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DISSERTATION

External appointees and successions on boards

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In order to provide a dissertation with a consistent structure, the three papers are listed below according to their relevance to the content and not in the chronological order in which they were written. The structure of the dissertation at hand is presented in the Introduction.

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Conferences and seminars:

Kick, T., Nehring, I., Schertler, A., 2017. Do all new brooms sweep clean? Evidence for outside bank appointments. Journal of Banking and Finance 84, 135-151.

An earlier version of this research paper was awarded as best conference paper at the 11th Annual London Business Research Conference and at the 5th Rostocker Services Research Conference 2016, was also presented at the European Finance and Banking Conference in Bologna 2016, the Deutsche Bundesbank Research Seminar in Frankfurt in 2016, and the HVB PhD workshop in Muenster 2016.

Nehring, I., 2017. Outside successions and performance consequences: A meta-analysis.

An earlier version of this research paper was presented at the HVB PhD workshop in Bochum 2017.

Chapter 1

Introduction

Successions are defining events for every organization and they are also an inevitable part of the process over every organization's life time (Giambatista et al., 2005). Some prominent external successions, such as the new Deutsche Bank chief executive officer (CEO) John Cryan, the WestLB CEO Thomas Fischer or the Siemens CEO Peter Löscher, demonstrate that the appointments of candidates external to the organization are probably even more defining than promoting candidates from any internal position to the top (Huson et al., 2004). While internal successions largely take place in the absence of public attention and represent organizational stability and maintenance (e.g. Dalton and Kesner, 1985), it is the appointments of externals that are rather associated with subsequent changes (e.g. Bailey and Helfat, 2003). Indeed, external appointments often occur not only because internal candidates are simply not available, but more as a response to troubled times in the past with these appointees being expected to clean up the company and instigate a turnaround (Dalton and Kesner, 1985). However, external candidates possess no internal knowledge and are less familiar with the company's procedures. Moreover, their managerial attributes are not directly observable during the selection process and, for this reason, such appointments generate a large amount of uncertainty (Zhang and Rajagopalan, 2004). Typically then, this uncertainty leads stakeholders, practitioners and researchers alike to question the likely influence of outside successions on business performance in the subsequent period.

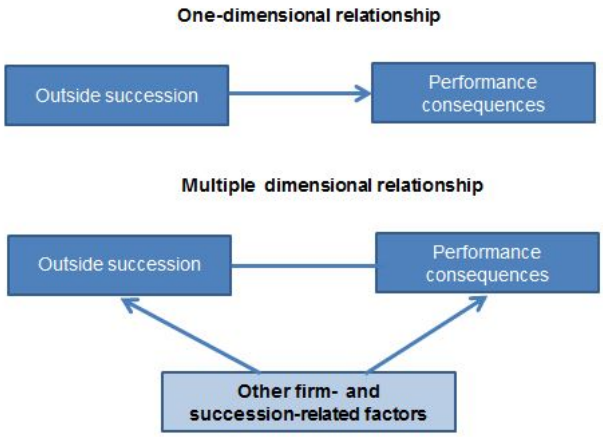
In fact this has been a prevalent question for institutions all over the world, in various industries and regulations; however the onset of the financial crisis that began in 2007 has led to a tightening of governance issues for financial institutions. While governance mechanisms in banks seem to have co-provoked the difficulties, it has also become clear that researchers have only few insights (Adams and Mehran, 2012). This is true for almost all aspects of bank governance research, however, the context of outside successions is particularly pertinent to banks since banking regulatory authorities are permitted to require financially distressed banks to replace the management so that incoming executive directors bring about the necessary changes.[1] Given this, the question of how performance develops following (outside)

[1]The German Banking Regulation Act (KWG) contains a provision to this effect in Section 36.

successions becomes even more important and research results may have direct policy implications.

A key issue for researchers seeking to provide econometrical answers to this question is, however, that a one-dimensional investigation of performance as a function of the outside succession event, as illustrated by Figure 1.1, seems to be insufficient since the existing literature has raised a variety of factors surrounding outside successions that require consideration.

FIGURE 1.1: Relation of outside succession and performance.



Note: This figure, which is based on Hermalin and Weisbach (2003), shows two different considerations of outside succession and performance consequences.

Firstly, the appointment of an external candidate becomes the most viable option when i) an internal candidate might not available and/or ii) the business is under stress. In other words, research has shown that prior performance affects the likelihood of whether the new CEO is appointed from inside or outside the firm (Parrino, 1997). Thus, external appointments are often a reaction to a decline in past performance (Weisbach, 1988; Borokhovich et al., 1996; Huson et al., 2001). Indeed, deciding to make an external appointment goes hand in hand with the expectation that candidates outside the firm possess the necessary (external) experience to deliver the desired turnaround from bad financial times (e.g. Dalton and Kesner, 1985; Hamori and Koyuncu, 2015). Thus, the pre-appointment situation of outside successions might differ from the promotion of an internal candidate to the top management. When performance is investigated as a function of outside successions, the pre-appointment differentials between inside and outside succession need to be carefully considered.

Secondly, there are further firm-related factors that influence both the appointment of external candidates to firms and subsequent institutional performance. For example, since firm performance might be a function of the firm's risk exposure

(i.e. financial leverage) (Opler and Titman, 1994), firms with a higher risk may have difficulties recruiting promising outside successors. Viable candidates with a reputation that may suggest performance improvements in the subsequent period may therefore forgo appointments at high-risk institutions whereas other candidates with fewer prospects have correspondingly fewer opportunities to choose from and will thus also be more likely to accept job offers from such institutions (Dalton and Kesner, 1985). Naturally, firm industry and size are also factors that would influence the decisions of the candidates in a similar manner. Both variables might have an influence on firm performance and also interact with selection preferences as far as the degree of complexity and the required firm-specific skills are concerned (Georgakakis and Ruigrok, 2017).

Thirdly, the succession trigger has also an influence on the recruitment process and selects among the group of available candidates (Dalton and Kesner, 1985). Studies dealing with successions on boards divide those events into i) forced or ii) voluntary turnovers (e.g. Denis and Denis, 1995; Parrino, 1997; Huson et al., 2001). The first group implies appointments of new board members where the predecessor was forced from his/her position, was fired or departs as a result of internal differences. The second group of voluntary turnovers can be subdivided into events triggered by the retirement of the predecessor, acceptance of a new position or departures for other reasons (e.g., ill health) (Huson et al., 2001). Of course, potential succession candidates might assess their future prospects in the new company differently in cases where a low-performing CEO was forced from the position or where a high-performing CEO departs for a better position. Certainly, not all candidates are equally willing to accept a job offer from an appointing firm that forced the predecessor from the position because, when the turnaround either takes time or seems impossible to reach, they will inevitably be aware of the negative repercussions this could have on their own reputations in the job market.

There are at least two important issues that emerge from this multiple dimensional relationship and which are worth considering by researchers seeking to provide econometrical evidence for the performance consequences of outside successions. First, individuals are not randomly assigned to organizations (Ocasio and Kim, 1999) and different selection mechanisms among firms need to be taken into account (Georgakakis and Ruigrok, 2017). Second, as is usual in governance research, almost all variables of interest are endogenous (Hermalin and Weisbach, 2003). However, the relation of outside succession and performance faces the particular problem of endogeneity among prior performance, outside succession and post-succession performance (Schepker et al., 2017). Seen in this light, careful consideration should be paid to whether the performance in the post-succession period is a consequence of the newly appointed manager or rather influenced by a persistently poor performance of the appointing firms.

The econometrical strategies used to investigate these performance consequences in the existing literature are, however, quite different in their nature to deal with selection issues and endogeneity. While some researchers explore their hypotheses with t-tests (e.g. McTeer et al., 1995) or in ordinary least square regression analysis (Zajac, 1990), others employ more advanced methods to study performance consequences. For example, Huson et al. (2004), Karaevli (2007) or Chung and Luo (2013), employ a Heckman selection model which is a two-stage procedure to correct for a selection bias in regression analysis. Georgakakis and Ruigrok (2017) use hierarchical-linear regression model to control for potential systematic variance and a pattern of selection preferences across firms.[2]

Unfortunately, the findings on the performance consequences following outside successions are as mixed as the methods employed. For example, Chung and Luo (2013) examine a sample of firms in emerging markets and show that leadership changes with outsiders have on average a positive impact on post-succession profitability as compared with inside successors. They emphasize that the appointing firm benefits from the "fresh perspective" (Chung and Luo, 2013, p. 343) of the newly appointed outsider. The studies of Huson et al. (2004) and Karaevli (2007) also lend support to this view while investigating post-turnover performance following CEO successions in US firms. Huson et al. (2004) find that outside successor CEOs positively affect performance and conclude that managerial quality in the boardroom increases after the turnover. Also, Karaevli (2007) shows that firm performance benefits from CEOs who bring experience gained from outside the firm and translate this into rapid changes to the firm's strategy.

In contrast, other studies report a more detrimental effect on performance following outside successions. For example, Zajac (1990) document significant positive results for the hypothesis that firms with insider CEOs are more profitable compared to firms with outsider CEOs. They argue that firms benefit from the advantage of being able to observe the characteristics of an insider during the CEO selection process while the characteristics of outsiders remain unobserved. In addition, the study of Georgakakis and Ruigrok (2017) reports negative performance effects following outside successions of CEOs in large firms. They find that the negative impact, however, diminishes when a longer post-appointment period is studied. They argue that external appointees acquire detailed knowledge of the internal processes over time, and thus, their impact no longer differs from their internally promoted counterparts after a period of five years. In contrast, however, Zhang and Rajagopalan (2004) examine the performance development of strategic change and document that the difference between outside and inside CEOs is more pronounced in the later, rather

[2]Chapter 2 of this dissertation provides a description of the employed methods in more detail.

than early years of CEO tenure.

In light of these mixed findings it is hardly surprising that reviewers point to a lack of consistency in the results (Giambatista et al., 2005) and express concerns about the statistical difficulties in terms of interaction (Pitcher et al., 2000). According to Giambatista et al. (2005) and Pitcher et al. (2000), future research is needed to improve the understanding of the employed methods that lead to such divergent research results. Motivated by this, one part of the dissertation at hand is committed to providing further insights into the variability of empirical findings. Chapter 2 of this dissertation therefore addresses the existing performance consequences of outside successions and explores the following research questions:

A) Does the relationship of outside succession and performance vary systematically with the employed research design of the study?

B) Can parts of the variability in the relationship be explained by the different econometrical strategies to deal with the selection issues and endogeneity among outside successions and firm performance?

To answer these questions, I employ a meta-analysis and investigate the existing findings of previous researchers. Originally established in the field of medical statistics but which has long since been extended to many other fields of research, the framework of meta-analysis has the advantage of synthesizing a number of studies and coding their reported results in a systematic process (Ringquist, 2013). From the literature search emerges that most of the studies investigating outside successions consider firms rather than banks. Noteworthy is the study of Haveman et al. (2001) that provides insights into performance consequences in hospitals, savings and loans associations. Other studies that investigate succession events in banks either do not distinguish between appointments made from outside or inside the bank (e.g. Barro and Barro, 1990; Schaeck et al., 2012), or provide no information on the post-succession performance effects of outside successions (e.g. Berger et al., 2013; Bornemann et al., 2015). Thus, to the best of my knowledge there is little in the way of insight into outside successions and their empirically examined consequences on bank performance.[3]

Besides the specific business structure and capital mechanism of banks, the important aspect of regulation also separates banks from other business institutions (Adams and Mehran, 2012; Haan and Vlahu, 2016). The banking supervisory law sets out regulations concerning the corporate organization of banks which influence the work of banking executives as regards their commercial behavior and discretionary power (Luetgerath, 2016). Following the financial crisis when management

[3]By way of preview, I wish to make the note that the meta-analysis includes the study presented in Chapter 3 of this dissertation, which provides insights into outside succession events in banks.

structures are enhanced considered by new regulations of banking supervisory authorities and an effective governance framework was emphasized by the principles of the Basel Committee for Banking Supervision, this influence on the work of banking executives has become increasingly urgent (Becht et al., 2011).[4]

The banking supervisory law is also obliged to order the replacement of (parts of) the management in cases where the bank is suffering from severe financial distress. When bank performance is under stress, bank customers, shareholders and banking regulatory authorities expect the incoming executive directors to bring about the necessary changes and improve the bank's subsequent performance. However, so far it remains unclear as to whether all external candidates are equally capable of delivering these changes and turning around bank performance. Exploring this topic, Chapter 3 of this dissertation makes a valuable contribution to the finance literature by providing insights into a heterogeneity in terms of managerial abilities between outside successors to German bank boards that account for post-performance differentials.[5] In particular, the following research questions are explored:

C) Which executive director will be of most help in turning around bad financial performance?

D) Are those executives who have already demonstrated high managerial abilities at their former banks also those who outperform the others with their new appointing banks?

Whereas the meta-analysis includes results from several board structures, the other parts of this dissertation are committed to highlighting the working of a dual board structure, which is mandatory to German banks. German institutions, by contrast with, for example, US firms, are required to have a two-tiered board structure. This implies a separation in an executive (first tier) and a supervisory board (second tier) (Hackethal et al., 2003). The members of the executive board, who are responsible for the daily management of the bank, are advised and monitored by the members of the supervisory board. However, the segregation of duties in the two-tiered board system entails that a member of the executive board cannot be part of the supervisory board at the same time. Thus, shareholders are interested in selecting supervisory board members who provide an effective advising and monitoring function (Johansen et al., 2017). In the case of German banks with an important role in financing the investment activity of small and medium-sized companies, the effectiveness of this task has a direct impact on institutional performance and, indirectly, on the national economy. Thus, it is of particular interest to select the best

[4]The Basel Committee on Banking Supervision issued the corporate governance principles for banks in 1999, 2006, and 2010. A last updated version is available from July 2015.

[5]Chapter 3 of this dissertation is based on joint work with Andrea Schertler and Thomas Kick, whereas Chapters 2 and 4 are based on single-authored work. Authorship is indicated by the use of the corresponding personal pronouns throughout the Introduction and several chapters of this dissertation.

candidate to exercise this supervisory role (Hau and Thum, 2009).

Approaching this overarching interest requires at least two different research perspectives. A first perspective refers to appointees who might provide necessary resources to exercise these tasks. A higher monitoring potential can be assumed among supervisory board members who are specialized in banking-related positions and possess financial management experience (Hau and Thum, 2009). This experience can be acquired either on the appointing bank's executive board or at another bank. In the case of formerly employed executives, the candidate might be in favor since s/he provides financial experience and moreover possesses internal knowledge. However, the personal connection between the executive and the supervisory role implies some major governance concerns (De Andres and Vallelado, 2008).

These concerns are drawn from agency theory and the principal-agent framework (Jensen and Meckling, 1976; Fama, 1980). Within this framework, the board is viewed as the principal who monitors the management which acts as the agent (Johansen et al., 2017). In the case of CEO duality, when the executive director is also the chairman of the board of directors, the dominance of one person leads to conflicts of interest and a lack of independence which reduces board effectiveness (Dalton et al., 1998). However, CEO duality does not exist in Germany given the separation into a first and second tier. Despite this, similar agency concerns are hidden in the dual board structure when a former executive is re-appointed to the supervisory board. For instance, former executives might have an interest in protecting their previous work which will inevitably weaken the prospects of future changes since they have to monitor and advise their own successors (Oehmichen et al., 2014). Thus, the presence of former executives on the supervisory board probably diminishes its independence and reduces its chances of providing an effective monitoring function (Grigoleit et al., 2011; Quigley and Hambrick, 2012; Oehmichen et al., 2014).

However, there is a competing argument from the resource dependence theory which predicts beneficial effects of former executives' presence on supervisory boards since they might be valuable resources of internal knowledge (Pfeffer and Salancik, 1978; Hillman et al., 2009). Given their bank-specific, internal knowledge, the supervisory board might be able to harness this to exercise the monitoring and advisory function in a very effective way (Oehmichen et al., 2014). The shareholders of Germany's largest bank, Deutsche Bank, faced such a trade-off in 1999 when the former CEO Josef Ackermann attempted to become the chairman of the supervisory board seamlessly after his CEO-role between 1994 and 1999. German law *(Aktiengesetz)* does not permit an internal appointment of an executive director to the supervisory board without a two-year "cooling-off period" or unless 25% of shareholders endorse this appointment. However, Deutsche Bank's shareholders appeared to be

uncomfortable with this re-appointment *(Economist, November 16, 2011)* and the appointment of Josef Ackerman to the supervisory board failed. He left the bank and Paul Achtleitner became the chairman of the supervisory board instead.

A second perspective on supervisory board appointments refers to which banks attempt to re-appoint former executives or rather appoint external monitoring potential to their supervisory boards. In following the resource dependence theory that predicts a match between board resources and firm needs (Pfeffer, 1972; Hillman et al., 2009), it is possible to argue that banks "need" external board experience when the financial situation is risky and rather re-appoint their formerly employed executives in good financial times. With reference to the following two research questions, Chapter 4 of this dissertation contributes to the literature of supervisory boards at German banks:

E) Are the executive directors appointed to the supervisory board more experienced than their non-appointed counterparts?

F) Do appointing banks have lower profitability and higher risk exposure?

Following the presented argumentation, the dissertation at hand consists of three empirical papers arranged according to their contribution to the thematic context and not to the time of their drafting. The first paper with the title, "*Outside successions and performance consequences: A meta-analysis*", highlights the existing literature to which essential parts of this dissertation contribute. The following two papers concentrate on successions in banking institutions. More specifically, the second study, "*Do all new brooms sweep clean? Evidence for outside bank appointments*", examines the appointment of executive directors external to the bank and the consequences of that appointment on bank performance. Finally, the third paper with the title, "*Experienced members of the supervisory board. Who is appointed and which bank appoints?*", considers the link between the executive and the supervisory board and investigates newly appointed members to the supervisory board who have an employment history on bank executive boards. This dissertation closes with a concluding chapter where I reflect on the findings of my empirical studies, summarize the results and identify some possibilities for future research.

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Chapter 2

Outside successions and performance consequences: A meta-analysis.

Abstract

The relation of outside successions and subsequent performance has been examined by many researchers from various academic disciplines. However the consequences of these succession events on firm performance have not ultimately been conducted in light of mixed research findings. From carefully observing these findings, method-related differences among the existing studies also appear. Using 102 effects from 28 original studies published between 1990 and 2017, the results of a meta-analysis suggest that the relationship of outside succession and performance is moderated by varying methods researchers employ to address potential selection issues and the endogeneity between outside succession and firm performance.

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2.1 Introduction

Hiring new executive managers are defining events for every institution. However the event is especially prominent when the successors are appointed externally (Huson et al., 2004). A reason for this is that appointments of external candidates create a large amount of uncertainty since some managerial attributes of these appointees remain unobserved before such appointments take place (Zhang and Rajagopalan, 2004). A key question of succession research is how organizational performance develops under the regime of the new external appointee. A vibrancy stream of literature that comprises a number of published papers and researchers from several academic disciplines such as, for example, finance, management and human resources as well as sports team leadership, have investigated this question. Although researchers generally agree that successions trigger institutional changes, ultimately it cannot be concluded whether outside successions are more likely to induce performance increases, which are reported by Huson et al. (2004), Karaevli (2007) and Chung and Luo (2013) or performance decreases, which are documented by Zajac (1990), Zhang and Rajagopalan (2004) and Georgakakis and Ruigrok (2017).

Of course, the multitude of researchers from several academic disciplines leads to less comparability across the studies. They differ, for example, in terms of sample sizes and types of institutions since results are provided for firms (Park and Cho, 2014), hospitals (Haveman et al., 2001) or sports teams (Gamson and Scotch, 1964). Perhaps more important, however, is the fact that the studies differ in terms of the methodological design to estimate the performance consequences of outside successions. While some researchers explore their hypotheses with t-tests (McTeer et al., 1995) or ordinary least square regression analysis (Zajac, 1990), other researchers employ more advanced methods in order to consider a broad range of aspects that potentially drive the effect of outside successions on performance. To cite just one example, Georgakakis and Ruigrok (2017) use a three-level hierarchical-linear-modeling approach as a framework to consider systematic differences among observations. Such an approach is justified by the finding that outside successors are not randomly assigned to their appointing firms (e.g. Ocasio and Kim, 1999; Chang et al., 2010). Outside appointments and their selection into firms is subject to several individual- and firm-related influences such as, for example, the size and industry of the firm, ownership and availability of candidates, pre-succession performance and risk (Kesner and Sebora, 1994). Each of these aspects may require consideration while estimating the performance consequences of outside succession events but they also raise difficulties for statistical studies with regard to measurement and interaction (Pitcher et al., 2000). Regarding the method-related differences of the existing literature, this study addresses the question of whether the relation of outside succession and performance varies systematically with the employed methodological design.

To answer this meta-analytical question, this study deals with the research results of the existing literature. I focus, in particular, on studies that assess the relationship between outside successions and indicators based on accounting-related performance rather than market-related indicators or a combination of both. Although accounting-related performance measures are often criticized, for example, for being susceptible to manipulation (Dalton et al., 1998) or as concerns income smoothing (Bornemann et al., 2015), these performance measures more likely reflect managerial decisions while market-based measures are sometimes influenced by forces beyond management's control (Finkelstein and Hambrick, 1996). In this regard, I follow the meta-analysis of Dalton et al. (1998) which investigates the relationship of board structure, leadership and accounting-related performance.

The origin of meta-analysis can be found in the field of medical statistics, however since the late 1990s the techniques have become more advanced and have extended to other fields in management and the social sciences (Ringquist, 2013). Offering the following three advantages compared to a literature review, meta-analyses complement the existing review work on successions by, i.e., Kesner and Sebora (1994), Daily and Dalton (1999), Pitcher et al. (2000), Giambatista et al. (2005) and Karaevli (2007). First, during the systematic process of meta-analysis researchers synthesize a body of literature and are able to draw conclusions on the basis of quantitative data. Second, a meta-analysis helps to generate a better understanding of the factors that influence the relationship of interest. This is especially helpful when findings on the relationship of interest are fragmented within various samples, periods and contexts. Third, meta-analysis offers a tool to quantify the influence of divergent methods of the original studies on the reported effects (Ringquist, 2013).

In light of numerous studies with mixed research findings, two recently published meta-analyses suggest that the relationship of successions and performance offers an ideal playground. One is the meta-analysis of Bilgili et al. (2017) that quantitatively synthesizes 144 research studies and examines the link between senior management turnovers and post-acquisition performance. The results suggest that the most significant factors affecting post-acquisition performance are executive turnovers and the level of integration of the acquired firm. Another meta-analysis in the succession context is conducted by Schepker et al. (2017). Their meta-analysis is based on 60 studies from 1972 to 2013 and provides results for the relation of chief executive officer (CEO) successions and both market- and accounting-related firm performance.[1] They examine the origin of the appointees, succession triggers and

[1]Since my meta-analysis focuses on outside successions only, the number of included studies differs from the one in Bilgili et al. (2017) or Schepker et al. (2017), both of which additionally include studies that do not differentiate between inside and outside successions.

measures of board independence as moderating variables on the relationship between successions and performance. They find negative influences of successions on short-term performance but no significant effect regarding the long-term perspective. Moreover, they provide mixed results as concerns the moderating impact of their explanatory variables.

With an exploration of the moderating influence of the methodological design, the meta-analysis of this study extends the insights provided by Bilgili et al. (2017) and Schepker et al. (2017) on the varying consequences of successions on performance. Such a focus responds to the calls of reviewers for advancing knowledge and providing greater explanation concerning the variability of succession consequences (Kesner and Sebora, 1994; Giambatista et al., 2005; Karaevli, 2007). The focus of my meta-analysis also refers to the claim of Pitcher et al. (2000), namely that methodological difficulties play a key role in the problem of inconclusive results. Thus, as a contribution to the literature, this study explores the existing studies in terms of methods employed so as to obtain a deeper understanding as to why the empirical results on the outside succession-performance relation differ in the current succession literature. Since the methods employed have developed over the course of time, this study also contributes with its descriptive meta-analysis on how the provided evidence on the relation develops over the 28 years of succession research studied here from 1990 to 2017.

This study is structured as follows. Section 2.2 provides some theoretical predictions of performance consequences and discusses the complexity of the relationship between outside succession and performance. Section 2.3 describes how I develop the sample from the literature search process and calculate the effect sizes. Section 2.4 outlines the results from the descriptive meta-analysis and provides insights into the change of effect sizes over time. Section 2.5 introduces my meta-regression model and provides the regression results. Section 2.6 discusses the findings and addresses their limitations.

2.2 Relation of outside successions and performance

Successions are inevitable for organizations (Kesner and Sebora, 1994; Giambatista et al., 2005) and imply instability, in particular, when an external candidate is appointed and no candidate from an internal position is promoted (Dalton and Kesner, 1985). However, internal candidates are not always available or not the most viable option when, for example, external candidates are expected to bring additional experience into the boardroom. This expectation refers to the theoretical view of *organizational adaptation*, where outside successions can be construed as learning mechanisms since they are associated with bringing new executive team experiences into the organizations (Grossman, 2007). Externally appointed executive directors

possess greater external knowledge and make use of other resources than internal candidates which might trigger organizational learning and changes (Tushman and Rosenkopf, 1996). Following the adapting view, outside successions are combined with informational benefits that bring about positive performance implications in the post-appointment period (Chung and Luo, 2013).

However, outsiders need more time to become integrated into the organization (Fondas and Wiersema, 1997) and it is time- and cost-intensive to build up new practices and implement changes (Zhang and Rajagopalan, 2010). These arguments refer to an opposing theoretical view of *organizational disruption*, where outside successions can be construed as destabilizing events because outsiders have less internal knowledge and are less familiar with firm-specific operations (Bailey and Helfat, 2003). Thus, the appointment of an external manager has a disruptive effect on firm routines and procedures (Dalton and Kesner, 1985) which entail negative effects on performance (Georgakakis and Ruigrok, 2017).

Regarding the contradictory predictions of the theoretical argumentation and the mixed findings in the existing literature, Georgakakis and Ruigrok (2017) argue that outside successions are less likely to have an effect on performance that is either only positive or only negative. The relation is rather more complex in its nature since outsiders are not randomly assigned to organizations and the effect on performance depends on a variety of factors (Kesner and Sebora, 1994; Ocasio and Kim, 1999; Chang et al., 2010).

Researchers who aim to investigate performance as a function of outside succession events have to carefully consider that these events are less likely to be exogenous since external candidates are more often appointed by firms whose business is under stress (e.g. Parrino, 1997). Research has shown that the current management is more likely to be replaced by external candidates than internals when the current performance is low (Weisbach, 1988; Borokhovich et al., 1996; Parrino, 1997; Huson et al., 2001). This implies that outside candidates are more likely to be appointed to institutions with a lower performance compared to internal candidates who change from any other position within the company to the top management level. Thus, between inside and outside appointing firms there might be (per-se) performance differentials.

This selection issue implies at least two aspects that should attract the interest of researchers who explore the performance consequences of outside successions. Firstly, outside successions and business performance might be simultaneously determined. To illustrate this with one example: a poorly performing bank replaces the current management with an external candidate to turn around declining performance. Although the successor would start immediately with change activities,

bank performance is highly persistent and correlates across time, which implies that the performance of that year is also determined by the (low) performance of the previous year. Econometrically, it is necessary to disentangle the actual effect of outside successions on subsequent performance from the persistent antecedents which request these events (Wintoki et al., 2012). In the absence of an appropriate control strategy, the outside succession variable may simply pick up the negative information of the persistently poor performance.

Secondly, firm-related factors may also determine the availability of candidates and the opportunities of firms to select among external candidates. Dalton and Kesner (1985) describes that poorly performing institutions have potential difficulties in appointing viable candidates, who suggest performance improvement in the subsequent period since the most promising candidates accept job offers from appointing firms with high prospects whereas candidates with a less proven track record have little choice and also accept jobs at risky institutions. In the same sense, it is also necessary to consider an appointing firm's industry, size, the region of its headquarters, or ownership structure in terms of selection opportunities. To give just one example, executives might be unwilling to accept appointments from firms operating in small and specialized industries since such organizations have high demands for internal knowledge and the adaption of information takes time (Georgakakis and Ruigrok, 2017). Also with regard to their track record, individuals with an employment history at large firms are unlikely to accept job offers from smaller institutes since they are more likely to want to improve on their current position (Dalton and Kesner, 1985). In this light, firms with different recruiting opportunities (i.e. varying levels of risk, different industries and sizes) should be carefully compared to each other when estimating the consequences of succession events on performance. Otherwise, the variance among the observations vary systematically which may drive the effect of outside succession on performance (Georgakakis and Ruigrok, 2017).

Besides the aforementioned, there are other characteristics that potentially affect the relation of outside successions and performance but these are not directly observable. To be precise, personal characteristics of the predecessor, top management or shareholders influence the firm's strategy process and the internal dynamics but are difficult to measure. Research has shown that a CEO's personality characteristics such as overconfidence, narcissism, charisma or self-evaluation influence firm financial outcome as well as a firm's dynamism and its activities (see for review Bromiley and Rau, 2016). Consequently, such characteristics would also be relevant when exploring performance as a function of explanatory variables because to leave out such determinants might lead to a poorly specified regression model and parameters that are potentially biased caused by confounding background characteristics (Wintoki

et al., 2012). This is called omitted variable bias (Wooldridge, 2015). As a consequence, the outside succession variable may pick up parts of the "omitted" influence when researchers do not control for all relevant characteristics.

In sum, the relation of outside successions and performance implies certain aspects worth considering while providing econometrical evidence for the consequences of these events on performance. In the following, this meta-analysis explores whether the results of studies that address the econometrical issues differ from those that consider them to a lesser extent.

2.3 Data

2.3.1 Search process and selection of original studies

To identify the population of studies investigating the performance consequences of outside successions, five complementary search strategies are used. First, I consult the following five electronic databases a) EBSCO, b) JSTOR, c) Elsevier ScienceDirect, d) ERIC - Institute of Education Science and e) SSRN with the following search terms, each combined with performance or profit: CEO succession/turnover, chief executive officer succession/turnover, management succession/turnover, executive succession/turnover.[2] Second, I consult several review articles (Kesner and Sebora, 1994; Daily and Dalton, 1999; Pitcher et al., 2000; Giambatista et al., 2005; Karaevli, 2007) for further studies that investigate the relation of outside succession and performance. Third, after collecting an initial set of studies, I trace backward references reported in the studies and trace forward studies that cited the original studies using the function provided by Google Scholar. Fourth, I conduct a manual search of 10 journals in the fields of management and finance: Journal of Finance, Review of Financial Studies, Journal of Financial Economics, Management Science, Strategic Management Journal, Academy of Management Journal, Journal of Banking and Finance, Journal of Economics and Management Strategy, Journal of Economics and Business, Human Resource Management. Fifth, I contact the following 16 researchers: Alexandros P. Prezas, Bruce K. Behn, David H. Zhu, Guoli Chen, Hong Zhao, Huang Jicheng, Jiang Fuxiu, Kenneth A. Kim, Monika Hamori, Scott D. Graffin, Steven Boivie, Udi Hoitash, Varouj A. Aivazian, Vincent Intintoli, Wallace Davidson and Yan Zhang who had previously written one or more paper/s on the relationship of interest but where the specific information was not reported or where I request additional correlation tables and regression outputs or additional (unpublished) studies on this relationship.

The literature searches result in more than 1000 articles that match the search criteria. From this amount of hits, I identify a subset of 876 studies with a title or

[2]The database search expired on September 30, 2016.

keywords that suggest suitability. From reading their abstracts, I identified a subset of 168 articles with an abstract that suggests the article provides information on the relation of outside succession and subsequent performance. From reading the 168 full papers, I find 28 studies that can be accepted for the meta-analytical review since they provide analyzable results for the relation studied here.

Where I find studies to have the same title and author/s, I use the published version when I observe no difference between the working paper and the published study. To do so, I yielded a final sample of 28 studies, which consists of 24 published studies and 4 working papers. Table 2.1 lists the author(s) of each study used (hereafter called as *original studies*), provides several citation details and shows how outside successions are on average associated with post-succession performance in this study.

Most studies use a dummy variable to differentiate between successions from outside or inside and compared them to firms without succession events. However other studies use a sample of succession events to analyze the relation between outside succession and performance. The vast majority of studies in my sample investigate the performance effects when the CEO changes, but I also include studies estimating effects when other members of the executive board change. Irrespective of whether the CEO or another board member changes, the original studies define outside successors with regard to their employment history but with some slight differences regarding the length of the tenure. For example, Huson et al. (2004) identify a new board member as an outsider when s/he is hired externally, whereas, for Chen and Hambrick (2012), a tenure at the new position of less than two years' is sufficient to be identified as an outsider.

Table 2.2 presents the number of years covered in the original studies and organizes their sample periods in five-year intervals. The table makes clear that original studies examine different, but sometimes overlapping, time periods, whereby most studies covered the years from 1991 to 1996. Among the studies with overlapping periods are two studies that are (co-)authored by Yan Zhang and might employ a similar sample since the data source, sample period and number of observations are

similar (Zhang and Rajagopalan, 2004; Zhang, 2008).

TABLE 2.1: Original studies included in the meta-analysis.

Cites	Study focus	Publication	Academic disc.	Findings
Zajac (1990)	CEO succession	Strategic Management Journal	Management	negative
Bommer and Ellstrand (1996)	CEO succession	Group and Organization Management	Management	negative
Khurana and Nohria (2000)	CEO turnover	Working paper	Economics	negative
Haveman et al. (2001)	Regulation effect	Organization Science	Management	negative
Shen and Cannella (2002.a)	CEO dismissals	Academy of Management Journal	Management	negative
Shen and Cannella (2002.b)	CEO succession	Academy of Management Journal	Management	negative
Huson et al. (2004)	Managerial succession	Journal of Financial Economics	Finance	positive
Zhang and Rajagopalan (2004)	CEO relay	Academy of Management Journal	Management	negative
Behn et al. (2006)	CEO death	Journal of Managerial Issues	Management	negative
Davidson et al. (2006)	CEO age	Journal of Management and Governance	Management	negative
Karaevli (2007)	Grade of outsiderness	Strategic Management Journal	Management	positive
Bennedsen et al. (2007)	Inside family succession	Quarterly Journal of Economics	Economics	positive
Zhang (2008)	CEO dismissals	Strategic Management Journal	Management	negative
Ballinger and Marcel (2010)	Interim succession	Strategic Management Journal	Management	negative
Zhang and Rajagopalan (2010)	Outside succession	Strategic Management Journal	Management	negative
Chen and Hambrick (2012)	Turnaround	Organization Science	Management	positive
Quigley and Hambrick (2012)	Former CEO	Strategic Management Journal	Management	mixed
Ellis (2012)	Tournaround specialist	Working paper	Finance	positive
Chung and Luo (2013)	Succession	Strategic Management Journal	Management	mixed
Aivazian et al. (2013)	Market for CEOs	Journal of Economics and Business	Management	negative
Intintoli et al. (2014)	Interim succession	Journal of Management and Governance	Management	negative
Park and Cho (2014)	Executive selection	Public Performance and Management Rev.	Management	mixed
Hamori and Koyuncu (2015)	CEO experience	Human Resource Management	Human Resource	mixed
Hoitash and Mkrtchyan (2016)	Outsider	Working paper	Finance	negative
Zhao (2016)	CEO relay	Working paper	Finance	mixed
Zhu and Shen (2016)	Outside succession	Strategic Management Journal	Management	negative
Georgakakis and Ruigrok (2017)	Outside succession	Journal of Management Studies	Management	negative
Kick et al. (2017)	Outside succession	Journal of Banking and Finance	Finance	negative

Note: The table shows the original studies included in the meta-analysis with detailed information. *Cites* depicts the name(s) of the author(s), whether the study was conducted by one or more researchers, and the year of publication. *Study focus* summarizes the main research focus of the study. *Publication* makes clear whether the study is a working paper or the name of the journal in the case of published studies, and *Academic disc.* is the main focus of the journal in which the study is published or the discipline of the department the author(s) of working papers worked for. *Findings* reports how outside successions are on average associated with performance in this study.

TABLE 2.2: Original studies over the time period.

No. of years covered in study sample																***Total***
Years	1	2	5	6	8	9	10	12	13	14	15	17	20	23	30	
Studies	3	2	3	1	2	2	1	2	4	1	1	1	2	2	1	*28*

No. of samples per time window						
Start of time windows	$\leq$	**1985**	**1991**	**1997**	**2003**	**2009**
End of time windows	**1984**	**1990**	**1996**	**2002**	**2008**	$\geq$
Samples started in this windows	7	6	12	2	1	0	*28*
Samples ended in this windows	0	2	6	8	9	3	*28*
Samples covered this windows	7	11	23	19	11	3	

Note: The table shows the number of years covered in the original studies. The table also details the time windows examined by the sample periods of the original studies or in which time window the sample periods start and end. The time windows comprise five-year intervals.

2.3.2 Calculating effect sizes

The original studies use different measures (i.e., metrics) of accounting performance to explore the consequences of outside successions. In particular, post-succession performance is measured as return on assets (ROA) and return on equity (ROE) which is adjusted for industry performance, for example, by Intintoli et al. (2014) and Ellis (2012), or risk-adjusted in Kick et al. (2017). In addition, the change of performance is considered in the study of Huson et al. (2004) or Bennedsen et al. (2007). Other measures of performance are examined by Park and Cho (2014), who develop a performance evaluation index based on a rating index regarding the overall quality of management, or in the study of Behn et al. (2006) which uses the change of sales as a proxy of firm performance. To conduct a meta-analysis where I aim to compare the empirical results reported for outside successions (the x-variable) on several measures of accounting performance (the y-variable), it is necessary to convert the estimated parameters into so-called effects, which is a standardized measure and can be used as the dependent variable in the meta-regression upon which the moderating variables are regressed. These effects measure the relationship of interest and provide information concerning the reported evidence in the original study (e.g. Ringquist, 2013; Gerrish, 2016).

The effect sizes in this study are calculated as r-based effect sizes. According to Ringquist (2013), an essential point of r-based effect sizes is that the calculation is appropriate for the traditional correlation coefficient provided in correlation tables and also for partial correlation coefficients associated with regression parameter estimated in any regression model. To calculate the partial correlation coefficient, Ringquist (2013) emphasizes the use of the t-value from testing the null hypothesis to ascertain whether the regression coefficient equals zero.[3] To generate r-based effect sizes, I used the following formula: $r = \sqrt{[t^2/t^2 + df]}$, where t is the t-value and df is the degrees of freedom.

In general, I code effect size reported in the original studies from correlation tables and regression outputs, however, I exclude effect sizes that are estimated via regression interaction terms. This implies that I might lose some nuances of the examined relationship since an interaction term changes the meaning of the outsider dummy variable and reveals information for other paths through which this succession is related to performance. However, the interpretation of regression coefficients changes too greatly in the presence of interaction terms to combine them with regression results without interaction terms in my meta-analysis (Ringquist, 2013). Moreover the number of effect sizes in my sample (which are estimated via interaction terms) is too small for a subsample analysis.

[3]Ringquist (2013) describes how other distributions of z, t, F, chi^2 can be converted into r-based effect size.

When the original study reports only p-values or significance stars, I use the t-value associated with the symbol threshold and the given degrees of freedom. In the case of an original study showing only regression coefficients with standard errors, I calculate the t-value as $t = b/s_b$, where b is the parameter estimates and s_b is the standard error. The estimates of standardized regression coefficients are used as r when required information are not reported (Ringquist, 2013).

Ringquist (2013) describes two ways for dealing with reported parameters that are not statistically significant. One is to exclude the effect size from the further coding. A second possibility is to set the t-statistic value equal to zero. I follow the latter since this enables me to include the effect size in my meta-analysis and to extract the relevant information from the original study instead of ignoring the effect size which would assume that I have no information on the effect size (Ringquist, 2013).[4]

The use of r-based effect sizes would imply, however, some limitations regarding their empirical properties. r is truncated and censored since the boundaries are -1/1. Moreover it is heteroskedastic since the variance is determined by $V[r] = (1-r^2)^2/(n-1)$ which means it depends strongly on its value (e.g. Ringquist, 2013; Gerrish, 2016). To overcome these shortcomings, I follow recent meta-analysis studies by, for instance, Carney et al. (2011), Van Essen et al. (2015) and Gerrish (2016), and use the Fisher (1928) Zr-transformation on the r-based effect sizes with the following formula: $Fishers\_Zr = 0.5 * ln[(1+r)/(1-r)]$ with a variance that is described as $V[Z] = 1/n - 3$.

The final sample of my meta-analysis comprises 28 original studies with 102 effect sizes. The mean $Fishers\_Zr$ effect size of the outside succession-performance relation over all original studies in my sample is -0.02 with 95% confidence intervals that range from -0.052 to 0.010. These values are very close to the presented average effect size for CEO outside successions on performance in the meta-analysis of Schepker et al. (2017). They report average correlation for outside succession on short-term (long-term) performance of -0.02 (-0.07) that, on the 95% confidence interval, ranges from -0.06 to 0.02 (-0.14 to 0.01). Similar to the confidence intervals presented by Schepker et al. (2017), my confidence intervals also include the value of zero which suggests less significance for the average effect in the literature.

[4]Proceeding in this manner implies that estimated parameters that are reported as statistically insignificant but whose t-values lie slightly below the significance level of 10% in general have the same content of information as other parameters that are far removed from any statistical significance. Unreported tests reveal that the results of this meta-analysis also hold when I employ a less conservative procedure, for example, when I also account for significance at the 20% or 25% level.

2.4 Descriptive meta-analysis

2.4.1 Heterogeneity of effect sizes

As a first step of analysis, it is necessary to examine the effect sizes in my sample regarding their heterogeneity. This implies determining whether the variation in my sample follows a fixed- or random-effect framework, which is important in order to choose the appropriate method for the meta-analysis.[5] The fixed-effect approach assumes that there is only one "true" effect size and all observed heterogeneity stems only from sampling errors. In contrast to this, random effects meta-analysis assumes that effect size heterogeneity is, in addition to the sampling error, also affected by the variance across original studies (Ringquist, 2013). A Q-test of fixed-versus random effects allows me to reject the null that the distribution of effect in my sample comes from the sampling error alone on a highly significant level (Q= 332.94, E[Q]=101, p=0.000) and the I^2-statistic of 72.8% shows that over 70% of the total variability in my sample cannot be attributed to a sampling error. Thus, I follow the standard framework applied in meta-analysis of social sciences (Ringquist, 2013) and employ a random-effects framework.

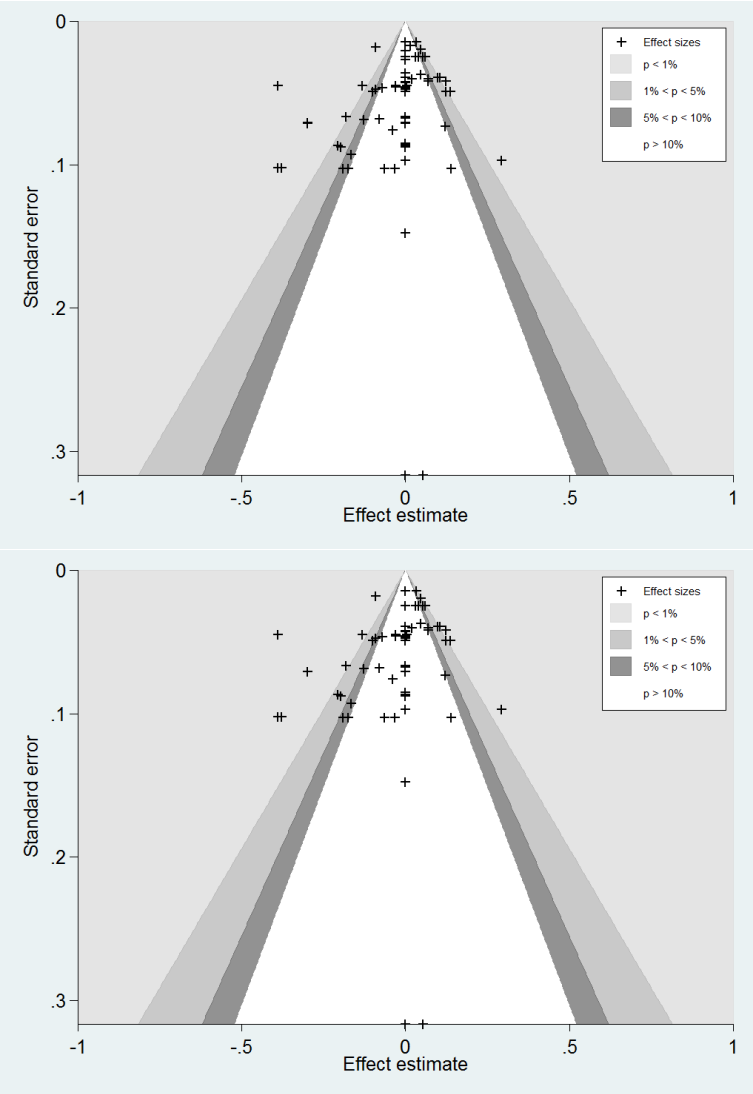
2.4.2 Publication bias

As a next step of descriptive analysis, I test whether the estimation of effect sizes is affected by a publication bias. In general, there are two sources of publication bias: one is that journal editors are less likely to publish studies with insignificant or conflicting results. The other is that such papers are probably not written or submitted by their authors because they do not expect these to be published (Ringquist, 2013). To detect a possible publication bias, I follow the strategy provided by Gerrish (2016) and Schepker et al. (2017), and use contour enhanced funnel (confunnel) plots as shown in Figure 2.1.

The full sample of 102 effect sizes is presented in the top panel, whereas the 18 effect sizes from unpublished working papers are excluded in the lower panel. The effect sizes are indicated with a black plus sign and the colored contours represent the statistical significance of the effect sizes from a two-tailed test on the 10, 5 or 1% significance level. I draw two insights from Figure 2.1: first, it shows fairly symmetric funnel plots with significant negative and positive, as well as statistically insignificant effect sizes. Second, the funnel plots show less variation between the upper and the lower plot. Taking these insights together, I conclude that my sample does not suffer from a publication bias.

[5]The applied terms of fixed- and random-effects have their own meaning in the methodology of meta-analysis and are not comparable to that associated with panel data models.

FIGURE 2.1: Contour enhanced funnel plots.



Note: The figure shows the contour enhanced funnel (confunnel) plots with the full sample of 102 effect sizes in the top plot and a sample of 87 effect sizes coded from published studies in the lower plot. The x-axis reports the effect estimates and the left y-axis reports the standard errors of the effect estimates. Effect sizes are indicated with a black plus sign and the colored contours represent the statistical significance of the effect sizes from a two-tailed test on the 10, 5 or 1% significance level. In the upper plot the mean (median) of the effect size in the full sample is -0.021 (0.00) and in the lower plot -0.029 (0.00).

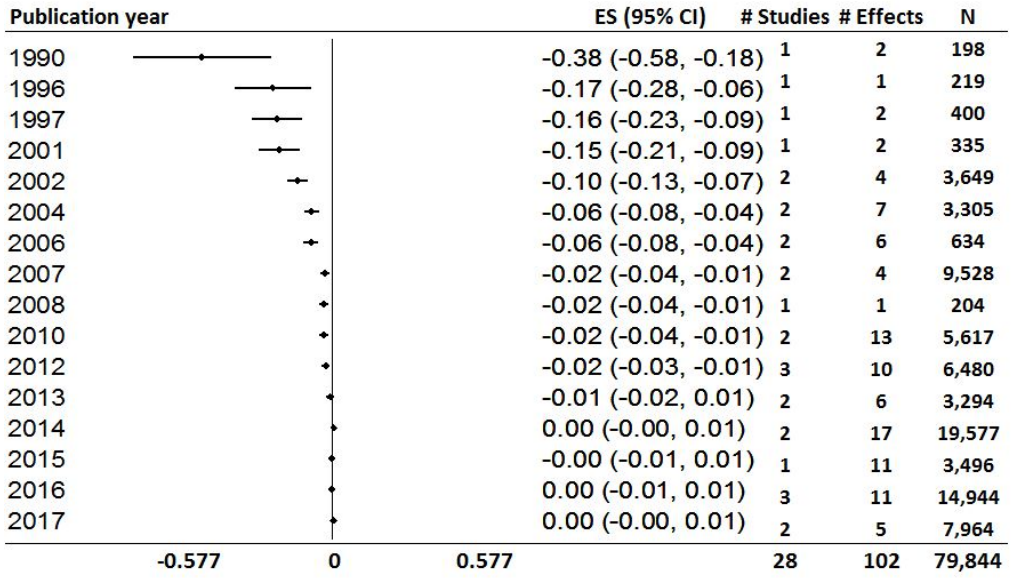
2.4.3 Changes of effect sizes over time

The tool of cumulative meta-analysis makes it possible to operationalize the effect sizes on time and show how the reported evidence on the outside succession-performance relation has changed over time. For this, the effects are sorted by the year in which the original study was published, multiplied by their weights on the whole sample and then summed up per year.[6] After this, an average (weighted) effect size for each publication year is calculated and presented on a year-level in Figure 2.2. Moreover, Figure 2.2 aggregates the number of sample sizes of the original studies in my sample on the publication year-level. This figure delivers the following two insights: first, it shows that evidence on the outside succession-performance relation exists (some confidence intervals do not include zero) but with a varying magnitude over time. Second, the figure visualizes changing effect sizes and confidence intervals over the course of time. More specifically, the estimated average effect size published in 1990 is of -0.38, whereas the values gradually increase and the confidence intervals decrease from this time.

The insights from the cumulative meta-analysis might reflect a general development over the last 28 years, which is combination of technical and methodological development. The reported values suggest that the sample sizes used to estimate performance consequences of outside succession gradually increase from 2002. This finding can be assigned to the general development of the technical operation that provides changing possibilities to researchers to handle numeric data and access to more aggregated information of institutions (database development). In addition, the changing relation over time can also be assigned to a development in academic research that calls on researchers to employ more complex econometric models and more advanced methods when studying economic research questions.

[6] As a robustness test, I use the first, the last and the mean year of the sample period of the original study. The results remain unchanged to those reported here.

FIGURE 2.2: Cumulative meta-analysis.



Note: The figure shows the mean effect sizes by publication year. The left y-axis reports the year in which the original studies included in the analysis were published. The right y-axis reports the average effect size (and the confidence interval) in that year. Mean effect sizes are indicated by the point and horizontal lines reflect the 95% confidence interval. *Studies* (*Effects*) depicts the number of original studies (effect sizes) added to the cumulative total in that year and *N* reports the total number of observations from the original studies on the level of the effect sizes.

2.5 Meta-regression

2.5.1 Estimation techniques

The primary tool used in meta-analysis is meta-regressions (Ringquist, 2013; Gerrish, 2016). Rather than simply taking into account whether the original study reports a positive or negative finding on the outside succession-performance relation, meta-regression makes it possible to explore the efficiency by considering the sample size of the original study, and the effect magnitude (Gerrish, 2016). The dependent variable in my meta-regression is $Fishers\_Zr^2$, which is the squared term of the transformed r-based effect size, $Fishers\_Zr$. As a consequence, the values of the dependent variable are only positive. Without this squaring, it might not be possible to discern whether a positive coefficient has to be interpreted as the relation becomes either less negative or more positive in the presence of that variable.

Moreover, I follow other meta-analytical studies in management, for example Van Essen et al. (2015) or Gerrish (2016) and employ a weighted least squares framework where each observation is weighted by the square root of the total variance of the effect size. The total variance of the effect size is defined as $V[Z]_i + \tau^2$ where $V[Z]$ is described by $= 1/n - 3$ and τ^2 is the random effects variance component.[7]

[7] τ^2 is estimated by the stata command *metan* provided for Stata 13.

Since this meta-analysis contains studies where I observe more than one effect size, the effect sizes in my analysis are not independent of each other. Ringquist (2013) describes two options to deal with this problem. One option is to calculate the mean effect size of each study or, alternatively, to use clustered robust standard error regression. The use of cluster robust standard errors at the study level provides me with the advantage of maintaining the variation that exists within each study. The so-called "within variation" arises when, for example, one original study estimates different regression models and uses varying sets of independent variables (i.e., information of pre-succession performance is not included in all regression models). In such a case, the second option of clustering at the study level allows me to recognize the different methodological characteristics whereas the use of the mean effect size per study would reduce this heterogeneity.

2.5.2 Moderating influence of methodological characteristics

This study explores the moderating influence of the employed methodological design on the relation of outside succession and performance. To characterize the employed method of the original studies, I use a set of variables that are described in the following. Table 2.3 reports the descriptive statistics of all used variables on the effect size level.

At first, I differentiate between effect sizes coded from univariate and multivariate analyses. With the dummy variable D_REG, I classify effect sizes estimated in regression models of more than one statistical control variable as one and effect sizes estimated in univariate analyses as zero. 61 effect sizes in my sample are coded from regression outputs and 41 from correlation tables.

The next moderating variables consider the independent variables included in the regression model of the original studies. The variable No_IV reflects the number of independent variables used in the multivariate regression model from which I code the effect size. In general,[8] a large number of control variables can be regarded as helpful in light of self-selection concerns since researchers are able to control for firm-specific characteristics (i.e. firm size and industry) that potentially drive the selection of candidates. Moreover, suffering from an omitted variable bias becomes less likely in regression specifications with a large number of independent variables compared to models with few variables. On average the original studies include 8

[8]My meta-regression comprises the variable No_IV since the model might be better specified when more variables that belong to the model are included whereas dropping them may lead to a regression bias. Besides, a large number of independent variables could give rise to certain concerns, for example, that of multicollinearity when one or more included variables are highly correlated among each other.

independent variables while estimating the effect of outside succession on performance.

The next variable $Risk$ considers whether the regression specification of the original study includes firm-risk variables (i.e., financial leverage). Controlling for risk in this setting is required for three reasons. First, firm performance might be a function of a firm's financial health, which justifies including risk measures as explanatory variables (Opler and Titman, 1994). Second, a firm's risk exposure might determine the availability of candidates and the opportunities of a firm to select among external candidates. As already outlined in Section 2.2, high-risk firms might have difficulties recruiting promising outside successors since those candidates may fear reputational damage to their track records and therefore be more likely to accept job offers from low-risk firms (Dalton and Kesner, 1985). Third, including firm risk as an additional control variable is also helpful in averting a potentially omitted variable bias since the information of a firm's risk exposure combines other firm-specific information that may lead to the current situation. Thus, to control for the appointing firms' risk exposure might address further systematic differences among observations. 36.3% of effect sizes are estimated in a model that controls for the risk exposure of the firms.

TABLE 2.3: Descriptive statistics of moderating variables in meta-regression.

Variable	N	mean	sd	p1	p50	p99
$Fishers\_Zr$	102	-0.022	0.108	-0.388	0	0.14
D_REG	102	0.598	0.493	0	1	1
No_IV	102	8.314	8.697	0	7	23
$Risk$	102	0.363	0.483	0	0	1
$Trigger$	102	0.431	0.489	0	0	1
$Firm\_fix$	102	0.265	0.443	0	0	1
Pre_perf	102	0.441	0.499	0	0	1
Pre_perf_method	102	0.186	0.391	0	0	1
$Selection$	102	0.157	0.365	0	0	1

Note: The table displays descriptive statistics for $Fishers\_Zr^2$ and the moderating variables. *N* reports the number of observations, *mean (sd)* denotes the mean (standard deviation) of each variable. The value *px* indicates the xth percentile of the distribution of the respective variable. All variables are defined in the Appendix.

With the variable $Trigger$ I consider whether the regression specification of the original studies differentiate among succession triggers. While estimating the consequences of outside succession on performance, the trigger of the succession event implies a possible source of outsider selection to firms. For example, Quigley and Hambrick (2012) report that the retention of the former CEO restrains the ability of the successor to make strategic changes or deliver performance that deviates from pre-succession levels and Zhang and Rajagopalan (2004) include information on the predecessor's dismissal since these contingencies determine the situation for the new appointee markedly. Consequently, not all appointees might be equally willing to accept a job offer where the predecessor was forced from the position since they might fear reputational damage should similar difficulties arise (Dalton and Kesner,

1985). Thus, the nature of the predecessor's departure influences the recruitment process since there is also a potential selection mechanism via the succession contingencies (Kesner and Sebora, 1994). The dummy variable $Trigger$ equals one when the effect size is estimated in the presence of potential causes of the appointment event and zero otherwise. The mean $Trigger$ in my sample is 43.1%.

While performing panel regression models, researchers use fixed-effect regression in order to control for group characteristics that are constant over time, for example, the region in which the firm is located. Additionally, fixed effects comprise other characteristics of the firm which are not directly observable as long as they do not vary over the time (Wooldridge, 2015, p. 485). Therefore, fixed-effect models provide an attempt to reduce an omitted variable bias (Wooldridge, 2015, p. 489). With regard to the relation of outside succession and performance, firm-fixed effects can also be seen as an additional means of reducing self-selection concerns since the selection of candidates into firms might work via firms region, industry and other time-constant characteristics. Thus, I include the dummy variable $Firm\_fix$, which equals one when the original study reports the use of fixed-effect regression while estimating the succession-performance relation and zero otherwise. 26.5% of effect sizes are estimated in a fixed effects regression model.

Next, I consider whether the original study includes the information of pre-succession firm performance in the regression model. To regard this as a methodological characteristic for the relation of outside succession and performance can be justified for three reasons. Firstly, it is reasonable in light of selection. The selection issue arises from the finding that outsiders are more likely appointed firms with lower performance in order to bring about the necessary changes than to high-performing firms (e.g. Parrino, 1997). Secondly, controlling for pre-succession performance might address the concern of endogeneity among pre-succession performance, the succession event and post-succession performance (Schepker et al., 2017). Thirdly, the moderating influence is also justified in light of a potentially omitted variable bias since the information of prior firm performance compromises other firm-specific information that may lead to this performance situation. The dummy variable Pre_perf equals one when the information of pre-succession performance changes is included in the regression model and zero otherwise. 44.1% of the effect sizes in my sample are estimated in the presence of pre-succession performance changes.

However, the variable engenders some econometrical difficulties when outside successions are regressed on firm performance. The performance of institutions is probably persistent over time (Wintoki et al., 2012). This leads to a statistical concern

of autocorrelation when the pre-succession performance is included in panel regression models since the performance of the last year is highly correlated with the performance of the current year which is the dependent variable (Wooldridge, 2015). Therefore, the dynamic panel generalized method of moments estimation with year sampling is an established method in the literature of board structure to investigate the effect on firm performance in light of this autocorrelation (Wintoki et al., 2012). For example, the study of Kick et al. (2017) estimates post-succession performance effects of outsiders by using such a dynamic panel estimator. Thus, I code another variable Pre_perf_method which equals one when the original study includes prior firm performance and employs an estimation method in light of the autocorrelation concern. The mean of Pre_perf_method is 18.6%. Unfortunately, such a small event rate does not allow for studying the influence in the meta-regression, but I consider this variable in variable categories that are explored in Section 2.5.3.

Also, as concerns selection, Chen and Hambrick (2012), for example, employ the Heckman (1979) two-stage model where the first-stage model is used to predict the likelihood of the succession event which is then (as a Mills ratio) additionally included in the second-stage model. The use of hierarchical-linear models also accounts for potential systematic variance. For example, Georgakakis and Ruigrok (2017) employ a hierarchical-linear-modeling technique which enables the comparison of firms with similar characteristics, for example, those in the same country and industry. To tackle these strategies in my meta-regression model, I include the dummy variable $Selection$. This variable equals one when effect sizes are estimated with one of the aforementioned strategies. The mean of $Selection$ is 15.7%. Again, the small event rate of this variable can only be considered in the variable categories.

TABLE 2.4: Correlations of meta-regression variables.

		1	2	3	4	5	6	7	8
1	$Fishers\_Zr^2$	1							
2	D_REG	-0.26*	1						
3	No_IV	-0.2	0.83*	1					
4	$Risk$	-0.18	0.74*	0.89*	1				
5	$Trigger$	-0.25	0.74*	0.84*	0.82*	1			
6	$Firm\_fix$	-0.1	0.4*	0.49*	0.4*	0.35*	1		
7	Pre_perf	-0.23	0.84*	0.79*	0.74*	0.73*	0.34*	1	
8	Pre_perf_method	-0.15	0.47*	0.48*	0.59*	0.44*	0.28*	0.56*	1
9	$Selection$	-0.01	-0.12	-0.08	-0.14	-0.07	-0.08	-0.27*	-0.17

Note: The table displays correlation coefficients between $Fishers\_Zr^2$ and the moderating variables. * indicates a correlation coefficient significant at the 1% level. All variables are defined in the Appendix.

Table 2.4 reports the pair-wise correlation coefficients and shows that several methodological characteristics are highly correlated to each other. High correlations among the moderating variables in a regression model might lead to multicollinearity concerns, which prompts me to first study the influence of the methodological characteristics separately.

2.5.3 Meta-regression results

Table 2.5 reports the results of the meta-regression for the full sample of 102 effect sizes clustered at the study level. The statistically significant coefficient of D_REG in Column (1) shows that the reported outside succession-performance relation significantly differs between uni- and multivariate analyses. The negative coefficient reveals that the relation moves downwards for effect sizes coded from regression models compared to correlation outputs. To study this first insight in more detail, I further investigate the regression models of the original studies and replace the variable D_REG in Columns (2)-(6). At first, the results suggest that the negative effect of D_REG hinges neither on the number of independent variables included in the regression specification of the original studies nor on whether a fixed-effect regression models is employed or not since both moderating variables lack significance. However, the outside succession-performance relation moves downwards when the regression model of the original study includes several variables in light of selection concerns and endogeneity. The results of my meta-regression reveal negative and significant coefficients on $Trigger$, $Risk$ and Pre_perf in Columns (4)-(6). The results indicate that the relation of outside succession and performance varies systematically with the specification of the employed regression model.

TABLE 2.5: Research design factors and categories.

	1	2	3	4	5	6
D_REG	-0.009** [0.004]					
No_IV		-0.000 [0.000]				
$Firm\_fix$			-0.001 [0.003]			
$Trigger$				-0.006** [0.003]		
$Risk$					-0.005* [0.003]	
Pre_perf						-0.010** [0.005]
Constant	0.010** [0.004]	0.007** [0.003]	0.005** [0.002]	0.007** [0.003]	0.007** [0.003]	0.012** [0.005]
No. of effect sizes	102	102	102	102	102	102
Adj_R^2	0.10	0.06	0.04	0.08	0.06	0.11
F-Test	4.51	4.06	3.49	4.35	4.03	5.63
p-Value (F-Test)	0.02	0.03	0.04	0.02	0.03	0.00

Note: Coefficients from random effect meta-regression based on the a sample of effect sizes with robust standard errors clustered by study below the coefficients. Observations are weighted by inverse variance plus the between study variance estimator (τ^2=0.0038). * and ** indicate significance of the coefficients at the 10%, 5% and 1% level, respectively. All variables are defined in the Appendix.

For diagnostic tests of my regression specification, I present the values of the F-Test and the $Adj\ R^2$. The latter values reveal that only a relatively small amount of the variation on the outside succession-performance relation can be explained by including only one moderating variable since the $Adj\ R^2$ statistics range from 4 to

11%. Thus, to obtain more insight and explore more variation in the relation of outside succession and performance, I present further specifications where I summarize several variables and build categories of variables.

Table 2.6 reports the results of the meta-regression where I combine several methodological characteristics to obtain more insight into their moderating influence on the relation of outside succession and performance. Since the characteristics of the methods are too highly correlated for me to estimate them together in one meta-regression, I derive three new variables in order to combine the relevant information into categories. First, the variable CAT_Select combines the methodological characteristics that address the selection concern of outside successions. More specifically, the dummy variable equals one where the original studies consider firms' risk exposure ($Risk$), the succession triggers ($Trigger$), employ firm-fixed effect regression ($Firm\_fix$), the pre-succession performance (Pre_perf) or a model which controls for a potential bias ($Selection$). The negative and significant coefficient on CAT_Select in Column (1) of Table 2.6 underlines that the relation of outside succession and performance moves downwards when the original study employs at least one or more of the aforementioned factors addressing selection concerns.

Second, the variable CAT_Endo combines the methodological characteristics which approaches the concern of endogeneity among outside successions and firm performance. The variable equals one when the original study controls for pre-succession performance (Pre_perf) or employs an estimation method in light of autocorrelation (Pre_perf_method), otherwise zero. The negative and significant coefficient on CAT_Endo in Column (2) of Table 2.6 shows that the relation of outside succession and performance moves downwards when the original study provides a strategy to deal with the endogeneity among the pre-succession performance, the succession event and the performance consequences.

Third, the variable CAT_OV combines the methodological characteristics which approaches a potentially omitted variable bias. The dummy variable equals one when the original study provides an above-median number of control variables (No_IV), considers firms' risk exposure ($Risk$), employs firm-fixed effect regression ($Firm\_fix$) or controls for pre-succession performance (Pre_perf). The negative and significant coefficient on CAT_OV in Column (3) of Table 2.6 reveals that the relation of outside succession and performance moves downwards when the original study addresses an omitted variable bias with one or more of the aforementioned characteristics.

Next, I present the results for further combinations of these combined variables. I derive the variable of $Select\_Endo$ in order to classify the original study which addresses the concerns of selection and endogeneity, the category of $Select\_OV$ when

TABLE 2.6: Categories of methodological characteristics.

	1	2	3	4	5	6
CAT_Select	-0.006* [0.003]					
CAT_Endo		-0.005** [0.002]				
CAT_OV			-0.006* [0.003]			
$Select\_Endo$				-0.005** [0.002]		
$Endo\_OV$					-0.005** [0.002]	
$Select\_OV$						-0.006* [0.003]
Constant	0.008** [0.003]	0.005** [0.002]	0.007** [0.003]	0.005** [0.002]	0.005** [0.002]	0.007** [0.003]
No. of effect sizes	102	102	102	102	102	102
Adj_R^2	0.07	0.06	0.07	0.06	0.06	0.07
F-Test	4.01	3.548	4.046	3.548	3.548	4.047
p-Value (F-Test)	0.03	0.04	0.03	0.04	0.04	0.03

Note: Coefficients from random effect meta-regression based on the a sample of effect sizes with robust standard errors clustered by study below the coefficients. Observations are weighted by inverse variance plus the between study variance estimator (τ^2=0.0038). * and ** indicate significance of the coefficients at the 10%, 5% and 1% level, respectively. All variables are defined in the Appendix.

the original study addresses the concerns of selection and a potentially omitted variable bias, and the category of $Endo\_OV$ when the original study addresses the concern of endogeneity and a potentially omitted variable bias. Columns (4)-(6) of Table 2.6 display negative and significant coefficients for all of these three combinations. Thus, it matters little which combinations are studied: the relation of outside succession and performance moves downwards compared to original studies without the methodological characteristics studied here. I regard this as being in line with the insight that outside succession and performance vary systematically with the specification of the employed regression model.

2.5.4 Further study-related characteristics

In Table 2.7 I present further meta-regressions to explore whether my results changes when I consider further characteristics of the original study. For these tests, I select the category of $Select\_Endo$, which is shown in Column (4) of Table 2.6, as baseline specification and include additional study-related variables.[9] Choosing this category refers to Section 2.2 where I already outlined that the issues of selection and endogeneity play a central role in the relation of outside succession and performance.

First, I regard the academic discipline to which the original studies can be allocated. Regarding the published studies in my sample, I consider the information of their journal focus to determine the academic discipline. In Table 2.1 I list the

[9]Unreported tests report similar results when I choose other categories of variables describing the methodological design of the original studies.

journal names and the coded academic discipline. In case of working papers, I consider the authors' affiliation. More specifically, I record the department discipline of the authors and identify, for example, the academic discipline as *Finance* when one of two authors are a member of the finance department. I use the dummy variable $Finance$ to distinguish between original studies within the field of finance and economics (coded as 1) or management and human resources (coded as 0). The mean of $Finance$ is 35.3% in my sample. Noteworthy is that the dummy variable $Finance$ and the category of $Select\_Endo$ are positively correlated to each other.[10] This might be the reason why the coefficient on $Select\_Endo$ changes from the output reported in Column (4) of Table 2.6 and now lacks significance when I add the dummy variable $Finance$ to the meta-regression as depicted in Column (1) of Table 2.7. Regarding a potential concern of multicollinearity this finding should not be overstated but it could indicate that the employed methods and their characteristics differ somewhat among the academic disciplines.

Second, I explore whether the results change when I consider the journal quality of the published study. To obtain information on journal quality, I use the Thomson Reuters database to collect the five years' journal impact factor in the year 2015. According to the database,[11] the value is calculated by the number of citations of recent studies divided by the overall number of recent studies. A higher value indicates a higher impact of the respective journal. The variable equals zero in the case of non-rated journals or working papers. The average study in my sample has an impact factor of 2.1 and the standard deviation of the sample is 1.84%. However, to control for differences between the academic disciplines, I calculate a mean impact factor for each of the academic disciplines of management, finance, economics and human resources. Afterwards, I subtract the mean of the academic discipline from the impact factor of the original study to determine the journal quality relative to the published study from the same academic discipline which leads to mean $Impact\_factor$ of zero (standard deviation of 1.6%). The negative and significant coefficient on $Select\_Endo$ remains unchanged when I add the variable $Impact\_factor$ as reported in Column (2) of Table 2.7.

Since I also consider studies that report the information on the outside succession-performance relation as supplemental analyses, my analysis also contains studies that provide empirical results for the relation of outside succession and performance consequences as part of their explanatory variables. However, this implies comparing studies that may ask different questions and test different hypotheses. To deal with these differences in the most conservative way, I code the dummy variable $Outsider\_key$ as one when the outsider variable is the key component in

[10] Unreported correlation tests reveal a correlation coefficient between $Select\_Endo$ and $Finance$ of 0.38 which is highly significant at a 1% level.

[11] Obtained from the website: https://jcr.incites.thomsonreuters.com at the July 21, 2017.

TABLE 2.7: Methodological and study-related characteristics.

	1	2	3	4	5
$Select\_Endo$	-0.005	-0.005**	-0.005*	-0.004**	-0.006**
	[0.003]	[0.002]	[0.003]	[0.002]	[0.003]
$Finance$	-0.000				
	[0.004]				
$Impact\_factor$		-0.000			
		[0.001]			
$Outsider\_key$			0.003		
			[0.003]		
US_sample				0.010	
				[0.006]	
$Restriction$					0.005
					[0.005]
Constant	0.006**	0.005**	0.003*	0.003**	0.005**
	[0.003]	[0.002]	[0.002]	[0.001]	[0.002]
No. of effect sizes	102	102	102	102	102
Adj_R^2	0.05	0.05	0.05	0.10	0.06
F-Test	2.30	2.41	2.32	3.83	2.22
p-Value (F-Test)	0.09	0.09	0.07	0.02	0.09

Note: Coefficients from random effect meta-regression based on a sample of effect sizes with robust standard errors clustered by study below the coefficients. Observations are weighted by inverse variance plus the between study variance estimator (τ^2=0.0038). * and ** indicate significance of the coefficients at the 10%, 5% and 1% level, respectively. All variables are defined in the Appendix.

the original study, or zero when the variable is estimated as a further control variable to consider characteristics of the successor. 32.7% of my effect sizes are reported in original studies where the outsider dummy variable is the key variable. The test reported in Column (3) of Table 2.7 shows that adding the variable $Outsider\_key$ does not change my results.

The next two variables consider different types of sample settings across the body of original studies. Some studies in my sample investigate successions in firms with restrictions on the industry, for example Quigley and Hambrick (2012) include only computer hardware, software and electronic firms, or a specific ownership structure, for example Ballinger and Marcel (2010) investigate only publicly held US firms. I code such sample restrictions with the dummy variable $Restriction$ to record when the original study apply some sample restrictions and zero otherwise. 25.7% of my effect sizes are coded in original studies that use industry restrictions on their sample. In addition, with the dummy variable US_sample I code original studies which use US firm data or zero in case of samples from other countries or international ones. The majority (83.3%) of original studies contain institutions located in the US. The tests displayed in Columns (4) and (5) of Table 2.7 reveal that the results remain unchanged when I consider the sample setting of the original study.

2.6 Concluding discussion

This meta-analysis centered on the mixed consequences of outside successions on a firm's accounting-related performance. The study synthesizes the empirical evidence provided by the existing literature and investigates the research question of whether the relation of outside succession and performance differs systematically with the employed methodological design. For this, I employ a hand-collected meta-analytical data set that consists methodological characteristics of 28 original studies and their 102 effect sizes. This study provides both results from descriptive meta-analysis as well as meta-regressions.

The results of the descriptive meta-analysis show that the reported evidence in the literature changes over time since the average effect moves downward and the confidence intervals become shorter and closer to zero. The meta-regression provides significant evidence for the view that the relation of outside successions and performance varies significantly with methodological characteristics of the original studies. To be precise, the relation of outside succession and performance moves downward when the original studies address the concerns of selection, endogeneity or a potentially omitted variable bias compared to other studies that might overestimate the appointment effect in the absence of a control strategy. Thus, this study shows that parts of the varying relationship between outside succession and performance can be assigned to method-related heterogeneity across original studies. This finding helps in understanding the conflicting results on the relation between outside succession and performance consequences, and provides meta-analytical support for the claim of Pitcher et al. (2000) that methodological difficulties play a key role in the problem of inconclusive results on this relation.

The main purpose of this meta-analysis, however, is not so much to evaluate the employed method or describe how to overcome the methodological complexity of the varying relation of outside succession and performance as to examine whether several methodological characteristics of the existing literature are able to moderate the relation of outside succession and performance. To this, there are several limiting aspects that require consideration when interpreting the findings of my meta-analysis. First, the study provides an attempt to estimate the moderating influence of the employed methods. With respect to selection, endogeneity and omitted variable bias, some methodological characteristics potentially addressing these concerns are synthesized to moderating variables and categories of these. Despite this, the separation between these categories is limited and cannot be interpreted strictly. For example, I present arguments that justify that the methodological characteristic of whether the original study considers pre-succession performance can be assigned to all three categories.

Second, the study considers aspects of the methodological design that can be generalized into characteristics and categories in order to compare them across original studies. This, however, means losing certain nuances of the study-specific research design when the number of studies that employ this aspect is too small. For example, the observations of original studies that employ the Heckman selection model, a method to consider the selection concern, are too few to estimate the moderating influence econometrically.

Third, this study considers methodological characteristics addressing statistical concerns but the methods explored rule out these difficulties only to a certain extent. To be precise, when the regression model includes fixed effects the authors may lower selection issues since they imply firm-specific aspects that potentially affect outside selection, even though, selection issues are not automatically carried out. Therefore, researchers employ more advanced methods in order to deal with these issues. For example, a multilevel framework, as employed in Georgakakis and Ruigrok (2017), is more able to deal with several drivers of outsider selection in firms and reduce systematic variance differences among observations. Similarly, when the regression model includes information on prior performance the authors may address parts of the complex relation between outside succession and performance, however this is not sufficient to overcome the concern of endogeneity. The method of dynamic panel estimation with year sampling offers another methodological tool modeling the concern of autocorrelation which stems from the persistence of firm performance to some extent (Wintoki et al., 2012). However, an econometrically deeper solution to the endogeneity of appointment might be achieved by centering on exogenous events that trigger appointments and may thus sever the link between succession and prior performance. The sudden death of the predecessor might be such an exogenous event (Behn et al., 2006). Moreover, the study of Hauser (2017) provides an identification strategy which considers the shock on boards following merger events when the entire board is terminated. Yet from a meta-analytical view encoding such individual strategies as methodological characteristics is challenging and comparing their outcome across studies is limited since the studies that contribute such strategies remain rare.

2.7 Appendix

$Fishers\_Zr$	r-based effect sizes with Fisher (1928) Zr-transformation.
D_REG	Dummy variable equals one when the effect size is estimated in a multivariate analysis and zero in the case of uni-variate analysis.
No_IV	Dummy variable equals the number of independent variables included in the model where the effect size was estimated and zero in the case of a uni-variate analysis.
$Risk$	Dummy variable equals one when the effect size is estimated in the presence of a control variable for the risk exposure of the appointing firm and zero otherwise.
$Trigger$	Dummy variable equals one when the effect size is estimated in the presence of a control variable for succession contingencies (e.g. retirement or death of the predecessor) and zero otherwise.
$Firm\_fix$	Dummy variable equals one when the effect size is estimated by a fixed effect model and zero otherwise.
Pre_perf	Dummy variable equals one when the effect size is estimated in a regression model which controls for pre-succession performance changes and zero otherwise.
Pre_perf_method	Dummy variable equals one when the effect size is estimated by a method which models for the autocorrelation between prior and current performance and zero otherwise.
$Selection$	Dummy variable equals one when the effect size is estimated by a method which addresses the selection of outsider into firms and zero otherwise.
CAT_Select	Dummy variable which combines the methodological characteristics of the original studies which approaches the concern of outside selection into appointing firms, others are classified as zero.
CAT_Endo	Dummy variable which combines the methodological characteristics of the original studies which approaches the concern of endogeneity among outside successions and firm performance, others are classified as zero.
CAT_OV	Dummy variable which combines the methodological characteristics of the original studies which approaches a potential omitted variable bias, others are classified as zero.
$Select\_Endo$	Dummy variable which combines the methodological characteristics of CAT_Select and CAT_Endo, others are classified as zero.
$Endo\_OV$	Dummy variable which combines the methodological characteristics of CAT_Endo and CAT_OV, others are classified as zero.
$Select\_OV$	Dummy variable which combines the methodological characteristics of CAT_Select and CAT_OV, others are classified as zero.
$Finance$	Dummy variable indicates the academic discipline of the study. It equals one when the study was published in a journal with a finance or economics focus and zero when the focus is on management or human resources. In case of working papers, the academic discipline is defined with regard to the author(s) and their research department(s).
$Impact\_factor$	The five-year journal impact factor 2015 from the Thomson Reuters database minus the mean of the five-year impact factor in each academic discipline.
$Outsider\_key$	Dummy variable equals one when the outsider-performance relation is the main focus of the study and zero otherwise.
US_sample	Dummy variable equals one when the sample contain only US data and zero otherwise.
$Restriction$	Dummy variable equals one when the original study imposes restrictions on the sample and zero otherwise. For example, the original studies investigate successions in banks only.

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Chapter 3

Do all new brooms sweep clean? Evidence for outside bank appointments.

Abstract

Banks in bad financial shape are more likely to appoint executive directors from the outside than those in good shape. It is, however, not clear whether all of these appointments necessarily lead to the desired turnaround. We analyze the performance effects of new board members with external boardroom experience (outsiders) by distinguishing between good and bad managerial abilities of executives based on either ROA or risk-return efficiency of their previous employers. Our results show that banks appointing bad outsiders underperform other banks while those appointing good outsiders do so to a lesser extent. The performance differentials are highly pronounced in high-risk banks and in the post-crisis period.

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3.1 Introduction

Appointing a new executive director from the outside involves greater uncertainty as concerns the abilities of the executive than appointing someone from the inside. At the time of their appointment, executive directors from outside are less well informed about the company and its employees than those appointed from inside. Thus, promoting a suitable candidate from any internal position to a senior management position may be preferable to bringing in an outsider. Therefore, banks may only risk hiring executive directors whose abilities are not well known if it is absolutely necessary to do so. They may appoint an executive from the outside either because no suitable internal candidate with the skills needed is available (Dalton and Kesner, 1985) or because the bank is in dire financial straits. In line with the latter reason, a large number of studies show that executive turnovers are often preceded by poor performance (e.g. Barro and Barro, 1990; Houston and James, 1995; Webb, 2008; Palvia, 2011) and high risk (Schaeck et al., 2012). In times of financial difficulties, the incoming executive from the outside is expected to catch up, revise the strategy and restructure the organization. For example, the appointment of John Cryan as the new CEO of Deutsche Bank in 2015 was described as follows: "Cryan is cleaning up" (*Frankfurter Allgemeine Zeitung*, October 8, 2015).

A key question in this context is which executive director will be of most help in turning around bad financial performance and whether it is possible to identify executives who outperform others. We study this question by investigating appointments to the executive boards of German universal banks from 1993 to 2014. The answer to this question is relevant for academics and practitioners alike. In the case of banks, whose governance mechanisms potentially differ from those of non-financial firms (Adams and Mehran, 2003), it is even more relevant because regulatory authorities often order financially distressed banks to replace (in whole or in part) the management team in the hope that incoming executive directors will clean up the bank. The German banking system is an excellent playground to address this question because German companies, especially the *German Mittelstand* (i.e. small and mid-sized companies), (still) rely heavily on bank lending (e.g. Koetter and Wedow, 2010). Therefore, one may argue that finding good successors is of even greater importance in this country than in those where a firm's finance is less tied to banks.

We focus on managerial ability, as executives with high ability are expected to do a better job than those with low ability. Unfortunately, managerial ability is not directly observable. We use two proxies of managerial ability to differentiate among outside appointments. Both measures follow the literature that suggests information of the previous banks as possible indicators of managerial talent (e.g. Kaplan and Reishus, 1990; Fee and Hadlock, 2003; Demerjian et al., 2012). Fee and Hadlock

(2003) postulate that labor markets use firm performance as an indicator of managerial ability and that executives from superior-performing firms have developed valuable management skills – in the sense that these managers have learned "how to win" (Fee and Hadlock, 2003, p. 1324). Following this line of reasoning, we build our first measure with the performance of executive directors' previous banks observed directly before they are appointed to another bank. The second measure is based on risk-return efficiency, which we will describe below. In line with the argument that external successors are often appointed in bad financial times, we find negative performance effects for banks after appointing executive directors from the outside. We extend the literature on post-turnover performance effects (Schaeck et al., 2012) by showing that executives with low managerial abilities, which we call *bad outsiders*, underperform with their new banks in the post-appointment period whereas executives with high managerial abilities, called *good outsiders*, only did so at the very beginning of the post-appointment period. These different performance paths indicate that not all executive directors appointed from outside are equally capable of improving bank performance. To the best of our knowledge, our study is one of the first to investigate the link between post-appointment financial performance and managerial abilities of executive directors appointed to German banks. Documenting this heterogeneity in post-appointment performance is our first contribution to the literature.

Our second contribution is methodological in nature and relates to how our second measure of managerial ability is constructed.[1] We extract managerial ability from risk-return efficiency of executive directors' previous banks. Many recent studies have distilled managerial ability from cost efficiency (e.g. Demerjian et al., 2012; Francis et al., 2016) and profit efficiency (Andreou et al., 2016) by separating full efficiency into a part caused by firm or bank characteristics and another part which is attributed to managerial ability. We use their approach of separating full efficiency, but we do not rely on cost or profit efficiency. Rather, we follow another strand of the banking literature arguing that risk, which is immanent in the banking industry, is not sufficiently controlled for in cost and profit efficiency measures (Koetter, 2008; Hughes et al., 1996). Therefore, we estimate bank risk-return efficiency and determine the proportion of efficiency that can be attributed to the management by using a Tobit regression. In doing so, we enhance the existing literature of managerial ability with a combination of two approaches that have thus far been unconnected.

A built-in problem of studies dealing with the link between performance and managerial heterogeneity, for instance in terms of managerial ability, is that executives are not randomly assigned to institutions (Chang et al., 2010). Good outsiders may outperform bad outsiders not because the former are necessarily the better

[1] We thank an anonymous referee for this valuable suggestion.

managers, but because they, due to their previous track record, have the opportunity to select the better banks. In other words, the performance differential between banks appointing good and bad outsiders might be driven by the managerial ability of the good outsiders or, alternatively, by their self-selection into better banks. Not all executive directors will accept job offers at high-risk banks because these positions may come with a higher likelihood of failure (Bushman et al., 2010; Schaeck et al., 2012) and executive directors care about their market value and reputation in the job market for bank managers. One potential source of selection is that good outsiders (who may receive many job offers because of their managerial ability) select low-risk banks while for bad outsiders (who may receive few job offers) high-risk banks may be the only viable employment option. To disentangle the two lines of reasoning, we exploit cross-sectional variation in the data. We build our regression model[2] in such a way that we are able to compare the post-appointment performance effects of good and bad outsiders in banks with similar risk profiles in the pre-appointment period. We find that good outsiders outperform bad outsiders especially, but not exclusively, at high-risk banks.

Studies dealing with bank corporate governance (see, the literature review by Haan and Vlahu (2016)) can be distinguished into three strands: (i) boards, (ii) ownership, and (iii) compensation (e.g. Diamond and Rajan, 2009; Fahlenbrach and Stulz, 2011). Our study contributes to the first two strands. While recent literature deals with ownership structures (e.g. Berger et al., 2005) and shareholder activism (e.g. Roman, 2015), we can only measure performance differentials of outside appointments separately for savings and private banks (cooperative as well as private commercial banks). This is because few German private commercial banks are publicly listed with dispersed ownership. Consequently, our main contribution to the bank corporate governance literature is related to the boards. While most studies deal with firms and banks in one-tier board systems, our study comes from a country with a two-tier system. Therefore, we use the term "outsider" in a different way. For instance, studies on US banks divide the board of directors into inside and outside directors. In these studies, directors who are employed full-time at the bank are classified as insiders, whereas directors who are independent of the bank are called outside directors (e.g. Adams et al., 2010). By contrast, the German corporate governance system often requires a dual board structure with an executive board (first tier) and a supervisory board (second tier) (Hackethal et al., 2003). Almost all German universal banks have an executive and a supervisory board, with only very few exceptions, for instance, among small private commercial banks. The members of the executive board who manage the bank are monitored and advised by the supervisory board, which appoints or dismisses members of the executive board and approves executive directors' salaries. The executive board has to report to the

[2]We estimate performance effects with dynamic panel estimations on several risk-adjusted performance measures, in which we reduce performance persistence by sampling every other year.

supervisory board on a regular basis. The supervisory board's responsibilities are similar to those of US boards (Kaplan, 1994; Fauver and Fuerst, 2006). In this study, we deal with the first tier of the system and investigate the performance implications of appointing executive directors from the outside.

In this two-tier bank board system, several measures developed in the context of one-tier systems to describe CEO entrenchment and the strength of the board of directors (independence, non-staggered boards, anti-takeover protections) are either not defined or are unknown. More specifically, CEO duality often used in US studies to measure CEO entrenchment (e.g. Pathan and Skully, 2010; Pathan, 2009) cannot be applied since CEOs serving on the executive board are not allowed to serve on the supervisory board at the same time. Also, many dimensions of strength of the board of directors (e.g. Pathan, 2009; Pathan and Faff, 2013; Beltratti and Stulz, 2012; Berger et al., 2016; Roman, 2015) are not applicable. The supervisory board consists of shareholders' representatives and elected employees according to the German codetermination law. Representatives of shareholders are from the outside (one possible exception could be former CEOs appointed to the supervisory board after having finished serving on the executive board) and therefore all of them have to be classified as independent. Thus, an independence measure of the supervisory board will show little variation across banks. While we cannot replicate board measures used in studies on US banks, we test whether our results are robust to several measures that capture different facets of the executive board, such as executive directors' tenure, age and academic degrees. These robustness tests do not alter our conclusion: banks hiring good outsiders outperform those hiring bad outsiders.

Studying bank corporate governance is of particular relevance because recent studies identify it as a contributing factor to the financial crisis (e.g. Diamond and Rajan, 2009; Berger et al., 2016). Berger et al. (2016), for example, find that in the case of US banks non-CEO managers with high ownership stakes take higher risks, which consequently increases the probability of bank default. However, not all studies come to the same conclusion. For example, Beltratti and Stulz (2012) investigate performance implications of shareholder-friendly boards. During the crisis, banks with shareholder-friendly boards significantly underperformed other banks. We follow this literature by measuring outside post-appointment effects separately for the pre- and post-crisis period. We find that the performance differentials between good and bad outsiders strengthen in the post-crisis period.

The remainder of this paper is organized as follows. Section 3.2 develops our hypotheses and introduces our study design. Section 3.3 describes the data, provides descriptive statistics, and introduces our econometric model. Section 3.4 discusses the results of bank performance in the post-appointment period, and delivers complementary results. Section 3.5 provides a conclusion to the study.

3.2 Hypothesis development and study design

Our study deals with members of the executive board who are appointed from outside the bank. Such outside appointees already possess board experience and have developed a set of skills in managing a bank, for example, with respect to implementing strategies, hedging financial risks and supervising a large number of employees. Thus, hiring an executive director from outside may inject additional expertise into the boardroom (Boeker, 1997) and potentially enhances the current management quality (Huson et al., 2004). This increase in management quality is expected to lead to an increase in performance. In line with this, several studies document that operating performance of non-financial firms improves following senior executive turnover events (Denis and Denis, 1995; Huson et al., 2004). However, Schaeck et al. (2012), who are among the first to examine post-turnover effects in the banking industry, find negative post-turnover performance effects. They argue that turnovers incurred costs (by the turnover itself or by the ongoing restructuring process) that may contribute to greater losses and reduced profitability in the post-turnover period.

An interesting and relevant question is whether all outside appointments entail similar post-appointment performance effects since the literature documents that the group of corporate executives is not homogeneous. Executives have different managerial styles, and heterogeneity among them matters for corporate decisions (Bertrand and Schoar, 2003). Masulis and Mobbs (2011) document considerable differences among non-CEO inside directors in the US. They find that firms' post-appointing operating performance is higher when inside directors hold outside directorships (which is interpreted as a proxy for experience and management quality). Examining individual characteristics, Kaplan et al. (2012) find that subsequent firm performance after the appointment of CEOs is strongly related to what they call the general talent of those CEOs. We hypothesize that the group of executive bank directors appointed from the outside is not homogeneous, and possesses varying levels of managerial ability. We expect outsiders with good managerial ability to outperform outsiders with bad managerial ability in the post-appointment period.

Unfortunately, managerial ability cannot be directly observed. However, several studies find evidence supporting the argument that past performance is an indicator of managerial ability. Chang et al. (2010) argue that if past performance reflects CEO ability, then the stock market reaction to CEO departure should depend on past performance, which is the result they find. Higher past performance leads to more outside directorships, as shown by Kaplan and Reishus (1990) for senior executives, Ferris et al. (2003) for corporate directors and executives, and Harford and Schonlau (2013) for CEOs and directors. Fee and Hadlock (2003) find that CEOs appointed from outside the company come from firms with above-average stock

performance. The merger-related literature also delivers insights into the relationship between past performance and management outcomes. Wulf and Singh (2011) and Bargeron et al. (2009) find that target CEOs who perform better have a higher retention probability. We follow the idea of measuring managerial ability by past performance and use the past performance of the executives' previous banks to distinguish between two types of outside appointments.

In addition to past performance, we follow the novel approach of Demerjian et al. (2012) and rest our second measure on managerial efficiency. Demerjian et al. (2012) find that the strong negative relationship between equity financing and returns is substantially lower for managers with higher managerial cost efficiency. They argue that the managers' ability enables them to select the most promising projects with positive net present values. This implies that managers with high managerial efficiency use issue proceeds more effectively. Francis et al. (2016) use the values of managerial ability provided by Demerjian et al. (2012) to build an index of relative peer quality. They find that firms with higher relative peer quality tend to earn higher risk-adjusted stock returns and to have higher profitability growth than firms with lower values. Using managerial profit efficiency, Andreou et al. (2016) find that banks managed by executives with higher abilities create more liquidity and take on more risk. Our hypothesis is consequently that executive directors with higher values of managerial efficiency help the bank more in turning around poor performance than those with lower values of managerial efficiency.

An outside appointment is very likely not an exogenous event (Murphy and Zimmermann, 1993; Masulis and Mobbs, 2011; Fee et al., 2013). Adams and Ferreira (2007) argue that directors who are appointed from the outside face an informational disadvantage compared to those appointed from the inside. This reasoning also holds for appointing directors to executive boards. Insiders are already incorporated in the business; they know the strategy in place as well as managers at lower management levels. However, existing management may be responsible for poor performance. Parrino (1997) and Huson et al. (2001) provide evidence that executives are much more likely to be appointed from the outside when the corporation faces financially bad times. Bornemann et al. (2015) argue that external successors are more often appointed when the bank needs a clear revision of its strategy. Thus, poor-performing and high-risk banks tend to appoint outsiders more often than other banks in order to bring in new talent, increase expertise in the boardroom and clean up the bank. Thus, appointments of executive directors from the outside and bank performance are simultaneously determined.

In such a setting, ordinary least square and fixed-effects regressions may deliver biased estimates (Wintoki et al., 2012). To deal with this endogeneity issue, our study design contains three elements. First, we consider lagged performance measures in

our estimations to control for as many unobservable effects as possible and reduce performance persistence by considering every other year only. Consequently, we use an estimation method well suited to such a dynamic panel data model: we estimate the performance effects of outside appointments using dynamic panel generalized method of moments (GMM) estimations. This estimation method is well established in the context of board structure and performance and has also been employed in a number of recent studies (e.g. Wintoki et al., 2012; Pathan and Faff, 2013; Pathan, 2009; García-Meca et al., 2015; Bornemann et al., 2015).

Second, we use a large number of bank-specific and macroeconomic variables to control for differences in banks' financial situations, business models, ownership structures, and so forth to ensure that the post-appointment effect we measure is not driven by other characteristics of the banks. More specifically, we include several measures of capitalization, measures to capture credit and other risk exposures, as well as off-balance sheet items. GDP growth and the government spread curve are used to control for the macroeconomic environment. All these variables will be introduced in more detail later in the data section. By using such a large number of control variables, we seek to minimize the problem of omitted variables and control for the observation that outsiders are more often appointed to high-risk banks than insiders.

In addition to the aforementioned two elements, we attempt to deal with a potential selection issue of good outsiders. Candidates from high-performing banks and a proven track record may be unwilling to take job offers from risky banks (Dalton and Kesner, 1985), while bad outsiders may receive job offers only from high-risk banks. Good outsiders may forgo appointments to boards of high-risk banks because they may fear damage to their reputation and reduced chances in the job market for executive directors. Executive directors who are fired may incur reputational damage both irrespective of their management qualities and of whether they were responsible for the poor performance. Jenter and Kanaan (2015) document that corporate boards do not filter out exogenous shocks to firm performance before deciding on CEO dismissal. In order to ascertain whether post-appointment performance effects are driven by selection rather than executives' managerial abilities, we create interaction terms in order to identify the performance effects of good outsiders at high-risk banks, which we then compare with the performance effects of bad outsiders at similarly high-risk banks. Thus, our strategy basically builds on the insight that selection should involve a clear cross-sectional order of appointments. For these tests, we interact our key outsider variables with banks' risks in the pre-appointment year and use several risk metrics to build interaction terms in order to provide robust findings.

3.3 Data

3.3.1 Sample

The data used in this study is taken from the Deutsche Bundesbank's prudential database, BAKIS, which contains information on the financial statements and supervisory reports of German banks. We use this database to obtain balance-sheet information for all banks belonging to the German universal banking system between 1993 and 2014. This system comprises three different types of universal banks: private commercial banks, cooperative banks and savings banks. These banking groups differ in terms of ownership structure, business models and also regional focus. Savings banks operate not only commercially but, in contrast to commercial and cooperative banks, they also have a public mandate (Brunner et al., 2004). Cooperative banks are established as mutual organizations and serve the interest of their owners. Commercial banks include large banks that are internationally active and listed on stock exchanges, and smaller commercial banks, which are partnerships, private limited companies or sole proprietors (Brunner et al., 2004). We consider all three types of universal banks. BAKIS also contains information on executive board members which allows us to trace their movements from one bank board to another.

Table 3.1 shows how we build up our sample. Overall we count 3,956 banks, which deliver as many as 53,285 bank-years. We exclude observations for which neither balance-sheet information nor information on the executive board is available for the current or previous year. In our sample period, a large number of merger and acquisition (M&A) transactions took place. The target bank is then integrated and no longer files reports under its former institutional ID. Such an M&A transaction not only increases the acquirer's size, but also influences risk and capitalization as well as returns. We control for these M&A transactions by artificially creating a "new bank". The new bank is independent of its pre-M&A entities and begins its existence in the M&A year. When applying a dynamic model, this M&A treatment removes appointments to the executive board in the year in which the bank acquires another bank, which ensures that we do not commingle appointments driven by mergers with those that result for any other reason. Our sample contains 2,793 banks before and 4,205 banks after the M&A treatment with 38,892 bank-year observations.

TABLE 3.1: Sample of banks.

	bank-years	No. of banks before merger	No. of banks after treatment
all universal banks	53,285	3,956	
no consecutive board information	3,172	460	
missing balance sheet and board information	11,221	703	
annual data	**38,892**	**2,793**	**4,205**
2-year sampled data	**15,491**	**2,582**	**3,108**

Note: The table shows the number of German universal banks and bank-years for the period 1993 to 2014. We present all reasons as to why particular banks and bank-years do not enter the sample. The M&A treatment artificially creates a "new bank" independent of the pre-M&A entities, which begins operations in the merger year. This M&A treatment increases the number of cross-sections in our sample.

3.3.2 Appointments from the outside and performance

We use board information for two consecutive years to identify new appointees to the executive board. When at least one new executive director shows up on the board, we classify this as an appointment regardless of whether the total number of board members increases, remains constant or decreases. Table 3.2 provides the number of banks with appointments to executive boards between 1994 and 2014. The number gradually decreases over time, which is due to the reduced number of banks in Germany, a trend that is related to the consolidation wave in the banking industry. Overall, we count 7,203 appointments of executive directors including those from inside the bank as well as those from outside with an employment history at another bank. We call executive directors who have boardroom experience at another bank and no previous employment history in the boardroom of the appointing bank *outsiders*.[3] At the bank level, an outside appointment occurs when at least one executive director from outside the bank is appointed to the executive board. In contrast, inside appointments are those in which the appointee has no boardroom experience at a German bank.

[3]Denis and Denis (1995) and Berger et al. (2013) also use previous employments to distinguish between appointments from the outside and inside.

TABLE 3.2: Number of appointments to the executive board.

			Historical ROA		Managerial RRE	
Year	Appointments	Outsider	$GOOD$	BAD	$GOOD$	BAD
1994	411	46	22	24	20	26
1995	377	56	29	27	27	29
1996	422	85	42	43	43	42
1997	427	81	37	44	36	45
1998	416	79	37	42	39	40
1999	364	84	39	45	41	43
2000	473	131	58	73	56	75
2001	374	109	50	59	51	58
2002	362	117	52	65	53	64
2003	339	93	45	48	45	48
2004	336	108	51	57	49	59
2005	289	94	43	51	44	50
2006	289	83	38	45	37	46
2007	320	76	37	39	33	43
2008	300	90	46	44	43	47
2009	332	90	40	50	44	46
2010	291	74	35	39	36	38
2011	303	72	36	36	35	37
2012	278	60	27	33	27	33
2013	261	69	33	36	30	39
2014	239	59	28	31	26	33
Total	***7,203***	***1,756***	***825***	***931***	***815***	***941***
of which...						
savings banks	*2,741*	*673*	*319*	*354*	*314*	*359*
cooperative banks	*3,583*	*932*	*432*	*500*	*434*	*498*
commercial banks	*879*	*151*	*74*	*77*	*67*	*84*

Note: The table reports the number of appointments to German banks' executive boards. *Outsider* denotes appointments in which at least one executive director with boardroom experience at another bank is appointed to the executive board. *Historical ROA* and *managerial RRE* denote the ability measures used to split the group of outside appointments into $GOOD$ and BAD. $GOOD$ (BAD) refers to appointments in which at least one outsider with above-median (below-median) value in the ability measure is hired.

Further, we classify outside appointments as good or bad by using either *historical ROA* or *managerial RRE*. Historical ROA is based on balance-sheet information for the executives' previous banks. We employ risk-, size- and time-adjusted performance measures of the previous bank and proceed as follows: first, we consider risk by using ROA relative to its standard deviation. To control for size effects, we calculate a mean $\frac{ROA}{\sigma}$ for ten deciles (peer group) formed on banks' total assets in each year. Calculating this for each year removes time effects. Afterwards, we subtract the mean of the peer group from a bank's $\frac{ROA}{\sigma}$ to determine how the bank performed relative to its peer group in the same fiscal year. We use up to four fiscal years before the outsider left the previous bank to calculate the average of her/his previous bank's adjusted performance. Then, we classify appointments of outsiders as good (bad) if the average historical ROA of their previous bank lies in the upper (lower) half of the previous-bank historical ROA distribution.

Our second measure of managerial ability[4] combines two strands of the literature, namely the literature on bank efficiency and managerial ability. Bank efficiency considers input prices, the output mix and provides an overall, objectively determined ranking value (Berger and Humphrey, 1997). It is often estimated with stochastic frontier analysis because an important drawback of nonparametric frontier approaches like data envelopment analysis, used to investigate firm efficiency (Demerjian et al., 2012), rest on the assumption of no random errors (Berger and Humphrey, 1997). Thus, the stochastic frontier analysis is better equipped to accommodate noise in the measurement of input, output, and price variables (Andreou et al., 2016). Instead of estimating cost efficiency (e.g. Demerjian et al., 2012; Francis et al., 2016) or profit efficiency (e.g. Andreou et al., 2016), we estimate risk-return efficiency, hereafter RRE, because Koetter (2008) and Hughes et al. (1996) argue that efficiency estimates control insufficiently for bank risk and may be misleading especially when risk preferences differ. We follow banking efficiency studies (i.e., Hughes et al., 1996, 2001; Koetter, 2008; Andreou et al., 2016), and choose the stochastic frontier analysis (SFA) to estimate the RRE frontier. Then, we use the intuition by Demerjian et al. (2012) to parse out managerial ability from full efficiency. For this, we regress the full bank RRE on various bank-specific characteristics, such as size and risk, to control for bank-specific efficiency determinants. The remaining residual from this regression is our second measure of managerial ability. We use the managerial efficiency information from up to four fiscal years before the outsider left the previous bank to calculate the average managerial RRE and classify outsiders as good (bad) if the average managerial RRE lies in the upper (lower) half of the distribution.

Table 3.2 shows that we identify as many as 1,756 bank-years with outside appointments, which include 825 (815) good and 931 (941) bad outside appointments based on historical ROA (managerial RRE). We classify cases as bad outside appointments if both types of executive directors from the outside are appointed to the same bank board in the same year.[5] Our findings, however, do not depend on this classification. Since almost 90% of all outside appointments are appointments of one executive director only, we do not discriminate between cases with one and more executive directors appointed from outside in the same year. Our number of appointments is lower than that reported by Berger et al. (2013) since we exclude executive directors appointed in merger years. Moreover, our number of outside appointments is lower than their number because our definition of outside appointments rests on identifying the previous bank of the executive director in the year directly before s/he is appointed. Thus, an executive director who has not served on an executive board in the previous 10 years but served on an executive board 11

[4]We describe the estimation procedure of managerial RRE in more detail in the Appendix.
[5]When using historical ROA (managerial RRE), bad outside appointments include 14 (35) cases where the information of the executive's previous bank was not available.

years ago is classified as an insider in our study.

We consider two alternative proxies of bank performance: risk-adjusted return on equity (RROE) and risk-adjusted return on assets (RROA). We divide each performance measure by its standard deviation to obtain risk-adjusted performance measures. In Table 3.3, we first present univariate tests on performance effects of good and bad outsiders, which we compare with the performance effects around insider appointments. More specifically, we present performance measures averaged over various windows, from one year up to five years, both before and after the event occurred. The table delivers two insights. First, before the event occurs, banks appointing an executive director from the outside have significantly lower performance than those that appoint an insider to the executive board. This holds regardless of whether we study performance in the one- or five-year window before the appointment. This is in line with the findings in the literature that outsiders are more often appointed to clean up banks. Second, differences in risk-adjusted performance between insiders and bad outsiders after the event become less significant for higher windows, indicating that banks appointing bad outsiders are catching up, relatively speaking. For good outsiders and applying the historical ROA as an ability measure, we even see a change in the order: before the appointment event, insider banks performed better, on average, than banks appointing good outsiders, but after the event, the opposite holds when we measure performance over more than two years. When using managerial RRE as an ability measure, we also find that good outsiders catch up compared to insiders, however, the effect is less pronounced.

TABLE 3.3: Performance before and after appointments.

					$Insider$ versus	
		$Insider$ *(mean)*	BAD *(mean)*	$GOOD$ *(mean)*	BAD $(t-value)$	$GOOD$
Historical ROA	*Windows before*			*RROE*		
	1	1.98	1.45	1.74	8.82	3.89
	3	2.02	1.56	1.80	7.69	3.56
	5	2.05	1.73	1.89	5.03	2.37
	Windows after					
	1	1.94	1.50	1.75	6.94	2.88
	3	1.83	1.60	1.89	3.72	-0.82
	5	1.79	1.67	1.96	1.73	-2.40
	Windows before			*RROA*		
	1	2.11	1.57	1.85	8.41	3.97
	3	2.14	1.66	1.87	7.40	3.80
	5	2.15	1.79	1.96	5.11	2.50
	Windows after					
	1	2.12	1.63	1.92	7.13	2.68
	3	2.02	1.74	2.07	4.12	-0.56
	5	1.98	1.81	2.17	2.35	-2.51
Managerial RRE	*Windows before*			*RROE*		
	1	1.98	1.46	1.70	8.67	4.52
	3	2.01	1.54	1.75	7.86	4.03
	5	2.02	1.62	1.87	6.04	2.06
	Windows after					
	1	1.94	1.44	1.63	7.64	4.65
	3	1.79	1.51	1.71	4.41	1.12
	5	1.71	1.54	1.75	2.55	-0.48
	Windows before			*RROA*		
	1	2.12	1.56	1.82	8.63	4.28
	3	2.12	1.63	1.85	7.67	3.85
	5	2.10	1.67	1.95	6.18	2.06
	Windows after					
	1	2.12	1.57	1.80	7.96	4.44
	3	2.00	1.66	1.92	4.95	1.15
	5	1.95	1.73	2.00	2.96	-0.61

Note: The table displays mean values of $RROE$ and $RROA$ of banks that appoint insiders, and good and bad outsiders. *Historical ROA* and *managerial RRE* denote the ability measures used to split the group of outsiders. $GOOD$ (BAD) refers to appointments in which at least one outsider with above-median (below-median) value in managerial ability is hired. $Windows$ refers to the number of years considered when calculating the mean either before or after the appointment. $t-value$ comes from two-tailed t-tests.

3.3.3 Econometric model and control variables

We use the following baseline econometric model, from which we derive all subsequent specifications, to determine the effects of executive directors appointed from

outside on bank performance:

$$
\begin{aligned}
y_{i,t} = \alpha + \sum_{j=0}^{4} \beta_{1+j} \cdot Outsider_{i,t-j} \; + \sum_{k=1}^{2} \beta_{5+k} \cdot Board\,Controls_{i,t} + \\
\sum_{l=1}^{10} \beta_{7+l} \cdot Bank\,Controls_{i,t-1} \; + \sum_{m=1}^{2} \beta_{17+m} \cdot Merger_{i,t} + \\
\sum_{n=1}^{2} \beta_{19+n} \cdot Macro_t + \sum_{o=1}^{10} \beta_{21+o} \cdot Year_t \; + \beta_{32} \cdot y_{i,t-1} + \mu_i + \epsilon_{i,t}.
\end{aligned}
\tag{3.1}
$$

where $y_{i,t}$ denotes the performance measure of bank i in year t. To account for the high persistence in German bank profitability, we follow Wintoki et al. (2012) and only use observations for every second year (1994, 1996, 1998, 2000, 2002, 2004, 2006, 2008, 2010, 2012 and 2014).[6] Table 3.1 shows that the 2-year sampling leads to 2,582 banks and 15,491 bank-year observations.

Table 3.4 delivers descriptive statistics of the performance measures, outsider variables and control variables, and a detailed definition of all variables used is given in Table 3.5. We remove extreme values by winsorizing the performance measures and control variables at the 1st and 99th percentiles. We see that the sample mean (median) RROE is 2.04% (1.91%) and that of RROA equals 2.21% (2.09%), which are comparable to the values presented in Busch and Kick (2015) for the German banking industry.

[6] We also replicate our analysis on data for every year between 1993 and 2014. The results of our analysis remain unchanged, but the outcomes of diagnostic tests become less significant, which may point to autocorrelation. These results are available upon request.

TABLE 3.4: Descriptive statistics for dynamic panel regression.

	mean	sd	p1	p50	p99
$RROE_{i,t}$	2.04	1.56	-1.43	1.91	6.35
$RROA_{i,t}$	2.21	1.74	-1.48	2.09	6.99
$Outsider_{i,t}$	0.03	0.18	0	0	1
$BAD_{i,t}$	0.02	0.13	0	0	1
$GOOD_{i,t}$	0.02	0.12	0	0	1
$\Delta\, Board\, Size_{i,t}$	0.02	0.74	-2.00	0	2.00
$Board\, Diversity_{i,t}$	2.18	0.52	1.39	2.08	2.77
$CAR_{i,t-1}$	10.59	12.31	5.14	8.88	31.64
$DISS_{w3}$	0.07	0.25	0	0	1
$Share\, Fee_{i,t-1}$	11.77	6.93	1.94	10.85	38.06
$OBS_{i,t-1}$	2.77	2.98	0.06	2.08	12.82
$CL_{i,t-1}$	57.86	13.77	16.67	59.82	85.68
$NPL_{i,t-1}$	3.35	2.92	0.07	2.70	13.96
$HHI_{i,t-1}$	3.33	0.32	2.89	3.25	4.52
$TA_{i,t-1}$	19.56	1.47	16.83	19.47	23.34
$D\_SAVINGS_i$	0.24	0.43	0	0	1
D_COOP_i	0.70	0.46	0	1	1
D_PRIV_i	0.06	0.23	0	0	1
D_BIG_i	0.01	0.08	0	0	0
$Acquirer_{i,w3}$	0.06	0.24	0	0	1
$Target_{i,w3}$	0.06	0.23	0	0	1
$GDP\, Growth_t$	1.87	1.28	0.1	1.50	4.19
$Spread_t$	1.54	0.80	0.53	1.53	3.21

Note: The table displays descriptive statistics for performance measures, outsider variables and explanatory variables. *mean (sd)* denotes the mean (standard deviation) of each variable. The value *px* indicates the *xth* percentile of the distribution of the respective variable. All variables are defined in Table 3.5.

TABLE 3.5: Definition of used variables.

$ROE_{i,t}$	Return on equity of bank i in year t.
$ROA_{i,t}$	Return on total assets of bank i in year t.
$RROE_{i,t}$	Risk-adjusted return on equity of bank i in year t (i.e. ROE is divided by its standard deviation.)
$RROA_{i,t}$	Risk-adjusted return on total assets of bank i in year t (i.e. ROA is divided by its standard deviation.)
$Outsider_{i,t}$ / $Outsider_{i,t-j}$	Dummy variable equals 1 if a new executive director who has experience as a board member at another bank (outsider) is appointed to the executive board in year t / in year $t-j$ or in the year before $t-j$.
$BAD(GOOD)_{i,t}$ / $BAD(GOOD)_{i,t+1}$ / $BAD(GOOD)_{i,t-j}$	Dummy variable equals 1 if a BAD (GOOD) outsider with a below-median (above-median) value of historical ROA or managerial RRE of the previous bank is appointed in year t / in year $t+1$ / in year $t-j$ or in the year before $t-j$.
$\Delta\, Board\, Size_{i,t}$	Change in board size from year $t-1$ to year t.
$Board\, Diversity_{i,t}$	Board diversity index (ln) of bank *i* in year t calculated as an index of age, gender, education, and job experience.
$CAR_{i,t-1}$	Tier 1 capital to risk-weighted assets of bank *i* in year $t-1$.
$Share\, Fee_{i,t-1}$	Fee income relative to total income of bank i in year $t-1$.
$OBS_{i,t-1}$	Off-balance sheet items to total assets of bank *i* in year $t-1$.
$CL_{i,t-1}$	Customer loans to total assets of bank i in year $t-1$.
$NPL_{i,t-1}$	Non-performing loans to total assets of bank i in year $t-1$.
$HHI_{i,t-1}$	Herfindahl-Hirschman Index (ln) for the loan portfolio based on 8 sectors. The index distinguishes between agriculture, forestry and fishing, mining, energy and water supply, manufacturing, building and construction, commerce, maintenance and repair of vehicles and durables, transportation and communication, financing and insurance, and services. A higher value indicates a higher concentrated loan portfolio of bank i in year $t-1$.
$TA_{i,t-1}$	Value of total assets (ln, deflated) of bank i in year $t-1$.
$D\_SAVINGS_i$	Dummy variable equals 1 if bank i is a savings bank.
D_COOP_i	Dummy variable equals 1 if bank i is a cooperative bank.
D_PRIV_i	Dummy variable equals 1 if bank i is a private commercial bank.
D_BIG_i	Dummy variable equals 1 if bank i is a very large commercial bank, or a head institution of a cooperative or savings bank.
$DISS_{w3}$	Dummy variable equals 1 if bank i receives a capital injection, is subject to severe regulatory intervention (i.e. moratorium), or has exited the market in a distress merger in a window of three years.
$Target_{i,w3}$	Dummy variable equals 1 if bank i is targeted in t or $t+1$.
$Acquirer_{i,w3}$	Dummy variable equals 1 in the first two years after bank i acquires another bank.
$GDP\, Growth_t$	Annual percentage change in per-capita real GDP at the federal state level in year t.
$Spread_t$	Interest rate spread between 10-year and 1-year government bonds in year t.

To examine the performance effects of outside appointments, we start with a dummy variable $Outsider_{i,t}$, which equals 1 for the bank that appoints an outsider in year t, and zero otherwise. Additionally, we derive lags of this dummy variable to examine the post-appointment effects. We use four dummy variables for the post-appointment period spanning an overall time period of up to eight years after the outside appointment. Accordingly, the dummy variable $Outsider_{i,t-j}$ equals 1 if the bank appoints an outsider in the past $t-j$ whereas each time step, *j = 1, 2, 3 or 4*, contains two years since we sample every second year. Each lagged outsider dummy variable equals 1 in two years instead of one year to capture post-appointment performance effects of outsiders in the sampled and omitted years.

$Board\,Controls_{i,t}$ contains two variables to control for elements of corporate governance. We follow recent literature of corporate governance (Berger et al., 2014, 2013; García-Meca et al., 2015; Delis et al., 2016) and measure the diversity of banks' executive board structure with $Board\,Diversity$ (ln), which was introduced by Anderson et al. (2011) and implemented for German banks by Berger et al. (2013). Our board diversity considers the banks' board dimensions in age, gender, education (measured by academic degrees), and job experience (computed by tenure). To yield this index, we first calculate coefficient of variation (which equals the ratio of the standard deviation divided by the mean) for each of the four dimensions. For each of the four dimensions, we assign a value of 1 (2, 3, 4) if the bank's value falls into the 1st (2nd, 3rd, 4th) quartile of the distribution. Finally, the index of board diversity results from summing up the four different dimensions. We take the natural log since the index is skewed. Our second board control measure is the change in board size from the previous to the current year with the variable $\Delta\,Board\,Size$.[7]

$Bank\,Controls_{i,t-1}$ comprises the first lag of all bank-specific continuous and discrete control variables. We justify the use of a large number of bank controls in light of endogeneity concerns. We use the capital adequacy ratio, CAR, to control for a bank's financial leverage measured in terms of regulatory equity. A higher CAR is likely to indicate a healthier bank. The sample mean (median) CAR is 10.59% (8.88%). We further include a dummy variable, $DISS_{w3}$, to control for banks which receive capital injections, or are subject to severe regulatory interventions (i.e. moratorium) or exit the market in a distressed merger. We include fee income to total income, $Share\,Fee$. The mean (median) $Share\,Fee$ in our sample equals 11.77% (10.85%) and higher than those for savings banks in Bornemann et al. (2015) since our sample considers private commercial banks, which are more active in fee business than savings and cooperative banks. We also include the ratio of off-balance sheet items to total assets, OBS, for two reasons. One is that banks might use off-balance sheet items to reduce their risks. Another is that off-balance sheet items themselves may include risky investment assets, which may decrease performance when they materialize, in many cases at the same time (Kick and Prieto, 2015). The mean (median) of OBS in our sample is equal to 2.77% (2.08%). We consider customer loans to total assets, CL, because loans represent a main source of income for German banks (Memmel and Schertler, 2012). The sample mean (median) CL is 57.86% (59.82%). We use the ratio of non-performing loans to total assets, NPL, to proxy the quality of credit exposure (Meeker and Gray, 1987). The sample mean (median) NPL equals 3.35% (2.70%). Following Berger et al. (2014), our second credit risk measure is a Herfindahl-Hirschman Index, HHI, for concentration in the loan portfolio, calculated with 8 sectors and log-transformed because it is skewed. A high

[7] We only include board size as an additional explanatory variable in robustness tests (see Section 3.4.4) because it is highly correlated with bank size.

HHI indicates a more concentrated loan portfolio and thus higher credit risk. The sample mean (median) HHI (ln) is 3.33% (3.25%).

Size effects are controlled for using bank size, measured by the natural logarithm of total assets (deflated), TA. This accounts for the fact that larger banks have more complex business structures and networks, invest more resources in high-quality risk management, work with a wider range of customers and can therefore better diversify their income structure than small banks. The sample mean (median) TA (ln) is 19.56 (19.47). Ownership structures are controlled for using pillar dummy variables. The majority of banks in our sample are cooperative banks (70%) followed by savings banks (24%), private commercial banks (6%) and the very large commercial banks and head institutes of cooperative and savings banks (1%). We include the dummies D_COOP, D_PRIV and D_BIG to account for the bank pillar of cooperative and private commercial banks and for the very large institutes and omit the dummy for savings banks to avoid perfect collinearity.

The process of incorporating target banks may induce structural changes not only in the year of the M&A transaction; it may, in fact, take much more than a year to integrate entities. Especially in savings and cooperative banks, M&A transactions are mostly conducted with a strong eye on social comparability for the employees. This might be more cost-intensive and extend the time needed for integration. In most cases, the transaction is prepared in the pre-merger year and affects the financial situation of the acquirer in the post-merger years. In addition to our aforementioned treatment of M&A transactions, we include $Merger_{i,t}$ which comprises two dummy variables. The dummy variable $Target_{i,w3}$ equals 1 if the bank is the target of an M&A transaction in the current or following year, zero otherwise. We set the dummy equal to 1 in two years instead of one year because most target banks no longer report data in the merger year. For the post-merger period of the acquirer bank, we use a dummy variable $Acquirer_{i,w3}$ that equals 1 in the first two years after completion of the M&A transaction. Setting this dummy variable equal to 1 only in the post-merger year would remove it from the dynamic panel estimations.

Finally, $Macro Controls_t$ comprises $GDP Growth$ and $Spread$ (interest rate spread between 10-year and 1-year government bonds) with which we control for the macroeconomic environment. $Year_t$ refers to year dummy variables to control for remaining time effects. μ_i is a fixed effect for bank *i*, and $\epsilon_{i,t}$ denotes the remaining disturbance term.

In order to ensure that our specifications do not suffer from multicollinearity, we present pair-wise correlation coefficients between performance measures and explanatory variables in Table 3.6. Since the correlation coefficients between the explanatory variables are not higher than 0.30 (the highest value between TA and

HHI and $DISS_{w3}$ and NPL is 0.30 and the next peak between CAR and $Share\,Fee$ is 0.28), multicollinearity is not a problem in our regression specifications.

TABLE 3.6: Correlations of regression variables.

		1	2	3	4	5	6	7	8	9	10	11
1	$RROE_{i,t}$	1										
2	$RROA_{i,t}$	0.94*	1									
3	$Outsider_{i,t}$	-0.09*	-0.09*	1								
4	$BAD_{i,t}$	-0.08*	-0.07*	0.73*	1							
5	$GOOD_{i,t}$	-0.05*	-0.05*	0.67*	-0.02*	1						
6	$\Delta\, Board\,Size_{i,t}$	-0.03*	-0.03*	0.26*	0.2*	0.16*	1					
7	$Board\,Diversity_{i,t}$	0.00	0.00	0.08*	0.06*	0.05*	0.11*	1				
8	$CAR_{i,t-1}$	-0.04*	-0.02	0.01	0.01	-0.01	-0.02	-0.01	1			
9	$DISS_{w3}$	-0.21*	-0.22*	0.09*	0.07*	0.06*	0	-0.02*	-0.03*	1		
10	$Share\,Fee_{i,t-1}$	-0.07*	-0.07*	0	0	0	-0.02*	-0.07*	0.28*	0.03*	1	
11	$OBS_{i,t-1}$	-0.04*	-0.07*	0.02*	0	0.03*	0.01	-0.01	0.02*	0.06*	0.07*	1
12	$CL_{i,t-1}$	0.02	0.02*	-0.02	-0.02*	-0.01	0.01	0	-0.26*	-0.02*	-0.19*	0.09*
13	$NPL_{i,t-1}$	-0.19*	-0.2*	0.03*	0.03*	0.01	-0.01	-0.03*	0.06*	0.3*	0.06*	0.21*
14	$HHI_{i,t-1}$	-0.11*	-0.12*	0.04*	0.04*	0.02*	0	0.04*	0.18*	0.01	0.1*	0.04*
15	$TA_{i,t-1}$	0.01	-0.01	0.11*	0.08*	0.07*	-0.02	0.12*	-0.05*	0.01	0.01	0.07*
16	$D\_SAVINGS_i$	0	0.02*	0.07*	0.05*	0.05*	0.01	0.2*	-0.05*	-0.08*	-0.16*	-0.05*
17	D_COOP_i	0.09*	0.08*	-0.08*	-0.06*	-0.05*	0	-0.18*	-0.08*	0.06*	0	-0.06*
18	D_PRIV_i	-0.15*	-0.17*	0.02*	0.01	0.01	0	-0.02*	0.25*	0.03*	0.32*	0.19*
19	D_BIG_i	-0.04*	-0.04*	0.05*	0.03*	0.04*	0.01	-0.01	-0.01	0	-0.08*	0.05*
20	$Acquirer_{i,w3}$	0	-0.03*	0.01	0.01	0	0.12*	0.02*	-0.03*	0.1*	-0.01	0.03*
21	$Target_{i,w3}$	-0.08*	-0.07*	0	-0.01	0.01	0	-0.02	-0.02	0.12*	-0.01	-0.01
22	$GDP\,Growth_t$	0.02	0.02*	-0.01	0	-0.01	0.01	0	0.01	-0.02*	0.02*	-0.03*
23	$Spread_t$	0.24*	0.21*	-0.01	-0.01	-0.01	0	0	0.01	-0.02*	-0.12*	0.06*

Continued from above

		12	13	14	15	16	17	18	19	20	21	22	23
12	$CL_{i,t-1}$	1											
13	$NPL_{i,t-1}$	0.13*	1										
14	$HHI_{i,t-1}$	-0.12*	-0.04*	1									
15	$TA_{i,t-1}$	-0.01	-0.1*	0.3*	1								
16	$D\_SAVINGS_i$	0.04*	-0.12*	0.1*	0.52*	1							
17	D_COOP_i	0.04*	0.07*	-0.29*	-0.59*	-0.85*	1						
18	D_PRIV_i	-0.1*	0.11*	0.37*	0.1*	-0.14*	-0.38*	1					
19	D_BIG_i	-0.14*	-0.06*	0.06*	0.32*	-0.05*	-0.12*	-0.02*	1				
20	$Acquirer_{i,w3}$	0.01	0	-0.02	0.04*	-0.03*	0.05*	-0.04*	0.01	1			
21	$Target_{i,w3}$	0.02*	0.06*	-0.03*	-0.12*	-0.03*	0.05*	-0.04*	-0.01	-0.06*	1		
22	$GDP\,Growth_t$	-0.03*	-0.06*	0.03*	0.03*	0	0	0	0	-0.01	-0.01	1	
23	$Spread_t$	-0.04*	-0.07*	-0.02*	-0.04*	0.01	-0.01	0	0	-0.05*	-0.1*	-0.21*	1

Note: The table displays correlation coefficients between performance measures, outsider variables and explanatory variables. All variables are defined in Table 3.5. * indicates the correlation coefficient is significant at the 1% level.

To further control for omitted variables and banks' past performance, we consider a lag of the dependent variable in our model. Therefore, we estimate Equation (3.1) by using a dynamic panel estimator, which is a GMM estimator, with a finite sample correction developed by Windmeijer (2005). An important aspect of this estimator is the use of historical values as instruments for current changes. For these instruments to be valid, they must fulfill two criteria: the historical information must provide a source of variation for current values, and the instruments must be uncorrelated with the error in the performance equation. This implies that there must be no additional information contained in the econometric model, which remains unexplained and correlates with the instruments.

We use two two-year sampled lags of the dependent variable as instruments. Since our regression sample includes every second year, we include the information from up to six years before the outsider is appointed in our instruments. As suggested by Wintoki et al. (2012), two lags can be sufficient to capture the dynamic dimension between performance and board measures. Accordingly, we expect information from the previous six years to be sufficient. We check the reliability of GMM estimation results by performing two tests: the Hansen test of instrument validity and the Arellano and Bond (1991) test of serially uncorrelated error terms. The diagnostic tests of our various specifications show insignificant test statistics for Hansen J-statistics of over-identifying restrictions, indicating that the instruments are valid. By way of construction, the specifications document a significant first-order autocorrelation (AR(1)); second-order autocorrelation (AR(2)) is absent, however.

3.4 Empirical results

3.4.1 Pre- and post-appointment bank performance

In Table 3.7, we present regression results from running Equation (3.1) for our dependent variables *RROE* (Columns (1)-(5)) and *RROA* (Column (6)). The negative and significant coefficient on $Outsider_{i,t}$ in Column (1) reveals that bank performance is significantly lower when executive directors with boardroom experience at other banks are appointed. Moreover, lower performance of appointing banks is persistent as we find significant effects in post-appointment years. The negative and significant coefficient on $Outsider_{i,t-1}$ reveals that banks with incoming outside executives perform significantly worse in the first and second years after appointing outsiders than banks without appointment events. Even after three and five years, as captured by the coefficients on $Outsider_{i,t-2}$ and $Outsider_{i,t-3}$, a bank with an outside appointment underperforms other banks. Only after seven years do we no longer observe a significant performance differential between bank-years with and without outside appointments. We regard these negative performance effects as being in line with the findings of Schaeck et al. (2012), who document that executive turnovers at US banks correlate with lower profitability and greater losses over a post-turnover period of three years.

TABLE 3.7: Pre- and post-appointment bank performance.

	(1)	(2)	(3)	(4)	(5)	(6)
$y_{i,t-1}$	0.257***	0.256***	0.255***	0.212***	0.267***	0.215***
	[0.018]	[0.018]	[0.018]	[0.028]	[0.023]	[0.022]
$Outsider_{i,t}$	-0.227***					
	[0.048]					
$Outsider_{i,t-1}$	-0.136***					
	[0.032]					
$Outsider_{i,t-2}$	-0.056*					
	[0.034]					
$Outsider_{i,t-3}$	-0.062*					
	[0.036]					
$Outsider_{i,t-4}$	-0.057					
	[0.042]					
$BAD_{i,t}$		-0.301***	-0.292***	-0.198**	-0.372***	-0.351***
		[0.054]	[0.072]	[0.081]	[0.073]	[0.058]
$BAD_{i,t-1}$		-0.209***	-0.179***	-0.180***	-0.222***	-0.241***
		[0.042]	[0.042]	[0.065]	[0.055]	[0.045]
$BAD_{i,t-2}$		-0.150***	-0.180***	-0.134**	-0.168***	-0.197***
		[0.045]	[0.045]	[0.067]	[0.062]	[0.048]
$BAD_{i,t-3}$		-0.126**	-0.102***	-0.172**	-0.083	-0.158***
		[0.051]	[0.050]	[0.073]	[0.071]	[0.055]
$BAD_{i,t-4}$		-0.051	-0.131**	0.011	-0.099	-0.074
		[0.055]	[0.056]	[0.084]	[0.074]	[0.058]
$GOOD_{i,t}$		-0.147*	-0.158***	-0.011	-0.277**	-0.129
		[0.083]	[0.060]	[0.082]	[0.131]	[0.101]
$GOOD_{i,t-1}$		-0.088*	-0.128***	0.070	-0.221***	-0.089*
		[0.047]	[0.043]	[0.062]	[0.070]	[0.051]
$GOOD_{i,t-2}$		0.019	-0.016	0.105	-0.024	0.006
		[0.047]	[0.047]	[0.074]	[0.062]	[0.050]
$GOOD_{i,t-3}$		0.007	-0.049	0.094	-0.035	0.005
		[0.047]	[0.052]	[0.065]	[0.069]	[0.053]
$GOOD_{i,t-4}$		-0.042	-0.050	0.052	-0.122	-0.025
		[0.055]	[0.065]	[0.072]	[0.082]	[0.060]
$BAD_{i,t+1}$		-0.135**	-0.168***	-0.135*	-0.142*	-0.128**
		[0.054]	[0.051]	[0.081]	[0.073]	[0.056]
$GOOD_{i,t+1}$		-0.075	-0.060	-0.061	-0.062	-0.096
		[0.058]	[0.061]	[0.082]	[0.080]	[0.059]
$\Delta\, Board\, Size_{i,t}$	-0.055***	-0.053***	-0.052***	-0.046**	-0.066***	-0.045***
	[0.015]	[0.015]	[0.015]	[0.019]	[0.021]	[0.016]
$Board\, Diversity_{i,t}$	0.007	0.007	0.007	-0.029	0.015	0.013
	[0.021]	[0.021]	[0.021]	[0.045]	[0.024]	[0.024]
$CAR_{i,t-1}$	0.005**	0.005**	0.005**	0.034***	-0.000	0.009**
	[0.003]	[0.003]	[0.003]	[0.012]	[0.002]	[0.004]

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	(1)	(2)	(3)	(4)	(5)	(6)
$DISS_{w3}$	-0.543***	-0.532***	-0.528***	-0.543***	-0.500***	-0.598***
	[0.050]	[0.049]	[0.049]	[0.124]	[0.055]	[0.052]
$Share\,Fee_{i,t-1}$	0.006**	0.006**	0.006**	0.035***	-0.000	0.003
	[0.003]	[0.003]	[0.003]	[0.013]	[0.003]	[0.003]
$OBS_{i,t-1}$	-0.016***	-0.016***	-0.016***	-0.009	-0.020***	-0.020***
	[0.004]	[0.004]	[0.004]	[0.016]	[0.005]	[0.006]
$CL_{i,t-1}$	0.000	0.000	0.000	0.003	-0.001	0.002
	[0.001]	[0.001]	[0.001]	[0.002]	[0.001]	[0.001]
$NPL_{i,t-1}$	-0.011**	-0.010**	-0.011**	-0.009	-0.012**	-0.024***
	[0.005]	[0.005]	[0.005]	[0.015]	[0.005]	[0.006]
$HHI_{i,t-1}$	-0.250***	-0.249***	-0.247***	-0.314**	-0.390***	-0.246***
	[0.053]	[0.053]	[0.053]	[0.122]	[0.058]	[0.064]
$TA_{i,t-1}$	0.131***	0.133***	0.131***	0.122***	0.096***	0.083***
	[0.015]	[0.015]	[0.015]	[0.029]	[0.017]	[0.017]
D_COOP_i	0.306***	0.305***	0.298***			0.192***
	[0.044]	[0.044]	[0.044]			[0.049]
D_PRIV_i	-0.410***	-0.414***	-0.417***			-0.662***
	[0.087]	[0.086]	[0.086]			[0.103]
D_BIG_i	-0.738***	-0.731***	-0.721***			-0.772***
	[0.144]	[0.145]	[0.145]			[0.140]
$Acquirer_{i,w3}$	0.120**	0.115**	0.118**	-0.018	0.155**	0.201***
	[0.056]	[0.056]	[0.056]	[0.110]	[0.064]	[0.062]
$Target_{i,w3}$	-0.212***	-0.216***	-0.210***	-0.239***	-0.235***	-0.150*
	[0.068]	[0.067]	[0.068]	[0.092]	[0.080]	[0.087]
$GDP\,Growth_t$	0.092***	0.092***	0.093***	-0.096**	0.134***	0.130***
	[0.014]	[0.014]	[0.014]	[0.043]	[0.017]	[0.015]
$Spread_t$	0.560***	0.559***	0.557***	0.371***	0.501***	0.546***
	[0.019]	[0.019]	[0.019]	[0.036]	[0.023]	[0.021]
Outsider JPE	-0.538***					
BAD JPE		-0.837***	-0.884***	-0.673***	-0.943***	-1.02***
GOOD JPE		-0.25	-0.402***	0.311	-0.679***	-0.232
F-Test JPE (p-value)		0.005	0.023	0.00	0.398	0.001
F-Test pre-appoint. (p-value)		0.45	0.174	0.532	0.451	0.702
No. of obs.	15,491	15,491	15,491	4,271	11,190	15,491
No. of banks	3,108	3,108	3,108	712	2,389	3,108
No. of instruments	32	39	39	36	36	39
AR(1) test (p-value)	0	0	0	0	0	0
AR(2) test (p-value)	0.733	0.832	0.813	0.58	0.887	0.638
Hansen test (p-value)	0.465	0.529	0.53	0.385	0.269	0.274

Note: Coefficients from dynamic panel estimations with Windmeijer (2005) corrected standard errors below the coefficients. In Columns (1)-(5), the dependent variable is $RROE$, and in Column (6) it is $RROA$. In Column (1), we present the results of our baseline model given in Equation (3.1) $Outsider_{i,t-j}$ with $j = 0, 1, 2, 3, 4$. In Columns (2) and (4)-(6), we replace outsider variables with dummy variables for good and bad outsiders split up according to historical ROA. In Column (3), we report the results for good and bad outsiders split up according to their managerial RRE. In Columns (2)-(6) we add $GOOD_{t+1}$ and BAD_{t+1} to control for the pre-appointment year. Column (4) shows the results for savings banks and Column (5) for private banks. Variables are listed in Table 3.5. Year dummies are included, but not reported. JPE (joint performance effect) depicts the sum of all coefficients belonging to a particular outsider type. *, ** and *** indicate significance of the coefficients at the 10%, 5% and 1% level.

Next, we test whether this initial insight holds for all outsiders. In Columns (2) and (3) of Table 3.7 we display results where all outsider variables are replaced by ten dummy variables: five variables for each outsider type, maintaining the lagged variables to tackle post-appointment effects. Column (2) is based on historical ROA, and Column (3) uses managerial RRE as an ability measure. The coefficient on $BAD_{i,t}$ reveals that banks that appoint bad outsiders perform significantly more poorly in appointment years, whereas the coefficient on $GOOD_{i,t}$ is also negative but is only half the size of the bad coefficient. *RROE* of banks with bad outsiders is 0.301 lower (Column (2)), which is large in economic terms since it accounts for more than 21% of the $RROE$'s standard deviation. Furthermore, coefficients on bad outsiders in the post-appointment period are significant whereas the higher order lagged coefficients on good outsiders are insignificant. In unreported tests, we find an insignificant performance differential for the fourth lag of good and bad outside appointments, while all others are significant. Thus, only after seven years following the appointment do banks appointing good outsiders no longer differ from those appointing bad outsiders. These findings hold regardless of the ability measure we employ.

We also calculate joint performance effects by summing up all coefficients of good and bad outsider dummy variables to determine how much lower the performance is overall for banks appointing good and bad outsiders. For historical ROA (Column (2)), the joint performance effect of bad outsiders is -0.837 and is highly significant, while the joint performance effect of good outsiders, which is -0.25, lacks significance. We test the null that the joint effects of good and bad outsiders are equal and obtain significant F-values for historical ROA (Column (2)) and managerial RRE (Column (3)), indicating that the performance path of banks hiring good outsiders differs significantly from that of banks appointing bad outsiders.

We additionally include variables that indicate the pre-appointment year of good and bad outsiders to figure out whether the risk-adjusted performance differs before the appointment. $GOOD_{i,t+1}$ ($BAD_{i,t+1}$) is a dummy variable which equals 1 in the year before a bank appoints a good (bad) outsider. Thus, following the approach of Kaplan and Minton (1994), we extend the investigation to the pre-appointment year. Doing so means that we control for an event that takes place in the future, which can be regarded as econometrically questionable. Therefore, the following findings should not be overstated. We see that bad outside appointments based on historical ROA and managerial RRE are significantly worse in the pre-appointment year than in non-appointment years. This negative effect of bad outsiders is in line with the finding in the literature that external successions are often preceded by poor accounting performance (e.g. Denis and Denis, 1995) and that external successors are expected to clean up banks (Bornemann et al., 2015). We test the null that the coefficients on good and bad outsiders in the pre-appointment year are equal and find

insignificant F-values for both ability measures. Following from this, we can conclude that the performance of banks appointing good outsiders does not differ from the one of banks appointing bad outsiders in the pre-appointment year.

We present results for the subsamples of savings banks in Column (4), and for private banks in Column (5). Since our sample contains less than 140 private commercial banks with no more than 70 outside appointments, we combine them with cooperative banks to the group of *private banks* as they have a similar ownership structure. From the subsample of private banks, we exclude the few very large commercial banks, and the head institutions of cooperative banks, since they differ too greatly in size, business models and governance for us to analyze their performance together with the huge number of small and medium-sized banks. Regarding our key variables of interest, we find that the coefficients on bad outsiders are negative and significant while those for good outsiders are much lower. The subsample analysis highlights the fact that outsider effects differ somewhat across savings and private banks. The negative performance effect of bad outsiders in the post-appointment years is somewhat stronger for private banks than for savings banks. The joint performance effect of bad outsiders for savings banks is -0.673, while that for private banks is even higher, at -0.943. We conclude that performance effects of appointing an outsider in savings and private banks have the same tendency, but joint performance effects of good and bad outside appointments do not significantly differ in private banks.

In Column (6), we use *RROA* as the dependent variable and see that it leads to similar conclusions to our baseline in Column (2). The estimated joint performance effect for bad outsiders for $RROA$ is somewhat higher than the one we find for $RROE$. The economic effects of bad outsiders are, however, very close to each other since the standard deviation of $RROA$ is higher than that of $RROE$. Thus, it matters little which risk-adjusted performance measure we use. We do not present subsample results for *RROA*, nor results on our alternative ability measure because they resemble the results of *RROE*.

Some control variables are also significantly and consistently related to risk-adjusted performance measures. The change in board size, $\Delta\, Board\, Size_{i,t}$, is significantly negative indicating lower performance when banks are in the process of extending their board.[8] The negative and significant coefficient on HHI indicates that a more concentrated loan portfolio is associated with worse performance. The coefficient on bank size identifies a positive relationship between a bank's total assets and performance. This is in line with the argument that larger banks are more diversified (Chiorazzo et al., 2008). Also the negative and significant coefficient on $DISS_{w3}$,

[8]This variable also captures part of the effect stemming from inside appointments, which we investigate further in Section 3.4.4.

which indicates a bank being in distress, is in line with the findings of the other risk measures. The effect of M&A transactions has more to do with the pre-merger year of the targets than with the acquiring banks. The effects of other bank-specific variables on performance depend on the specification and sample chosen. For instance, higher off-balance-sheet items, OBS, are associated with poorer performance of private banks. Thus, an increase in such items decreases bank performance. An increase in the volume of non-performing loans, NPL, which accompanies a lower credit quality (Meeker and Gray, 1987), is associated with poorer performance of private banks. A higher CAR is associated with improved performance for savings banks only, and an increase in $Share\,Fee$ leads to better risk-adjusted performance but only when measured by *RROE* in the full sample. The positive and significant coefficients on $GDP\,Growth$ and $Spread$ suggest that bank performance increases pro-cyclically and with a positive yield curve for both savings and private banks.

3.4.2 Outsider and pre-appointment bank risk

Our findings may indicate that good outsiders outperform bad outsiders. However, an alternative explanation for the performance differential between banks appointing good and bad outsiders may be that good outsiders select banks with lower risk, while bad outsiders are more likely to be hired by banks in very bad financial shape. Thus, the outside appointment dummy variable may simply pick up where this effect left off. Although we have already controlled for a large number of risk-related variables, this might be insufficient when these risk measures also determine which outsider accepts which job offer. Our next step, therefore, is to take into account risk differences between the banks before the outsider is appointed to trace possible selection effects by distinguishing between low- and high-risk banks appointing good and bad outsiders.

Our workhorse in this part of the analysis is a probability of bank distress (PD) of the banks in our sample. This PD comes from an econometric model, which is explained in detail in the Appendix, that considers balance-sheet as well as regulatory data on banks' capitalization, funding, lending and investment behavior. We use this as a workhorse, since it combines the different dimensions of bank risk into a single number for each bank and year. As alternative risk measures, we use the Herfindahl-Hirschman Index of the loan portfolio *(HHI, ln)*, and non-performing loans *(NPL)*. However these measures consider risk-bearing parts of balance-sheet composition and not a bank's risk exposure overall. A higher PD, HHI and NPL indicate higher risk.

In Table 3.8, we list descriptive statistics of the three proxies of bank risk for the full sample, and for the sample of good and bad outside appointments in the

pre-appointment year. The numbers support the view that banks with outside appointments are riskier than banks without these appointments, which is in line with the argument that executive directors from the outside are more often appointed to clean up. Moreover, the displayed cross-section variations of PD, HHI and NPL, and in the pre-appointment year indicate that banks with bad outside appointments are more risky than those which appoint good outsiders. According to t-tests, the differences in risk are significant especially when we use historical ROA as an ability measure. This supports the selection argument for good and bad outsiders: good outsiders, on average, are hired by less risky banks than bad outsiders.

TABLE 3.8: Pre-appointment bank risk.

			Historical ROA		**Managerial RRE**	
	Full sample	Outsider	GOOD	BAD	GOOD	BAD
			$PD_{i,t-1}$			
mean	3.84	5.94	5.28	7.19	5.64	7.06
p50	1.19	1.28	1.09	1.70	1.27	1.45
sd	7.89	10.63	9.94	11.90	10.32	11.84
GOOD-BAD (t-value)			*-4.90*		*-1.91*	
			$HHI_{i,t-1}$			
mean	3.3	3.39	3.39	3.41	3.40	3.40
p50	3.25	3.32	3.31	3.34	3.33	3.32
sd	0.32	0.34	0.35	0.35	0.34	0.36
GOOD-BAD (t-value)			*-1.98*		*-0.22*	
			$NPL_{i,t-1}$			
mean	3.35	3.94	3.81	4.29	3.89	4.21
p50	2.70	2.96	2.87	3.14	2.90	3.12
sd	2.92	3.55	3.48	3.76	3.49	3.78
GOOD-BAD (t-value)			*-4.34*		*-0.29*	

Note: The table displays mean, median *(p50)* and standard deviation *(sd)* of three proxies of bank risk for the full sample and subsamples of all, good and bad outsiders from their respective pre-appointment years. We use banks' probability of bank distress (PD), a Herfindahl-Hirschman Index (HHI, ln) that measures the concentration of the loan portfolio and the ratio of non-performing loans to total assets (NPL). $t-value$ comes from two-tailed t-tests between good and bad outside appointments.

To test whether this selection accounts for performance differentials, we split the dummy variables of good and bad outsiders into two parts according to the bank risk in the year before the executive director is appointed. We build the PD interaction term on the 90th percentile of the full sample distribution. This ensures that the group of high-risk banks includes those that are relatively close to financial distress; an alternative, splitting at the median PD, delivers too few observations for bad outsiders in low-risk banks. In Table 3.9, Panel A, we present the results for *RROE* with these PD interaction terms for good and bad outsiders. To save space, we only report joint performance effects. Results on our control variables and diagnostic tests are similar to those presented earlier (for all tables to come, we present

the full version in the Appendix of this paper). For high-default banks, we find that good outside appointments significantly outperform bad outside appointments, but less so for low-default banks. Thus, especially in banks needing the turnaround the most, good outsiders do a better job than bad outsiders.

To see whether this conclusion also holds for other risk measures, we employ HHI and NPL, and use the median of the aforementioned risk proxies of the full sample which delivers a sufficient number of cases in each group. For banks with a high concentration in HHI or a high ratio of NPL in their loan portfolios, our two measures of ability point toward the same conclusion as for the overall bank risk measure: good outsiders help the most in turning around bad bank performance.

TABLE 3.9: Outsider and pre-appointment bank risk.

	Historical ROA			Managerial RRE		
Panel A	(1A)	(2A)	(3A)	(4A)	(5A)	(6A)
High $PD_{i,t-1}$						
BAD JPE	-1.205***	-1.294***	-1.277***	-1.143***	-0.610	-1.429***
GOOD JPE	-0.439*	0.542	-0.796***	-0.659***	-0.582	-0.889***
F-Test High risk (p-value)	0.009	0.005	0.166	0.110	0.965	0.049
Low $PD_{i,t-1}$						
BAD JPE	-0.5***	-0.329	-0.742**	-0.573***	-0.477**	-0.613
GOOD JPE	-0.182	0.215	-0.733*	-0.161	0.361	-0.696*
F-Test JPE (p-value)	0.279	0.095	0.987	0.140	0.010	0.597
Panel B	(1B)	(2B)	(3B)	(4B)	(5B)	(6B)
High $HHI_{i,t-1}$						
BAD JPE	-0.953***	-0.805***	-0.941***	-1.038***	-0.561*	-1.505***
GOOD JPE	-0.427*	0.446	-0.958***	-0.403**	0.170	-0.573***
F-Test JPE (p-value)	0.065	0.003	0.966	0.024	0.074	0.026
Low $HHI_{i,t-1}$						
BAD JPE	-0.676***	-0.365	-1.225***	-0.519***	-0.524*	-0.403**
GOOD JPE	-0.123	0.141	-0.534	-0.320	0.170	-0.6*
F-Test JPE (p-value)	0.073	0.204	0.173	0.509	0.092	0.695
Panel C	(1C)	(2C)	(3C)	(4C)	(5C)	(6C)
High $NPL_{i,t-1}$						
BAD JPE	-0.983***	-0.768***	-1.244***	-1.15***	-0.715***	-1.629***
GOOD JPE	-0.679***	0.034	-1.241***	-0.617***	-0.063	-0.92***
F-Test JPE (p-value)	0.287	0.040	0.994	0.054	0.097	0.083
Low $NPL_{i,t-1}$						
BAD JPE	-0.575***	-0.387	-0.611**	-0.313	-0.321	-0.053
GOOD JPE	0.200	0.544*	-0.080	-0.137	0.359	-0.464
F-Test JPE (p-value)	0.011	0.029	0.269	0.569	0.123	0.378

Note: This table reports results from 18 GMM estimations with Windmeijer (2005) corrected standard errors. The dependent variable is $RROE$. Joint performance effects (JPE) of various outside appointments interacted with various risk categories are depicted. $High\ BAD$ ($Low\ BAD$) is a bad outsider who enters a bank with high (low) risk. $High\ GOOD$ ($Low\ GOOD$) is a good outsider who enters a bank with high (low) risk. Our risk classification is based on PD in Panel A, HHI in Panel B and NPL in Panel C, in all cases measured in the pre-appointment year. Columns (1) and (4) represent the full sample, Columns (2) and (5) show the results for savings banks and (3) and (6) for private banks. All bank-specific, macro and year dummy variables listed in Equation (3.1) are included, but not reported. *, ** and *** indicate significance at the 10%, 5% and 1% level.

3.4.3 Outside appointments before and after the financial crisis

Since our sample spans the time before and after the financial crisis, we next test whether appointment effects differ in the pre- and post-crisis period. Thus, we

have an eye on whether the years of the financial crisis changed the performance channel of appointing good and bad executive directors from the outside. To determine whether the financial crisis has implications, we measure the performance effect for good and bad outside appointments separately for the years 1993-2006, and 2007-2014.[9] In Table 3.10, we present joint performance effects of good and bad outside appointments using historical ROA (Columns (1)-(3)), and managerial RRE (Columns (4)-(6)). For the full sample (Columns (1) and (4)), we find that banks with bad outside appointments underperform those with good outside appointments both in the pre-crisis and post-crisis period. The statistical significance is, however, always higher in the post-crisis period than in the pre-crisis period, but we do not find any significant differences between bad outside appointments before and after the crisis in the full sample.

TABLE 3.10: Outsider in the pre- and post-crisis period.

	Historical ROA			**Managerial RRE**		
	(1)	(2)	(3)	(4)	(5)	(6)
Pre-crisis period						
BAD JPE	-0.649***	-0.389**	-0.846**	-0.591***	-0.201	-0.938***
GOOD JPE	-0.251	0.212	-0.709***	-0.349***	-0.024	-0.628***
F-Test JPE (p-value)	0.04	0.008	0.644	0.165	0.413	0.231
Post-crisis period						
BAD JPE	-0.658***	-0.775***	-0.544***	-0.637***	-0.702***	-0.549**
GOOD JPE	-0.046	0.162	-0.037	-0.074	0.152	-0.087
F-Test JPE (p-value)	0.016	0.011	0.168	0.03	0.024	0.208
F-Test BAD JPE (p-value)	0.964	0.238	0.283	0.827	0.104	0.185
F-Test GOOD JPE (p-value)	0.387	0.875	0.054	0.211	0.596	0.081

Note: This table reports results from 6 GMM estimations with Windmeijer (2005) corrected standard errors. The dependent variable is $RROE$. Joint performance effects (JPE) of various outside appointments separately measured for the pre- and post-crisis period are depicted. The pre-crisis period contains the years 1993-2006 and the post-crisis period the years 2007-2014. In Columns (1)-(3), we split up the group of outsiders according to historical ROA and in Columns (4)-(6) according to managerial RRE. Columns (1) and (4) represent the full sample. Columns (2) and (5) show the results for savings banks and Columns (3) and (6) for private banks. All bank-specific, macro and year dummy variables listed in Equation (3.1) are included, but not reported. *, ** and *** indicate significance at the 10%, 5% and 1%.

Interesting are the findings for private banks, as the separation in a pre-crisis and post-crisis period delivers new insights. Results in Table 3.7 seem to indicate that private banks have a similar pattern of appointment effects than savings banks in the sense that the joint performance effect of bad outsiders is more negative than that of good outsiders. However, we could not establish a significant difference of joint performance effects between good and bad outside appointments of private banks. Splitting the appointment effect in a pre-crisis and post-crisis period indicates that

[9]Subsampling the data is not appropriate in a dynamic model with two-year sampling.

private banks have the same tendency in the post-crisis period but not in the pre-crisis period. This tendency stems from a change in the performance effects of good outside appointments. In the pre-crisis period, the performance effect of good outside appointments is significantly negative, which is not the case in the post-crisis period. According to an F-test, the performance effect of good outside appointments differs significantly between the pre- and post-crisis period, regardless of the managerial ability measure used to classify good and bad outside appointments.

With respect to our results on the pre- and post-crisis period, a note of caution is in order. While we label the period from 2007 to 2014 as the post-crisis period, the split may not capture effects stemming from the financial crisis as in other studies that primarily capture US banks (e.g. Fahlenbrach and Stulz, 2011; Berger et al., 2016). The reason for this is that the majority of banks in our sample are small and medium-sized banks with almost no exposure to US subprime products. Therefore, these small and medium-sized banks were not hit directly by the value drop in subprime mortgages, but most likely by the Euro crisis and monetary policy. Moreover, German banks are faced with higher regulatory requirements, which partly stem from the crisis. Thus, the post-crisis effect we measure for outside appointments captures all these influences at the same time.

3.4.4 Complementary results

In this section we present a number of robustness tests and extensions (detailed results are tabulated in the Appendix). First, we use difference-in-differences estimations to check whether our results are robust to an alternative approach, which has been used in many recent studies on manager and director appointments (e.g. Berger et al., 2014; Min, 2013). The treatment group are banks with newly appointed outsiders in which no further turnover, merger or distress event occurred in the three years surrounding the appointment year. The control group consists of banks without any turnover, merger or distress events in the preceding and following two years. For each bank in the treatment group we match control banks with replacement from the same year and banking group, and from the same size and ROA deciles in the year before the treatment bank appoints the outsider. Results from this alternative approach confirm our findings. More specifically, we find that banks with bad outside appointments significantly underperform control banks, while banks with good outside appointments do not. We use this approach as a robustness test rather than our main approach for the following reasons: first, for many of the treatment banks, we are not able to find an appropriate match partner in terms of pre-event size and ROA, so the number of banks considered is much lower, which may

raise concerns of sample selection. Second, with the difference-in-differences approach we cannot control for the fact that several appointments to the same executive board occur in adjoining years. Also, difference-in-differences estimations require that the event is exogenous. However, for outside appointments it can hardly be argued that these events are exogenous since the risk-profile of banks may determine their outside appointment behavior. A natural exception to this rule is the unexpected death of a director.

Our second set of robustness tests deals with the structure of the executive board. First, we find that our results hold when we exclude the board diversity index and the change in board size. Second, we test whether adding inside appointments, i.e., executive directors who have not accumulated any boardroom experience outside their current bank, has an effect. Consequently, we add variables of insider appointments to the list of variables in Equation (3.1). We find that appointments of insiders are associated with a negative joint performance effect, which is significantly weaker than the joint performance effect of bad outsiders in Column (2) of Table 3.7. Third, we consider the size of the executive board, which has a significant negative effect on risk-adjusted performance. Fourth, we add the boards' average age and experience, however neither are significantly related to the bank performance. Fifth, we add the average tenure of bank executive directors, which turns out to be significantly positively related to the performance indicating that either directors with longer tenure generate more value or that executive directors stay longer at banks with high performance. It is important for our conclusion that excluding or including these additional board characteristics does not change the post-appointment effects we find for good and bad outsiders.[10]

Finally, we examine whether potential causes of the appointment event are related to performance differentials. We distinguish three groups of appointments. The first group contains turnover events triggered by the retirement of an executive director. We classify an appointment as triggered by retirement when an incumbent executive director is older than 60 years and when s/he stops serving on this board in the appointment or pre-appointment year, as in e.g. Huson et al. (2004) and Bornemann et al. (2015).[11] The second group contains cases where outsiders are appointed to replace an incumbent executive director who is not retiring. Consequently, these turnover events are triggered by any other reason, such as a resignation or dismissal. The third group consists of appointments where the board size increases. These three types may differ substantially because retirement turnovers

[10] One other robustness test might be worth mentioning. As the German banking sector is characterized by conglomerate structures, we run a model excluding all banks that belong to a concern and we find our conclusion confirmed.

[11] Our classification differs from other studies such as Denis and Denis (1995) and Jenter and Kanaan (2015) where the retirement age is 64 years. We opted to use 60 years as the retirement age to have a sufficient number of cases in the retirement group. Using a higher retirement age, however, does not change our findings.

are a relatively orderly process (Khurana and Nohria, 2000) where the incumbent executive director might be involved in selecting her/his successors, which is even more likely when the CEO retires (Shivdasani and Yermack, 1999). Non-retirement turnovers are potentially less orderly and might be more disruptive events (Khurana and Nohria, 2000), such as the (in)voluntary resignation of an incumbent executive. Thus, these events might be characterized by a shortage of time to adequately structure the process. Appointments when the board size increases enhance the body of expertise in the boardroom since all other members will continue serve on the board.

Table 3.11 delivers information on the total number of outside appointments as well as the numbers of good and bad outside appointments based on the two ability measures on the one hand, and of retirement, non-retirement turnover and board-increase appointments, on the other. In our sample, relatively few outside appointments are associated with a replacement of incumbent executives who are not retiring. In only 15.72% of all outside appointments does an outsider replaces an executive director who is not retiring. We have no evidence that good outside appointments are more likely to be chosen during retirement turnovers, while bad outsiders are hired to serve on boards after non-retirement turnovers, or vice versa. As shown for historical ROA, 44.57% of all non-retirement turnovers and 49.84% of all retirement turnovers are associated with hiring a good outsider. Thus, good and bad outside appointments and replacement (retirement and non-retirement) and appointments with board increase seem to be fairly independent of one another.

TABLE 3.11: Appointment triggers.

Ability measure		Retirement	Non-retirement turnover	Board increase	Total
Historical ROA					
GOOD	Number	314	123	388	825
	Column (%)	49.84	44.57	45.65	46.98
BAD	Number	316	153	462	931
	Column (%)	50.16	55.43	54.35	53.02
Managerial RRE					
GOOD	Number	285	141	389	815
	Column (%)	45.24	51.09	45.76	46.41
BAD	Number	345	135	461	941
	Column (%)	54.76	48.91	54.24	53.59
Total	Number	630	276	850	1756
	Row (%)	35.88	15.72	48.41	100.00

Note: The table relates $GOOD$ and BAD outside appointments to retirement (i.e. when at least one incumbent executive director is older than 60 years and when s/he stops serving on this board in the appointment or pre-appointment year), non-retirement turnover and board increase (i.e. the number of executive directors increases and no director leaves the board). $GOOD$ (BAD) refers to appointments when at least one outsider is hired with above-median (below-median) historical ROA or managerial RRE. *Column* refers to the observations in each cell of the table as a percentage of the number of observations in the respective column. *Row* shows the total observations in each column as a percentage of the total number of appointments.

To see whether the potential triggers of the appointment events involve performance differentials between good and bad outside appointments, we run models with interaction terms of the trigger. In Table 3.12 we present the results for *RROE* with our previously used dummy variables for good and bad outsiders and the 3 different appointment triggers. Again, to save space we report only joint performance effects. The results confirm our findings from the full sample in Table 3.7: the joint performance effect for bad outsiders is significantly negative for retirement turnovers and appointments with board increase. Thus, even in the case of a board increase when the outsider dummy variables capture the infusion of additional expertise into the boardroom, we find negative performance effects of bad outsiders. Bad outsiders in non-retirement turnovers do not show significantly negative performance effects; rather for savings banks we even find a positive post-appointment performance effect of good outsiders. This may indicate that in the case of non-retirement turnovers, good outsiders are better equipped to turn around bad bank performance. However, the information we have available to classify appointments into different types is limited. For instance, the percentage of forced turnovers (where the former executive director was fired because of poor bank performance)

in our category of non-retirement turnovers may significantly differ between good and bad outside appointments. We leave this open for future research.

TABLE 3.12: Outsider and appointment triggers.

	Historical ROA			Managerial RRE		
	(1)	(2)	(3)	(4)	(5)	(6)
Retirement						
BAD JPE	-1.025***	-0.805***	-1.16***	-0.803***	-0.246	-1.4***
GOOD JPE	-0.546*	0.307	-1.903***	-0.645***	-0.179	-1.35***
F-Test JPE (p-value)	0.205	0.005	0.279	0.683	0.885	0.939
Non-retirement turnover						
BAD JPE	-0.195	0.444	-0.396	-0.254	0.802	-0.717*
GOOD JPE	0.553	1.301**	0.155	0.249	0.663*	0.051
F-Test JPE (p-value)	0.121	0.194	0.391	0.284	0.84	0.238
Board increase						
BAD JPE	-0.858***	-0.843***	-0.925***	-1.11***	-1.378***	-1.101***
GOOD JPE	-0.296	-0.119	-0.369	-0.378*	0.206	-0.637**
F-Test JPE (p-value)	0.04	0.095	0.148	0.015	0.002	0.255

Note: This table reports results from 6 GMM estimations with Windmeijer (2005) corrected standard errors. The dependent variable is $RROE$. Joint performance effects (JPE) of various outside appointments interacted with various appointment triggers are depicted. We classify outside appointments as retirement, non-retirement turnover and board increase. Retirement is when at least one incumbent executive director is older than 60 years and when s/he stops serving on this board in the appointment or pre-appointment year. Board increase means the size of the board increases and no executive director leaves the board. In Columns (1)-(3), we split up the group of outsiders according to historical ROA and in Columns (4)-(6) according to managerial RRE. Columns (1) and (4) represent the full sample. Columns (2) and (5) show the results for savings banks and Columns (3) and (6) for private banks. All bank-specific, macro and year dummy variables listed in Equation (3.1) are included, but not reported. *, ** and *** indicate significance at the 10%, 5% and 1% level.

3.5 Concluding remarks

The aim of this paper was to test whether executive directors appointed from outside the bank are a homogeneous group of executive directors concerning post-appointment performance effects or whether some outsiders are better predisposed than others to turn around poor bank performance and can do it more quickly than others. We use two measures of ability, the historical return on assets and managerial risk-return efficiency, to distinguish between what we call good and bad outside appointments. For a sample of German banks from 1993 to 2014, we find performance differentials after appointing good and bad outsiders. Appointing outsiders with low ability creates lower performance than appointing outsiders with high ability. This is in line with the reasoning that some executives are better than others at turning around bank performance. We put forth an alternative explanation that might

also create the patterns in the data we attribute to the managerial ability of executives appointed from the outside. The performance differential between good and bad outsiders could be driven by a positive selection on the part of good outsiders. All outsiders may want to maintain their individual reputation in the job market for bank executive directors. However, while good outsiders may decline offers from high-risk banks, bad outsiders may only receive offers from high-risk banks. We find that the pattern in performance differentials is not driven by selection via bank risk.

We further test whether the performance differential between good and bad outside appointments differs in the pre- and post-crisis period. Our results indicate that the performance differentials become more pronounced in the post-crisis period, especially because good outsiders do a much better job after than before the crisis. We find that banks appointing bad outsiders perform in the post-crisis period as poorly as before the crisis. As many of the banks in our sample did not have subprime exposure, the interpretation of the post-crisis effects we measure differs from post-crisis effects measured in studies using US data. In our study, the post-crisis effects combine the effects of the Euro crisis, monetary policy changes, and changes in regulatory requirements in response to the crisis.

3.6 Appendix

3.6.1 Managerial RRE

Managerial RRE is our second measure of managerial ability and is based on banks' efficiency. Many studies have used cost efficiency (Demerjian et al., 2012; Francis et al., 2016) or profit efficiency (Andreou et al., 2016) to obtain information on managerial ability. However, an important drawback of using them for banks is that risk is not sufficiently controlled for (Koetter, 2008). Consequently, those efficiency estimates might be misleading. To get rid of this drawback in our measure of managerial ability, we follow Koetter (2008), who estimates risk-return efficiency *(RRE)* for German universal banks following Hughes and Moon (1995) and Hughes et al. (1996). They start with a utility-maximization setting based on an Almost Ideal Demand (AID) system consisting of profit and input share equations. The idea is that a focus on profit maximization or cost minimization is insufficient since bank managers may have different risk preferences and pursue alternative objectives (Koetter, 2008). For a detailed description of this structural model of bank production see Koetter (2008), Hughes et al. (1996), Hughes and Moon (1995), Hughes et al. (2000) and Deaton and Muellbauer (1980). Our estimation procedure, for which we introduce and summarize all variables in Table 3.13, starts with such a structural model of bank input and output equations (which is a 4-equation system as in Koetter (2008) and Hughes et al. (1996)), which we estimate with a seemingly unrelated regression equations (SURE) estimation and allow for heteroscedasticity.

TABLE 3.13: Variables in the three step estimation procedure.

First step: SURE estimation						
Variable	Definition	mean	sd	p1	p50	p99
$w1$	Price of fixed assets **	88.97	3188.76	4.51	11.81	107.17
$w2$	Price of labor ***	57.16	157.81	30.36	52.91	116.59
$w3$	Price of borrowed funds **	3.48	70.13	0.65	3.13	6.31
$y1$	Interbank loans *	504.42	5888.21	0.84	24.92	5809.91
$y2$	Customer loans *	1011.01	8614.33	6.09	149.56	13279.87
$y3$	Bonds and stocks *	497.83	5086.12	0.00	49.76	4886.00
$y4$	Off-balance sheet items *	287.86	3927.54	0.12	13.50	2715.27
z	Equity *	88.28	745.01	0.92	14.41	1127.65
C	Total operating costs *	103.19	966.76	1.01	13.96	1236.30
PBT	Profit before tax *	13.05	81.97	0.08	2.44	164.83
t	Tax rate **	0.20	0.02	0.17	0.20	0.24
$p*y+m$	Total revenue **	122.21	1094.20	1.23	17.29	1533.16
SW_w1	Input share fixed assets **	3.02	2.32	0.31	2.68	10.38
SW_w2	Input share labor **	22.73	6.32	4.80	22.61	38.39
SW_w3	Input share borrowed funds **	41.64	12.11	9.28	43.10	74.56
SW_p_π	Input share profit before tax **	32.61	9.48	15.98	30.60	65.31
π	Price of after tax profit	2.11	24.17	0.80	1.41	7.42
$\tilde{p}$	Mean output interest **	5.65	1.61	2.42	5.63	9.03
Second step: SFA						
$ER_{i,t}$	Expected return **	1.32	0.86	0.03	1.19	3.41
$RK_{i,t}$	Bank risk **	0.02	0.03	0.00	0.01	0.16
$D\_SAVINGS_i$	Savings banks	0.24	0.43	0	0	1
D_COOP_i	Cooperative banks	0.70	0.46	0	1	1
D_PRIV_i	Private commercial banks	0.06	0.23	0	0	1
D_BIG_i	Large commercial banks and head institutions of cooperative and savings banks	0.01	0.08	0	0	0
Third step: Tobit regression						
$Full\,RRE_{i,t}$	Bank risk-return efficiency	0.87	0.08	0.48	0.89	0.95
$TA_{i,t}$	Total assets, deflated (ln) ***	19.46	1.27	16.73	19.47	23.44
$NPL_{i,t}$	Non-performing loans to total assets **	0.03	0.03	0.00	0.03	0.14
$MARKET\,SHARE_{i,t}$	TA of $\sum TA$ German universal banks **	0.04	0.28	0.00	0.01	0.43
$CAR_{i,t}$	Tier 1 capital to risk-weighted assets **	0.11	0.12	0.05	0.09	0.30

Notes: The table displays descriptive statistics for the variables used to estimate $managerial\,RRE$. *mean (sd)* denotes the mean (standard deviation) of each variable. The value *px* indicates the *xth* percentile of the distribution of the respective variable. The number of bank-year observations is 50,123 and the number of banks is 3,567. * denotes values in millions of Euros; ** in percent and *** in thousands of Euros.

One of the 4 equations of the structural model delivers the input for the second step of our estimation procedure. We present this equation below:

$$\begin{aligned}\frac{\partial \ln E}{\partial \ln w_i} = \frac{p_\pi \pi}{p*y+m} &= \frac{\partial \ln P}{\partial \ln p_\pi} + \mu\left[ln(p*y+m) - \ln P\right] \\ &= \eta_\pi + \eta_{\pi\pi}\ln p_\pi + \psi_{p\pi}\ln\tilde{p} + \sum_j \gamma_{j\pi}\ln y_j + \sum_s \omega_{s\pi}\ln w_s \\ &+ \eta_{\pi\,z}\ln z + \mu\left[ln(p*y+m) - \ln P\right] + \epsilon_{p_\pi}\end{aligned} \tag{3.2}$$

where

$$
\begin{aligned}
ln\, P = {} & \alpha_0 + \alpha_p\, ln\, \tilde{p} + \sum_i \delta_i\, ln\, y_i + \sum_j \omega_j\, ln\, w_j \\
& + \eta_\pi\, ln\, p_\pi + \rho\, ln\, z + \frac{1}{2}\, \alpha_{pp}\, (ln\, \tilde{p})^2 \\
& + \frac{1}{2} \sum_i \sum_j \delta_{ij}\, ln\, y_i\, ln\, y_j + \frac{1}{2} \sum_s \sum_t \omega^*_{st}\, ln\, w_s\, ln\, w_t \\
& + \frac{1}{2}\, \eta_{\pi\pi}\, (ln\, p_\pi)^2 + \frac{1}{2}\, \rho_{zz}\, (ln\, z)^2 + \sum_j \theta_{pj}\, ln\, \tilde{p}\, ln\, y_j \\
& + \sum_s \phi_{ps}\, ln\, \tilde{p}\, ln\, w_s + \psi_{p\pi}\, ln\, \tilde{p}\, ln\, p_\pi + \psi_{pz}\, ln\, \tilde{p}\, ln\, z \\
& + \sum_j \sum_s \gamma_{js}\, ln\, y_j\, ln\, w_s + \sum_j \gamma_{j\pi}\, ln\, y_j\, ln\, p_\pi \\
& + \sum_j \gamma_{jz}\, ln\, y_j\, ln\, z + \sum_s \omega^*_{s\pi}\, ln\, w_s\, ln\, p_\pi \\
& + \sum_s \omega_{sz}\, ln\, w_s\, ln\, z + \eta_{\pi z}\, ln\, p_\pi\, ln\, z.
\end{aligned}
\tag{3.3}
$$

This equation delivers the expected return and predicted risk, which are the key variables in the risk-return efficiency estimation. The expected return, ER, is the predicted profit divided by equity, z, $ER = E(p_\pi \pi / z)$. The predicted risk, RK, is the standard error of the predicted profit, $RK = S(E(p_\pi \pi / z)$. Thus, both measures, which are bank specific, depend on the bank's production plan and other explanatory variables of the bank. If the risk preferences of bank managers differ, the expected risk-return relationship may also vary across banks. Following Koetter (2008), the curve of risk-return optimums slopes upward since risk is positively related to return, albeit with a decreasing rate. Therefore, the RRE is estimated as an upper envelope of expected return of the following form:

$$
ER_{i,t} = \alpha_i + \beta_1 \cdot RK_{i,t} + \beta_2 \cdot RK^2_{i,t} + Bank\, Sectors_i + \epsilon_{i,t} \tag{3.4}
$$

After imposing the necessary homogeneity and symmetry restrictions, we estimate Equation (3.4) using stochastic frontier analysis (SFA). The banking structure in Germany, with its large number of small and medium-sized cooperative and savings banks, requires controlling for heterogeneity in efficiency analysis (e.g. Koetter and Wedow, 2010). Therefore, we control for systematic differences across the bank sectors by adding dummies to the deterministic kernel of the frontier. The results of this estimation are presented in Table 3.14.[12]

[12]This is the second specification from Koetter (2008). We do not control for size as multicollinearity problems are then severe.

Banks' total deviation from the best practice risk-return frontier, $\epsilon_{i,t}$, is due to random noise, $v_{i,t}$, which is assumed to be i.i.d. with $v_{i,t} \sim N(0,\ \sigma_v^2)$ and inefficiency, $u_{i,t}$, which is i.i.d. with $u_{i,t} \sim \text{N}|\ (0,\ \sigma_u^2)\ |$ and independent of the $v_{i,t}$. A point estimator of efficiency is given by $E(u_{i,t} \mid \epsilon_{i,t})$, i.e., the mean of u_i given ϵ_i (Kumbhakar and Lovell, 2000). We use $[exp(-u_{i,t})]$ to calculate RRE per bank and year. RRE of 1 implies a fully efficient bank; a RRE of around 0.87 implies that the bank has realized only 87% of potential returns at given production plan and risks.

TABLE 3.14: Stochastic frontier analysis.

Variables	
$RK_{i,t}$	48.08***
	[0.13]
$RK_{i,t}^2$	-212.31***
	[1.37]
Bank sector dummies	YES
Year effects	YES
σ_u^2	0.15***
σ_v^2	0.17***
λ	0.83***
ll	4187.22

Note: The table displays the coefficients from SFA estimations and standard errors below the coefficients in parentheses. All variables are defined in Table 3.13. The number of bank-year observations is 50,123 and the number of banks is 3,567. λ is defined as σ_u / σ_v.

The third step of our estimation procedure delivers our managerial RRE. We regress various bank-specific characteristics on the RRE to determine the proportion which can be attributed to the bank management (managerial efficiency). As in Demerjian et al. (2012), we use bank characteristics to parse out RRE into bank efficiency and managerial efficiency: bank size, bank market share, the ratio of Tier 1 capital to risk-weighted assets, the ratio of non-performing loans to total assets and dummy variables to account for the bank sectors. The model looks like this:

$$\begin{aligned} Full\ RRE_{i,t} = \alpha_0 + \beta_1 \cdot TA_{i,t} + \beta_2 \cdot Market\,Share_{i,t} + \\ \beta_3 \cdot CAR_{i,t} + \beta_4 \cdot NPL_{i,t} + Bank\,Sectors_i + \\ \sum_{n=1}^{21} \beta_{6+n} \cdot Year_t + \epsilon_{i,t}. \end{aligned} \tag{3.5}$$

The residual from this estimation is our measure of managerial ability.

We report various specifications in Panel A of Table 3.15, where we cluster standard errors by bank and year to control for cross-sectional and intertemporal correlation. In Column (1) we show our baseline results, where we do not consider board characteristics. In Columns (2)-(6) we consider various board characteristics such as age, academic degree, tenure and board diversity to control for possible influences on RRE. We show in Panel B descriptive statistics of managerial RRE from the various model specifications. We observe that the 1st and 99th percentile values of the managerial RRE are very close to each other. To further support this proximity, we report correlations of managerial RRE from the various specifications in Panel C. The correlation coefficients are larger than 0.99, indicating that board characteristics do not significantly change the managerial RRE in our sample. Therefore, we rest our analysis on the baseline specification since this yields a substantially higher number of observations for classifying outside appointments into good and bad appointees.

TABLE 3.15: Tobit regressions.

Panel A:	(1)	(2)	(3)	(4)	(5)
$TA_{i,t}$	2.89***	2.80***	3.03***	3.12***	3.00***
	[0.03]	[0.03]	[0.03]	[0.03]	[0.03]
$MARKET\_SHARE_{i,t}$	-0.01***	-0.03***	-0.03***	-0.03***	-0.03***
	[0]	[0]	[0]	[0]	[0]
$CAR_{i,t}$	-0.02***	-0.02***	-0.02***	-0.01***	-0.02***
	[0.01]	[0]	[0]	[0]	[0]
$NPL_{i,t}$	-0.05***	-0.06***	-0.06***	-0.04***	-0.05***
	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]
$Board\,Size_{i,t}$		0.00***			
		[0]			
$Board\,Age_{i,t}$			-0.00***		
			[0]		
$Board\,Academic\,Degree_{i,t}$			-0.01***		
			[0]		
$Board\,Tenure_{i,t}$				0.00***	
				[0]	
$Board\,Diversity_{i,t}$					0.00
					[0]
$\Delta\,Board\,Size_{i,t}$					0.00
					[0]
Bank sector dummies	Yes	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	Yes	Yes	Yes
No. of obs.	50,123	43,247	43,162	43,224	38,956
Panel B: Descriptive statistics of managerial RRE					
sd	0.06	0.06	0.06	0.06	0.06
p1	-0.57	-0.57	-0.57	-0.56	-0.57
p99	0.21	0.21	0.21	0.2	0.2
Panel C: Correlation					
(1)	1				
(2)	0.99***	1			
(3)	0.99***	0.99***	1		
(4)	0.99***	0.99***	0.99***	1	
(5)	0.99***	0.99***	0.99***	0.99***	1

Note: The table reports coefficients from Tobit regressions and standard errors below the coefficients. In Column (1) we show our baseline results from Equation (3.5). In Columns (2)-(6) we consider various characteristics of the executive board. $Board\,Size_{i,t}$ denotes the number of directors serving on the executive board; $Board\,Age_{i,t}$ denotes the average age of the executive board; $Board\,Academic\,Degree_{i,t}$ is the percentage of directors who hold an academic degree; $Board\,Tenure_{i,t}$ is the average tenure of the executive directors; $Board\,Diversity_{i,t}$ is a board diversity index (ln) of age, gender, education, and job experience, and $\Delta\,Board\,Size_{i,t}$ is the change in board size from year $t-1$ to year t. Panel B reports summary statistics and Panel C correlation coefficients of managerial RRE from the various specifications. sd denotes the standard deviation and *px* indicates the *xth* percentile of the distribution of the managerial RRE. All variables (except board characteristics) are defined in Table 3.13. *** indicates significance at the 1% level.

3.6.2 Estimation of probability of bank distress

In order to discriminate between solvent and poorly capitalized banks, we apply a standard bank rating model which has been used in several other studies (e.g. Porath, 2006; Bornemann et al., 2014 and Kick and Prieto, 2015).[13] Here, the Logit model is designed to predict the probability of a bank experiencing a severe distress event (i.e. capital support from the bankers association, a restructuring merger, or a moratorium) within the subsequent year with a distress frequency of 4.05%. Control variables in the model follow the usual CAMELS taxonomy: capital adequacy, asset quality, management, earnings, liquidity,[14] and sensitivity to market risk.

TABLE 3.16: Variables for the probability of bank distress.

Variable	Definition	mean	sd	p1	p50	p99
$D\_Bank\ Distress$	Dummy variable equals one for banks receiving capital support measures from the bankers associations' insurance funds, or exiting the market in a distressed merger/in a moratorium.	0.04	0.20	0	0	1
CAR	Tier 1 capital to risk-weighted assets	10.07	5.27	5.14	8.61	32.92
$Bank\ Reserves$	Total bank reserves (according to sections 340f and 340g of the German Commercial Code) to total assets	1.34	1.10	0	1.05	4.26
$Reserves\ Reduction$	Dummy variable that equals one if hidden bank reserves are reduced	0.08	0.27	0	0	1
CL	Customer loans to total assets	57.60	14.05	14.11	59.87	84.92
OBS	Off-balance sheet items to total assets	5.91	4.13	0.556	4.94	23.59
HHI	Herfindahl-Hirschman Index of the bank loan portfolio	15.94	13.69	7.57	11.83	97.20
D_HL	Dummy variable that takes on one for banks with avoided write-offs on their balance sheets	0.11	0.31	0	0	1
$Share\ Fee$	Fee income to total income	11.80	7.14	1.63	10.7	43.47
ROE	Return on equity	14.06	10.82	-20.23	14.01	41.88
$Spread$	Interest rate spread between 10-year and 1-year government bonds	1.70	0.79	0.20	1.66	3.21
$GDP\ Growth$	Annual percentage change in per-capita real GDP at the federal state level	1.59	3.46	-7.57	1.35	12.5

Note: The table displays descriptive statistics for the variables used to estimate PD. *mean (sd)* denotes the mean (standard deviation) of each variable. The value *px* indicates the *xth* percentile of the distribution of the respective variable. The number of bank-year observations is 46,138.

[13] Similar models are also used in banking supervision as early warning tools and to determine the frequency of on-site inspections (which is, of course, higher for poorly rated banks).

[14] We wish to note that banks' real liquidity risk cannot be measured adequately with the data available at the Deutsche Bundesbank (Porath, 2006) and, in particular for small cooperative and savings banks, a high cash and interbank-loans to total assets ratio is rather an indicator of lacking business opportunities than low liquidity risk. Therefore, we follow Kick and Jahn (2014) and proxy banks' liquidity situation at an aggregate level instead by including the yield curve in the bank rating model.

TABLE 3.17: Logit bank rating model.

Variables	
$CAR_{i,t-1}$	-0.07***
	[0.02]
$Bank\ Reserves_{i,t-1}$	-1.59***
	[0.120]
$Reserves\ Reduction_{i,t-1}$	0.18**
	[0.08]
$CL_{i,t-1}$	-0.01**
	[0.00]
$OBS_{i,t-1}$	0.02*
	[0.01]
$HHI_{i,t-1}$	-0.02***
	[0.01]
$D\_HL_{i,t-1}$	0.59***
	[0.08]
$Share\ Fee_{i,t-1}$	0.02***
	[0.01]
$ROE_{i,t-1}$	-0.07***
	[0.00]
$Spread_{i,t-1}$	0.13***
	[0.04]
$GDP\ Growth_{t-1}$	-0.01
	[0.01]
Bank sector dummies	Yes
No. of obs.	46,138

Note: This table shows regression coefficients with standard errors in parentheses from a bank rating model that is based on a Logit function which transforms a set of bank-specific and macroeconomic covariates observed in year t-1 into the probability of bank distress (PD) of a bank in year t. The dependent variable is $D\_Bank\ Distress$. All variables are defined in Table 3.16. ** and *** indicate statistical significance at the 5% and 1% level, respectively.

3.6.3 Full versions of tables

We use the following baseline econometric model, from which we derive all subsequent specifications, to determine the effects of executive directors appointed from outside on bank performance:

$$\begin{aligned} y_{i,t} = \alpha + \sum_{j=0}^{4} \beta_{1+j} \cdot Outsider_{i,t-j} \ + \sum_{k=1}^{2} \beta_{5+k} \cdot Board\,Controls_{i,t} + \\ \sum_{l=1}^{10} \beta_{7+l} \cdot Bank\,Controls_{i,t-1} \ + \sum_{m=1}^{2} \beta_{17+m} \cdot Merger_{i,t} + \\ \sum_{n=1}^{2} \beta_{19+n} \cdot Macro_t + \sum_{o=1}^{10} \beta_{21+o} \cdot Year_t \ + \beta_{32} \cdot y_{i,t-1} + \mu_i + \epsilon_{i,t} \end{aligned} \tag{3.6}$$

where $y_{i,t}$ denotes the performance measure of bank *i* in year *t*.

TABLE 3.18: Full version of Table 3.9 (PD).

Variables	(1)	(2)	(3)	(4)	(5)	(6)
$RROE_{i,t-1}$	0.258***	0.215***	0.269***	0.258***	0.215***	0.269***
	[0.018]	[0.028]	[0.023]	[0.018]	[0.028]	[0.022]
$Low \cdot BAD_{i,t}$	-0.149**	-0.146*	-0.122	-0.261**	-0.158*	-0.432*
	[0.068]	[0.080]	[0.121]	[0.113]	[0.082]	[0.239]
$Low \cdot BAD_{i,t-1}$	-0.090*	-0.101	-0.024	-0.081	-0.103	-0.011
	[0.053]	[0.067]	[0.087]	[0.054]	[0.064]	[0.091]
$Low \cdot BAD_{i,t-2}$	-0.083	-0.084	-0.052	-0.092	-0.065	-0.085
	[0.062]	[0.077]	[0.109]	[0.058]	[0.071]	[0.102]
$Low \cdot BAD_{i,t-3}$	-0.113*	-0.082	-0.153	-0.085	-0.099	-0.029
	[0.068]	[0.078]	[0.138]	[0.061]	[0.070]	[0.120]
$Low \cdot BAD_{i,t-4}$	-0.065	0.084	-0.392**	-0.053	-0.051	-0.057
	[0.098]	[0.114]	[0.175]	[0.069]	[0.084]	[0.122]
$High \cdot BAD_{i,t}$	-0.470***	-0.360*	-0.516***	-0.338***	-0.020	-0.454***
	[0.080]	[0.211]	[0.085]	[0.089]	[0.213]	[0.096]
$High \cdot BAD_{i,t-1}$	-0.275***	-0.244*	-0.307***	-0.223***	-0.084	-0.294***
	[0.062]	[0.139]	[0.066]	[0.063]	[0.156]	[0.067]
$High \cdot BAD_{i,t-2}$	-0.228***	-0.241*	-0.251***	-0.256***	-0.061	-0.348***
	[0.064]	[0.130]	[0.073]	[0.070]	[0.164]	[0.077]
$High \cdot BAD_{i,t-3}$	-0.123	-0.248	-0.102	-0.109	-0.190	-0.100
	[0.077]	[0.170]	[0.083]	[0.082]	[0.180]	[0.095]
$High \cdot BAD_{i,t-4}$	-0.110	-0.202	-0.101	-0.216**	-0.254*	-0.233**
	[0.080]	[0.155]	[0.096]	[0.090]	[0.144]	[0.114]
$Low \cdot GOOD_{i,t}$	-0.162	-0.052	-0.353	-0.047	-0.027	-0.052
	[0.121]	[0.085]	[0.252]	[0.070]	[0.079]	[0.127]
$Low \cdot GOOD_{i,t-1}$	-0.037	0.069	-0.198*	-0.031	0.094	-0.203**
	[0.059]	[0.067]	[0.105]	[0.055]	[0.068]	[0.091]
$Low \cdot GOOD_{i,t-2}$	0.005	0.088	-0.057	0.001	0.089	-0.085
	[0.058]	[0.080]	[0.085]	[0.060]	[0.083]	[0.093]
$Low \cdot GOOD_{i,t-3}$	0.027	0.079	-0.015	-0.007	0.109	-0.179
	[0.062]	[0.073]	[0.123]	[0.070]	[0.082]	[0.136]
$Low \cdot GOOD_{i,t-4}$	-0.016	0.031	-0.110	-0.076	0.095	-0.370**
	[0.070]	[0.078]	[0.144]	[0.094]	[0.110]	[0.161]
$High \cdot GOOD_{i,t}$	-0.118	0.197	-0.224*	-0.309***	-0.311	-0.319***
	[0.106]	[0.221]	[0.119]	[0.101]	[0.191]	[0.118]
$High \cdot GOOD_{i,t-1}$	-0.159**	0.118	-0.255***	-0.230***	-0.130	-0.259***
	[0.075]	[0.143]	[0.089]	[0.067]	[0.136]	[0.077]
$High \cdot GOOD_{i,t-2}$	-0.014	0.144	-0.084	-0.029	-0.100	-0.014
	[0.079]	[0.189]	[0.089]	[0.071]	[0.154]	[0.081]
$High \cdot GOOD_{i,t-3}$	-0.060	0.050	-0.072	-0.071	-0.046	-0.058
	[0.082]	[0.136]	[0.097]	[0.076]	[0.146]	[0.080]
$High \cdot GOOD_{i,t-4}$	-0.088	0.032	-0.162	-0.020	0.005	-0.045
	[0.093]	[0.152]	[0.115]	[0.084]	[0.163]	[0.100]

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Variables	(1)	(2)	(3)	(4)	(5)	(6)
$\Delta\, Board\, Size_{i,t}$	-0.055***	-0.046**	-0.068***	-0.055***	-0.048**	-0.067***
	[0.015]	[0.019]	[0.021]	[0.015]	[0.019]	[0.021]
$Board\, Diversity_{i,t}$	0.007	-0.031	0.015	0.006	-0.031	0.012
	[0.021]	[0.046]	[0.024]	[0.021]	[0.046]	[0.024]
$CAR_{i,t-1}$	0.005**	0.032***	-0.001	0.005**	0.032***	-0.001
	[0.002]	[0.012]	[0.002]	[0.002]	[0.012]	[0.002]
$DISS_{w3}$	-0.520***	-0.541***	-0.491***	-0.513***	-0.534***	-0.484***
	[0.051]	[0.124]	[0.057]	[0.051]	[0.122]	[0.057]
$Share\, Fee_{i,t-1}$	0.006**	0.035***	-0.000	0.006**	0.035***	-0.000
	[0.003]	[0.013]	[0.003]	[0.003]	[0.013]	[0.003]
$OBS_{i,t-1}$	-0.016***	-0.008	-0.020***	-0.016***	-0.007	-0.020***
	[0.004]	[0.016]	[0.005]	[0.004]	[0.016]	[0.005]
$CL_{i,t-1}$	0.000	0.003	-0.001	0.000	0.003	-0.001
	[0.001]	[0.002]	[0.001]	[0.001]	[0.002]	[0.001]
$NPL_{i,t-1}$	-0.010*	-0.008	-0.390***	-0.010*	-0.009	-0.011**
	[0.005]	[0.015]	[0.058]	[0.005]	[0.015]	[0.005]
$HHI_{i,t-1}$	-0.250***	-0.304**	-0.011**	-0.251***	-0.314***	-0.389***
	[0.053]	[0.122]	[0.005]	[0.053]	[0.121]	[0.058]
$TA_{i,t-1}$	0.131***	0.121***	0.095***	0.131***	0.118***	0.095***
	[0.015]	[0.030]	[0.017]	[0.015]	[0.030]	[0.017]
D_COOP_i	0.319***			0.316***		
	[0.045]			[0.045]		
D_PRIV_i	-0.394***			-0.396***		
	[0.086]			[0.086]		
D_BIG_i	-0.674***			-0.670***		
	[0.148]			[0.146]		
$Acquirer_{w3}$	0.114**	-0.017	0.154**	0.120**	-0.026	0.160**
	[0.056]	[0.110]	[0.064]	[0.056]	[0.110]	[0.065]
$Target_{w3}$	-0.207***	-0.230**	-0.230***	-0.204***	-0.230**	-0.227***
	[0.068]	[0.092]	[0.079]	[0.068]	[0.092]	[0.079]
$GDP\, Growth_t$	0.092***	-0.092**	0.134***	0.092***	-0.092**	0.135***
	[0.014]	[0.043]	[0.017]	[0.014]	[0.043]	[0.017]
$Spread_t$	0.560***	0.375***	0.501***	0.560***	0.375***	0.500***
	[0.019]	[0.036]	[0.023]	[0.019]	[0.035]	[0.023]
Low BAD JPE	-0.5***	-0.329	-0.742**	-0.573***	-0.477**	-0.613
Low GOOD JPE	-0.182	0.215	-0.733*	-0.161	0.361	-0.696*
F-Test Low risk (p-value)	0.279	0.095	0.987	0.140	0.010	0.597
High BAD JPE	-1.205***	-1.294***	-1.277***	-1.143***	-0.610	-1.429***
High GOOD JPE	-0.439*	0.542	-0.796***	-0.659***	-0.582	-0.889***
F-Test High risk (p-value)	0.009	0.005	0.166	0.110	0.965	0.049
No. of obs.	15,491	4,271	11,190	15,491	4,271	11,190
No. of banks	3,108	712	2,389	3,108	712	2,389
AR(1) test (p-value)	0	0	0	0	0	0
AR(2) test (p-value)	0.763	0.483	0.870	0.702	0.483	0.817
Hansen test (p-value)	0.515	0.363	0.278	0.498	0.383	0.272

Note: Coefficients from dynamic panel estimations with Windmeijer (2005) corrected standard errors below the coefficients. The dependent variable is $RROE$. $High\ BAD$ ($Low\ BAD$) is a bad outsider who enters a bank with high (low) risk. $High\ GOOD$ ($Low\ GOOD$) is a good outsider who enters a bank with high (low) risk. Our risk classification is based on PD measured in the pre-appointment year. Columns (1) and (4) represent the full sample. Columns (2) and (5) show the results for savings banks and Columns (3) and (6) for private banks. Year dummies are included, but not reported. JPE (joint performance effect) depicts the sum of all coefficients belonging to a particular outsider type. *, ** and *** indicate significance at the 10%, 5% and 1% level, respectively.

TABLE 3.19: Full version of Table 3.9 (HHI).

Variables	(1)	(2)	(3)	(4)	(5)	(6)
$RROE_{i,t-1}$	0.258***	0.213***	0.270***	0.257***	0.216***	0.244***
	[0.018]	[0.027]	[0.023]	[0.018]	[0.027]	[0.025]
$Low \cdot BAD_{i,t}$	-0.293***	-0.229*	-0.380***	-0.210**	-0.200	-0.183
	[0.091]	[0.133]	[0.126]	[0.094]	[0.139]	[0.128]
$Low \cdot BAD_{i,t-1}$	-0.106	-0.039	-0.244***	-0.093	-0.102	-0.078
	[0.066]	[0.099]	[0.087]	[0.066]	[0.097]	[0.099]
$Low \cdot BAD_{i,t-2}$	-0.047	-0.049	-0.086	-0.065	0.008	-0.184**
	[0.069]	[0.106]	[0.090]	[0.066]	[0.098]	[0.093]
$Low \cdot BAD_{i,t-3}$	-0.146*	-0.031	-0.300***	-0.098	-0.067	-0.144
	[0.078]	[0.109]	[0.113]	[0.071]	[0.093]	[0.111]
$Low \cdot BAD_{i,t-4}$	-0.085	-0.016	-0.214	-0.054	-0.162	0.186
	[0.097]	[0.131]	[0.154]	[0.085]	[0.102]	[0.138]
$High \cdot BAD_{i,t}$	-0.305***	-0.176*	-0.370***	-0.347***	-0.089	-0.671***
	[0.064]	[0.096]	[0.085]	[0.102]	[0.090]	[0.174]
$High \cdot BAD_{i,t-1}$	-0.232***	-0.227***	-0.182***	-0.187***	-0.117	-0.271***
	[0.051]	[0.075]	[0.066]	[0.051]	[0.075]	[0.072]
$High \cdot BAD_{i,t-2}$	-0.219***	-0.184**	-0.240***	-0.239***	-0.149*	-0.265***
	[0.058]	[0.083]	[0.079]	[0.059]	[0.086]	[0.082]
$High \cdot BAD_{i,t-3}$	-0.112*	-0.227**	-0.002	-0.076	-0.154*	-0.009
	[0.067]	[0.099]	[0.084]	[0.067]	[0.091]	[0.096]
$High \cdot BAD_{i,t-4}$	-0.085	0.009	-0.147	-0.189**	-0.052	-0.289***
	[0.080]	[0.127]	[0.099]	[0.075]	[0.098]	[0.109]
$Low \cdot GOOD_{i,t}$	-0.046	-0.082	-0.044	-0.118	-0.123	-0.062
	[0.091]	[0.119]	[0.133]	[0.087]	[0.104]	[0.153]
$Low \cdot GOOD_{i,t-1}$	-0.047	0.101	-0.257**	-0.055	0.150*	-0.168
	[0.070]	[0.083]	[0.118]	[0.067]	[0.079]	[0.104]
$Low \cdot GOOD_{i,t-2}$	-0.014	0.030	-0.091	-0.007	-0.048	0.078
	[0.066]	[0.094]	[0.098]	[0.066]	[0.101]	[0.096]
$Low \cdot GOOD_{i,t-3}$	-0.065	0.118	-0.313***	-0.094	0.173*	-0.333***
	[0.072]	[0.084]	[0.116]	[0.077]	[0.096]	[0.124]
$Low \cdot GOOD_{i,t-4}$	0.049	-0.026	0.171	-0.044	0.018	-0.115
	[0.078]	[0.094]	[0.129]	[0.091]	[0.117]	[0.171]
$High \cdot GOOD_{i,t}$	-0.225*	0.054	-0.460**	-0.185**	-0.047	-0.203*
	[0.131]	[0.108]	[0.214]	[0.079]	[0.103]	[0.115]
$High \cdot GOOD_{i,t-1}$	-0.119**	0.055	-0.218***	-0.155***	-0.050	-0.196***
	[0.060]	[0.088]	[0.083]	[0.055]	[0.088]	[0.071]
$High \cdot GOOD_{i,t-2}$	0.003	0.186*	-0.057	-0.010	0.157	-0.076
	[0.065]	[0.111]	[0.080]	[0.064]	[0.103]	[0.086]
$High \cdot GOOD_{i,t-3}$	0.040	0.030	0.105	-0.008	-0.040	0.072
	[0.068]	[0.097]	[0.097]	[0.067]	[0.106]	[0.091]
$High \cdot GOOD_{i,t-4}$	-0.126	0.120	-0.328***	-0.045	0.150	-0.17
	[0.080]	[0.097]	[0.120]	[0.089]	[0.137]	[0.127]

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Variables	(1)	(2)	(3)	(4)	(5)	(6)
$\Delta\, Board\, Size_{i,t}$	-0.054***	-0.048**	-0.066***	-0.053***	-0.049**	-0.073***
	[0.015]	[0.019]	[0.021]	[0.015]	[0.019]	[0.023]
$Board\, Diversity_{i,t}$	0.007	-0.025	0.016	0.006	-0.031	0.021
	[0.021]	[0.046]	[0.024]	[0.021]	[0.045]	[0.025]
$CAR_{i,t-1}$	0.005**	0.033***	-0.001	0.005**	0.033***	0.015**
	[0.003]	[0.012]	[0.002]	[0.003]	[0.012]	[0.007]
$DISS_{w3}$	-0.532***	-0.538***	-0.504***	-0.528***	-0.532***	-0.499***
	[0.050]	[0.123]	[0.055]	[0.049]	[0.124]	[0.058]
$Share\, Fee_{i,t-1}$	0.006**	0.035***	-0.000	0.006**	0.037***	0.020***
	[0.003]	[0.013]	[0.003]	[0.003]	[0.013]	[0.006]
$OBS_{i,t-1}$	-0.016***	-0.009	-0.019***	-0.016***	-0.010	-0.027***
	[0.004]	[0.016]	[0.005]	[0.004]	[0.016]	[0.008]
$CL_{i,t-1}$	0.000	0.003	-0.001	0.000	0.003	0.001
	[0.001]	[0.002]	[0.001]	[0.001]	[0.002]	[0.002]
$NPL_{i,t-1}$	-0.231***	-0.292**	-0.383***	-0.230***	-0.301**	-0.251***
	[0.053]	[0.128]	[0.057]	[0.054]	[0.128]	[0.069]
$HHI_{i,t-1}$	-0.010**	-0.010	-0.011**	-0.011**	-0.009	-0.024***
	[0.005]	[0.015]	[0.005]	[0.005]	[0.015]	[0.007]
$TA_{i,t-1}$	0.131***	0.117***	0.094***	0.131***	0.115***	0.144***
	[0.015]	[0.029]	[0.017]	[0.015]	[0.029]	[0.020]
D_COOP_i	0.309***			0.306***		
	[0.044]			[0.044]		
D_PRIV_i	-0.416***			-0.419***		
	[0.086]			[0.087]		
D_BIG_i	-0.729***			-0.727***		
	[0.145]			[0.145]		
$Acquirer_{w3}$	0.120**	-0.008	0.155**	0.122**	-0.037	0.170***
	[0.056]	[0.110]	[0.064]	[0.056]	[0.111]	[0.066]
$Target_{w3}$	-0.210***	-0.238***	-0.234***	-0.207***	-0.243***	-0.261***
	[0.067]	[0.092]	[0.080]	[0.067]	[0.093]	[0.081]
$GDP\, Growth_t$	0.093***	-0.096**	0.138***	0.093***	-0.098**	0.122***
	[0.014]	[0.044]	[0.016]	[0.014]	[0.044]	[0.013]
$Spread_t$	0.560***	0.373***	0.499***	0.560***	0.373***	0.475***
	[0.019]	[0.036]	[0.023]	[0.019]	[0.035]	[0.027]
Low BAD JPE	-0.676***	-0.365	-1.225***	-0.519***	-0.524*	-0.403**
Low GOOD JPE	-0.123	0.141	-0.534	-0.32	0.17	-0.6*
F-Test Low risk (p-value)	0.065	0.003	0.966	0.509	0.092	0.695
High BAD JPE	-0.953***	-0.805***	-0.941***	-1.038***	-0.561*	-1.505***
High GOOD JPE	-0.427*	0.446	-0.958***	-0.403**	0.17	-0.573***
F-Test High risk (p-value)	0.073	0.204	0.173	0.024	0.074	0.026
No. of obs.	15,491	4,271	11,190	15,491	4,271	11,190
No. of banks	3,108	712	2,389	3,108	712	2,389
AR(1) test (p-value)	0	0	0	0	0	0
AR(2) test (p-value)	0.697	0.596	0.870	0.705	0.662	0.914
Hansen test (p-value)	0.477	0.361	0.263	0.483	0.354	0.277

Note: Coefficients from dynamic panel estimations with Windmeijer (2005) corrected standard errors below the coefficients. The dependent variable is $RROE$. $High\, BAD$ ($Low\, BAD$) is a bad outsider who enters a bank with high (low) risk. $High\, GOOD$ ($Low\, GOOD$) is a good outsider who enters a bank with high (low) risk. Our risk classification is based on HHI measured in the pre-appointment year. Columns (1) and (4) represent the full sample. Columns (2) and (5) show the results for savings banks and Columns (3) and (6) for private banks. Year dummies are included, but not reported. JPE (joint performance effect) depicts the sum of all coefficients belonging to a particular outsider type. *, ** and *** indicate significance at the 10%, 5% and 1% level, respectively.

TABLE 3.20: Full version of Table 3.9 (NPL).

Variables	(1)	(2)	(3)	(4)	(5)	(6)
$RROE_{i,t-1}$	0.260***	0.217***	0.272***	0.264***	0.217***	0.274***
	[0.019]	[0.028]	[0.023]	[0.019]	[0.028]	[0.023]
$Low \cdot BAD_{i,t}$	-0.094	-0.074	-0.081	-0.057	-0.036	-0.022
	[0.074]	[0.100]	[0.111]	[0.077]	[0.105]	[0.114]
$Low \cdot BAD_{i,t-1}$	-0.158**	-0.161*	-0.131	-0.063	-0.151	0.065
	[0.064]	[0.094]	[0.090]	[0.065]	[0.096]	[0.092]
$Low \cdot BAD_{i,t-2}$	-0.126*	-0.034	-0.194*	-0.042	0.072	-0.106
	[0.069]	[0.097]	[0.103]	[0.069]	[0.097]	[0.100]
$Low \cdot BAD_{i,t-3}$	-0.086	-0.067	-0.070	-0.056	-0.111	0.073
	[0.075]	[0.085]	[0.132]	[0.077]	[0.092]	[0.129]
$Low \cdot BAD_{i,t-4}$	-0.111	-0.051	-0.136	-0.095	-0.094	-0.064
	[0.093]	[0.128]	[0.138]	[0.092]	[0.126]	[0.140]
$High \cdot BAD_{i,t}$	-0.431***	-0.302***	-0.511***	-0.462***	-0.207*	-0.663***
	[0.070]	[0.115]	[0.088]	[0.110]	[0.107]	[0.161]
$High \cdot BAD_{i,t-1}$	-0.191***	-0.130	-0.234***	-0.206***	-0.089	-0.307***
	[0.054]	[0.085]	[0.065]	[0.054]	[0.080]	[0.069]
$High \cdot BAD_{i,t-2}$	-0.167***	-0.221**	-0.165**	-0.231***	-0.187**	-0.296***
	[0.058]	[0.093]	[0.074]	[0.058]	[0.087]	[0.078]
$High \cdot BAD_{i,t-3}$	-0.133**	-0.175	-0.136*	-0.107*	-0.140	-0.122
	[0.067]	[0.115]	[0.080]	[0.062]	[0.093]	[0.085]
$High \cdot BAD_{i,t-4}$	-0.060	0.060	-0.198*	-0.144**	-0.091	-0.241**
	[0.076]	[0.112]	[0.104]	[0.071]	[0.080]	[0.115]
$Low \cdot GOOD_{i,t}$	-0.001	0.003	0.039	-0.039	-0.044	-0.018
	[0.090]	[0.099]	[0.145]	[0.086]	[0.096]	[0.146]
$Low \cdot GOOD_{i,t-1}$	0.027	0.138	-0.072	-0.059	0.103	-0.189**
	[0.068]	[0.092]	[0.103]	[0.064]	[0.088]	[0.094]
$Low \cdot GOOD_{i,t-2}$	0.096	0.172	0.058	-0.016	0.063	-0.042
	[0.070]	[0.106]	[0.093]	[0.068]	[0.102]	[0.095]
$Low \cdot GOOD_{i,t-3}$	0.149**	0.176*	0.149	0.095	0.197**	0.026
	[0.075]	[0.096]	[0.118]	[0.074]	[0.093]	[0.119]
$Low \cdot GOOD_{i,t-4}$	-0.070	0.055	-0.254*	-0.117	0.039	-0.241*
	[0.097]	[0.120]	[0.154]	[0.096]	[0.121]	[0.144]
$High \cdot GOOD_{i,t}$	-0.273**	-0.014	-0.505**	-0.252***	-0.129	-0.325***
	[0.134]	[0.121]	[0.203]	[0.082]	[0.120]	[0.110]
$High \cdot GOOD_{i,t-1}$	-0.180***	0.021	-0.346***	-0.176***	-0.025	-0.268***
	[0.065]	[0.086]	[0.091]	[0.059]	[0.089]	[0.076]
$High \cdot GOOD_{i,t-2}$	-0.081	0.029	-0.158*	-0.018	0.039	-0.030
	[0.062]	[0.099]	[0.081]	[0.063]	[0.105]	[0.080]
$High \cdot GOOD_{i,t-3}$	-0.127*	-0.026	-0.174*	-0.165**	-0.061	-0.185**
	[0.065]	[0.088]	[0.095]	[0.066]	[0.102]	[0.090]
$High \cdot GOOD_{i,t-4}$	-0.019	0.024	-0.057	-0.006	0.113	-0.111
	[0.066]	[0.076]	[0.111]	[0.079]	[0.118]	[0.111]

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Variables	(1)	(2)	(3)	(4)	(5)	(6)
$\Delta\, Board\, Size_{i,t}$	-0.055***	-0.046**	-0.068***	-0.056***	-0.051***	-0.068***
	[0.015]	[0.019]	[0.021]	[0.015]	[0.019]	[0.021]
$Board\, Diversity_{i,t}$	0.008	-0.028	0.016	0.006	-0.028	0.014
	[0.021]	[0.046]	[0.024]	[0.021]	[0.045]	[0.024]
$CAR_{i,t-1}$	0.005**	0.032***	-0.001	0.003	0.033***	-0.001
	[0.002]	[0.012]	[0.002]	[0.002]	[0.012]	[0.002]
$DISS_{w3}$	-0.521***	-0.541***	-0.480***	-0.519***	-0.539***	-0.469***
	[0.049]	[0.123]	[0.055]	[0.049]	[0.123]	[0.054]
$Share\, Fee_{i,t-1}$	0.006**	0.035***	-0.000	0.007**	0.035***	0.000
	[0.003]	[0.013]	[0.003]	[0.003]	[0.013]	[0.003]
$OBS_{i,t-1}$	-0.016***	-0.009	-0.020***	-0.016***	-0.005	-0.019***
	[0.004]	[0.016]	[0.005]	[0.004]	[0.016]	[0.005]
$CL_{i,t-1}$	0.000	0.003	-0.001	0.000	0.002	-0.001
	[0.001]	[0.002]	[0.001]	[0.001]	[0.002]	[0.001]
$NPL_{i,t-1}$	-0.252***	-0.305**	-0.392***	-0.230***	-0.301**	-0.392***
	[0.054]	[0.122]	[0.058]	[0.054]	[0.128]	[0.058]
$HHI_{i,t-1}$	-0.008	-0.005	-0.009	-0.007	-0.007	-0.009*
	[0.005]	[0.015]	[0.005]	[0.005]	[0.015]	[0.005]
$TA_{i,t-1}$	0.129***	0.114***	0.094***	0.113***	0.089***	0.094***
	[0.015]	[0.029]	[0.017]	[0.015]	[0.029]	[0.017]
D_COOP_i	0.303***			0.300***		
	[0.044]			[0.044]		
D_PRIV_i	-0.404***			-0.494***		
	[0.086]			[0.083]		
D_BIG_i	-0.700***			-0.676***		
	[0.146]			[0.143]		
$Acquirer_{w3}$	0.120**	-0.011	0.161**	0.125**	-0.031	0.163**
	[0.055]	[0.110]	[0.064]	[0.056]	[0.109]	[0.064]
$Target_{w3}$	-0.211***	-0.229**	-0.227***	-0.218***	-0.243***	-0.224***
	[0.068]	[0.092]	[0.080]	[0.068]	[0.093]	[0.080]
$GDP\, Growth_t$	0.094***	-0.089**	0.136***	0.096***	-0.102**	0.137***
	[0.014]	[0.043]	[0.017]	[0.014]	[0.043]	[0.016]
$Spread_t$	0.558***	0.381***	0.500***	0.561***	0.371***	0.499***
	[0.019]	[0.036]	[0.023]	[0.019]	[0.036]	[0.023]
Low BAD JPE	-0.575***	-0.387	-0.611**	-0.313	-0.321	-0.053
Low GOOD JPE	0.2	0.544*	-0.08	-0.137	0.359	-0.464
F-Test Low risk (p-value)	0.011	0.029	0.269	0.569	0.123	0.378
High BAD JPE	-0.983***	-0.768***	-1.244***	-1.15***	-0.715***	-1.629***
High GOOD JPE	-0.679***	0.034	-1.241***	-0.617***	-0.063	-0.92***
F-Test High risk (p-value)	0.287	0.04	0.994	0.054	0.097	0.083
No. of obs.	15,491	4,271	11,190	15,491	4,271	11,190
No. of banks	3,108	712	2,389	3,108	712	2,389
AR(1) test (p-value)	0	0	0	0	0	0
AR(2) test (p-value)	0.752	0.451	0.862	0.718	0.484	0.822
Hansen test (p-value)	0.484	0.412	0.246	0.388	0.516	0.228

Note: Coefficients from dynamic panel estimations with Windmeijer (2005) corrected standard errors below the coefficients. The dependent variable is $RROE$. $High\, BAD$ ($Low\, BAD$) is a bad outsider who enters a bank with high (low) risk. $High\, GOOD$ ($Low\, GOOD$) is a good outsider who enters a bank with high (low) risk. Our risk classification is based on NPL measured in the pre-appointment year. Columns (1) and (4) represent the full sample. Columns (2) and (5) show the results for savings banks and Columns (3) and (6) for private banks. Year dummies are included, but not reported. JPE (joint performance effect) depicts the sum of all coefficients belonging to a particular outsider type. *, ** and *** indicate significance at the 10%, 5% and 1% level, respectively.

TABLE 3.21: Full version of Table 3.10.

Variables	(1)	(2)	(3)	(4)	(5)	(6)
$RROE_{i,t-1}$	0.255***	0.213***	0.263***	0.254***	0.213***	0.263***
	[0.018]	[0.028]	[0.022]	[0.018]	[0.028]	[0.022]
$Pre \cdot BAD_{i,t}$	-0.317***	-0.151	-0.444***	-0.322***	-0.071	-0.548***
	[0.063]	[0.095]	[0.083]	[0.093]	[0.096]	[0.140]
$Pre \cdot BAD_{i,t-1}$	-0.207***	-0.135*	-0.257***	-0.168***	-0.095	-0.237***
	[0.049]	[0.074]	[0.063]	[0.050]	[0.075]	[0.066]
$Pre \cdot BAD_{i,t-2}$	-0.125**	-0.103	-0.144**	-0.100**	-0.035	-0.154**
	[0.049]	[0.073]	[0.069]	[0.050]	[0.073]	[0.069]
$Pre \cdot BAD_{i,t-3}$	-0.115**	-0.172**	-0.070	-0.047	-0.118*	0.010
	[0.053]	[0.076]	[0.074]	[0.050]	[0.068]	[0.074]
$Pre \cdot BAD_{i,t-4}$	-0.047	0.012	-0.099	-0.071	-0.078	-0.069
	[0.056]	[0.085]	[0.075]	[0.052]	[0.070]	[0.079]
$Post \cdot BAD_{i,t}$	-0.266***	-0.308**	-0.217	-0.234**	-0.286**	-0.173
	[0.095]	[0.135]	[0.135]	[0.101]	[0.134]	[0.146]
$Post \cdot BAD_{i,t-1}$	-0.127*	-0.197*	-0.078	-0.083	-0.180*	-0.024
	[0.071]	[0.107]	[0.101]	[0.071]	[0.095]	[0.104]
$Post \cdot BAD_{i,t-2}$	-0.265***	-0.271*	-0.250*	-0.321***	-0.235*	-0.352***
	[0.100]	[0.147]	[0.140]	[0.090]	[0.126]	[0.131]
$Post \cdot BAD_{i,t-3}$	-0.078	0.086	-0.160	-0.230	-0.021	-0.314**
	[0.184]	[0.329]	[0.226]	[0.148]	[0.282]	[0.151]
$Pre \cdot GOOD_{i,t}$	-0.171	0.013	-0.374**	-0.175**	-0.098	-0.249**
	[0.111]	[0.103]	[0.176]	[0.070]	[0.092]	[0.100]
$Pre \cdot GOOD_{i,t-1}$	-0.096*	0.095	-0.287***	-0.143***	0.045	-0.307***
	[0.058]	[0.077]	[0.085]	[0.052]	[0.074]	[0.072]
$Pre \cdot GOOD_{i,t-2}$	0.017	0.103	-0.048	-0.031	0.029	-0.072
	[0.052]	[0.081]	[0.072]	[0.052]	[0.079]	[0.072]
$Pre \cdot GOOD_{i,t-3}$	0.018	0.102	-0.030	-0.048	0.042	-0.096
	[0.049]	[0.067]	[0.073]	[0.052]	[0.074]	[0.072]
$Pre \cdot GOOD_{i,t-4}$	-0.037	0.058	-0.122	-0.045	0.085	-0.144*
	[0.055]	[0.072]	[0.083]	[0.059]	[0.090]	[0.078]
$Post \cdot GOOD_{i,t}$	-0.083	-0.054	-0.057	-0.115	-0.060	-0.106
	[0.110]	[0.132]	[0.167]	[0.108]	[0.130]	[0.166]
$Post \cdot GOOD_{i,t-1}$	-0.018	0.044	-0.029	-0.052	0.014	-0.063
	[0.073]	[0.091]	[0.112]	[0.073]	[0.101]	[0.107]
$Post \cdot GOOD_{i,t-2}$	0.055	0.172	0.049	0.093	0.198	0.082
	[0.090]	[0.158]	[0.114]	[0.101]	[0.180]	[0.127]
$Post \cdot GOOD_{i,t-3}$	-0.157	-0.060	-0.161	-0.035	0.030	-0.036
	[0.115]	[0.181]	[0.153]	[0.172]	[0.187]	[0.266]

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Variables	(1)	(2)	(3)	(4)	(5)	(6)
$\Delta\, Board\, Size_{i,t}$	-0.055***	-0.049**	-0.068***	-0.055***	-0.049**	-0.066***
	[0.015]	[0.019]	[0.021]	[0.015]	[0.019]	[0.021]
$Board\, Diversity_{i,t}$	0.007	-0.028	0.015	0.007	-0.029	0.015
	[0.021]	[0.046]	[0.024]	[0.021]	[0.045]	[0.024]
$CAR_{i,t-1}$	0.005**	0.033***	-0.000	0.005**	0.033***	-0.000
	[0.003]	[0.012]	[0.002]	[0.003]	[0.012]	[0.002]
$DISS_{w3}$	-0.540***	-0.551***	-0.505***	-0.538***	-0.546***	-0.502***
	[0.049]	[0.124]	[0.055]	[0.049]	[0.124]	[0.054]
$Share\, Fee_{i,t-1}$	0.006**	0.035***	-0.000	0.007**	0.036***	-0.000
	[0.003]	[0.013]	[0.003]	[0.003]	[0.013]	[0.003]
$OBS_{i,t-1}$	-0.016***	-0.011	-0.020***	-0.016***	-0.011	-0.020***
	[0.004]	[0.016]	[0.005]	[0.004]	[0.017]	[0.005]
$CL_{i,t-1}$	0.000	0.003	-0.001	0.000	0.003	-0.001
	[0.001]	[0.002]	[0.001]	[0.001]	[0.002]	[0.001]
$NPL_{i,t-1}$	-0.011**	-0.009	-0.012**	-0.011**	-0.010	-0.012**
	[0.005]	[0.015]	[0.006]	[0.005]	[0.015]	[0.005]
$HHI_{i,t-1}$	-0.253***	-0.309**	-0.394***	-0.253***	-0.311**	-0.393***
	[0.053]	[0.122]	[0.058]	[0.053]	[0.122]	[0.059]
$TA_{i,t-1}$	0.132***	0.117***	0.097***	0.132***	0.115***	0.097***
	[0.015]	[0.029]	[0.017]	[0.015]	[0.030]	[0.017]
D_COOP_i	0.310***			0.306***		
	[0.044]			[0.044]		
D_PRIV_i	-0.409***			-0.410***		
	[0.087]			[0.088]		
D_BIG_i	-0.739***			-0.737***		
	[0.146]			[0.145]		
$Acquirer_{w3}$	0.118**	-0.012	0.152**	0.119**	-0.020	0.156**
	[0.055]	[0.109]	[0.064]	[0.056]	[0.110]	[0.064]
$Target_{w3}$	-0.215***	-0.231**	-0.235***	-0.213***	-0.236**	-0.232***
	[0.067]	[0.092]	[0.079]	[0.067]	[0.093]	[0.079]
$GDP\, Growth_t$	0.090***	-0.089**	0.129***	0.089***	-0.089**	0.129***
	[0.014]	[0.044]	[0.016]	[0.014]	[0.044]	[0.016]
$Spread_t$	0.562***	0.380***	0.507***	0.562***	0.380***	0.507***
	[0.019]	[0.037]	[0.023]	[0.019]	[0.037]	[0.023]
Pre-crisis BAD JPE	-0.649***	-0.389**	-0.846**	-0.591***	-0.201	-0.938***
Pre-crisis GOOD JPE	-0.251	0.212	-0.709***	-0.349***	-0.024	-0.628***
F-Test JPE (p-value)	0.04	0.008	0.644	0.165	0.413	0.231
Post-crisis BAD JPE	-0.658***	-0.775***	-0.544***	-0.637***	-0.702***	-0.549**
Post-crisis GOOD JPE	-0.046	0.162	-0.037	-0.074	0.152	-0.087
F-Test JPE (p-value)	0.016	0.011	0.168	0.03	0.024	0.208
F-Test BAD JPE (p-value)	0.964	0.238	0.283	0.827	0.104	0.185
F-Test GOOD JPE (p-value)	0.387	0.875	0.054	0.211	0.596	0.081
No. of obs.	15,491	4,271	11,190	15,491	4,271	11,190
No. of banks	3,108	712	2,389	3,108	712	2,389
AR(1) test (p-value)	0	0	0	0	0	0
AR(2) test (p-value)	0.827	0.487	0.944	0.763	0.471	0.89
Hansen test (p-value)	0.673	0.177	0.974	0.689	0.184	0.988

Note: Coefficients from dynamic panel estimations with Windmeijer (2005) corrected standard errors below the coefficients. The dependent variable is $RROE$. The pre-crisis period contains the years 1993–2006 and the post-crisis period the years 2007–2014. Year dummies (crisis dummies) are included, but not reported. JPE (joint performance effect) depicts the sum of all coefficients belonging to a particular type of outsider. *, ** and *** indicate significance of the coefficients at the 10%, 5% and 1% level, respectively.

TABLE 3.22: Full version of Table 3.12.

Variables	(1)	(2)	(3)	(4)	(5)	(6)
$RROE_{i,t-1}$	0.257***	0.216***	0.268***	0.256***	0.213***	0.269***
	[0.018]	[0.028]	[0.023]	[0.018]	[0.028]	[0.023]
$Retirement \cdot BAD_{i,t}$	-0.387***	-0.283**	-0.462***	-0.341**	-0.046	-0.760**
	[0.092]	[0.130]	[0.122]	[0.161]	[0.115]	[0.321]
$Retirement \cdot BAD_{i,t-1}$	-0.235***	-0.199**	-0.240**	-0.158**	-0.043	-0.268**
	[0.066]	[0.094]	[0.094]	[0.066]	[0.083]	[0.105]
$Retirement \cdot BAD_{i,t-2}$	-0.170**	-0.162	-0.173	-0.115	-0.026	-0.211*
	[0.074]	[0.104]	[0.110]	[0.070]	[0.090]	[0.113]
$Retirement \cdot BAD_{i,t-3}$	-0.218***	-0.171*	-0.259**	-0.127*	-0.091	-0.124
	[0.075]	[0.095]	[0.116]	[0.071]	[0.079]	[0.136]
$Retirement \cdot BAD_{i,t-4}$	-0.015	0.011	-0.025	-0.062	-0.040	-0.037
	[0.091]	[0.113]	[0.144]	[0.093]	[0.106]	[0.195]
$Retirement \cdot GOOD_{i,t}$	-0.367*	-0.016	-0.971**	-0.424***	-0.288**	-0.565***
	[0.188]	[0.120]	[0.396]	[0.105]	[0.134]	[0.154]
$Retirement \cdot GOOD_{i,t-1}$	-0.084	0.071	-0.275**	-0.140**	-0.081	-0.200*
	[0.069]	[0.082]	[0.112]	[0.071]	[0.099]	[0.103]
$Retirement \cdot GOOD_{i,t-2}$	0.086	0.141	0.037	0.066	0.024	0.080
	[0.070]	[0.095]	[0.103]	[0.077]	[0.121]	[0.100]
$Retirement \cdot GOOD_{i,t-3}$	-0.056	0.127	-0.345***	-0.051	0.148	-0.348***
	[0.075]	[0.089]	[0.119]	[0.092]	[0.123]	[0.111]
$Retirement \cdot GOOD_{i,t-4}$	-0.124	-0.017	-0.349**	-0.095	0.017	-0.318*
	[0.084]	[0.094]	[0.169]	[0.107]	[0.121]	[0.186]
$Non\,retirement \cdot BAD_{i,t}$	-0.206	0.081	-0.294	-0.152	0.177	-0.303
	[0.129]	[0.111]	[0.180]	[0.151]	[0.176]	[0.207]
$Non\,retirement \cdot BAD_{i,t-1}$	-0.034	0.345**	-0.165	-0.021	0.335**	-0.209*
	[0.090]	[0.154]	[0.102]	[0.103]	[0.153]	[0.124]
$Non\,retirement \cdot BAD_{i,t-2}$	-0.075	-0.055	-0.081	-0.132	0.056	-0.204
	[0.098]	[0.142]	[0.123]	[0.110]	[0.223]	[0.125]
$Non\,retirement \cdot BAD_{i,t-3}$	0.064	0.046	0.055	0.079	0.236	0.020
	[0.099]	[0.143]	[0.133]	[0.101]	[0.157]	[0.130]
$Non\,retirement \cdot BAD_{i,t-4}$	0.057	0.027	0.088	-0.028	-0.002	-0.021
	[0.114]	[0.154]	[0.149]	[0.125]	[0.187]	[0.159]
$Non\,retirement \cdot GOOD_{i,t}$	0.082	-0.119	0.149	0.033	-0.194	0.164
	[0.168]	[0.187]	[0.237]	[0.150]	[0.155]	[0.212]
$Non\,retirement \cdot GOOD_{i,t-1}$	0.105	0.361**	-0.091	0.021	0.249*	-0.109
	[0.107]	[0.148]	[0.143]	[0.094]	[0.145]	[0.115]
$Non\,retirement \cdot GOOD_{i,t-2}$	0.043	0.339*	-0.084	0.012	0.263*	-0.090
	[0.116]	[0.197]	[0.143]	[0.107]	[0.140]	[0.148]
$Non\,retirement \cdot GOOD_{i,t-3}$	0.174*	0.279**	0.194	0.140	0.147	0.196
	[0.103]	[0.138]	[0.136]	[0.103]	[0.115]	[0.155]
$Non\,retirement \cdot GOOD_{i,t-4}$	0.149	0.441**	-0.012	0.042	0.197	-0.110
	[0.132]	[0.194]	[0.165]	[0.113]	[0.138]	[0.167]
$Board\,Increase \cdot BAD_{i,t}$	-0.256***	-0.153	-0.343***	-0.292***	-0.268**	-0.292***
	[0.070]	[0.105]	[0.097]	[0.077]	[0.131]	[0.098]
$Board\,Increase \cdot BAD_{i,t-1}$	-0.199***	-0.225**	-0.213***	-0.183***	-0.276***	-0.149*
	[0.061]	[0.092]	[0.080]	[0.061]	[0.094]	[0.078]
$Board\,Increase \cdot BAD_{i,t-2}$	-0.159**	-0.143	-0.174**	-0.241***	-0.219**	-0.279***
	[0.063]	[0.097]	[0.085]	[0.064]	[0.103]	[0.084]
$Board\,Increase \cdot BAD_{i,t-3}$	-0.113	-0.249**	-0.032	-0.172**	-0.382***	-0.095
	[0.074]	[0.121]	[0.094]	[0.077]	[0.129]	[0.099]
$Board\,Increase \cdot BAD_{i,t-4}$	-0.131*	-0.073	-0.164*	-0.221***	-0.232**	-0.286**
	[0.076]	[0.128]	[0.098]	[0.085]	[0.111]	[0.133]
$Board\,Increase \cdot GOOD_{i,t}$	-0.036	0.053	-0.062	-0.052	0.111	-0.146
	[0.081]	[0.111]	[0.110]	[0.079]	[0.105]	[0.115]
$Board\,Increase \cdot GOOD_{i,t-1}$	-0.145*	-0.030	-0.217**	-0.211***	-0.023	-0.340***
	[0.074]	[0.111]	[0.100]	[0.068]	[0.099]	[0.094]
$Board\,Increase \cdot GOOD_{i,t-2}$	-0.060	-0.077	-0.038	-0.065	-0.030	-0.050
	[0.066]	[0.108]	[0.086]	[0.065]	[0.105]	[0.088]
$Board\,Increase \cdot GOOD_{i,t-3}$	-0.001	-0.060	0.048	-0.085	-0.048	-0.063
	[0.075]	[0.112]	[0.104]	[0.077]	[0.114]	[0.107]
$Board\,Increase \cdot GOOD_{i,t-4}$	-0.054	-0.006	-0.101	0.035	0.196	-0.037
	[0.079]	[0.125]	[0.105]	[0.100]	[0.179]	[0.114]

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Variables	(1)	(2)	(3)	(4)	(5)	(6)
$\Delta\, Board\, Size_{i,t}$	-0.057***	-0.051***	-0.505***	-0.056***	-0.051***	-0.068***
	[0.015]	[0.019]	[0.055]	[0.015]	[0.019]	[0.023]
$Board\, Diversity_{i,t}$	0.009	-0.023	-0.001	0.009	-0.022	0.016
	[0.021]	[0.045]	[0.002]	[0.021]	[0.046]	[0.024]
$CAR_{i,t-1}$	0.005**	0.034***	-0.001	0.005**	0.034***	-0.000
	[0.003]	[0.012]	[0.002]	[0.003]	[0.012]	[0.002]
$DISS_{w3}$	-0.543***	-0.548***	-0.505***	-0.539***	-0.536***	-0.498***
	[0.050]	[0.122]	[0.055]	[0.050]	[0.123]	[0.055]
$Share\, Fee_{i,t-1}$	0.006**	0.033**	-0.000	0.006**	0.035***	-0.000
	[0.003]	[0.013]	[0.003]	[0.003]	[0.013]	[0.003]
$OBS_{i,t-1}$	-0.016***	-0.011	-0.020***	-0.016***	-0.008	-0.020***
	[0.004]	[0.016]	[0.005]	[0.004]	[0.016]	[0.005]
$CL_{i,t-1}$	0.000	0.004	-0.001	0.000	0.003	-0.001
	[0.001]	[0.002]	[0.001]	[0.001]	[0.002]	[0.001]
$NPL_{i,t-1}$	-0.011**	-0.009	-0.012**	-0.011**	-0.009	-0.013**
	[0.005]	[0.015]	[0.005]	[0.005]	[0.015]	[0.005]
$HHI_{i,t-1}$	-0.247***	-0.313**	-0.389***	-0.246***	-0.314***	-0.388***
	[0.053]	[0.122]	[0.058]	[0.053]	[0.121]	[0.058]
$TA_{i,t-1}$	0.132***	0.121***	0.096***	0.130***	0.115***	0.096***
	[0.015]	[0.029]	[0.017]	[0.015]	[0.029]	[0.017]
D_COOP_i	0.305***			0.301***		
	[0.044]			[0.044]		
D_PRIV_i	-0.410***			-0.411***		
	[0.086]			[0.087]		
D_BIG_i	-0.725***			-0.711***		
	[0.148]			[0.148]		
$Acquirer_{w3}$	0.124**	0.001	0.157**	0.129**	-0.011	0.168***
	[0.055]	[0.109]	[0.064]	[0.056]	[0.109]	[0.065]
$Target_{w3}$	-0.214***	-0.229**	-0.237***	-0.209***	-0.242***	-0.229***
	[0.068]	[0.092]	[0.080]	[0.068]	[0.093]	[0.081]
$GDP\, Growth_t$	0.092***	-0.090**	0.136***	0.093***	-0.095**	0.137***
	[0.014]	[0.043]	[0.017]	[0.014]	[0.044]	[0.016]
$Spread_t$	0.558***	0.378***	0.499***	0.559***	0.374***	0.499***
	[0.019]	[0.036]	[0.023]	[0.020]	[0.035]	[0.023]
Retirement BAD JPE	-1.025***	-0.805***	-1.16***	-0.803***	-0.246	-1.4***
Retirement GOOD JPE	-0.546*	0.307	-1.903***	-0.645***	-0.179	-1.35***
F-Test JPE (p-value)	0.205	0.005	0.279	0.683	0.885	0.939
Non retirement BAD JPE	-0.195	0.444	-0.396	-0.254	0.802	-0.717*
Non retirement GOOD JPE	0.553	1.301**	0.155	0.249	0.663*	0.051
F-Test JPE (p-value)	0.121	0.194	0.391	0.284	0.84	0.238
Board Increase BAD JPE	-0.858***	-0.843***	-0.925***	-1.11***	-1.378***	-1.101***
Board Increase GOOD JPE	-0.296	-0.119	-0.369	-0.378*	0.206	-0.637**
F-Test JPE (p-value)	0.04	0.095	0.148	0.015	0.002	0.255
No. of obs.	15,491	4,271	11,190	15,491	4,271	11,190
No. of banks	3,108	712	2,389	3,108	712	2,389
AR(1) test (p-value)	0	0	0	0	0	0
AR(2) test (p-value)	0.761	0.547	0.974	0.753	0.455	0.829
Hansen test (p-value)	0.521	0.452	0.304	0.496	0.442	0.261

Note: Coefficients from dynamic panel estimations with Windmeijer (2005) corrected standard errors below the coefficients. In columns (1)-(3), we split up the group of outsiders according to historical ROA and in columns (4)-(6) according to managerial RRE. Columns (1) and (4) represent the full sample. Columns (2) and (5) show the results for savings banks and columns (3) and (6) for private banks. Year dummies are included, but not reported. JPE (joint performance effect) depicts the sum of all coefficients belonging to a particular outsider turnover-type interaction term. *, ** and *** indicate significance of the coefficients at the 10%, 5% and 1% level, respectively.

3.6.4 Untabulated complementary results

TABLE 3.23: Difference-in-differences estimations.

The treatment group is composed of banks with newly appointed outsiders in which no further turnover, merger and distress event occurred in the three years around this appointment year. The control group consists of banks without any turnover, merger and distress events in the preceding and following two years. For each bank in the treatment group we match control banks with replacement from the same year and banking group, as well as from the same size and ROA deciles in the year before the treatment bank appoints the outsider. Panel A shows the results on whether both groups differ regarding ROE, ROA, RROE, RROA and TA in the pre-event year.

Panel A:	**Historical ROA**			**Managerial RRE**		
	Treat mean	Non-Treat mean	Treat vs. Non-Treat *t-value*	Treat mean	Non-Treat mean	Treat vs. Non-Treat *t-value*
No. of obs.	308	1688		309	1688	
ROE	12.599	13.14	*0.717*	12.533	13.085	*0.737*
ROA	0.739	0.773	*0.79*	0.739	0.767	*0.664*
RROE	1.9	1.865	*-0.289*	1.891	1.853	*-0.31*
RROA	2.082	2.076	*-0.042*	2.076	2.061	*-0.106*
TA	19.138	19.037	*-0.699*	19.134	19.027	*-0.744*

In Panel B, coefficients come from the following difference-in-differences equation: $\Delta\, Performance_{i,t} = \beta_0 + \beta_1 \cdot BAD_i + \beta_2 \cdot GOOD_i + \beta_3 \cdot POST_{i,t} + \beta_4 \cdot BAD_i \cdot POST_{i,t} + \beta_5 \cdot GOOD_i \cdot POST_{i,t} + \epsilon_{i,t}$. $\Delta\, Performance_{i,t}$ denotes the annual change in $RROE$ in Columns (1)-(2) and (5)-(6) and $RROA$ in Columns (3)-(4) and (7)-(8). $POST_{i,t}$ equals 1 in the post-treatment period. BAD ($GOOD$) in Columns (1)-(4) denotes appointments of outsiders with below-average (above-average) historical ROA, and in Columns (5)-(8) with below-average (above-average) managerial RRE. We consider up to three years before and after appointment. All estimations include bank-fixed effects; therefore no estimate is reported for BAD and $GOOD$. Standard errors reported in parentheses are corrected for heteroscedasticity and are clustered at the level of the bank. ***, **, and * indicate that coefficients are significant at the 1%, 5%, and 10% level, respectively.

Panel B:	**Historical ROA**				**Managerial RRE**			
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$POST$	0.056	0.069	0.054	0.060	0.074	0.094	0.109	0.123*
	[0.058]	[0.057]	[0.062]	[0.061]	[0.064]	[0.063]	[0.069]	[0.068]
$BAD \cdot POST$	-0.186**	-0.171**	-0.193**	-0.174**	-0.133*	-0.152**	-0.210***	-0.224***
	[0.077]	[0.075]	[0.083]	[0.082]	[0.070]	[0.069]	[0.076]	[0.074]
$GOOD \cdot POST$	-0.022	-0.033	-0.001	-0.012	-0.032	-0.036	-0.096	-0.103
	[0.079]	[0.077]	[0.085]	[0.084]	[0.067]	[0.065]	[0.072]	[0.071]
Year effects	YES	YES	YES	YES	YES	YES	YES	YES
Bank controls	NO	YES	NO	YES	NO	YES	NO	YES
No. of obs.	2,691	2,691	2,691	2,691	2,691	2,691	2,691	2,691
No. of banks	397	397	397	397	397	397	397	397

TABLE 3.24: Board structure for historical ROA.

Variables	(1)	(2)	(3)	(4)	(5)
$RROE_{i,t-1}$	0.260***	0.252***	0.262***	0.259***	0.263***
	[0.018]	[0.018]	[0.018]	[0.018]	[0.018]
$BAD_{i,t}$	-0.334***	-0.319***	-0.284***	-0.335***	-0.315***
	[0.052]	[0.057]	[0.054]	[0.052]	[0.053]
$BAD_{i,t-1}$	-0.154***	-0.219***	-0.146***	-0.158***	-0.134***
	[0.041]	[0.042]	[0.041]	[0.042]	[0.042]
$BAD_{i,t-2}$	-0.146***	-0.153***	-0.143***	-0.149***	-0.130***
	[0.044]	[0.045]	[0.044]	[0.045]	[0.045]
$BAD_{i,t-3}$	-0.120**	-0.128**	-0.116**	-0.122**	-0.108**
	[0.050]	[0.051]	[0.050]	[0.051]	[0.051]
$BAD_{i,t-4}$	-0.049	-0.056	-0.045	-0.050	-0.041
	[0.055]	[0.055]	[0.055]	[0.055]	[0.055]
$GOOD_{i,t}$	-0.191**	-0.156*	-0.155*	-0.194**	-0.178**
	[0.084]	[0.082]	[0.083]	[0.084]	[0.083]
$GOOD_{i,t-1}$	-0.053	-0.096**	-0.047	-0.056	-0.034
	[0.046]	[0.047]	[0.046]	[0.046]	[0.046]
$GOOD_{i,t-2}$	0.022	0.020	0.022	0.019	0.038
	[0.046]	[0.046]	[0.046]	[0.046]	[0.046]
$GOOD_{i,t-3}$	0.018	0.001	0.015	0.016	0.030
	[0.048]	[0.048]	[0.048]	[0.048]	[0.048]
$GOOD_{i,t-4}$	-0.047	-0.048	-0.048	-0.048	-0.040
	[0.055]	[0.055]	[0.055]	[0.055]	[0.055]
$Insider_{i,t}$		-0.061**			
		[0.031]			
$Insider_{i,t-1}$		-0.092***			
		[0.021]			
$Insider_{i,t-2}$		-0.052**			
		[0.022]			
$Insider_{i,t-3}$		-0.087***			
		[0.024]			
$Insider_{i,t-4}$		-0.071***			
		[0.024]			
$Board\,Size_{i,t}$			-0.044***		
			[0.011]		
$Board\,Age_{i,t}$				-0.003	
				[0.003]	
$Board\,Academic\,Degree_{i,t}$				-0.080	
				[0.108]	
$Board\,Tenure_{i,t}$					0.006***
					[0.002]
Board controls	NO	YES	YES	YES	YES
Bank controls	YES	YES	YES	YES	YES
Insider JPE		-0.364***			
BAD JPE	-0.754***	-0.875***	-0.69***	-0.763***	-0.687***
GOOD JPE	-0.205	-0.279*	-0.165	-0.216	-0.145
F-Test JPE (p-value)	0.002	0.004	0.004	0.003	0.003
No. of obs.	15,838	15,491	15,831	15,826	15,829
No. of banks	3,108	3,108	3,108	3,108	3,108
AR(1) test (p-value)	0	0	0	0	0
AR(2) test (p-value)	0.561	0.937	0.577	0.608	0.546
Hansen test (p-value)	0.450	0.550	0.501	0.467	0.438

Note: Coefficients from dynamic panel estimations with Windmeijer (2005) corrected standard errors below the coefficients. The dependent variable is $RROE$. We use historical ROA as an ability measure to separate good from bad outside appointments. In Column (1) we present the results without any board variables. In Column (2) we add 5 dummies to control for inside appointments. In Column (3) we add board size, in Column (4) we add the average age of the executive board and the average academic degree, and in Column (5) we include the average tenure of the executive board members. All bank-specific, macro and year dummy variables listed in Equation (3.6) are included, but not reported. JPE (joint performance effect) depicts the sum of all coefficients belonging to a particular outsider type. *, ** and *** indicate significance of the coefficients at the 10%, 5% and 1% level, respectively.

TABLE 3.25: Board structure for managerial RRE.

Variables	(1)	(2)	(3)	(4)	(5)
$RROE_{i,t-1}$	0.259***	0.252***	0.261***	0.259***	0.262***
	[0.018]	[0.018]	[0.018]	[0.018]	[0.018]
$BAD_{i,t}$	-0.336***	-0.302***	-0.293***	-0.339***	-0.321***
	[0.074]	[0.071]	[0.072]	[0.074]	[0.072]
$BAD_{i,t-1}$	-0.104**	-0.174***	-0.099**	-0.108***	-0.084**
	[0.041]	[0.043]	[0.041]	[0.041]	[0.041]
$BAD_{i,t-2}$	-0.125***	-0.134***	-0.125***	-0.128***	-0.107**
	[0.044]	[0.045]	[0.044]	[0.044]	[0.044]
$BAD_{i,t-3}$	-0.075	-0.068	-0.080*	-0.077	-0.062
	[0.048]	[0.048]	[0.048]	[0.048]	[0.048]
$BAD_{i,t-4}$	-0.076	-0.083	-0.076	-0.077	-0.069
	[0.051]	[0.052]	[0.051]	[0.051]	[0.051]
$GOOD_{i,t}$	-0.200***	-0.173***	-0.155***	-0.201***	-0.184***
	[0.058]	[0.064]	[0.059]	[0.058]	[0.059]
$GOOD_{i,t-1}$	-0.102**	-0.137***	-0.093**	-0.106**	-0.084*
	[0.043]	[0.043]	[0.043]	[0.043]	[0.044]
$GOOD_{i,t-2}$	-0.003	-0.016	0.001	-0.005	0.011
	[0.047]	[0.047]	[0.047]	[0.047]	[0.048]
$GOOD_{i,t-3}$	-0.012	-0.053	-0.005	-0.014	-0.001
	[0.050]	[0.051]	[0.050]	[0.050]	[0.050]
$GOOD_{i,t-4}$	-0.023	-0.054	-0.020	-0.025	-0.015
	[0.058]	[0.059]	[0.058]	[0.058]	[0.058]
$Insider_{i,t}$		-0.062**			
		[0.031]			
$Insider_{i,t-1}$		-0.092***			
		[0.021]			
$Insider_{i,t-2}$		-0.050**			
		[0.022]			
$Insider_{i,t-3}$		-0.089***			
		[0.024]			
$Insider_{i,t-4}$		-0.069***			
		[0.024]			
$Board\,Size_{i,t}$			-0.044***		
			[0.011]		
$Board\,Age_{i,t}$				-0.003	
				[0.003]	
$Board\,Academic\,Degree_{i,t}$				-0.081	
				[0.108]	
$Board\,Tenure_{i,t}$					0.006***
					[0.002]
Board controls	NO	YES	YES	YES	YES
Bank controls	YES	YES	YES	YES	YES
Insider JPE		-0.362***			
BAD JPE	-0.717***	-0.761***	-0.598***	-0.652***	-0.574***
GOOD JPE	-0.341**	-0.433***	-0.252**	-0.326**	-0.258**
F-Test JPE (p-value)	0.063	0.116	0.047	0.061	0.067
No. of obs.	15,838	15,491	15,831	15,826	15,829
No. of banks	3,108	3,108	3,108	3,108	3,108
AR(1) test (p-value)	0	0	0	0	0
AR(2) test (p-value)	0.494	0.896	0.509	0.536	0.482
Hansen test (p-value)	0.422	0.534	0.471	0.438	0.410

Note: Coefficients from dynamic panel estimations with Windmeijer (2005) corrected standard errors below the coefficients. The dependent variable is $RROE$. We use managerial RRE as an ability measure to separate good from bad outside appointments. In Column (1) we present the results without any board variables. In Column (2) we add 5 dummies to control for inside appointments. In Column (3) we add board size, in Column (4) we add the average age of the executive board and the average academic degree, in Column (5) we include the average tenure of the executive board members. All bank-specific, macro and year dummy variables listed in Equation (3.6) are included, but not reported. JPE (joint performance effect) depicts the sum of all coefficients belonging to a particular outsider type. *, ** and *** indicate significance of the coefficients at the 10%, 5% and 1% level, respectively.

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Chapter 4

Experienced members of the supervisory board. Who is appointed and which bank appoints?

Abstract

This study employs a unique sample of 171 newly appointed supervisory board members of German banks who possess experience in bank executive positions. In fact, such a focus involves internal candidates (i.e. formerly employed executive directors) and those with executive positions at other banking institutes. Covering all universal banks in Germany between 2009 and 2015, this study explores two different questions. Firstly, are the appointed executives different from other, non-appointed executives? Secondly, which banks appoint such directors to their supervisory boards? My results suggest that the appointed executives can be characterized by a particular aggregate of experience that sets them apart from their non-appointed counterparts. Moreover, this paper shows that banks appointing internal candidates to the supervisory board differ in terms of their prior financial situation from both externally- and non-appointing banks.

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4.1 Introduction

Within the German dual board structure, the role of a supervisory board covers the following tasks. Firstly, the supervisory board selects and appoints the members of the executive board who are responsible for the day-to-day management of the bank. This implies that the supervisory board is separated from the daily management but monitors, as their second task, the bank management decisions as a whole. Thirdly, the supervisory board has to advise the executive board in basic terms and shareholders can require that some decisions of the executive board are additionally subject to the supervisory board's approval (e.g. Dittmann et al., 2010). To exercise these three tasks, members of the supervisory board require a specific understanding of the bank-related economic and legal subjects. In sum, the effectiveness of these tasks have an influence on the financial performance of the bank (Hermalin and Weisbach, 1998). These tasks, however, also have an indirect influence on the economy since the amount of German small- and medium-sized enterprises are predominately bank-financed and their investments rely on a well-performing banking industry.

The composition of internal control bodies such as the supervisory board is bound to specific guidelines. These guidelines are driven by the interests of bank stakeholders and employees as well as a framework set out by bank regulatory authorities. This framework has changed in light of the last banking crisis that began in 2007. Indeed, calls for improving various internal governance mechanisms in banks have become increasingly urgent (e.g. Hau and Thum, 2009; Adams and Mehran, 2012) meaning that the framework now specifically demand an increase in transparency as concerns supervisory board member appointments in German banks.

From a standpoint of well-performing banks and reliable financing to the economy, there is considerable interest in whether the best are picked to exercise the supervisory function in response to the bank's specific situation. The following paper contributes to this overarching interest by using two research perspectives. First, the study aims to answer the question of whether a higher level of experience influences the probability of being appointed to the supervisory board. A unique dataset covering balance sheet and board information of all German banks allows me to identify new appointees to the supervisory board between 2009 and 2015 who possess bank employment experience in an executive role. Thus, I determine the appointed executives to the supervisory board and compare them to other, non-appointed candidates at the same professional level. Among other comparison criteria, my key interest refers to three different aspects of executives' employment history: a) experience from the position of a chief executive officer (CEO), b) number of previously held positions at other banks and c) number of board seats the executive holds in addition to his/her (full-time) executive position at the bank (secondary employment).

These aspects are chosen based on the argument from the literature that bank supervisory board members with a higher level of financial experience, measured in terms of their employment history, might be more predisposed to monitoring bank executive directors than those with less finance-related experience. For example, Hau and Thum (2009) consider board members' expertise from their previous employment history as well as their educational background in order to obtain a measure of the monitoring potential of the supervisory board. Minton et al. (2014) identifies financial experts among independent directors[1] of US bank holding companies with regard to their employment history at an executive position at a financial institution, a finance-related position or an academic position. Also García-Sánchez et al. (2017) consider non-executive directors who specialize in the banking industry as financial experts and are better equipped to monitor and advise banks because they have lower costs in acquiring information about the complexity and associated risks of certain financial transactions.

After identifying the group of appointees to the supervisory board with a specific set of experience, my second research perspective relates to which banks appoint experienced members to their supervisory boards. I provide insights to this question in terms of the financial situation of the appointing banks, which refers to the argument that expertise in the supervisory boardroom might become important when banks need an alternative channel of information and monitoring (e.g. Oehmichen et al., 2017). This study considers where the relevant knowledge and expertise were accumulated, that is, whether this relies more on internal or external experience. In particular, the bank's formerly employed executives might possess internal knowledge of bank managing. Hence, in addition to former executives, my study considers appointments from the executive board to the supervisory board within a bank concern since I argue that these appointments are also a source of internal experience.[2] It would be particularly interesting to study those appointments in a single group and explore the dynamics of power within a bank concern, however, the number of such appointments is too small to examine them separately. Thus, I combine them with the formerly employed executives to the group of internal appointments. By way of a preview, the results of this study suggest that the pre-appointment financial situation of the bank has a significant influence on whether the banks appoint an experienced member to the supervisory board and whether it is more likely that an internal or external candidate is hired.

[1] Within the one-tiered board system of the US, an independent director is a non-executive director who monitors and advises the CEO and the senior management of the institution (Hermalin and Weisbach, 1998)

[2] A concern is a group of legal independent institutions brought together under the same direction with controlling influence of a "parent institute" over subsidiaries. The German *Konzern* is defined in provision 18 of the *Aktiengesetz (AktG)*.

With insight to re-appointments from the executive to the supervisory board, my study is related to a first stream of literature that investigates former executives in the supervisory boards. The literature discusses two opposing theoretical arguments to these appointments that draw on resource dependence theory and agency theory (Oehmichen et al., 2014). First, the resource dependence theory predicts beneficial effects of former executives since they might be a valuable resource of internal knowledge (Pfeffer and Salancik, 1978; Hillman et al., 2009). The presence of former executives on supervisory boards would ensure bank-specific knowledge and allow for exercising a monitoring and advisory function in a very effective way. However, agency theory predicts conflicts of interest and a lack of independence when former executive are present on the supervisory board (Jensen and Meckling, 1976; Fama, 1980). Former executives may have an interest in protecting their previous work, which reduces the ability of the supervisory board to provide an effective (independent) monitoring function (e.g. Grigoleit et al., 2011; Quigley and Hambrick, 2012; Oehmichen et al., 2014). Regarding the contradictory predictions of the theoretical argumentation,[3] researchers have examined when former executives obtain access to supervisory boards. Brickley et al. (1999) provide supportive evidence that the likelihood of a former CEO being retained on the board after retirement depends on his/her previous performance in the position. Contributing to this, my study shows that the probability that a former executive is re-appointed to the supervisory board increases when the bank experiences a lower risk exposure in the period prior to this appointment.

In addition, this study refers to a second stream of literature examining financial expertise among non-executive directors and the relation to bank performance and risk-taking. García-Sánchez et al. (2017) provide findings suggesting that the monitoring role of financial experts as well as gender diversified boards imply positive effects on accounting conservatism and earnings quality in banks. Moreover, García-Meca and Sánchez-Ballesta (2014) find that Spanish savings banks which are run by a chairman of the board of directors with previous banking experience are likely to be significantly more solvent and less volatile. However, competing results to the findings of García-Sánchez et al. (2017) and García-Meca and Sánchez-Ballesta (2014) are provided by Minton et al. (2014), who show that the presence of financial experts among independent directors is positively related to several measures of risk taking. More precise, Minton et al. (2014) find only a weak relation to better

[3]The existing literature aims to disentangle whether advantages or disadvantages have the upper hand but the question remains unanswered in light of very mixed results. More specifically, the study of Grigoleit et al. (2011) examines former CEOs serving as supervisory board members with a sample of German firms but does not provide evidence of significant positive or significant negative effects on performance. Also Andres et al. (2014) document insignificant results in the analysis of post-appointment operating firm performance and instead finds that the firm value increases when the bank's own executive directors are appointed to the supervisory board. Oehmichen et al. (2014) find on average a negative performance effect but document that firm internal contingencies influence the impact that the bank's own executives as non-executive directors can have on performance.

firm performance and conclude that their results challenge the regulator's view that more financial expertise on bank boards lead to a lower risk profile. Extending the research of board expertise, Oehmichen et al. (2017) provide supportive evidence for the view that institutional differences modify the relation of board expertise and strategic change. They show that weak institutions, i.e., where there is low institutional information and control provision, appoint greater board industry expertise to their boards of directors and argue that in such institutions a director's expertise is a more powerful lever in advising and monitoring managers to initiate strategic change. The argument of Oehmichen et al. (2017) refers to the resource dependence perspective on boards as a critical resource and channel of information and control which is related to the firm's specific needs of advising and monitoring (Pfeffer, 1972; Hillman et al., 2009). Contributing to this perspective, my results suggest that the risk exposure of the appointing bank affects the probability of whether an experienced member is appointed to the supervisory board. Thus, this study extends the literature of financial expertise among bank directors with the insight that high-risk banks are more likely to appoint (external) experienced members to their supervisory board than banks with a lower risk exposure. This finding could be of interest to researchers investigating performance as a function of board expertise with the indication that there is a potential reverse causality.

The findings of this study also enlarge a third stream, namely the literature of supervisory boards in Germany. Leaving aside the number of studies that investigate bank-employed directors in supervisory boardrooms of German firms (e.g. Dittmann et al., 2010), the review of Johansen et al. (2017) summarizes that the studies focusing governance mechanism in supervisory boards of German banks are rare. One of these is the study by Hau and Thum (2009) that provides two important insights on the competence of board members of the largest 29 banks in Germany. First, the competence among supervisory boards is lower among the state-owned banks than in private banks and, secondly, these differences may explain the higher losses of the state-owned banks during the crisis period 2007-2008. Also, Johansen et al. (2017) investigate supervisory boards of 41 large German commercial banks. They ask whether the composition of these boards reflects either more inside control by, for example, former executives or outside control by major shareholders and document that the largest group among non-employee board members is made up of bank managers. My study contributes to this stream of literature with a unique dataset covering linkages between executive and supervisory boards among German universal banks regardless their size, ownership or a subsidiary's membership in a bank concern.

The remainder of this paper is organized as follows: Section 4.2 provides information on the institutional background of supervisory boards in German banks. Section 4.3 develops the hypotheses, while Section 4.4 introduces the data and the

identification of experienced members of the supervisory board used in this study. Using executive-level data, Section 4.5 presents results on the probability of executives being appointed to the supervisory board. Then, making use of bank-level data, Section 4.6 provides insights into which banks appoint experienced members and whether banks with internal appointments differ from externally-appointing banks. The results and limitations of the present study are discussed in Section 4.7.

4.2 Institutional background

The German corporate governance system requires a dual board structure with an executive board (first tier), chaired by the CEO, and a supervisory board (second tier), headed by the firm's own chairman (Hackethal et al., 2003). Accordingly, banks in the German universal banking system are in general organized in a two-tiered board system.[4] The supervisory board's responsibilities comprise the advising and monitoring function and are largely comparable to those of the boards of directors in the Anglo-American system (e.g. Kaplan, 1994; Fauver and Fuerst, 2006). However, Balsmeier et al. (2015) argue that the distinction of corporate activities and monitoring function in the two-tiered board system requires an enhanced need for monitoring expertise on the part of supervisory board members. More specifically, the members of the German second tier fulfill a supervisory role for the executive board while they are separated from the day-to-day management of the bank. The management is obliged to follow the executive board, which in turn reports to the supervisory board on a regular basis. It is the task of the supervisory board to appoint and dismiss members of the executive board and to approve executive directors' salaries. Members of the supervisory board are not permitted to be members of the executive board of the same institution at the same time. Thus, the case of CEO duality, that is where the CEO is also the chairman of the board of directors, does not exist in the German two-tiered board system (Berger et al., 2013). Such dominance of one person would lead to conflicts of interest and a lack of independence that reduces board effectiveness (Dalton et al., 1998).

However, the independence of the supervisory board in the two-tiered system can be affected when formerly employed executives are appointed seamlessly to the supervisory board following their duties on the executive board. The most obvious example would be the appointment of the former CEO who has to monitor the successor to his/her former position on the executive board. However since 2009, the regulatory authorities have become more active and aim to protect the independence of the supervisory board with a number of different standards. Firstly, since 2009

[4]The only exception that can be found among the small banks of the banking sector where the form and even the existence of the supervisory board depends on the company form is discussed in the following when I describe this private commercial banking group in more detail.

the German Stock Corporation Act *(Aktiengesetz, AktG)* has placed a general prohibition on the internal appointment of executive directors to the supervisory board for listed banks without a "cooling-off period" of two years between the duty of the executive and the supervisory board, or upon the explicit request of shareholders that together hold at least one-quarter of the voting shares. Secondly, the German Banking Act *(Kreditwesengesetz; hereafter as KWG)* limits the appointments of former executive directors for all banks when two former executive directors already serve on the supervisory board. The standards can be interpreted as a trade-off between an inefficient monitoring function by former executives, and deriving benefits from their expertise and knowledge (e.g. Oehmichen et al., 2014).

The focus of this study is on German banks. The German universal banking system reveals large differences in terms of bank size and bank business focus. While a small number of large commercial banks that are internationally active and stock listed exist, the majority of banks are small- and medium-sized institutes with a regional business focus. The German banking system comprises banks with varying legal structures: banks are organized as public law, cooperative and private sector institutes. The three types of banks are called savings, cooperative and commercial banks, hereafter referred to as *banking groups*.

Savings banks are owned by the administrative district and subject to the individual state law for savings banks. In contrast to the cooperative and commercial banks, they are not only commercial but also have a public mandate (Brunner et al., 2004). This study also covers the *Landesbanken*, which serve as the money-center institutions for their assigned, regional savings banks. Members of the *Landesbanken* may serve as supervisory board members at savings banks in order to provide financial expertise to the supervisory boardroom and to advise and monitor the members of the executive board (Hau and Thum, 2009).[5] Due to their ownership structure, the supervisory boards in savings banks *(Verwaltungsrat)* consist of a chairman, who is also often the senior official in the administrative district, and mainly high-level employees of the state or members belonging to the main organ of the municipality (Hau and Thum, 2009). In addition, one-third of the board members are elected representatives of the employees since, in general, supervisory boards in Germany operate under the codetermination system that grants employees one-third of the seats in the supervisory board (Renaud, 2007).

The second banking group consists of cooperative banks and their central cooperative banks,[6] which alongside activities similar to the Landesbanken, also carry

[5]These appointments are considered as external appointments in this study.
[6]The sample period studied here covers the time period before the DZ Bank (Frankfurt) and WGZ Bank (Düsseldorf) merged into one central cooperative bank in 2016.

out investment banking activities (Hau and Thum, 2009). Cooperative banks are organized as mutual organizations and serve the interests of their owners. They elect the chairman and the members of the supervisory board *(Aufsichtsrat)*[7] from among all shareholders of the cooperative.

The private commercial banking group consists of large (stock) listed institutes and smaller banks organized as partnerships, private limited companies or sole proprietors (Brunner et al., 2004). In contrast to the two former banking groups they are not restricted to a local focus or in terms of their business models or company form. Thus, the existence and shape of the supervisory board in private banks depends on the chosen company form and the number of employees. Whereas German law requires shareholders of (listed) stock companies and commercial partnerships to appoint members of a supervisory board *(Aufsichtsrat)*, a second tier is optional for these rare banks in the form of limited liability companies (GmbH) with less than 500 employees or institutions with personally liable partners (i.e., Offene Handelsgesellschaft (OHG) or Kommanditgesellschaft (KG)). In addition, this banking group comprises the majority of bank concerns considered in this study.

4.3 Development of hypotheses

This study explores newly appointed members of the supervisory board at German banks who possess experience derived from sitting on a bank's executive board. Possible candidates to these appointments are individuals with:

i) a previous executive position at the same bank,

ii) an executive position at related institutes (i.e., same bank concern, group of institutions or financial holding) or

iii) an executive position at non-related institutes.

Besides the aforementioned regulations of former executives' appointments to the supervisory board, Section 25d (3) of the KWG restricts in general the number of memberships at different supervisory boards to four. However, a bank executive director cannot be a supervisory board member of an institute when s/he already holds two memberships at other institutes. With this provision, inter alia, the law aims to ensure the necessary time capacities to exercise the executive and supervisory roles concurrently. However, all supervisory board seats at related institutes, covered under ii), count as one under this provision.[8] The appointments examined

[7] At this point, I wish to emphasize that the expression *supervisory board* used in this study encompasses each internal institution that is responsible for monitoring and advising the executive board according to the social contract, statute or law.

[8] The numbers are enlarged when the appointing bank is a non-CRR institute which means that it is not covered by the capital requirement regulation of the EU (Section 1 KWG).

in this study among non-related institutes are possible since, in contrast to the "non-competition regulation" affecting the executive role (Section 88 AktG), it is not legally prohibited for an executive to become a supervisory board member at another company (Feltl and Kraus, 2011).

All of these candidates possess bank management experience from an executive board. The majority of bank executive boards in Germany comprise two members where both of them deal with the duties of bank management. On this basis, one might argue that all candidates have developed various skills in managing banking institutions since a single focus on, for example, human resource duties are seldom. Thus, they are able to monitor and advise the executive directors in a more efficient way than non-executive directors might since they understand bank management from their own practice and know the "adjustment screws". While this study focuses on bank management experience, it is possible to argue that any form of management experience, also from non-banks, is more helpful in the monitoring of executives than no management experience at all. However, bank executives differ from non-bank executives in their regular reporting to national and international regulatory requirements and in their interaction with banking supervisory authorities. They are therefore better placed to ascertain financial risks, identify poor management decisions, and monitor the executive board (Hau and Thum, 2009).

However, a strand of literature examining characteristics of managers documents that there are material differences among a group of individuals at the same career level and that these differences can have an impact on corporate success (Bertrand and Schoar, 2003; Masulis and Mobbs, 2011; Kaplan et al., 2012). This insight prompted me to regard the executives in German banks as a heterogeneous group and ask which properties distinguish the small amount of executive directors that are appointed to the supervisory board from the large group of non-appointed executives since all of them operate at the same professional level. I study this question with regard to three different aspects of job experience: namely CEO experience, positions held at other banks and secondary employment, since one may argue that executives with a higher level of job experience are expected to have a higher potential capacity for advising and monitoring than those with a lower level (Hau and Thum, 2009; Minton et al., 2014; García-Sánchez et al., 2017). Following from this, I hypothesize that more job experience leads to a greater probability of being appointed to the supervisory board.

Moreover, the potential candidates differ in terms of either internally or externally gained experience. The most obvious source of internal managing experience will originate from formerly employed executives. While the German board structure does not allow executive directors to be members of the supervisory board at the same time, a natural pre-condition of a former executive's re-appointment to the

supervisory board is that s/he ceases serving on the executive board. Since banks are thought to be less likely to re-appoint executives they have previously dismissed, it is more likely that the appointee will retire from the executive board before his/her appointment to the supervisory board. The time surrounding a retirement event is, especially when the CEO retires, defining for every institution. In order to reduce the uncertainty associated with the succession process (Evans et al., 2010) and to avoid a loss of bank-specific knowledge (Brickley et al., 1999), a post-retirement board duty at the supervisory board can be offered to the incumbent executive. However, the literature shows that the likelihood of a former executive director being appointed to the supervisory board depends on the financial situation of the bank. To be precise, Brickley et al. (1999) show that the post-retirement opportunities for executive directors are positively related to the managerial performance demonstrated on the job. Following from this, I argue that banks are more willing to re-appoint their previous executives when past times were successful because, in contrast, bad financial times are often assigned to poor performance of the current management (Huson et al., 2004). Following these lines of reasoning, I hypothesize that internal appointments of former executives are accompanied by a retirement event on the executive board and are more likely observable in banks in good financial health.

In contrast to internal experience, the literature shows that the experience of external candidates is favored when a business is under stress. Dalton and Kesner (1985) argue that this negative relation between prior performance and selecting external candidates is motivated by the desire to overcome the poor financial situation with the external knowledge of the appointee. This argument relates to the resource dependence perspective of Pfeffer (1972), where board members are regarded as an channel of resource provision and a "match" between the resources provided by the board and the needs of the firm (Pfeffer, 1972; Hillman et al., 2009). Following from this, I argue that candidates external to the bank provide additional (external) financial experience and enhance the monitoring potential in the supervisory boardroom. This becomes even more important when the bank needs an additional source of knowledge such as where a bank's financial situation becomes more precarious (Hau and Thum, 2009; Oehmichen et al., 2017). Thus, I hypothesize that the probability of an experienced supervisor external to the bank being appointed increases with a deteriorating financial situation, i.e. high risk, of the bank.

4.4 Data and identification

One part of the efforts to improve internal governance mechanisms in banks relates to the disclosure requirements of banks, which have changed since 2008 and now require more transparency. Among other requirements, banks now have to report on their internal monitoring institutions, which essentially comprise announcing the new appointments of supervisory board members. Banking regulatory authorities

must be informed about new supervisory board members and their background in order to ensure they have the knowledge required to exercise the supervisory function. More specifically, German banks have to provide both specific personnel-related information about the new appointees and evidence of their reliability and expertise. The relevant regulation has been applied to banks since August 2009, after coming into force with an amendment to the KWG via legislation aimed at strengthening supervision of the finance and insurance sectors *(Gesetz zur Stärkung der Finanzmarkt- und der Versicherungsaufsicht, FMVAStärkG)*. Thus, 2009 also marks the beginning of the sample period studied here since the data used in this study is taken from the Deutsche Bundesbank's prudential database, BAKIS, which contains information on the financial statements and supervisory reports of German banks where the employment histories of executive directors have been available since 1993, and for supervisory board members since 2009.

Starting from all banks of the German universal banking system, I use board information of two consecutive years to identify all new appointments to the supervisory board. Moreover, I determine those appointees to the board who already possess experience at the executive board level. I identify those individuals as *experienced members of the supervisory board* who are reported to have been an executive director for at least two years prior to their appointments to the supervisory board. Moreover, the appointment to the supervisory board has to take place within five years after the final year of the executive director's previous position. I chose a time period of five years to ensure that the experience of the newly appointed members implies actual (regulatory) knowledge of bank managing. The recent development of the Basel Framework serves as just one example to justify that a time period of five years seems to be appropriate to ensure that the executive director is still familiar with the current regulatory requirements of bank managing. To be more precise, the revision of the Basel Framework I by the introduction of Basel II in 2007 and the gradual implementation of Basel III between 2013 and 2017 intensify the regulatory capital and reporting requirements of banks comprehensively and have changed the work of banking executives within several years (e.g. Gruber, 2015; Luetgerath, 2016).[9]

[9]The Basel Framework encompasses all applicable standards issued by the Basel Committee on Banking Supervision. The Basel II Framework revised Basel I, that was first enacted in the 1980s, with, inter alia, more complex models for capital measurement and intensified capital standards (Vousinas, 2015). This revised framework of Basel II was first published in 2004 and came into force via several regulations and directives at the European level in 2007 (capital requirement regulations (CRR) and capital requirements directives (CRD)) (e.g. Basel Committee et al., 2010). The Basel Framework III, which implies stricter capital and liquidity rules, improved bank management and governance regulations, and demands higher transparency, were introduced in 2013 and then gradually replaced the regulations of Basel II up to 2017 (e.g. Basel Committee et al., 2010; Gruber, 2015; Vousinas, 2015).

TABLE 4.1: Appointments of experienced members to the supervisory board.

	All universal banks		**Savings banks**		**Cooperative banks**		**Commercial banks**	
Year	EM	Internals	EM	Internals	EM	Internals	EM	Internals
2009	14	9	3	3	0	0	11	6
2010	24	13	8	4	4	1	12	8
2011	41	21	18	8	6	1	17	12
2012	17	11	9	5	3	2	5	4
2013	27	14	11	2	8	6	8	6
2014	37	15	11	4	9	3	17	8
2015	11	6	1	0	3	3	7	3
Total	171	89	61	26	33	16	77	47

Note: This table reports the number of appointments of experienced members to the supervisory board organized by year and bank group. Experienced members (*EM*) are defined as those individuals appointed to the supervisory board that already possess bank experience at the executive board level. *Internals* denotes appointments of members of the same executive board, within the same concern or from previous target banks per year and bank group.

Table 4.1 provides the number of appointments of experienced members to the supervisory board between 2009 and 2015 organized by year and bank group. Overall, there are 171 cases including those appointments from the same executive board and those external to the bank. I refer to supervisory directors as *externals*, who have experience at the executive level of another bank. The appointments between savings (cooperative) banks and their Landesbanken (central cooperative banks) are also identified as externals. In contrast, *internals* are all those individuals previously employed on the executive board of the same bank prior to their appointment to the supervisory board.

In addition, appointments within connected institutions of a concern when, for example, an executive director from the parent institute is appointed to the supervisory board of its subsidiary, also provide a source of internal experience. Such appointees are more familiar with business procedures and have acquired more internal knowledge than an external appointee. According to Weiß (2014), such concern-linkages between executive and supervisory boards are made with regard to functional requirements, informational flow or with the aim of enhancing the influence of the parent institute over the subsidiary. Unfortunately, the number of these appointments is too small to investigate them separately. Thus, I classify appointees to the supervisory board with executive experience acquired within the same bank concern as *internals* and adjust my following econometric analysis for the possibility of connected institutes to appoint an experienced member to the supervisory within the same bank concern.[10]

[10]Function sharing of executives and supervisory board members within a concern are regulated by German law in order to protect the segregation of board duties and the influence of the parent institute over the subsidiaries (Weiß, 2014). Section 100 of the AktG restricts two cases that are of

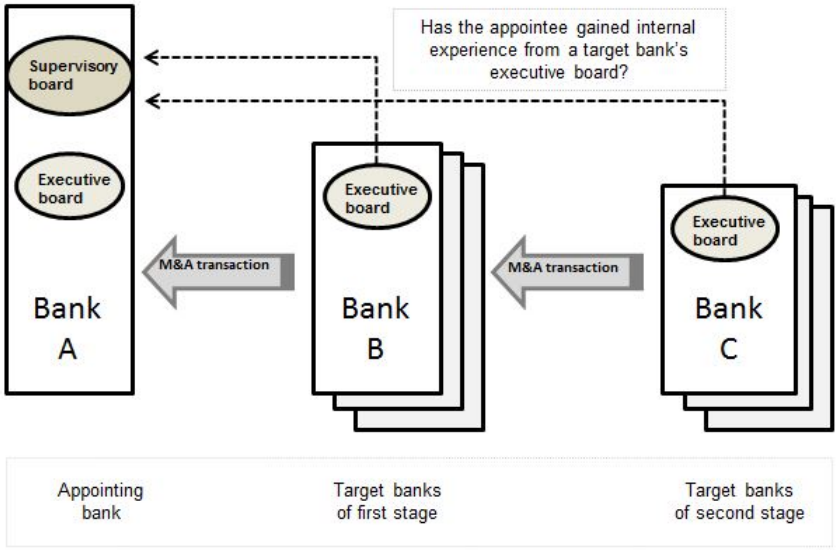
To consider merger and acquisition (M&A) transactions among German banks is justified in light of the large number of transactions that take place within the German banking system (e.g. Boone et al., 2007; Berger et al., 2014). The group of internals also contains appointees to the supervisory board who have an executive employment history at target banks. Following the M&A transactions studied here, which implies that the target bank is dissolved and no longer files reports under its former institutional ID (integrating merger),[11] the target bank's executives do not have seats on the board unless they are retained on the new executive board or appointed to the new supervisory board (Kick and Schertler, 2016). This practice offers the possibility of integrating some internal knowledge about the target bank into the combined entity which might improve information flow and communication within the new entity (Cai and Sevilir, 2012). Therefore, as depicted in Figure 4.1, I consider past M&A transactions of the appointing bank *(Bank A)* closed between 2000 and 2015 to ensure that appointees with an employment history at the executive board of the target bank *(Bank B)* are classified as internals. However, appointees to the supervisory board of Bank A would also possess internal knowledge about (parts of) Bank B if they had an employment history at a previous target bank *(Bank C)* which was integrated into Bank B. Such appointees are also classified as internals. In other words, I want to make sure (as far as possible) that no appointee to the supervisory board is classified as an external who was employed as an executive director at a target bank of the appointing bank (*Target banks of first stage*), or at a bank integrated into this target bank during previous M&A transactions (*Target banks of second stage*).

Overall, the group of 89 internals includes 57 individuals who are appointed from the same executive board, 30 individuals who are appointed within the same bank concern, and two appointees who were employed as executive directors in a target bank. The number of internals and externals is relatively evenly distributed. The percentage of internal (external) appointments of experienced members to the supervisory board is 52.05% (47.95%) and differs somewhat among the banking groups. The highest share of internal appointments is 61.04% in the sample of the commercial banks since internal appointments within bank concerns are predominantly in this banking group.

interest to this study. First, a subsidiary executive director cannot be a member of the parent supervisory board at the same time because the executive board would then be monitoring itself. Second, cross-over interlinks are not permitted when, for example, an executive director of concern division X is a member of the supervisory board at concern division Y and, at the same time, an executive board member of Y is sitting on the supervisory board of division X (Holtmann, 2013). In contrast, executive directors of the parent institute are allowed to be members of the supervisory body of subsidiaries. Although such appointments might imply positive effects concerning informational and communication benefits, there are concerns about such linkages since they raise conflicts of interest when business decisions touch interests of the parent and the subsidiary to a different extent (Weiß, 2014).

[11] According to Kick and Schertler (2016), non-integrating mergers can be defined as where the acquiring bank gains the majority stakes in the target bank but where the latter continues to operate under its own bank license and with its own executive board.

FIGURE 4.1: Origin of appointees and M&A transactions.



Note: This figure depicts the procedure used in this study to identify whether an appointee to the supervisory board of Bank A (*Appointing bank*) has an employment history at the executive board of Bank B which was integrated into Bank A (*Target banks of first stage*); or an employment history at the executive board of Bank C which was integrated into Bank B during previous transactions (*Target banks of second stage*).

4.5 Role of experience: which executive is appointed?

4.5.1 Sample construction and executive matching

As a first step of empirical analysis, I investigate whether a higher level of experience influences the probability of being appointed to the supervisory board. This question leads me to estimate a probit regression model in the following form:

$$\begin{aligned} Pr(Appointee = 1) = \Phi(\alpha + \sum_{j=0}^{3} \beta_{1+j} \cdot Experience_j + \\ \sum_{k=1}^{3} \beta_{3+k} \cdot Characteristics_k + \sum_{l=1}^{6} \beta_{6+l} \cdot Bank\,Controls_l + \epsilon) \end{aligned} \tag{4.1}$$

in which executive directors' job experience and personal characteristics as well as control variables of this bank, where the appointees were reported as executive directors before the appointment, are included. The dependent variable takes the value one where an executive director is appointed to the supervisory board and zero in the case of a non-appointed counterpart.

The probability of an executive director being appointed to the supervisory board increases with the executive director's age since executive directors at a later stage in their careers naturally have a higher level of experience and are more likely to be requested to provide supervisory board duties than younger executive directors (Fahlenbrach et al., 2010). Moreover, characteristics of the banks where the executive membership was held might also influence the probability of being appointed since the literature documents that the labor market uses firm performance as an indicator of managerial talent (e.g. Fee and Hadlock, 2003). To deal with this, I match the group of appointed executives to all non-appointed executive directors in my sample which increases comparability and allows me to examine the effect of job experience while controlling for executives' age and several characteristics of the executive bank.

For this matching, I consider the year of the appointee's membership on the executive board that precedes the appointment to the supervisory board. I call this year the *pre-appointment period*. For most appointed individuals this is equal to the year previous to their appointment. For a small number of appointees, however, I observe a slight gap between the last executive board position and the appointment to the supervisory board.[12] Moreover, I use all bank-related information of this bank, where the appointees were reported to be an executive director before the appointment takes place. I call this bank the *executive bank*. When the appointee was reported as being on more than one executive board during the pre-appointment period, I consider the largest bank in terms of total assets since the position at this bank may provide him/her with the most visible profile. Starting from all executive directors-year observation in German banks, I remove all observations where the balance sheet information of the executive banks at the pre-appointment period is missing. Overall, doing this reduces the number of experienced supervisory board members in my sample from 171 to 146 and the number of executive directors in the control group from 32,553 to 27,540.

As a next step, I match all executive directors who are appointed to a supervisory board in the following (treatment group) to all non-appointed executive directors in the same year and of similar characteristics in age, bank size, financial performance, and within the same banking group (control group). As far as matching criteria are concerned, I use executive age in the pre-appointment period and banking group to account for the considerable heterogeneity among German banks in terms of ownership structure and business models.

The age criterion ensures the comparison of executive directors at similar stages of their careers and distance to retirement. More specifically, I measure executives'

[12]The definition of an experienced member of the supervisory board used in this study, however, requires that this gap is no longer than five years.

ages in the pre-appointment period and match these to other directors whose age differs between 0 and 3 years. The banking group criterion ensures controlling for executives who come from the same savings, cooperative or commercial banking sector. Moreover, I consider bank size, which refers to a bank's total assets, to ensure the comparison of banks with similar operations in terms of business models, scale, and scope (Berger et al., 2014). Finally, I consider bank performance, captured by return on assets (ROA) measured in the pre-appointment period, to take into account that financial performance reflects the management abilities of the executive directors and works as a potential signal to the labor market for supervisory directors (Fee and Hadlock, 2003). The matching procedure is a *1:n* matching that ensures obtaining at least one matched executive director for each executive director who becomes a supervisory board member. This leads, however, to a large difference in the sample sizes of the treatment and the control group. A large difference would result in a small event rate when I would estimate the probability of being appointed to the supervisory board with the probit regression model. Therefore, I calculate the difference between the executives and the matched executive and retain only those executives from the control group with the minimum distance of age. Some executives have more than one matched counterpart when more than one exists with the same distance, which is the reason for the slightly larger-sized control group.

4.5.2 Summary statistics and measuring job experience

Table 4.2 presents the means and standard deviations of characteristics of executive directors and their executive banks in my sample, measured in the pre-appointment period. A detailed definition of all variables used is given in the Appendix. The first column refers to the characteristics of the treatment group. The 146 treated executive directors include 72 externals and 74 internals. The internals can be further subdivided into 44 executive directors who are appointed to the supervisory board of the same bank, 28 executive directors who are appointed within the same concern and two executive directors of a target bank who are appointed to the supervisory board of the combined entity. The second column in Table 4.2 describes the control executive directors in more detail. This sample contains 201 executive directors who are similar to the treatment executive directors in terms of age, total assets, ROA and banking group. The third column provides information on the entire sample of executives used in this analysis.

TABLE 4.2: Descriptive statistics of executive directors.

	Treatment group		Control group		Entire sample	
Executive directors	146		201		347	
No. of externals	72					
No. of internals	74					
... by the same bank	44					
... within the same concern	28					
... from previous target banks	2					
Job experience	*mean*	*sd*	*mean*	*sd*	*mean*	*sd*
EXP_CEO	0.438	0.498	0.035	0.184	0.205	0.404
EXP_BANKS	1.774	1.119	1.328	0.687	1.516	0.920
EXP_SECOND	0.137	0.345	0.060	0.238	0.092	0.290
Characteristics						
AGE	54.075	6.350	53.612	6.115	53.807	6.210
$FEMALE$	0.034	0.182	0.134	0.342	0.092	0.290
$AKAD$	0.178	0.384	0.169	0.376	0.173	0.379
Bank controls						
ROA	0.827	1.083	0.806	0.960	0.815	1.012
$TA\,(ln)$	22.600	2.278	22.769	2.237	22.698	2.252
Z_EQ	2.543	0.952	2.503	0.979	2.520	0.966
$D\_CONCERN$	0.404	0.492	0.418	0.494	0.412	0.493
$D\_SAVINGS$	0.486	0.502	0.498	0.501	0.493	0.501
D_COOP	0.192	0.395	0.184	0.389	0.187	0.391
D_COMM	0.322	0.469	0.318	0.467	0.320	0.467

Note: This table shows the descriptive statistics for the analysis at the executive level. I report characteristics and measures of job experience of executive directors, measured in the year before they are appointed to the supervisory board (*pre-appointment period*) and of that bank where the individuals joined the executive board before they are appointed to the supervisory board ($executive\,bank$). Column (1) refers to executive directors in my sample who are appointed to the supervisory board in the following (treatment group). Column (2) refers to the matched executive directors in my sample who are not appointed to the supervisory board (control group). Column (3) refers to the entire sample of executives used in this analysis. *mean (sd)* denotes the mean (standard deviation) of each variable. All variables are defined in the Appendix.

To examine the appointed individuals in more detail, I consider the personal characteristics in terms of age, gender and academic degree. *AGE* measures the age of the executive director. Since age is a matching criterion, the sample means of the treated and control group are relatively similar to each other. The mean executive director of the treated sample is 54.08 years old, which is a slightly higher value than the sample mean of the control group (53.61 years). *FEMALE* is a dummy variable that takes the value one when a female executive director is appointed, or zero in the case of a male appointee. 3% of the treated executive directors are women, whereas the share of women among the control group equals 13.4%. To determine whether the executive director has an academic degree, I use the dummy variable

AKAD which takes the value one when the executive director holds a Ph.D or has been awarded the title of professor, or zero otherwise. In both samples, 17% of the executive directors hold an academic degree.

Of key interest are the variables of executive directors' job experience. EXP_CEO is a dummy variable that takes the value one when the executive director has worked as chair of a bank executive board in the last five years, or zero otherwise. Since, the CEO is one of the key factors in the determination of corporate decisions (e.g. Bertrand and Schoar, 2003; Bornemann et al., 2015), I postulate that the CEO position comes with a higher level of bank managing experience than all other positions on the executive board. Moreover, the variable EXP_BANKS comprises the number of banks in which memberships to the executive board were previously held. I conclude that a higher value refers to a higher level of job experience since the executive director has to work with different business models, management styles, and staff leadership models. The same is applicable to the third measure of job experience: EXP_SECOND. This is a dummy variable that takes the value one when the executive director is assigned to one or more secondary positions at other financial or non-financial firms in addition to the full-time executive membership at the bank, or zero otherwise. I postulate that executive directors with experience in other firms have developed more management skills than those without such secondary positions (Kick et al., 2017). On average, 43% of all treated executive directors have experience as a CEO in the last five years, whereas the sample mean of the control group is 3.5%. The mean of EXP_BANKS in the sample of treated executive directors is 1.77 and thus higher than the sample mean of the control group (1.33). Moreover, 13.7% of the treated executive directors have one or more secondary positions in the last five years, whereas the sample mean of the control group is 6%. The treated executive directors tend to have higher average values in all three proxies of job experience than the control group.

Since I control for the difference between the executive bank of the treated and control group in terms of bank size, performance and banking group, the bank characteristics in Table 4.2 are relatively similar between both samples. Bank size is measured by the natural logarithm of total assets (deflated), $TA\,(ln)$. The sample mean $TA\,(ln)$ of the treated group is 22.60, and 22.77 for the control group. The majority of banks are savings banks (48.6% of the treated group and 49.8% of the control group), followed by commercial banks (32.2% in the treated and 31.8% in the control group) and cooperative banks (19.2% in the treated and 18.4% in the control group). In addition to the matching criteria, I use the Z-score based on the equity capital and total assets to measure a bank's risk and log-transformed exposure because it is skewed, Z_EQ. A higher value indicates a higher distance to default and thus a lower risk exposure. The mean value of Z_EQ in the sample of treated executives

is slightly higher than the mean value of banks in the control group (2.50). The variable $D\_CONCERN$ is a dummy variable that equals one when the bank belongs to a banking concern, or zero otherwise. To control for differences between banks that belong to a bank concern and banks that do not is necessary since they differ in complexity and linkages to the parent institute as well as to other subsidiaries. Moreover, executives within the concern may provide an additional source of internal experience to the supervisory board which other, non-connected banks do not have. 40.4% of banks in the treated sample belong to a bank concern and 41.8% of banks in the control group.

4.5.3 Empirical results

After obtaining a group of non-appointed counterparts from the executive matching, I am able to investigate what might determine the appointment of an executive director to the supervisory board. Table 4.3 reports marginal effects[13] estimated from probit regression model with Equation (4.1) where I focus on the set of variables that captures both the job experience and personal characteristics of executive directors. $Bank\,Controls$ captures measures of bank performance (*ROA*), bank risk (Z_EQ), and bank size ($TA\,(ln)$) as well as the dummy variable $D\_CONCERN$ which define banks belonging to a bank concern. In addition, I control for ownership structures by capturing bank group dummy variables. I include the dummies $D\_SAVINGS$ and D_COOP to account for the bank pillar of savings banks and cooperative banks and omit the dummy for commercial banks to avoid perfect collinearity.

The regression outcome of Column (1) indicates that a higher level of job experience increases the probability of being appointed to the supervisory board. More specifically, I find positive and highly significant marginal effects of EXP_CEO and EXP_BANKS. This indicates that the status of having been a CEO in the last five years increases the probability of becoming a supervisory board member by about 75.9 points, and holding more positions at various banks than an executive director from the control group enhances the probability by about 12.1 points. The marginal effect of EXP_SECOND goes in the same direction and shows that executive directors with secondary employments in other firms are more likely (by about 21.4 points) to be appointed than the matched executive director from the control group. Taken together, this first insight indicates that a higher level of job experience increases the probability of being appointed to the supervisory board and suggests that appointed executives have more job experience than their non-appointed counterparts.

[13] Note that marginal effects in this study are estimated when variables are set to their respective means.

TABLE 4.3: Probability of being appointed.

	(1)	(2)	(3)	(4)
EXP_CEO	0.759***	1.006***	0.544***	-0.006
	(0.099)	(0.149)	(0.145)	(0.113)
EXP_BANKS	0.121***	0.206***	0.094*	-0.001
	(0.038)	(0.068)	(0.048)	(0.044)
EXP_SECOND	0.214*	0.846***	0.095	0.007
	(0.116)	(0.268)	(0.129)	(0.141)
AGE	-0.008	-0.012	-0.006	-0.011
	(0.006)	(0.009)	(0.007)	(0.009)
$FEMALE$	-0.180	-0.286*	-0.152	0.073
	(0.114)	(0.166)	(0.164)	(0.256)
$AKAD$	-0.027	-0.243	0.070	-0.229*
	(0.085)	(0.178)	(0.101)	(0.124)
ROA	0.002	0.043	0.008	-0.020
	(0.028)	(0.130)	(0.031)	(0.047)
$TA\,(ln)$	-0.004	-0.044	-0.001	0.014
	(0.019)	(0.057)	(0.020)	(0.030)
$Z\_EQ\,(ln)$	0.011	-0.130	0.001	-0.069
	(0.038)	(0.113)	(0.039)	(0.067)
$D\_CONCERN$	-0.011	0.218	-0.006	0.436***
	(0.092)	(0.221)	(0.111)	(0.142)
$D\_SAVINGS$	-0.146*			
	(0.089)			
D_COOP	-0.153			
	(0.105)			
No. of obs.	347	171	176	146
$Pseudo\,R^2$	0.25	0.46	0.12	0.19
Chi^2 statistic	86.81	68.81	22.24	34.11
p-value (Wald test)	0.00	0.00	0.01	0.00
Area under the ROC curve	0.82	0.91	0.72	0.78

Note: The table reports marginal effects from probit regression and robust standard errors below the coefficients. The baseline results from Equation (4.1) are shown for all banks in Column (1), for savings banks in Column (2) and for cooperative and commercial banks in Column (3). In Column (4) a modification from the baseline model is derived where the dependent variable now takes the value one when the executive director is appointed internally and the value zero when appointed externally; the control group is excluded in this specification. *, ** and *** indicate significance at the 10%, 5% and 1% level.

Next, I present the results for the subsample of savings banks in Column (2), for cooperative and commercial banks in Column (3) of Table 4.3. Since the sample contains only 33 appointments in cooperative banks, I combine them with the commercial banks in the subsample in Column (3) as they have a similar private ownership structure. An investigation in subsamples is possible since unreported statistics reveal that appointments across the banking groups in the German universal banking system are very rare. In other words, an executive director of a savings bank is not usually appointed to the supervisory board of a cooperative or commercial bank.

Regarding the key variables of interest, I observe that the findings of EXP_CEO and EXP_BANKS are positive and significant in both subsamples. The marginal effect of EXP_SECOND shows, however, only significance in the subsample of savings banks. The subsample analysis highlights the fact that the influence of job experience differs little across the banking groups. I conclude that the determinants of being appointed to the supervisory board are not universal and differ somewhat over the ownership structures of the German banking groups.

In Column (4) of Table 4.3, the dependent variable is changed so as to examine whether the positive relation between job experience and an appointment to the supervisory board differs among internal or external appointments. I derive a modification from Equation (4.1) where the dependent variable now takes the value one when the executive director is appointed internally and zero when appointed externally. Thus, directors of the control group are not included. The specification gives no cause to believe that a difference between internals and externals in terms of job experience exists. I therefore conclude that the higher level of job experience is similarly observable for internally and externally appointed members of the supervisory board.

As far as control variables are concerned, the results of the specification show that the probability of being appointed internally is higher (by about 43.6 points to be more precise) within a bank concern. Moreover the regression outcomes show that the matching procedure performed very well in reducing the heterogeneity between the executive banks of treated and control executives. The p-values from the model chi-squared test (Wald test), which are all close to zero, allow me to conclude that the marginal effects are different from zero and that the chi-square statistics are of high significance. The subsample model of savings banks provides the highest classification accuracy of 46%, whereas the values range from 12% to 25% across the other models. The area under the receiver operating characteristic (ROC) curve is always above 70%.[14]

4.6 Which bank appoints an experienced member to the supervisory board?

4.6.1 Data and sample construction

The findings from the previous section indicate that the appointed executives tend to have a higher level of job experience than their non-appointed counterparts. Thus, hiring an experienced member to the existing supervisory board may increase the

[14] A value of 100% would indicate completely deterministic appointment probabilities while a value of 50% would imply that the model specification works like a fifty-fifty chance.

level of management experience in the boardroom and possibly enhance the effectiveness of the supervisory board. The next relevant question in this context would be which banks "need" to appoint an experienced member to their supervisory boards in order to potentially benefit from an increase in bank management experience. To investigate this, I change the analysis unit from the executives in Section 4.5 to the banks in the following.

Starting from all universal banks between 2009 and 2015, I remove all observations where the balance sheet information or the information of the executive and supervisory board is not available. Overall, this reduces the number of 4,147 banks with 29,010 bank-year observations to 1,769 banks with 11,366 bank-year observations. This also reduces the number of appointing banks. In Table 4.4, I provide information on the total number of appointments as well as the number of individuals appointed internally and externally between 2009 and 2015. The final sample includes 105 banks that appoint experienced members to the supervisory board. This number includes 45 banks appointing externals and 60 banks appointing internals. These banks can be further subdivided into 38 appointments within the same bank, 20 appointments within the same bank concern and two appointments from previous target banks.[15]

4.6.2 Performance and risk of appointing banks

Next, I report the means and standard deviations of bank performance and risk exposure for banks that appoint experienced members to their supervisory boards and all banks from the German banking system without experienced member appointments (bank control group)[16] in Table 4.4. The values report the mean and standard deviation for all appointments regardless of the specific appointment type. A detailed definition of all variables used here is provided in the Appendix. I remove extreme values by winsorizing the performance, risk measures and the control variables at the 1st and 99th percentiles.

I consider two proxies of bank performance and bank risk measured in the year prior the appointment. For bank performance, I use returns on assets, ROA, and risk-adjusted return on assets ($RROA$). To obtain the latter, I divide the performance measured as ROA by its standard deviation to get a risk-adjusted performance measure. For bank risk, I use the Z-score based on the equity capital and total assets to

[15] These two appointments were determined following the aforementioned procedure to trace the M&A transactions of the appointing banks and of their target banks in Figure 4.1.

[16] Here it is important to emphasize that the bank control group implies banks that have no appointment to their supervisory board as well as banks that appoint non-experienced members to their supervisory board, for example stakeholder representatives or bank employees as part of the codetermination system. Since the data do not allow for any further differentiation among the appointments of stakeholder representatives and bank employees, I combine them with the control group of non-appointing banks.

measure a bank's risk and log-transformed exposure because it is skewed (Z_EQ), and the ratio of non-performing loans to total assets (*NPL*).

TABLE 4.4: Performance and risk proxies of appointing banks.

	Appointing banks		Bank control group		
No. of banks	105		1,664		
No. of banks with external appointments	45				
No. of banks with internal appointments	60				
...by the same bank	38				
...within the same bank concern	20				
...from previous target banks	2				
Performance and risk proxies	*mean*	*sd*	*mean*	*sd*	*ttest*
ROA	0.580	1.214	0.837	0.790	3.295*
$RROA$	1.583	1.403	2.272	1.329	5.283*
Z_EQ	2.365	1.042	2.838	0.489	9.708*
NPL	3.951	4.483	3.861	3.860	-0.238

Note: This table reports the number of banks that appoint experienced members to their supervisory boards. Moreover the table shows descriptive statistics for performance and risk proxies for the appointing banks measured in the pre-appointment year in Column (1) and for banks of the control group in Column (2). *mean* (*sd*) denotes the mean (standard deviation) of each variable. * indicates the significance of mean differences in two-tailed t-tests at the 1% level, respectively. All variables are defined in the Appendix.

Noteworthy is the following cross-section variation in the data: banks with appointments of experienced members to their supervisory boards show on average in the pre-appointment year a lower bank performance and a higher risk exposure than the bank control group. More specifically, the mean of ROA ($RROA$) in the sample of appointing banks is 0.58% (1.58%). That is somewhat lower than in the sample of the bank control group, which is 0.84% (2.27%). When it comes to bank risk, the mean of Z_EQ in the sample of appointing banks is 2.37 and somewhat lower than the sample mean for the bank control group (2.84). A lower value of Z_EQ indicates a lower distance to default and thus a higher risk exposure. Moreover, the mean of *NPL* is 3.95% and somewhat higher than the sample mean for the bank control group (3.86%). With a two-tailed t-test, I check the null that the reported mean values are equal and obtain statistically significant t-values, indicating that the means of the performance proxies and of Z_EQ measured in the sample of appointing banks differ significantly from the sample of the bank control group. The difference in performance and distance to default likely indicates that banks with appointments of experienced members to their supervisory boards differ in terms of their financial situation from banks without experienced member appointments.

4.6.3 Bank model and control variables

As a next step of estimation, I investigate which bank characteristics influence the probability of appointing an experienced member to the supervisory board. This

question leads me to estimate a probit regression model of the following form:

$$\begin{aligned} Pr(Appointing\,Bank = 1) = \Phi(\alpha + \beta_1 \cdot RETIRE_{w2} + \\ \sum_{j=1}^{6} \beta_{1+j} \cdot Financial\,Health_j + \sum_{k=1}^{5} \beta_{7+k} \cdot Bank\,Controls_k + \\ \beta_{13} \cdot GDP\,Growth + \sum_{l=1}^{6} \beta_{13+l} \cdot Year_l + \epsilon) \end{aligned} \tag{4.2}$$

in which bank characteristics are included. The dependent variable takes the value one if an experienced member is appointed to the bank supervisory board and zero for banks of the control group (as already specified in Section 4.6.2). The unit of analysis is bank-year observations. Table 4.5 shows the descriptive statistics for the dependent and control variables used in the following analysis. To examine whether the appointments of experienced members to the supervisory board are driven by the retirement of a member of the executive board, I include the variable $RETIRE_{w2}$ that takes the value one if the bank has experienced a retirement event on its executive board in the current or next year. I classify a retirement when an incumbent executive is older than 60 years[17] and s/he is no longer reported as being a member of the board in the current or forthcoming year. The dummy $RETIRE_{w2}$ equals one for 20.6% of the banks.

TABLE 4.5: Descriptive statistics of bank model.

Full sample	*mean*	*sd*	*p1*	*p50*	*p99*
$D\_INTERNAL$	0.005	0.072	0	0	0
$D\_EXTERNAL$	0.004	0.063	0	0	0
$RETIRE_{w2}$	0.206	0.405	0	0	1
$RROA$	2.266	1.332	-1.06	2.224	5.825
$CABDIS$	39.08	14.064	11.692	37.527	77.069
$Z\_EQ\,(ln)$	2.833	0.499	1.489	2.875	3.838
NPL	3.862	3.866	0.107	3.204	14.013
OBS	5.794	4.948	0.962	4.926	19.4
$DISS_{w3}$	0.035	0.183	0	0	1
$MERGER_{w3}$	0.086	0.28	0	0	1
$TA\,(ln)$	20.101	1.434	17.293	20.05	24.379
$D\_CONCERN$	0.046	0.209	0	0	1
$D\_SAVINGS$	0.265	0.441	0	0	1
D_COOP	0.675	0.468	0	1	1
D_COMM	0.059	0.237	0	0	1
$GDP\,Growth$	0.818	3.016	-5.599	1.633	4.058

Note: This table reports the descriptive statistics for the bank-level analysis. *mean (sd)* denotes the mean (standard deviation) of each variable. The value px indicates the xth percentile of the distribution of the respective variable. All variables are defined in the Appendix.

[17] Doing so refers to the same threshold used in, for example, Huson et al. (2004) and Bornemann et al. (2015) to classify a retirement age.

Turning to the relation between a bank's financial situation and the appointment of an experienced member to the supervisory board, the vector $Financial\,Health$ comprises the following bank-specific performance and risk indicators measured in the pre-appointment year. First, I include the first lag of risk-adjusted return on assets, $RROA$.[18] The sample mean (sd) of $RROA$ is 2.27% (1.33). Moreover, I include the variable $CABDIS$, which is the sum of a bank's cash, deposits and investment securities relative to total assets. This ratio indicates the percentage of a bank's total assets based on short-term liquidity. A higher ratio indicates a bank with greater liquidity since this permits the bank to convert more short-term assets when cash is required. The sample mean (sd) of $CABDIS$ is 39.08% (14.06). To control for the bank's risk exposure, I include the first lag of Z_EQ, which is the Z-score based on the equity capital and total assets, to measure the bank's risk and log-transformed exposure because it is skewed. The sample mean (sd) of Z_EQ is 2.83 (0.5). Moreover, I use the first lag of NPL, which is the ratio of non-performing loans to total assets, to proxy the risk exposure due to the loan portfolio. I also include the first lag of off-balance sheet items relative to total assets, OBS, to measure the extent to which the bank might use off-balance sheet items to reduce its risks. The sample mean (sd) of NPL is 3.86% (3.87) and of OBS is 5.79% (4.95). In addition, I include the dummy variable, $DISS_{w3}$ to control for banks that receive capital injections and are subject to severe regulatory interventions (i.e., moratorium) or have exited the market in a distressed merger in the past or current year, or plan to do so in the forthcoming year. The dummy variable $DISS_{w3}$ equals one for a small group of banks (3.5%).

Moreover, the vector $Bank\,Controls$ includes the following bank-specific variables.[19] With the dummy variable $MERGER_{w3}$, I control for M&A transactions since these events may influence the composition of the supervisory board. The variable takes the value one if the bank is subject to an M&A transaction in the past, current or forthcoming year. I further take into account a bank's size, $TA\,(ln)$, measured as the natural logarithm of total assets (deflated), whether a bank belongs to a bank concern with the dummy variables $D\_CONCERN$, and two further variables $D\_SAVINGS$ and D_COOP to control for varying banking groups. Finally, I control for the macroeconomic environment with the variable *GDP Growth* and include year dummies to control for the remaining time effects.

In order to ensure that the probit model specifications do not suffer from multicollinearity, I present pair-wise correlation coefficients between all variables used here in Table 4.6. Since the correlation coefficients among the variables are not higher

[18] The risk-adjusted measure of bank performance is used as a bank control variable rather than ROA in order to avoid multicollinearity among the control variables.

[19] Here it is important to emphasize that the data do not allow for a description of the supervisory board in more detail or rather to add further board control variables, i.e., supervisory board size, to my regression model.

than 0.38 (the highest value between Z_EQ and $RROA$), I conclude that multicollinearity is not a problem in the specifications.

TABLE 4.6: Correlations of bank-level variables.

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1)	D_EXP_SUP	1							
(2)	$D\_INTERNAL$	0.75*	1						
(3)	$D\_EXTERNAL$	0.65*	0.00	1					
(4)	$RETIRE_{w2}$	0.03*	0.04*	0.00	1				
(5)	$RROA$	-0.05*	-0.03*	-0.04*	0.01	1			
(6)	$CABDIS$	0.02	0.03*	-0.01	-0.05*	-0.06*	1		
(7)	$Z\_EQ\,(ln)$	-0.08*	-0.07*	-0.04*	0.03*	0.38*	-0.19*	1	
(8)	NPL	0.00	-0.02	0.02	-0.02	-0.16*	-0.02	-0.11*	1
(9)	OBS	0.06*	0.03*	0.05*	0.01	0.00	-0.23*	0.00	-0.01
(10)	$DISS_{w3}$	0.04*	0.02	0.04*	-0.02	-0.14*	0.05*	-0.19*	0.11*
(11)	$MERGER_{w3}$	0.05*	0.03*	0.04*	0.07*	-0.05*	0.01	-0.01	0.00
(12)	$TA\,(ln)$	0.15*	0.12*	0.09*	0.13*	-0.03*	-0.06*	-0.14*	-0.1*
(13)	$D\_CONCERN$	0.21*	0.19*	0.1*	0.01	-0.14*	0.06*	-0.14*	0.02
(14)	$D\_SAVINGS$	0.02	0.01	0.02	0.12*	0.01	-0.06*	-0.04*	-0.05*
(15)	D_COOP	-0.09*	-0.07*	-0.06*	-0.11*	0.11*	0.01	0.18*	-0.04*
(16)	D_COMM	0.14*	0.12*	0.08*	-0.02	-0.24*	0.09*	-0.29*	0.18*
(17)	$GDP\,Growth$	0.02	0.02	0.01	0.02	0.27*	0.00	0.02	0.13*

		(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(10)	$DISS_{w3}$	0.01	1						
(11)	$MERGER_{w3}$	0.02	0.1*	1					
(12)	$TA\,(ln)$	0.21*	0.09*	0.08*	1				
(13)	$D\_CONCERN$	0.06*	0.09*	0.08*	0.36*	1			
(14)	$D\_SAVINGS$	0.01	-0.04*	-0.09*	0.49*	0.04*	1		
(15)	D_COOP	-0.08*	0.02*	0.07*	-0.55*	-0.22*	-0.87*	1	
(16)	D_COMM	0.14*	0.03*	0.02	0.19*	0.35*	-0.15*	-0.36*	1
(17)	$GDP\,Growth$	0.01	-0.04*	-0.03*	0.01	0.00	0.00	-0.01	0.00

Note: The table displays correlation coefficients between the variables from the bank-level analysis. All variables are defined in the Appendix. * indicates correlation coefficient is significant at the 1% level.

4.6.4 Empirical Results

Table 4.7 reports marginal effects estimated from probit regression model with Equation (4.2). The results of Column (1) provide evidence for the idea that experienced candidates are more likely to be appointed when the bank experiences a retirement event at the executive board level in the current year or when such an event is planned to take place in the next year. The positive and highly significant marginal effect of $RETIRE_{w2}$ reveals that such an event enhances the probability of an appointment by about 25.7 points. This might suggest that banks will appoint their own executive directors to the supervisory board when they stop serving in the current or next year.

In addition, Column (1) reveals three insights regarding banks' financial health. Firstly, the results show that the appointments of experienced members to the supervisory board are preceded by a higher risk exposure in the pre-appointment year. The significant marginal effect of Z_EQ indicates that bank risk in the pre-appointment year is positively related to an appointment since a higher value of Z_EQ, which reveals a lower bank risk because of higher distance to default, reduces the probability of an appointment by about 18.3 points. This result seems to be supported by positive and significant marginal effects of *OBS*. A higher value of *OBS* in the pre-appointment year increases the probability studied here by about 6 points. I consider these results to be in line with the initial insight that appointments of experienced members to the supervisory board are determined by the bank's risk exposure. Finally, I report a positive and highly significant result of $MERGER_{w3}$, which indicates a positive relation between the M&A transactions of the bank and the appointment of an experienced member to the supervisory board. This insight can be regarded as supportive evidence that an M&A transaction increases not only the size of the acquiring bank, but also influences the board structure of the combined entity (Boone et al., 2007), for instance, when target executives are appointed to the new supervisory boardroom in order to gain internal informational and communication benefits (e.g. Cai and Sevilir, 2012).

TABLE 4.7: Probability of appointing.

	(1)	(2)	(3)	(4)	(5)
$RETIRE_{w2}$	0.257***	0.131	0.302***	0.984	1.185**
	(0.091)	(0.162)	(0.108)	(0.063)	(0.078)
$RROA$	-0.004	0.011	-0.030	0.963	1.017
	(0.039)	(0.075)	(0.050)	(0.025)	(0.027)
$CABDIS$	0.003	0.010*	0.000	0.999	1.003
	(0.002)	(0.006)	(0.003)	(0.002)	(0.002)
Z_EQ	-0.183**	-0.149	-0.324***	0.974	0.910**
	(0.077)	(0.232)	(0.096)	(0.049)	(0.040)
NPL	0.001	-0.003	0.004	1.003	0.994
	(0.005)	(0.053)	(0.006)	(0.002)	(0.005)
OBS	0.006*	0.015	0.008**	1.003*	1.002
	(0.003)	(0.021)	(0.003)	(0.002)	(0.001)
$DISS_{w3}$	0.001	-0.005	0.001	1.001	1.000
	(0.001)	(0.004)	(0.001)	(0.001)	(0.001)
$MERGER_{w3}$	0.002**	0.006**	0.001	1.001	1.000
	(0.001)	(0.003)	(0.001)	(0.001)	(0.001)
$TA\,(ln)$	0.202***	0.413***	0.198***	1.081***	1.090***
	(0.035)	(0.121)	(0.039)	(0.028)	(0.025)
$D\_CONCERN$	0.506***	0.326**	0.679***	1.820	6.620***
	(0.131)	(0.192)	(0.171)	(1.279)	(2.839)
$D\_SAVINGS$	-0.005***			0.999	0.998**
	(0.001)			(0.001)	(0.001)
D_COOP	-0.006***			0.998	0.997**
	(0.002)			(0.001)	(0.001)
$GDP\,Growth$	0.000	0.001	-0.000	1.000	1.000
	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
YEAR effects	YES	YES	YES	YES	YES
No. of obs.	11,366	3,015	8,351	11,366	11,366
$Pseudo\,R^2$	0.242	0.265	0.234	0.223	0.223
Chi^2 statistic	342.6	78.79	188.3	499.9	499.9
p-value (Wald test)	0.00	0.00	0.00	0.00	0.00
Area under the ROC curve	0.91	0.86	0.89	0.87	0.86

Note: The table reports two different parts of estimation. The baseline results from Equation (4.2) with marginal effects from probit regression and robust standard errors below the coefficients are shown for all banks in Column (1), for savings banks in Column (2) and for cooperative and commercial banks in Column (3). Columns (4) and (5) show the marginal effects from multinomial logit regression where the regression outcome refers to two different levels of the dependent variable: the individual is appointed externally in Column (4) or internally from the same bank, bank concern or from previous target banks in Column (5). All parameters in this specification are estimated relatively to the bank control group. *, ** and *** indicate significance at the 10%, 5% and 1% level.

Next, I test if these insights hold equally for the various ownership structures in German banks. In Column (2) of Table 4.7, I present the results for the sample of savings banks and in Column (3) for the sample of cooperative and commercial banks. Since the sample contains only a small number of appointments in cooperative banks, I combine them again with the commercial banks in the subsample of private banks in Column (3). Regarding the key variables of interest, I find that the positive relation between bank risk and the appointment of experienced members to

the supervisory board differs somewhat between the ownership structures. I document a positive relation of bank risk with a negative and highly significant marginal effect of Z_EQ, and a significantly positive one of *OBS* in the sample of private banks, but no significant relation in the sample of savings banks. The same holds for the positive relation between retirements and these appointments, which hinges primarily on the subsample of cooperative and commercial banks. The marginal effect of $RETIRE_{w2}$ is positive and highly significant for private banks but not in the sample of savings banks. In addition, the effect of M&A transactions is more pronounced in the sample of savings banks where I report positive and significant findings. From these findings I conclude that the determinants of appointments of experienced members to the supervisory board are different between private and public banks. This may be related to the particular board composition in savings banks. As a consequence of their public mandate, the administrative official of the government in the administrative district has membership on the supervisory boards of the savings banks and this differs from shareholder-dominated supervisory boards in private banks.

Turning to the bank control variables, bank size increases the probability that the bank appoints an experienced member to the supervisory board in the full sample and in the subsamples. Moreover, these appointments seem to be more likely in bank concerns regarding the positive and highly significant marginal effect of $D\_CONCERN$.[20]

In order to account for the small event rate studied here, I replicate the outcome of Columns (1)-(3) of Table 4.7 with an alternative approach. I employ the so called Firth method, which is a penalized maximum likelihood approach to reducing a potential bias resulting from small event rates (Firth, 1993; King and Zeng, 2001) and implemented in stata by the command *firthlogit* (Coveney, 2015). Since the results of my analysis remain unchanged, I do not report the results here but they are available upon request.

4.6.5 Are internally and externally appointing banks different?

After investigating why banks appoint an experienced member to the supervisory board, it is natural to ask whether these determinants differ among externally and internally appointed executive directors to the supervisory board since the motivation of banks to appoint internally might differ from appointing an experienced member from external to the supervisory board. Thus, as a final step of estimation, I provide marginal effects from a multinomial logistic regression where I include the same set of explanatory variables as in Equation (4.2). However, the meaning of the dependent variable is changed from the one in Columns (1)-(3) of Table 4.7. Now,

[20] In order to assess the correlation with bank size, I also replicate the analysis without the dummy variable $D\_CONCERN$. The results of this analysis remain unchanged with those reported above.

the reported marginal effects refer to two different levels of the dependent variable: an external appointment in Column (4), and an internal appointment in Column (5) of Table 4.7. All parameters in this specification are estimated relative to banks of the control group. At this point of the estimation, it is noteworthy to mention that considering balance sheet information of the pre-appointment year carries a completely different meaning for external than for internal appointments. In the case of an external appointment, it is reasonable to say that the pre-appointment period cannot be assigned to the management performance of the executive director since s/he works at a different bank. However, in the case of internal appointments and especially when the former executive is appointed, the pre-appointment period reflects the bank's financial situation under its management regime.

Keeping this in mind, the results of Columns (4) and (5) reveal two important insights. First, there is a significant relation between internal appointments of experienced members to the supervisory board and retirement events. The marginal effect of $RETIRE_{w2}$ is positive and highly significant in Column (5), which reveals that an internal appointment to the supervisory board will more likely take place when a retirement event on the executive board occurs in the current or next year. In contrast, the results show no significant relation between retirement events and hiring an external candidate. I conclude that retirement events seem to be a pre-condition for the appointments of former executives to the supervisory board and/or the probability of an internal appointment within the same bank concern increases when the supervisory board appoints a new executive member due to the retirement of the predecessor at the executive board.

Secondly, the sign of Z_EQ differs from the one displayed in Columns (1)-(3) when all appointments are considered. The positive and highly significant marginal effects indicate that a higher level of bank risk reduces the probability of an internal appointment by about 91 points. Moreover, I find a positive and significant result of $CABDIS$, which indicates that a higher liquidity ratio increases the probability of an internal appointment (rather than where no appointment takes place) assuming all others are held constant. Thus, internal appointments seem to be more likely when the bank experiences a lower risk exposure and enjoys greater liquidity in the pre-appointment year, which in the case of former executives is the last year under its management regime.

In sum, whereas there is only little evidence based on external appointments, I find significance in the test of internal appointments and some supporting evidence that the financial situation in the pre-appointment year has a significant influence on the appointment decision of an internal or external candidate to the supervisory board. This outcome suggests that the motivation of banks to appoint internally differs from hiring a candidate external to the bank. I conclude that executive directors

from any internal source are more likely to be appointed in the case of i) retirement events (in the current or following year) and ii) better financial health. Thus, I consider this outcome of the multinomial logistic regression to be in line with Brickley et al. (1999), who argues that the practice of post-retirement board duty depends on the management performance of those executives in the pre-appointment period.

4.7 Concluding discussion

This study focuses on newly appointed members to the supervisory board that hold an executive position at the same bank (former executives), are employed within the same bank concern or have acquired experience externally. Considering these appointments from a unique sample of German banks between 2009 and 2015, this paper takes two different perspectives: first, whether a higher level of experience influences the probability of being appointed to the supervisory board and, second, whether the appointing banks differ in terms of their financial situation from non-appointing banks?

The results suggest that a higher level of job experience among executive directors significantly increases the probability of being appointed to the supervisory board. These appointed executives differ from their non-appointed counterparts in terms of higher levels of job experience. The study finds supportive evidence even though comparability between appointed and non-appointed executives in terms of their age and the characteristics of their executive banks is ensured. Following on from this, I conclude that the appointed individuals are those executive directors with a particular set of experiences. In this regard, there is no difference between being appointed internally or externally. Thus, the data available to date suggest that more experienced candidates are appointed to the supervisory boards and that these appointments probably enhance both knowledge of bank management and the monitoring potential of the supervisory board.

Turning to the second perspective, this study examines which banks are more likely to hire such experienced members to their supervisory board and whether the banks that appoint internal candidates differ from those that appoint externally. Among other possible criteria, this study provides evidence for the view that the pre-appointment financial situation, measured by several proxies of bank risk and performance, has a significant influence on these recruitment decisions. Whereas there is little evidence for performance, the results indicate that a higher risk exposure in the pre-appointment year is positively related to the appointment of an experienced member to the supervisory board. This relation differs, however, when it comes to an internal appointment. Supervisory board appointments of formerly employed executives or those from another executive position in the bank concern are more likely when banks experience lower risk exposure prior to these events. Since the

majority of internal appointments studied here are formerly employed executives, it is possible to conclude that these re-appointments depend on the performance of that specific individual in the executive role. In other words, former executives must have performed sufficiently well to gain access to the supervisory board.

Before closing, it is important to bear in mind that this study is subject to a few limitations, which in turn prompt two suggestions for any future research. First, the small sample of 89 internal appointments, which is further reduced by the data available, does not permit the separate evaluation of evidence for internal experience gained from the same bank and within the same concern. A second limitation concerns the sample period. The study makes use of data beginning in 2009, which is determined by the application of a regulation in that year and which demands increased transparency with respect to the appointments of supervisory board members since then. However, the sample period from 2009 to 2015 is, unfortunately, not appropriate in the context of an interesting next research step that would be to evaluate performance consequences of the appointments studied here. This is because the established methods, i.e., estimations via dynamic panel generalized methods of moments, that deal with the issue of endogeneity among appointments and the prior financial situation require a longer sample period in order to use historical values as instruments for current changes. Of course there might be more data available in the future since the appointments in the coming years will increase the number of observable events. Thus, over the next few years, research on the appointments of experienced members to supervisory boards might be able to operate with a larger number of events and a longer time period in order to investigate post-appointment effects on performance or risk-taking. Insights on this would contribute to a large stream of succession research and would be also of particular interest to regulatory authorities and practitioners alike.

4.8 Appendix

Definition of executive-level variables.

EXP_CEO	Dummy variable that takes the value one when the executive director has worked as the chair of an executive board (CEO) in the last five years.
EXP_BANKS	Variable that equals the number of banks in which a membership to the executive board has already been held.
EXP_SECOND	Dummy variable that equals one when the executive director has reported one or more secondary positions at other financial or non-financial firms in addition to the full-time executive membership at the bank.
AGE	Variable that measures the age of the executive director.
$FEMALE$	Dummy variable that equals one if the executive director is female.
$AKAD$	Dummy variable that equals one if the executive director holds a Ph.D or has been awarded the title of professor.
ROA	Return on total assets of this bank where the executive membership was held.
$TA\,(ln)$	Value of total assets (ln, deflated) of this bank where the executive membership was held.
$Z\_EQ\,(ln)$	Z-score based on the equity capital and total assets to measure the executive bank's risk exposure (ln).
$D\_CONCERN$	Dummy variable equals one if the bank where the executive membership was held belongs to a bank concern.
$D\_SAVINGS$	Dummy variable equals one if the bank where the executive membership was held is a savings bank.
D_COOP	Dummy variable equals one if the bank where the executive membership was held is a cooperative bank.
D_COMM	Dummy variable equals one if the bank where the executive membership was held is a commercial bank.

Definition of bank-level variables.

$D\_EXTERNAL$	Dummy variable equals one in the year where the bank appoints an external candidate.
$D\_INTERNAL$	Dummy variable equals one in the year where the bank appoints a candidate from the same bank, bank concern or from previous target banks.
$RETIRE_{w2}$	Dummy variable equals one when the bank has experienced or will experience a retirement event on its executive board in the current or next year.
ROA	Return on total assets of the appointing bank.
$RROA$	Risk-adjusted return on total assets of the bank (i.e. ROA is divided by its standard deviation).
$CABDIS$	The sum of a bank's cash, deposits and investment securities relative to total assets of the bank.
$Z\_EQ\,(ln)$	Z-score based on the equity capital and total assets (ln) to measure the risk exposure of the bank.
NPL	Non-performing loans to total assets of the bank.
OBS	Off-balance sheet items to total assets of the bank.
$DISS_{w3}$	Dummy variable equals one if the bank receives a capital injection, is subject to severe regulatory intervention (i.e. moratorium), or has exited the market in a distress merger within a window of three years.
$MERGER_{w3}$	Dummy variable equals one if the appointing bank is subject to M&A transactions within a window of three years.
$TA\,(ln)$	Value of total assets of the bank (ln, deflated).
$D\_CONCERN$	Dummy variable equals one if the bank belongs to a bank concern.
$D\_SAVINGS$	Dummy variable equals one if the bank is a savings bank.
D_COOP	Dummy variable equals one if bank is a cooperative bank.
D_COMM	Dummy variable equals one if bank is a private commercial bank.
$GDP\,Growth$	Annual percentage change in per-capita real GDP at the federal state level.

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Chapter 5

Conclusion

5.1 Closing remarks on the research questions

This dissertation analyses external appointees and successions on boards. It provides insights into the present literature from a meta-perspective, enlarges the understanding of external successions to German executive bank boards and extends the rare number of studies on the internal supervisory bodies of these institutions (Johansen et al., 2017). The analyses in this dissertation are all empirical in nature. The majority of quantitative data are taken from the Deutsche Bundesbank's prudential database, BAKIS. In addition, a meta-analytical dataset used in the first paper covers hand-collected literature survey data on the performance consequences of external successions. In the following, the research questions from the Introduction are taken up and answered by using the main results of the individual papers.

The thesis starts by taking a closer look at the association of outside succession and post-succession performance estimated by previous studies. Since firm performance has been observed to benefit from appointing new CEOs externally in the post-appointment period, but can also be subject to difficulties following these events, the consequences can be considered as inconclusive (Giambatista et al., 2005). From carefully observing these varying consequences, method-related differences among the existing studies appear. A suitable choice of methods is relevant to provide reliable results since external successors and their appointment to firms could be subject to succession- and company-related influences which, while requiring consideration, also raise statistical difficulties with regard to measurement and interaction (Pitcher et al., 2000). Thus, it has been unclear so far whether the consequences vary systematically with the employed methodological design of the study.

The first paper, "*Outside successions and performance consequences: A meta-analysis*", highlights the present findings on the association of outside succession and performance. Conducting a literature search process, the paper aggregates 102 empirical results from 28 journal articles and working papers published between 1990 and 2017. The meta-analysis focuses on how researchers address the build-in issue that outsiders are not randomly assigned to firms. The results reveal that the relationship

of outside successions and performance varies significantly with the methodological characteristics of the original studies. To be precise, the relation of outside succession and performance moves downward when the original studies address the concerns of selection, endogeneity or a potentially omitted variable bias compared to other studies that might overestimate the appointment effect in the absence of a control strategy. This result emphasizes the importance of choosing an appropriate strategy because without carefully considering these econometrical issues, research may result with less reliable implications for governance policy and, in the case of banks, for the work of regulatory authorities.

The second analysis, "*Do all new brooms sweep clean? Evidence for outside bank appointments*", addresses in particular such alternative explanations, i.e. outside selection and/or joint endogeneity, while examining external executive appointments and their consequences on bank performance. Since external successions to the executive board are in favor when business is under stress, these events are motivated by the need to bring about the necessary changes in performance. However, thus far it remains unclear as to whether all external candidates are equally capable of meeting these expectations to the same extent. Evaluating this topic, the second paper explores 1,756 outside candidates appointed to German executive bank boards between 1993 and 2014 and their employment histories in the German banking industry.

In essence, the results of the second empirical paper lend significant support to the view that some outsiders are better predisposed to helping the bank turn around poor performance and that the selected proxies of managerial ability, which are based on the historical return on assets and risk-return efficiency measured at outsiders' former banks, are able to identify such good outsiders. Notably, this finding is not driven by the appointment of good outsiders to better banks but is pronounced by the development of the financial crisis. This might be essential to researchers and practitioners, but is of particular interest to regulatory authorities since the German Regulatory Act provides, inter alia, a provision to change the executive board of banks in distress.

The dissertation is completed by a third paper, entitled "*Experienced members of the supervisory board. Who is appointed and which bank appoints?*" that explores newly appointed members to the supervisory board with an employment history on bank executive boards which involves internal appointments (i.e. formerly employed executive directors) and appointees with executive positions external to the bank. All of these candidates provide a source of bank-specific understanding. However, it is the appointment of an internal that leads to conflicts of interest and concerns about a supervisory board's independence given the personal connection between the executive and the supervisory role. In particular, seamless re-appointments of former

CEOs to the same supervisory boards are part and parcel of a good corporate governance debate as outlined in the Introduction (Oehmichen et al., 2014; Andres et al., 2014; Quigley and Hambrick, 2012). An overarching interest of bank shareholders, however, is to select the best to carry out the internal supervisory role since bank performance and the mainly bank-financed German economy benefit from the effectiveness of these tasks (Hermalin and Weisbach, 1998; Johansen et al., 2017).

With a unique dataset of 171 supervisory board appointments between 2009 and 2015, the third paper explores the determinants of who is appointed and which bank appoints experienced members to the supervisory board. The first perspective considers executive directors and whether more experience influences the likelihood of being appointed to the supervisory board. Concerning the experience of executive directors, the paper points to the conclusion that newly appointed executives to the supervisory board differ from their non-appointed counterparts with a particular set of experiences in terms of previous CEO positions, more positions at other banks and/or more secondary employment.[1]

Secondly, the study provides evidence for the view that the pre-appointment financial situation, measured by several proxies of bank risk and performance, has significant influence on the decision to appoint such an experienced member to the supervisory board. The results indicate that the appointment of internal executives to the supervisory board depends on the sound financial health of the bank in question. Since the majority of internal appointments are in fact formerly employed executives, it is possible to conclude that these individuals must be good performers to gain access to the supervisory board.

5.2 Potential for future research

In sum, the three partial analyses of this dissertation draw a comprehensive picture of external appointees and successions on boards. First, they highlight why empirical strategies have to be chosen carefully if performance consequences of outside successions are to be evaluated reliably and, second, they make a valuable contribution to the stream of literature addressing these post-appointment effects. Third, they further the debate of good corporate governance concerning the linkage between executive and supervisory boards at German banks. As outlined in the Introduction, there has been a particular need for a deeper exploration of bank governance structures for some time, primarily because some governance structures are regarded as assuming joint responsibility for the financial crisis (Adams and Mehran, 2012). By responding to this academic void with empirical insights for

[1] Defined as board seats the executive holds in additional to his/her (full-time) executive position at the bank.

the German banking industry, it is hoped the studies may serve as a foundation for further research.

Firstly, an interesting question for further meta-analytical researchers might be to investigate whether the relation of outside successions and performance consequences differs across several institutions, especially with regard to financial or non-financial firms. This may create a greater understanding of a bank's governance mechanisms which differs, as outlined in the Introduction, to firms at least in terms of the requirements of bank regulatory authorities (Adams and Mehran, 2012; Haan and Vlahu, 2016).

Secondly, future researchers on managerial abilities may enhance the significance of the developed proxies, namely historical return on assets and risk-return efficiency, by applying them to institutions in other countries with divergent corporate governance structures, for instance, institutions administrated with single-tiered board structures.

Thirdly, future research approaching appointments of banking executives to bank supervisory boards might be able to elaborate the consequences of these linkages between the executive and the supervisory board to bank risk and performance. To estimate such consequences, however, requires a longer sample period in order to employ an appropriate dynamic regression model. The sample period studied here from 2009 to 2015 does not allow for the employment of an empirical model capable of dealing with the concern of endogeneity among the pre-appointment situation, the recruitment decision and the post-appointment consequences. My dissertation provides supporting evidence for the presence of such endogeneity concerns when performance is investigated as a function of experienced supervisory board members since the fourth chapter documents that the financial situation in the pre-appointment stage affects the likelihood that experienced members will be appointed to their supervisory boards.

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