromise their independence to retain the client. Audit firm rotation mitigates this pressure, since an auditor switch is mandated by regulators and does not send negative signals to capital markets. With rotation, auditors experience less psychological pressure to retain a client or to protect their reputation (Stefaniak et al., 2009; Wang and Tuttle, 2009). Taken both together, external rotation - as it is argued by regulators and researchers - improves auditor independence over reputation concerns.

Audit firm rotation also reduces the personal relationship between auditors and their clients. Besides its economic dimension, the auditor-client relationship also has a non-financial, personal dimension. The personal dimension can be understood as a social bond or affinity between both parties that arises from regular interactions and develops beyond financial motives (Kachelmeier and Van Landuyt, 2017; Koch and Salterio, 2017). Regulators fear that auditors get too aligned with their clients in a long-term audit engagement and therefore consider this dimension as potential threat to auditor independence (e.g. EU Regulation 2014/537; PCAOB Release 2011). The audit literature, too, argues that the personal tie between auditors and clients can bias the judgments of auditors. "The longer an accounting partner serves a particular client, the more biased his judgements will tend to be." (Bazerman et al., 2002, p. 5). Audit firm rotation has a positive effect on the independence of the auditor, because it reduces the time for both parties to build and maintain a personal relationship. A rotation requirement not only reduces the financial dependency of the auditor, but is also likely to lower the personal relationship and to reduce the bias in judgments (Catanach and Walker, 1999; Moore et al., 2006; Jackson et al., 2008; Moore et al., 2010; Cameran et al., 2015b, 2016).

In contrast thereto, some argue that audit firm rotation also alleviates the positive effects associated with a close personal relationship. The positive effect of the personal dimension is described informally by Arrunada and Paz-Ares (1997). "The continuity of the relationship creates a favorable framework for mutual trust and knowledge [...]. Trust allows the

parties to communicate at low cost and to resolve satisfactorily conflicts [...]" (Arrunada and Paz-Ares, 1997, p. 34). The argument is partly based on social exchange theory which states that shared goals and values in a personal relationship enable the exchange of socio-emotional benefits, such as trust (De Ruyter and Wetzels, 1999; Fontaine and Pilote, 2012; Herda and Lavelle, 2013). These benefits do not threaten the independence of auditors, instead they help to improve the communication between auditors and clients. A rotation requirement reduces the time to build such a relationship and alleviates its positive effects. "These assets are not only destroyed with each rotation; in fact, to a great extent they are never actually produced in the first place in the context of mandatory rotation." (Arrunada and Paz-Ares, 1997, p. 34). External rotation prevents a close personal relationship between auditors and clients, which is important for resolving conflicts and ultimately for maintaining auditor independence.

3.2.2 *Experimental evidence*

Although non-economic implications of audit firm rotation are less commonly the focus of attention in the audit literature, my review identifies some prior studies that experimentally investigate upon the predicted effects described above: (a) escalation of commitment bias (Hatfield et al., 2011), (b) reputation effects (Arel et al., 2006), and (c) the personal relationship between auditors and clients (e.g. Kachelmeier and Van Landuyt, 2017; Gibbins et al., 2010). Table B.2 summarizes the predicted effects again. With the exception of Arel et al. (2006), who directly manipulate audit firm rotation as independent variable, the non-economic effects are mostly studied outside the rotation context and with no direct link to external rotation. The following section therefore elaborates whether the experimental designs reproduce incentives comparable to the ones auditors face under rotation (beyond financial incentives), and analyses which constructs are used to measure auditor independence experimentally. I further provide brief suggestions for future research how to investigate non-financial effects experimentally.

(a) *Escalation of commitment.* Hatfield et al. (2011) investigate how prior-year involvement in waiving immaterial audit adjustments affects the independence of auditors in the subsequent year. The research question is interesting in a rotation context, because it provides insights whether long-term relationships without rotation may bias the judgments of auditors due to an escalation of commitment bias. The experimental case study informs experienced auditor participants that the current-year income of an hypothetical client is

Table B.2: Non-economic effects of rotation on auditor independence

Dimension	Predicted effects of rotation	Sign	Experimental literature (e.g.)
a) Non-economic	Reduced escalation of commitment	+	Hatfield, Jackson and Vandervelde (2011)
b) Non-economic	Lower reputation concerns	+	Arel, Brody and Pany (2006)
c) Non-economic	Weakened personal relationship	±	Kachelmeier and Van Landuyt (2017); Gibbins, McCracken and Salterio (2010)

Source: own source.

overstated above materiality and asks auditors to indicate a proposed audit adjustment. In line with the theoretical prediction, the study finds that auditors propose smaller adjusting entries when they do have an involvement in waiving the same issue in the prior period. In contrast, the proposed adjustments are larger when the auditor has no prior-year involvement. The measure is a sound approximation for the independence of auditors, because the proposed audit adjustments allow conclusions about the willingness of the auditor to report material misstatements independently.

Hatfield et al. (2011) manipulate prior-year involvement across two conditions. In the first condition without prior involvement, auditors learn that the same accounting issue arose last year. The issue was immaterial in scope and was waived by the prior-year auditor. The manipulation reflects an external rotation setting in a sense that the new incoming auditor is not involved in the prior-year decisions. In the second condition with prior-year involvement, auditors must first decide if they want to waive or record the immaterial item in the prior-year audit. This setting is comparable to an ongoing engagement, in which the long-standing auditor may have formed a commitment to prior decisions. The experimental manipulations do not directly relate to external rotation, but allow inferences about the behavior of auditors in early stages of a new engagement upon rotation (no prior involvement) and about the behavior of auditors in settings without rotation (prior involvement).

(b) *Reputation effects.* Arel et al. (2006) study the role of audit firm rotation in an accounting case study with professional auditors as participants. The study is motivated by two different theoretical considerations. Similar to Dopuch et al. (2001), the study

builds on the assumption that auditors compromise their independence over financial incentives. Arel et al. (2006) argue that audit firm rotation reduces the prospect to gain future quasi-rents and it increases the tendency to report independently. Interestingly, another consideration of the study refers to the reputation concerns of auditors. They argue that auditors usually fear the review of their working papers through a successor auditor or the monitoring of their work through the audit committee. The hypotheses suggest that auditors will compromise their independence less frequently when a review is likely, either due to external audit firm rotation or due to the presence of an audit committee that is competent enough to effectively oversee the work performed by the auditor. The reasoning and the experimental results are in line with the arguments regulators and proponents of audit firm rotation present. In particular, the study finds that auditors respond to erroneous financial statements and show a higher likelihood to modify their opinion when rotation is mandated. Arel et al. (2006) discuss different facets of audit firm rotation and include reputation concerns as an important addition to the purely economic argument.

The research instrument in Arel et al. (2006) is an accounting case study. The experiment directly manipulates audit firm rotation as independent variable through a case study prime. In the baseline setting without rotation, public accounting participants are asked to assume the role of the statutory auditor of an hypothetical audit client. The participants are informed that the audit firm has been conducting the financial statement audit of that particular client for the past three years and has always issued an unqualified audit opinion. The audit opinion in the current year has not been issued yet. In the rotation condition, the case contains the additional information that the audit firm is required to rotate off that client after the current year audit. Auditors are also informed that the successor auditor would review their work and might detect unreported misstatements. The manipulation in Arel et al. (2006) shows some strength and weaknesses. On the positive side, the experimental case prime clearly emphasizes and places a narrow focus on the reputation effect of audit firm rotation. On the negative side, such a rotation design lacks adequate incentives compared to a real-world rotation setting. The auditors in the experiment do not actually experience the consequences of their actions and must not fear a review through an hypothetical successor auditor. Overall, the manipulation seems too weak to appropriately capture the incentives auditors face in practice, which gives me reason to raise doubts about the external validity of the design.

The experiment is also subject to certain limitations in terms of measurement reliability. The task of the auditors in Arel et al. (2006) is to decide whether they would issue a qualified or an unqualified audit opinion given the following case. Auditors learn that they disagree with the hypothetical client over the appropriate treatment of a subjective, but material accounting issue. The client refuses to record an income adjusting entry in the books and prefers the aggressive treatment of the issue. The participants are asked to assume the role of the statutory auditor and to indicate on a Likert-scale the likelihood that they would qualify the audit opinion in that particular case. Arel et al. (2006) use the single-item measure to study the (reputation) effect of audit firm rotation on the independence of the auditor. The construct only limitedly allows inferences about the research question. For one reason, a qualified audit opinion is a severe action and auditors may be more reluctant to qualify the opinion in practice than on paper where consequences remain hypothetical. The setting does not allow auditors to find an alternative solution to deal with the accounting issue. For another reason, the self-reported intentions of the auditor might be influenced by the experimenter demand effect, since the instructions remind auditors that "[...] the manner in which the accounting issue in this case is resolved will be obvious to the successor auditors who will be expected to review this year's audit documentation." (Arel et al., 2006, p. 15). Such a note guides the auditors towards the more salient answer, that is the qualified audit opinion. The self reports as well as confounded constructs reduce the validity of the measure.

(c) *Personal relationship.* The role of external rotation to the personal dimension of the auditor-client relationship is controversially discussed by regulators and researchers. Rotation may mitigate the negative effects of a close relationship (e.g. biases in judgment), but it may also alleviate the positive effects associated with personal ties (e.g. effective communication). Despite the discussion, the topic is underrepresented in the experimental literature. Few studies outside the rotation context, however, investigate how the nature of the relationship between auditors and clients affects auditor independence. Gibbins et al. (2010) or Brown-Liburd and Wright (2011) conduct experimental case studies with professional auditors. Both use a case prime to manipulate the auditor's perception of the relationship with an hypothetical client as being either close and cooperative, or distant and difficult in nature. Other experiments outside the rotation context focus on the social bond or the affinity between auditors and clients, as important aspect of the personal

dimension. For instance, Kachelmeier and Van Landuyt (2017) aim to induce a social bond between two student-subjects by letting them answer questions jointly right before the main experimental task begins. Koch and Salterio (2017) use a case prime to manipulate the affinity of professional auditors to an hypothetical client. The auditors who learn that their firm has implemented a customer relation management system to improve the service for clients experience a higher affinity to the hypothetical client than auditors who have no such system available. Thus, there are multiple ways to induce a personal relationship between experimental participants.

These studies investigate upon the effects of personal ties outside the rotation context. The experimental manipulations described above do not reproduce the incentives auditors face in a rotation setting. In practice, a personal relationship between auditors and clients arises from repeated or regular interaction and needs time to develop. Audit firm rotation limits the time for both parties to interact with each other and to get to know each other, which weakens the personal relationship between auditors and clients. The manipulations in Koch and Salterio (2017) and Kachelmeier and Van Landuyt (2017), as an example, do not consider this time-component but induce a personal relationship between the experimental participants (social bond, affinity) through case primes or role playing. It is questionable whether the affinity auditors experience from the implementation of a customer relation management system is in fact comparable to the personal ties that develop during a long-term relationship. Both experiments build a different framework and do not reproduce the incentive auditors face in a rotation context - importantly, these studies do not claim to do so. The different thematic focus in combination with the missing link to rotation weakens the potential to draw inferences about the effect of a personal relationship in rotation vs. no-rotation settings.

Future studies could address the lack of research in this area and contribute to the debate over the personal dimension of the relationship. An interesting research question is whether audit firm rotation indeed affects the strength of the personal relationship, and how the personal ties between auditors and clients influence the independence of auditors. Thereby, experiments should vary the strength of the personal relationship between auditors and clients through manipulations that capture similar incentives auditors face in a long-term and repeated interactions. Economics-based experiments provide the opportunity to create an artificial environment in which student-subjects can interact over several rounds.

For example, the subjects in Wang and Tuttle (2009) or Dopuch et al. (2001) interact with another over multiple consecutive rounds, during which they may build a personal relationship. Researchers should find ways to measure the strength of the relationship between the subjects, or to disentangle the personal relationship in such a setting from other confounding factors, such as financial influences.

4. The effect of external rotation on auditor detection ability

4.1 Economic effect

4.1.1 Theory

The second key component of audit quality is the auditor's ability to discover breaches in the financial statement of their clients. High quality not only requires auditors to report misstatements truthfully, but also to detect errors in the client's reporting first. This ability is also referred to as detection ability of the auditor (DeAngelo, 1981a). The detection ability depends on (1) economic factors, such as the extent of testing or the scope of the procedures performed by the auditor. The probability to detect misstatements is likely to increase with the level of audit effort (financial and personnel resources) or with the use of a proper client-specific audit technology (customary audit approach). In addition, the detection ability also depends on (2) personal traits, such as the competence and knowledge of the auditor. Good industry and client-specific experience, sound technical and technological proficiency, as well as a profound knowledge of the accounting framework are associated with an increased ability to detect misstatements (e.g. DeAngelo, 1981a,b; Catanach and Walker, 1999). This chapter elaborates and discusses the economic implications of audit firm rotation on the detection ability of the auditor.

Under economic theory (e.g. DeAngelo, 1981a; Antle, 1982; Watts and Zimmermann, 1983; Antle, 1984; Hackenbrack and Nelson, 1996), auditors can be seen as rational agents who aim to maximize the quasi-rents of an engagement. Rotation reduces the quasi-rents, because it lowers the income-side, but increases the cost-side of the equation. On the income side, audit firm rotation restricts the earnings potential of an engagement to a certain maximum number of years (see prior section 3.). On the cost side, rotation leads to a frequent duplication of the switching costs. The limited engagement tenure makes auditor switches occur earlier in time and more frequently than without rotation. A new client, however, imposes a considerable financial burden on the audit firm. The switching

costs include acquisition costs during the proposal or tendering process, but also initial start-up costs for the audit firm. In the first year(s) of an engagement, auditors need to make client-specific investments (e.g. knowledge building, tailored audit technology and audit approach) and need to provide adequate personnel resources to familiarize themselves with the new client. This process requires effort from the incoming auditor, but increases the detection ability of the auditor (Arrunada and Paz-Ares, 1997, Catanach and Walker, 1999, Dopuch et al., 2001, Myers et al., 2003, Jackson et al. 2008, PCAOB Release 2011, EU Commission 2011).

A common argument against audit firm rotation is that it leads to less client-specific investments. In an ex-ante view - that is before initial investments into a new client are made - auditors take all switching costs into consideration when assessing the profitability of a new client.¹² When facing a new client, audit firms must decide how much personnel and financial resources to invest into that client. With rotation, start-up and implementation costs need to amortize more quickly and in a smaller time horizon in order to become profitable. Rational auditors anticipate that their initial investments might not be fully rewarded given the limited earnings potential. One consequence is that auditors have less incentives to make client-specific or efficiency-enhancing investments. For example, auditors might invest less into a tailored audit technology or into the acquisition of knowledge (Arrunada and Paz-Ares, 1997, Catanach and Walker, 1999, GAO Report 2003, AICPA Comment 2011). Another consequence is that audit firms have less interest to assign their most experienced and knowledgeable auditors to an engagement that is limited in tenure, but more interest to assign this qualified personnel to another client with higher quasi-rents (GAO Report 2003). The reduced financial and personnel investments in a rotation setting damage the detection ability of the auditor.

A contrary economic prediction states that rotation does not reduce the amount of client-specific investments. Starting point of this consideration is that the incoming auditors consider their initial investments ex-ante in the audit pricing. Rotation does not lead to a decline in the quasi-rents, if high switching costs are compensated through higher audit

¹² From an ex-post perspective - that is upon rotation and after switching costs incurred - rational auditors consider their switching costs as sunk (DeAngelo, 1981a). These sunk costs do not affect the quasi-rents of an engagement and should not influence the decisions of auditors (I discuss potential behavioral heuristics in the next section).

fees. Under these conditions, client-specific investments would amortize faster and auditors have more incentives to spend financial or personnel resources on a new engagement. The argument is based on the premise that the incoming auditor is able to charge higher audit fees, and that the client is also willing to accept these higher fees (e.g. Arrunada and Paz-Ares, 1997, GAO Report 2003, PCAOB Release 2011, Reid and Carcello, 2017). Researchers argue that audit firms can indeed charge higher premiums, since the costs would not be beared by the client itself, but would be passed on to shareholders. Imhoff (2003), for example, assume that shareholders "[...] would gladly pay for it knowing that they were actually getting an independent opinion on management's financial statements." (Imhoff, 2003, p. 124). Given the assumption that auditors include their investments ex-ante in the audit pricing, audit firm rotation would not reduce the client-specific investments and would not negatively affect the detection ability of the auditor. Imhoff (2003) refer to the increased cost argument described above as insufficient "[...] justification to reject mandatory rotation." (Imhoff, 2003, p. 124) since "[...] any increase in the cost of doing the audit would be passed on [...]" (p. 124) to the client and ultimately to shareholders.

4.1.2 *Experimental evidence*

The detection ability of the auditor is an important driver of audit quality (DeAngelo, 1981a). Despite its importance, the topic is seldom subject to investigation in the rotation context. One reason for the lack of research might be that the research question itself is straightforward and the results may appear obvious. However, the predicted economic effects of rotation do not clearly point in one direction but offer two competing hypotheses, which makes the detection ability an interesting research topic. Another reason for the lack of research might be practical challenges in designing an appropriate experimental design. Professional auditors may be reluctant to participating in an experimental detection task beyond the questionnaire-based case studies that I discussed previously. The audit literature may also find it challenging to design a construct that reliably measures the detection ability across different rotation settings. Given the limited experimental evidence, the subsequent review presents studies outside the rotation context. I elaborate the different constructs used to measure the detection ability of the auditor, and discuss the external validity of these experiments in a rotation setting. Table B.3 provides an overview.

(a) *Client-specific investments.* The detection ability of auditors is subject to investigation in some economics-based experiments with student-subjects. One line of research

Table B.3: Economic effects of rotation on the detection ability

Dimension	Predicted effect of rotation	Sign	Experimental literature (e.g.)
a) Economic	Reduced client-specific investments	–	Kachelmeier, Majors and Williamson (2014); King and Schwartz (2000)
b) Economic	Lower personnel investments	–	Asare, Cohen and Trompeter (2005); Bowlin (2011)

Source: own source.

addresses the question how auditors vary their client-specific investments under different economic incentives. In King and Schwartz (1999, 2000), Mayhew (2001), or King (2002) for example, auditor-subjects receive potentially erroneous information from managers and must choose an audit level (extent of testing) to verify these information. A strict audit level reduces the uncertainty about the information, but is also costly for auditors. The audit level can be considered as a client-specific investment of the auditor, which increases the ability to detect erroneous information. In other experiments, the auditors in Kachelmeier et al. (2014) or Kachelmeier and Van Landuyt (2017) likewise have incomplete information available during their interaction with a manager-subject. Auditors must decide how much monetary resources to spend on the verification of these information. The level of audit quality increases with the resources invested by the auditor. "The verification fee auditors are willing to spend serves as [...] proxy for audit resources." (Kachelmeier et al., 2014, p. 2188). In other words, auditors can invest into a client-specific audit technology that improves the detection ability and ultimately increases the quality of audit evidence.

These experimental designs can be adopted to a rotation setting. First, the studies use valid constructs to infer about the detection ability of auditors. Recall that the detection ability develops from knowledge and competence of the auditor, but is also affected by the scope of audit procedures performed or the level of audit effort (e.g. DeAngelo, 1981a,b; Catanach and Walker, 1999). In the laboratory experiments presented, auditors are asked to choose an audit level or to pay for the verification of information. These client-specific investments appropriately reflect the auditor's ability to detect misstatements. Second, the economics-based designs also allow researchers to reproduce incentives auditors face in a rotation setting. While prior studies do not relate to an audit firm rotation context (e.g. King and Schwartz, 2000; King, 2002; Kachelmeier et al., 2014), future research could

account for the economic effects auditors face under rotation. For example, a potentially appropriate design investigates the detection ability of auditors across two settings: one setting with limited tenure and reduced earnings potential (rotation), and one setting with multiple-round interaction and increased earnings potential (no-rotation). Importantly, the experimental setting must show a high external validity in a sense that auditors face similar economic incentives in the laboratory compared to practice.

(b) Personnel investments. Opponents of audit firm rotation argue that rotation reduces the detection ability of auditors, because audit firms have less incentives to assign their most experienced and knowledgeable auditors to an engagement that is limited in tenure. Accordingly, a different line of research in the experimental auditing literature investigates the staffing decision of auditors under different circumstances. Prawitt (1995) conduct an experiment with professional audit managers as participants. The auditors receive a list of audit tasks that need to be performed during the financial statement audit of an hypothetical client (e.g. risk assessment, internal controls testing, audit opinion, audit report) and are asked to indicate their preferred staffing assignment. In particular, the participants indicate whether they would assign seniors, managers, senior managers, or partners to perform the tasks on that list. In a similar staffing decision experiment, Asare et al. (2005) ask experienced audit partners how they would allocate staff time (e.g. of seniors, managers, partners) between two different tasks: i) the statutory audit of an existing client with minor financial importance to the portfolio, or ii) the acquisition of a potential new client with promising fees. Last, Bowlin (2011) conduct an experiment with student-subjects as participants. They ask auditor-subjects to allocate a given amount of resources between two accounts that differ in their risk of misstatement. The probability to detect a misstatement increases with the amount of resources auditors place on the account.

These experimental studies are interesting in the context of my review. For one reason, the dependent variable - that is the staffing decision or resources allocation through auditors - is a sound measure for the detection ability. The more resources or staff time auditors spend on a task, the more likely they are to find misstatements. Lower personnel investments, in contrast, reduce the detection ability of the auditor. For another reason, the experimental settings also create conflict of interests that parallel the conflicts auditors face under rotation. In Bowlin (2011), for example, auditors assign resources across two accounts with varying probability of misstatement. The high-risk account may reflect a first-year client upon

rotation with whom the auditor is less familiar and with higher risks of misstatement. The low-risk account may reflect an ongoing engagement in which auditors are more familiar with the client and the risk of misstatement is reduced. Similarly, the auditors in Asare et al. (2005) allocate staff time between an existing client with lower quasi-rents, and a potential new client with higher promising quasi-rents. This task is comparable to practice, where auditors likewise face the trade-off in their staffing decision between an engagement with limited earnings potential due to rotation and the acquisition of another client whose tenure might be unlimited. Both designs do not directly relate to audit firm rotation in the narrow sense, but capture important incentives auditors face in practice and thus relate to rotation more indirectly.

4.2 Non-economic effect

4.2.1 Theory

The debate over external rotation often covers a non-economic perspective, too. Focus of this non-economic perspective usually are personal traits of the auditor that determine the detection ability (e.g. knowledge, competence). One common argument against audit firm rotation is that the loss of client-specific knowledge reduces the detection ability of the auditor. Critics fear that the leaving auditor might not be able to transfer the entire acquired knowledge to the new incoming auditor (Catanach and Walker, 1999). Regulators aim to address this concern through a hand-over file. The EU, for instance, advises the former statutory auditor to provide the new auditor access to all relevant information about the audited entity and to prepare a hand-over file for the incoming auditor (EU Regulation 2014/537, Art. 18). The incoming auditor, however, faces the challenge to verify the completeness and accuracy of the provided information. Prior literature argues that a knowledge transfer is hardly achievable if an auditor simply reviews information prepared by another auditor from a different firm (Joe and Vandervelde, 2007; Hatfield et al., 2011). External rotation also leads to a loss of knowledge, because the new auditor needs sufficient time to become familiar with the audited entity. The limited engagement tenure increases the pressure on auditors to acquire the client-specific knowledge in a shorter time period. Opponents of mandatory rotation argue that the loss of knowledge and the lack of familiarity due to an auditor switch are the primary sources of non-detected misstatements (e.g. AICPA Comment 2011, PCAOB Release 2011, Schmidt and Cross, 2014, Bowlin et al., 2015, Cameran et al., 2016, Reid and Carcello, 2017).

A contrary argument in favor of rotation is that the fresh look of an incoming auditor increases the detection ability. Different psychological theories indicate that auditors in long-term relationships with their clients might be tied down by their judgments. I highlight two important cognitive biases in this respect. First, Tan (1995) shows that auditors may be prone to a confirmation bias. Auditors with prior-year involvement tend to seek evidence that is consistent with their judgments documented in the working papers. In an ongoing engagement, auditors may anticipate the audit results and view the task merely as a repetition of prior-year audits. Second, Bazerman et al. (1997) points out that auditors are prone to an unintentional self-serving bias that develops from a close and repeated interaction with their clients (King, 2002). The self-serving bias implies that auditors judge information in a way that favors their own interests or the interests of their clients. The bias is associated with a lack of professional scepticism that may lead auditors to blindly trust the client. Audit firm rotation mitigates these concerns, because the limited engagement tenure leads to more frequent auditor switches (e.g. Nagy, 2005; Jackson et al., 2008; Reid and Carcello, 2017). Regulators and researchers argue that the incoming auditor is less prone to these biases and may bring in more objectivity. A new auditor is not committed to prior-year judgments and may question the established with a fresh look (e.g. Cameran et al., 2015b, PCAOB Release 2011).

Audit firm rotation may also lead auditors to lower their audit effort in early stages of a new engagement. I derive this assumption from two cognitive biases that have received less attention in the audit literature so far. Hyperbolic discounting describes the tendency of people to prefer smaller payoffs sooner in time over larger payoffs later in time. Put another way, people often are present-biased and make time-inconsistent choices (Laibson, 1997). In an audit context, Dopuch and King (1996) find that auditors have a preference to avoid losses early in the engagement (e.g. losses through lowballing DeAngelo, 1981a) even though these losses will be compensated within the engagement period. Audit firm rotation reduces the amortization period further and might lead auditors to lower their effort in the first year of the engagement in which start-up and implementation costs already are an additional financial burden. Moreover, the sunk cost fallacy describes the tendency of people to take sunk costs into consideration and to stick to a project once an initial investment has been made (Arkes and Blumer, 1985). Auditors prone to such a bias may calculate their quasi-rents under consideration of sunk costs. Audit firm rotation increases

the perceived pressure for auditors to recover their initial sunk investment in a shorter time period. This pressure might lead auditors to lower their effort in order to reduce costs further. Since both cognitive biases find less attention in the current debate over rotation, they are not part of the subsequent review.

4.2.2 *Experimental evidence*

The non-economic perspective yields two opposing views on the detection ability of auditors: the incoming auditor brings in a fresh perspective with a less biased mindset (fresh look), but the new auditor also lacks client-specific knowledge (loss of knowledge). These two effects are not only important in current debate over rotation, but also subject to a prior experimental investigation. Focus of my review is on the study by Bowlin et al. (2015), who investigate the knowledge-loss effect of rotation experimentally. I discuss the opportunities and limitations of this study in detail. Moreover, there are some experimental studies outside the rotation context with a thematic reference to my discussion (Tan, 1995; Joe and Vandervelde, 2007; van Rinsum et al., 2017). Important research questions is how these studies incorporate the non-economic effects of rotation experimentally, and whether or not the research designs allow inferences about rotation. The review follows the structure presented in table B.4.

Table B.4: Non-economic effects of rotation on the detection ability

Dimension	Predicted effect of rotation	Sign	Experimental literature (e.g.)
a) Non-economic	Loss of client-specific knowledge	–	Joe and Vandervelde (2007); Bowlin, Hobson and Piercey (2015)
b) Non-economic	Fresh look of the incoming auditor	+	Tan (1995); van Rinsum, Maas and Stolker (2017)

Source: own source.

(a) *Loss of client-specific knowledge.* Bowlin et al. (2015) study the effect of audit firm rotation on audit quality. The particular focus is on how the loss of familiarity and the loss of knowledge caused through rotation influences the audit effort. The study is motivated by the support theory from social-psychology, which suggests that auditors can adopt two different mental frames when they think about their clients. Auditors can either assess the potential honesty or they can assess the potential dishonesty of their clients. These two different thinking modes have important implications. The theory predicts that auditors

will overestimate the honesty of their clients when auditors apply an honest mental frame, which will lead to lower audit effort. Bowlin et al. (2015) argue that rotation makes it harder for auditors to gather support for their mental frame, since the incoming auditor lacks knowledge of a new client. Under an honest mental frame, rotation would impede auditors to find psychological support for their assumption that financial statements are actually prepared honestly. This lack of psychological support leads auditors to mistrust the client more and to increase their effort.¹³ The theoretical foundation is directly linked to audit firm rotation, yet it provides a novel perspective on the subject. In contrast to the assumption that the loss of knowledge harms the detection ability of the auditor, Bowlin et al. (2015) acquire a new comprehension and highlight the beneficial effects. They “[...] predict and find that mandatory rotation improves audit quality when an auditor takes an honesty frame [...]” (Bowlin et al., 2015, p. 1363).

The level of audit effort serves as proxy for the detection ability of auditors and represents the main dependent variable. Bowlin et al. (2015) conduct a laboratory experiment with student-subjects who engage in a dyadic (two-party) decision making task. Participants are randomly assigned to their experimental role as auditor or manager and are randomly divided into pairs of two. As a first step, managers take an hidden action and choose between two financial reporting strategies, a conservative strategy and an aggressive strategy. They benefit from an aggressive reporting strategy as long as auditors do not investigate much. Managers then send a message to the auditor indicating - truthfully or untruthfully - the reporting alternative they claim to have chosen. In other words, the auditor receives a potentially erroneous signal about the actual decision of the manager. As a second step, auditors are asked to assess how honest or how dishonest managers were in their message, depending on the experimental condition (honesty vs. dishonesty frame respectively). Auditors are then required to choose between two levels of audit effort, no investigation and strict investigation. Auditors benefit from low audit effort if managers choose a conservative reporting strategy, but auditors yield the lowest payoff if an aggressive reporting remains undetected due to low audit effort. The construct allows

¹³ The same logic applies to a dishonest frame, but in the opposite direction. Auditors will overestimate the dishonesty of their clients when they apply a dishonest mental frame, which leads to an increase of audit effort given that auditors expect financial statements to be prepared dishonestly. With audit firm rotation, auditors lack knowledge of the client and would find it harder to gather support for their mental frame. This lack of psychological support for the dishonesty of their client would lead to a decrease of audit effort given rotation (Bowlin et al., 2015).

inferences about the detection ability of the auditor, since the chosen level of audit effort reflects the extent of procedures performed through the auditor. A stricter audit is usually associated with a higher ability to detect misstatements, in practice as in the experiment.

Bowlin et al. (2015) manipulate audit firm rotation as independent variable through the number of rounds auditor-manager pairs interact with another. Each subject participates in exactly 20 experimental rounds. In the rotation condition, auditors are randomly paired with a new manager at the start of each round. The manipulation repeatedly simulates the last period of an engagement before rotation is mandated, it also can be thought of as strict rotation rule with a maximum engagement period of just one year. In the no-rotation condition, the auditor is retained for the whole experiment and interacts with the same manager throughout all rounds. In both conditions, auditors are financially independent from the manager and cannot be dismissed. Bowlin et al. (2015) do not implement the usual hire and fire mechanism, instead auditors are automatically reappointed in the retention condition and are always guaranteed a follow-up engagement in the rotation condition. In line with the theoretical foundation, the manipulation does not reproduce the economic effects of rotation, but focuses on non-financial structural features, e.g. its effect on the familiarity between auditors and managers. The experiment creates a clear contrast between a lower level of knowledge about the client assumed in the rotation condition with short-term interaction, and a higher level of knowledge assumed in the retention condition with multi-period interaction between auditors and managers. The manipulation places a narrow focus on the knowledge-effect of rotation and captures non-financial incentives auditors face under rotation.

Outside the rotation context, Joe and Vandervelde (2007) investigate whether a transfer of knowledge between two auditors can be achieved through a review of working papers. They argue and find that auditors transfer more knowledge “[...] when the same auditor performs both [...] tasks than when the tasks are performed by different auditors.” (Joe and Vandervelde, 2007, p. 471). In the case study experiment, professional auditors receive background information about an hypothetical client and are asked to perform a judgmental audit task. The task is to identify internal control weaknesses, fraudulent actions of the management, and client-specific risks. The higher the number of frauds identified, for example, the higher the detection ability of the auditor. As such, the dependent variable allows conclusions about the detection ability of the auditor.

The experimental manipulation in Joe and Vandervelde (2007) also shows an indirect link to a rotation setting. In one condition, auditors are required to first perform a different non-audit task that helps them better understand the business environment of the hypothetical client. This setting reflects an ongoing engagement without rotation, in which the auditor may gain knowledge of the client. In another condition, auditors do not perform the non-audit task themselves but review the working papers of another auditor who performed that task. This condition is comparable to a rotation setting, where incoming auditors usually perform their procedures upon a review of a hand-over file prepared by the predecessor auditor. Although the study lacks the direct link to external rotation, the experimental results indirectly allow inferences about the knowledge effect in a rotation setting.

(b) *Fresh look.* Tan (1995) study the effect of a fresh look on the detection ability of auditors. In particular, they investigate whether the prior-year involvement of auditors reduces their scepticism but increases their bias to seek evidence consistent with prior judgments. The study contributes to the debate over rotation, since it compares “[...] the behavioral effects in both staff rotation and repeated engagements settings to determine whether staff rotation implies an improved ability to bring a new viewpoint to the audit [...]” (Tan, 1995, p. 114). Although the term staff rotation refers to an internal rotation requirement of the auditor, it does not impede the validity of the experimental results in an external rotation context. Both rotation requirements similarly affect the prior-year involvement of the individual auditor upon internal/ external rotation and create comparable incentives at the individual level. The paper shows that “[...] rotation can be useful in reducing the tendency to focus more on consistent facts arising from repeated engagements.” (Tan, 1995, p. 115). They conduct an experimental case study with professional auditors as participants, as described next.

Across two conditions, Tan (1995) implement an internal rotation scheme. In the prior-year involvement condition, auditors receive information about an hypothetical client and are asked to assess the financial viability of that client. Such a task is comparable with the decision on the appropriate audit opinion (e.g. a high financial viability might reflect a going concern opinion). Next, auditors receive updated facts about that client and are asked to make the same assessment once again for the subsequent financial year. The setting relates to an ongoing audit engagement without rotation, in which auditors are repeatedly assigned to one client and make judgments repeatedly. In the condition without

prior-year involvement, auditors first read the going concern evaluation of the last year's auditor and are then asked to assess the financial viability in the current year. The setting relates to a rotation environment (external or internal), in which the incoming auditor makes judgments without prior involvement. In both conditions, auditors are subsequently asked to recall as many facts about the hypothetical client as possible. This dependent variable allows conclusions about the detection ability of the auditor in a sense that the recall of facts that are inconsistent with the prior judgments of the auditor indicate a fresh look and an improved scepticism, while the recall of facts that are consistent with prior judgments might indicate a confirmation bias.

Audit firm rotation is thought to improve the detection ability of the auditor because the incoming auditor brings in a fresh perspective. This argument is based on the assumption that auditors in long-term relationships might be tied down by their judgments and exhibit lower scepticism. Instead of questioning the established, auditors may employ a less critical mode of thinking and may be prone to a confirmation bias. van Rinsum et al. (2017) investigate a similar hypothesis, but outside the rotation context. They assume that the use of a disclosure checklist biases auditor judgments and leads to less critical thinking. The mental framework is comparable to the one auditors apply in ongoing engagements, where routine may unintentionally lower scepticism. Without having checklists available, auditors would bring in a fresh look and a more critical mindset. This mental framework is comparable to the one of an incoming auditor upon rotation, who is less tied down by judgments and breaks the routine. As such, the research question indirectly relates to the fresh-look-hypothesis in the rotation context.

van Rinsum et al. (2017) conduct a case study experiment with professional auditors as participants. Auditors learn that the hypothetical client prefers a rather aggressive, income-increasing treatment of a subjective accounting issue described in the case materials. In one condition, auditors have no checklist available and are asked to rate the acceptability of the accounting treatment. In the second condition, auditors have to go through a disclosure checklist before making their judgments. "A disclosure checklist is often one of the important decision aids used while reviewing the audit file and forming an audit opinion." (van Rinsum et al., 2017, p. 7). The experimental results confirm the hypothesis that disclosure checklists may bias auditor judgments. Auditors exhibit a less critical thinking mode and behave more in favor of the client-preferred reporting when they have checklists

available. Although the study does not relate to rotation in a narrow sense, it reinforces the assumption that routine tasks (e.g. in repeated engagements without rotation) may negatively affect auditor judgments.

5. Conclusion

My study adds to the practical debate over audit firm rotation. The EU recently introduced an external rotation requirement to enhance the quality of financial statement audits. The effectiveness of such a rotation rule, however, is subject to controversial discussion on a political level as well as in the academic audit literature. Since public debates often mix the various influences rotation has on audit quality, this study gathers the key arguments and categorizes these different channels. Figure B.2 provides a summary of the predicted effects. I observe that the positive effects associated with audit firm rotation mainly address the independence of the auditor, while the negative effects predominantly relate to the detection ability of the auditor. The experimental literature in most parts supports these predictions: external rotation seems to strengthen auditor independence, but to weaken the detection ability. These opposing effects provide a reasonable explanation for the mixed evidence in the archival literature, stating that rotation is associated with both improved and reduced audit quality. Furthermore, my dichotomous classification (economic vs. non-economic) provides a more differentiated view on the theoretical effects of rotation. It also highlights the importance of non-financial channels, that researchers and regulators should consider when evaluating the effectiveness of rotation.

Alongside the three key research questions, this review further contributes to the audit literature from a thematic and methodological perspective. First, my study follows the questions what channels of rotation have been tested experimentally and how prior research incorporated these channels in the theoretical foundation. In particular, I identify two thematic areas that have received less attention in the experimental literature so far: the non-economic perspective on rotation is covered in most debates over external rotation, yet the topic is still underrepresented in the experimental literature (e.g. personal relationship, reputation, fresh look). In addition, I observe that the detection ability of the auditor is mostly studied upon outside the rotation context (e.g. client-specific investments, personnel resources). Both areas provide interesting research directions for future studies.

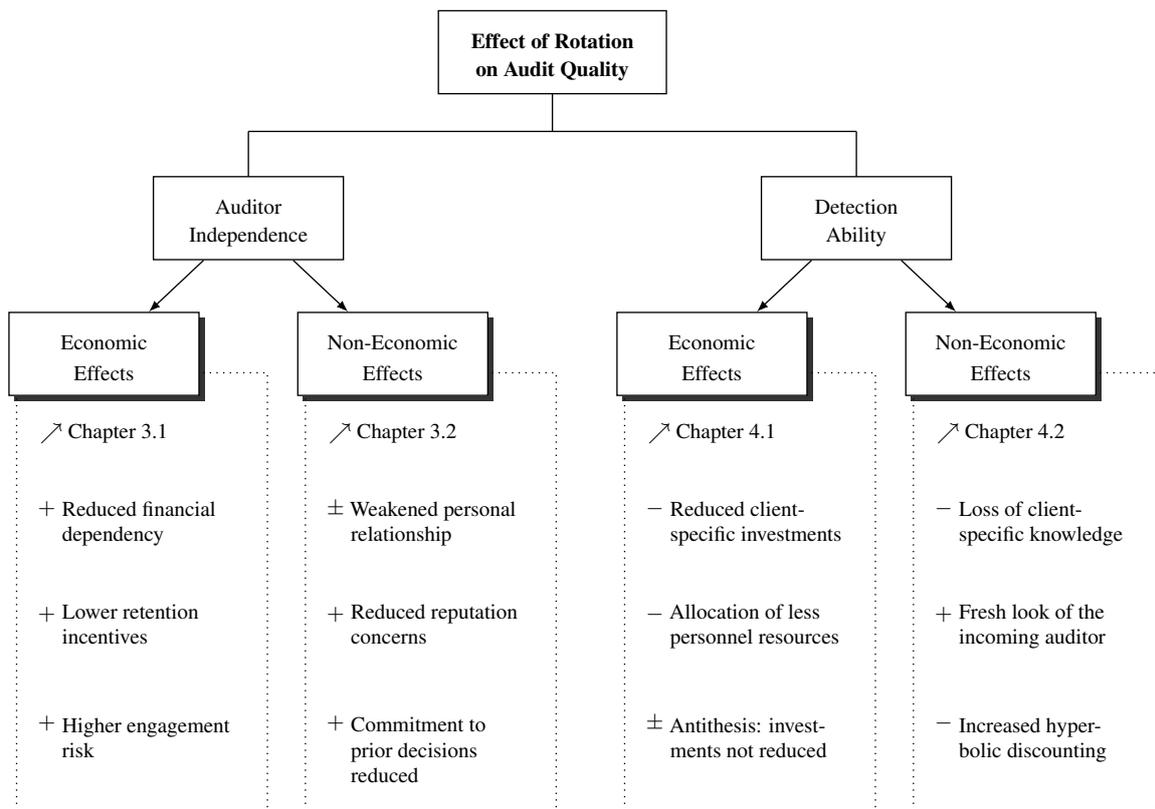


Figure B.2: Effects of rotation on audit quality

(Source: own source)

Second, my study also elaborates how external rotation is reproduced in a controlled experimental environment. One benefit of experimental studies over archival studies is their potential to mitigate the lack of international experience with external rotation. Despite the potential, only few experimental studies directly manipulate rotation as independent variable. Laboratory studies with students as participants usually manipulate rotation by limiting the number of rounds subjects may interact with one another. An important limitation of this approach is that researchers sometimes fail to create an externally valid environment with incentives comparable to a real rotation setting. Case-study instruments with auditors as participants, in turn, usually include a case prime that requires auditors to imagine a rotation setting (e.g. first-year audit upon rotation, terminal year of an engagement). To improve the external validity of such a prime, researchers should implement a stronger manipulation of the treatment variable.

Third, another key questions of this review refers to the validity of the constructs used to measure audit quality. The second benefit of experimental studies over archival studies is

that researchers do not need to proxy audit quality based on publicly available measures. Instead, they can directly observe the interaction between the participants and infer about the quality of an audit task performed. Nevertheless, the operationalizations of auditor independence and auditor detection ability - as two drivers of audit quality - show some weaknesses. Auditor independence refers to the independent mind-set of the auditor to ensure that the consumers of audit services receive truthful information. Most independent measures, however, create a purely financial trade-off for auditors, but do not take on this third-party perspective. The detection ability of the auditor is still less commonly operationalized in the experimental literature, at least in the context of audit firm rotation. The experimental economics literature provides some interesting measures that future studies could incorporate and further develop (e.g. client-specific financial and personnel investments).

My study has important implications to regulators and researchers. Regulators should realize that audit firm rotation indeed has two opposing effects on the quality of financial statement audits. A rotation requirement can strengthen auditor independence, but it may also negatively affect the ability to detect misstatements. It seems that first-year audit failures are mainly due to the lack of knowledge of the incoming auditor, and due to economic incentives that hinder client-specific investments of the auditor. A stricter regulation of the hand-over file and of the familiarization requirements upon rotation could mitigate these concerns. Researchers have the potential to address the lack of research that some thematic areas still offer. It is important to disentangle single effects, and to place a clear focus on the one of interest. Future studies should design experiments that reliably capture the key economic or non-economic incentives auditors face in a rotation setting. I also suggest not to underestimate the role of the psychological effects rotation has on the behavior of auditors.

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CHAPTER C

External rotation and auditor-client negotiations: The role of power and personal relationship

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Abstract

The European Union has recently introduced an external rotation rule to enhance auditor independence and audit quality. Prior literature argues that external rotation may enhance auditor independence, because it reduces the economic incentives for auditors to retain the client, and thus weakens the financial relationship between auditors and clients. This study goes beyond the purely economic effects and considers the effects of rotation on the personal relationship between auditors and clients. Based on the dual-concern model, I argue that a weaker personal relationship due to the rotation requirement can hinder effective auditor-client negotiations. In contrast, the personal relationship that develops when the auditor is retained for several periods enables integrative solutions and strengthens the outcome orientation of the auditor. These positive effects on the gatekeeper function of the auditor can especially be realized when the auditor has sufficient statutory power. To test my hypotheses, I conduct an economics-based laboratory experiment with students as participants. My gatekeeper game extends the standard trust-game by an additional third player - the auditor - who negotiates with the client on behalf of investors. The game also allows me to disentangle the effects of external rotation on the financial and personal dimension of the auditor-client relationship. The experimental results fully support my hypotheses.

1. Introduction

Auditors often negotiate about the appropriate financial reporting together with their clients (Gibbins et al., 2001, 2005, 2007). It is important to understand how auditors negotiate, because accounting negotiations between auditors and client-management ("ACM negotiation") directly affect the quality of financial statements (e.g. Brown and Wright, 2008; McCracken et al., 2008). According to the dual-concern model, the way auditors approach negotiations depends on two concerns: their concern for the negotiated accounting outcome and their concern for the relationship with the client (Pruitt, 1983; Savage et al., 1989). The concern for the relationship with the client is usually equated with the auditor's financial interest to retain the client and is seen as a threat to auditor independence (Wang and Tuttle, 2009). Prior studies show that auditors tend to negotiate in favor of the client and are more likely to accept an aggressive financial reporting when they have financial incentives to maintain a long-term relationship (e.g. Hackenbrack and Nelson, 1996; Wright and Wright, 1997; Dopuch et al., 2001; Wang and Tuttle, 2009).

The European Union has recently introduced an external audit firm rotation requirement ("external rotation" or "audit firm rotation") that mandates public-interest entities to change their statutory audit firm after a maximum engagement period of ten years, if no exceptions apply. Aim of this new rotation requirement is to enhance auditor independence and to improve audit quality. The ACM negotiation literature argues that external rotation may achieve these objectives, because it limits the engagement period to a certain number of years. It reduces the auditor's economic incentives to retain the client and removes the potential to earn long-term audit-rents from subsequent engagements. From the perspective of the dual-concern model, external rotation thus leads to a lower concern for the (financial) relationship and to less cooperation in negotiations. The financial view on rotation is well developed in theory and often subject to investigation in the experimental literature (Dopuch et al., 2001; Arel et al., 2006; Wang and Tuttle, 2009).

In my study, I go beyond the purely financial effects of external rotation and argue that rotation also changes the personal relationship between the auditor and the client. The personal dimension of the relationship can be understood as a social bond between auditors and clients that arises from regular interactions (Kachelmeier and Van Landuyt, 2017). This personal dimension refers to non-financial characteristics of the ACM relationship, such as shared goals and values, or affinity and trust between both parties (DeRuyter

and Wetzels, 1999; Fontaine and Pilote, 2012; Herda and Lavelle, 2013). I argue that external rotation not only reduces the financial dependency, but also weakens the personal relationship. The limited engagement tenure due to rotation reduces the time for auditors and clients to get to know each other and to build a personal relationship. Thus, I assume a stronger personal relationship in a long-term engagement without rotation, and a weaker personal relationship when the engagement tenure is limited due to rotation.

My research addresses the question how the personal relationship between auditors and their clients affects accounting negotiations. The negotiation literature often focuses on the financial dimension, but only few studies investigate upon the personal dimension of the auditor-client relationship. These studies argue that close personal ties can bias the judgment of auditors (Bazerman et al., 2002; Moore et al., 2006) and that auditors tend to negotiate in favor of the client when the relationship is close (e.g. Gibbins et al., 2010; Brown-Liburd and Wright, 2011; Koch and Salterio, 2017). In contrast, the dual-concern model suggests that a high concern for the personal relationship has positive effects and can enable integrative negotiation solutions. Integrative solutions are desirable, because they reflect a strong relationship and outcome orientation of the auditor, and yield win-win solutions for both negotiating parties. I further build on the power research from social psychology and argue that the positive effects of a close relationship can be realized especially when the auditor has bargaining power over the client. I suggest that a close personal relationship does not harm auditor independence, but instead can improve accounting negotiations. It leads auditors to negotiate integrative solutions while remaining rigid on the final accounting outcome. These positive effects can especially be realized if the auditor has sufficient power relative to clients.

To test my hypotheses, I apply an experimental economics approach that is based on the standard two-player trust game (Berg et al., 1995). In the trust game, investors decide how much of their initial endowment to entrust to an anonymous responder, that I refer to as manager. The manager receives a multiple of the investment and decides which share to return to the investor. Investors benefit from a high return on their investment. The trust game reflects a principal-agent conflict in which investors fear misappropriation of their investment, but cannot reliably oversee the actions of managers. In practice, this conflict is mitigated by an independent supervising body, such as the external auditor. I include the auditor as an additional third player to the trust game (Choy et al., 2008). In my setting, the

auditor is an independent gatekeeper who oversees the interaction between the investor and the manager. As an external party, the auditor may intervene at two stages. First, the auditor negotiates with the manager about the division of the investment outcome. The auditor may convince the manager to return more resources to the investor than initially planned, thus auditors can yield an additional investor value through communication. Second, the auditor may also disapprove of the final negotiated outcome and reject the investor return defined by the manager.

My experiment is a fully crossed 2×2 factorial design with the independent variables rotation regime (rotation vs. retention) and auditor power (high vs. low power) manipulated between subjects. First, I implement a rotation and retention condition. In both conditions, the auditor is financially independent from the manager, analogous to the auditors in Bowlin et al. (2015). This setup enables me to clearly separate financial and personal effects of rotation on ACM negotiation. I assume a weaker personal relationship in the rotation condition when auditors and managers interact for only one round, but a stronger relationship in the retention condition when the auditor is retained for several experimental rounds. This rotation manipulation reflects a one-year rotation rule, it repeatedly simulates the last audit before rotation is mandated. Second, I implement two conditions with varying auditor power, a low and high auditor power condition. I manipulate it by varying the consequences for managers when auditors disapprove their action. In practice, the disapproval of the auditor can be compared to the issuance of a qualified audit opinion that has detrimental economic consequences for managers.

This paper provides new evidence how audit firm rotation influences ACM negotiations beyond financial incentives. Across 16 experimental sessions, a total of 240 student-subjects participated in the laboratory gatekeeper game. In line with my expectations, I find that a stronger personal relationship in the retention regime leads to more integrative negotiation strategies, while a weaker personal relationship in the rotation regime leads to more contending (uncollaborative or tough) negotiation strategies. Integrative strategies improve negotiations, because they yield additional investor value and they also receive less negative feedback from managers compared to contending strategies. Another positive effect of a strong personal relationship is that it increases the investor orientation of auditors. My results are restricted to settings in which auditors have sufficient power over managers. With low power, the auditor has almost no impact on the negotiated outcome so that

negotiations between auditors and managers can be seen as cheap talk. I conclude that effective communication between auditors and clients requires sufficient auditor power, and that a strong personal relationship can improve the way auditors negotiate with managers. In fact, investors are best protected in the retention setting where stronger personal ties between auditors and managers develop.

The results provide a novel perspective on external rotation and on accounting negotiations. While most of the debate over rotation is directed solely towards economic incentives (Dopuch et al., 2001; Arel et al., 2006; Wang and Tuttle, 2009), my study focuses on the effects of external rotation on the personal dimension of the auditor-client relationship. The research is important, because it shows that audit firm rotation not only affects the financial dimension, but also weakens the personal relationship between auditors and clients. Contrary to the argument that a close relationship biases the judgment of auditors (Bazerman et al., 2002; Moore et al., 2006) and compromises auditor independence (e.g. Gibbins et al., 2010; Brown-Liburd and Wright, 2011; Koch and Salterio, 2017), I find beneficial effects of a close relationship. Auditors negotiate more integrative and are more willing to disapprove of the negotiation outcome in the long-term retention setting. These positive effects vanish with external rotation, where auditors tend to apply more uncollaborative negotiation strategies.

My study also extends the experimental economics research in auditing. The gatekeeper game provides a negotiation framework that captures very important features of any audit environment. First, the gatekeeper game is a three-player game in which investors, managers, and auditors interact with one another. Prior research often simulate auditor-client interactions in purely dyadic decision making tasks, but do not account for the third-party perspective. Second, I include the auditor as an independent gatekeeper who oversees the actions of the manager and negotiates with the manager in the best interest of investors. In practice, auditors have a legal and moral obligation to ensure high-quality financial reporting to external investors or shareholders. Auditors should be seen as gatekeepers, who ensure the proper informational function of financial statements on behalf of the investors. Unlike prior studies which incentivize auditors to negotiate for their own benefit, my setting accounts for this broader perspective. Third, I implement information asymmetry between better-informed managers and less-informed auditors.

Skewed information are essential, because they allow for different beliefs and create a negotiation framework with tension.

The remainder of the chapter is structured as follows. The second section describes the theory of accounting negotiations. The third section derives the hypotheses. The fourth section introduces the experimental design. The fifth section presents the experimental results. The last section concludes with a discussion of the experimental results.

2. Literature

2.1 The dual-concern model and auditor-client negotiations

2.1.1 Introduction to accounting negotiations

ACM negotiations are a common part of most financial statement audits. Prior field research shows that auditors frequently negotiate with their clients and resolve disputed accounting issues jointly with their clients (Gibbins et al., 2001). Starting point of these accounting negotiations usually is a disagreement between auditors and client-management over an accounting issue. A disagreement can result from different preferences between both parties, unequal information between auditors and client-management, or from ambiguous accounting standards that might leave some leeway for interpretation (Gibbins et al., 2001, 2005, 2007; McCracken et al., 2008). The subject of negotiation covers a range of accounting issues in the financial reporting and auditing process (Beattie et al., 2000, 2004; McCracken et al., 2008). For instance, auditors negotiate about the appropriateness of accounting practices (e.g. management estimates, accruals), the disclosure of information (e.g. contingent liabilities, related party transactions), or about compliance and other audit-related matters (e.g. scope of internal control testing, implementation of new regulations).

The role of the auditor in accounting negotiations is to ensure the proper informational function of financial statements (ISA 200). The informational value and the quality of financial statements strongly depend on the negotiated accounting outcome (Brown and Wright, 2008; McCracken et al., 2008; Perreault and Kida, 2011). The outcome of a negotiation usually is the content of the financial statement or the audit opinion on the financial statement (Gibbins et al., 2001). A low quality outcome is implied when the negotiated accounting solution is not a fair representation of the applicable accounting standards and the auditor approves of such a solution via an unqualified audit opinion.

An unqualified audit opinion should provide investors and shareholders with reasonable assurance that the financial statement is free from material misstatements. If auditors were willing to waive material audit adjustments to the benefits of the client, the financial statement would not provide an adequate picture of the entity and auditors would not fulfill their role as independent watchdog. Interestingly, the auditors in Gibbins et al. (2001) report that the negotiated outcome is seldom an agreement on their own initial preferences, but often an in-between solution of their own and the client's preferred outcome.

Auditors can directly influence the negotiated outcome through the way they negotiate with their clients (e.g. Sanchez et al., 2007; Hatfield et al., 2008; Tan and Trotman, 2010; McCracken et al., 2011). The negotiation strategy of the auditor is a central element in accounting negotiations that directly affects the outcome, and thus the quality of financial statements (e.g. Beattie et al., 2004; Brown and Wright, 2008; McCracken et al., 2008; Perreault and Kida, 2011). With the auditor's role model as independent watchdog in mind, we would expect auditors to always use negotiation strategies that yield high quality outcomes in line with the applicable accounting standards. The audit literature, however, shows that accounting negotiations are very sensitive to the respective negotiation context. Gibbins et al. (2001) propose a negotiation model that embeds the interaction between auditors and client-management in a larger context. The negotiation framework suggests that the whole negotiation process - the negotiation issue, the negotiation itself, and the negotiation outcome - is context-dependent. Auditors use different negotiation strategies under changing conditions and dependent on the contextual influences. In this paper, I focus on two important contextual influences: the auditor rotation regime and the statutory power of the auditor as two independent variables.

2.1.2 Conceptualization of negotiation strategies

A common way to conceptualize negotiation strategies is the dual-concern model from the generic negotiation literature (Savage et al., 1989; Pruitt, 1983; Pruitt and Carneval, 1993). The dual-concern framework suggests that the way people negotiate depends on the relative importance they individually place on two dimensions, (1) the negotiated outcome and (2) the relationship with the other party. Outcome orientation, the first dimension, reflects the concern to reach a certain substantive negotiation outcome. This dimension is also referred to as degree of assertiveness in regard to one's own preferred outcome. Relationship orientation, the second dimension, reflects the concern to build and maintain

a sound relationship with the negotiating party. This dimension is also referred to as degree of cooperativeness towards the other negotiator or willingness to cooperate with other people. The dual-concern model suggests that people apply different negotiation strategies depending on the strength of their preferences for both dimensions, the substantive outcome and the relationship with the other party (Savage et al., 1989; Pruitt, 1983; Rahim, 2001).

The dual-concern model defines five different negotiation strategies that vary across the outcome and relationship dimension, displayed in figure C.1. The first strategy is referred to as avoiding negotiation strategy. This strategy reflects a low concern for the outcome and the relationship. A low concern for both dimensions leads to inactivity or disinterest of the negotiator. Avoiding strategies are likely to leave conflicts unsolved or to create lose-lose solutions to the drawback of both negotiators. The second strategy is called conceding negotiation strategy. Conceding strategies indicate a high concern for the relationship and a low concern for negotiated outcome. Typical features of that strategy include cooperation, compliance, or flexibility in order to maintain a sound relationship with the other party. Concerns for the substantive outcome are of lower importance to the negotiator, which might result in lose-win outcomes in favor of the other party (Savage et al., 1989; Pruitt, 1983; Pruitt and Carneval, 1993; Lewicki et al., 2010).

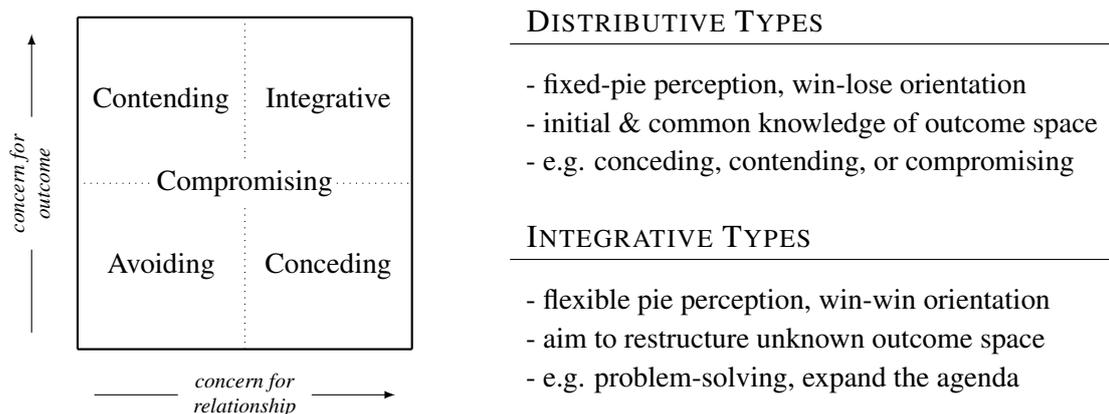


Figure C.1: The dual-concern model of negotiation

(Source: Pruitt, 1983; Savage et al., 1989; Kersten, 2001)

The third strategy is referred to as contending negotiation strategy. Contending strategies show a low concern for the relationship, but a high concern for the negotiated outcome. Typical characteristics of that strategy involve assertiveness towards the negotiation out-

come but uncooperativeness towards the other party. Contending strategies often yield win-lose solutions that are beneficial for only one party. The fourth strategy is a compromising strategy that reflects an intermediate concern for the outcome and the relationship. A compromise requires both negotiating parties to accommodate on their preferred position in order to find an acceptable middle ground. The fifth strategy, referred to as integrative negotiation strategy, signals a high concern for the relationship and a high concern the outcome. The idea behind integrative negotiation is to elaborate a mutually beneficial win-win agreement via collaboration from all negotiating parties involved (Savage et al., 1989; Pruitt, 1983; Pruitt and Carneval, 1993; Lewicki et al., 2010).

The five negotiation strategies are sometimes clustered into two main types of negotiation, distributive and integrative types of negotiation. Distributive types, or also called competitive types, include strategies with opposing preferences for the outcome and the relationship (e.g. conceding or contending strategies). Distributive negotiation types show a win-lose orientation that leads to rather extreme negotiation positions and to outcomes beneficial for only one or neither negotiating party. Key characteristic of distributive negotiators is that the outcome space is perceived as a fixed pie of resources whose scope is initial and common knowledge to all negotiating parties. Integrative types of negotiation, or also called collaborative types, reflect a high concern for the outcome and the relationship. Integrative negotiation types aim to restructure the outcome space by adding new decision alternatives or new attributes to a problem. In integrative negotiation, both negotiators follow a win-win approach to yield mutually beneficial agreements. These strategies usually require much effort and strong collaboration from all negotiators (Savage et al., 1989; Pruitt, 1983; Pruitt and Carneval, 1993; Kersten, 2001; Lewicki et al., 2010).

Another indicator for the outcome and relationship orientation of the auditor, besides the five negotiation strategies, is the negotiation position that auditors plan on taking during negotiations. The negotiation position describes how auditors plan on approaching their clients pre-negotiation (e.g. initial negotiation offer, negotiation goal) and how auditors assess the accounting outcome post-negotiation (e.g. acceptance of client-preferred method, audit adjustments). Such measures are often used as an additional dependent variable in ACM negotiation studies, where the focus is less on the negotiation strategy of the auditor. The experimental ACM negotiation literature quantifies the negotiation position by asking auditors to propose preferred audit adjustments (e.g. Ng and Tan, 2003; Trotman et al.,

2009; Hatfield et al., 2010, 2011), to indicate their willingness to offer concessions to client-management (e.g. Brown and Johnstone, 2009; Brown-Liburd et al., 2013), or to indicate their propensity to accept an aggressive client-preferred reporting method (e.g. Chang and Hwang, 2003; Kadous et al., 2003; Ng and Shankar, 2010; Bauer, 2015). Some negotiation positions are usually considered less desirable and associated with a reduced independence of the auditor. For example, a larger range of acceptable outcomes, one that allows negotiation solutions inconsistent with GAAP, indicates a lower outcome orientation and a flexible negotiation position in favor of the client (Bame-Aldred and Kida, 2007).

2.1.3 *The dual-concern model in auditing*

(a) *The role of the outcome dimension in auditing.* Both dimensions of the dual-concern model, outcome and relationship concerns, play an important role in the context of ACM negotiations. The accounting outcome matters for auditors, because an outcome that is inconsistent with GAAP increases the litigation risk for the auditor and exposes the auditor to possible sanctions through the regulator (Tan and Trotman, 2010). The accounting outcome also matters for entities and their stakeholders, because the negotiated solution directly affects the quality and the informational value of financial statements (Brown and Wright, 2008; McCracken et al., 2008; Perreault and Kida, 2011). Importantly, prior studies find that the negotiation issues are often material in scope (Gibbins et al., 2001, 2007). The material scope highlights the importance of a sound accounting outcome, because any misstatement could provide an inadequate picture of the financial statement. The audit literature usually considers a negotiated solution that is free from material misstatements and that is in line with the applicable accounting standards as “[...] success in negotiations with client-management.” (Salterio, 2012, p. 267).¹⁴

Accordingly, negotiation strategies with a strong outcome orientation (e.g. contentious strategies) are often regarded to as a desirable (e.g. Wang and Tuttle, 2009) and “[...] associated with good outcomes [...]” (Beattie et al., 2004, p. 2). Auditors who apply contentious strategies are more assertive on the negotiated outcome, while relationship concerns remain of secondary importance. Practical examples of this strategy would be if

¹⁴ Salterio (2012) explains that auditors can apply certain negotiation strategies to increase their success in negotiations. His understanding of “negotiation success” refers to two studies by Sanchez et al. (2007) and Tan and Trotman (2010) who show that auditors can convince their clients to post higher audit adjustments or to record material adjustments.

auditors used their influence to enforce their preferred outcome or if auditors threatened to qualify the audit opinion in case the client would not comply with GAAP (Gibbins et al., 2010; McCracken et al., 2011). Contending strategies portray the image of a tough auditor who stands up against the client and who exercises its role as independent auditor with a strong outcome orientation. On the downside, the win-lose character of this distributive strategy might lead to discontent between auditors and their clients (Trotman et al., 2005; Perreault and Kida, 2011) or might result in negotiation impasses (Wang and Tuttle, 2009). In my study, I replicate these results and show that contending strategies are indeed effective in negotiations, but they also receive more negative feedback, which makes them less desirable to use.

I place one thematic focus on the outcome orientation of the auditor. In particular, I investigate how the outcome orientation is affected by the relative power structure between auditors and clients. Gibbins et al. (2001) assume that “[...] clear statutory powers increase the general influence of the auditor.” (Gibbins et al., 2001, p. 539) and affect the outcome orientation. Power is an important and interesting contextual feature of negotiations that has received little attention in the ACM negotiation literature so far (Salterio, 2012). I address this concern and manipulate auditor power as independent variable across two experimental conditions. One condition places the auditor in a position of high power compared to the client, while the second condition withdraws much of the auditor power over clients. I expect auditors to increase their outcome orientation in a position of high power and argue that auditors require sufficient power to negotiate successfully (see next section).

(b) The role of the relationship dimension in auditing. Relationship concerns, the second dimension of the dual-concern model, also play an important role in the context of ACM negotiations. The relationship between auditors and clients is characterized by mutual influences. Clients, on the one hand, care for the relationship with the auditor out of an interest to receive an unqualified audit opinion on their financial statement. They are dependent on the auditor’s opinion. Auditors, on the other hand, care for the relationship with their clients out of an economic interest to maintain future audit rents. Auditors are financially dependent on their clients who decide over reappointment or dismissal (hire and fire). Due to this financial dependency, the auditor’s concern for the relationship is often equated with a purely financial interests to renew an engagement and to earn long-term

audit fees (Wang and Tuttle, 2009). Regulators and researchers fear that the financial concerns of the auditor may compromise the independence of auditors EU Directive 2014/56. As such, relationship concerns are afflicted with a rather negative image in the ACM negotiation literature.

Correspondingly, negotiation strategies that show a high concern for the relationship are discussed more controversial in the literature. One point of view is that integrative strategies enable mutually beneficial solutions and win-win outcomes (Savage et al., 1989; Pruitt and Carneval, 1993; Lewicki et al., 2010). The audit literature finds that integrative strategies can help auditors to negotiate less aggressive accounting solutions, because these strategies may convince clients to record higher audit adjustments. For example, reciprocity-based strategies (Sanchez et al., 2007; Hatfield et al., 2008) or gradual-concession strategies (Tan and Trotman, 2010; Sun et al., 2015) are two forms of integrative strategies that are found to be effective in negotiations. Another point of view shows more reservations about integrative strategies. Beattie et al. (2004) finds that integrative strategies are “[...] associated with poor outcomes [...]” (Beattie et al., 2004, p. 2), and Gibbins et al. (2010) fear that auditors are too concerned to maintain the relationship with the client and place too little emphasis on the accounting framework. Therefore, integrative strategies “[...] may result in financial statements remaining materially misstated subsequent to the negotiation.” (Gibbins et al., 2010, p. 593). They consider it “[...] troubling to find an undifferentiated emphasis in using integrative strategies such that these experienced audit partners routinely look for ‘wins’ for client management no matter what the accounting circumstances [...]” (Gibbins et al., 2010, p. 593). The tension between these two opposing views is even more relevant given that auditors often plan on using integrative strategies in accounting negotiations (Bame-Aldred and Kida, 2007; Gibbins et al., 2010; McCracken et al., 2011). I aim to address this tension and to provide a more differentiated view on integrative strategies.

A second thematic focus of my study is on the relationship orientation of the auditor. In particular, I analyze how the relationship orientation is affected by audit firm rotation. Prior studies have applied the dual-concern model in this context before. Wang and Tuttle (2009), for example, use the dual-concern model to study the effect of rotation on accounting negotiations. Their theoretical foundation is largely based on an economic view of the relationship dimension. They argue that rotation reduces the financial dependency of

the auditor and thus lowers the concern for the (financial) relationship with the client (Wang and Tuttle, 2009). My study places a different focus on rotation and applies the dual-concern model from a non-financial perspective. I argue that external rotation also weakens the personal relationship between auditors and client-management. My experiment allows me to manipulate the rotation regime as second independent variable, and to clearly disentangle the economic from the personal dimension of the relationship.

2.1.4 Methodological perspective on ACM negotiations

The negotiation research in auditing predominantly uses two broad groups of experimental research methods. The first group comprises psychology-based “judgment and decision making” studies with auditor participants. Psychology-based studies rely on case study instruments in order to elicit the planned negotiation strategy of the auditor (e.g. Bame-Aldred and Kida, 2007; Gibbins et al., 2010; McCracken et al., 2011) or to quantify the intended negotiation position of the auditor (e.g. Hatfield et al., 2008; Trotman et al., 2009; Hatfield et al., 2010; Bennett et al., 2015). Starting point is usually a short business case that presents auditors background information about an hypothetical audit client and asks auditors to assume the role of the statutory auditor of that company. In the case description, auditors learn about an artificial accounting conflict between client-management and the statutory auditor. These conflict scenarios often describe a material and subjective accounting issue that auditors disagree on with the audited entity. The participants are asked to assume an upcoming negotiation to discuss the issue with the hypothetical client.

As a next step, the case studies elicit the planned negotiation strategy of the auditor. In Bame-Aldred and Kida (2007), Gibbins et al. (2010), or McCracken et al. (2011), auditors are required to indicate the likelihood of employing certain negotiation strategies in the upcoming negotiation with client-management. The available strategy options are presented in a catalogue of different statements that each reflect one strategy defined in the dual-concern model, e.g. a statement representing contending strategies: “I would use my ability to qualify JEL’s (*author’s note: the client*) financial statement to obtain a resolution in my favor.” (Gibbins et al., 2010, p. 585) or conceding strategies: “I would make concessions from my position to JEL management.” (Gibbins et al., 2010, p. 585). Other studies ask auditors to quantify a preferred audit adjustment (Ng and Tan, 2003; Fu et al., 2011; Hatfield et al., 2011), to indicate their willingness to accept the client-preferred reporting (Chang and Hwang, 2003; Ng and Shankar, 2010; Bauer, 2015), or to propose a

goal for the upcoming negotiation (Brown-Liburd and Wright, 2011; Bennett et al., 2015). These case studies allow researchers to simulate different negotiation scenarios and to study the planned behavior of auditors across varying contextual influences.

The second group of experiments comprises economics-based laboratory studies with student-subjects as participants. These studies simulate accounting negotiations between auditor-subjects and manager-subjects in a controlled laboratory environment (e.g. Dopuch et al., 2001; Wang and Tuttle, 2009; Bowlin et al., 2015). Aim of these experiments is not to reproduce the audit framework in detail, but to capture the key concepts of auditing and to reproduce a similar incentive structure in an artificial setting (Kachelmeier and King, 2002). Although experimental economics-based studies are increasingly prominent in the audit research, they are still less common in the accounting negotiation literature. One notable exception hereto is the study by Wang and Tuttle (2009). They implement a laboratory bargaining task that allows student-subjects to negotiate over the fair value of an asset. In pairs of two, auditors and managers communicate through a chat module by typing messages to each other. Each message sent is coded and assigned to one negotiation strategy defined by the dual-concern model. This bargaining task allows Wang and Tuttle (2009) to simulate accounting negotiations in the laboratory.

Both research designs have their limitations in the context of ACM negotiation studies. Main drawback of psychology-based case studies is that they require auditors to assume a fictional negotiation setting. These designs only allow researchers to elicit hypothetical judgments and the intended negotiation strategies of auditors, but lack a real interaction with the other negotiating party (e.g. Gibbins et al., 2010; McCracken et al., 2011). The self-reported intentions may also suffer from a potential self-serving bias and from the experimenter demand effect (Goodwin, 2002). Main drawback of many experimental economics-based studies is that they simulate ACM interactions through a dyadic two-player decision making task (e.g. King, 2002; Wang and Tuttle, 2009; Bowlin et al., 2015). Accounting negotiations, however, are not just two-dimensional, but cover a much broader perspective. The role of the auditor is to ensure the informational value of the financial statement, which means auditors protect potential stakeholders of the entity. It is important to consider this third-party perspective and to view the auditor as an independent watchdog or gatekeeper who negotiates on behalf of investors.

My study extends the experimental economics research in auditing from a methodological perspective. I implement a novel experimental design that I refer to as gatekeeper game. The laboratory game improves prior psychological-based studies, because it does not elicit hypothetical judgments, but allows me to study actual decisions of auditor student-subjects in an interactive negotiation framework. The gatekeeper game also improves prior experimental economics-based studies, since auditors act as independent gatekeepers and negotiate with clients on behalf of the investors. This third-party perspective is one important feature of ACM negotiations that has been disregarded in prior economics-based designs. In addition, the negotiation setting in the gatekeeper game also implements information asymmetry between auditors and client-management, another key feature in accounting negotiations. Auditors and client-management often have unequal information about the subject of negotiation, which creates tension between both negotiators.

2.2 The concept of power in social psychology and in auditing

2.2.1 Power in social psychology

In social psychology, power is often defined as the ability to influence other people and it is seen as an inherent property of social relationships. It emerges from asymmetric control over socially valuable resources and from the ability to offer rewards or to impose penalties on other people (Galinsky et al., 2006; Whitson et al., 2013). Power is a relative construct that becomes meaningful not in absolute figures but in comparison to a reference value. For example, having one party with relatively more power in exchange relations, such as dyadic negotiations, implies that the other party is in a position of comparatively low power (DeDreu and Van Kleef, 2004; Overbeck et al., 2010). The role of power in social interactions is subject to investigation in many experiments. These studies find that power has significant effects on negotiations, of which I highlight three findings that are particularly interesting in the context of ACM negotiation: First, power affects the pre-negotiation positions of subjects (e.g. Gruenfeld et al., 2008). Second, power also influences the negotiation process and the choice of negotiation strategies (e.g. Wang et al., 2012). Third, power further influences the distribution of the negotiated outcome (e.g. Guinote, 2007). I discuss each of these three effects in detail next.

Power is an important concept in negotiations because it affects pre-negotiation positions. Social psychology shows that possessing power leads subjects to set rather egocentric goals,

to demand more for themselves, and to focus on their own well-being. Keltner et al. (2003) argue that power increases the attention to goals and potential gains. This orientation towards own gains leads to a certain degree of objectification in social interactions. It leads powerful subjects to perceive other people merely as an instrument for goal completion and it drives powerful subjects to approach others more on how useful they are to own goals (Gruenfeld et al., 2008). Besides this goal-orientation, power also fosters proactive behavior. For example, Magee et al. (2007) show that possessing power increases the willingness to initiate a negotiation and it strengthens the intention to make the first offer in negotiations. The initial demands are often higher for subjects in a position of high power compared to subjects in a position of low power (DeDreu, 1995).

Next, power is essential to negotiations because it influences the negotiation process. Social psychology demonstrates that high power motivates subjects to remain more rigid and to pursue their goals dedicatedly. For example, the powerful process information with a strong focus on goal-relevant information (Guinote, 2008; Smith et al., 2008; Slabu and Guinote, 2010) and devote less cognitive resources to influences that might oppose goal achievement (Galinsky et al., 2008; Whitson et al., 2013). This strong focus on goals helps subjects to pursue their preferred outcome dedicatedly. Power also promotes competitive behavior such as the communication of threats or the use of contending negotiation strategies (DeDreu, 1995; Giebels et al., 1998, 2000). Low power subjects, in contrast to high-power subjects, ask fewer leading questions (DeDreu and Van Kleef, 2004) and offer larger concessions, especially when high-power subjects express anger (van Kleef et al., 2006; Wang et al., 2012).

Finally, power is relevant to negotiations because it operates on the negotiated outcome. Social psychology finds evidence that the powerful achieve their desired outcome more easily (Guinote, 2007) and negotiate higher outcomes for themselves compared to low-power subjects (Pinkley et al., 1994; Kim, 1997). Negotiating parties with unequal power also yield fewer integrative agreements but more win-lose outcomes to the benefit of the high-power subject, as shown by Giebels et al. (2000). They conduct an experiment in which some subjects may exit dyadic negotiations to negotiate with an outside party, while the other negotiating party does not have that opportunity (unbalanced power). The results show that dyads yield lower joint outcomes when their power structure was unbalanced but higher joint outcomes when the power structure was balanced, such that both parties

can exit the negotiation (balanced power). This finding is in line with an older study by Mannix and Neale (1993) who show that equal power negotiators achieve higher joint outcomes than unequal power negotiators.

2.2.2 Power in an ACM negotiation context

In accounting negotiations, the power structure between auditors and clients depends on a variety of factors (Salterio, 2012). Recall that the interaction between both parties is embedded in a larger context and depends on different contextual features (Gibbins et al., 2001). Two of these features are often discussed in the audit literature and thought to have a particularly important effect on the power structure. First, the power of clients is directly related to the economic framework of the ACM relationship (Iyer and Rama, 2004; Nagy, 2005; Gibbins et al., 2010). Clients have power over auditors, because they pay the auditor and decide over reappointment or dismissal. This financial dependency of the auditor provides the client with control over future audit rents and the ability to reward the auditor with subsequent engagements (Goodwin, 2002; Wang and Tuttle, 2009). Second, the power of auditors is directly related to their statutory rights to qualify the audit opinion. The issuance of the audit report allows auditors to exercise implicit control over financial statement and to impose informal penalties on the client (Gibbins et al., 2001, 2007; Bennett et al., 2015). Both factors shape the power structure in an audit context.

Although prior studies think of power as an important concept in ACM negotiations (e.g. Gibbins et al., 2001; Beattie et al., 2004; Gibbins et al., 2005; Salterio, 2012), only few researchers investigate the effect of power on negotiations experimentally. One exception hereto is McCracken et al. (2011), who argue that auditors on partner-level are relatively more powerful than auditors on manager-level. They predict and find that the more powerful audit partners intend to employ fewer conceding, but more contending negotiation strategies compared to the less powerful audit managers. Similarly, Brown-Liburd and Wright (2011) shows that the presence of a strong audit committee enhances the perceived bargaining power of auditors and helps auditors to enforce their preferred negotiation position. In line with the social psychological power literature, these studies demonstrate that auditors act more contentious when their perceived power is strong, but offer more concessions when their perceived power is lowered. The influence of auditor power relative to the client, however, has not yet been directly tested in the ACM negotiation context.

In my experiment, I address the lack of research and manipulate the relative power between auditors and client-management as independent variable. Since the auditors in the gatekeeper game are not financially dependent on the client, the power manipulation is not through the economic framework of the relationship, but through the statutory rights of the auditor. I provide the auditor with the opportunity to approve or to disapprove of the negotiated outcome, which is comparable to a qualified or unqualified audit opinion. In the high-power condition, the disapproval of the auditor has strong economic consequences for the client-management. In the low-power condition, the disapproval has almost no economic consequences for the client. This setting allows me to study ACM negotiations under varying levels of relative power between auditors and client-management.

2.3 External rotation and auditor-client negotiations

2.3.1 Financial dimension of external rotation

The EU recently introduced an external rotation requirement to enhance audit quality and to strengthen the independence of the auditor (EU Regulation 2014/537, Art. 17). The EU mandates public-interest entities to change their statutory audit firm after a maximum engagement period of ten years. This period may only be extended once if tender is undertaken or if joint audit is adopted. Regulators assume that rotation increases the (1) financial autonomy, and the (2) personal autonomy of auditors from their clients (EU Regulation 2014/537, EU Directive 2014/56). The negotiation literature in auditing primarily focuses on financial implications of audit firm rotation.

The financial dimension of the relationship is often seen as threat to auditor independence. The purely economic perspective on ACM relationships considers auditors as rational agents (e.g. DeAngelo, 1981; Hackenbrack and Nelson, 1996). Auditors care for the relationship with their clients to gain monetary benefits. The financial dimension is associated with self-interest, economic benefits, and an extrinsic motivation for the relationship (DeRuyter and Wetzels, 1999; Fontaine and Pilote, 2012; Herda and Lavelle, 2013). Since auditors are paid by their clients, regulators and researchers assume that auditors may compromise their independence, e.g. in accounting negotiations, in order to maintain the engagement and to earn long-term audit rents. The potential loss of a client provides sufficient incentives for auditors to approach negotiations in favor of the client preferred position. For instance, a “pro-client bias exists if auditors judge aggressive accounting

practices more favorably when they believe that accepting these methods is in their client firm's interest." (van Rinsum et al., 2017, p. 1).

Audit firm rotation reduces the concern for the financial relationship with their clients and strengthens the independence of auditors, as shown in prior ACM negotiation studies (Dopuch et al., 2001; Arel et al., 2006; Wang and Tuttle, 2009). These studies apply a purely economic view on external rotation and focus on the effects of rotation on the financial dimension of the ACM relationship. They argue that external rotation limits the engagement period between the auditor and the audited entity to a certain number of years. A rotation requirement thus limits the economic rents auditors can earn from a client and withdraws the prospect to gain future economic benefits from subsequent engagements. The auditor has a reduced economic incentive to retain the client and is less financially dependent on the client. That is why auditors show a lower concern for the (financial) relationship with their clients when rotation is mandated compared to an ongoing engagement (Dopuch et al., 2001; Arel et al., 2006; Wang and Tuttle, 2009). This reduced concern for the relationship can strengthen auditor independence and has a positive effect on ACM negotiations, described in the following.

In accounting negotiations, a reduced concern for the financial relationship due to audit firm rotation can make the auditor tougher and more rigid. In a case study experiment, Arel et al. (2006) ask U.S. public accountants to indicate the likelihood that they would modify the audit opinion if client-management refused to report a material accounting issue in compliance with the applicable accounting standard. They find that auditors are more likely to accept deviations from GAAP in an ongoing engagement than in the terminal year of the engagement before rotation is mandated (Arel et al., 2006). In other words, when auditors have the prospect to maintain a financial relationship with their clients, auditors are more likely to concede towards their clients than when financial incentives are absent due to a rotation requirement. Similarly, Dopuch et al. (2001) conduct a laboratory experiment with a rotation condition and a retention condition. Auditor student-subjects receive private information about the state of a risky asset and can communicate these information credibly or dishonestly to manager student-subjects. The study shows that auditors issue dishonest reports that favor the manager more often in the retention condition when auditors can realize financial benefits in subsequent rounds. With rotation, auditors more often reports honestly to the drawback of the manager (Dopuch et al., 2001). In

another economics-based study, Wang and Tuttle (2009) find that auditors apply conceding negotiation strategies more often when they are financially dependent on achieving an agreement, but contending strategies more often when a rotation requirement lowers the financial pressure of reaching an agreement. Auditors remain more rigid in the absence of financial incentives, that is when the risk of losing a client and remaining unemployed is low.

The financial aspect of the relationship, however, is drifting out of focus of research. One reason for this development is described by Bazerman et al. (1997, 2002, 2006) and Moore et al. (2006, 2010). The authors argue that auditor decisions are inevitably biased, since auditors find it psychological impossible to preserve their independence in a relationship of financial dependency. Prior negotiation research in auditing also supports this argument and repeatedly shows that financial incentives indeed threaten the independence of auditors (e.g. Hackenbrack and Nelson, 1996; Wright and Wright, 1997; Chang and Hwang, 2003; Brown and Johnstone, 2009). Another reason for this development is that the economic aspect of the audit profession is increasingly regulated. Together with the introduction of mandatory audit firm rotation, the EU also restricted the fees for non-audit services that auditors may obtain from their clients (EU Regulation 2014/537, Art. 4) and increased the transparency requirements for the disclosure of audit-fees (EU Regulation 2014/537, Art. 13). This regulatory density moves the economic aspect of the auditor-client relationship further into the background of attention.

2.3.2 Personal dimension of external rotation

The personal dimension of the auditor-client relationship, on the other hand, is receiving growing attention. This dimension can be understood as a social bond or affinity between auditors and clients that arises from regular interactions (Kachelmeier and Van Landuyt, 2017; Koch and Salterio, 2017). The personal aspect of the relationship develops beyond economic incentives (DeRuyter and Wetzels, 1999; Fontaine and Pilote, 2012; Herda and Lavelle, 2013). It is based on shared goals and values, an intrinsic motivation for the relationship, or the mutual exchange of non-financial benefits such as trust, respect, or cooperation (Fontaine and Pilote, 2012; Herda and Lavelle, 2013). The personal dimension is also subject to investigation in the audit literature. In their field studies with audit partners and CFO's, Gibbins et al. (2001, 2005) and McCracken et al. (2008) provide descriptive evidence that the interpersonal relationship between auditors and clients is

a key feature in negotiations, and also “[...] particularly promising for more systematic investigation.” (Gibbins et al., 2001, p. 559).

The question that remains unanswered in the literature is how audit firm rotation affects the personal relationship between auditors and client-management, and whether or not close personal ties harm the outcome orientation of auditors in accounting negotiation. To date, there is little empirical evidence how non-financial factors of the relationship affect negotiations. Some researchers argue that the personal tie between auditors and clients can (un-)consciously bias the judgments of auditors (Bazerman et al., 2002; Moore et al., 2006). Similarly, regulators consider a personal relationship as potential threat to the autonomy of auditors (EU Directive 2014/56). Other studies imply some positive effects of a personal relationship (e.g. Beattie et al., 2004; Rennie et al., 2010). I shortly discuss the positive and negative effects of a personal relationship in the context of ACM negotiations.

One negative aspect of a close personal relationship is that auditors tend to negotiate more in favor of the manager. In two accounting case studies, Gibbins et al. (2010) and Brown-Liburd and Wright (2011) manipulate the strength of the ACM relationship through a case study prime. For example, Gibbins et al. (2010) use eight different items in their case description to manipulate the auditors’ perception of the relationship as being positive-cordial or negative-contentious. In the positive-cordial condition, key words of the manipulation included mutual trust or long-time engagement. In this condition, auditors show less ambitious negotiation goals and intend to employ conceding strategies more often than in the negative-contentious relationship condition. Brown-Liburd and Wright (2011) use a less extensive manipulation and describe the past auditor-client relationship as either cooperative or difficult. Auditors intend to make smaller first offers relative to their negotiation aim when the relationship was cooperative than difficult. Both studies indicate that auditors concede towards the client-preferred position when the relationship with the client is positive.

Another detrimental aspect is that auditors propose lower audit adjustments when the social bond or the affinity between both parties is strong. In an experimental economics study, Kachelmeier and Van Landuyt (2017) find that the social bond that arises from casual interactions between auditors and clients leads auditors to propose lower audit adjustments when the audit evidence contains measurement uncertainty. Similarly, Koch and Salterio (2017) find that auditors who show a high affinity for clients propose lower

audit adjustments to an aggressive financial reporting than auditors with a low affinity for clients. Furthermore, auditors that show a strong identification with their clients have a larger intention to concede towards that client (Bamber and Iyer, 2007) and are more likely to agree with the client-preferred outcome if their professional identity is weak (Bauer, 2015). Overall, auditors seem to negotiate less outcome oriented and more in favor of the client when the personal relationship is strong.

In contrast, a close personal relationship also has positive effects in the negotiation context. An essential part of the personal dimension is trust between ACM and an intrinsic motivation for the relationship. In their working paper, Kadous and Zhou (2016) show that auditors whose intrinsic rather than extrinsic motivation for the job is prompted request more audit evidence. Prompting intrinsic motivations also leads to improved auditor scepticism, which implies an increased outcome orientation of the auditor. Trust in a personal relationship further helps auditors and client-management to negotiate mutually acceptable accounting outcomes. Beattie et al. (2004) conduct an interview study with six auditor-client dyads from UK listed companies. Audit partners and financial directors are asked to recall and to describe a negotiation that they jointly experienced. Both parties consider a good personal relationship as necessary to negotiating mutual acceptable agreements. Audit partners and financial directors also indicate that mutual trust, respect, and integrity are important factors to a good relationship. These effects are also described more informally by Arrunada and Paz-Ares (1997): "The continuity of the relationship creates a favorable framework for mutual trust and knowledge [...]. Trust allows the parties to communicate at low cost and to resolve satisfactorily conflicts [...]" (Arrunada and Paz-Ares, 1997, p. 34). Rennie et al. (2010) report similar results. In their descriptive field study, they find that auditors consider trust towards the client as a basic requirement for a sound relationship. Auditors also ensure that their relationship to the client does not impede their professional scepticism.

Since the personal dimension of the relationship has received no attention in the rotation context, my study investigates how rotation affects the personal relationship between auditors and clients. The gatekeeper game allows me to clearly disentangle financial from personal effects of rotation. I manipulate the rotation regime as independent variable across two conditions (rotation vs. retention) that induce varying strength of the personal relationship. I assume a weaker personal relationship in the rotation condition, where

auditors interact with clients for one experimental round. I assume a stronger personal relationship in the retention condition, that allows auditors to interact with clients for a longer period. Importantly, the auditor is fully financially independent from the manager across all conditions. The next section derives the hypotheses and discusses the effect of rotation on the personal dimension of the ACM relationship.

3. Hypotheses

3.1 The effect of rotation on auditor negotiation strategies

Audit firm rotation affects the strength of the personal relationship between auditors and clients. A rotation requirement limits the engagement tenure to a certain maximum number of years. For example, the EU reform mandates public-interest entities to change their statutory auditor after a maximum engagement period of ten years, but EU Member States may also opt for even shorter periods. Given this limited duration, both parties have less time available to get to know each other. A personal relationship usually requires sufficient time for the development of trust or the creation of common values (DeRuyter and Wetzels, 1999). I assume that audit firm rotation leads to a weaker personal relationship, and assume a stronger personal relationship in an ongoing engagement when the auditor is retained for several periods. The benefits of a long-term relationship, such as trust or mutual knowledge, are “[...] not only destroyed with each rotation; in fact, to a great extent they are never actually produced in the first place in the context of mandatory rotation.” (Arrunada and Paz-Ares, 1997, p. 34).

The dual-concern model directly links the concern for the personal relationship to certain negotiation strategies. In the model, a weak personal relationship is associated with both avoiding and contending strategies, and a close personal relationship is associated with conceding and integrative negotiation strategies. These influences are illustrated graphically in the left box of figure C.2. The dual-concern model is in line with prior research in auditing, showing that a close personal relationship can have positive and negative effects. On the one hand, auditors tend to negotiate more in favor of the manager (e.g. conceding) when the personal relationship is strong (Gibbins et al., 2010; Kachelmeier and Van Landuyt, 2017; Koch and Salterio, 2017). On the other hand, a close personal relationship also enables mutually beneficial solutions (e.g. integrative) in negotiations (Rennie et al., 2010; Beattie et al., 2004).

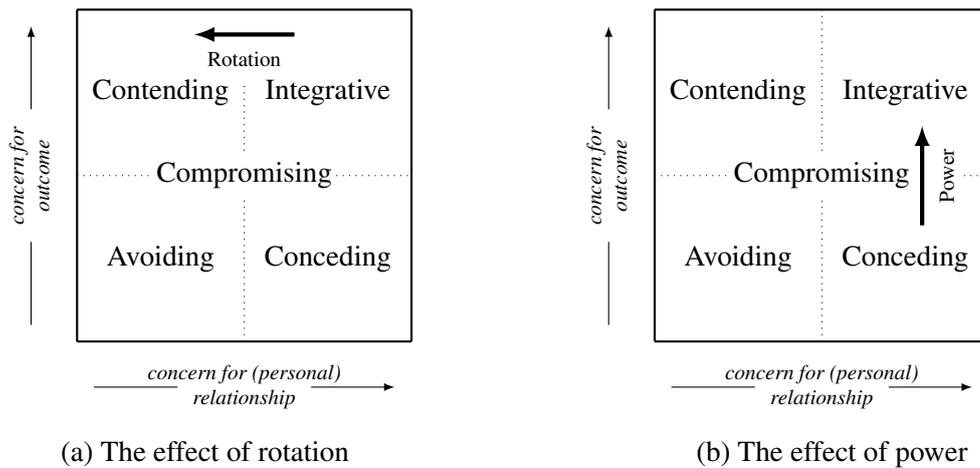


Figure C.2: The effect of rotation and power in the dual-concern model

(Source: own source)

The choice of strategies, however, not only depends on the concern for the relationship, but also on the concern for the negotiated outcome. Prior research shows that the outcome orientation of subjects varies across different levels of power. Social psychology suggests that power helps negotiators to increase their goal-orientation and goal-pursuit (Keltner et al., 2003; Gruenfeld et al., 2008). The audit research also demonstrates that auditors tend to remain rigid and contentious when they perceive themselves in a strong position (Brown-Liburd and Wright, 2011; McCracken et al., 2011). These findings suggest that high power increases the outcome orientation of the negotiator. I assume that high power increases the auditor's concern for the outcome, while low power relative to the client reduces this concern.

The dual-concern model links the concern for the outcome to certain negotiation strategies. A high concern for the outcome is usually associated with contending or integrative negotiation strategies, and low concern with avoiding or conceding strategies. This effect is illustrated graphically in the right box of figure C.2. Taken both effects together, I assume that auditors employ contending negotiation strategies when their power is high and the relationship is weak due to rotation. In contrast, when auditor retention leads to a stronger relationship, auditors will tend to use integrative strategies when their power is high. *Ceteris paribus*, I predict that rotation leads to more contending strategies (H1a) and less integrative strategies (H1b), if auditor power is high.

H1 Effect of rotation on auditor negotiation strategy

- a) Audit firm rotation leads to more contending strategies, if auditor power is high.
 - b) Audit firm rotation leads to less integrative strategies, if auditor power is high.
-

3.2 The effect of negotiation strategies on additional investor value

The negotiation strategy of the auditor is the central element of any negotiation process and particularly relevant to accounting negotiations. The way how auditors negotiate with their clients is relevant, because it affects the accounting outcome and ultimately determines the quality of financial statements (e.g. Beattie et al., 2004; Brown and Wright, 2008; McCracken et al., 2008; Perreault and Kida, 2011). I focus on two negotiation strategies that are subject to controversial discussion in the audit literature. I analyze the effect of contending and integrative strategies on the additional investor value in negotiations. In my experiment, the negotiation creates an additional value for investors when auditors can convince managers to return more resources to the investor than initially proposed by the manager. In practice, an additional investor value is created if the negotiation between auditors and clients leads to a correction of the unaudited and materially misstated financial statement. In such cases, the negotiation improves the informational function of the financial statements and creates a value for outside parties.

Contending strategies portray the image of a tough auditor who exercises its role with a strong outcome orientation. Although these strategies often lead to discontent between auditors and clients (Trotman et al., 2005; Perreault and Kida, 2011), they are also assumed to be an effective negotiation approach for auditors (Wang and Tuttle, 2009). To verify this assumption, I test the hypothesis that contending strategies indeed have a positive effect on managers and lead to additional investor value in negotiations (H2a). Integrative strategies are sometimes referred to as “[...] potentially problematic [...]” (Gibbins et al., 2010, p. 593), but they are also thought to achieve “[...] a positive outcome without incurring ill-will.” (Trotman et al., 2005, p. 351). Despite much descriptive evidence in the audit literature, the effect of integrative strategies on the negotiation outcome has not yet been subject to a more systematic investigation. Following the dual-concern model, I test the hypothesis that integrative strategies likewise reflect a strong outcome orientation and create additional investor value in negotiations (H2b).

The negotiation strategy, however, is less relevant when the auditor has insufficient power. Lacking power, as social psychology repeatedly shows, reduces the potential to achieve one's desired outcome and the potential to enforce one's preferred negotiation position. Low power subjects have less impact on the negotiated outcome and yield lower concessions from the negotiation party (e.g. Pinkley et al., 1994; Kim, 1997; Giebels et al., 2000; Guinote, 2007). The experimental auditing literature finds similar results. Gibbins et al. (2005) and Gibbins et al. (2007) assume that statutory powers increase the influence of the auditor. Brown-Liburd and Wright (2011) show that perceived bargaining power helps auditors to enforce their own preferred position in negotiation with clients. Considering these results, I assume that low-power auditors are less influential in terms of the negotiated outcome and predict that the negotiation is just cheap talk¹⁵ in low-power setting. I suggest that auditors require power to create additional investor value in negotiations.

H2 Effect of auditor negotiation strategies on additional investor value

- a) Contending strategies create additional investor value, if auditor power is high.
 - b) Integrative strategies create additional investor value, if auditor power is high.
-

3.3 The effect of rotation on the investor value

The first two hypotheses assume an indirect effect of the rotation regime on the additional investor value (see figure C.3). Audit firm rotation increases investor value, because auditors apply more contending strategies (path H1a, H2a). Audit firm rotation also decreases investor value, because auditors are less likely to use integrative strategies (path H1b, H2b). The direct effect of the rotation regime on the additional investor value is described in hypothesis three.

Audit firm rotation weakens the personal relationship and makes auditors less familiar with their clients. The limited engagement tenure provides less opportunity for both parties to learn about one another and causes uncertainty for managers about the behavior of auditors.

¹⁵ Experimental cheap talk is often defined as communication between subjects that has no direct implication on payoffs and does not impact the experimental outcome, such that talk is cheap in a proverbial sense (Crawford, 1998). In cheap talk, transmitting as well as receiving information is free and the communication is non-verifiable and non-binding (Crawford and Sobel, 1982; Farrell, 1987). I rely on this definition and specify cheap talk between auditors and managers as any form of non-binding, free, and non-verifiable communication that does not lead managers to significantly deviate from their initial negotiation positions (e.g. manager concessions on their initial position that would lead to a change in payoffs).

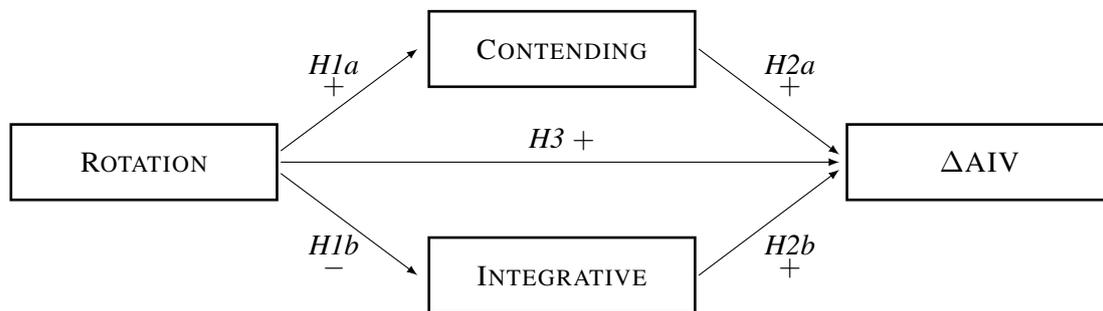


Figure C.3: Predicted effects in the high-power setting

(Source: own source)

I assume that managers find it challenging in early stages of a new engagement to assess whether auditors are willing to approve of the final negotiated investor return (a beneficial action for managers), or to disapprove of the final negotiated investor return (a potential harmful action for managers). This uncertainty leads managers to include a safety margin in their investor return in order to account for the uncertainty about the auditor's actions and to avoid disapprovals. I predict that managers are willing to increase the investor value when audit firm rotation is mandated (H3). This hypothesis describes a direct effect of rotation on the additional investor value. When the auditor has insufficient power, however, managers do not fear disapprovals since these actions have little economic consequences for managers.

H3 Effect of rotation on investor value

Audit firm rotation creates additional investor value, if auditor power is high.

4. Method

To test my hypotheses, I conduct an economics-based laboratory experiment with student-subjects as participants. The experiment is a fully crossed 2×2 factorial design with the independent variables auditor power (high vs. low) and auditor rotation regime (retention vs. rotation) manipulated between subjects. The two dependent measures are the negotiation strategy of the auditor (avoiding, conceding, contending, compromising, or integrative) and the additional investor value (AIV) that the negotiation creates.

4.1 The gatekeeper game

I operationalize interactions between auditors and clients using a modified version of the standard “trust game” (Berg et al., 1995). The standard trust game is a two-player game in which investor and responder subjects interact across two stages. In the first stage of the game, investors receive an initial endowment E and decide how much of their initial endowment $x(E)$, $0 \leq x \leq E$ to send to an anonymous responder. The responder receives a multiple share of the investment, what I refer to as resource pie or allocation size, denoted $\omega = n \cdot x$. The investment in the standard trust game, for example, is tripled ($n = 3$; $\omega = 3 \cdot x$). The multiplier is common knowledge to both parties. In the second stage of the game, the responder decides what amount of the resource pie to return to the investor $y(\omega)$, $0 \leq y \leq \omega$. The decision of the responder ends the game and both parties receive their payoff. Investors receive the payoff $\pi_I(x, y) = E - x + y$ and responders the payoff $\pi_R(\omega, y) = \omega - y$.

The trust game reflects a simplified principal-agent setting. In an agency setting, one party (the principal) engages another party (the agent) to take a costly action or to make an effort on behalf of the principal. A conflict of interest arises when the incentive structure of both parties is misaligned or the information between both parties is skewed, such that the principal fears that the agent does not act as instructed (Varian, 1992). In the trust game, the investor entrusts money to an anonymous agent who might be motivated not to act in the best interest of the principal, but to exploit the trust the principal placed in him. A common practical example for a principal-agent relationship is the one between investors and corporate management. Investors entrust their capital to companies and expect the managers to administer the investment in the best interest of the investors. A conflict of interest arises, since the investors as external parties cannot reliably oversee the work performed by managers and fear misappropriation of their investment. The managers, in practice, might use earnings management or special accounting treatments to inflate their own earnings at the expense of the investors. In the trust game, managers can inflate their own earnings by keeping a large share of the resource pie for themselves.

How does the trust game relate to auditing? In practice, the conflict of interest between investors and managers is mitigated by an independent supervising body, the auditor. The role of the auditor is to oversee the work performed by managers and to alleviate the information asymmetry between investors and managers as an independent third party. For

example, the auditor oversees the financial statement prepared by the manager and ensures that the financial reporting is acceptable under the applicable accounting standards. The auditor can be seen as an additional third player in the trust game - a gatekeeper - who mitigates the conflict of interest between the investor and the manager. In their working paper, Choy et al. (2008) conduct a gatekeeper experiment that includes the auditor as a mitigating supervising body. In the first stage of their experiment, student-subjects in the role of the manager have to divide a fixed pie of resources between themselves and an unnamed charity organization. The charity organization is not physically present, but receives a donation upon completion of the experiment. In the second stage, an independent gatekeeper is instructed to protect the financial interest of the charity organization and to raise as much as possible to the charity. The gatekeeper can decide whether or not the proposed split of resources between the manager and the charity organization is appropriate (Choy et al., 2008).

The gatekeeper game covers a very important concept of any audit context, namely the third party perspective. Auditors are legally and morally obligated to ensure the proper informational function of financial statements. The idea behind an independent audit opinion is to strengthen the credibility of financial statements and to provide investors with an objective basis for decision making (ISA 200). Although auditors are paid by their clients, auditors must be regarded as gatekeepers who are obligated to act on behalf of the investors. Auditors oversee the actions of managers in order to protect the interests of the entities' stakeholders, e.g. investors. With this role perception in mind, I suggest that ACM negotiation studies must include a third-party perspective. Auditors do not negotiate accounting matters to their own benefit, but they negotiate out of a moral (and legal) obligation to protect investors. Prior ACM negotiation research does not yet cover this perspective (e.g. Hatfield et al., 2008; Wang and Tuttle, 2009; Gibbins et al., 2010; McCracken et al., 2011; Bennett et al., 2015).

My experimental setting extends the standard two-player trust game by an independent gatekeeper (or auditor) adapted from Choy et al. (2008). The independent gatekeeper represents an additional third player who oversees the trust game played by investors and managers. I pay auditors a fixed audit-fee and instruct them to ensure an appropriate investor return. This instruction reflects a social mission for the auditor and creates a moral obligation to act on behalf of the investor. Importantly, the auditor has no monetary

incentive to protect investors. The auditor may intervene the trust game between investors and managers at two points in time. The first intervention is right after managers received the investment and decided what amount to return. Auditors can step in and negotiate with the manager about the investor return. They may send managers a text message to convince them to return a larger share than initially proposed. The second intervention takes place after the negotiation phase, when managers have specified a final return. The decision of the manager how much to return to the investor is subject to approval by the auditor. The auditor may decide that the returned share is appropriate and accept the distribution, or the auditor may decide that it is inappropriate and reject the distribution.

The gatekeeper game is implemented via a five-stage experiment that I summarize shortly below and illustrate graphically in figure C.4. The next section goes into detail and explains the game step-by-step. The game proceeds as follows:

(1) Investment decision

Investors receive an initial endowment E and decide whether or not to invest an amount x into the manager. The size of the resource pie $\omega = n \cdot x$ that managers receive is defined through a randomly drawn multiplier $n \in \{3, 4, 5, 6\}$. The exact multiplier remains private information of the manager.

(2) Unaudited report (manager proposal)

Managers must decide what amount of the resource pie to return to the investor. Managers make an initial proposal to the auditor about their preferred investor return, denoted $\hat{y}(\omega)$, $0 \leq \hat{y} \leq \omega$. The proposed return can be seen as the “manager’s unaudited report”.

(3) Negotiation stage (auditor message)

Auditors receive an erroneous, noisy signal (\hat{n}) about the true state of the multiplier. They may comment on the proposal and send the manager a text-message from a pre-defined negotiation catalogue (intervention #1). The procedure is known to all parties, but the content of the catalogue is private information of the auditor.

(4) Audited report (manager final)

Managers receive the text-message and may then decide to revise their initial proposal from stage two. The final return is denoted $y(\omega)$, $0 \leq y \leq \omega$ and can be seen as the “manager’s audited report”.

(5) Audit opinion (auditor decision)

Auditors need to decide whether or not to accept the final investor return. Rejections are costly to the auditor, but they also reduce the amount that managers want to keep for themselves by a certain factor δ (intervention #2). The decision of the auditor reflects the “auditor’s opinion” on the financial statement.

My setting captures an important characteristic of accounting negotiations, that is information asymmetry between auditors and client-management. In practice, both parties may have skewed information about an accounting issue due to their different industry experience or accounting knowledge (Gibbins et al., 2001). The preparer of the financial statement usually has more company-internal information available about the underlying accounting issue compared to the auditor. In practice, a manager may withhold sensitive or industry-specific information from the auditor that would be necessary to reliably assess an accounting issue. This information asymmetry is a special and important feature in auditing, because the informational advantage of one party creates a negotiation framework with tension. I implement information asymmetry between auditors and managers similar to prior ultimatum games with incomplete information (e.g. Mitzkewitz and Nagel, 1993). Auditors know how the size of the resource pie is determined, but they are not informed about the exact drawn multiplier. Instead, auditors receive a noisy signal about the true state of the multiplier. The signal includes a range of two possible multiplier, out of which one is the true multiplier.

Another important benefit of the gatekeeper game compared to prior experimental economics studies is the controlled negotiation framework. In Wang and Tuttle (2009), for example, auditor and manager dyads negotiate through a chat module by typing messages set and forth. The free communication between subjects requires coding of the negotiation transcript to identify individual negotiation strategies. This data coding is a major factor of uncertainty to the experimental results since the coding includes judgment and is difficult to reproduce. For example, Wang and Tuttle (2009) do not differentiate between integrative and compromising negotiation strategies, and code “[...] information that may justify a

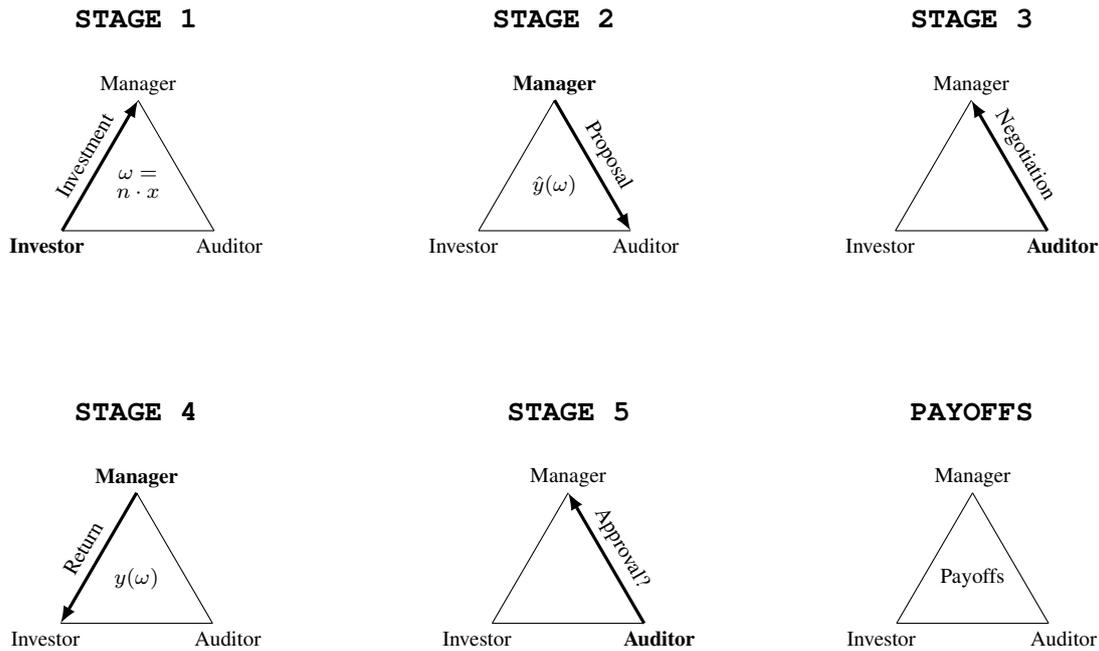


Figure C.4: The five-stage gatekeeper game

(Source: own source)

compromise." (Wang and Tuttle, 2009, p. 241) or messages that ask "[...] for a 'middle' or 'fair value'." (Wang and Tuttle, 2009, p. 241) as integrative strategies. The unrestricted communication between auditors and managers also adds heterogeneity to the experiment and creates potential confounds due to carryover and learning effects. My experiment, in contrast, provides a more controlled negotiation framework to investigate ACM negotiation. I allow auditors to choose certain messages from a pre-defined communication catalogue that I extensively pre-tested before conducting the experiment (see next section). Each message from that catalogue traces back to one negotiation strategy according to the dual-concern model. The restricted communication allows me to increase the internal validity of the experimental design and avoids ambiguity resulting from data-coding of a communication transcript.

The gatekeeper game also sets a clear economic benchmark of rational behavior. The economic prediction according to traditional game theory is straightforward. Auditors receive a fix audit-fee and have no economic incentive to protect investors. A rational auditor will never reject in stage five of the game, because rejections provide auditors no monetary benefit and a small rejection fee is deducted from the auditor's income. Auditors also choose not to communicate with managers, since communication requires an effort

from auditors. Managers anticipate that auditors will accept any return, even when that return does not lead to an additional investor value. A rational manager will try to maximize his own profit and will return zero in stage four of the game. Investors, in turn, anticipate a negative return on their investment and will never invest in the first place. The equilibrium derived via backward induction leaves each party with their initial endowment and prevents a pareto-efficient solution for managers and investors. This economic benchmark allows me to compare the actions of investors, managers, and auditors against the predicted actions of rational players. The economic prediction is independent of the four experimental conditions.

4.2 Detailed experimental procedure

4.2.1 *Experimental venue and participants*

I conducted the experiment in the Experimental Economics Laboratory at the University of Mannheim (mLab) and in the Frankfurt Laboratory for Experimental Economic Research (FLEX) at the Goethe University of Frankfurt. I pre-registered my design including the experimental instructions as well as my hypotheses online at the American Economic Association's AEA registry for randomized controlled trials.¹⁶ I use students as participants since my gatekeeper game, unlike more complex decision tasks (e.g. Koch and Salterio, 2017), does not require subjects to have task-specific knowledge or experience in auditing (see Libby et al., 2002; Mayhew and Murphy, 2014, for a discussion). I recruited all subjects from the general student population of the University of Mannheim and the Goethe University of Frankfurt using the Online Recruitment System for Economic Experiments ORSEE (Greiner, 2004). Because the gatekeeper game requires teams of three players, the number of participants in each session must be a multiple of three. In case more students arrived than needed to form groups of three, I paid a show-up fee of four Euro to the last individual(s) to arrive and dismissed these subjects.

The experiment was programmed and conducted with the Zurich Toolbox for Ready-made Economic Experiments (z-Tree) on networked computers (Fischbacher, 2007). Appendix I.3 shows screenshots of the experimental implementation in z-Tree. Across 16 experimental sessions, a total of 240 students participated, 60 in each of the four experi-

¹⁶ Registry: www.socialscienceregistry.org/trials/897.

mental conditions. Participants are predominantly enrolled in an undergraduate (71%) or graduate (16%) program, and mostly studying business or business related subjects (61%). A slight majority of participants are female (55%). The average age of the participants is 22 years. Individual payouts range from EUR 3.00 to EUR 24.00, and average EUR 14.60. Financial support from the Interdisciplinary Public Policy IPP research unit of the Johannes Gutenberg University of Mainz is gratefully acknowledged. Each session lasted about 70-80 minutes on average, with approximately 20 of those minutes devoted to instructions and comprehension questions.

4.2.2 Session introduction and conclusion

At the beginning of each session, the participants are randomly seated in the laboratory and they receive written instructions, which are also read aloud by the experimenter. The experimental instructions are reproduced in appendix I.1 (English translation) and appendix I.2 (German original). Each participant has to correctly answer a series of comprehension questions before the experiment begins. I include this short test in order to make sure that every participant understands the experimental design and the upcoming procedure. At the end of each session, subjects complete the post experimental questionnaire (PEQ). The PEQ includes manipulation checks and demographic questions.

Part of the session introduction is the random assignment of each participant to one of the three experimental roles: role A (investor), role B (manager), or role C (auditor). I keep the role assignment neutral and do not mention the audit context or the wording investor, manager, auditor, or gatekeeper at any point in time during the experiment. "The experimental instructions avoid contextually rich terms [...]" (Kachelmeier et al., 2014, p. 2187) in order to reduce experimental demand effects and other unintended influences (Haynes and Kachelmeier, 1998; Kachelmeier et al., 2014). The role assignment is fix and subjects stick to their role throughout the whole experiment. For example, if one subject was randomly assigned to play in the role of an investor that subject would remain investor until the end of the experiment. This procedure is public knowledge to all subjects.

As a next step, the participants are further divided into groups of three players. Each group includes one investor, one manager, and one auditor (role A, B, C) who are randomly chosen and who play the gatekeeper game together. Each subject participates in exactly 15 experimental rounds, which means that all subjects repeatedly play the gatekeeper game

in their assigned role. The number of rounds is pre-defined and common knowledge to all parties, I do not let the computer determine the last round randomly in order to avoid heterogeneity across the experimental sessions. Unlike the role assignment, the group assignment is not fix but may change during the experiment depending on my independent variable rotation regime. In the rotation condition, the auditor is assigned to a new group in each round. In the retention condition, the auditor interacts with the same group across all 15 rounds. Investors and managers remain paired throughout the whole experiment and independent of the condition. I explain this mechanism and the experimental manipulation of the independent variable in more detail later in this section.

Straight before the first round of the gatekeeper game starts, there is one last procedure due. In their role as independent gatekeepers, auditors are instructed to ensure an appropriate investor return. Since the auditor has no financial incentive to protect the investor, I intend to create a moral obligation for auditors and let them commit themselves to act on behalf of the investors. Similar to Davidson and Stevens (2013), auditors receive an ethical code and need to publicly certify that they will adhere to the code. This confirmation is then displayed to the investors, reinforcing the ethical demand for the auditor to negotiate in the best interest of the investor. Figure C.5 summarizes the experimental procedures that is common knowledge to all participants.

4.2.3 The five-stage gatekeeper game

In the **first stage** of the gatekeeper game, investors receive an initial endowment of 100 taler ($E = 100$). I use an experimental currency unit that I refer to as taler, whereby 10 taler convert to 1 Euro. Investors must decide whether or not they want to entrust money to the manager. My design differs from the standard trust game in a way that I provide two investment options to choose from. Investors can decide not to invest any resources into the manager ($x = 0$) or to invest half of their initial endowment ($x = 50$) while keeping the other half as a fix payoff for themselves. These two pre-defined options simplify the game, reduce heterogeneity in the following stages of the experiment, and make comparisons across different experimental conditions more easy (King, 2002). Investors know that their investment will be multiplied with the randomly drawn multiplier, but they are not informed about the exact multiplier. The investment decision is made public to all group members. In case the investor decides not to invest into the manager, the round ends

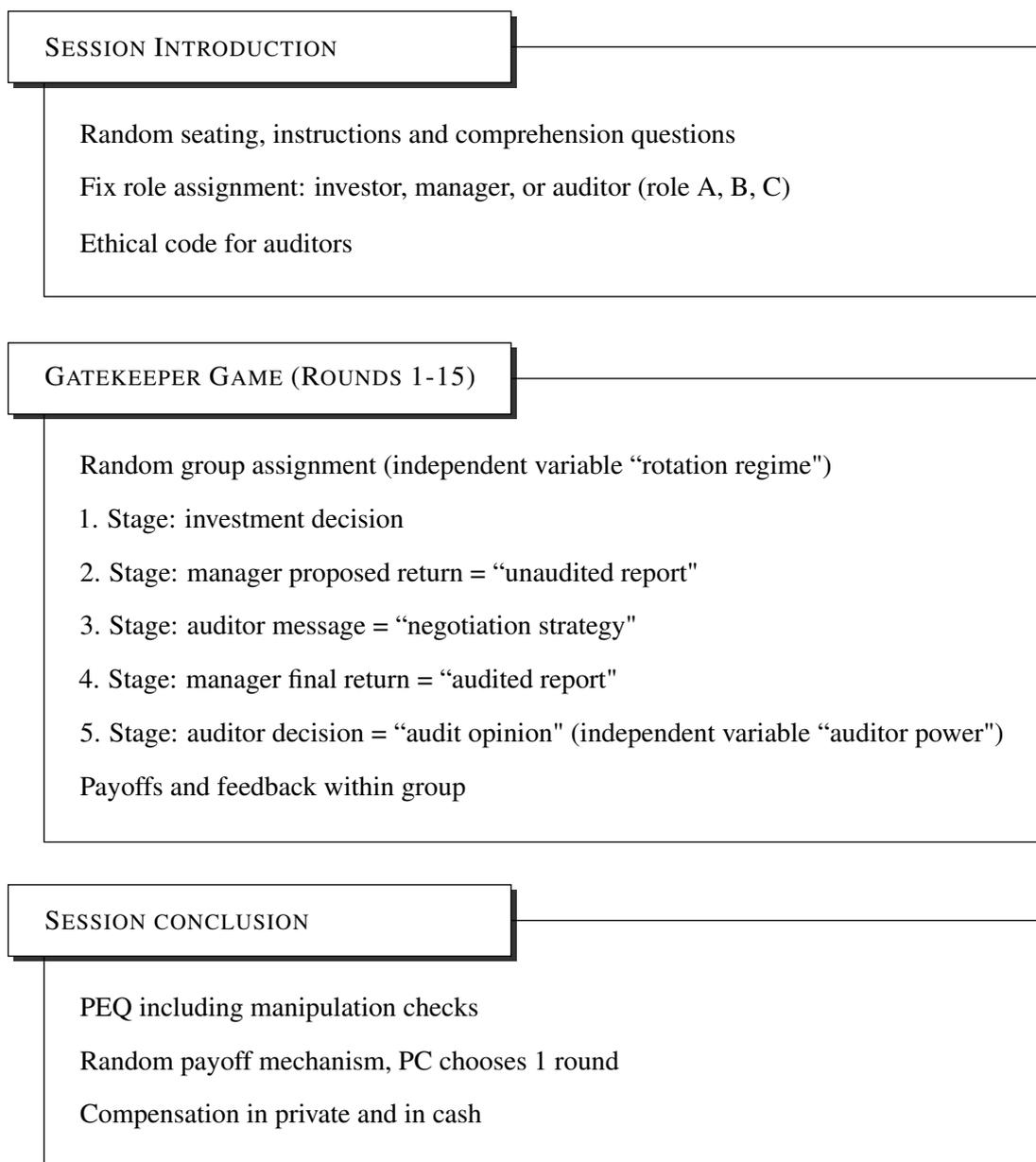


Figure C.5: Experimental procedure summarized

(Source: own source)

immediately and each group member receives its payoff. In case the investor decides to invest into the manager, the group moves to the second stage of the game.

I faced the decision whether to incorporate the investor as real subject or to replace the investor by a computer-operated one. The key argument in favor of a computer-operated investor is that the trivial investment decision makes the investor seem redundant. Nevertheless, I decided to include the investor as a real subject in the experiment, because

leaving the investment up to human decision makes moral conflicts become more visible. It increases the moral obligation of auditors to protect the interests of the investors, a very important feature of the audit context. But it also makes the manager less inclined to consider the investment as given by nature, but more reluctant to enrich himself. I was worried that the investor would not be perceived as a third party that is worthy of protection if the investor was physically absent or replaced by a computer. This concern might be reasonable in Choy et al. (2008) who ask managers to share a given endowment with an unnamed and absent charity organization, and ask auditors to protect this charity organization. I consider the inclusion of the investor in the gatekeeper game as a valuable and important enhancement of prior studies.

In the **second stage** of the game, managers receive a multiple share of the investment ($\omega = x \cdot n$) and make an initial proposal to the auditor about their preferred investor return $\hat{y}(\omega), 0 \leq \hat{y} \leq \omega$. I refer to \hat{y} as manager proposal. The proposal reflects the manager's unaudited financial report that may be subject to changes upon the negotiation. In particular, managers may revise their proposal once in stage four of the game. A randomly drawn multiplier $n \in \{3, 4, 5, 6\}$ defines the size of the resource pie that managers receive. For instance, if the multiplier equals $n = 5$, managers receive the fivefold investment of $\omega = 50 \cdot 5 = 250$ taler. Similar to the procedure in Wang and Tuttle (2009), I determined the value of the multiplier for each experimental round prior to conducting the experiment through a randomized and computerized process. The advantage of a pre-determined multiplier is that every subject across every session experiences the same multiplier throughout the experiment.

The multiplier remains private information of the manager. While auditors and investors know the range of possible multipliers and know how the size of the resource pie is determined, they are not informed about the exact drawn multiplier. An important feature of my experimental design is the information asymmetry between auditors and managers. I provide the auditor with a noisy signal about the true state of the multiplier. This signal includes a range of two possible multipliers $\hat{n} = n \pm 1$ with $\hat{n} \in \{3, 4, 5, 6\}$, out of which one is the true multiplier. For example, if the multiplier equals $n = 5$ auditors receive the signal $\hat{n} \leq n = \{4, 5\}$ or the signal $\hat{n} \geq n = \{5, 6\}$. Again, I pre-determined the information asymmetry between auditors and managers randomly prior to conducting

the experiment. Table C.1 shows the multiplier and the respective auditor signals. The investors remains uninformed about the true multiplier and does not receive a signal.

Table C.1: Gatekeeper game - investment multiplier

	EXPERIMENTAL ROUNDS														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Manager															
Multiplier n	6	5	5	3	6	4	3	4	5	4	6	3	4	5	3
Resources ω	300	250	250	150	300	200	150	200	250	200	300	150	200	250	150
Auditor															
Signal \hat{n}	5 6	5 6	4 5	3 4	5 6	3 4	3 4	4 5	4 5	4 5	5 6	3 4	3 4	4 5	3 4
EV (ω)	275	275	225	175	275	175	175	225	225	225	275	175	175	225	175
Tension*															
		x		x			x	x		x		x			x

* rounds with information asymmetry to the drawback of the manager. In such rounds, the expected value of a rational auditor about the resource pie is higher than the resources managers actually receive. These settings create more tension between auditors and managers, thus provide an interesting negotiation framework.

The noisy signals leads to two different scenarios of information asymmetry. In the first scenario, the signal is less than and equal to the true multiplier $\hat{n} \leq n$. In this scenario, the auditor's expected value of the resource pie is lower than the resource pie the manager actually receives $EV(\omega) < \omega$. The auditor is likely to underestimate the amount of resources the manager has on hand, which favors the manager. In the second scenario, referred to as "tension setting", the signal is equal to and higher than the true multiplier $\hat{n} \geq n$. The information asymmetry is detrimental for the manager, since the auditor's expected value of the resource pie is higher than the actual resource pie $EV(\omega) > \omega$. In the tension setting, the auditor is likely to overestimate the amount of resources managers have available. The noisy signal allows me to create an interesting negotiation framework through an exogenous variable. My analysis of the auditor decisions focuses mainly on the experimental tension setting.

In the **third stage** of the game, auditors receive the unaudited report and must evaluate the proposal. I provide auditors the opportunity to negotiate with the manager about the investor return via text-messages. The negotiation reflects the first intervention of the gatekeeper in the trust game between managers and investors. This step is optional, auditors may also choose not to negotiate with the manager. For their role as gatekeeper, auditors receive a fix audit-fee of $A = 150$ taler. In practice, this fix audit-fee reflects the non-performance related compensation of the statutory auditor. I present auditors a

communication catalogue that contains five different messages. Each of these five messages represents one negotiation strategy according to the dual-concern model. The negotiation strategy is my main dependent variable. The categorical variable is measured on a nominal scale that contains the five items: avoiding, conceding, contending, compromising, and integrative strategies. When auditors decide not to send a message I interpret that behavior as an avoiding negotiation strategy. The number of messages auditors can send is restricted to one message in each round. Table C.2 summarizes the available strategy options in more detail. The content of the communication catalogue is not shown to managers or investors, the messages remain private information of the auditors.

Table C.2: Gatekeeper game - communication catalogue

Strategy	Message ^a	Concern for relationship ^b Mean (Std.)	Concern for outcome ^c Mean (Std.)
Avoiding	"I do not want to comment on your proposal at this point in time."	3.6 (1.3) <i>low*</i>	2.9 (1.3) <i>low</i>
Conceding	"I agree with your proposal and approve of it."	6.0 (1.1) <i>high</i>	2.0 (1.0) <i>low</i>
Contending	"I will reject your proposal, if the investor (player A) does not receive a bigger share."	2.4 (1.0) <i>low</i>	6.0 (1.0) <i>high</i>
Compromising	"If you were willing to make concessions to the investor (A), the distribution would be fairer."	4.0 (1.0) <i>medium</i>	5.2 (1.1) <i>medium</i>
Integrative	"You could benefit from further investments in the long-run, if you considered the investor (A) in this round more."	5.1 (1.1) <i>high</i>	5.2 (1.1) <i>high</i>

^a = English translation. German original is reported in the appendix II.2.

^b = Mean (Std.) concern for the relationship reported on a 7-point Likert-Scale (1 = strongly disagr., 7 = strongly agree). N=63.

^c = Mean (Std.) concern for the outcome reported on a 7-point Likert-Scale (1 = strongly disagr., 7 = strongly agree). N=63.

* = Expected direction of the outcome/ relation orientation according to the dual-concern model.

I developed and verified the communication catalogue in a two-step process prior to conducting the experiment. At first, I generated a comprehensive communication catalogue containing 32 different messages. Similar to Gibbins et al. (2010) and McCracken et al. (2011), the "[...] negotiation specific tactics are based on an inventory of tactics validated by Rahim (1983) [...]" (McCracken et al., 2011, p. 140). I designed a questionnaire to test whether these messages were clearly worded, easily understandable, and well suited for my experimental design. In an extensive pre-test, 130 students completed the questionnaire as part of their accounting lecture. The answers allowed me to identify five messages - one message for each negotiation strategy of the dual-concern model - that seemed most appropriate to my experiment. Second, I conducted another in-class questionnaire with 63 students to test whether these five messages reasonably reflected

the two dimensions according to the dual-concern model. On a 7-point Likert Scale, the students indicated the “concern for the outcome” and the “concern for the relationship” that each message transmits (1 indicates a weak outcome/ relationship orientation, 7 indicates a strong outcome/ relationship orientation). A copy of the second questionnaire is reproduced in appendix II.1 (English translation) and appendix II.2 (German original).

The questionnaire results show a good fit of my communication catalogue with the dual-concern model (table C.2). The avoiding message rates low on both dimensions, outcome and relationship (outcome: 2.9, relation: 3.6). The message is designed to reflect the disinterest or inactivity of the auditor. The contending strategy shows its assertiveness in the high outcome orientation and its uncooperativeness in the low relationship orientation (outcome: 6.0, relation: 2.4). The threat of the auditor to reject the final distribution transmits a clear win-lose character to the drawback of the manager. The conceding strategy shows the opposite picture, with a low outcome but a high relationship concern (outcome: 2.0, relation: 6.0). The agreement and approval in the wording of the message suggests a cooperative and rather unassertive auditor. The compromising message seeks a fair distribution and an acceptable middle ground that requires some concessions from the manager. This compromise is reflected in the relatively high concern for the outcome and the intermediate concern relationship (outcome: 5.2, relation: 4.0). My integrative strategy rates higher on the relationship concern and shows a high concern for the outcome, too (outcome: 5.2, relation: 5.1). The messages calls the manager’s attention to the long-term benefit of a higher investor return and seeks a mutually beneficial win-win solution for managers as well as investors. It changes the dimensionality of the decision alternatives by adding new attributes (long-run benefit).

In the **fourth stage** of the gatekeeper game, managers ultimately decide which share of the resource pie they want to return to the investor $y(\omega)$, $0 \leq y \leq \omega$ and which share they want to keep for themselves. Managers receive the text-message of the auditor and may then decide to revise their initial proposal from stage two. I refer to the manager decision $y(\omega)$ as final return. In auditing terms: auditors negotiate with managers about the manager’s unaudited report, which leads managers to revise their report and issue the final audited report. My second dependent variable, the additional investor value (AIV), is quantified as difference between the final investor return in stage four and the proposed investor return in stage two ($AIV = y - \hat{y}$) of the game. The ratio-scaled variable AIV reflects

the impact the negotiation strategy has on the final position of the manager. The more managers concede on their initial proposal, the larger is the investor value created through the communication.

In the **fifth stage** of the game, the final decision of the manager is subject to approval by the auditor. In their role as gatekeeper, auditors decide on behalf of the investor whether to accept or to reject the final return by the manager. This decision reflects the second intervention of the gatekeeper in the trust game between managers and investors. The decision of the auditor is comparable to the issuance of the auditor's opinion. In case the auditor decides that the returned share is appropriate, the distribution proposed by the manager is implemented. The decision to accept is free of charge for auditors. In case the auditor rejects and decides that the returned share is inappropriate, the amount that managers want to keep for themselves is reduced by a certain factor $\delta \cdot (\omega - y)$. The rejection factor varies between the high-power ($\delta = 0.50$) and low-power ($\delta = 0.95$) condition. I explain this mechanism and the experimental manipulation of the independent variable auditor power in more detail below. The rejection decision is costly for auditors and a fee of $f = 5$ taler is deducted from their income. The auditor decision has no impact on investor payoffs, investors are dependent only on the manager return.

Upon completion of the five stages, all group members are informed about their own payoff, about the manager final return in stage four, and about the auditor decision in stage five of the game. The exact multiplier remains private information of the manager. At this stage, managers have the opportunity to provide auditors feedback. Managers may choose to send the auditor a positive response "I believe your decision was reasonable" (positive feedback), or a negative response "I believe your decision was not reasonable" (negative feedback). Providing feedback is optional and free of charge to managers.

4.2.4 *Payoffs and independent variables*

I implement a random payoff mechanism through which subjects are compensated for one round that is randomly drawn from all 15 rounds at the end of the experiment. Subjects receive their payoff in private and cash subsequent to the experiment. The payoff structure, summarized in table C.3, is as follows. Investors receive their initial endowment and may earn a return on their investment: $\pi_I = E - x + y$. Auditors receive their fix audit-fee less a small deduction on their income in case they reject: $\pi_A = A - f$. Managers receive

the multiplied investment less any amount they are willing to return to the investor. Their payoff is reduced by the rejection factor δ in case the auditor does not approve of the final return: $\pi_M = \delta \cdot (\omega - y)$. Since managers would earn zero if investors did not invest in stage one of the game, I pay managers an additional allowance of $M=30$ taler in each experimental round, reflecting the fix part of a manager remuneration in practice. The payoff scheme is common knowledge to all participants.

Table C.3: Gatekeeper game - payoff structure

	Investor payoff*	Manager payoff	Auditor payoff
No investment	$\pi_I = E$	$\pi_M = M$	$\pi_A = A$
Investment & auditor accepts	$\pi_I = E - x + y$	$\pi_M = M + (\omega - y)$	$\pi_A = A$
Investment & auditor rejects	$\pi_I = E - x + y$	$\pi_M = M + (\omega - y) \cdot \delta$	$\pi_A = A - f$

* $E = 100$ taler initial investor endowment, $M = 30$ taler manager allowance, $A = 150$ taler fix audit fee, $f = 5$ taler rejection fee, $\omega = x \cdot n$ defines the size of the resource pie, $x = 50$ taler investor investment, $y(\omega), 0 \leq y \leq \omega$ defines the final investor return, and $\delta = 0.5/0.95$ the rejection factor.

The experiment is a fully crossed 2×2 factorial design with the independent variables auditor power and rotation regime manipulated between subjects. I manipulate auditor power (high vs. low) by varying the economic disadvantage managers experience from auditor disapprovals. In practice, disapprovals can be compared to the issuance of a qualified audit report that has economic consequences for managers. A qualified audit report sends negative signals to the capital market and to outside creditors which may lead to a decline in stock prices or to increased cost of capital (e.g. Dopuch et al., 1986; Guiral-Contreras et al., 2007). While managers experience the economic disadvantages of a qualified audit report more indirectly in practice (stock prices, cost of capital), the managers in my study experience a more direct economic disadvantage. Auditor rejections (disapprovals) reduce the amount of the resource pie that managers want to keep for themselves by a certain factor δ . The mechanism is adapted from the delta-ultimatum game in Suleiman (1996). I vary the rejection factor and provide the auditor with more or less power over the manager. In the high-power condition, auditor rejections reduce manager payoffs by 50% ($\delta = 0.50$), providing the auditor with much control over the manager's resources. In the low-power condition, rejections reduce manager payoffs by 5% ($\delta = 0.95$), withdrawing much of the auditor power over manager's resources. This setting allows me to study negotiations under varying levels of power.

The rotation regime (retention vs. rotation) is manipulated through the group assignment of auditors. Similar to Bowlin et al. (2015), I override the usual hire and fire mechanism to rule out the economic dependency of the auditor, which allows me to disentangle the financial from the personal dimension of the ACM interaction. Investors and managers remain paired throughout all 15 experimental rounds. In the rotation condition, the auditor is randomly assigned to a new investor-manager pair after each round. This condition repeatedly simulates the terminal year of an engagement before rotation is mandated. I assume a weaker personal relationship between auditors and managers in the rotation condition.

In the retention condition, the auditor interacts with the same investor-manager pair throughout the whole experiment. The group assignment is fix in the retention condition. I assume a stronger personal relationship that develops when the auditor is retained for 15 consecutive rounds. Thus, I vary the number of rounds auditors interact with the same manager to induce variability in the strength of the personal relationship.¹⁷ Table C.4 summarizes the 2×2 factorial design.

Table C.4: Gatekeeper game - independent variables

	Rotation	Retention
High Power	<ul style="list-style-type: none"> - Rejection factor $\delta = 0.50$ - Auditor rotates every round - Weak relationship implied 	<ul style="list-style-type: none"> - Rejection factor $\delta = 0.50$ - Auditor remains in group - Strong relationship implied
Low Power	<ul style="list-style-type: none"> - Rejection factor $\delta = 0.95$ - Auditor rotates every round - Weak relationship implied 	<ul style="list-style-type: none"> - Rejection factor $\delta = 0.95$ - Auditor remains in group - Strong relationship implied

¹⁷ Kadous et al. (2003) follow a similar approach when they manipulate “[...] engagement pressure to induce variability in auditor’s directional goals [...]” (Kadous et al., 2003, p. 761) for an upcoming accounting negotiation.

5. Results

5.1 Manipulation checks, descriptive statistics, and setting validation

5.1.1 Manipulation checks

The PEQ includes manipulation checks for the independent variable auditor power. I adapt two constructs from social psychology to measure the experienced power of auditors and managers, as well as the perceived relative power between both parties (van Kleef et al., 2006). The wording of the original items is modified to fit my experimental context. I measure the experienced power through a three-item construct that I average into a single index. Auditors and managers respond on a 7-point Likert scale from 1 = "totally disagree" to 7 = "totally agree":

- "I felt that I needed the other party to make a good deal" (reverse scored),
- "I felt that I had a strong position",
- "I felt that my decisions influenced the outcome."

In addition, I measure the perceived power of the auditor and the manager relative to the other party. I adapt a similar three-item construct from social psychology that I average into a single index of relative power (van Kleef et al., 2006). Auditors and managers respond on a 7-point Likert scale from 1 = "definitely the other party" to 7 = "definitely myself":

- "Who do you feel had the most power in the experiment?",
- "Who do you feel was most dependent on the other?" (reverse scored),
- "Who do you think had the most influence on the outcome?"

The manipulation checks indicate a successful power manipulation (table C.5, panel A). Auditors feel more powerful in the high-power condition compared to the low-power condition. They report significantly higher experienced power ($t=4.59$, $p\text{-value}<0.01$) and higher relative power ($t=3.68$, $p\text{-value}<0.01$) indices in the high-power condition. Consistently, managers show a reverse pattern, they feel more powerful when the auditor is in a weak position. Managers report lower experienced power ($t=-3.35$, $p\text{-value}<0.01$) and lower relative power ($t=6.09$, $p\text{-value}<0.01$) indices in treatments with high-power auditors.

Table C.5: Descriptive statistics - manipulation checks

Panel A: Manipulation check "auditor power"

	AUDITOR			MANAGER		
	HIGH POW (N=40)	LOW POW (N=40)	p-val ^{a,c}	HIGH POW (N=40)	LOW POW (N=40)	p-val ^{a,c}
	$\bar{\phi}$ (Std.)	$\bar{\phi}$ (Std.)		$\bar{\phi}$ (Std.)	$\bar{\phi}$ (Std.)	
Exp. power	5.00 (1.04)	3.93 (1.07)	0.00***	4.70 (1.07)	5.56 (1.22)	0.00***
Rel. power	4.70 (1.54)	3.56 (1.22)	0.00***	2.98 (1.06)	4.48 (1.14)	0.00***

Panel B: Manipulation check "rotation regime" (personal relationship)

	AUDITOR			MANAGER		
	ROTATION (N=40)	RETENTION (N=40)	p-val ^{b,c}	ROTATION (N=40)	RETENTION (N=40)	p-val ^{b,c}
	\bar{r} (Std.)	\bar{r} (Std.)		\bar{r} (Std.)	\bar{r} (Std.)	
Personal relationship	2.68 (1.54)	3.23 (1.96)	0.08*	2.23 (1.42)	3.32 (1.75)	0.00***

^a *t*-test: test compares the mean reported experienced and relative power (ϕ) in the high-power condition against the mean power in the low-power condition. *p*-values are one-tailed since expectations are directional.

^b *t*-test: test compares the mean reported strength of the personal relationship (*r*) in the rotation condition against the strength in the retention condition. *p*-values are one-tailed since expectations are directional.

^c * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

The PEQ also includes a manipulation check for the independent variable rotation regime. My rotation manipulation was designed to induce a weaker personal relationship in the rotation condition, but a stronger personal relationship in the retention condition. I measure the strength of the personal relationship through a one-item construct that asks auditors and managers to respond on a 7-point Likert scale (from 1 = "totally disagree" to 7 = "totally agree") whether a "personal relationship developed between the other party and me?" In line with my assumption, the test shows that the rotation manipulation successfully induced variability in the strength of the personal relationship (table C.5, panel B). Managers experience a stronger personal relationship in the long-term retention condition compared to the short-term rotation condition ($t=3.09$, $p\text{-value}<0.01$). The experienced relationship strength reported by auditors points in the same direction ($t=1.40$, $p\text{-value}<0.1$). As predicted, the number of rounds auditors interact with the same manager influences the strength of their relationship.

5.1.2 Descriptive statistics stages 1-5

Table C.6 shows the descriptive statistics for the investor decisions in **stage one** of the game. In contrast to the economic benchmark of rational behavior, the proportion of investments is high in all four experimental conditions ($\geq 90\%$). Investors invest most frequently when auditors have high power and rotate between groups ($n=282$), but least often when auditors are in a weak position and do not rotate ($n=270$). A two-tailed test of proportions, however, shows no significant differences in the investment behavior across the experimental conditions.

Table C.6: Descriptive statistics - investor decisions (stage 1)

	HIGH POWER				LOW POWER					
	ROTATION ($N=300$)		RETENTION ($N=300$)		ROTATION ($N=300$)		RETENTION ($N=300$)		p-val ^{a,b}	
	n	(%)	n	(%)	n	(%)	n	(%)		
Invest	282	(94%)	272	(91%)	0.13	277	(92%)	270		(90%)
No invest	18	(6%)	28	(9%)	0.13	23	(8%)	30	(10%)	0.31

^a Test of proportions: test compares proportion of investments in the rotation condition against proportion in the retention condition. p -values are two-tailed since expectations are not directional.

^b * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. $N = 300 = 20$ investor decisions \times 15 experimental rounds.

The descriptive statistics for the manager decisions in **stage two** and in **stage four** are displayed in table C.7. The mean proposed returns vary within $91.6 \leq \hat{y} \leq 95.4$ taler, with no salient or significant differences across the four conditions. The mean final returns range from $93.0 \leq y \leq 103.6$ taler and the mean investor values from $0.4 \leq AIV \leq 8.2$ taler, contingent on the (1) rotation and (2) power conditions. First, looking at the effect of rotation, I find significantly higher final returns ($t=-2.66$, $p\text{-value}<0.01$) and higher AIVs ($t=-2.38$, $p\text{-value}<0.01$) in the rotation compared to the retention regime, given high auditor power. This finding is in line with my third hypothesis, stating that rotation creates investor value. Second, looking at the effect of auditor power, I observe smaller mean AIVs in the low-power setting ($0.4 \leq AIV \leq 1.8$ taler) and larger mean AIVs in the high-power setting ($5.1 \leq AIV \leq 8.2$ taler). It seems that managers are less willing to concede on their initial proposal in the low-power condition, providing descriptive evidence that the

negotiation in these settings has no effect on the manager and can be seen as cheap talk.¹⁸ These decisions are in contrast to the economic benchmark of rational behavior, which predicts zero investor return.

Table C.7: Descriptive statistics - manager proposals (stage 2) and finals (stage 4)

	HIGH POWER					LOW POWER				
	ROTATION (N=282)		RETENTION (N=272)		p-val ^{a,b}	ROTATION (N=277)		RETENTION (N=270)		p-val ^{a,b}
	\bar{y}	(Std.)	\bar{y}	(Std.)		\bar{y}	(Std.)	\bar{y}	(Std.)	
Proposal	95.4	(29.3)	91.6	(28.0)	0.12	95.1	(27.2)	92.6	(31.5)	0.32
Final	103.6	(30.7)	96.7	(30.5)	0.01***	96.9	(28.7)	93.0	(34.3)	0.15
Δ AIV	8.2	(16.4)	5.1	(13.7)	0.00***	1.8	(11.9)	0.4	(22.8)	0.19

^a *t*-test: test compares the mean proposals, finals, and AIVs in the rotation condition against the means in the retention condition. For proposals and finals, *p*-values are two-tailed since expectations are not directional. For my dependent variable AIV, *p*-values are one-tailed since expectations are directional (H3).

^b * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table C.8 summarizes the descriptive statistics for the negotiation **stage three**. I report the number of auditor messages pooled over all experimental rounds in panel A, and the number of messages in the tension setting in panel B. To begin with the full data set in panel A, I observe the frequent use of conceding strategies across all four conditions ($\geq 43\%$). Avoiding negotiation strategies account for the lowest proportion of messages (4-12%). Auditors apply contending strategies more often in a position of power (19-27%), but use integrative strategies more frequently in low-power settings (16-21%). Panel B reports the number of messages in settings where the auditor is likely to overestimate the resource pie managers actually have available. In these settings, I observe a decline in the proportion of conceding strategies ($\leq 33\%$) and an increase in the proportion of contending, compromising, and integrative strategies. As expected, the tension of the negotiation setting is reflected within the messages. I also find two salient and significant effects in the high-power condition, where the rotation regime leads to more contending ($z = -1.83$, $p\text{-value} < 0.05$) but fewer integrative strategies ($z = 2.40$, $p\text{-value} < 0.01$) compared to the retention regime. These findings are in line with my first hypothesis stating that a stronger personal relationship in the retention regime leads to more integrative negotiation.

¹⁸ Unsurprisingly, I observe a high standard deviation of the managers' actions due to the range of multipliers $n \in \{3, 4, 5, 6\}$ who define the size of the resource pie.

Table C.8: Descriptive statistics - auditor messages (stage 3)

Panel A: Auditor messages pooled over all rounds (tension and no tension)										
	HIGH POWER				LOW POWER					
	ROTATION (N=282)		RETENTION (N=272)		p-val ^{a,b}	ROTATION (N=277)		RETENTION (N=270)		
	n	(%)	n	(%)		n	(%)	n	(%)	
Avoiding	24	(9%)	19	(7%)	0.50	12	(4%)	32	(12%)	0.00***
Conceding	120	(43%)	130	(48%)	0.22	152	(55%)	131	(49%)	0.14
Contending	77	(27%)	51	(19%)	0.01***	34	(12%)	30	(11%)	0.34
Compromising	29	(10%)	30	(11%)	0.78	21	(8%)	33	(12%)	0.07*
Integrative	32	(11%)	42	(15%)	0.08*	58	(21%)	44	(16%)	0.92

Panel B: Auditor messages in the tension setting ($\hat{n} \geq n$)										
	HIGH POWER				LOW POWER					
	ROTATION (N=130)		RETENTION (N=125)		p-val ^{a,b}	ROTATION (N=129)		RETENTION (N=128)		
	n	(%)	n	(%)		n	(%)	n	(%)	
Avoiding	11	(8%)	8	(6%)	0.53	7	(5%)	19	(15%)	0.01**
Conceding	28	(22%)	31	(25%)	0.54	43	(33%)	42	(33%)	0.93
Contending	56	(43%)	40	(32%)	0.03**	29	(22%)	20	(16%)	0.08*
Compromising	22	(17%)	20	(16%)	0.84	14	(11%)	22	(17%)	0.14
Integrative	13	(10%)	26	(21%)	0.01***	36	(28%)	25	(20%)	0.94

^a Test of proportions: test compares the proportion of messages (avoiding, conceding, contending, compromising, integrative) in the rotation condition against the proportion of message in the retention condition. *p*-values for contending and integrative strategies are one-tailed since expectations are directional (H1), *p*-values for the remaining three strategies are two-tailed since expectations are not directional.

^b * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table C.9 displays the descriptive statistics for the final decisions of the auditor in **stage five**. Looking at the auditor decisions pooled over all rounds (panel A), I find that auditors more often accept the final investor returns (87-90%) than they reject the final returns (10-13%). I do not observe significant differences in the behavior of the auditor across the four experimental conditions. In the tension setting (panel B), the rejection rates increase to an average of 15-24%. This behavior is in contrast to the economic benchmark of rational behavior, which predicts that auditors never choose costly rejections. I further find that auditors disapprove of the final investor return significantly more often in the long-term retention setting compared to the short-term rotation setting, given high auditor power ($z=1.73$, $p\text{-value}<0.1$).

Table C.9: Descriptive statistics - auditor decisions (stage 5)

Panel A: Auditor decisions pooled over all rounds (tension and no tension)										
	HIGH POWER					LOW POWER				
	ROTATION (N=282)		RETENTION (N=272)		p-val ^{a,b}	ROTATION (N=277)		RETENTION (N=270)		p-val ^{a,b}
	n	(%)	n	(%)		n	(%)	n	(%)	
Accept	255	(90%)	237	(87%)	0.22	241	(87%)	235	(87%)	0.99
Reject	27	(10%)	35	(13%)	0.22	36	(13%)	35	(13%)	0.99

Panel B: Auditor decisions in the tension setting ($\hat{n} \geq n$)										
	HIGH POWER					LOW POWER				
	ROTATION (N=130)		RETENTION (N=125)		p-val ^{a,b}	ROTATION (N=129)		RETENTION (N=128)		p-val ^{a,b}
	n	(%)	n	(%)		n	(%)	n	(%)	
Accept	110	(85%)	95	(76%)	0.08*	99	(77%)	103	(80%)	0.47
Reject	20	(15%)	30	(24%)	0.08*	30	(23%)	25	(20%)	0.47

^a Test of proportions: test compares the proportion of auditor decisions in the rotation condition against the proportion in the retention condition. p-values are two-tailed since expectations are not directional.

^b * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

5.1.3 Setting validation

A potential problem to the validity of multi-round games are carryover or learning effects. Since the participants repeatedly play the gatekeeper game, the effect of one round might carry over to another round and confound the causality of my results (Charness et al., 2012). The descriptive statistics do not take such time effects into consideration as the results are pooled over all experimental rounds or pooled over the tension setting. I conduct several panel regressions to control for potential carryover effects and to validate the experimental setting. The results do not cast doubts over the robustness and the validity of the experimental design, since I find very little and no salient prior round effects (table C.10). It is important to note that not all prior-round effects are a threat to my experiment, in fact, I even expect some effects to carry over from one round to another. For example, I expect auditor and client-subjects to build a closer relationship across the experimental rounds in the retention setting. I am also not concerned about carryover effects between different experimental conditions, since my experiment is a between-subject design and not conducted within-subjects.

The panel regression results are displayed in table C.10. I find that the investment decision in stage one of the game (regression I) depends only on prior round final returns. Investors reward higher final returns with a follow-up investment in the subsequent round. The proposed return in stage two (reg. II) increases with the size of the resource pie managers have available. Interestingly, managers propose higher returns when they received a “tough” auditor message in the prior round, that is a contending, compromising, or integrative message. However, this effect is only weakly significant. Looking at the additional investor value (reg. III), I observe that the AIV is strongly influenced by the negotiation strategy of the auditor. Tougher messages have a positive and significant effect on the investor value. The intervention of the auditor in prior rounds has no effect on the final return of the manager. This result suggests that managers consider each experimental round as a “fresh negotiation” and are not influenced by the prior message or the prior rejection decision of the auditor. As expected from my descriptive results before, I find that the power dummy is significantly associated with a higher AIV, reflecting the important role of a strong auditor in negotiations.

The regression results for the auditor decisions are summarized in regressions IV to IX. In the negotiation stage three, I observe that the auditor’s choice of messages depends on the proposal of the manager. Auditors concede towards higher proposed returns (reg. VI), but use more contending (reg. VII), compromising (reg. VIII), or integrative strategies (reg. IX) when the proposed investor returns are small. The tension setting significantly reduces the number of conceding strategies and leads to a more frequent use of tougher strategies. This finding is in line with my descriptive results, showing that the information asymmetry in the tension setting affects the communication of the auditor. I observe that the manager final returns in the prior round have little impact on the negotiation strategy of the auditor. The rejection decision in stage five depends strongly on the final resource distribution (reg. IV). Higher investor returns are significantly associated with fewer rejection decisions. The information asymmetry to the drawback of the manager increases the proportion of rejections, again reflecting the tension of negotiation setting. Overall, my analysis indicates that the actions of auditors and managers in one round have little impact on the decisions of the respective counterpart in the subsequent round, reinforcing the robustness of the results and the validity of the experimental design.

Table C.10: Panel regression - prior round effects

INDEPENDENT VAR. ^c	(REGRESSION NUMBER) / DEPENDENT VARIABLE								
	(I) ^a Investment	(II) ^b Proposal	(III) ^b ΔAIV	(IV) ^a Rejection	(V) ^a Avoiding	(VI) ^a Conceding	(VII) ^a Contending	(VIII) ^a Compromising	(IX) ^a Integrative
Power	-0.02 (0.45)	-2.66 (2.47)	4.34*** (1.55)	0.22 (0.56)	-0.90 (0.73)	-0.03 (0.60)	1.03** (0.50)	-0.24 (0.44)	-0.09 (0.43)
Rotation	0.09 (0.46)	0.78 (2.46)	1.60 (1.54)	0.17 (0.55)	-1.84** (0.84)	0.22 (0.60)	0.40 (0.51)	-0.58 (0.45)	0.38 (0.42)
Power × Rotation	0.43 (0.67)	2.70 (3.47)	1.87 (2.16)	-0.17 (0.77)	1.93* (1.13)	-0.87 (0.85)	0.41 (0.68)	0.63 (0.63)	-0.56 (0.61)
Multiplier-High		36.45*** (1.18)	9.53*** (1.37)	2.31*** (0.49)	-0.60 (0.48)	-2.14*** (0.31)	1.45*** (0.34)	0.78** (0.34)	0.70** (0.29)
Tension Setting				1.87*** (0.48)	0.46 (0.41)	-2.03*** (0.25)	1.53*** (0.31)	1.12*** (0.33)	0.72*** (0.27)
Proposal (Stage 2)			-0.17*** (0.03)	0.00 (0.01)	0.01 (0.01)	0.06*** (0.01)	-0.05*** (0.01)	-0.01** (0.01)	-0.01** (0.01)
Message-Tough (Stage 3)			7.65*** (1.09)	3.04*** (0.47)					
Final (Stage 4)				-0.05*** (0.01)					
Message-Tough (Prior Round)		2.43* (1.33)	0.14 (1.08)	0.33 (0.31)	-0.23 (0.36)	-0.04 (0.22)	0.32 (0.24)	-0.11 (0.27)	0.06 (0.23)
Final (Prior Round)	0.04*** (0.01)	-0.03 (0.02)	-0.01 (0.02)	-0.01** (0.01)	-0.00 (0.01)	0.01*** (0.00)	-0.01** (0.00)	0.00 (0.00)	-0.00 (0.00)
Rejection (Prior Round)	-0.27 (0.36)	1.74 (2.23)	1.11 (1.82)	0.13 (0.49)	-0.09 (0.66)	0.72** (0.35)	-1.47*** (0.49)	0.34 (0.44)	0.35 (0.34)
Constant	-0.67 (0.54)	77.28*** (3.01)	9.64*** (3.20)	-1.28 (0.95)	-3.06*** (1.08)	-5.22*** (0.84)	0.81 (0.73)	-2.18*** (0.73)	-1.44** (0.66)
N	1039	955	955	950	950	950	950	950	950
R ² overall		0.46	0.17						
Chi ²	58.29	998.55	181.89	91.71	11.20	177.82	102.82	30.97	20.59
df	5	7	9	11	9	9	9	9	9
Prob > Chi ²	0.00	0.00	0.00	0.00	0.26	0.00	0.00	0.00	0.01

^a Random effects panel logit regression. Reported are coefficients, standard errors (subject level) are provided in parentheses. The dependent variable is a dummy = 1, if the investor invests (I), if the auditor rejects (IV), or if the auditor chooses the strategy as indicated (V-IX), 0 otherwise.

^b Random effects panel regression. The DV is the manager proposed investor return in taler (II) and the additional investor value AIV in taler (III) respectively.

^c Power & rotation are dummies = 1 in the high-power/ rotation condition respectively, 0 otherwise. The interaction term is a dummy = 1 if both individual dummies are 1. Multiplier-high is a dummy = 1 if $n \in \{5, 6\}$. Tension is a dummy = 1 in the tension setting ($\hat{n} \geq n$). Proposal and final reflect the manager returns in taler. Message-tough is a dummy = 1 if the auditor sends a contending, compromising, or integrative messages. Rejection is a dummy = 1 if the auditor rejects.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

5.2 Test of hypotheses

To test my hypotheses, I employ a path analysis as main analytical tool. Path analysis is a causal modeling approach that is used to describe the relationship between a set of variables. It is a subtype of the structural equation model (SEM). The difference between a path analysis and SEM lies in the type of variables used in the model. All variables in a path analysis are manifest (observed) variables that are derived from a single indicator. The variables in a SEM usually include latent (unobserved, measured) variables that are inferred from multiple other variables (Acock, 2013). I use the STATA "SEM builder" to conduct the path analysis. Since my descriptive statistics and the results of the panel regressions show that the information asymmetry in the tension setting provides an interesting negotiation framework, my test of hypotheses focuses on this subpopulation. I use the data of the tension setting in the path analysis below, but report a full sample path analysis subsequently for a comprehensive view and as further validation of the results.

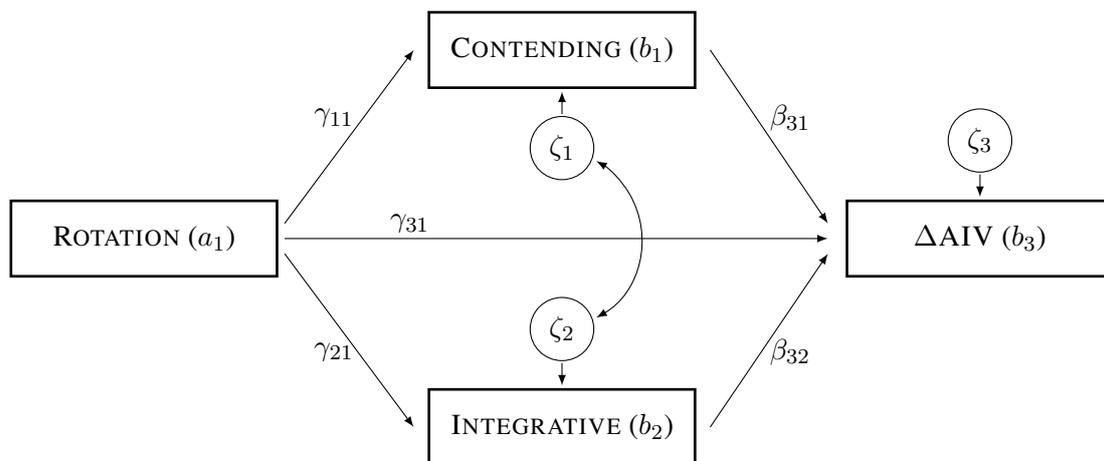


Figure C.6: Path analysis: hypotheses testing

(Source: own source)

The structural links in the path analysis, displayed in figure C.6, show the predicted effects from my hypotheses. All variables in the model are observed variables that are enclosed in boxes. Causal relationships between two variables are represented through unidirectional arrows, and non-causal relationships through a two-headed arrow. The gamma (γ) coefficients describe the association between the exogenous variable rotation regime (a_1) and the endogenous variables auditor negotiation strategy ($b_{1/2}$) and AIV (b_3). The beta (β) coefficients describe the association between the two endogenous variables

auditor negotiation strategy ($b_{1/2}$) and AIV (b_3). The error terms (ζ) are enclosed in circles (Aichholzer, 2017). The path analysis allows me to test the structural links simultaneously in a single model (H1: rotation \rightarrow strategy; H2: strategy \rightarrow AIV; H3: rotation \rightarrow AIV).¹⁹

A good model fit is important to the validity of the path analysis. Prior studies in the ACM negotiation context have used SEM analysis with latent variables (e.g. Gibbins et al., 2010; Koch and Salterio, 2017). These latent variables are measured through multiple-item constructs. Such models require reliability tests to provide “[...] evidence that the measurement model is properly captured by the measured items [...]” (Gibbins et al., 2010, p. 589). Since my path analysis only includes manifest variables, I do not need to validate the constructs of any latent variable. However, I must ensure “[...] that the overall measurement model is a well-fitting structural model.” (Gibbins et al., 2010, p. 589). The common fit indices indicate a good model fit and suggest that the path analysis is a well-fitting model.²⁰

The results of the path analysis are reported in table C.11. My first hypothesis predicts that audit firm rotation leads to more contending (H1a) and less integrative strategies (H1b), if auditor power is high. Consistent with H1a, the results (panel A) show a positive relationship between the rotation dummy and the use of contending negotiation strategies. As expected, the effect is significant in settings with high auditor power (model I, $\gamma_{11}=0.11$, z-stat=1.84, p-value<0.1) but not in settings with low auditor power (model II, $\gamma_{11}=0.07$, z-stat=1.40, p-value>0.1). In line with H1b, I find a significant and negative relationship between the rotation regime and the use of integrative negotiation strategies, if auditor

¹⁹ I report the results of an extended path model in appendix III. The extended path model includes all negotiation strategies (conceding, contending, compromising, and integrative) according to the dual-concern model. The avoiding dummy is omitted due to multicollinearity. In the extended path model, all my main results hold true in direction and effect size.

²⁰ The common fit indices (Thompson et al., 2000; Koch and Salterio, 2017) indicate a good model fit: comparative fit index CFI=1.00, Tucker-Lewis index TLI=1.00, root mean square error approximation RMSEA=0.00. A “pclose test” does not reject the null hypothesis that the RMSEA value is smaller than 0.05 (p=1.00). The comparative fit index CFI “[...] assesses fit relative to other models [...]” (Ullman, 2006, p. 44), e.g. it compares the fit of the path model with an alternative model that assumes uncorrelated variables. Values closer to one indicate a good fit. The Tucker-Lewis index TLI analyzes the differences between the chi-squared values of the path model and a null model. Again, TLI values closer to one indicate a good fit. The root mean square error approximation RMSEA “[...] estimates the lack of fit in a model compared to a perfect or saturated model [...]”. Values of .06 or less indicate a close fitting model [...]” (Ullman, 2006, p. 44). The pclose test is a one-sided test of the null hypothesis that the RMSEA is smaller than 0.05. The test indicates a good fit if p-values are not significant at the 90% confidence interval. See also Byrne (1994); Ullman and Bentler (2003); Schumacker and Lomax (2004).

power is high (model I, $\gamma_{21}=-0.11$, z-stat=-2.42, p-value<0.05) but not if auditor power is low (model II, $\gamma_{21}=0.08$, z-stat=1.59, p-value>0.1). These results reinforce the descriptive statistics which showed higher proportions of contending messages and lower proportions of integrative messages with rotation. My results fully support H1.

Table C.11: Path analysis results - tension setting

Panel A: Effect of rotation on negotiation strategy - H1 (tension setting)									
DEPENDENT VAR ($b_{1/2}$)	INDEPENDENT VAR (a_1)	HIGH POWER (MODEL I) (N=255)				LOW POWER (MODEL II) (N=257)			
		Exp. Sign	Est. (γ)	S.E.	p-val.	Exp. Sign	Est. (γ)	S.E.	p-val.
Contending	Rotation	+	0.11	0.60	0.07*	n.s.	0.07	0.05	0.16
Integrative	Rotation	-	-0.11	0.05	0.02**	n.s.	0.08	0.05	0.11

Panel B: Effect of negotiation strategy on AIV - H2 (tension setting)									
DEPENDENT VAR (b_3)	INDEPENDENT VAR ($b_{1/2}$)	HIGH POWER (MODEL I) (N=255)				LOW POWER (MODEL II) (N=257)			
		Exp. Sign	Est. (β)	S.E.	p-val.	Exp. Sign	Est. (β)	S.E.	p-val.
AIV	Contending	+	8.46	2.06	0.00***	n.s.	6.99	2.99	0.02**
AIV	Integrative	+	5.60	2.78	0.04**	n.s.	3.32	2.76	0.23

Panel C: Effect of rotation on AIV - H3 (tension setting)									
DEPENDENT VAR (b_3)	INDEPENDENT VAR (a_1)	HIGH POWER (MODEL I) (N=255)				LOW POWER (MODEL II) (N=257)			
		Exp. Sign	Est. (γ_{31})	S.E.	p-val.	Exp. Sign	Est. (γ_{31})	S.E.	p-val.
AIV	Rotation	+	3.72	1.90	0.05*	n.s.	1.75	2.27	0.44

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. n.s. = not significant.

Model fit:

Good model fit (high-power - I): CFI: 1.00; TLI: 1.00; RMSEA: 0.00 (H: RMSEA \leq 0.05 not rejected $p=1.00$).

Good model fit (low-power - II): CFI: 1.00; TLI: 1.00; RMSEA: 0.00 (H: RMSEA \leq 0.05 not rejected $p=1.00$).

Legend:

Rotation: dummy variable = 1 in the rotation condition, 0 otherwise.

Strategy: dummy variable = 1 if the auditors uses contending/integrative strategies respectively.

AIV: additional investor value in taler ($AIV = y - \hat{y}$).

The second hypothesis predicts that contending (H2a) and integrative negotiation strategies (H2b) both lead to additional investor value, but only if auditor power is high. Consistent with H2a, the path analysis (panel B) shows that contending strategies lead to a significantly higher AIV in the high-power setting (model I, $\beta_{31}=8.46$, $z\text{-stat}=4.11$, $p\text{-value}<0.01$). Contrary to my prediction, contending strategies are also effective in the low-power setting. The effect of integrative strategies is as expected. Integrative negotiation leads to a higher AIV if auditor power is high (model I, $\beta_{32}=5.60$, $z\text{-stat}=2.02$, $p\text{-value}<0.01$), but not if auditor power is low (model II, $\beta_{32}=3.32$, $z\text{-stat}=1.20$, $p\text{-value}>0.1$). The path analysis is in line with the results from the panel regression, but conveys a clearer picture of the structural relationship. My results support H2.

The third hypothesis states that rotation creates additional investor value, if auditor power is high (H3). The descriptive statistics provide first evidence that the investor value is positive in both rotation regimes, but that the mean AIV is higher with rotation compared to retention. My path analysis focuses on the subpopulation in the tension setting and provides a more detailed view on the direct effect of rotation on the AIV (panel C). In line with the hypothesis, I find a positive and weakly significant effect of rotation on AIV, in the high-power condition (model I, $\gamma_{31}=3.72$, $z\text{-stat}=1.96$, $p\text{-value}<0.1$) but not in the low-power condition (model II, $\gamma_{31}=1.75$, $z\text{-stat}=0.77$, $p\text{-value}>0.1$). My results support H3.

As a validation of the results, I re-run the path analysis using the full data set with and without tension (table C.12). In panel A, I observe that rotation has a positive effect on the use of contending strategies and a negative effect on the use of integrative strategies. The direction of the effect is in line with the first hypothesis, but the effect is significant only for contending strategies. In panel B, I find that both negotiation strategies increase the investor value in line with the second hypothesis. In panel C, I observe that rotation increases the investor value, providing support for the third hypothesis. Overall, the results of the path analysis in the tension setting are robust to the full data set.

5.3 Supplementary analysis

5.3.1 *Indirect effect of rotation on investor value: negotiation strategies*

Audit firm rotation affects the investor value *indirectly* through the negotiation strategy of the auditor. The impact of each strategy is focus of this supplementary section. My

Table C.12: Path analysis results - all data

Panel A: Effect of audit firm rotation on negotiation strategy (all data)									
DEPENDENT VAR ($b_{1/2}$)	INDEPENDENT VAR (a_1)	HIGH POWER (MODEL I) ($N=554$)				LOW POWER (MODEL II) ($N=547$)			
		Exp. Sign	Est. (γ)	S.E.	p-val.	Exp. Sign	Est. (γ)	S.E.	p-val.
Contending	Rotation	+	0.09	0.34	0.02**	n.s.	0.01	0.03	0.67
Integrative	Rotation	-	-0.04	0.03	0.16	n.s.	0.05	0.03	0.16

Panel B: Effect of negotiation strategy on AIV (all data)									
DEPENDENT VAR (b_3)	INDEPENDENT VAR ($b_{1/2}$)	HIGH POWER (MODEL I) ($N=554$)				LOW POWER (MODEL II) ($N=547$)			
		Exp. Sign	Est. (β)	S.E.	p-val.	Exp. Sign	Est. (β)	S.E.	p-val.
AIV	Contending	+	12.68	1.44	0.00***	n.s.	3.18	2.42	0.19
AIV	Integrative	+	11.13	1.78	0.00***	n.s.	7.31	2.00	0.00***

Panel C: Effect of audit firm rotation on AIV (all data)									
DEPENDENT VAR (b_3)	INDEPENDENT VAR (a_1)	HIGH POWER (MODEL I) ($N=554$)				LOW POWER (MODEL II) ($N=547$)			
		Exp. Sign	Est. (γ_{31})	S.E.	p-val.	Exp. Sign	Est. (γ_{31})	S.E.	p-val.
AIV	Rotation	+	2.43	1.19	0.04**	n.s.	1.00	1.53	0.52

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. n.s. = not significant.

Model fit:

Good model fit (high-power - I): CFI: 1.00; TLI: 1.00; RMSEA: 0.00 (H: RMSEA \leq 0.05 not rejected $p=1.00$).

Good model fit (low-power - II): CFI: 1.00; TLI: 1.00; RMSEA: 0.00 (H: RMSEA \leq 0.05 not rejected $p=1.00$).

path analysis shows that rotation increases the use of contending strategies (H1a), but decreases the use of integrative strategies (H1b). Since the accounting literature often associates integrative strategies with "[...] poor outcomes [...]" (Beattie et al., 2004, p. 2) and considers its use as "[...] potentially problematic [...]" (Gibbins et al., 2010, p. 593), one could argue that the reduction of integrative negotiation is a positive effect of rotation. However, integrative strategies also improve negotiations, because they (1) receive less negative feedback compared to contending strategies, and (2) yield additional investor value in negotiations. First, I observe that auditors receive less negative feedback from

managers when they employ an integrative (30% of feedback is negative) compared to a contentious (45% of feedback is negative) negotiation approach.²¹ Contending strategies in fact receive the most negative responses compared to all other negotiation strategies. The positive feedback integrative strategies receive reflects the win-win character of such strategies, while the negative feedback contending strategies receive highlights the win-lose character of such strategies in line with the dual-concern model. It seems that integrative strategies help to resolve conflicts, and create a more pleasant atmosphere between auditors and client-management .

Table C.13: Descriptive statistics - mean AIV by negotiation strategy

	HIGH POWER ^a					LOW POWER				
	ROTATION (N=282)		RETENTION (N=272)		Σ	ROTATION (N=277)		RETENTION (N=270)		Σ
	AIV	(Std.)	AIV	(Std.)		AIV	(Std.)	AIV	(Std.)	
Avoiding	3.9	(10.9)	3.8	(8.8)	3.8	-10.0	(27.6)	-6.2	(30.3)	-7.1
Conceding	0.0	(3.5)	-0.3	(1.6)	-0.1	-0.8	(6.5)	-2.1	(14.0)	-1.4
Contending	17.1	(20.5)	12.2	(23.3)	15.1	7.4	(13.8)	-2.8	(31.3)	2.6
Compromising	12.6	(9.1)	10.0	(10.4)	11.3	3.3	(8.1)	10.4	(21.5)	7.6
Integrative	16.4	(25.2)	10.7	(16.3)	13.2	6.6	(16.4)	7.0	(31.1)	6.8
Σ	8.2	(16.4)	5.1	(13.7)	6.6	1.8	(11.9)	0.4	(22.8)	1.1

^a Tabulated is the mean (std.) AIV by negotiation strategy across the four conditions. All data.

Second, integrative strategies also improve negotiations, because they yield an additional investor value as shown in the path analysis. As a descriptive validation of these findings, I summarize the impact of each negotiation strategy on the AIV in table C.13. I observe a strong contrast in the effectiveness between the five different messages. Avoiding and conceding strategies yield almost no additional investor value. In low-power settings, these strategies even lead managers to exploit the inactivity or cooperativeness of the auditor to their own benefit (negative AIV). In contrast thereto, I observe higher investor values when the auditor uses contending, compromising, or integrative strategies. These strategies lead managers to return more resources to the investor than initially proposed, especially so when auditors have sufficient power. Taken together, I conclude that auditors do not

²¹ Recall that I gave managers the opportunity to provide the auditor a short feedback upon completion of each round. Managers could choose to send the auditor a positive response or a negative response. Providing feedback was optional and free of charge to managers.

necessarily need to negotiate though (e.g. contending strategy) in order to achieve investor value, integrative strategies are likewise effective and yield more positive feedback from managers.

To further validate these results, panel regressions X - XII describe the impact of each negotiation strategy on the AIV more formally (table C.14). Regression X shows that avoiding and conceding strategies have no effect on the manager. These strategies do not yield a significant AIV. Contending, compromising, and integrative strategies, in contrast, are significantly associated with higher AIV. These results further support my second hypothesis and the results of the path analysis. Integrative strategies are no obstacle to negotiating outcome-oriented and to achieving high investor returns (X, Coef.=10.23, z-stat=2.82, p-value<0.01). Regressions XI - XII further emphasize the important role of a strong auditor in negotiations. Without power, the effectiveness of the negotiation strategies diminishes and the communication can be seen as cheap talk.

5.3.2 *Direct effect of rotation on investor value: personal relationship*

The *direct effect* of rotation on the additional investor value can be explained through different channels. One potential channel is the uncertainty in the auditor-client relationship. In early stages of a new engagement, auditors and client-management are less familiar with one another and may find it challenging to anticipate the actions of their counterparty. Bowlin et al. (2015) describe a similar effect from the perspective of the auditor: "Rotating auditors (aware that they will not be in a long-term relationship) will [...] likely perceive themselves to be less competent in evaluating the honesty or dishonesty of the manager [...]" (Bowlin et al., 2015, p. 1369). Such an uncertainty could lead managers to include a safety margin in the final investor return (higher AIV) in order to avoid an unfavorable audit report, because managers are less competent in evaluating the action of the auditor during interactions with a new auditor. This uncertainty is present upon rotation as well as in early stages of a long-term engagement.

In line with my expectations, I observe that the AIV does not differ between the rotation and retention regime in the first three experimental rounds ($t=-0.05$, $p\text{-value}=0.96$). With increasing engagement tenure, however, both parties have time to get to know each other and time to reduce the uncertainty. I assume and find lower safety margins (lower AIV) in the retention regime compared to the rotation regime in later stages of the game ($t=-2.72$,

Table C.14: Panel regression - negotiation strategy on AIV

INDEPENDENT VARIABLES ^b	(REGR. NUMBER) ^a / DEPENDENT VARIABLE		
	(X) AIV	(XI) AIV	(XII) AIV
Multiplier-High	8.19*** (1.25)	9.34*** (1.27)	9.07*** (1.27)
Proposal	-0.12*** (0.02)	-0.17*** (0.02)	-0.18*** (0.02)
Power	3.77* (1.97)	3.74*** (1.39)	5.35*** (1.48)
Rotation	1.52 (1.94)	1.63 (1.39)	2.80* (1.49)
Power × Rotation	2.79 (2.76)		
Avoiding	0.05 (3.91)		
Conceding	0.68 (3.49)		
Contending	9.43*** (3.63)		
Compromising	9.66*** (3.73)		
Integrative	10.23*** (3.62)		
Contending		-2.03 (2.52)	
Contending × Power		5.98** (2.65)	
Contending × Rotation		5.49** (2.57)	
Integrative			4.73** (2.28)
Integrative × Power			1.89 (2.64)
Integrative × Rotation			1.20 (2.62)
Constant	3.07 (4.11)	11.78*** (2.21)	11.37*** (2.22)
N	1101	1101	1101
R ² overall	0.17	0.13	0.12
Chi ²	178.27	121.83	116.76
df	10	7	7
Prob > Chi ²	0.00	0.00	0.00

^a Random effects panel regression. Reported are coefficients, standard errors (subject level) are provided in parentheses. The DV is the additional investor value in taler.

^b Legend: please refer to table C.10.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

p-value<0.01). A two-tailed t-test compares the mean AIV pooled across early rounds 1-3 (and later rounds 4-15 respectively) in the high-power rotation regime against the mean in the high-power retention regime, at the 95% confidence interval.

Another potential channel is the personal relationship between auditors and clients. Prior studies show that a close personal relationship can have negative effects on negotiations, such that auditors tend to remain less rigid and behave more in favor of the manager (e.g. Gibbins et al., 2010; Brown-Liburd and Wright, 2011). To test whether the personal relationship has indeed negative effects on the investor value, I include the PEQ measure perceived relationship strength in the path analysis (see figure C.7). As expected from the manipulation checks, I find that audit firm rotation decreases the strength of the personal relationship ($\gamma_{11}=-0.63$, $z\text{-stat}=-6.02$, $p\text{-value}=0.00$). More interestingly, I observe that the personal relationship has a positive effect on the AIV ($\beta_{11}=0.52$, $z\text{-stat}=1.78$, $p\text{-value}=0.08$). A stronger personal relationship is significantly associated with higher investor values. These results exclude the personal relationship as channel of influence, but highlight the beneficial character of a strong personal relationship in the retention regime.

Path model:

Reported are coefficients. All data. $N=1101$.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Fit: $CFI=1.00/TLI=1.00/RMSEA=0.00$ ($p=1.00$).

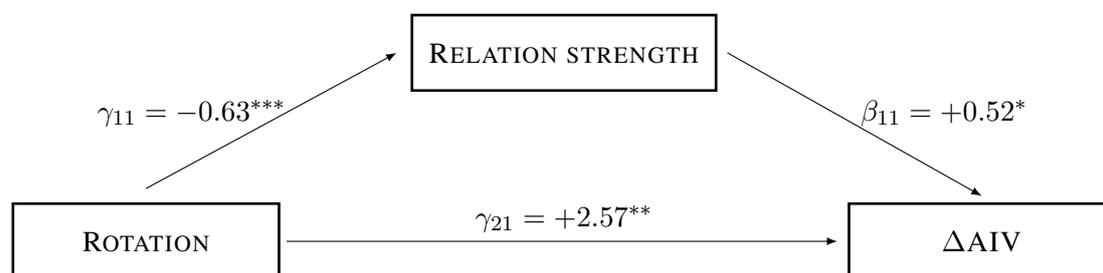


Figure C.7: Path analysis: indirect effect of rotation

(Source: own source)

A close personal relationship in the retention regime has some additional positive effects. First, auditors reject significantly more often in the retention setting compared to the rotation setting, if power is high. My descriptive statistics show that the proportion of rejections increases from 15% with rotation to 24% with auditor retention ($z=1.73$, $p\text{-value}<0.1$, table C.9). Despite the costs associated with rejections, auditors are willing to disapprove of the manager's final return, especially in the long-term retention setting. Second, the mean rejected investor returns are lower with retention ($y = 65.6$ taler) compared to rotation ($y = 71.7$ taler). These thresholds indicate that auditors demand

more resources for investors in the retention regime. Third and similarly, auditors show a higher moral obligation than managers to protect the interest of investors in long-term relationships (t-test: $t=-2.14$, $p\text{-value}<0.05$). This result is derived from the PEQ, where I asked managers and auditors on a 7-point Likert-Scale (1 = "strongly disagree", 7 = "strongly agree") whether they felt obligated to act on behalf of the investor. Overall, I find that the retention regime strengthens the investor orientation of auditors.

My supplementary analysis highlights the beneficial character of a close personal relationship in the retention setting. I do not find that auditors compromise their independence, on the contrary, a close personal relationship is associated with an increased investor value. Auditors also choose integrative strategies more often in the retention setting. These strategies improve negotiations, because they receive less negative feedback and they yield higher investor returns. Moreover, auditors are more inclined in the retention setting to disapprove of the negotiation outcome and to protect the interest of investors. This behavior is in contrast to standard economic theory, which predicts that rational auditors would never reject any return, because rejections are costly to the auditor and do not yield any monetary benefit. One possible explanation for my findings is that auditors - in a close personal relationship - might be more willing to invest into that relationship and educate the manager towards more reasonable behavior compared to auditors in a short-term relationship.

6. Conclusion

My study extends the experimental economics research in auditing. Prior literature often disregards two important concepts of the ACM negotiation framework, (1) the mitigating role of the auditor as an independent gatekeeper and (2) the information asymmetry between auditors and client-management. I propose a novel experimental design that addresses these issues. The gatekeeper game includes the auditor as an additional third party, who protects the interests of investors and who negotiates on behalf of the investors. For their role as independent gatekeeper, auditors receive a fix audit-fee. The gatekeeper game also includes information asymmetry between auditors and client-management. In practice, the information between both parties is often skewed, creating a negotiation framework with tension. My experiment considers this important concept. Furthermore, prior experimental economics studies sometimes lack a controlled negotiation framework and allow for free

communication between subjects. I deliberately restrict the communication and the action space of subjects to increase the internal validity of the results. The gatekeeper game thus allows me to simulate negotiations in a highly controlled and properly incentivized environment. I believe that the design offers potential for future negotiation studies to analyze more contextual influences using the gatekeeper game.

More importantly, I also contribute to the debate over external audit firm rotation. One common argument in favor of audit firm rotation is that it reduces the financial dependency of auditors and strengthens auditor independence in ACM negotiations. The financial dimension of the relationship, however, is increasingly regulated and is drifting out of focus of research. I offer a novel perspective on audit firm rotation and focus on its effect on the personal relationship between auditors and clients. I argue that external rotation reduces the time for both parties to become familiar with another and weakens the personal relationship between auditors and clients. In line with my expectations, I observe stronger personal ties when the auditor is retained for several rounds and weaker personal ties when rotation is mandated. Interestingly, I find that a close personal relationship in the retention regime does not harm auditor independence, but actually improves negotiations and raises the investor orientation of auditors. This finding is in contrast to the commonly held argument that personal affiliation biases the judgment of auditors and leads auditors to negotiate in favor of the manager.

The study has important implications to our perception of the personal relationship between auditors and clients. While regulators still aim to reduce the personal ties between both parties, I find that the investors in the experiment are best protected in the long-term retention setting. In these settings, the proportion of integrative strategies increases and the proportion of contending strategies declines. Integrative strategies improve negotiations, because they yield additional investor value and they also receive less negative feedback from managers compared to contending strategies. These findings imply that auditors do not necessarily need to negotiate contentious to yield a sound negotiation outcome. My supplementary analysis further shows that a close personal relationship in the retention regime also strengthens the investor orientation of auditors. Auditors do not compromise their independence in a close relationship, on the contrary, they are more willing to disapprove of the negotiation outcome and to educate the manager in the long-run. These

positive effects vanish with external rotation, where auditors increase the investor value through tougher, unfavorable negotiation strategies.

Another important implications to theory and practice is derived from the experimental power manipulation. The psychological power research shows that low-power negotiators follow their goals less dedicatedly and are less effective in achieving their desired outcome. I replicate these findings in an accounting negotiation context. As predicted, I observe that the negotiation between auditors and managers is cheap talk when auditors have insufficient power. If auditor power is low, I find that managers concede less on their initial position but tend to exploit the weak position of the auditor. The important implication to future ACM negotiation research is to implement a framework that provides the auditor sufficient power over clients. The power may stem from control over financial resources of the client, or from the ability to impose penalties on the client. My findings have important implications to practice, too. In an ongoing engagement, the auditor is often concerned to maintain the relationship in order to earn future economic rents. This economic dependency withdraws power from auditors and might lead to cheap talk in negotiations. It is important that the auditor can plausibly convey a powerful appearance in negotiations to prevent exploitation.

The study is subject to certain limitations, too. The research design places a strong focus on the personal dimension of the ACM relationship. In order to disentangle the financial from the personal dimension of the relationship, I override the usual hire and fire mechanism and disregard the financial interdependency. Therefore, I am not able to predict the role of such personal ties in settings where the auditor is financially dependent on the client. Future research could address this limitation and attempt to study the effect of external rotation on both dimensions in a single and yet controlled design. Another limitation of my study is the rather controlled experimental design. A controlled negotiation framework with restricted communication between subjects increases the internal validity of the results and lowers potential carryover effects, but it also withdraws the opportunity for subjects to find their own alternative negotiation solution. Future research could attempt to find a balance between both attempts, unconstrained communication yet still a controlled environment.

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Conclusion

This thesis combines two research directions that each play an important role in securing the good corporate governance of firms. The first focus is on the behavior of gatekeepers in interactions with the supervised party. In particular, I investigate how auditors negotiate accounting issues with their clients. Such negotiations have a key function, because they are a common part of most statutory audits and they directly affect the quality of financial statements (e.g. Gibbins et al., 2001, 2005; Brown and Wright, 2008; McCracken et al., 2008; Salterio, 2012). As such, the negotiation behavior of auditors determines the informational value of an audit for third parties, and the behavior allows conclusion about the compliance of auditors with their gatekeeper role. The second focus is on the regulation of gatekeepers through legislators or private standard setters. This thesis investigates the implications of the novel external rotation requirement for audit firms of public-interest entities (EU Regulation 2014/537, Art. 17). Given the central role of auditors for the corporate governance of firms, an important question is whether rotation achieves its desired effects and strengthens the gatekeeper function of auditors. These two research directions define the overall framework of my work.

Across three chapters, I study the effects of external rotation on auditor-client negotiations. One main objective of my thesis is to elaborate an experimental design that meets the specific methodological requirements in this research context. Chapter A and chapter B provide the methodological basis. At first, I describe the characteristics that distinguish accounting negotiations from negotiations in other fields, and assess the validity of prior experimental negotiation designs against that benchmark. Subsequently, I provide a differentiated view on the different channels of external rotation, and analyze how prior studies have reproduced the key economic and non-economic influences of rotation experimentally. Taken together, these two chapters set the methodological foundation for the experimental study in chapter C and provide new research directions in terms of content. Another main objective of my thesis is to go beyond the purely economic perspective of rotation and to study the effects of rotation on the personal dimension of auditor-client interactions. I

conduct a laboratory experiment to investigate upon non-financial channels of rotation that have received less attention in the audit research.

I contribute to the literature in several ways. Chapter A extends the negotiation research in auditing from a methodological perspective. This perspective is very important as scholars have engaged in long debates about the appropriate way to study auditor-client interactions. Although my study indicates that there is no single best experimental design, it points out the merits and limitations of different negotiation studies and thus provides future research with methodological guidance. To my knowledge, prior reviews have not incorporated this methodological aspect in detail but focused more on “[...] where research has been carried out and where important matters [...] have received less research interest than their importance may warrant.” (Salterio, 2012, p. 233f.). I find that psychology-based experiments are prevalent and well-developed in the audit literature. These experimental case studies, however, are often reasonably criticized that “[...] they lack the richness of strategic interaction, (and) infer behavior from hypothetical judgments rather than actions.” (Kachelmeier and King, 2002, p. 228). Most case studies do not account for the dynamic aspect of negotiations and struggle to account for the gatekeeper function of auditors. Economics-based experiments, in contrast, are rather uncommon and less-developed in the audit literature. These experiments offer the potential to capture the key influences auditors face in practice.

Chapter B adds to current debate over audit firm rotation. European legislators introduced an external rotation requirement in order to improve the quality of financial statement audits (EU Regulation 2014/537, EU Directive 2014/56). The mixed evidence in the experimental and archival literature with regard to the effectiveness of external rotation, however, calls for a more differentiated analysis of rotation. My study provides such a view and elaborates the various channels through which rotation influences audit quality. To give a comprehensive picture, I not only discuss economic effects of rotation but also take non-economic effects (e.g. psychological, cognitive view) into account. I review the experimental rotation literature and point out directions for future research, both from a thematic and methodological perspective. In terms of content, my results indicate that the non-economic implications of external rotation are underrepresented in the experimental literature. In terms of methodology, my results show some key challenges for experimental researchers in designing an appropriate rotation setting. Prior studies often require a better

differentiation between the effects of rotation, and a stronger manipulation of the variable at interest to improve the external validity of the designs.

Both chapters have important implications to regulators and researchers. Regulators must realize that external rotation influences the quality of a financial statement audit through various channels. These channels are not only of economic nature, but include psychological “softer influences”. A rotation requirement can strengthen the independence of auditors, but it may also negatively affect the ability to detect misstatements. It hinders auditors to make client-specific investments (e.g. customized audit technology, industry knowledge) and leads to a loss of client-specific knowledge of the incoming auditor. Importantly, not all channels of rotation have a sound set of experimental research to refer to. The current state of research does not yet provide a comprehensive picture of the effects of rotation. Some arguments brought forward in favor of rotation, thus, base on less firm grounds (e.g. reputation concerns, fresh look). Researchers should carefully design an experimental design that meets the specific requirements set forth in my thesis. I point out the specific characteristics of auditor-client negotiations, and elaborate the economic and non-economic incentives of audit-firm rotation.

Chapter C uses the insights of both reviews to derive a novel experimental economics research design. The design combines elements of the trust game (Berg et al., 1995) and ultimatum game (Güth et al., 1982) with communication among subjects. My research design contributes to the negotiation literature, because it addresses some main shortcomings of prior studies. Most importantly, my gatekeeper game includes the auditor as an additional third party, who is instructed to negotiate on behalf of investors. The third-party perspective is an extension of former research, which often simulates the interaction between auditors and clients in a purely dyadic decision making task (e.g. Wang and Tuttle, 2009; Bowlin et al., 2015). In addition, the gatekeeper game incorporates key audit-specific characteristics that have been disregarded in most experimental studies so far: information asymmetry, dynamic and interactive negotiation framework, and the ethical perspective in negotiations. My research design also contributes to the rotation literature, because it allows me to disentangle economic from non-economic influences of rotation. I override the usual hire and fire mechanism to rule out the economic dependency of the auditor. Such a setting provides a more differentiated view on the various channels of rotation and places a stronger focus on the personal relationship beyond financial incentives.

I apply the gatekeeper game in the laboratory to investigate how external rotation affects the negotiation behavior of auditors. I argue that external rotation reduces the time for both parties to become familiar with another and weakens the personal relationship between auditors and clients. Based on the dual-concern model of negotiation (Pruitt, 1983), I predict and find that a weaker personal relationship due to the rotation requirement leads to more contentious negotiation (H1a). In contrast, the personal relationship that develops when the auditor is retained for several periods triggers more integrative negotiation strategies (H1b). Is either one strategy preferable over the other? Prior negotiation studies in auditing consider it “[...] troubling to find an undifferentiated emphasis in using integrative strategies [...]” (Gibbins et al., 2010, p. 593) and associate integrative strategies “[...] with poor outcomes [...]” (Beattie et al., 2004, p. 2). My results point in a different direction and show that both strategies (contending and integrative) do not harm the outcome-orientation of the auditor, but lead to an additional investor value (H2a, H2b). Integrative strategies also improve negotiations, because auditors receive less negative feedback from managers if they apply these strategies. These findings are in contrast to the commonly held argument that personal affiliation between both parties leads to a pro-client bias.

My experimental results have important implications to our perception of the personal relationship between auditors and clients. European regulators consider strong personal ties as threat to auditor independence and aim to increase the personal autonomy of the auditor through external rotation. I find that rotation indeed leads to a weaker personal relationship between auditor and clients. However, my findings also indicate that such settings hinder effective negotiations and counteract the gatekeeper function of the auditor. In fact, the investors in my experiment are best protected in the long-term retention setting that allows a closer personal relationship between both parties. With retention, auditors yield an additional investor value through integrative negotiation and they are more likely to disapprove of the negotiation outcome. Auditors have no economic benefit from disapprovals, they protect the interests of investors out of a moral obligation. Overall, my results suggest that external rotation does strengthen the gatekeeper function of the auditor, but a stronger personal relationship in the retention setting does not counteract the gatekeeper role.

Appendix

I. Experimental material

I.1 Instructions (English translation)

Introduction

Welcome to the experiment. Today, you participate in a scientific study. The session consists of 15 rounds and will last about 70 to 90 minutes. It is important to me that you remain silent and do not look at other people's screens. If you have any questions or need assistance of any kind, please raise your hand, and the experimenter will come to you.

You will be asked to make decisions in each round. Please note that there are no right or wrong answers, you are free to decide the way you prefer. You may earn a variable amount of "taler" in each round. At the end of the last round, the computer will choose randomly one round for which you receive the amount of taler earned in that round. You will be paid in private and cash after today's session. 10 taler convert to 1.00 Euro.

Procedure

Before the first round begins, you are required to answer a few comprehension questions. Answering these questions will not be compensated but is a prerequisite for participating in the study. The first round begins as soon as all participants have answered the comprehension questions correctly.

You will be randomly matched with two other participants in this room to form a group of three players. Each group consists of one player A, one player B, and one player C. The three roles are randomly allocated among the players of one group. The computer will inform you about your role assignment at the beginning of the first round.

[Rotation Condition] Your role assignment is fix and does never change, you pass through all 15 rounds in the role allocated to you. The three-player groups play together for exactly one round. After each round, the player with the role C will randomly be assigned to another group. Player A and B remain in the same group throughout all 15 rounds, but player C will randomly be replaced by another player C each round.

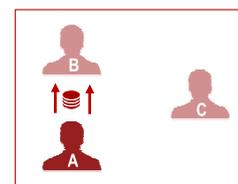
[Retention Condition] Your role and group assignment is fix and does never change throughout the whole session. That means you will pass through all 15 rounds in the role allocated to you and with the same group members.

The study is carried out anonymously. Neither your, nor any other participants' identity will be disclosed. The upper right corner of your screen will indicate a time frame within you should decide on your actions. We kindly ask you not to exceed this time frame from the second or third round onwards in order to ensure a smooth conduct. Each round consist five stages, through which you will pass sequentially.

Your task

Stage 1 - Investment

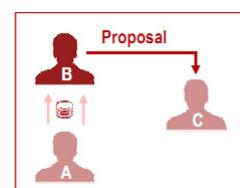
Player A receives an initial endowment of 100 taler at the beginning of each round. Player A may decide to keep all taler for herself. In this case, the round ends immediately. Player A may alternatively decide to keep half of the initial endowment (50 taler) for herself and to invest the other half (50 taler) in Player B.



When player A decides to invest, player B will receive a multiple of the investment. The multiplication is made because I assume that the investments are profitable. The computer randomly decides whether the investment will be multiplied by the factor three (50×3), by four (50×4), by five (50×5), or by six (50×6). For example, if the computer decides to multiply the investment by five, player B receives 250 taler. The multiplication is private information of player B, player A does not know how much taler player B receives from the investment. In the following stages, player B decides how many taler she would like to return to player A. This scenario is comparable to a cash-investment that may yield high returns on the investment.

Stage 2 - Proposal

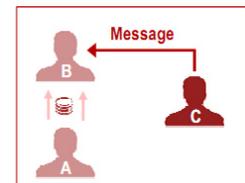
It is player's B turn now. As explained, player B receives a multiple of the investment. In addition, player B receives a fix compensation of 30 taler in each round that cannot be taken away. Player B needs to decide how many taler of the received investment she wants to keep for herself and how many taler she wants to return to player A.



For example, if the investment was multiplied by four (200 taler), player B can decide to keep X taler for herself and return (200-X) taler to player A. It is player's B task to ensure that player A receives an appropriate return on her investment. Before player B ultimately decides how to divide the investment between player A and herself, in the second stage player B makes a proposal to player C, in which player B suggests an amount that she would like to return to player A.

Stage 3 - Message

It is player's C turn now. Player C does not know how many taler player B received from the investment. However, player B is informed about two potential multiplications, of which one is the correct multiplication.



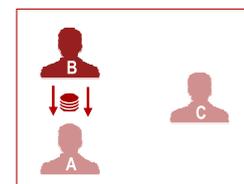
For example, if the investment is multiplied by five, player C may be informed that the investment was multiplied by "four or five (200/250 taler)"; alternatively player C may be informed that the investment was multiplied by "five or six (250/300 taler)".

The task of player C is to act as independent party and to ensure that player A receives an appropriate return on her investment. For this purpose, player C receives a fix compensation of 150 taler in each round. The decisions of the other two group members have no influence on player C's compensation.

At the beginning of stage three, player C is informed about the amount player B wants to return. Player C may now comment on that proposal. There are five pre-defined messages available. Player C may decide to choose one message and send this message to player B.

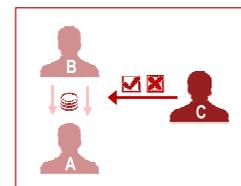
Stage 4 - Final Decision

The message is displayed to player B. In the fourth stage, player B needs to decide how many taler of the received investment she wants to return to player A. Player B may revise her proposal from stage two and decide differently.



Stage 5 - Accept/ Reject

Player C must decide whether to accept or to reject the distribution determined by player B in stage four. If player C decides to accept the distribution, player A and B receive the amount of taler that player B determined in stage four. This decision is free of charge for player C. Alternatively, player C can decide to reject the distribution.



[High Power Condition] If player C decides to reject the distribution, player B receives half (50%) of the amount player B wanted to keep for herself and player A receives the full amount that player B was willing to return.

[Low Power Condition] If player C decides to reject the distribution, player B receives 95% of the amount player B wanted to keep for herself and player A receives the full amount that player B was willing to return.

To decision to reject is not free of charge, an amount of 5 taler will be deducted from player C's compensation of 150 taler. After player C made her decision, player B may comment on this decision. Player B may choose between two text messages.

Procedure Example

Example A

Suppose player A decides not to invest but to keep all 100 taler for herself. The round ends immediately and the next round begins. The group members receive their initial endowment:

	Player A	Player B	Player C
No investment	100	30	150

Example B

Suppose player A decides to invest 50 taler in the first stage. The computer randomly determines that the investment will be multiplied by five, such that player B receives 250 taler. The multiplication is private information of player B. In the second stage, player B proposed to return 70 taler to player A.

Player C comments on the proposal by sending a text message to player B. In the fourth stage, player B ultimately decides to return 150 taler to player A (and keep 100 taler for herself). Dependent on the decision of player C in stage five whether to accept or to reject the final distribution, the group members receive the following payoffs:

	Player A	Player B	Player C
Player C accepts	$50 + 150 = 200$	$30 + 100 = 130$	150
Player C rejects	$50 + 150 = 200$	$30 + 100 \times 50\% = 80$ (95% in the low-power cond.)	$150 - 5 = 145$

Payoffs

After each round, you will be informed about the investment decision of player A (stage 1), about the final return determined by player B (stage 4) and about player C's decision whether to accept or to reject (stage 5). In addition, you will be informed about the achieved amount of taler in that round.

At the end of the 15th round, the computer will choose randomly one round for which you receive the amount of taler earned in that round. You will be paid in private and cash upon completion.

If you have any questions at this point, please raise your hand. When you have understood the procedure, please click the "ready" button to start the comprehension questions.

I.2 Instructions (German original)

Einleitung

Herzlich willkommen! Sie nehmen an einer wissenschaftlichen Studie teil. Die heutige Sitzung gliedert sich in 15 Spielrunden und wird etwa 70 bis 90 Minuten dauern. Es ist wichtig, dass Sie während der Durchführung nicht reden und nicht auf andere Bildschirme schauen. Wenn Sie Fragen haben oder Hilfe brauchen, heben Sie bitte die Hand und jemand wird zu Ihnen kommen.

In jeder Spielrunde werden Sie gebeten, Entscheidungen zu treffen. Wir möchten Sie darauf hinweisen, dass es keine richtigen oder falschen Entscheidungen gibt. Bitte entscheiden Sie stets so, wie Sie es bevorzugen. In jeder Spielrunde haben Sie die Möglichkeit eine variable Anzahl an Taler zu erzielen. Zum Ende der 15. Spielrunde wählt der Computer 1 Spielrunde zufällig aus, für die Sie die Anzahl der in dieser Spielrunde erzielten Taler erhalten. Die erzielte Anzahl an Talern wird in Euro umgerechnet und Ihnen nach Beendigung der Sitzung privat und in bar ausgezahlt. Für 10 Taler erhalten Sie 1,00 Euro.

Ablauf

Zu Beginn der Sitzung werden Sie mehrere Verständnisfragen beantworten. Die Beantwortung der Verständnisfragen wird nicht vergütet, ist allerdings für die Teilnahme an der Studie Voraussetzung. Sobald alle Teilnehmer die Verständnisfragen korrekt beantwortet haben, beginnt die erste Spielrunde.

Sie werden mit zufällig ausgewählten Versuchsteilnehmern in Gruppen mit je drei Personen eingeteilt. Innerhalb der Gruppen wird jeweils einer Person die Rolle A, B oder C zufällig zugeteilt. Welche Rolle Ihnen zugewiesen wird, erfahren Sie zu Beginn der ersten Spielrunde auf dem Bildschirm.

[Rotation Condition] Sie durchlaufen die 15 Spielrunden in der Ihnen zugeteilten Rolle, die Rollen werden zu keinem Zeitpunkt neu eingeteilt. Ihre Gruppe spielt jeweils genau eine Spielrunde in der gleichen Besetzung zusammen. In der darauf folgenden Spielrunde wird das Gruppenmitglied C zufällig durch einen anderen Spieler C ersetzt. Spieler A und B spielen so 15 Spielrunden in der gleichen Gruppe zusammen, das Gruppenmitglied C wird jedoch jede Spielrunde durch einen neuen Spieler C ersetzt.

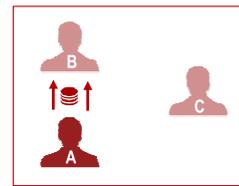
[Retention Condition] Sie durchlaufen die 15 Spielrunden in der Ihnen zugeteilten Rolle und mit den gleichen Gruppenmitgliedern, das heißt die Rollen und die Gruppen werden zu keinem Zeitpunkt neu eingeteilt.

Die Studie wird anonym durchgeführt. Identitäten von Ihnen, Ihren Gruppenmitgliedern oder anderen Versuchsteilnehmern werden nicht preisgegeben. Die obere rechte Ecke Ihres Bildschirms zeigt Ihnen einen Zeitrahmen an, innerhalb dessen Sie Ihre Entscheidungen treffen sollten. Um den zügigen Ablauf der Studie zu gewährleisten, bitten wir Sie, diesen Zeitrahmen ab der zweiten oder dritten Spielrunde einzuhalten. Jede Spielrunde besteht aus fünf Schritten, die Sie der Reihe nach durchlaufen werden.

Ihre Aufgabe

Schritt 1 - Investition

Zu Beginn jeder Spielrunde erhält Spieler A eine Grundausrüstung von 100 Talern. Spieler A hat die Möglichkeit, alle Taler für sich zu behalten. In diesem Fall endet die Spielrunde sofort. Alternativ hat Spieler A die Möglichkeit, die Hälfte der Grundausrüstung (50 Taler) für sich zu behalten und die andere Hälfte (50 Taler) in das Gruppenmitglied B zu investieren.



Investiert Spieler A, so wird Spieler B ein Vielfaches der Investitionssumme zur Verfügung gestellt. Die Vervielfachung erfolgt, da immer angenommen wird, dass die Investition profitabel ist. Der Computer bestimmt zufällig, ob die Investition verdreifacht (50×3), vervierfacht (50×4), verfünffacht (50×5) oder versechsfacht (50×6) wird. Wird die Investition des Spielers A beispielsweise verfünffacht, so erhält Spieler B 250 Taler.

Die Information über die Vervielfachung erhält nur Spieler B, Spieler A kennt den Betrag nicht, den Spieler B aus der Investition erhält. Spieler B entscheidet in einem späteren Schritt, wie viele Taler er an Spieler A zurückgeben möchte. Das Szenario ist vergleichbar zu einer Geldanlage, bei der Spieler A eine höhere Anzahl an Talern aus der Investition zurückerhalten kann.

Schritt 2 - Vorschlag

Nun ist Spieler B an der Reihe. Spieler B erhält, wie unter Schritt 1 beschrieben, das Vielfache der Investition. Zusätzlich erhält er in jeder Spielrunde eine fixe Grundausrüstung in Höhe von 30 Talern. Die fixe Grundausrüstung behält er in jedem Fall sicher für sich.

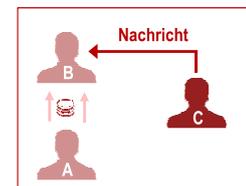


Spieler B entscheidet nun, wie viele der aus der Investition stammenden Taler er für sich behalten möchte und wie viele Taler er an Spieler A zurückgeben möchte.

Wird die Investition beispielsweise vervierfacht (200 Taler), kann Spieler B X Taler für sich behalten und (200-X) Taler an Spieler A zurückzugeben. Spielers B hat die Aufgabe, Spieler A eine angemessene Rendite aus der Investition zukommen zu lassen. Bevor Spieler B die endgültige Aufteilung festlegt, macht er in Schritt 2 einen Vorschlag an das Gruppenmitglied C, wie viele Taler der Investition er an Gruppenmitglied A zurückgeben würde.

Schritt 3 - Nachricht

Nun ist Spieler C an der Reihe. Spieler C kennt das Vielfache der Investitionssumme ebenfalls nicht, wird jedoch über eine Bandbreite von zwei möglichen Vervielfachungen informiert, von denen eine Angabe die Korrekte ist.



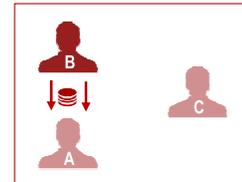
Wird die Investition beispielsweise verfünffacht, so könnte Spieler C entweder erfahren, dass die Investition "vervierfacht oder verfünffacht (200/250 Taler)" wurde, alternativ könnte Spieler C erfahren, dass die Investition "verfünffacht oder versechsfacht (250/300 Taler)" wurde.

Die Aufgabe des Spielers C ist es, als unabhängige Partei dafür zu sorgen, dass Spieler A eine angemessene Rendite aus der Investition erhält. Hierzu erhält Spieler C unabhängig von den Entscheidungen der anderen Gruppenmitglieder eine fixe Anzahl von 150 Talern in jeder Spielrunde.

Spieler C erhält zu Beginn von Schritt 3 den Vorschlag von Spieler B zur Aufteilung der Investition. Spieler C kann diesen Vorschlag nun kommentieren. Hierbei stehen Spieler C fünf verschiedene Nachrichten zur Verfügung, von denen er eine Nachricht auswählen und an Spieler B senden kann.

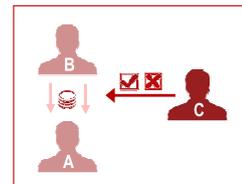
Schritt 4 - Finale Verteilung

Spieler B erhält die Textnachricht von Spieler C und legt in Schritt 4 final fest, wie viele Taler der Investition er an Spieler A zurückgeben möchte. Spieler B kann hierbei seinen Vorschlag aus dem zweiten Schritt revidieren, er ist also nicht daran gebunden.



Schritt 5 - Annahme/ Ablehnung

Spieler C entscheidet nun, ob er die in Schritt 4 von Spieler B festgelegte Verteilung annehmen oder ablehnen möchte. Nimmt Spieler C die Verteilung an, so erhalten die Gruppenmitglieder A und B die von B festgelegte Anzahl an Talern. Diese Entscheidung ist für Spieler C mit keinen Kosten verbunden. Alternativ kann Spieler C die in Schritt 4 festgelegte Verteilung ablehnen.



[High Power Condition] Lehnt Spieler C die Verteilung ab, so erhält Spieler B die Hälfte (50%) des Anteils, den er eigentlich für sich behalten möchte. Spieler A erhält den von B festgelegten Anteil in voller Höhe.

[Low Power Condition] Lehnt Spieler C die Verteilung ab, so erhält Spieler B 95% des Anteils, den er eigentlich für sich behalten möchte. Spieler A erhält den von B festgelegten Anteil in voller Höhe.

Die Entscheidung abzulehnen kostet Spieler C einen Betrag von 5 Talern, der von seiner fixen Vergütung in Höhe von 150 Talern abgezogen wird. Nachdem Spieler C seine Entscheidung getroffen hat, kann diese von Spieler B kommentiert werden. Hierzu stehen Spieler B zwei Textnachrichten zur Verfügung.

Ablauf Beispiel

Beispiel A

Spieler A entscheidet, im ersten Schritt alle 100 Taler für sich zu behalten. Die Spielrunde ist beendet, es startet automatisch die nächste Spielrunde. Die Gruppenmitglieder erhalten ihre fixe Grundausstattung:

	Spieler A	Spieler B	Spieler C
Keine Investition	100	30	150

Beispiel B

Spieler A entscheidet sich im ersten Schritt dazu, 50 Taler zu investieren. Der Computer vervielfacht die Investition, so dass Spieler B 250 Taler erhält. Diese Information kennt nur Spieler B. Spieler B schlägt im zweiten Schritt vor, 70 Taler an Spieler A zurückzugeben.

Spieler C sendet eine Textnachricht an Spieler B, woraufhin dieser sich im vierten Schritt dazu entscheidet, endgültig 150 Taler an Spieler A zurückzugeben (also 100 Taler selbst zu behalten). In Abhängigkeit der Entscheidung von Spieler C in Schritt 5 über Annahme oder Ablehnung ergibt sich die erzielte Anzahl an Talern der Spielrunde wie folgt:

	Spieler A	Spieler B	Spieler C
Spieler C nimmt an	$50 + 150 = 200$	$30 + 100 = 130$	150
Spieler C lehnt ab	$50 + 150 = 200$	$30 + 100 \times 50\% = 80$ 95% in der low-power cond.)	$150 - 5 = 145$

Auszahlung

Nach jeder Spielrunde werden Sie über die Investitionsentscheidung des Gruppenmitglieds A (Schritt 1), über die finale Entscheidung des Gruppenmitglieds B (Schritt 4) und über die Entscheidung des Gruppenmitglieds C über Annahme oder Ablehnung (Schritt 5) informiert.

Ferner erfahren Sie nach jeder Spielrunde Ihre erzielte Anzahl an Talern. Zum Ende der 15. Spielrunde wählt der Computer eine Spielrunde zufällig aus, für die Sie die in Euro

umgerechnete Anzahl an Talern erhalten. Die Auszahlung erfolgt nach Beendigung der Sitzung privat und in bar.

Wenn Sie jetzt Fragen haben, heben Sie bitte die Hand. Sofern Sie den Ablauf der Studie verstanden haben, klicken Sie bitte auf bereit, um die Verständnisfragen zu bearbeiten.

I.3 z-Tree screenshots

1. Spielrunde - Schritt 1Verbleibende Zeit [sec]: 9

Ihre beiden Gruppenmitglieder B und C haben sich vor Beginn der Runde dazu verpflichtet, Ihnen eine angemessene Rendite aus der Investition zu sichern:
B & C: "Ich werde meiner Aufgabe nachkommen und verpflichte mich, Dir eine angemessene Rendite aus der Investition zu sichern."

Ihnen stehen in jeder Spielrunde 100 Taler zur Verfügung.
Bitte entscheiden Sie sich für eine der beiden Optionen und bestätigen Sie Ihre Eingabe.

Ich investiere nicht in Spieler B.
 Ich investiere 50 Taler in Spieler B.

1. Spielrunde - Schritt 2Verbleibende Zeit [sec]: 19

Gruppenmitglied A hat 50 Taler in Sie investiert.

Der Computer hat zufällig entschieden, den Betrag zu versechsfachen.
Sie erhalten $6 \times 50 = 300$ Taler von Gruppenmitglied A.

Bitte schlagen Sie Gruppenmitglied C vor, wie viele Taler Sie an A zurückgeben möchten.
Ihren Vorschlag können Sie in Schritt 4 nochmals ändern.

An Gruppenmitglied A zurückgeben:

1. Spielrunde - Schritt 3Verbleibende Zeit (sec): 3

Spieler B hat 250 oder 300 Taler erhalten und würde hiervon gerne **40 Taler** an Gruppenmitglied A zurückgeben.

Sie können sich zum Vorschlag Ihres Gruppenmitglieds B äußern, indem Sie eine Nachricht markieren und diese "einloggen".
Wenn Sie Gruppenmitglied B keine Nachricht senden möchten, klicken Sie bitte auf den "Keine Nachricht senden" Button.

- Ich möchte mich an dieser Stelle hierzu nicht äußern.
- Ich bin einverstanden und stimme deinem Vorschlag zu.
- Ich werde deinen Vorschlag ablehnen, wenn Spieler A nicht einen größeren Anteil erhält.
- Bei Zugeständnisse an Spieler A würde die Verteilung zwischen Dir und Spieler A gerechter sein.
- Es wäre gut für dich, wenn du die Interessen des Spielers A in dieser Runde stärker berücksichtigst, denn dann wird Spieler A in den kommenden Runden auch weiterhin investieren.

1. Spielrunde - Schritt 4Verbleibende Zeit (sec): 20

Sie haben vorgeschlagen, **40 der 300 Taler** an Gruppenmitglied A zurückzugeben.

Gruppenmitglied C sendet Ihnen die folgende Nachricht zu Ihrem Vorschlag:

Ich werde deinen Vorschlag ablehnen, wenn Spieler A nicht einen größeren Anteil erhält.

Legen Sie bitte final fest, wie viele der 300 Taler Sie an Gruppenmitglied A zurücksenden möchten.

An Gruppenmitglied A zurückgeben:

1. Spielrunde - Schritt 5Verbleibende Zeit [sec]: 24

Spieler B hat 250 oder 300 Taler erhalten und nun final entschieden **120 Taler** an Gruppenmitglied A zurückgeben.

Sie haben die Möglichkeit, die Verteilung des Gruppenmitglieds B anzunehmen oder abzulehnen.

Annehmen
 Ablehnen

1. Spielrunde - ErgebnisVerbleibende Zeit [sec]: 0

Spielrunde	Investition A	Erhaltene Taler	An A zurückgegeben	Entscheidung C	Ihr Profit
1	50	300	120	Angenommen	210

Sie dürfen Gruppenmitglied C Rückmeldung geben (optional):

Ich kann deine Entscheidung nachvollziehen.
 Ich kann deine Entscheidung nicht nachvollziehen.

II. Communication catalogue

II.1 In-class questionnaire (English translation)

Study on negotiations

This study focuses on the behavior of individuals in business negotiations. Discussions about the appropriate financial reporting can also be described as negotiations. It will take you about 5 minutes to complete this questionnaire. Please take the necessary time to answer all questions carefully. Thank you very much for your participation.

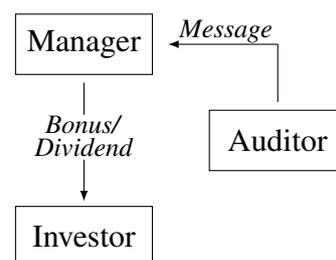
Scenario

A company's manager must decide whether to keep resources of the company for himself (e.g. in form of a bonus) or to distribute these resources to investors (e.g. in form of dividends). The manager can guide this decision using accounting policies.

In my scenario, the managers decides to apply specific accounting policies that allow him to keep more resources for himself and to pay lower dividends to investors. However, the manager's plan will only succeed if the auditor agrees with the manager. Moreover, investors might not be willing to invest into the company in future periods if the manager is overly egoistic in the current period.

Your task

The manager makes a proposal how to divide a certain amount of money between an investor and himself. Thereby, the manager proposes to keep more money for himself and to give less money to the investor. The auditor sends a message to the manager in which the auditor comments on the proposal.



The following questionnaire contains five different messages, that the auditor may send to the manager. Please answer the questions below each message. Thank you very much.

II.2 In-class questionnaire (German original)

Studie zum Verhalten in Verhandlungen:

Diese Studie untersucht das Verhalten von Personen in geschäftlichen Verhandlungen. Auch Diskussionen über die korrekte Bilanzierungsweise können als Verhandlung interpretiert werden. Die Bearbeitung wird ca. 5 Minuten dauern. Bitte nehmen Sie sich diese Zeit und beantworten Sie die Fragen sorgfältig. Herzlichen Dank für Ihre Teilnahme!

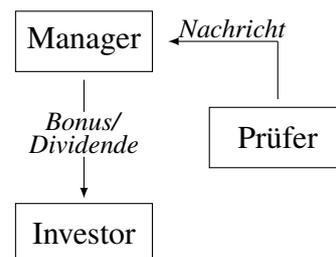
Szenario:

Der Manager eines Unternehmens muss entscheiden, ob er Ressourcen des Unternehmens für sich behält (z.B. in Form eines Bonus) oder an Investoren ausschüttet (z.B. in Form von einer Dividende). Diese Entscheidung kann der Manager über bilanzpolitische Maßnahmen steuern.

In unserem Szenario entscheidet sich der Manager dafür, Bilanzpolitik einzusetzen, um mehr Ressourcen für sich behalten zu können und weniger an die Investoren ausschütten zu müssen. Allerdings gelingt ihm dieses Vorhaben nur, wenn auch der Wirtschaftsprüfer zustimmt. Auch kann ein zu egoistisches Verhalten des Managers dazu führen, dass der Investor in den folgenden Perioden nicht mehr bereit ist, in das Unternehmen zu investieren.

Ihre Aufgabe

Der Manager schlägt die Verteilung eines Geldbetrags zwischen sich und einem Investor vor, wobei der Manager mehr Geld für sich behalten möchte und weniger an den Investor abgeben möchte. Daraufhin sendet der Wirtschaftsprüfer eine Nachricht an den Manager, in welcher der Wirtschaftsprüfer die vorgeschlagene Verteilung beurteilt.



Der Fragebogen beinhaltet fünf verschiedene Nachrichten des Wirtschaftsprüfers an den Manager. Wir würden Sie bitten, diese Nachrichten anhand der anschließenden Aussagen zu beurteilen. Vielen Dank!

III. Further result tables

III.1 Extended path analysis - tension setting

Table C.15: Extended path model results - tension setting

Panel A: Effect of rotation on negotiation strategy (tension setting)									
		HIGH POWER (MODEL I) (N=255)				LOW POWER (MODEL II) (N=257)			
DEPENDENT VAR (b_{1-4})	INDEPENDENT VAR (a_1)	Exp. Sign	Est. (γ)	S.E.	p-val.	Exp. Sign	Est. (γ)	S.E.	p-val.
Conceding	Rotation		-0.03	0.05	0.54		0.01	0.06	0.93
Contending	Rotation	+	0.11	0.06	0.07*	n.s.	0.07	0.05	0.16
Compromising	Rotation		0.01	0.05	0.84		-0.06	0.04	0.14
Integrative	Rotation	-	-0.11	0.05	0.02**	n.s.	0.08	0.05	0.11

Panel B: Effect of negotiation strategy on manager concession (tension setting)									
		HIGH POWER (MODEL I) (N=255)				LOW POWER (MODEL II) (N=257)			
DEPENDENT VAR (b_5)	INDEPENDENT VAR (b_{1-4})	Exp. Sign	Est. (β)	S.E.	p-val.	Exp. Sign	Est. (β)	S.E.	p-val.
AIV	Conceding		-2.41	3.87	0.53		8.18	4.02	0.04**
AIV	Contending	+	9.87	3.68	0.01***	n.s.	14.76	4.37	0.00***
AIV	Compromising		7.38	4.06	0.07*		12.13	4.58	0.01***
AIV	Integrative	+	6.98	4.13	0.09*	n.s.	11.09	4.22	0.01***

Panel C: Effect of rotation on manager concession (tension setting)									
		HIGH POWER (MODEL I) (N=255)				LOW POWER (MODEL II) (N=257)			
DEPENDENT VAR (b_5)	INDEPENDENT VAR (a_1)	Exp. Sign	Est. (γ_{51})	S.E.	p-val.	Exp. Sign	Est. (γ_{51})	S.E.	p-val.
AIV	Rotation	+	3.57	1.87	0.06*	n.s.	1.29	2.26	0.57

Model fit:

Good model fit (high-power - I): CFI: 1.00; TLI: 1.00; RMSEA: 0.00 (H: RMSEA \leq 0.05 not rejected $p=1.00$).

Good model fit (low-power - II): CFI: 1.00; TLI: 1.00; RMSEA: 0.00 (H: RMSEA \leq 0.05 not rejected $p=1.00$).

** $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.*

III.2 Extended path analysis - all rounds (tension and no tension)

Table C.16: Extended path model results - all rounds (tension and no tension)

Panel A: Effect of rotation on negotiation strategy (all data)									
DEPENDENT VAR (b_{1-4})	INDEPENDENT VAR (a_1)	HIGH POWER (MODEL I) ($N=554$)				LOW POWER (MODEL II) ($N=547$)			
		Exp. Sign	Est. (γ)	S.E.	p-val.	Exp. Sign	Est. (γ)	S.E.	p-val.
Conceding	Rotation		-0.05	0.04	0.22		0.06	0.04	0.13
Contending	Rotation	+	0.09	0.04	0.02**	n.s.	0.01	0.03	0.67
Compromising	Rotation		-0.01	0.03	0.78		-0.05	0.03	0.07*
Integrative	Rotation	-	-0.04	0.03	0.16	n.s.	0.05	0.03	0.16

Panel B: Effect of negotiation strategy on AIV (all data)									
DEPENDENT VAR (b_5)	INDEPENDENT VAR (b_{1-4})	HIGH POWER (MODEL I) ($N=554$)				LOW POWER (MODEL II) ($N=547$)			
		Exp. Sign	Est. (β)	S.E.	p-val.	Exp. Sign	Est. (β)	S.E.	p-val.
AIV	Conceding		-3.08	2.23	0.17		3.91	2.89	0.18
AIV	Contending	+	11.89	2.38	0.00***	n.s.	7.94	3.48	0.02**
AIV	Compromising		8.29	2.71	0.00***		13.14	3.59	0.00***
AIV	Integrative	+	10.33	2.59	0.00***	n.s.	12.07	3.21	0.00***

Panel C: Effect of rotation on AIV (all data)									
DEPENDENT VAR (b_5)	INDEPENDENT VAR (a_1)	HIGH POWER (MODEL I) ($N=554$)				LOW POWER (MODEL II) ($N=547$)			
		Exp. Sign	Est. (γ_{51})	S.E.	p-val.	Exp. Sign	Est. (γ_{51})	S.E.	p-val.
AIV	Rotation	+	2.37	1.16	0.04**	n.s.	1.08	1.53	0.48

Model fit:

Good model fit (high-power - I): CFI: 1.00; TLI: 1.00; RMSEA: 0.00 (H: RMSEA \leq 0.05 not rejected $p=1.00$).

Good model fit (low-power - II): CFI: 1.00; TLI: 1.00; RMSEA: 0.00 (H: RMSEA \leq 0.05 not rejected $p=1.00$).

** $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.*

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